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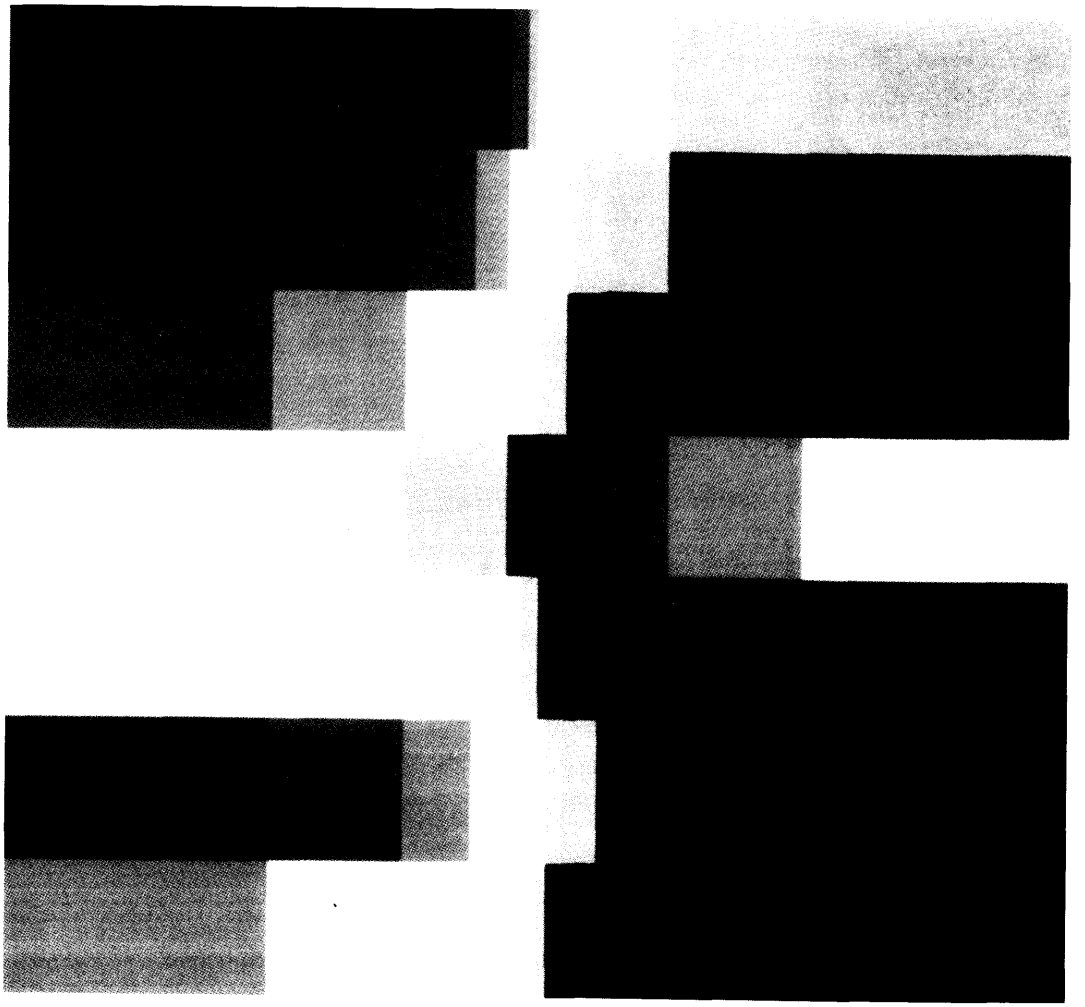
SECOND EDITION

HARMONIC PRACTICE IN TONAL MUSIC



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FOR

Bear, Stick, Gina, and Dark Angel

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PREFACE

(TO THE TEACHER)

Harmonic Practice in Tonal Music takes a linear, functional approach to tonal music in the common-practice era, not only showing students how individual chords function within the larger realm of harmonic tendency, but also the interaction between melody and harmony. Through comprehensive revisions, this new Second Edition ultimately aims to achieve the same objective as the First Edition—to provide students with a thorough treatment of harmony and voice-leading principles in tonal music. Traditionally this body of music has been approached through a vertically oriented system of harmonic analysis. While this method provides a thorough classification of the various chords and their harmonic tendencies in progressions, it tends to ignore the melodic aspects of the music and the way these linear forces shape the harmony. This text has attempted to correct this imbalance by correlating harmony with the interaction of melodic lines, especially the soprano and bass voices. Therefore, harmonic function is largely derivative of this contrapuntal framework, the voice-leading analysis of which may form the basis for more-insightful performances of the music itself.

New to this Edition

In response to feedback from professors at colleges and universities around the country, the following revisions have been implemented to make the text maximally useful to students and teachers alike:

- The prose has been thoroughly rewritten for clarity and precision. Definitions of fundamental vocabulary have been simplified and differences between similar concepts emphasized.

- The chapters covering diatonic and chromatic harmony have been reordered to increase the accessibility of core concepts. Specifically, the subdominant chord is now introduced along with the tonic and dominant; mediant and submediant chords are introduced earlier; sequences are presented in a single chapter; and an entire chapter devoted to secondary dominants occurs *before* the introduction of basic modulation.
- The harmony chapters have been restructured internally as well. Each of these chapters now begins with a short introduction that relates the new chord to those discussed in previous chapters, followed by a section on chord type, spelling, and terminology. An explanation of practical partwriting considerations follows. Short excerpts from the literature occur throughout the chapters, providing contexts for the chords' typical uses and functions. Exceptions or rare applications are now reserved for the end of the chapter, and additional sources for study may be found in footnotes. Each chapter concludes with explanations of ways in which model chord progressions may be embellished, guidelines for melody harmonization, a list of terms for review, and a short self-quiz.
- Summary boxes have been added throughout the text to highlight key information, recapping and providing straightforward descriptions of the more complex concepts and procedures. Students will be able to easily refer back to these boxes in order to remind themselves of these ideas.
- Guidelines boxes have also been added to offer clear outlines for such procedures as partwriting, making voice-leading reductions, and harmonizing melodies.
- Self-quizzes have been included at the end of each chapter, enabling students to review the material and test their understanding of concepts. The answers to each of these quizzes are included in a section at the end of the book.
- Many new music examples, by a broader range of composers, have been added throughout the book, resulting in the inclusion of more world music, popular music, rock, jazz, and music by women.
- An appendix covering the transposition of instruments has been added, and the appendix explaining chord symbols for jazz and commercial music now incorporates more standard commercial symbols.
- A single CD-ROM accompanies the Second Edition, replacing the three-CD set that accompanied the First Edition. This one disc contains all excerpts from the music literature cited within the text (except for most single-line melodies), and is both Macintosh- and PC-compatible. A special "CD" icon ( ) appears next to each recorded excerpt in the book.

- While the underlying principles of the First Edition of *Harmonic Practice in Tonal Music* are maintained in the Second Edition, the approach is now more flexible in its presentations of linear ideas. The graphing procedures have been simplified and the voice-leading reductions have been clarified, with more emphasis on the elaboration of framework models.

ORGANIZATION

Like the First Edition, the text is divided into four parts. Part One surveys the basic elements of music; Part Two introduces functional diatonic harmony, modulations, and sequences; Part Three explores the most common procedures of chromatic harmony; and Part Four examines some advanced chromatic techniques. Separate chapters on formal organization occur in the first three parts.

The chapters are arranged to provide a gradual progression from simple to more sophisticated issues. In Part One, for instance, Chapter 3 ("Tonic, Scale, and Melody") places the topics introduced in Chapter 1 ("Pitch and Intervals") and Chapter 2 ("Rhythm and Meter I") within the larger context of tonality and melody. Likewise, Chapter 7 examines the chordal figuration and embellishing dissonance arising from the interaction between melody (Chapter 3) and chords (Chapters 4 through 6). The initial chapters on music fundamentals have been especially revised and rewritten for clarity, and new music examples have been added to Chapters 1, 3, and 7.

A working knowledge of the fundamental topics found in Part One is prerequisite to the study of tonal harmony (covered in Part Two and beyond). In addition to understanding meter (Chapter 2), keys (Chapter 3), partwriting errors (Chapter 6), and embellishing or non-harmonic tones (Chapter 7), students must develop a facility in spelling and playing intervals (Chapter 1), scales (Chapter 3), chords (Chapter 4), and figured bass (Chapters 4 and 5).

The review of fundamental materials in Part One provides the basis for the largely harmonic topics in Part Two. The chapters of this portion of the text systematically present the various diatonic chords and their harmonic functions in different musical contexts, from the three primary tonic-dominant-subdominant triads (Chapters 9, 10, 11, and 13) to the remaining diatonic triads and seventh chords (Chapters 14, 17, and 19). The other chapters in Part Two mostly treat broader topics, such as phrase-grouping (Chapter 12); suspension technique (Chapter 15); linear chords, including the $\frac{6}{4}$ (Chapter 16); rhythmic and metrical dissonance (Chapter 18); and harmonic sequences

(Chapters 20 and 23). Secondary dominants are given their own chapter (Chapter 21), thereby providing a basis for the discussion of simple modulation in Chapter 22. As in Part One, the concepts introduced in one chapter provide the necessary foundation for those introduced later. For example, the introduction of suspensions in Chapter 15 establishes the basis for the cadential $\frac{6}{4}$ in Chapter 16.

Chapters 24 and 31 (formerly Excursions I and II in the First Edition) deal with formal design in homophonic and contrapuntal music. Although they can be introduced and discussed at various times during the course of study, they have been strategically repositioned near chapters that raise larger issues of formal organization, such as modulation.

Part Three is patterned after Part Two. Some of its chapters focus on specific altered harmonies, such as mixture chords, the Neapolitan triad, augmented-sixth sonorities, and embellishing chromatic chords. Others examine the use of chromaticism in larger contexts, such as chromaticized diatonic sequences and modulations to foreign keys. Separate chapters are devoted to extended tertian chords, dominant prolongations, and melodic and harmonic implication and realization.

Finally, Part Four extends the study of chromaticism into more-advanced areas. These include chromatic sequences, chromaticism by parallel and contrary motion, more-unusual ways of effecting foreign modulations, and tonal organization based on symmetrical divisions of the octave.

The chapters in Parts Two and Three stress the interaction between the melodic and harmonic forces in tonal music. Those chapters that focus on the function of specific chords proceed from generalizations (spelling and partwriting), through musical examples from literature, to practical applications (melody harmonization). Conventional terminology is employed for the chords and devices, although a few recently coined theoretical terms that have gained wide acceptance are incorporated when appropriate. Several innovative approaches to traditional classification or symbolization are also utilized. For example, emphasis is placed on the accentuation of various types of embellishing tones, bringing their terminology more in line with the way we tend to perceive them. Furthermore, in modulatory passages, a given new tonality is denoted by its relation to the prevailing tonic (designated by Roman numerals enclosed in boxes), rather than by key designation.

The more common harmonic progressions first appear in each chapter as basic harmonic models in C major or C minor, allowing us to see and hear their essential voice leading. Excerpts from music literature then demonstrate how these models may be fleshed out and elaborated in various keys, meters, rhythms, and textures. This "model-to-music" format is often re-

versed by the reduction of music excerpts back to their essential harmonic basis and voice leading. Thus, quotations from music literature are frequently followed by one or more layers of reductive analysis. The student is carefully guided through each step of this reduction process. Such analyses, when carried out on complete pieces, provide insight into the role of tonal function within shifting musical contexts, and may thereby lay the foundation for a more coherent performance strategy.

The appendixes contain a wealth of supplementary information. Since some teachers prefer to introduce the basic principles of two-voice linear or contrapuntal writing in the first year of music theory, Appendix 3 provides a short introduction to species counterpoint. Some minor changes to the Renaissance-oriented Fuxian species approach bring this appendix's presentation in line with the tonal procedures of the common-practice period. A new appendix covering the transposition of instruments has been added (Appendix 6), and Appendix 4 now incorporates more standard commercial chord symbols. The remaining appendixes address such diverse topics as basic acoustics, modes and other scales, and conducting patterns. The text concludes with a section containing answers to all of the self-quizzes, a glossary of terms often found in musical scores, and indexes of both music examples and terms.

Music Examples

All core concepts in the text are illustrated by carefully selected music examples. These excerpts are drawn from an exceptionally wide range of literature that extends from the Baroque style of the early common-practice period to the popular music of the twentieth century. Representing various vocal and instrumental media, these examples include not only the traditional "classical" genres (such as sonatas, symphonies, concertos, and art songs), but also excerpts from hymns, chorale harmonizations, folk songs, waltzes, marches, rags, popular and jazz standards, and rock music. Although the music examples are seldom longer than eight or sixteen measures, three in-depth analyses of complete compositions have been included at the ends of Part Two (a Beethoven Menuetto), Part Three (Wagner's *Tristan* Prelude), and Part Four (Berg's *Four Songs*, Op. 2). The majority of the text's examples require only moderate keyboard ability to perform; in fact, some of them have been simplified or are shown only in voice-leading reduction. With the exception of lieder and solo sonatas, ensemble works employ condensed two-stave scores rather than open full scores.

CD-ROM

Recognizing that many students now prefer to listen to music on their computers, the First Edition's set of three audio CDs has been replaced with a single CD-ROM, which features all of the examples from music literature discussed in the text (with the exception of single-line melodies). As visual reminders to students, all music examples included on the CD-ROM are marked in the text with a special "CD" icon ( ). In using the CD-ROM, students can easily navigate through the chapters or an index of the music examples and simply click on ones they wish to hear. Listening to the examples will help students understand the melodic, rhythmic, and harmonic concepts explained in the text, while aiding in the transition from theory to ear training and performance. The excerpts on the CD-ROM were recorded at the Eastman School of Music and performed by its faculty and students.

Workbook

The written exercises in the accompanying Workbook, which serve as ample assignments for students, include such tasks as filling in short harmonic progressions, completing sequential patterns, realizing figured basses, harmonizing melodies, analyzing excerpts from music literature, and composing original music. By working through these exercises, students learn in a tangible way how harmony functions within a large-scale melodic organization, and thereby develop the tools they need to write and analyze music and to plan convincing performances. In the Second Edition of the Workbook, exercises have been added to each chapter to give students more thorough practice in basic concepts and procedures, and to reflect the revisions incorporated in the Second Edition of the text. More-detailed descriptions of changes to the Workbook are noted in its preface.

Acknowledgments

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of the Eastman School of Music. I also wish to acknowledge the following staff at W. W. Norton & Company for their work on the Second Edition: Maribeth Anderson Payne (editor), Allison Benter (assistant editor), and Christopher Miragliotta (project editor); thanks, too, to Richard Wingell, who copyedited the manuscript. Furthermore, I would be remiss if I failed to mention the continued encouragement and patience of my wife during the long task of both writing and revising this book. Finally, in response to the many inquiries I have received concerning the rather obscure dedication, they are simply "nicknames" for my four children.

INTRODUCTION

(TO THE STUDENT)

As children we memorized songs the same way we learned to speak a language—by repeating the music or words over and over until we could sing them perfectly. We call this method *rote learning*. However, before we can play music that is *notated* or written down, we must first know certain basic information about music notation, such as clefs, rhythmic durations and meter, keys, intervals, scales, and even chords. These are fundamental subjects that all practicing musicians must master. As we continue to hone our skills in the basics of music, we begin to focus on what might be called the "chemistry" of music—that is, how music is constructed and how it operates. This inquiry forms the basis of the discipline called *music theory*. In the same way that our study of grammar and syntax enables us to better express ourselves in speech and writing, our study of music theory allows us to better express ourselves when performing, interpreting, and explaining music. Learning about how the essential components of music are organized and how they influence each other provides us with a better understanding of what makes music so aesthetically pleasing and satisfying to our ears. It also suggests ways of examining how we may best perform and hear musical works.

We can summarize the relation between acquiring skills in language and music as follows:

Language	*Music*
1. imitating speech	1. learning by rote
2. learning to spell words	2. learning notation and music fundamentals
3. studying grammar	3. studying the organization of music (music theory)

This text focuses primarily on music composed during what we call the *common-practice* or *tonal* period. Extending roughly from the early–eighteenth century to the beginning of the twentieth century, this period encompasses the music of the late-Baroque composers (such as Bach and Handel), the masters of the Classical era (Haydn, Mozart, and Beethoven), and the figures of the Romantic period (Schubert, Schumann, Wagner, Brahms, and Tchaikovsky, to name a few). The text also includes examples of *popular* genres of the twentieth century (such as ballads, jazz, and rock), which continue to employ tonal procedures introduced and developed during the common-practice period.

We will begin our study of music theory with a review of the rudimentary elements of music, as found in Part One (Chapters 1 to 7). While some of the information in these chapters may already be familiar to you, other material may be new. Since *all* of the subject matter in this rudiments survey is *prerequisite* to the study of harmony, it is essential that you thoroughly understand the underlying concepts and master the preliminary skills outlined in Part One *before* going on the topics discussed in Part Two ("Diatonic Harmony"), Part Three ("Chromatic Harmony"), and Part Four ("Advanced Chromatic Techniques").

Aside from the introductory chapters that begin each of the last three parts of this text, you will find that the remaining chapters are organized in approximately the same manner. Following a short lead-in, which links the material in the new chapter to concepts introduced previously, we will discuss the spelling, notation, and context of the new chord(s), and then examine ways of connecting or *partwriting* the harmonies in question. Basic models that demonstrate their customary or normative use are followed by examples from actual musical literature. As the chapter proceeds, you may find instances of less-traditional procedures, with possible additional sources provided in footnotes. Following some further "practical" applications, such as elaborating harmonic models or harmonizing melodies, each chapter concludes with a list of terms and concepts for review, and a brief self-quiz.

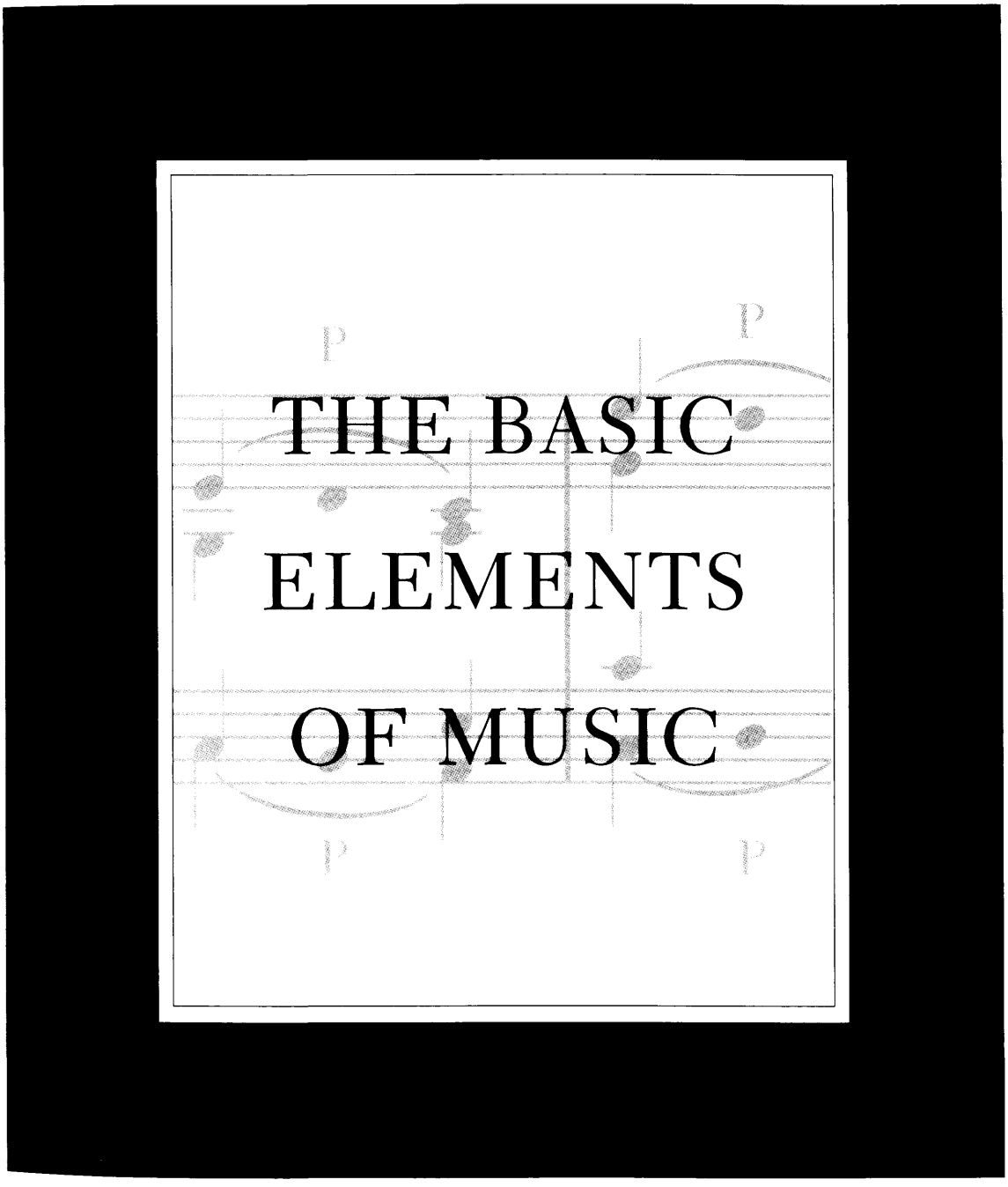
The accompanying CD-ROM includes recordings of each chapter's excerpts from music literature, not only allowing you easier access to the text's music examples, but also providing a resource to widen your knowledge of Western music. In addition to listening to these recorded examples, you should also try to play through them on the piano whenever possible. Since most of the harmonic models (given in C major and C minor) and analytical reductions are not included on the CD-ROM, you should *always* attempt to play them to establish their sound in your ear.

The accompanying Workbook is designed to follow the text closely and offers many types of written assignments and keyboard exercises for each chapter. These assignments should *always* be supplemented with oral drills,

ear training, sight singing, and aural dictation—exercises which allow you to further develop your skills in basic musicianship.

The purpose of all these aids is to help you better assimilate the material in the text, to establish a solid foundation in music theory. Mastering music theory represents a major step toward becoming a complete musician. It provides listeners with the vocabulary necessary for discerning the tonal and formal frameworks of the works they hear. It supplies composers, arrangers, and improvisers with an essential language for musical communication. And it enables singers and instrumentalists to achieve deeper insights into the tonal drama and coherence of the works they perform.

PART ONE



THE BASIC ELEMENTS OF MUSIC

CHAPTER 1

Pitch and Intervals

THIS BOOK WILL DISCUSS THE MUSIC of what we call the *common-practice era*—the span of music history that extends from the late Baroque period, about 1700, to the close of the Romantic period, about 1900—and the tonal system on which this music is based. The music we are concerned with includes the art music beginning from Corelli, Vivaldi, Bach, and Handel and extending to Liszt, Wagner, and Debussy, as well as most genres and styles of twentieth-century commercial music. Before we can begin our comprehensive study of harmony and voice leading in the music of this period, we must first review the fundamentals of music theory and the skills necessary to study music theory, such as the ability to read pitches in the treble and bass clefs, to notate intervals and chords correctly, to understand rhythmic notation, to interpret meter and key signatures, to write chords correctly in four-part texture, to detect errors in partwriting, and to identify and analyze non-chord tones. We begin this preliminary survey by examining the most distinguishing characteristic of music, its use of *musical tones* and the **pitch,** or relative highness or lowness, of those musical tones.

Pitch Notation and the Diatonic Pitch Collection

Our first concern is the notation of pitch—that is, our system of writing down the music we hear or perform. Note that music does not always exist in written form; much of the world's music, and much of the folk and popular music of our own culture, is not written down, but transmitted orally, through performance or one-to-one study with a master. Writing music down, however, can be useful for several purposes; it enables society, for whatever reason, to establish a definitive version of its music and preserve it accurately for future generations. One of the earliest attempts to notate music employed the first seven letters of the alphabet, A-B-C-D-E-F-G, to represent the musical tones.[1] Moving forward through the letters represented moving upward, raising the pitch, and moving backward represented moving down. To extend the range, these same letters were repeated, sometimes using uppercase and lowercase letters to distinguish different octaves. In our present notational system, we call the seven tones represented by these letters the **white-key** or **diatonic pitch collection.** We will return to the term "diatonic" in Chapter 3; for now we can define these diatonic notes as the group of pitches that occur in the same repeating pattern as the *white keys* of the piano keyboard (Figure 1.1).

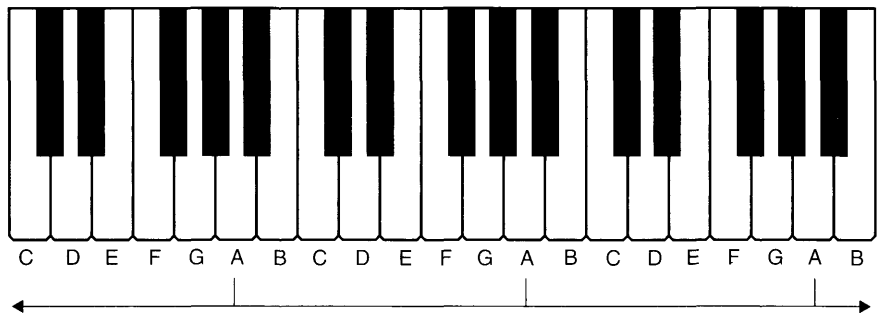


Figure 1.1

If you start from any white key and play successive white keys up or down, each new key will have a different sound or pitch until you reach the key that has the same letter name as your starting key. That key will sound higher or lower than the note you started with, but, allowing for that, the two notes will sound the same. This recurring sonority occurs on the eighth white key from your starting point, and is therefore called an **octave,** from the Greek word *okta,* meaning "eight." The reason for the nearly identical sound of any note and its octave lies in the physics of musical sound, or acoustics. Pitch results from the **frequency** of a sound—that is, the number of complete vibrations or cycles per second produced by a sound. All sounds result from vibrating bodies of some sort—a string,

1. Early notation systems can be traced back as far as 1500 B.C. in Babylonia. The system described here was used by the ancient Greeks about the second century B.C., and appears in treatises on music in medieval Europe around A.D. 900.

a column of air in a wind instrument, a drumhead. Measuring the frequencies of notes reveals that an octave above a given note is exactly twice its frequency, and that an octave below it is exactly half its frequency. For example, A above middle C (the note we use as a reference for tuning) has a frequency of 440 cycles per second; the A an octave higher has a frequency of 880 cycles per second, and the A an octave below A 440 has a frequency of 220 cycles per second.[2]

If music had remained a single melody, letter names would probably have sufficed for notating pitch. As music became more complex, however, new ways of indicating pitch were developed in the early medieval period, from roughly A.D. 900 to 1200. One of the first such methods attempted to indicate relative pitch by drawing the notes higher or lower on the unlined page (Example 1.1a). Later a single guideline was added as a point of reference (Example 1.1b), and then two, and this system evolved into **staff notation,** in which the various lines and spaces of a four-line staff designated specific notes (Example 1.1c). A fifth line was added later, and the five-line staff became the standard system for notating music throughout the common-practice period (Example 1.1d).

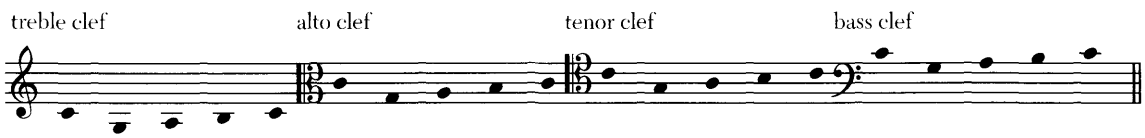
Example 1.1

2. The term *hertz* named after the German physicist Heinrich Hertz, is commonly used to indicate frequency—for example, 440 hertz. For a more extensive discussion of the acoustics of musical sounds, see Appendix 1.

Clefs are signs that designate the lines and spaces of the staff to represent the various pitches of the scale. The most important clefs in use in the common-practice period are the **treble clef** and the **bass clef.** The treble clef, also called the G clef, assigns the second staff line from the bottom to G above middle C; middle C is the first extra or **ledger line** below the staff. The bass clef, or F clef, assigns the fourth staff line from the bottom of the staff to F below middle C; middle C, therefore, is the first **ledger line** above the staff. These two clefs bracketed together form the **grand staff** (Example 1.1e), used for piano music or keyboard reductions of music written for other performing groups.

There is another clef, the C clef, that locates middle C on one of the staff lines. Two C clefs are still in use; the **alto clef,** which locates middle C on the middle staff line, is used in music for the viola, and the **tenor clef,** which locates middle C on the fourth line from the bottom, is used occasionally in music for the cello, bassoon, and trombone. In Example 1.2, a series of five pitches beginning with middle C (C-G-A-B-C) is written in four different clefs. This example makes clear why we have different clefs; even this narrow-range melody fits better on some staves than others.

Example 1.2

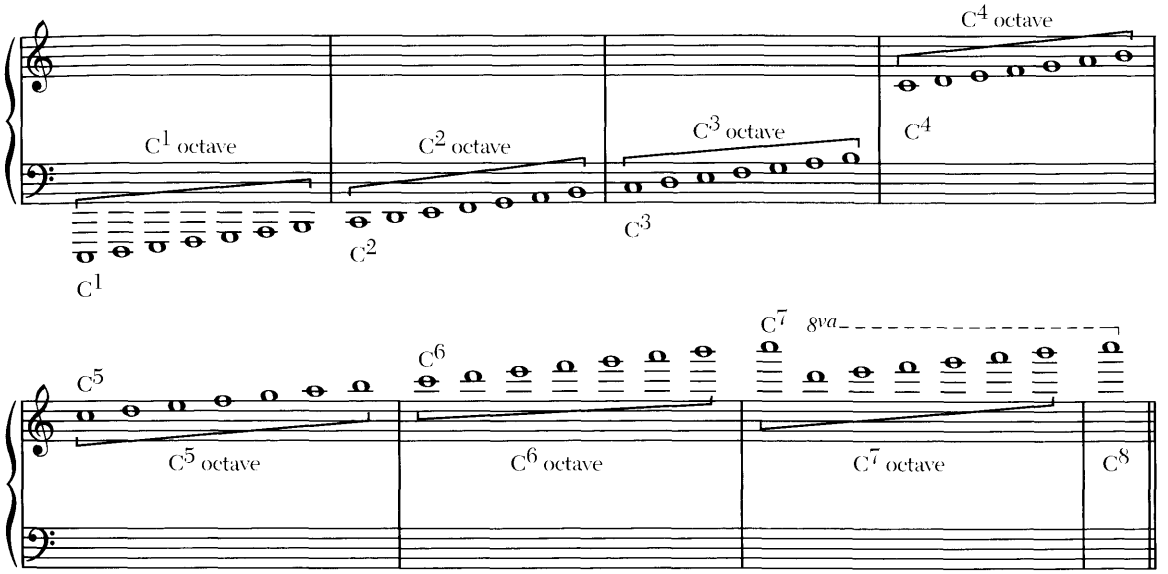


The musical examples in this text will employ the treble and bass clefs. It is imperative that you can read pitches in both these clefs quickly and accurately; see Chapter 1 in the Workbook for drills in rapid pitch reading.

Pitch Register and Pitch Class

When discussing or writing about music, we often need to refer to a note in a specific octave range or register. One system for specifying the octave location of a pitch designates middle C "c^1" and calls the C's on the piano, starting from the lowest, CC, C, c, c^1, c^2, c^3, and so forth. In this book we will use a system now in common use among music theorists and acousticians that designates the lowest C on the piano C^1 and calls the C's in the following octaves C^2, C^3, and so forth, up to C^8. The same superscript numbers are used for all the pitches in that octave, so that we can designate any pitch in its specific octave.

Example 1.3



Our familiar middle C is therefore C^4, and the A above middle C, the note we use as a reference point for tuning, is A^4. Study the various octaves illustrated in Example 1.3, and then locate the following pitches on the piano keyboard: E^2, A^5, B^4, and G^6.

Sometimes when we refer to a particular note or letter, we have no specific register or octave in mind. For example, when we speak of the "key of F," we mean that all F's function as the tonic of the key. We refer to a note identified by its letter name, regardless of its position in a specific octave or register, as a **pitch class.** The pitch class E refers to any E, regardless of its register; E^2, E^4, and E^7 all represent the same pitch class.

Half Steps and Accidentals

In the early Middle Ages, Gregorian chant and secular song were built on modal scales that used mostly what we call the "white-key" pitches—that is, the white notes on the modern piano, plus one accepted accidental, B-flat. Note that we are referring to the modern piano keyboard; early keyboard instruments often reversed the colors, using darker keys for what we call the white keys and lighter keys for what we call the black keys. Since the white notes are designated by the letters of the alphabet alone, without modifying accidentals, we will refer to these pitch classes—A, B, C, D, E, F, G—as **natural** or **white-note pitch classes.** However, these seven notes are not the

only pitches that tonal music has used. As early as the Renaissance, additional notes were added to the scale, often to create leading tones in cadences, and by the late sixteenth century, keyboard instruments had the same set of white and black keys as the modern piano. If we count all the keys between middle C (C^4) and the C an octave higher (C^5), we see that the octave is divided into *twelve* different pitches, not seven. The distance between any two adjacent keys is called a **half step** or **semitone.** It is the smallest distance between two pitches commonly used in Western music. In the tuning system in use since about 1800, called **equal temperament,** each of the twelve half steps within the octave is exactly equal in size. The twelve-note scale, including all the white keys and black keys of the piano, is called the **chromatic scale.**

We write these additional pitches through the use of **accidentals.** A **sharp sign** (♯) raises the pitch of a note by one half step, a **flat sign** (♭) lowers the pitch by one half step, and a **natural sign** (♮) cancels a previous sharp or flat (Example 1.4a). The notation of pitches may occasionally require a double accidental: a **double sharp** (𝄪) raises a note by two half steps, or a whole step, and a **double flat** (𝄫) lowers a tone by two half steps, or a whole step (Example 1.4b). Accidentals allow us to expand the seven natural or white-key pitch classes into the twelve different pitch classes within the octave, the **chromatic pitch collection** that includes all the pitches normally employed in Western music (Example 1.4d).

Example 1.4

Accidentals also allow us to notate a single pitch in different ways. The black key between C and D, for example, may be called C♯ or D♭, depending on the context. We say that such notes are **enharmonic spellings** of the same pitch class—identical sounds written, or spelled, different ways. Some other examples of enharmonic notation appear in Example 1.4c. The reasons why different situations and musical contexts require different spellings of the same note will become clear in the course of our discussion in later chapters.

THE NATURAL OR WHITE-KEY INTERVALS

Since music theory is primarily concerned with relationships between two or more pitches, we need an accurate way of measuring the distance between pitches. Two pitches considered as a unit represent what we call a **dyad,** and the distance between the two pitches of a dyad is called an **interval.** The interval between two pitches sounded successively is called a **melodic interval;** the interval between two notes sounded at the same time is called a **harmonic interval.** Example 1.5 illustrates these two types of intervals. The upper and lower lines played separately form a series of horizontal or melodic intervals; when they are played together, they form a series of vertical or harmonic intervals.

Example 1.5

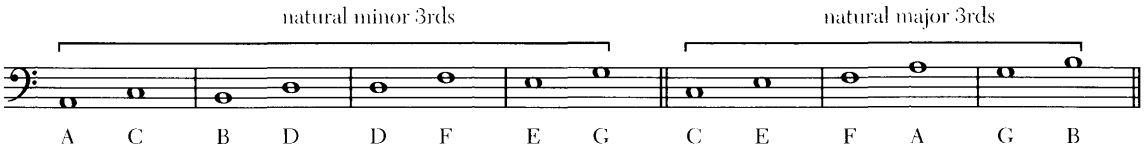
We can determine the *class* of the interval (2nd, 4th, 7th) between the two pitches of a dyad by counting the letter names of the pitches from one to the other, including the first and last notes. For example, the interval from A up to B is a 2nd (A-B), from D up to G is a 4th (D-E-F-G), and from C down to E is a 6th (C-B-A-G-F-E). For the moment, we will restrict our discussion of spelling and notating intervals to natural, white-note pitch classes. Commit the intervals between all the natural pitch classes to memory, since they will form the basis for spelling intervals with accidentals.

1. *Major and minor 2nds* As you look at the piano keyboard, you see that adjacent white keys (or notes) are a 2nd apart. Since most of these white keys are separated by a black key, the seconds between them consist of two half steps (C-D, D-E, F-G, G-A, and A-B). Two pairs of keys, however, E-F and B-C, do not have an intervening black key, and therefore the 2nds between them consist of only one half step. In order to distinguish the two sizes of 2nds, we call the larger second, which consists of two half steps, a **major 2nd,** abbreviated M2. The major 2nd is also called a **whole step** or **whole tone.** The smaller second, consisting of one half step, is called a **minor 2nd,** abbreviated m2.

Example 1.6

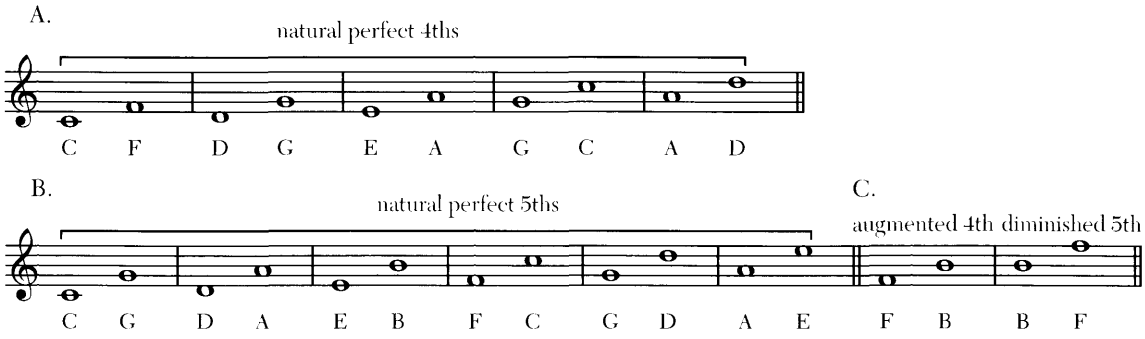
2. *Major and minor 3rds* Since there are two basic sizes of thirds that differ by one half step, we distinguish between them by adding the same qualifiers we use for seconds—"major" and "minor." The **major 3rd,** abbreviated M3, consists of four half steps or two whole steps. The **minor 3rd,** abbreviated m3, consists of three half steps or a whole step and a half step. The three natural major 3rds are C-E, F-A, and G-B; the four natural minor 3rds are D-F, E-G, A-C, and B-D (Example 1.7).

Example 1.7



3. *Perfect 4ths and perfect 5ths* With one exception, all the natural or white-key 4ths are the same size, five half steps, and all natural or white-key 5ths are the same size, seven half steps. In addition, all **unisons** and **octaves** with the same letter names, consisting of two notes on the same pitch or of the same pitch class, are also the same size. We call this group of dyads **perfect intervals** because of their purity of sound and the fact that they occur in nature as the first three intervallic relations in the harmonic or overtone series.[3] Six different **perfect 4ths** occur as natural or white-note intervals: C-F, D-G, E-A, G-C, A-D, and B-E (Example 1.8a). Likewise, six **perfect 5ths** occur as natural or white-note intervals: C-G, D-A, E-B, F-C, G-D, and A-E (Example 1.8b). We abbreviate the perfect intervals as follows: PU for perfect unison, P8 for perfect octave, P4 for perfect 4th, and P5 for perfect 5th.

Example 1.8

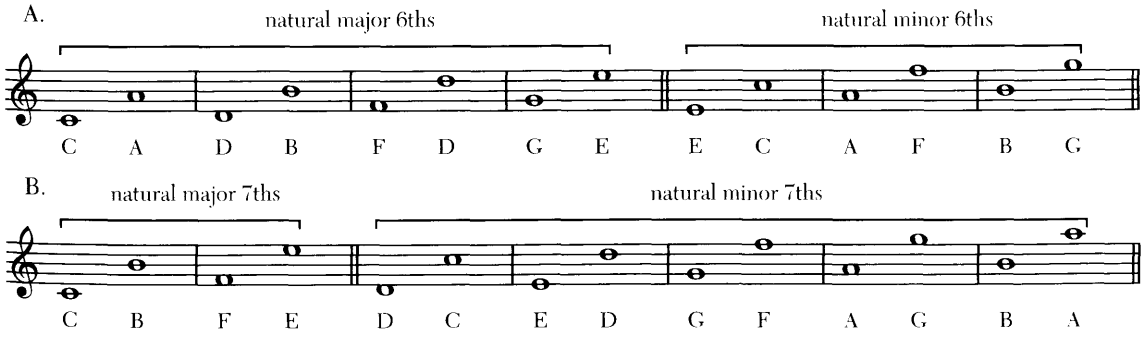


3. The overtone series is discussed in detail in Appendix 1.

The one unusual case among the natural or white-note 4ths and 5ths involves the pitch classes B and F. The interval from F up to B is a 4th; since it contains not five but six half steps, one half step more than a perfect 4th, we call it an **augmented 4th,** abbreviated as A4. On the other hand, the interval from B up to F is a 5th; since it too contains six half steps, one less that the seven of a perfect 5th, we call it a **diminished 5th,** abbreviated as d5 (Example 1.8c). Another term for both the augmented 4th and the diminished 5th is the **tritone,** since both consist of six half steps or three whole tones. The term "augmented" is also applied to intervals that are one half step larger than a major interval—for example, C-D♯ is an augmented 2nd; the term "diminished" is also applied to intervals that are one half step smaller than a minor interval—for example, B-D♭ is a diminished 3rd.

4. *Major and minor 6ths* As is the case with 2nds and 3rds, there are two distinct types of 6ths, which differ by one half step. The **major 6th** (M6) consists of nine half steps (a perfect 5th plus two half steps or one whole step), and the **minor 6th** (m6) consists of eight half steps (a perfect 5th plus one half step). The four natural or white-note major 6ths are C-A, D-B, F-D, and G-E. The three natural or white-note minor 6ths are E-C, A-F, and B-G.

Example 1.9



5. *Major and minor 7ths* There are also two distinct varieties of 7ths, and the difference between them is one half step. The **major 7th** (M7) consists of eleven half steps (a perfect fifth plus a major third); the **minor 7th** consists of ten half steps (a perfect fifth plus a minor 3rd). The two natural or white-note major 7ths are C-B and F-E; the five natural or white-note minor 7ths are D-C, E-D, G-F, A-G, and B-A.

Summary of Intervals

When dealing with the natural or white-note intervals, remember:

1. **Unisons, octaves, 5ths,** and **4ths** are normally **perfect** intervals; the exceptions are the two different spellings of the **tritone**—the augmented 4th and diminished 5th.
2. **2nds, 3rds, 6ths,** and **7ths** are either **major** or **minor,** depending on the number of half steps they contain.
3. **Augmented** intervals are one half step larger than **perfect** or **major** intervals; **diminished** intervals are one half step smaller than **perfect** or **minor** intervals.

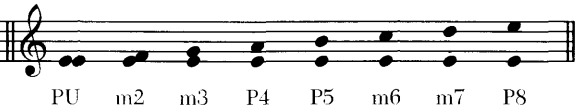
Simple and Compound Intervals

An interval that spans an octave or less is called a **simple interval.** Example 1.10a-b illustrates all the natural or white-note simple intervals, perfect, major, and minor, up to an octave; below each interval is the number of semitones it contains.

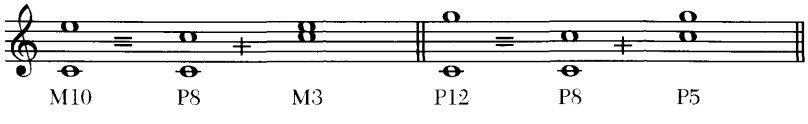
Example 1.10

A. Major and Perfect Intervals

B. Minor and Perfect Intervals



C. Compound Intervals



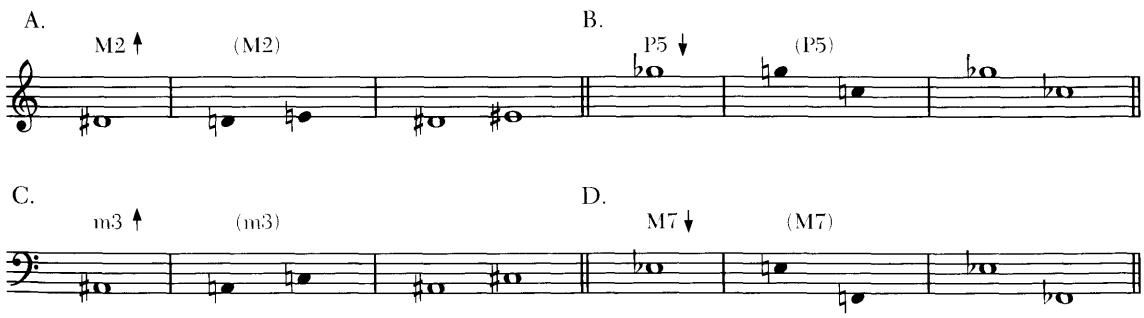
Intervals that exceed the range of an octave are called **compound intervals.** If we add a major 3rd to an octave, for example, we form a **major 10th,** and if we add a perfect fifth to an octave, we form a **perfect 12th.** These two compound intervals are included in Example 1.10c. Note that the math seems strange when we add intervals—how can 8 (the octave) and 3 (the third) add up to 10? The reason is that the upper C (C^4) in our example is counted twice, as the upper note of the octave and the lower note of the third. The number of any compound interval, therefore, is one less than the sum of its constituent intervals.

Spelling Intervals with Accidentals

So far our discussion of intervals has been restricted to the natural or white-key intervals. Following are some basic guidelines for spelling intervals that include accidentals (sharps or flats) in their notation. These guidelines are based on what we have already established about the natural or white-key intervals.

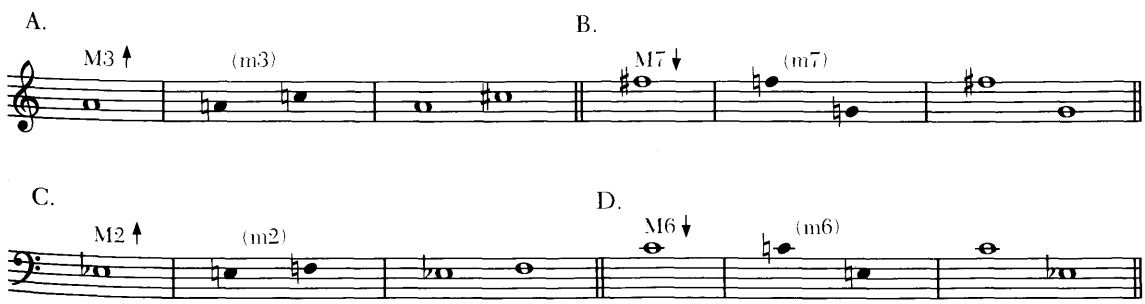
1. **If the new interval is the same size as the natural interval using the same notes, both pitches will have the same accidental.** For example: G-B is a major 3rd; therefore, the major third on G♯ is G♯-B♯; the major third on G♭ is G♭-B♭. Since the interval from C down to F is a perfect fifth, a perfect fifth down from C♯ would be C♯-F♯, and a perfect fifth down from C♭ would be F♭. Further examples are found in Example 1.11.

Example 1.11



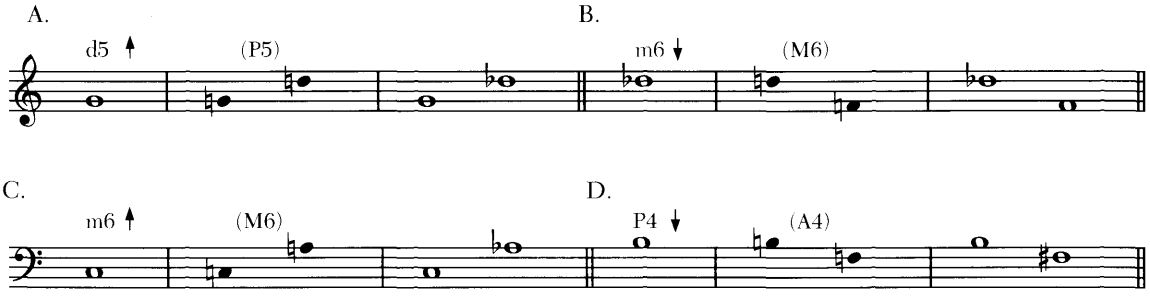
2. **If the new interval is one half step larger than the natural interval using the same notes, the upper note will have a sharp or the lower note will have a flat.** For example: E to C is a minor 6th; a major 6th up from E is E-C♯; a major sixth down from C is C-E♭. D-F is a minor 3rd; a major 3rd up from D is D-F♯; a major third down from F is F-D♭.

Example 1.12



3. **If the new interval is one half step smaller than the natural interval using the same notes, the upper note will have a flat or the lower note will have a sharp.** For example: G-D is a perfect fifth; a diminished 5th up from G is G-D♭; a diminished fifth down from D is D-G♯. G-B is a major third; a minor third from G is G-B♭; a minor third down from B is B-G♯.

Example 1.13



4. **These same guidelines apply to augmented and diminished intervals** and extend to double sharps and double flats. The way to proceed is always to use the natural or white-note intervals as your point of reference. Do not be confused by enharmonic relationships. For example: A-C is a minor third; a major third whose lower note is A♯ has C𝄪 as its upper note. The upper note has to be a half step higher than C♯, since a major third down from C♯ is A, not A♯. The fact that C𝄪 enharmonically the same note as D is irrelevant; A♯-D is a diminished fourth, not a major third, because A-D is a perfect fourth, and the interval between any form of A and any form of D must be some variety of fourth. The two tritones E-B♭ and E-A♯ are exactly the same size, and are played on the same two piano keys. Still, E-B♭ is a diminished 5th and E-A♯ is an augmented 4th, and the two intervals have entirely different theoretical meanings and functions. Always start from the natural, white-note intervals.

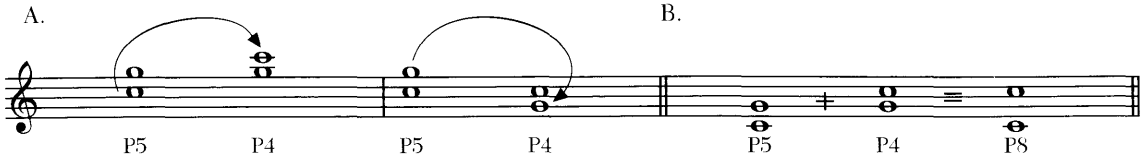
Interval Inversion

Some pairs of intervals share a unique sonic quality that sets them apart from the sounds of other intervals. Perfect 4ths and perfect 5ths, for example, have such similar sonic characteristics that students sometimes confuse the two. There is a logical reason for this similarity; a perfect 4th is a perfect 5th "upside down," or inverted, and therefore the two dyads are closely related by **interval inversion.**

Look at Example 1.14. When we turn a perfect interval upside down, by moving the lower note up an octave or moving the upper note down an oc-

tave, the new interval consists of **the same two pitch classes as the first one, but the size of the interval is changed,** from a perfect 5th to a perfect 4th. The two intervals together add up to an octave. Once again the math seems strange—5 plus 4 = 8? Remember that we are counting one note twice; in this case the top note of the 5th is also the bottom note of the 4th. Another characteristic of intervals and their inversions is that **the total of the half steps they contain is twelve.**

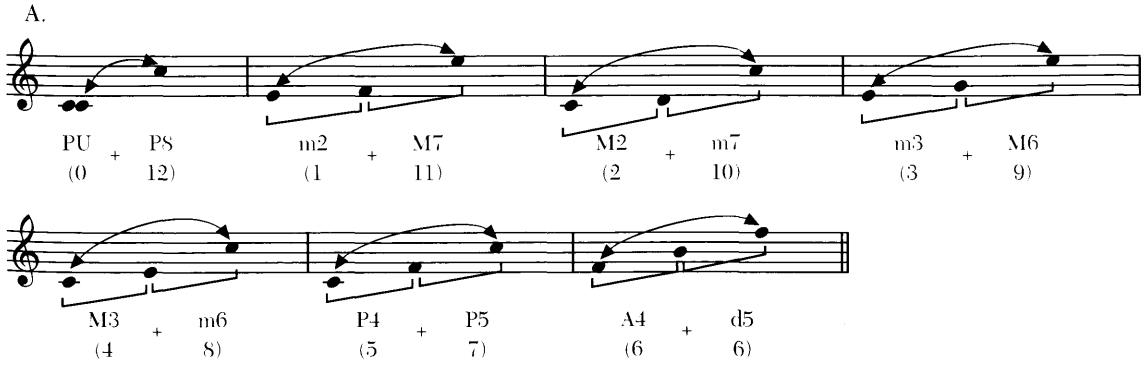
Example 1.14



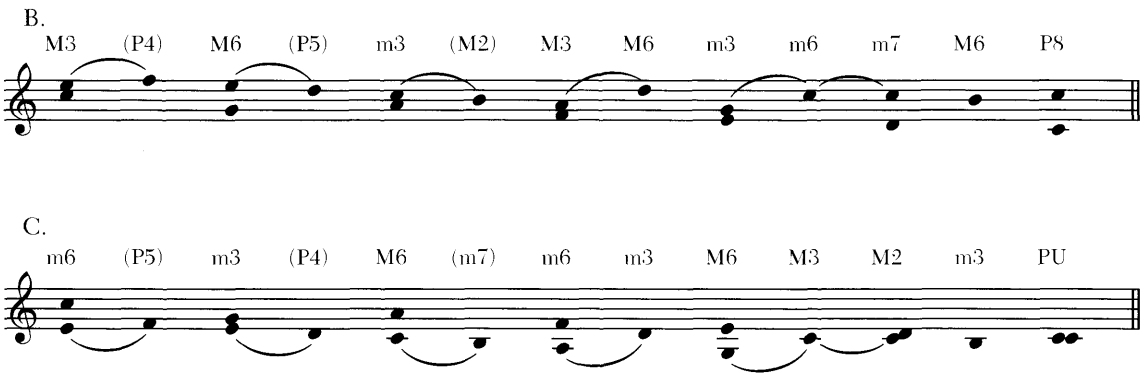
All diatonic intervals are joined to companion intervals that use the same pitch classes arranged differently, as shown in Example 1.15a; the following guidelines apply to all such pairs of intervals.

1. **If the classes of two intervals add up to 9 (or an octave), they are inversions of each other.** These pairs of intervals—unisons and octaves, 2nds and 7ths, 3rds and 6ths, 4ths and 5ths—all contain twelve half steps and are said to be inversionally related.
2. **The inversion of a perfect interval is a perfect interval.** The inversion of a perfect unison is a perfect octave; the inversion of a perfect 4th is a perfect 5th.
3. **The inversion of a major interval is a minor interval, and vice versa.** The inversion of a major 6th is a minor 3rd; the inversion of a minor 7th is a major 2nd, and so forth.
4. **The inversion of an augmented interval is a diminished interval, and vice versa.** The inversion of a diminished 5th is an augmented 4th; the inversion of a diminished 7th is an augmented 2nd.

Example 1.15



Play the two two-voice passages in Example 1.15b and c. The only difference between the two versions is that the upper voice of 1.15b has been lowered an octave in 1.15c, so that all the harmonic intervals have been inverted; compare the two sets of intervals.



Summary of Interval Inversion

1. The sum of the half steps contained in an interval plus its inversion is always 12.
2. The sum of an interval's class (2nd, 3rd) plus that of its inversion is always 9.
3. The inversion of a perfect interval is a perfect interval.
4. The inversion of a major interval is a minor interval and vice versa.
5. The inversion of an augmented interval is a diminished interval and vice versa.

Consonant and Dissonant Intervals

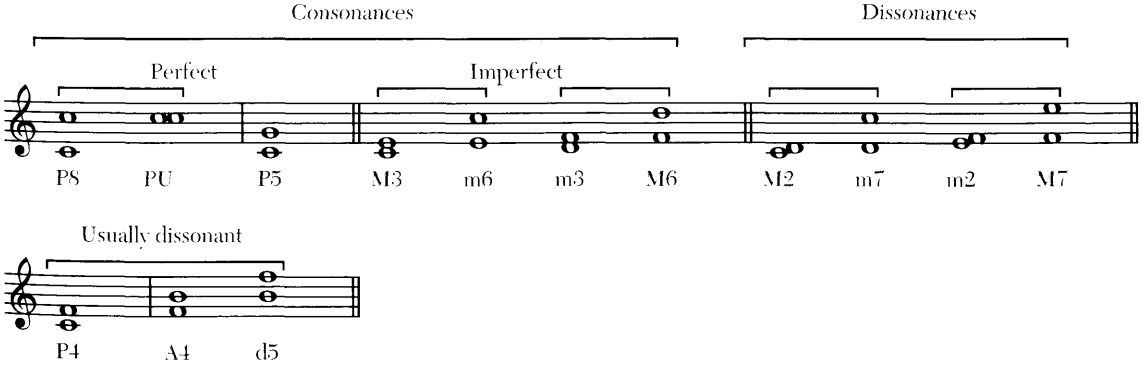
When we hear a succession of harmonic intervals, we sense that each has it own distinctive sonic quality. It is difficult to put these unique characteristics into words, but the differences are unmistakable. For example, play the major 3rd C-E, and then the major 7th C-B. The 3rd sounds stable, pleasant, complete; it could be the final sound of a piece. The 7th, on the other hand, sounds harsh, incomplete, unstable; it is hard to imagine a piece from the common-practice period ending with this interval. We can feel the 7th pulling to its resolution; if we play the 7th and then the octave C-C, we have a satisfactory conclusion or cadence. We call these two types of intervals **consonant and dissonant intervals.**

There are several explanations for consonance and dissonance. The intervals we regard as consonant are at the lower end of the harmonic series, and

the mathematical ratios between their frequencies are simpler than those of dissonant intervals. There must be more to the question of consonance and dissonance than mere physics, however, or people of all cultures and historical periods would define the terms in the same way. Clearly, the concept of consonance and dissonance is conditioned by the music we are used to and varies from culture to culture and period to period. Our sense of consonance and dissonance is also influenced strongly by the musical context. In the common-practice period of Western art music, we divide intervals into consonant intervals, either perfect or imperfect, and dissonant intervals.

1. **Perfect consonances include the perfect unison, the perfect octave, and the perfect 5th.** Note that the perfect 4th is missing from the list, for reasons explained in the next paragraph.
2. **Imperfect consonances include 3rds and 6ths, both major and minor.**
3. **Dissonant intervals include 2nds and 7ths, both major and minor.**
4. **The perfect 4th and tritone are generally considered dissonant, but may be consonant in some contexts.** If acoustical science alone were the basis for judging consonance and dissonance, the perfect 4th would always be consonant and the tritone, in either of its forms, would always be dissonant. The immediate musical context is the basis on which we classify these two intervals as consonant or dissonant. Example 1.16 sorts the natural diatonic intervals into four groups based on their consonance or dissonance.

Example 1.16



Example 1.17 illustrates how consonant and dissonant intervals work in a tonal context. The dissonant intervals are circled. Note that the dissonant intervals are used in particular ways; in this case, they always share common tones or stepwise tones with the consonant intervals that precede and follow them. Appendix 3 discusses more fully the treatment of consonance and dissonance in two-voice writing. In a sense, this entire text deals with issues of

consonance and dissonance, as well as the other basic concepts about pitch and intervals explained in this chapter.

Example 1.17

Terms and Concepts for Review

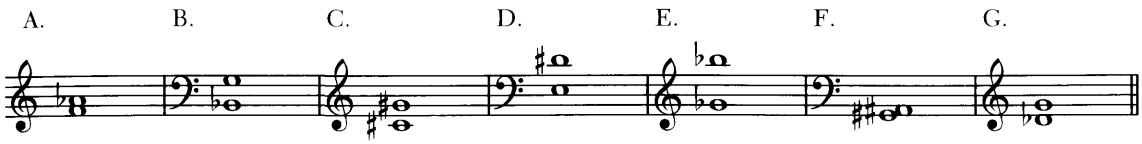
pitch
pitch class
diatonic pitch collection
octave
frequency
chromatic pitch collection
equal temperament
half step *or* semitone
accidentals:
  sharp
  flat
  natural
  double sharp
  double flat
enharmonic spelling
dyad
interval:
  perfect interval
  major interval
  minor interval
  augmented interval
  diminished interval
melodic interval
harmonic interval
unison *or* prime
whole step *or* whole tone
diatonic interval
simple interval
compound interval
tritone
interval inversion
consonant interval
dissonant interval
perfect consonance
imperfect consonance

A BRIEF REVIEW SELF-QUIZ

1. Match the letters (right column) to the numbers (left column):

1. Dissonance	a. Greater than an octave
2. Diatonic intervals	b. Involves octave displacement
3. Interval inversion	c. Notated several different ways
4. Enharmonic	d. Six half steps
5. Compound interval	e. Unstable, wants to resolve
6. Tritone	f. Perfect, major, minor

2. In Example 1.18 information about seven specific intervals is given below the staff, where 1. denotes the interval name, 2. denotes its number of half steps it contains, 3. denotes its inversion, and 4. denotes whether it is consonant or dissonant. Circle any *incorrect* statements and supply the right answer.

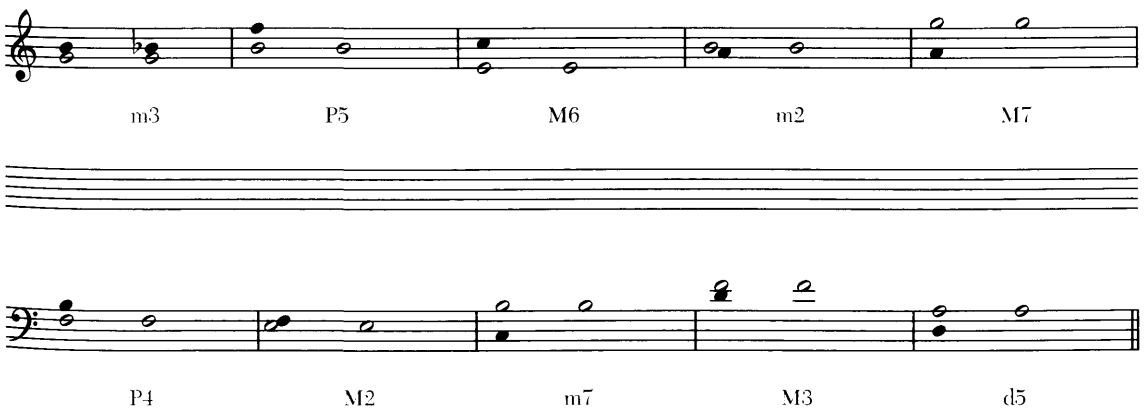


Example 1.18

1.	M3	M6	P5	M7	m10	M2	A4
2.	3	8	7	10	16	2	5
3.	M6	m3	P5	M2	does not invert	m7	d5
4.	C	D	C	D	C	C	D

3. Using an accidental (either a ♯ or ♭), convert each natural dyad into the interval indicated below. Apply the accidental only to the *black* notehead (consult the first example).

Example 1.19



Note: The answers to all end-of-chapter quizzes may be found at the end of the book, beginning on page A-39.

CHAPTER 2

Rhythm and Meter I: Beat, Meter, and Rhythmic Notation

THE PREVIOUS CHAPTER introduced us to some spatial elements of music, such as pitch notation and interval relationships. This chapter will shift our attention to the temporal elements of music or what we collectively call rhythm. **Rhythm** deals with the articulation and passing of time in musical compositions, in which the present is continually becoming the past, and that past is giving rise to certain expectations in the future. Aural perception and memory play a significant role in how we hear or perform a piece of music. We will therefore concentrate first on how we hear different levels of metrical organization, such as the beat, its smaller divisions, and its larger groupings. We will then discuss how the proportional divisions and multiples of the beat are represented in rhythmic notation. Armed with this information, we can then interpret various meter signatures.

THE BEAT AND TEMPO

When we listen to a piece, we sometimes keep time to the music by tapping our finger or foot, marking what we feel as a regular pulse. We call this evenly spaced or regular pulsation the **beat.** The beat in turn becomes the basis against which we compare or measure other rhythmic durations.

Tempo is a term for the speed of the regular beat of a composition. It is customarily indicated by approximate Italian terms, such as *Adagio* (slow), *Andante* (moderate), *Allegro* (fast), and so on. Figure 2.1 shows a list of the more common tempo markings from very slow to very fast.

Figure 2.1

very slow	slow	moderate	fast	very fast
Grave (Larghetto)	*Adagio (Adagietto)*	*Moderato (Allegretto)*	*Allegro (Vivace)*	*Presto*
Largo	*Lento*	*Andante*		*Prestissimo*

A more precise way to denote tempo is to specify a metronome setting; a metronome is a device that can be set to beat at a precise number of beats per minute. The typical metronome marking in a score includes a note value and an equal sign, followed by the number of beats per minute (♩ = 120). Sometimes the abbreviation M.M. ("Maelzel's Metronome," for its inventor) is added before the number. A good approximation of moderate tempo is the normal heart rate of between 70 to 80 beats per minute.

When listening to a composition to determine its basic beat and tempo, it is important to try to match the speed of your perceived beat to the tempo marking indicated in the score. For instance, in a typical Sousa march your beat should correspond to a brisk marching tempo (or *Allegro*), which is about M.M. 120. You could mark only every other pulse, perceiving this beat as only half as fast (at M.M. 60), but since that tempo more properly denotes a slow *Adagio*, it is hardly in keeping with the spirit of a march. It is therefore important that the tempo or rate of speed of the beat you choose in a piece agrees with the rhythmic character of the music.

Changes in tempo are denoted by terms such as *accelerando* (gradually speed up), *ritardando* (gradually slow down), and *a tempo* (return to the original speed). In slow movements performers often make subtle changes of tempo or *rubato* in the beat for expressive purposes, even though these fluctuations are not usually indicated in the score. Play the Chopin Prelude found in Chapter 2 of the *Harmonic Practice in Tonal Music* CD-ROM and tap the beat along with the music, noting any variations in its regularity.

The precise meaning of some tempo indications has changed over centuries of use. For instance, in the time of Bach and Handel the term *Adagio* (literally, "at ease") referred to a relaxed tempo, whereas by 1800 the indication had come to mean "extremely slow." As you become better acquainted with various musical styles, you will learn to distinguish between these different meanings.

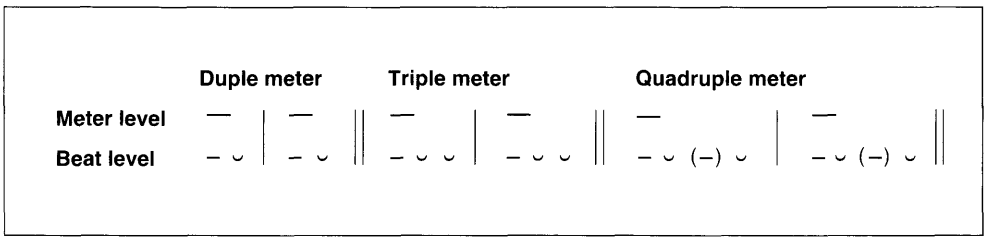
METRICAL GROUPING AND METER

Sing the familiar melodies "Yankee Doodle" and "America" ("My Country 'Tis of Thee"). You will observe that your mind tends to group the beats in the music into larger units of equal duration, each of which begins with a stressed pulse. Each initial stronger **downbeat** is followed by several weaker beats, creating a series of regular groupings or units that contain the same number of beats. This pattern of stressed and unstressed beats results in a sense of metrical grouping or **meter.** Each unit, called a **measure** or **bar,** is set off in notation by **bar lines.** There may be a weak anticipatory beat that precedes the initial downbeat. Both "Yankee Doodle" and "America" begin on the first strong beat, but "America the Beautiful" has a weak beat before the first downbeat, on the syllable "Oh." The anticipatory weak beat is called an **anacrusis** or **upbeat.** Since "Yankee Doodle" has two beats per measure, we say that it is in **duple meter;** since "America" has three beats per measure, we say that it is in **triple meter.**

If we denote the stressed or stronger beats by the symbol –, and the unstressed or weaker beats by the symbol ⏑, then duple meter is represented by – ⏑ | – ⏑ | – ⏑, and triple meter by – ⏑ ⏑ | – ⏑ ⏑ | – ⏑ ⏑. The melody "America, the Beautiful" is in **quadruple meter** or four beats per measure, with the primary stress on beat 1 and a secondary stress on beat 3: – ⏑ (–) ⏑ | – ⏑ (–) ⏑. A measure of quadruple meter may also be heard as two measures of duple meter. Once a meter is firmly established, we tend to hear this grouping as continuing, even in the face of conflicting rhythmic evidence.

Figure 2.2 gives a visual representation of the various types of simple meters, using the symbols for strong and weak beats.

Figure 2.2

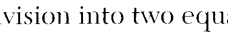


What forces in music give rise to a sense of metric regularity? Metric grouping may be established in a variety of ways: (1) dynamic accents on the

regularly recurring downbeats, sometimes written with an **accent mark** >, (2) the repetition of the same rhythmic pattern(s), (3) the placement of longer note values at the beginning of a measure, and (4) the rate of chord change and bass notes in an accompaniment. Sing some songs with which you are familiar and see how these methods play a role in establishing their sense of meter.

Division and Subdivision of the Beat

Another way to differentiate meters is by the number of divisions in each beat. The three songs discussed so far are in different meters—"Yankee Doodle" is in duple meter, "America" in triple meter, and "America the Beautiful" in quadruple meter. They are similar in one respect, however, because in all three the beats are divided into two parts. Division of the beat into two parts is called **simple division.** Thus, "Yankee Doodle" is in **simple duple meter,** "America" is in **simple triple meter,** and "America the Beautiful" is in **simple quadruple meter.**

Now sing "Yankee Doodle" and then "For He's a Jolly Good Fellow." Sing them slowly enough to mark no only the main beats but the divisions of the beat as well. Although both are examples of duple meter (two beats in a measure), you will note that the beat is divided in different ways. In "Yankee Doodle" the beat is divided into two equal portions, while in "For He's a Jolly Good Fellow" it is divided into three equal portions. This procedure is called **beat division.** In the former the beat undergoes **simple** division into two equal parts (), and in the latter it undergoes **compound** division into three equal parts ( ). Beats may be further subdivided into even smaller durations of equal length, as the charts on rhythmic notation will demonstrate.

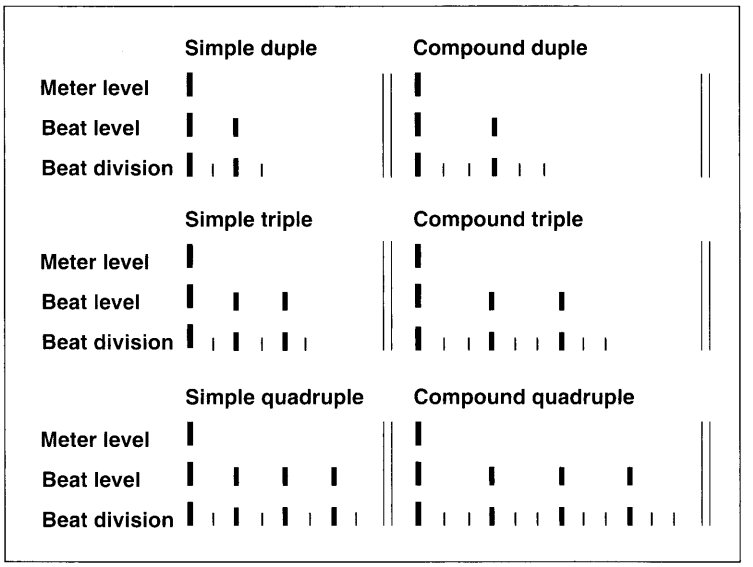
The overall meter of a piece is generally identified by the type of beat division (simple or compound) followed by the type of meter (duple, triple, or quadruple): "Yankee Doodle" is an example of **simple duple meter** while "For He's a Jolly Good Fellow" is an example of **compound duple meter.**

Sing some other tunes you know, analyzing each in the same way. You might want to beat time along with the music, using the standard conductor's patterns for two-, three-, and four-beat measures. These patterns are illustrated in Appendix 5.

Our discussion suggests a three-tiered metrical pyramid or hierarchy of relationships. Figure 2.3 shows one possible representation of this **metrical hierarchy,** which moves upward from shorter to longer pulses: (1) beat

division → (2) beat → (3) meter or measure—producing a sense of recurring stresses at different pulse or rhythmic levels. The stresses are called **metrical accents.** They may occur at the measure level, the beat level, or even the beat-division level.

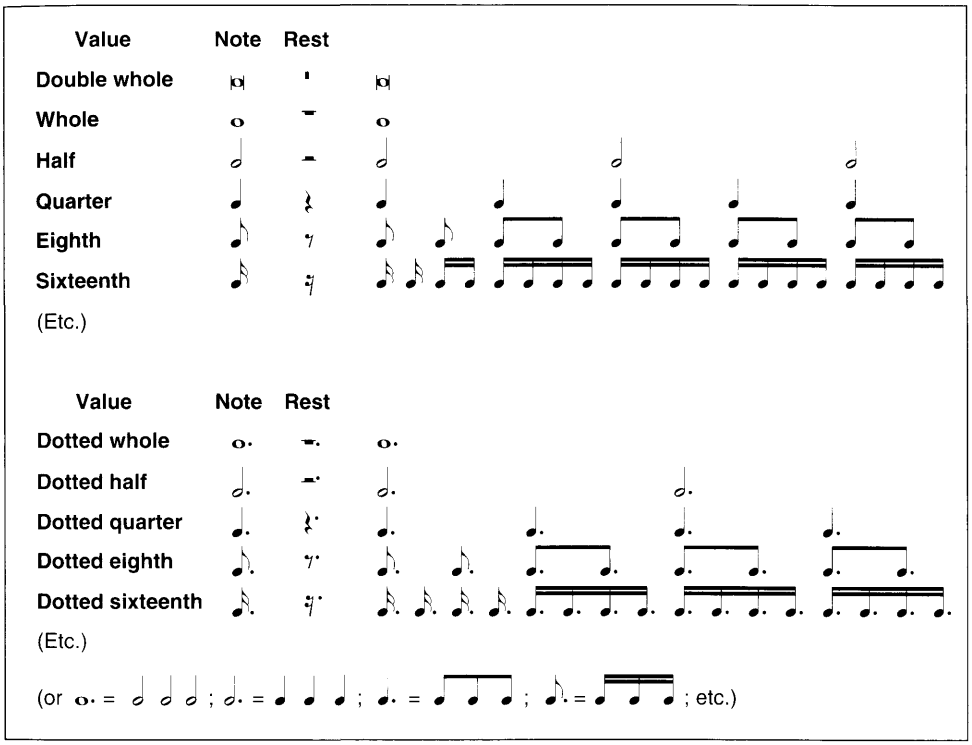
Figure 2.3



Rhythmic Notation

In order to express rhythm in musical notation, we must use various symbols or **note values** to represent tones of different lengths. None of these note values, however, represent any *finite* or *fixed* duration in real time until they are associated with a specific beat and tempo. Rather, these various note values indicate *proportional* relations between the different rhythmic durations, such as the beat or durations shorter or longer than the beat. We use two basic types of values—the undotted note and the dotted note. A dot increases the note's duration by half again, so that any dotted note is 1 and 1/2 times as long as its undotted equivalent. **Undotted notes** are successively divisible by two (𝅗𝅥 = ♩♩, ♩ = ♫, and so on); **dotted notes** may be divided into two dotted notes or three undotted notes of equal value (𝅗𝅥. = ♩. ♩. or 𝅗𝅥. = ♩ ♩ ♩). A **tie** ( ) adds together the values of the notes it connects. Figure 2.4 displays these relationships in standard music symbols.

Figure 2.4



THE BEAT VALUE

We must now choose some note value to represent the beat. This choice is ultimately up to the composer. In judging a piece by ear alone, we can only guess the **beat value** the composer may have selected. The beat in "America" (simple triple meter) is normally notated as a ♩, but you could just as easily choose another value to represent the beat, such as a 𝅗𝅥 or an ♪. In simple meter the beat is always an **undotted note,** so that in the case of "Yankee Doodle" (simple duple meter), the beat value could be a ♩, 𝅗𝅥, or ♪. In compound meter, on the other hand, it is always a **dotted note,** so that in the case of "For He's a Jolly Good Fellow" (compound duple meter), the beat value could be a ♩., 𝅗𝅥., or ♪.

We choose a meter by identifying strong beats and rhythmic patterns in a melody. Sing the first phrase of "America the Beautiful." The words fall into the following pattern:

Oh	BEAU-	ti-	ful	for
	SPA-	cious	skies	for
	AM- ber		waves	of
	GRAIN			

The pattern is immediately clear. "Oh" is an upbeat; starting the first measure with that note would displace the repeated pattern of the first two units, creating an awkward syncopation. The tune is clearly in simple quadruple meter; each accented syllable (the ones in capitals) falls on the downbeat of a measure.

Meter Signatures in Moderate Tempo

Meter signatures, also called **time signatures,** are placed at the beginning of a piece to provide information about its metric characteristics. It would be much simpler if meter signatures were written as 2 or 3, where the bottom note value is the beat and the top number is the number of beats in a measure. Unfortunately, we continue to use an antiquated system that consists of two numbers, one over the other. Since the way we interpret a meter signature is dependent on the tempo or speed of the beat in a piece, for now we will assume a moderate tempo between M.M. 60 and 120. The two numbers of the signature tell three things: (1) the note value assigned as the beat; (2) the type of beat division, simple or compound; and (3) the type of meter, or number of beats in each measure.

The interpretation of moderate-tempo meter signatures depends on the type of beat division used in a piece. This beat division (simple or compound) is always indicated by the *top number* of the signature.

1. If the top number is 2, 3, or 4, the meter is simple duple, triple, or quadruple, and the rhythmic value of the beat will be an undotted note. In these time signatures, the bottom number represents the note value of the beat: 2 stands for 𝅗𝅥, 4 for ♩, and 8 for ♪. The top number represents the number of beats of that value in each measure. Thus, $\frac{2}{4}$ means that the beat is a quarter note and there are 2 beats to the measure; $\frac{3}{2}$ indicates that the beat is a half note and there are 3 beats to the measure.
2. If the top number is 6, 9, or 12, we read the time signature differently. First, we are dealing with compound meters, and the note value of the beat will be a dotted note. In this case, the bottom number, instead of indicating the note value of the beat, represents the compound division of the beat. The beat, therefore, will be the sum of three of the indicated note values. If the bottom number is 8, the value of the beat will be three eighth notes or ♩.; if the bottom number is 4, the value of the beat will be three quarter notes or 𝅗𝅥.; if it is 16, the value of the beat will be three sixteenths or ♪. In order to determine the number of beats in each measure, you must divide the top number by 3.

This system of reading compound meter signatures is contrary to the system many of us learned, which interpreted compound signatures in the same way as simple signatures. In that older system, $\frac{6}{8}$ means that the value of the beat is ♪ and there are six beats to the measure. The reason for changing this system for compound meters is that music in $\frac{6}{8}$ does not have six beats to the measure, but two. Sing or play anything in moderate tempo $\frac{6}{8}$, and you hear that it is actually in compound duple meter—there are two beats to the measure, not six. There are many marches in $\frac{6}{8}$; humans have two feet, and we take two steps per measure, not six.

Memorize the charts in Figure 2.5, which illustrate the various meter signatures in moderate tempo. (Some of these signatures may not be familiar to you.) Then scan through the text or Workbook and analyze the meter signatures you find, always assuming a moderate tempo.

Figure 2.5

SIMPLE METERS

Beat value ↓	2	3	4	← Number of beats in measure
♪	$\frac{2}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	
♩	$\frac{2}{4}$	$\frac{3}{4}$	$\frac{4}{4}$	
𝅗𝅥	$\frac{2}{2}$	$\frac{3}{2}$	$\frac{4}{2}$	
	Simple Duple	Simple Triple	Simple Quadruple	← Meter type

COMPOUND METERS

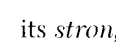
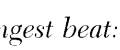
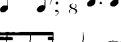
Beat value ↓	2	3	4	← Number of beats in measure
♪.	$\frac{6}{16}$	$\frac{9}{16}$	$\frac{12}{16}$	
♩.	$\frac{6}{8}$	$\frac{9}{8}$	$\frac{12}{8}$	
𝅗𝅥.	$\frac{6}{4}$	$\frac{9}{4}$	$\frac{12}{4}$	
	Compound Duple	Compound Triple	Compound Quadruple	← Meter type

Two early symbols for meter signatures still survive to the present: **C** for $\frac{4}{4}$ and ¢ (or *alla breve*) for either $\frac{2}{2}$ or more rarely $\frac{2}{1}$. Some twentieth-century composers use signatures whose interpretation is more obvious, such as $\frac{3}{\text{♩}}$ or $\frac{2}{\text{♪}}$, replacing the bottom number with the notational symbol of the beat value, while the top number is still the number of beats in a measure. In this system, $\frac{6}{8}$ would be notated $\frac{2}{\text{♪.}}$.

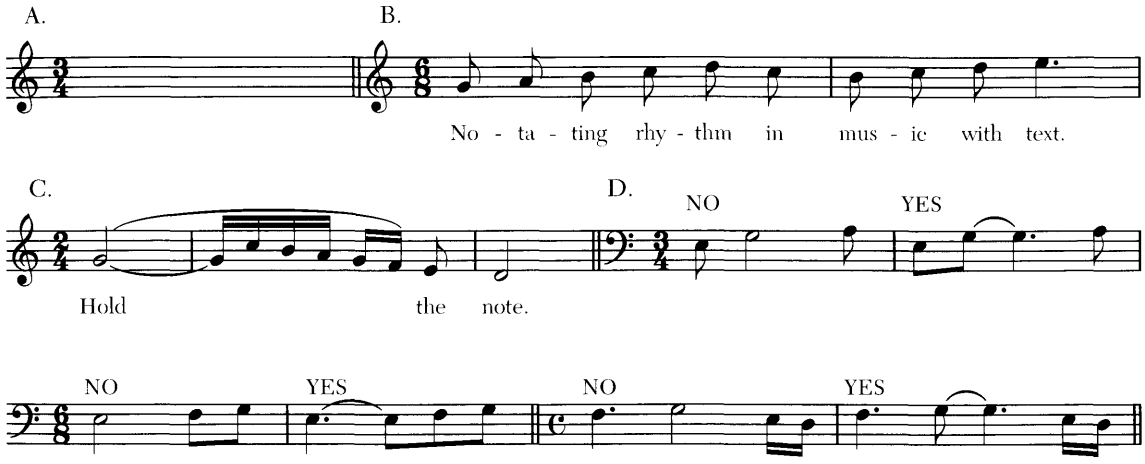
Some Guidelines for Rhythmic Notation

When you write down music, you discover that it is one thing to see music neatly printed on the page and quite another to remember how to use correct rhythmic notation when writing your own. Here are a few guidelines regarding the notation of rhythm.

1. Make sure your meter signature is placed at the beginning of the first staff. Unless the meter changes, it need appear only once (Example 2.1a).
2. In *instrumental* music, groups of eighth notes or smaller values are beamed together according to the beat and meter. In simple meters the beat division or subdivision is beamed in multiples of *two:* in $\frac{2}{4}$, eighth notes are beamed in groups of two or even four (♫ ♫ or ♬), while sixteenths are beamed in groups of four (♬ ♬). On the other hand, in compound meters the beat division is beamed in multiples of *three:* in $\frac{6}{8}$ eighth notes are beamed in groups of three (♫ ♫) and sixteenths in groups of six (♬ ♬). Sometimes there are several ways to notate a passage correctly. For instance, you might write $\frac{3}{4}$ ♩ ♫ or ♩. ♪♫ or even ♩. ♫.
3. In notating *vocal* music with text, the custom for years was to let the text determine whether notes were beamed or not. Any note that carried a new syllable stood alone, with its own flag or stem, not beamed to preceding or following notes (Example 2.1b). When one syllable extended over several notes, those notes were beamed together, or if the notes were larger than an eighth note, a slur mark was placed above or below the passage, making clear how long a single syllable lasted (Example 2.1c). This practice is falling into disuse; many modern publications use the same system of beaming notes for vocal music as they do for instrumental music, regardless of where the syllables of text fall.
4. Always strive to notate rhythm in such a way that the placement of the beats in the measure is made as clear as possible. It is often necessary to use ties to make rhythms clear. One way to keep things clear is to

notate the durational patterns so that each beamed group begins on its *strongest beat:* $\frac{2}{4}$, not  ;  , not ; $\frac{6}{8}$ not ; and  , not . Compare the correct and incorrect measures shown in Example 2.1d.

Example 2.1



Terms and Concepts for Review

rhythm
pulse
beat
tempo
tempo markings:
adagio
andante
moderato
allegro
presto
changes in tempo:
accelerando
ritardando
a tempo
rubato
metrical grouping
downbeat
upbeat
measure, bar
bar line
duple meter
triple meter
quadruple meter
beat division
simple meter
compound meter
metrical hierarchy
metric accent
beat value
meter (time) signature

A BRIEF REVIEW SELF-QUIZ

1. Match the letters to the appropriate numbers:

1. Quadruple meter	a. Gradually speed up the beat
2. Beat division	b. The rate of speed of the beat
3. 9/8	c. Four beats in a measure
4. *Accelerando*	d. Simple or compound
5. Dotted note	e. Grouping of beats into regular units
6. Tempo	f. First stressed beat of the measure
7. *Allegro*	g. Gets the beat in compound meter
8. Meter	h. Compound triple meter
9. ¢	i. Fast tempo
10. Downbeat	j. *alla breve*

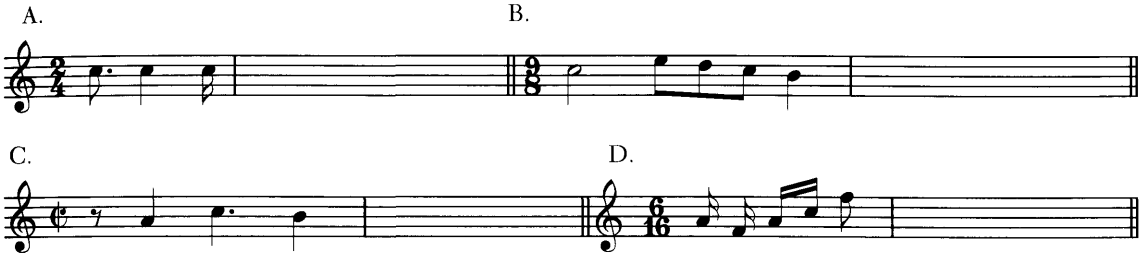
2. Using the meter signatures in Figure 2.6, identify (1) the type of beat division (simple or compound), (2) the note value receiving the beat, and (3) the number of beats in each measure.

Figure 2.6

	Simple/ compound	Note value of beat	No. of beats in measure
$\frac{6}{8}$			
$\frac{3}{2}$			
$\frac{9}{4}$			
$\frac{12}{16}$			
$\frac{3}{4}$			
C			

3. Rewrite the rhythm in each bar of Example 2.2, using correct notation and stemming. You may have to use some ties.

Example 2.2



CHAPTER 3

Tonic, Scale, and Melody

In Chapters 1 and 2 we discussed some aspects of pitch and intervals and rhythm and meter as separate topics. Now we will see how pitch and rhythm interact to create melodic lines.

Melody is the most accessible aspect of music—we memorize and recall tunes more readily than harmonic progressions, we tend to identify pieces by their melodic themes, and above all, we sing melodies. Yet despite the primacy of melody in the art of music, it has often been neglected in treatises and textbooks and frequently forced to take a back seat in favor of harmony. In this chapter we will lay an introductory foundation for understanding melody by presenting some ways in which it is organized tonally and formally. After a discussion of tonic and tonality (perhaps the single most important characteristic of music in the common-practice period), major and minor modes, scales, and key signatures, we will examine some basic characteristics of the melodic phrase.

Tonic and Tonality

Sing or play the first four measures of the carol "Joy to the World" (Example 3.1a), which is written with white-key pitches. This phrase gives us a sense of

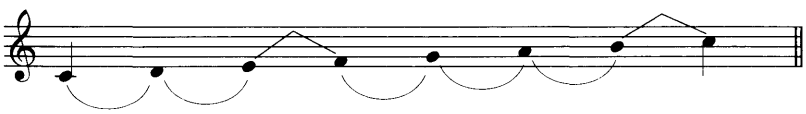
tonal conclusiveness, finality, or closure because it begins and concludes on the **tonic** tone, the pitch class of greatest centrality, stability, and finality in a tonal composition. Try ending the phrase on some other note than C; does it sound as conclusive or final?

Example 3.1

A. "JOY TO THE WORLD" (CAROL)

B.

C.



In Example 3.1b the pitches of the melody are notated without rhythm, and the tonic pitches are stemmed and beamed together with dots. Finally, in Example 3.1c all the pitches of the tune are gathered together and arranged in a stepwise, ascending collection to form a **scale** (from the Italian *scala*, "ladder"). This scale is bounded on both ends by the tonic. The notes of this tune constitute a **diatonic** pitch collection—that is, a group of seven pitch classes which forms the pattern of adjacent white keys on the piano. One ancient way to create this diatonic collection was to construct a series of ascending perfect 5ths from F to B and then gather all the notes within a single octave; the series F C G D A E B, when assembled in the same octave, becomes C D E F G A B. Many early tuning systems were based on a series of 5ths as well. Example 3.1c illustrates this diatonic pattern, marking its stepwise relations with ◡ for whole steps and ⌒ for half steps. If we tabulate the number of intervals between consecutive pitches, we can see there are five whole steps and two half steps, a characteristic shared by all seven-note diatonic collections that span an octave.[1]

1. These stepwise intervals are usually grouped into units of three and two whole steps that are separated by half steps: for instance, C D E ⌒ F G A B ⌒ C D E, etc.

Now sing or play the tune "Home on the Range" (Example 3.2) and see if you can locate where the tonic notes occur. The first part of this song is divided into two sections; which do you feel is the more conclusive and why?[2] In "Joy to the World" the tonic lies at the top and bottom of the melodic range; is this true with "Home on the Range?"[3]

Example 3.2

"HOME ON THE RANGE" (FOLK SONG)

Tonality is the broad organization of pitches around a central tonic in a passage or piece of music. The diatonic pitches in a composition form a tonal *hierarchy*, or relative levels of importance, in which all the other tones are subordinate to the tonic. We will soon learn how these other diatonic pitches are related to each other. Although this hierarchy also represents the underlying foundation of tonal harmony, for the present we will focus on the single melodic line and reserve our examination of the role that harmony plays in tonality until Chapter 8.

The fact that you use only white-note pitches to compose a melody is not an automatic guarantee that its tonic will always be C. It is possible to establish a tonic on A, G, or even D with these same pitches.[4] In order to understand those characteristics of a melodic line that lead us to perceive a particular tone as tonic, play or sing the short tune in Example 3.3.

Example 3.3

You doubtless agree that the tonic of the short phrase is also C. This tune exhibits at least four characteristics which tend to reinforce this sense of finality on C: (1) the frequent occurrence of C through repetition, (2) the fre-

2. The second part is more conclusive, since it ends on the tonic.
3. No; the tonic lies in the middle of the melodic range of the tune.
4. For a discussion of white-key melodies that display a tonic other than C, see the Diatonic Modes in Appendix 2.

quent placement of C on the downbeat, stressing it metrically, (3) the tonal reinforcement of C by preceding it with a G, producing a perfect 4th up or a perfect 5th down (in both cases, the root of the interval is C), and (4) the strong tendency of the upper B to resolve upward by half step to the C. These observations may also be applied to other diatonic tonal melodies as well. We will return for a more detailed discussion of some of these general traits in the section on scale degrees.

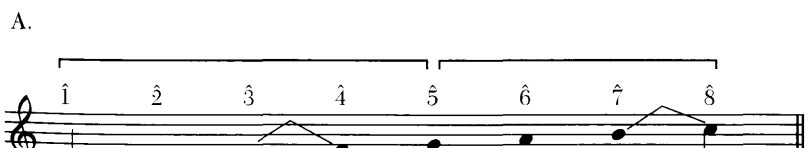
Improvise or compose a short melody, using white keys only, that establishes a sense of F as its tonic, keeping in mind the observations listed above.

The Major Mode and Major Scale

Two basic systems of pitch organization are employed in the music of the common-practice period: the **major mode** and the **minor mode.** We will consider the major mode first. To represent the basic tonal content of the major mode, the white-key diatonic notes can be arranged in ascending order above the tonic C to form a scale (Example 3.4a); the symbols ⌣ and ⌢ again indicate whole and half steps respectively. This scale represents the pitch classes available for composing a wide variety of melodies in the major mode. Compare the first phrase of the carol "Joy to the World" (Example 3.1a) to that of "The First Noel" (Example 3.4b). Both employ white-key pitches whose range spans an octave from the tonic C to C. Although the latter phrase does not end on C, one still senses that C is the tonic. Yet the two melodies are different one from the other. Composers throughout the ages have used this same diatonic collection (the major scale) in various arrangements to create countless melodies of endless variety.[5]

Example 3.4

A.



B. "The First Noël" (carol)

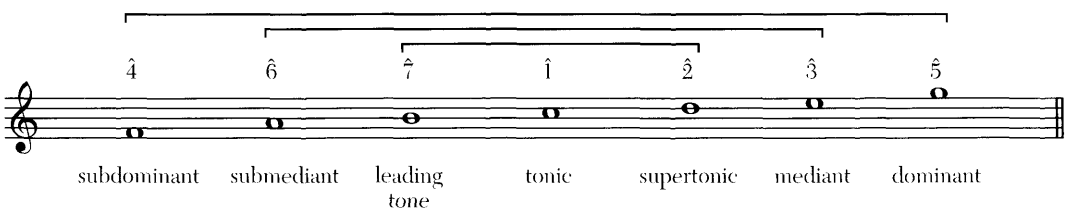
5. In this respect, one might view a "scale" as the unordered collection of pitches used in a melody.

The seven **scale degrees,** or **scale steps,** of the major scale are numbered from the tonic to the note a 7th above (Example 3.4a). Arabic numbers with small carets denote the various scale degrees: $\hat{1}$ $\hat{2}$ $\hat{3}$ $\hat{4}$ $\hat{5}$ $\hat{6}$ $\hat{7}$. The next note, the upper tonic, is also called scale degree $\hat{8}$.

Diatonic Scale Degrees

In tonal music the individual scale degrees have been assigned specific names based on their association either to $\hat{1}$, the tonic, or $\hat{5}$, the dominant. Example 3.5 charts the various scale steps and their names arranged in a symmetrical fashion around the central tonic of C.

Example 3.5



The dominant, which takes its name from the Latin *dominus* ("lord" or "ruler"), is the next most important note after the tonic, partly because of the acoustical stability of the perfect 5th formed by $\hat{1}$ and $\hat{5}$, whose root is the tonic. The dominant scale degree divides the major scale into two unequal segments of five pitches (C-D-E-F-G) and four pitches (G-A-B-C); refer to Example 3.4a. The major scale may also be thought of as a pair of tetrachords, or four-note spans: C-D-E-F and G-A-B-C. Scale step $\hat{3}$, called the mediant because it lies midway between tonic and dominant, determines the mode of the scale; the interval between $\hat{1}$ and $\hat{3}$ is a major 3rd in the major scale. The prefix "sub" (Latin for "below") denotes that the subdominant and submediant lie below their respective namesakes; the prefix "super" (Latin for "above") denotes that the supertonic lies above the tonic. The descriptive leading tone suggests its tendency to resolve or lead upward by half step to the tonic.

Play or sing several simple folk songs that you know by ear in C major on the piano or your own instrument. First identify the tonic tone ($\hat{1}$), then identify the scale degree number and name of each successive note.

The Minor Mode and Minor Scale

The minor mode is more complex than the major mode or scale. The basic difference between the two modes lies in the minor mode's use of a lower mediant, or minor 3rd above the tonic or $\hat{1}$. In addition, the submediant and

leading tone (scale degrees $\hat{6}$ and $\hat{7}$) may also be lowered by a half step from their counterparts in the major scale. Several scales are traditionally used to illustrate different aspects of the minor mode. In the following examples, we continue to build the scale on C for purposes of comparison to the major scale. In scale degree comparisons between major and minor, those scale steps which are lowered by one half step will be preceded by a flat—$\flat\hat{3}$, $\flat\hat{6}$, etc.—while scale degrees which are raised by one half step will be preceded by a sharp, even though a natural occurs in the original—$\#\hat{6}$, $\#\hat{7}$, etc.

The **natural minor scale,** shown in Example 3.6a, is perhaps the oldest scalar form of the minor mode.[6] Three scale degrees are lowered from major, as mentioned above: $\flat\hat{3}$, $\flat\hat{6}$, and $\flat\hat{7}$. As a result of these lowered tones, the half steps in the diatonic major scale switch their positions from $\hat{3}$-$\hat{4}$ and $\hat{7}$-$\hat{8}$ to $\hat{2}$-$\flat\hat{3}$ and $\hat{5}$-$\flat\hat{6}$. Melodies based on the pure natural minor pitch collection occur in the folk songs of several countries. Locate the half steps in the tune quoted in Example 3.6b.

Example 3.6

6. The natural minor scale corresponds to the Aeolian Church mode: consult Appendix 2.

The natural minor will form our basis for constructing and comparing other forms of minor scales. If this scale is built on A as its tonic, the resulting notes correspond to the pitch classes found in the C major scale (Example 3.6c).

The next two scales demonstrate how the scale degrees in the minor mode operate in melodic and harmonic contexts. In the **melodic minor scale** the pitches from $\hat{1}$ to $\hat{5}$ remain the same as the natural minor, but the upper fourth from $\hat{5}$ to $\hat{8}$ undergoes change. As a melodic line *rises* from $\hat{5}$ to $\hat{8}$, scale steps $\hat{6}$ and $\hat{7}$ are raised by a half step from their natural minor form (Example 3.7). This change increases their inclination to move to the upper tonic ($\hat{5}$-$\sharp\hat{6}$-$\sharp\hat{7}$-$\hat{8}$). Note that we use sharps to denote raised scale degrees and flats to denote lowered scale degrees, thereby avoiding the sometimes ambiguous use of naturals. When a melodic line *descends* from $\hat{8}$ to $\hat{5}$, scale degrees $\hat{7}$ and $\hat{6}$ are lowered back to their original forms in the natural scale, producing a strong half-step pull from $\flat\hat{6}$ to the dominant ($\hat{8}$-$\flat\hat{7}$-$\flat\hat{6}$-$\hat{5}$). The lowered 7th degree is called the **subtonic** rather than the leading tone, since in this form it does not lead to the tonic.

Example 3.7

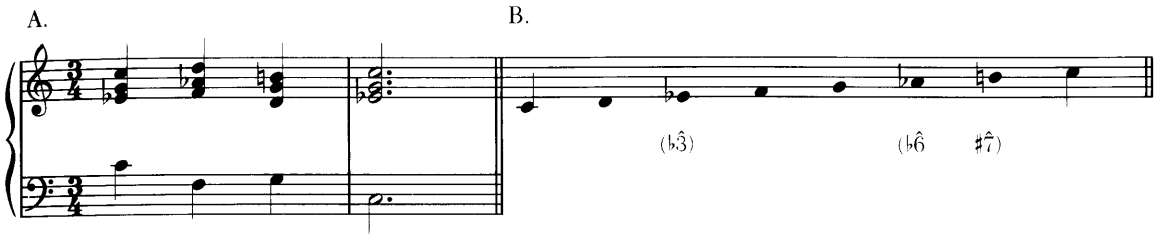
You can observe these melodic tendencies in the brief Beethoven tune in Example 3.8; the key is F minor.

Example 3.8

BEETHOVEN: STRING QUARTET IN F MINOR, OP. 95, I

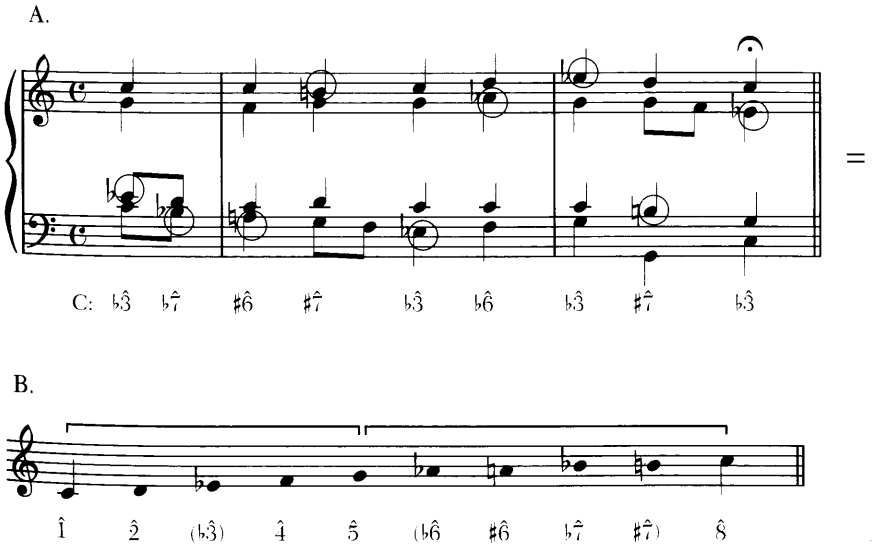
The **harmonic minor scale** incorporates the scale degrees typically found in most harmonic progressions. The pitch classes of the chord progression in Example 3.9a have been extracted and arranged to form the harmonic minor scale in Example 3.9b; the scale contains a lowered $\hat{6}$ (or $\flat\hat{6}$, which pulls downward to $\hat{5}$) and a raised $\hat{7}$ or leading tone ($\sharp\hat{7}$, which pulls upward to $\hat{8}$).

Example 3.9



Actually, none of the above scalar formations give us a complete and accurate picture of how the minor mode operates in actual musical practice. But if we combine all three scales into one composite collection, we can obtain a better idea of the wealth of scale degrees and the manner in which they are actually used in minor-mode compositions. The passage shown in Example 3.10a can only be explained in this way, since the previous scales are inadequate to explain its pitch content. Again, by gathering all the pitch classes together, we now arrive at a ten-tone stepwise collection, in which the notes from $\hat{1}$ up to $\hat{5}$ are diatonic scale degrees in the three minor scales, and in which the span from $\hat{5}$ up to $\hat{8}$ proceeds by half steps (Example 3.10b). This latter span contains both lowered and raised 6th and 7th degrees: $\hat{5}$-♭$\hat{6}$-♯$\hat{6}$-♭$\hat{7}$-♯$\hat{7}$-$\hat{8}$.

Example 3.10



The Transposition of Scales and Melodies

Up to this point we have employed the pitches in the mode of C major or minor in our comparison of various melodies and scales. However, it is possible to take all the pitches of a scale or melody and restate them on a different pitch level while still preserving their same intervallic relations. Example 3.11a shows the last phrase of the "The Star-Spangled Banner" written in C major. Since the G^5 is too high for most people to sing easily, the tune is customarily performed at a more comfortable pitch level, such as B♭ major, a whole step lower (Example 3.11b). The C-major scale in Example 3.11c has been shifted both up and down—to D major, a whole step higher, and to A♭ major, a major 3rd lower.[7]

Example 3.11

A. "The Star-Spangled Banner"

Since there are twelve possible simple intervals, if we count the unison and octave as one interval, there are twelve possible levels to which a scale or passage of music may be raised or lowered. This procedure is called **transposition.** There are twelve such transpositions—one for each note of the chromatic collection. For other instances of transposition, consult the text examples cited in the footnote below. It is necessary that we use this technique when writing out parts for **transposing instruments,** such as a

7. Other transpositions may be found in Example 22.4a, mm. 1–4 and 9–12 (a perfect 4th lower), Example 40.8a (a major 3rd higher), and Example 40.1a, mm. 1–3 and 7–9 (a minor 2nd higher).

B♭ clarinet or E♭ alto saxophone; transposition charts may be found in Appendix 6.

Relative and Parallel Keys

The term **key** is used interchangeably with tonality when discussing music of the tonal period. When we speak of the keys of D major and F♯ minor, for example, we are saying that D and F♯ are the tonics of the respective pieces, and that the given mode identifies the underlying diatonic scales used in those works. In the musical examples of this text, major keys are indicated with uppercase letters followed by a colon (e.g., D: = D major) and minor keys with lowercase letters followed by a colon (e.g., f♯: = F♯ minor).

For each major key or scale there is a corresponding minor key whose tonic is a minor 3rd lower and whose natural minor scale contains the same pitch classes as the original major scale (Example 3.12a). Likewise, for each minor key or scale there is a corresponding major key whose tonic is a minor 3rd higher and whose major scale contains the same pitch classes as the original natural minor scale. Because of their shared pitch content, we call such relations **relative keys.** Thus C major and A minor are relative keys, as are C minor and E♭ major. In Example 3.12b the melody in the first four measures is repeated almost note for note in the last four bars. But whereas the first phrase establishes the key of A minor, the last establishes the key of C. With the exception of two G♯'s in measures 1 and 3, the pitch content of the melodies and harmonies is identical since they use only natural white-key pitches; therefore they are relative keys.

Whereas relative keys display similar pitch content but different tonics, **parallel keys** share the same tonic but differ in mode (major versus minor) and thus in the notes of their scales. Example 3.12c contrasts the parallel keys of C major, which has no accidentals, and C minor, which has three flats.

Example 3.12

A.

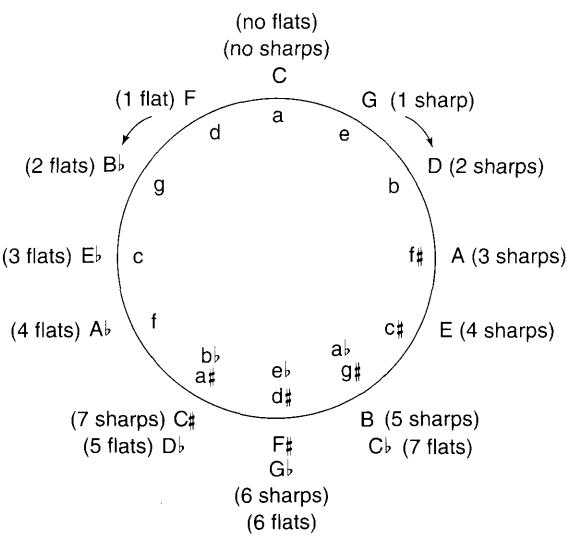
B. GRIEG: "SOLVEJG'S SONG" FROM *PEER GYNT* SUITE NO. 2, OP. 5

C.

THE CIRCLE OF 5THS

In addition to C major, which has no accidentals, there are seven other major keys containing sharps and seven containing flats. The fifteen major keys can be arranged along the outer rim of a **circle of 5ths,** as in Figure 3.1.

Figure 3.1



As you move to the right around the circle, each successive key is a perfect 5th higher and therefore requires one more sharp or one less flat in its scale. Similarly, moving to the left, each successive key is a perfect 5th lower than the last and has one additional flat or one less sharp. Notice the three keys at the bottom of the circle, whose scales are spelled enharmonically—C♯ = D♭, F♯ = G♭, and B = C♭.

Beginning with A minor, which has no accidentals, there are also a total of fifteen minor keys, which appear on the inner rim of the circle in Figure 3.1. Relative keys are placed directly across from one another on the rim, since they share the same pitch content.

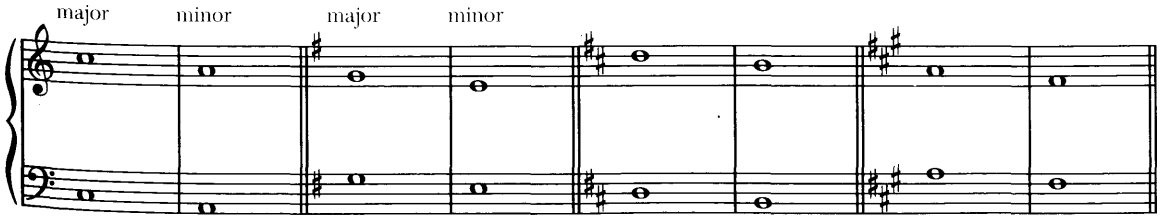
KEY SIGNATURES

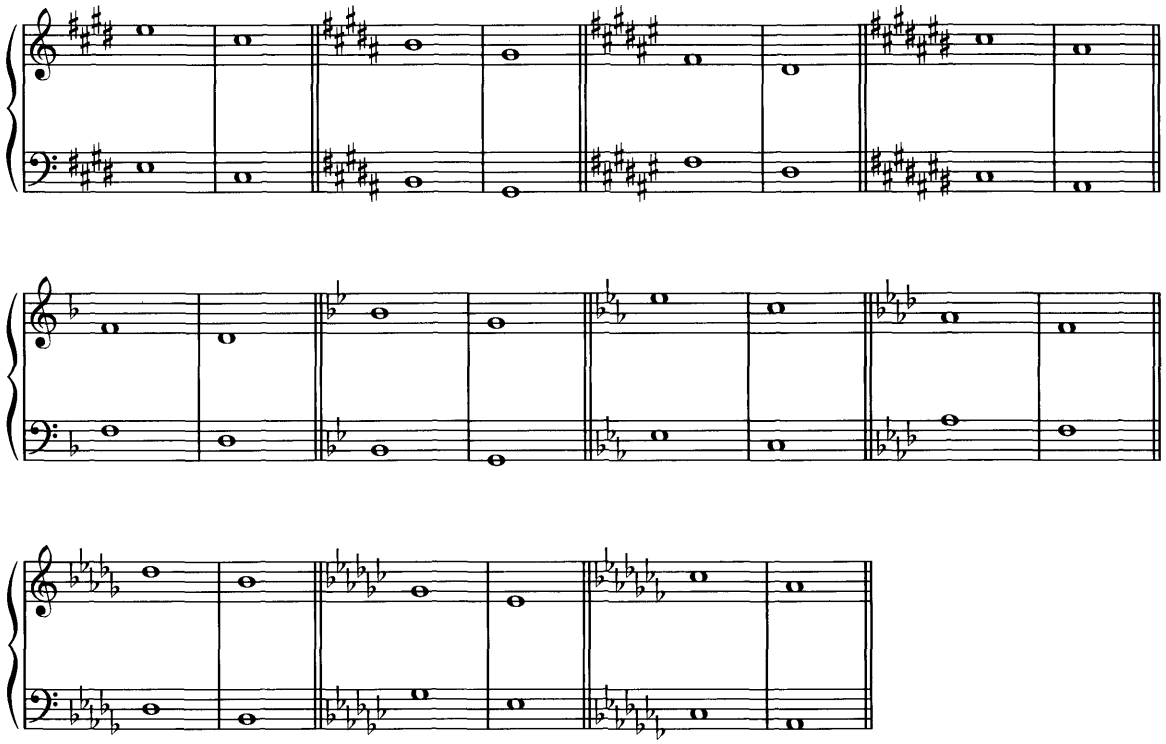
The **key signature** placed at the beginning of each staff in a composition indicates the accidentals necessary to form the diatonic scale on which the piece is based. This convenient shorthand avoids the tedious task of notating each required sharp or flat throughout the entire score. For instance, for the key of G major we need write only one sharp on the F line in the signature to signal that all the F's on that staff will be raised a semitone.

A signature may indicate either the relative major or minor; for example, a signature of two sharps may denote either D major or B minor. Therefore, it is necessary to examine the content of the music itself in order to determine its correct tonic and key. As possible guidelines, look first at the opening and end of the piece, as these are likely places for an emphasis on the tonic note, and then check for the leading tone in minor, which will occur as a raised accidental.

The various key signatures for relative major and minor keys are given in Example 3.13. Memorize these signatures, carefully noting the placement and succession of the accidentals on the treble- and bass-clef staves.

Example 3.13





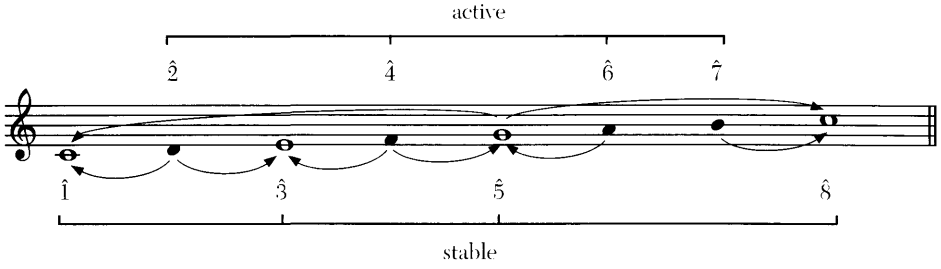
The Function of Scale Degrees in Melody

A melodic line or **melody** is a succession of rhythmicized pitches that forms a series of melodic intervals. Although some musicians argue that melody arises from harmony, a study of history reveals that single-line melodies—including Greek melodies, Gregorian chant, and early secular monophony—evolved first. Other factors, such as dynamics, timbre or tone color, and articulation can also contribute to what we call melody. Tonal melodies represent goal-oriented or directed motion that is continually moving toward or away from certain tonal, rhythmic, and formal destinations. The path between these goals may be very predictable, or it may be ambiguous. As listeners, we become involved in this unfolding of tone in time as we trace the music's course to its conclusion.

The scale degrees of a melody convey us on our tonal journey. The various scale steps in the major and minor modes have distinct tonal characteristics that influence their melodic tendencies. Study the C-major scale in Example 3.14. Since scale steps $\hat{1}$ and $\hat{3}$ are associated with the tonic, they are the most stable, or inactive, degrees. The dominant ($\hat{5}$) has a strong ten-

dency to return to the tonic, but it assumes a more stable role when it joins $\hat{1}$ and $\hat{3}$ in the tonic harmony. The more active scale steps—$\hat{2}$, $\hat{4}$, $\hat{6}$, and $\hat{7}$—tend to move stepwise to the more stable degrees—$\hat{2}$ to $\hat{1}$, $\hat{4}$ to $\hat{3}$, $\hat{6}$ to $\hat{5}$, or $\hat{7}$ to $\hat{8}$. Since the leading tone and submediant, in both major and minor modes, exhibit such a strong pull to the tonic and dominant respectively ($\hat{7}$-$\hat{8}$, $\hat{6}$-$\hat{5}$, and $\flat\hat{6}$-$\hat{5}$), they are often called **tendency tones.** In Example 3.14 the more stable steps—$\hat{1}$, $\hat{3}$, and $\hat{5}$—are denoted with white note-heads, while the more active steps—$\hat{2}$, $\hat{4}$, $\hat{6}$, and $\hat{7}$—are denoted with black note-heads. The arrows indicate the direction of their tonal tendencies.

Example 3.14



When we take a melodic line and examine it note by note, we may find that the successive scale degrees do not always comply with the preceding generalizations. But as we begin to peel back the melodic details and look beneath the rhythmic and tonal surface of the music, we will reveal the underlying framework on which the melody is based. In doing so, we will discover long-range stepwise tendencies in that framework that support these conclusions. The later melodic analyses in this chapter will incorporate some simple methods of illustrating these long-range connections between scale degrees; in Part Two of the text more sophisticated techniques will be introduced.

Melodic Phrases

When we sing familiar melodies, we will observe that they are usually divided into smaller sections or units. These sections, which may be melodically similar or dissimilar, are usually set off by some kind of rhythmic punctuation. The way these sections are organized into a whole lends form or design to a melody.

Let us draw on the analogy between words and music and employ some grammatical terms to describe these melodic groupings. Consider the sentence: "If you go to the concert tonight, you will hear Beethoven's Ninth Symphony." The end of each phrase is punctuated in a different way. The

opening condition ("If you go . . ."), held in suspension by a comma, is resolved by the consequent action ("you will hear . . ."), concluded with a period. We may thus diagram the sentence as follows:

Condition	*Resolution*
If you go to the	you will hear Beethoven's
concert tonight,	Ninth Symphony.

Now sing or play the "Ode to Joy" theme from the last movement of this symphony, given in Example 3.15, and compare its musical design to the diagram above.

Example 3.15 BEETHOVEN: SYMPHONY NO. 9 ("CHORAL"), IV, "ODE TO JOY" THEME

This simple tune consists of two sections, called phrases. Each **phrase** expresses a well-ordered musical idea that progresses tonally to a point of musical punctuation, or **cadence.** In Example 3.15, brackets mark off each phrase. As in this passage, successive phrases in tonal music frequently contain the same number of measures, a trait called **phrase periodicity.**

MELODIC CADENCES

Cadences represent the coming together of melodic, harmonic, and rhythmic factors to create structural punctuation. Every era in music history has devised its own set of standardized melodic or harmonic cadential patterns. We can identify two melodic characteristics typical of cadences from the common-practice period:

1. A momentary cessation of rhythmical motion on the final cadence note. Is this apparent in Example 3.15?[8]

8. Yes.

2. The use of certain two-note scale-degree patterns at the ends of phrases. Which two different scale degrees end each phrase of Example 3.15?[9]

One way of demonstrating long-range melodic motion is to focus on the beginning and the conclusion of a musical phrase. In the first two phrases of the "Ode to Joy" theme in Example 3.16 we will highlight its first and its last two cadence tones with *stemmed notes* and indicate its interior pitches with *unstemmed* note-heads.

Example 3.16

The opening $\hat{3}$ eventually descends to $\hat{2}$ at the end of the first phrase but is stopped before it reaches $\hat{1}$. The second phrase starts again on $\hat{3}$, and this time the phrase does descend all the way to the tonic, creating a sense of tonal closure. This long-range movement, which can be diagrammed as $\hat{3}$-$\hat{2}$, $\hat{3}$-$\hat{2}$-$\hat{1}$, shows an overall inclination to descend stepwise from scale step $\hat{3}$ to $\hat{1}$, even though the end of the first phrase is interrupted after the active scale step $\hat{2}$. In Example 3.16 we denote this interruption by a // marking. This break in the tonal motion forms an **inconclusive cadence** ($\hat{3}$-$\hat{2}$) at the end of the first phrase, which is finally resolved by the **conclusive cadence** ($\hat{2}$-$\hat{1}$) at the end of the second phrase.

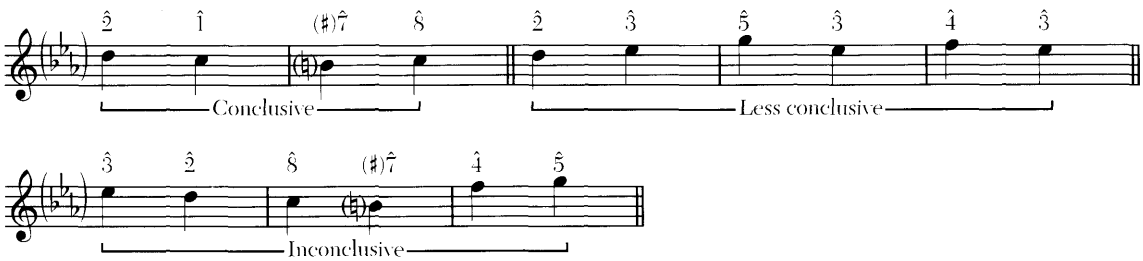
The chart in Example 3.17a lays out the various two-note melodic cadences and their scale degrees in the keys of C major and C minor. The most **conclusive** cadences exhibit stepwise motion to the tonic: $\hat{2}$-$\hat{1}$ or $\hat{7}$-$\hat{8}$. **Less conclusive** cadences end on the mediant: $\hat{2}$-$\hat{3}$, $\hat{5}$-$\hat{3}$, or $\hat{4}$-$\hat{3}$. **Inconclusive** cadences generally employ stepwise motion toward an active scale degree: $\hat{3}$-$\hat{2}$, $\hat{8}$-$\hat{7}$, or $\hat{4}$-$\hat{5}$. The short hymn phrases in Example 3.17b illustrate typical uses of these melodic cadences.[10] Play or sing each of the phrases.

9. Scale degree $\hat{2}$ at the end of phrase one followed by $\hat{1}$ at the end of the second phrase.
10. These tunes have been transposed to C major and C minor to facilitate comparisons.

noting the different sorts of psychological impressions you receive from the three types of cadences. It is imperative that you memorize these various melodic formulas now, since we will later add more types of cadences to our present list.

Example 3.17 MELODIC CADENCES

A. MELODIC CADENCES



B. CONCLUSIVE CADENCES

"Jesu, meine Freude"

"Vom Himmel hoch"

LESS CONCLUSIVE CADENCES

"St. Magnus"

"Dunfermline"

INCONCLUSIVE CADENCES

"Eisenach"

"London New"

"Rheidol"

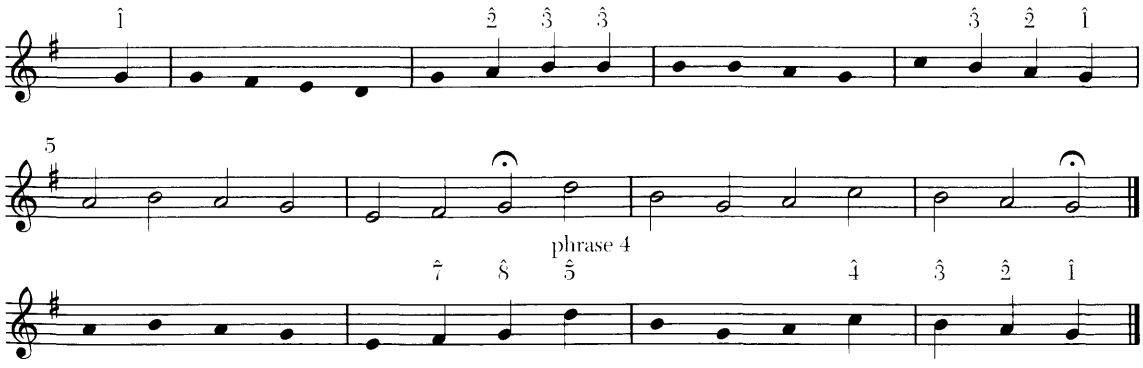
Two Melodic Analyses

We will conclude this introduction to melody by examining two diatonic tunes. By tracing the progress from the first note to the cadence, it is possible to demonstrate some interesting long-range melodic motions that underlie the musical surface. Since both short tunes are complete in themselves, they allow us to see how scale degrees operate within a longer melodic span. The hymn known as the "Old One Hundred" contains four short phrases, denoted with brackets in Example 3.18. Each phrase ends with a well-defined melodic cadence, denoted by a **fermata** or 𝄐.

Example 3.18

A. Louis Bourgeois: "Old One Hundred" (hymn)

B. (reduction)



As in the previous "Ode to Joy," we will stem the initial note and last two cadential notes of each phrase, thereby framing their directed tonal motion; see the reduction in Example 3.18b. Phrase 1 represents a rise from tonic to mediant, $\hat{1}\rightarrow\hat{2}$-$\hat{3}$, spread over two measures. Phrase 2 begins on $\hat{3}$ and gradually descends to $\hat{2}$, while phrase 3 begins on the tonic and hovers around it before ending with $\hat{7}$-$\hat{1}$. The overall tonal motion of the first three phrases, then, is $\hat{1}\rightarrow\hat{2}$-$\hat{3}$, $\hat{3}\rightarrow\hat{3}$-$\hat{2}$, $\hat{1}\rightarrow\hat{7}$-$\hat{1}$, with the first ending on a less conclusive cadence, the second on an inconclusive cadence, and the third on a conclusive cadence. Notice that this long-range motion proceeds completely by step. Despite the apparent close on $\hat{1}$ at the end of the third

phrase, an additional line of text remains to be set. Since we anticipate that the concluding phrase will likewise cadence on the tonic, its sense of closure should be even more emphatic than what has preceded it. Therefore, after the prevailing conjunct motion in the previous three phrases, the melodic line dramatically leaps up to the dominant in the fourth phrase and makes an emphatic stepwise descent back to the final tonic: $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ (Example 3.19).

Example 3.19

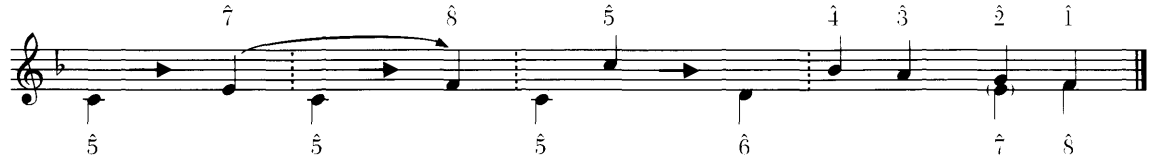
The familiar tune quoted in Example 3.20a aptly illustrates both short- and long-range tonal goals in melodic writing. We have once more stemmed the framing pitches of each phrases and notated the interior notes with unstemmed note-heads.

Example 3.20

A.

B. (REDUCTION 1)

C. (REDUCTION 2)



This F-major tune divides into four short phrases of two measures each, the first three of which begin with an upbeat on C^4 ($\hat{5}$). The F-E ($\hat{8}$-$\hat{7}$) ending of the first phrase is answered by the G-F ($\hat{2}$-$\hat{1}$) of the second, which, as we can see by the curved arrows in measures 2–4 (Example 3.20c), resolves the leading tone ($\hat{7}$) to the tonic $\hat{8}$ (or $\hat{1}$). The octave leap to C^5 ($\hat{5}$) in measure 5, which disrupts the previous pattern, descends by 3rds to D^4 ($\hat{6}$). The $B\flat^4$ that opens the last phrase eventually moves to the final tonic via scale steps $\hat{3}$-$\hat{2}$-$\hat{1}$. If we examine the tonal summary in Example 3.20c, we can see that our tune actually consists of two different melodic strands, as indicated by the direction of the stemming. Following the dramatic octave leap to $\hat{5}$ in measure 5, the melodic strand in the last three measures actually descends stepwise to the concluding tonic: $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$, in a similar manner to the conclusion of the preceding tune. The $\hat{5}$ of the lower strand, which serves as the upbeat to the first three phrases, now pulls up to the $\hat{6}$ and seems to suggest a stepwise ascent to $\hat{8}$ through an inferred leading tone, shown as an E^4 in parentheses. What occurs in the text of this song at the beginning of measure 6? How is this highlighted in the musical setting?[11] Whereas the octave range of the two opening carols of this chapter is framed by the tonic ($\hat{1}$ to $\hat{8}$), the pitch content of the last two tunes is framed by the dominant ($\hat{5}$ to $\hat{5}$).

Our three melodic analyses illustrate several similar characteristics. Most of the long-range melodic connections exhibit stepwise motion, demonstrating the tendency of the more active scale degrees ($\hat{7}$, $\hat{2}$, $\hat{4}$, and $\hat{6}$) to move to the more stable degrees ($\hat{1}$, $\hat{3}$, and $\hat{5}$). In addition, the overall motion of each melody tends to move stepwise from either the dominant or the mediant down to the tonic: $\hat{3}$-$\hat{2}$-$\hat{1}$ or $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$. Our further melodic analyses will confirm these generalizations.

The diagrams that reduce these last two melodies to their essential melodic framework allow us to see more clearly the functions of the various scale degrees and their long-range tendencies within the key.

11. The name of the honoree is inserted. There is a momentary clash of the melody (E-D) with the supporting harmony, thereby setting off the particular name.

GUIDELINES FOR USING THE ANALYTICAL SYMBOLS

$\hat{5}$	A caret (^) placed over an arabic number denotes a scale degree.
	Black note-heads with stems represent more important or essential melodic tones.
	Black note-heads without stems represent less essential tones.
//	An interruption sign denotes a break in the long-range tonal movement toward $\hat{1}$, usually occurring after scale degree $\hat{2}$.

Terms and Concepts for Review

tonic
tonality
major mode
scale
scale degree/scale step
  tonic
  dominant
  mediant
  subdominant
  submediant
  leading tone
  supertonic
  subtonic
transposition
melodic minor scale
harmonic minor scale
natural minor scale
key
key signature
circle of 5ths
relative major and minor keys
parallel major and minor keys
tendency tone
phrase
phrase periodicty
inconclusive cadence
conclusive cadence

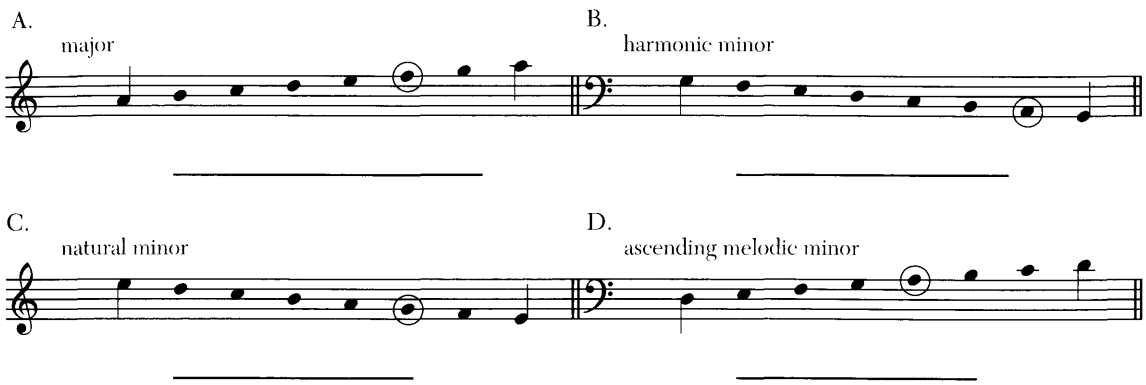
A BRIEF REVIEW SELF-QUIZ

1. Supply the correct signatures for the following keys.

Example 3.21

2. A. Add accidentals to the natural scales in Example 3.22 to produce the indicated scale; the tonic is stemmed.
B. Write in the correct key signature for each scale.
C. Identify the name of the circled scale degree in the provided space.

Example 3.22



3. Here is a brain-teaser on key signatures and scale degrees for you to fill out. You may wish to refer to graphs or charts in this chapter.

Multiply the number of accidentals in the key signature of D major by the number of accidentals in the key signature of F minor (__ × __ = __). Divide this by the number that represents the subdominant scale degree (__ ÷ __ = __). Now add to this the number of different scale degrees in a major scale (__ + __ = __). Finally, subtract from this the number of accidentals in the key signature of the relative minor of B major (__ − __ = __). Your answer should equal the number of accidentals in the key signature for the parallel major of E minor.

4. In the two melodies shown in Example 3.23, the phrases are denoted with slurs. Provide the following information about the tunes:

A. The key and mode (major or minor) of each tune.
B. The number of measures in each phrase.
C. The type of cadence that ends each phrase. Use C for conclusive, LC for less conclusive, and IC for inconclusive.
D. Circle and provide the scale degree numbers for the framing pitches—the first and last two notes—of each phrase, disregarding upbeats. Do you note any similarities between the two melodies? You may also wish to check for evidence of any other melodic goals, such as long-range stepwise motion.

Example 3.23

A. "MARTYRDOM" (HYMN TUNE)

B. HUNGARIAN FOLK TUNE

CHAPTER 4

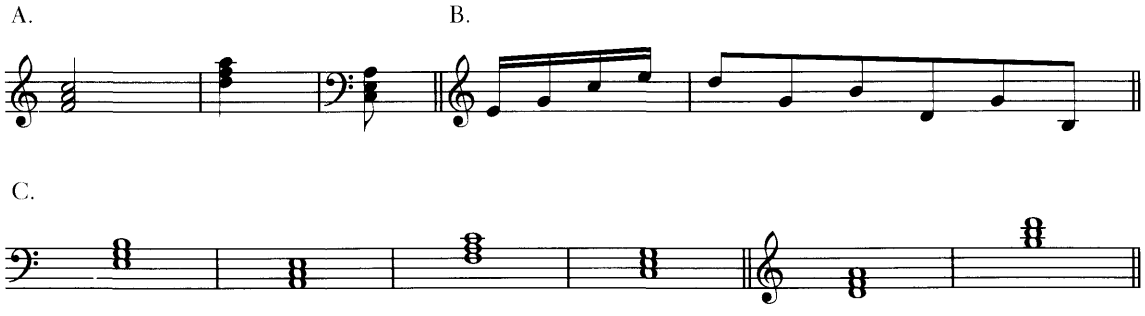
Triads and Seventh Chords

IN THE PREVIOUS CHAPTER we examined some general characteristics of melody. We will now turn our attention to harmony—that is, the study of vertical sonorities in music. Most of this text is concerned with the way harmony operates in tonal music. However, before we can understand the forces that underlie harmonic functions and progressions, we must begin with a consideration of the individual sonorities or chord types that make up our harmonic resources. In this chapter we will focus on several of these introductory topics: (1) chord types consisting of three or four different pitch classes (triads and seventh chords), (2) the spelling of these chords and their notation, (3) chord inversions, and (4) two forms of chordal shorthand—commercial chord symbols and figured bass symbols. The chords in this chapter will be confined to their most compact form and written on a single staff. We will incorporate the grand staff in Chapter 5 when we begin to explore how the members of chords can be distributed.

Root-Position Major and Minor Triads

A **chord** may be defined as three or more pitch classes performed at the same time (Example 4.1a). A chord implied by playing two or more disjunct intervals one after the other is called an **arpeggio** or **broken chord** (Example 4.1b). Tonal music shows a strong preference for **tertian chords,** in which chords are built up of consecutive major and minor thirds above the bottom note, or **root.** A tertian chord consisting of three different pitch classes is called a **triad.** Some white-key triads constructed on various roots appear in Example 4.1c.

Example 4.1



The most common triads consist of two intervals, each of which forms a consonant relation to the bottom note or root. For instance, above C we may add a major 3rd and a perfect 5th (C E G), resulting in a **major triad.** Or we may add a minor 3rd and a perfect 5th above C (C E♭ G), resulting in a **minor triad.** The consonant major or minor triad derives its name from the type of third above the root. When the root of a triad is in the bottom or bass voice, we say that the triad is in **root position.** All of the triads in Example 4.1c are in root position; below each chord indicate whether it is a major or minor triad, using **M** for major and **m** for minor.[1]

Musicians have employed various abbreviations or symbols as a quick way of indicating chords. One of these in current use today, **commercial** (or **"pop"**) **chord symbols** of the kind found in keyboard and guitar arrangements of popular songs, provides us with a handy way of indicating root-position triads. Since no one standard system of commercial chord symbols exists, in some cases the text will supply several alternatives; your instructor will indicate which you are to use. In commercial chord symbols, a capital

1. Your chord types should read m m M M m M.

letter denotes a major triad (C, E♭ F♯, and so on). A minor triad is denoted by a capital letter followed by either a minus sign (-) or a lowercase "m" (C-, E♭-, or F♯m, Dm, and so on).[2] Typical examples are shown in Example 4.2.

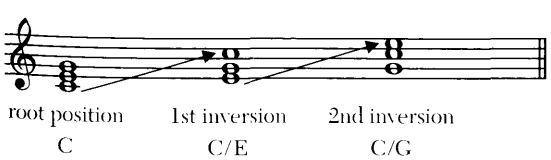
Example 4.2

INVERSIONS OF MAJOR AND MINOR TRIADS

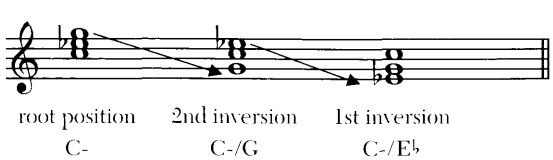
Just as we have inverted harmonic intervals or dyads by placing one pitch an octave around the other, we can also invert triads in a similar way: by placing their bottom note an octave higher or their top note an octave lower. The **triad inversions** that result are illustrated in Example 4.3. Taking the C major triad as an example, each chord member of the triad (root, 3rd, or 5th) may appear in the lowest voice or bass. Putting the chord root, or C, in the bass produces a **root-position triad**; putting the chordal third, or E, in the bass produces a **first-inversion triad**; and putting the chordal fifth, or G, in the bass produces a **second-inversion triad.** The location of chord members in the voices *above* the bass does not affect the triad's inversion. The commercial symbols for triad inversions appear below the chords in Example 4.3. The chord type is written first, followed by a slash and the bass note; if the chord type appears alone, without a bass note, assume root position. Thus, "C" means a C major chord in root position; "C/E" means a C major chord in first inversion, with E in the bass; and "C/G" means a C major chord in second inversion, with G in the bass. The symbols for the C minor chords work in exactly the same way.

Example 4.3

A. MAJOR TRIAD



B. MINOR TRIAD



2. The use of the minus sign to denote a minor triad (D-) is more common today than the older use of a small "m" following the capital letter (Dm).

Because of the strength of the acoustically perfect 5th above the root, root position is the most stable and consonant form of a major or minor triad. The other inversions are less stable, since the root now appears in an upper voice. In first inversion, the pitches that form intervals above the bass are both consonant with the bass note (a 3rd and a 6th). In second inversion, however, one of the intervals is a dissonant 4th.

Diminished and Augmented Triads

Example 4.4 illustrates the two other tertian triads that occur in tonal music.

Example 4.4

A. Diminished triad

B. Augmented triad

In both diminished and augmented triads, the stable perfect 5th above the root is now altered by one half step, forming either a diminished or an augmented 5th. The **diminished triad** contains a minor 3rd and a diminished 5th above the root, taking its name from the diminished 5th that replaces its perfect counterpart in the minor triad. As a result, the sense of root stability is much weaker, making it more difficult to recognize which note is the root by just hearing the triad. The diminished triad is traditionally found in first inversion; in its other inversions, a dissonant tritone occurs between the bass and one of the upper notes (Example 4.4a).

The **augmented triad** contains a major 3rd and an augmented 5th above the root; it may be found in root position or first inversion. Since its two consecutive major 3rds divide the octave into three equal parts, the augmented triad conveys little or no aural sense of root (Example 4.4b). As a result, its inversions sound identical to each other except for their pitch level, and any of its tones could be seen to function as its root. Because this sonority occurs so rarely in diatonic tonal music, we will reserve its discussion until Chapter 32.

In commercial chord symbols, the diminished triad is represented by a capital letter followed by a superscript circle (B° = B D F); an augmented triad is represented by a capital letter followed by a superscript small plus sign (C^{+} = C E G♯). As before, the inversion is denoted by a pitch class that follows the triad symbol and a slash ($B\flat^{+}/D$ = first inversion of a B♭ augmented triad); see Example 4.4.

Triad Spelling and Notation

Musicians use the following methods to spell root-position triads. The resultant chord tones can then be rotated to obtain the various inversions.

1. To spell a **major triad,** construct a major 3rd and a perfect 5th above a given root. Thus E♭ G B♭ is an E♭ major (E♭) triad.
2. To spell a **minor triad,** construct a minor 3rd and a perfect 5th above a given root. Thus B D F♯ is a B minor (B-) triad.
3. To spell a **diminished triad,** construct a minor 3rd and a diminished 5th above a given root. Thus A C E♭ is an A diminished (A°) triad.
4. To spell an **augmented triad,** construct a major 3rd and an augmented 5th above a given root. Thus G B D♯ is a G augmented (G+) triad.

You will find some spelling drills on the various triads at the end of this chapter and in Chapter 4 of the accompanying Workbook.

Figured Bass

Another form of chordal shorthand symbols arose much earlier in music history, about 1600. To indicate what chords to play, musicians used numbers to represent the appropriate intervals above the bass note. This practice of **figured bass,** or **thoroughbass,** was a hallmark of the Baroque period, the era of Bach and Handel. Example 4.5 shows a typical keyboard part from that period; the notes in the treble staff indicate what the performer would add to the given figured bass.

Example 4.5

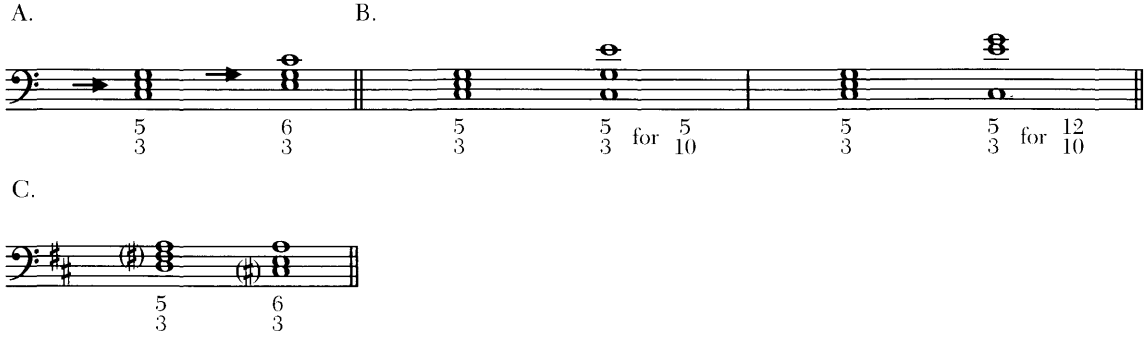
The player was expected to play, or realize, the harmonies from the bass line and numerical symbols, in much the same way that a jazz pianist or guitarist realizes the chords when given the commercial chord symbols on a

leadsheet.[3] In harmony manuals written after the Baroque period, these intervallic symbols came to indicate both chords and melodic motion in the voices above the lowest or bass part.

When learning the various figured-bass numerals, remember:

1. The numbers always refer to the intervals *above the bass.* They must *not* be confused with chord members (root, 3rd, or 5th). The 3 of the figured-bass symbol $\frac{6}{3}$ represents the note a 3rd *above the bass,* not the 3rd above the root of the chord. If the bass note is E, "3" refers to the chordal 5th (G), rather than E (Example 4.6a).
2. Compound intervals are treated like simple intervals. Therefore you cannot tell from a figured-bass symbol whether it stands for a simple interval (less than an octave) or a compound interval (more than an octave). A "3" can stand for either a 3rd or a 10th (an octave and a 3rd), and a "5" can stand for either a 5th or a 12th (an octave and a 5th). You must determine which octave register is appropriate by the context of the other voices above the bass; see Example 4.6b.
3. Chords realized from the figured bass are always affected by the key signature. In the key of D major, the spelling of all chords above the bass will assume the F♯ and C♯ that appear in the key signature. Likewise, all accidentals affecting the bass note will obviously affect that same pitch class in notes above the bass (Example 4.6c).

Example 4.6



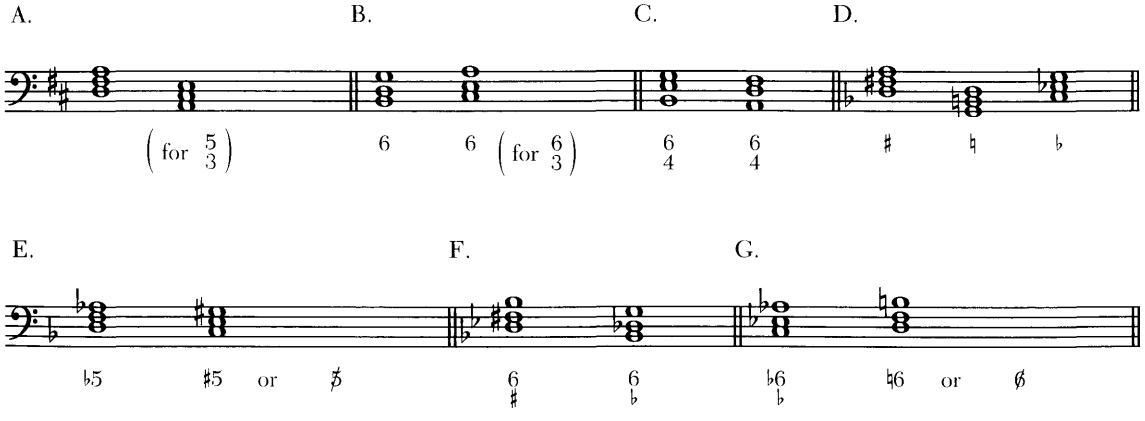
The complete figuration for triads is $\frac{5}{3}$ (root position), $\frac{6}{3}$ (first inversion), and $\frac{6}{4}$ (second inversion). These figurations are usually abbreviated, so that root-position triads do not require any figures at all, and first-inversions triads are usually denoted by the digit 6. However, it is necessary to use both numbers ($\frac{6}{4}$) for the second inversion (Examples 4.7a through c).

3. A leadsheet customarily provides only the melody and chord symbols for a popular song.

On occasion the intervals above the bass may contain accidentals not found in the key signature. In such cases the figured-bass symbols must make it clear what these alterations are.

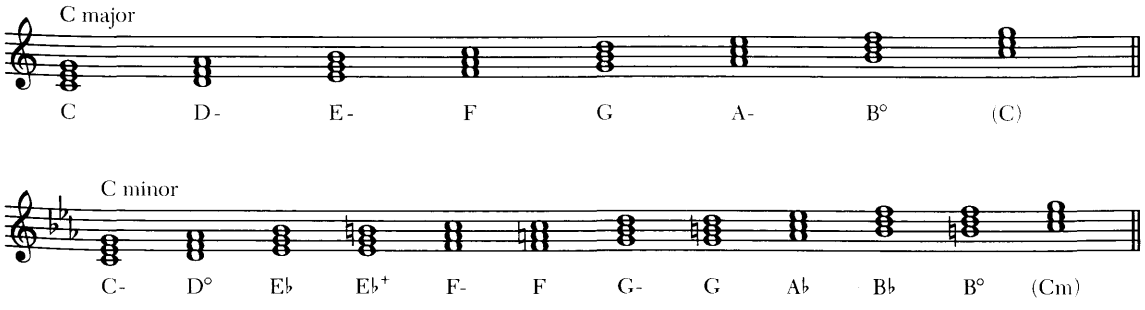
1. If the 3rd above the bass is affected by an accidental, a single ♯, ♭, or ♮ denotes the chromatic alteration (Example 4.7d).
2. With all other intervals, the accidental is placed before the interval, such as a ♭5, ♮5, and ♯5, or a ♭6, ♮6, and ♯6. In cases where the interval is raised a half step, a slash mark through the interval is often used, such as 7̸ or 6̸ (Example 4.7e through g).

Example 4.7



Example 4.8 summarizes the various diatonic triads and their commercial chord symbols in C major and minor.

Example 4.8



SEVENTH CHORDS

If we view chords as intervals constructed over the lowest voice, as represented in thoroughbass figuration, there are only six triads whose pitches form exclusively consonant intervals above the bass. These are the major and minor triads in root position and first inversion, and diminished and augmented triads in first inversion only. These consonant triads formed the basis for harmonic composition in Western music from about 1400 to 1650. During the late Baroque period, however, the tertian structure of the triad was extended beyond the 5th to the 7th above the root. Such sonorities were called **seventh chords.** Since the chordal 7th of a seventh chord is a dissonant harmonic interval above the root, we must approach it and leave—or resolve—it with special care, a task we will discuss in detail in Chapter 10.

There are five types of seventh chords found in the music of the common-practice period. In identifying and labeling the various forms of seventh chords, we place two prefixes before the 7. The first denotes the type of triad; the second denotes the size of the intervallic 7th above the root. For instance, MM7 indicates that the underlying triad is a major triad (the first capital M) with an added major 7th (second capital M7), whereas mm7 indicates that the underlying triad is a minor triad (first lower case m) with an added minor 7th (second lower case m7). However, these complete labels are usually abbreviated or commercial symbols are substituted; notice that in commercial chord symbols the 7 always appears as a superscript (E^7). The various root-position seventh chords are arranged in decreasing size in Example 4.9, using E as a common root.[4] The complete title appears above each sonority, and its abbreviated form and commercial symbol are listed below. Consult this chart while examing the following types of seventh chords.

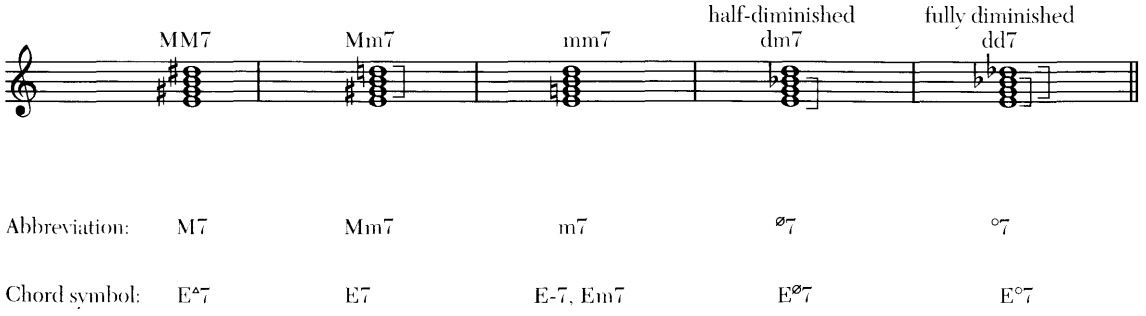
1. **The major seventh chord** (MM7) is abbreviated as M7 or in commercial chord symbols as either an $E^{\Delta 7}$ or an E^{M7}.
2. **The major-minor seventh chord** (Mm7) remains the same (Mm7), but in commercial chord symbols it appears as an E^7.
3. **The minor seventh chord** (mm7) is abbreviated as either m7 or -7. In commercial chord symbols it is Em^7 or $E\text{-}^7$.

4. Using E as the root allows us to spell all the seventh chords without having to use double sharps or double flats.

4. The diminished-minor seventh is usually called a **half-diminished seventh chord** (dm7); it is abbreviated as a ø7 and appears in commercial chord symbols either as E^{ø7} or Em^{7}♭5).
5. The diminished-diminished seventh is usually called a **fully diminished** or simply a **diminished seventh chord.** It is abbreviated as a °7 and appears in commercial chord symbols either as E$^{°7}$ or Edim^{7}.

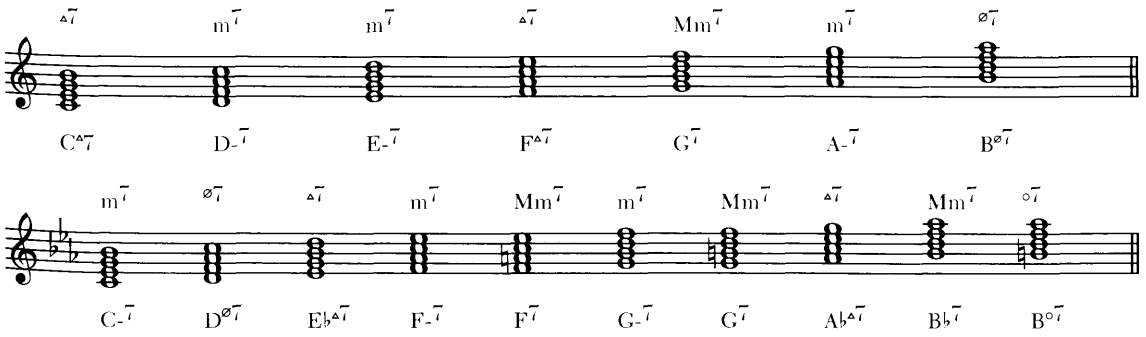
Since the absence or presence of tritones in the various seventh chords is crucial to their identity and function, we have bracketed the chordal tritones as well.

Example 4.9



Example 4.10 lists the various diatonic seventh chords in C major and minor with both their abbreviations and commercial chord symbols.

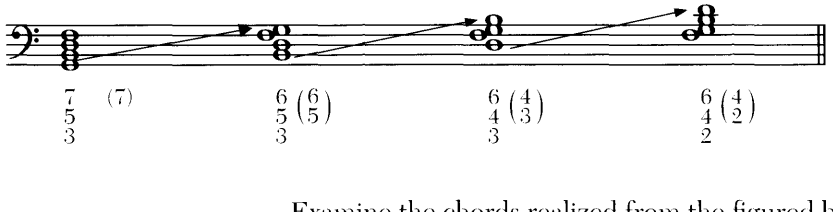
Example 4.10



Inversions of Seventh Chords

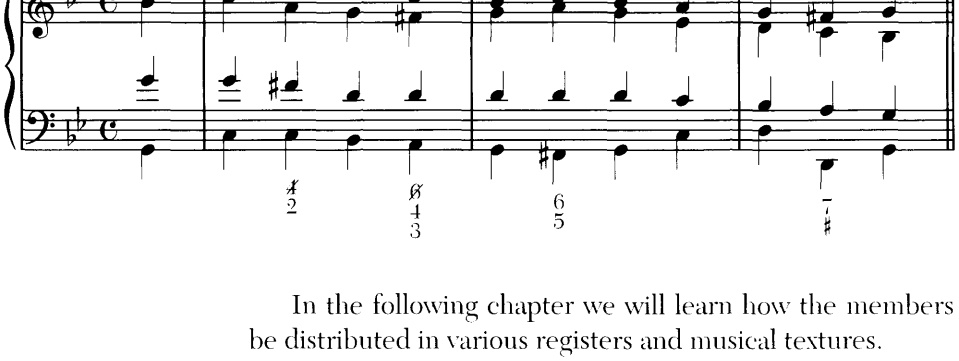
When we rotate the four chordal members of a seventh chord, they produce not two but three different inversions. Figured-bass numbers for seventh chords, like those for triads, denote the intervals above the bass voice, and employ appropriate symbols, such as accidentals or a slash, for altered intervals. These four inversions are shown in Example 4.11 with their complete figured-bass symbols; the standard abbreviations shown in parentheses are as follows: 7 = root position, $\frac{6}{5}$ = first inversion, $\frac{4}{3}$ = second inversion, and $\frac{4}{2}$ = the third inversion, with the seventh of the chord in the bass voice. The stability of these chords weakens as we move through the higher inversions.

Example 4.11



Examine the chords realized from the figured bass in Example 4.12, paying particular attention to the seventh chords, both root position and inversions, that are marked with downward arrows. Remember that a slash through a digit raises the pitch a half step, and a solitary accidental alters the third above the bass.

Example 4.12



In the following chapter we will learn how the members of chords may be distributed in various registers and musical textures.

Terms and Concepts for Review

chord
tertian chord
triad
major triads
minor triads
root (of a chord)
root position
commercial chord symbols
triad inversions
first inversion
second inversion
diminished triads
augmented triads
figured bass *or* thoroughbass
seventh chords
  major seventh chord (M7)
  minor seventh chord (m7)
  major-minor seventh chord (Mm7)
  half-diminished seventh chord ($^{\varnothing}7$)
  fully diminished seventh chord ($^{\circ}7$)
third inversion

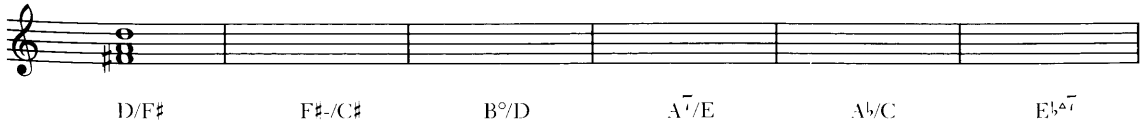
A BRIEF REVIEW SELF-QUIZ

1. Indicate the chord type and inversion of each triad in Example 4.13, using commercial symbols; the first two will serve as a model.

Example 4.13

2. Write out the chords indicated by the pop symbols in Example 4.14, noting any indicated inversions. Use the given chord as your model.

Example 4.14



3. Using the figured-bass passages in Example 4.15, spell each triad to yourself and indicate the chord type and inversion with commercial chord symbols; the first two will serve as a model.

Example 4.15

A.

B.

CHAPTER 5

Musical Texture and Chordal Spacing

IF YOU LISTEN CAREFULLY to an orchestral composition, you will notice a network of relationships involving a variety of musical elements. These elements include not only particular combinations of pitches and rhythmic patterns but also density, range, timbre, dynamics, and doublings. These relationships, which combine to produce what we call musical **texture,** may be compared to a woven fabric—its thread, color, tactile properties, density of weave, and interplay of patterns. In this chapter we will address the basic textures produced by the interaction of voice parts in a music passage, the spatial arrangement of pitches in chords (chord structure), and choosing pitches to double.

Basic Categories of Texture

The interactions between separate voice parts produce three basic types of texture: monophonic, homophonic, and contrapuntal.

1. **Monophonic texture**—that is, a single-line melody with no accompanying parts—is rather rare in the music of the common-practice period. Most passages of monophonic texture are brief and tend to occur either

at the opening of a composition or at a later climactic point. The Sibelius symphony begins with a single clarinet (Example 5.1a); the opening of the Borodin symphony makes use of octave doubling (Example 5.1b).

Example 5.1

A. SIBELIUS: SYMPHONY NO. 1, I

B. BORODIN: SYMPHONY NO. 2, I

2. In music with more than one voice or part, we tend to direct our attention to a single prominent melodic line, the textural foreground, and relegate the other parts to secondary status, the textural background. This relationship between foreground and background is typical of **homophonic texture.** There are two types of homophonic texture. In **chordal** or **homorhythmic texture,** all the voices proceed in the same rhythm. We normally focus on the uppermost or soprano part as the foreground melody (Example 5.2a). However, the leading melodic line may occasionally appear in an inner voice or the bass. Examine the two passages from Handel's *Messiah* (Example 5.2b and c); in the second passage, which voice has the melody that the soprano has in the first passage?[1]

Example 5.2

A. BIZET: FARANDOLE FROM *L'ARLÉSIENNE* SUITE NO. 2

1. The bass voice.

B. HANDEL: 4. "AND THE GLORY OF THE LORD" FROM *MESSIAH*

C. HANDEL: "AND THE GLORY OF THE LORD"

In Example 5.3 Bach has taken a series of block chords and arpeggiated the harmonies with a consistent figuration, producing a kind of **figured chordal texture.** The autograph manuscript of this prelude shows that Bach wrote out the complete figuration for only the first few measures and then simply provided the block harmonies for the remainder of the piece. Although the sense of a real melody is weakened by the continual arpeggiation, we tend to hear the upper notes of the broken chords as the principal melodic line.

Example 5.3

BACH: PRELUDE IN C MAJOR FROM *THE WELL-TEMPERED CLAVIER*, BOOK I

In the second type of homophonic texture, called **melody and accompaniment,** the foreground melodic line or melody is set apart both rhythmically and spatially from the background or accompaniment. Example 5.4a illustrates a typical example of this texture, in which a simple tune with its own rhythmic pattern occurs above a succession of chords that employs a different rhythmic pattern. In Example 5.4b the melody that Gounod added to Bach's Prelude relegates the original arpeggiation to an accompanimental role.

Example 5.4

A. BIZET: FARANDOLE

B. BACH-GOUNOD: "AVE MARIA"

3. **Contrapuntal texture** consists of the simultaneous combination of melodic lines. The term *polyphonic texture* is often used synonymously with *contrapuntal texture,* but *polyphonic* is a more general term, describing any music that features many voices. In contrapuntal texture, each voice retains its own melodic contour and rhythmic identity, producing a web of interweaving parts. Rather than concentrating on a single line, the listener tends to switch back and forth between those parts of greater melodic or rhythmic interest. Example 5.5a illustrates a contrapuntal combination of the two tunes from Examples 5.2a and 5.4a. This technique of combining different contrasting melodic ideas is sometimes called **free counterpoint.** Example 5.5b presents the theme from Example 5.2a in strict **imitation,** where the theme in one voice part is immediately restated in a different voice part, usually at the octave or 5th.[2]

2. Since counterpoint is the most sophisticated form of music texture, it is often treated as a separate topic from harmony. Appendix 3 provides a brief introduction to the study of Species Counterpoint, although it cannot hope to do justice to this complex topic. For additional information, the student should consult a current counterpoint text.

Example 5.5

A. BIZET: FARANDOLE

B. BIZET: FARANDOLE

The succession of different textures found in the Farandole from Bizet's *L'Arlesienne* Suite No. 2 provides an excellent review of the preceding discussion. Listen to the entire movement on the accompanying CD-ROM and see if you can identify the various types of texture as they appear in the music.

Summary of Textures

1. **Monophonic**—single-line melody
2. **Homophonic**—many voices, one prominent melody
   chordal or **homorhythmic**—all voices move together
   melody and accompaniment—prominent melody with supporting chords
3. **Contrapuntal (polyphonic)**—combination of many melodic lines

STRICT VS. FREE TEXTURE

Some compositions display a **strict texture,** in which a specific number of separate voice parts are retained throughout. Pieces in strict texture are notated in such a way that each voice is carefully separated from the others by means of its own rests and stemming. Thus we can follow each voice individually throughout the piece, and we are always conscious of the number of

voices. An example of strict texture appears in Example 26.14. Thus, we speak of a two-part invention, a three-part fugue, or a four-part chorale setting.

Other compositions display a **free-voiced texture,** in which the number of parts is not consistent. We can find such textures in much of the instrumental music of the Classical period. In a typical Mozart piano sonata, for instance, a phrase may begin in two-part texture but conclude with a cadence in four voices. (See, for instance, Example 24.9.) In both strict and free texture, we must always be mindful of the actual number of parts in a passage. What may seem to be a six-voice texture, for example, could actually consist of only three individual lines, each doubled at the octave.

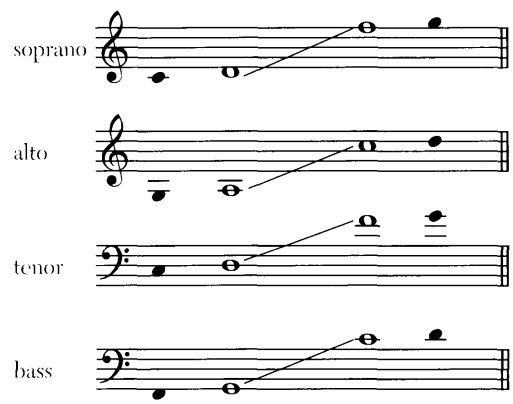
Now let us turn our attention to **chord voicing**—that is, the distribution of chord members among a specified number of voices. After first concentrating on the spacing and doubling of chord members in four-voice texture, we will examine the ways in which complete triads may be implied or suggested through the use of only two voices. All the examples that follow are chordal, note-against-note settings.

Four-Voice Texture

Since the eighteenth century, music theorists have preferred chordal four-voice examples for illustrating basic harmonic progressions. This preference is supported by a vast amount of four-voice music literature. Some familiar media using four-voice texture are the choir (soprano, alto, tenor, and bass), and the string quartet or string section of the orchestra (violins 1 and 2, viola, and cello/bass).

When writing choral music, we must consider the appropriate range of each vocal part. The normal range of the different voices is shown between the white noteheads in Example 5.6; the outer fringes of the ranges are indicated by black noteheads.

Example 5.6



In an *open* or *full score* each voice part has its own staff. The treble clef (𝄞) employed by the tenor voice always implies that the notes sound an oc-

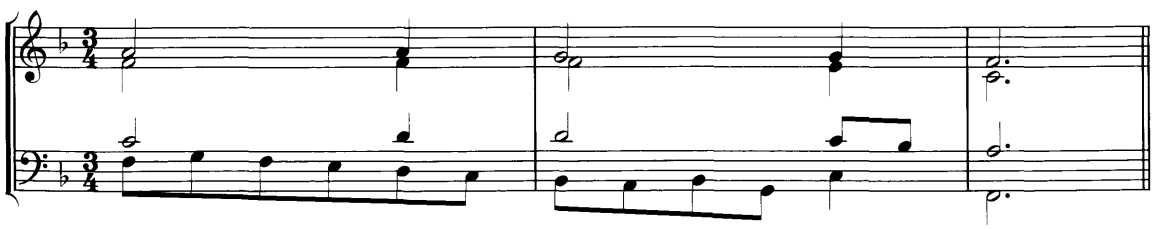
tave lower than in the standard treble clef. Most of the choral four-voice examples in this text employ a *condensed score,* in which the soprano and alto parts are written on the treble-clef staff and the tenor and bass parts on the bass-clef staff. Each voice retains its own individual stemming.

The register span for instruments is usually wider than vocal ranges. In four-voice *keyboard style,* the three upper voices for the right hand are written in the treble-clef staff with a common stem for all three notes, while the bass for the left hand is written in the bass clef. In Example 5.7 a short passage is written first in full score (5.7a), then in condensed score (5.7b), and finally in keyboard style (5.7c). All the remaining examples in this chapter will be written in condensed score on the grand staff.

Example 5.7

A. FULL SCORE

B. CONDENSED SCORE



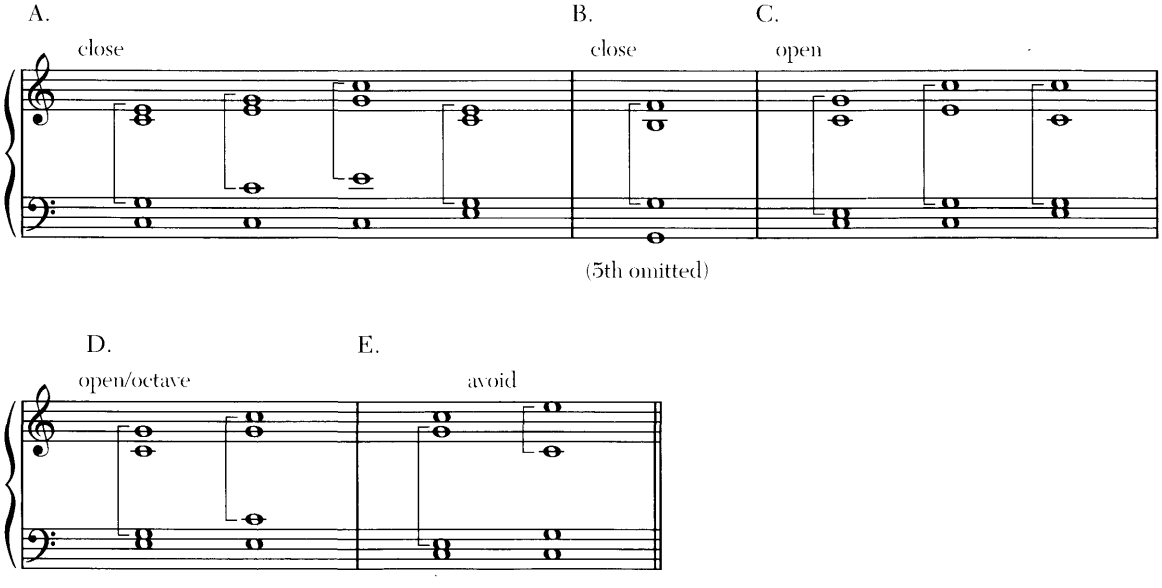
C. KEYBOARD STYLE

Chordal Spacing in Four-Voice Texture

There are several standard methods of distributing the members of a four-voice chord. These chord structures are distinguished by the intervallic distance between the soprano and tenor parts.

1. In **close structure** (abbreviated as C), there is less than an octave between the soprano and tenor. In most situations, consecutive chord members are simply arpeggiated downward from the soprano (Example 5.8a). However, when the chordal 5th is omitted in certain root-position seventh chords, a chord member may be missing between the adjacent upper voices (Example 5.8b).
2. In **open structure** (abbreviated O), there is more than an octave between soprano and tenor. At least one chord member is usually missing between adjacent voices (Example 5.8c).
3. First-inversion triads often exhibit exactly an octave distance between soprano and tenor, resulting in an octave doubling of the soprano note (Example 5.8d). We designate this spacing as **open/octave** (abbreviated as O/O), sometimes called **neutral structure.**
4. The distance between consecutive upper voices (soprano to alto and alto to tenor) should not exceed an octave (Example 5.8e). On the other hand, no restriction is placed on the distance between the tenor and bass.

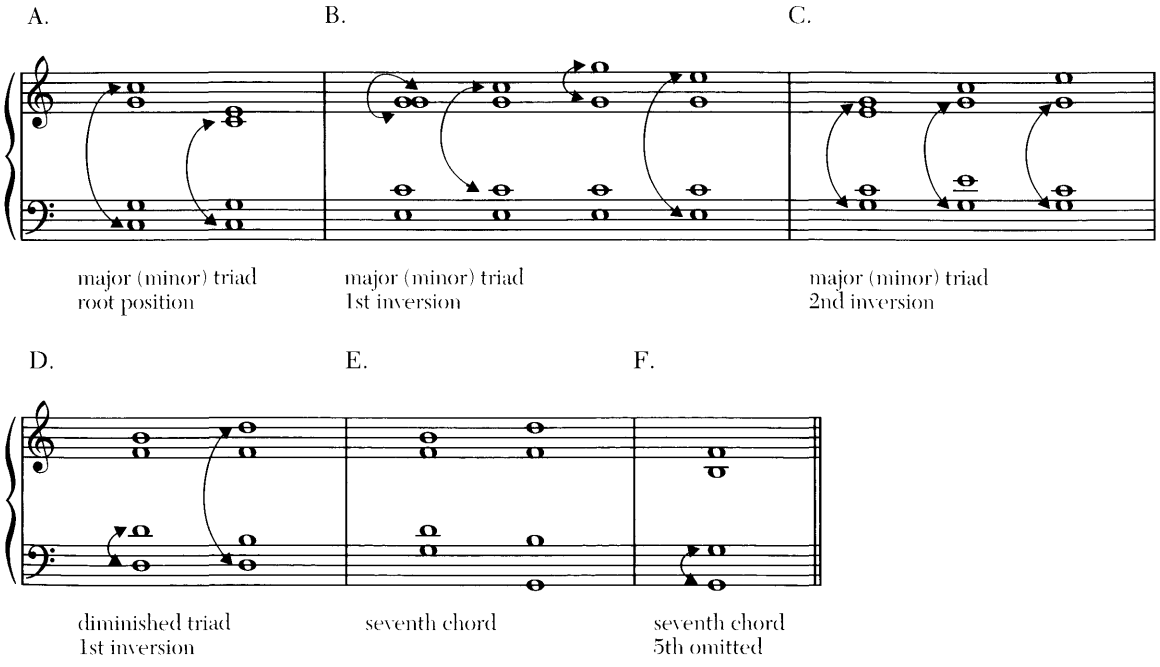
Example 5.8



Doubling in Four-Voice Chords

Since there are four voice parts but only three chordal members or chordal tones, triads in four-voice texture always present issues of doubling. One chord member must always be doubled, either at the unison or at the octave. The following suggestions reflect the most frequent doublings found in music of the common-practice period. The doubled notes are bracketed with arrows in Example 5.9. As we will see later, other choices may be called for in certain harmonic contexts.

Example 5.9



1. In root-position *major and minor triads*, double the pitch class that appears in the bass voice, thus doubling the root of the triad (Example 5.9a).
2. In first-inversion *major and minor triads*, double the pitch class that appears in the soprano voice, regardless of which chord member it represents (Example 5.9b).
3. In second-inversion *major and minor triads*, double the pitch class that appears in the bass, the chordal 5th of the triad (Example 5.9c).
4. In first-inversion *diminished triads*, their most common form, double the pitch class that appears in the bass, the chordal third (Example 5.9d).

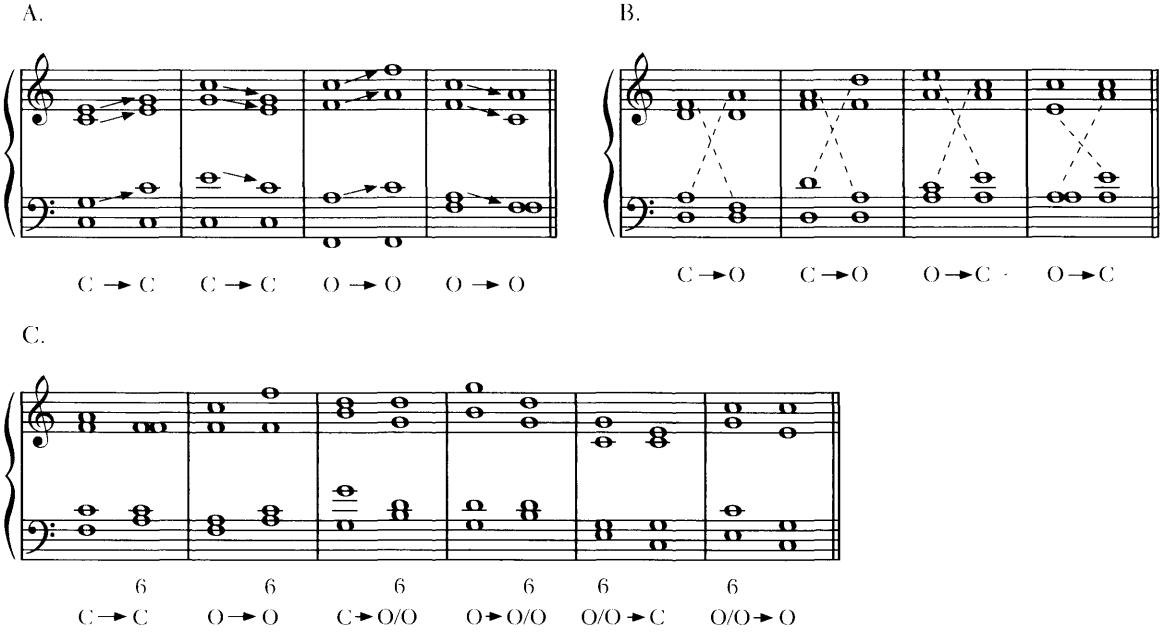
5. In *seventh chords*, assign each of the four different pitch classes a separate voice part (Example 5.9e). On occasion the chordal 5th may have to be omitted and the root doubled (Example 5.9f).

During our study of harmony in Part Two, we will modify some of these suggestions for doubling, depending on the progression and chordal context.

Voice Movement within the Same Triad

In four-voice harmonic progressions, the manner in which the individual voice parts move from chord to chord is called the **partwriting** of the passage. While we will not begin a systematic study of partwriting until Chapter 9, we can gain some preliminary skills in this area by manipulating voices within different inversions of the same triad. These preparatory exercises will increase our ability to use various chordal spacings or structures and doublings of chord members.

Example 5.10



1. When we change positions of a root-position triad, we can either retain or change the structure. When we retain close or open structure (Example 5.10a), the upper three voices move in the same direction

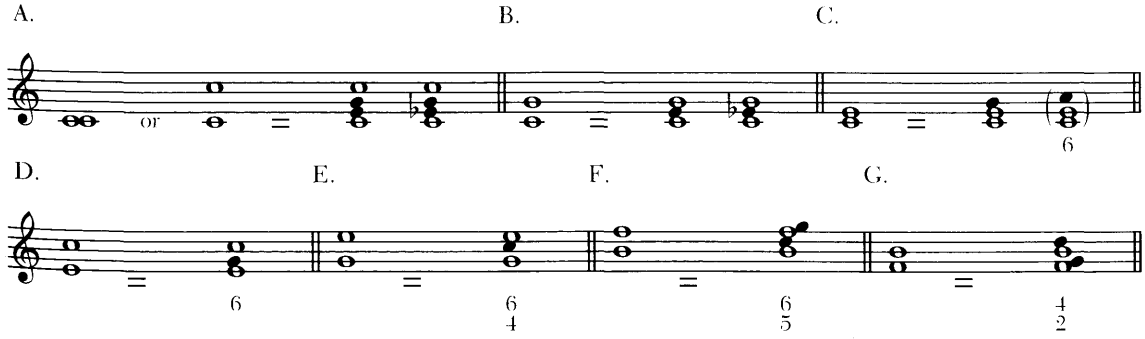
and the same number of chordal members. In other words, if the soprano moves up one chord member, then the alto and tenor do likewise.

2. When the structure of a root-position triad changes from close to open (or open to close), as in Example 5.10b, two of the three upper voices will exchange tones (indicated by the dotted lines), while the third voice retains a common tone.
3. When moving from a root-position to a first-inversion triad or vice versa (Example 5.10c), the first-inversion chord may exhibit open/octave structure. Remember that the soprano is normally doubled at the unison or octave in first-inversion triads. In some of the examples in 5.10c above, the soprano retains a common tone, while in others the two outer parts move to different chord tones.

Chordal Implication in Two-Voice Texture

Extended passages of two-part texture are frequently encountered in music of the common-practice period—for instance, numerous pieces in the Baroque era (such as Bach's Two-Part Inventions), or in a jazz group when a trumpet and bass perform without piano or guitar accompaniment. Since harmonic dyads contain only two potential chord members, triads and seventh chords must be *implied* in two-voice texture. A summary of these chordal implications is supplied in Example 5.11, where the black note-heads represent those pitches that complete the implied chord. You may wish to use this example as a reference when dealing with two-part texture.

Example 5.11

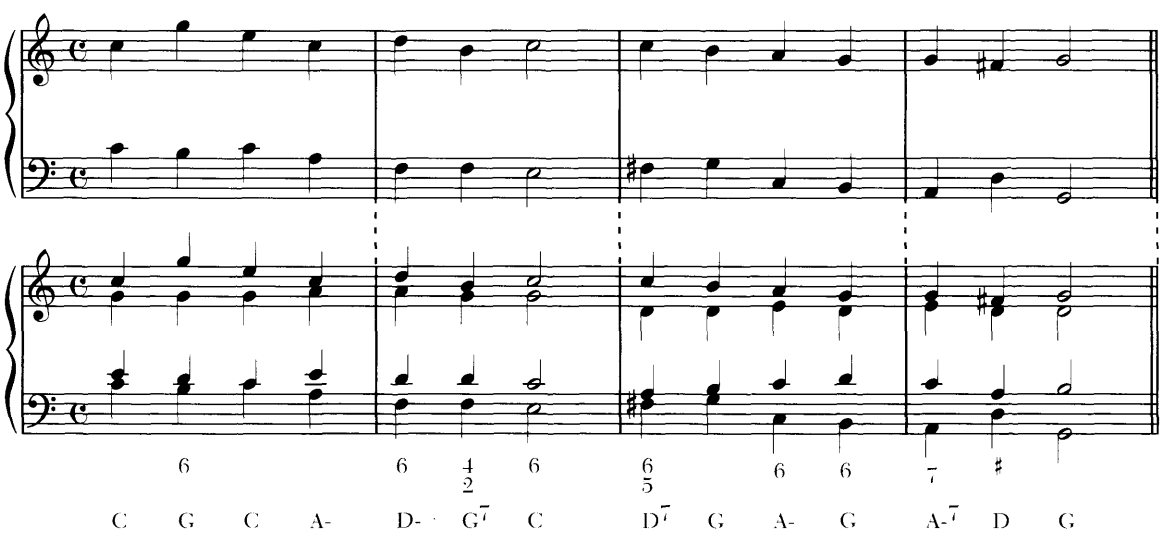


Summary of Chordal Implication in Two-Voice Texture

1. The unison or octave almost always suggests the root of a triad. It usually occurs at the opening or final cadence of a phrase (Example 5.11a).
2. A perfect 5th implies a root-position triad through its root and chordal 5th. The missing 3rd must be supplied by the tonal context (Example 5.11b).
3. The most common intervals in the middle of a phrase are the imperfect consonances of 3rds and 6ths. Thirds normally imply root-position triads (root and chordal 3rd), although on occasion they may suggest first inversions (3rd and 5th); see Example 5.11c.
4. Sixths usually suggest triadic first inversions through their 3rd and root (Example 5.11d). However, a 6th made up of scale degrees $\hat{5}$ and $\hat{3}$ can also imply a second-inversion sonority or $^{6}_{4}$ (Example 5.11e).
5. Seventh chord implications in two-voice textures usually involve two inversions of the major-minor 7th (or dominant 7th). A diminished 5th (chordal 3rd and 7th) suggests a $^{6}_{5}$ or first inversion, while an augmented 4th (chordal 7th and 3rd) suggests a $^{4}_{2}$ or third inversion (Example 5.11f).

Carefully study the short two-voice passage in Example 5.12, which is supplied with both traditional figures and commercial chord symbols. Identify the chordal members in the two-part version.

Example 5.12



Terms and Concepts for Review

texture
monophonic texture
homophonic texture
  chordal *or* homorhythmic
  melody and accompaniment
contrapuntal texture
imitation
strict texture
free-voiced texture
full score
condensed score
keyboard score
chordal voicing
close structure
open structure
open/octave structure
partwriting
chordal implication in two-voice writing

A BRIEF REVIEW SELF-QUIZ

1. Match the following, letter to number:

1. Imitation	a. less than an octave between soprano and tenor
2. Close structure	b. a type of contrapuntal texture
3. Homophonic texture	c. the soprano voice
4. Usual doubling in root position	d. implies $\frac{6}{5}$ of a seventh chord
5. Diminished fifth	e. the bass voice or root
6. Usual doubling in first inversion	f. chordal/melody-accompaniment

2. The original melodic passage in Example 5.13A has been reset in five different types of musical texture. Identify each in the provided space.

Example 5.13

A.

B.

C.

D.

E.

F.

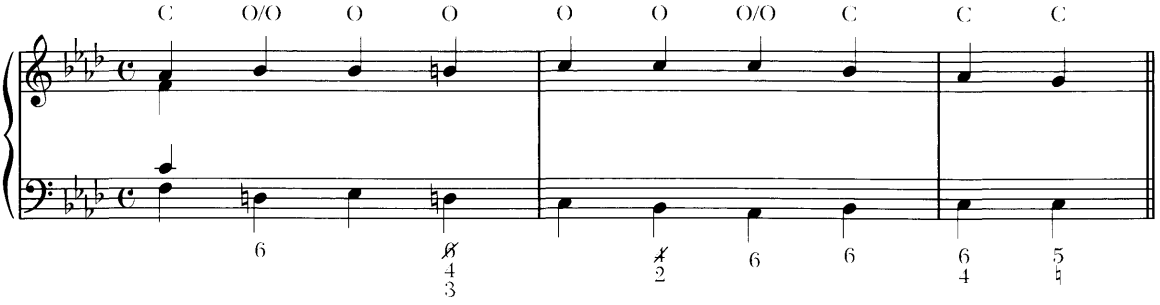
3. Identify each triad in Example 5.14, indicating its chord/inversion (in commercial chord symbols), its chord structure (use abbreviations C, O, or O/O), and its doubling. The answers have been supplied for the first chord.

Example 5.14

chord/inv.	F–								
structure	C								
doubling	bass								

4. In Example 5.15, write out each chord in four-voice texture, according to the figured-bass symbols (positioned below each chord) and chord structure (positioned above each chord). The first one has already been completed for you.

Example 5.15



CHAPTER 6

Partwriting in Four-Voice Texture

In Chapter 3 we introduced some basic concepts about melodic lines and concluded with analyses of several tunes that demonstrated long-range tonal connections. In the present chapter we will return to this topic, first discussing some characteristics of good melodic writing in the common-practice period and then enumerating some features of questionable melodic writing that we wish to avoid. We will then apply these principles to the individual melodic voice parts in four-part texture, focusing on both single-line melodic writing and on the intervallic motion or interaction between several parts. In addition, other aspects of partwriting, such as spacing and doublings, will be examined.

Criteria for Melodic Writing

Although it is impossible to formulate a set of rules that will guarantee the composition of a good melody, we can list some stylistic characteristics of acceptable melodic writing in the common-practice period. These include:

1. A preference for stepwise motion, with occasional use of melodic leaps, mainly 3rds and 4ths, with 5ths, 6ths, and octaves occurring less

often. The larger the leap, the greater the tendency to follow it with motion in the opposite direction.

2. A preference for diatonic intervals, and restricted use of diminished and augmented intervals.
3. The establishment of a stable tonal center at the beginning of a phrase and a clear tonal goal at the cadence, coupled with a pronounced sense of tonal direction in the interior of the phrase—in other words, the sensation that the music is moving away from or toward those framing goals. The application of these principles will result in a well-defined melodic shape or contour.
4. A tendency to reiterate rhythmic patterns that are often associated with reiterated pitch patterns.

Think of these criteria as you examine the two famous melodies in Example 6.1. Although one comes from an Italian opera and the other from a Hollywood movie, the underlying basis of both tunes is the same—a gradually descending major scale. See if you can trace it through the course of the melodic lines.

Example 6.1

A. PUCCINI: "CHE GELIDA MANINA" FROM *LA BOHÈME*

B. HAROLD ARLEN: "OVER THE RAINBOW" FROM *THE WIZARD OF OZ*

MELODIC MOTION BETWEEN VOICES

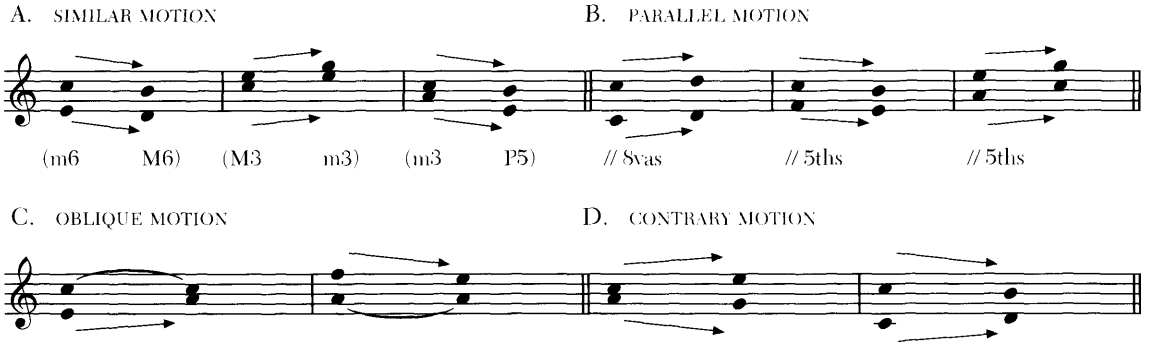
In multi-voiced music we must consider the relative motion produced *between* two individual voice parts. There are three basic types of relative motion:

1. **similar motion,** in which the voices move in the same melodic direction, either up or down (Example 6.2a). **Parallel motion** is a special

type of similar motion in which the voices move not only in the same direction but also by the same interval; Example 6.2b illustrates parallel octaves and parallel perfect 5ths.

2. **oblique motion,** in which one voice remains on the same note while the other moves up or down (Example 6.2c).
3. **contrary motion,** in which the voices move in opposite directions to each other (Example 6.2d).

Example 6.2



Contrary motion between two voices tends to accentuate the melodic independence of those voices, whereas excessive similar motion between two voices tends to negate their individuality. A balanced mixture of these types of motion is helpful in delineating the separate lines in contrapuntal texture.[1] Trace the different melodic relations that exist between the soprano and bass voices in Example 6.3.

Example 6.3

1. Refer to Appendix 3 for a fuller discussion of contrapuntal texture.

Voice Leading

When we look at a harmonic setting of a hymn or chorale tune, such as Example 6.3, we can see that, although each of the four voices has its individual melodic profile, all the parts combine to produce a musical totality. We call this interaction between a voice's melodic profile and its relationship to the other voices the **voice leading** of a composition. Just as we previously demonstrated how to uncover long-range tonal connections in melodies, we will later introduce analytical techniques that will reveal the basic voice leading underlying passages of complex music.

In four-voice texture, each voice ideally should exhibit its own distinctive melodic profile. In actual practice, the soprano (or melody) has the greatest degree of melodic freedom or latitude. Since the bass voice must also provide the foundations for the harmonies, it is sometimes more melodically limited, especially at cadences. The melodic scope of the inner voices (alto and tenor) is further restricted, since they must not only complete the harmonies by filling in notes missing in the outer voices but also adhere to the rules of chord doubling and structure discussed in the previous chapter.

Further information on the melodic and harmonic relations between two or more voices may be found in Appendix 3 on Species Counterpoint and in discussions of melody harmonization in later chapters.

Partwriting

We discussed some principles of four-voice chord spacing or structure and doubling of chord members in Chapter 5. In the remainder of this chapter we will concentrate on **partwriting**—that is, how the individual voices move from chord to chord. Based on a careful examination of the partwriting techniques of composers of the common-practice era, theorists have formulated guidelines or rules that represent standard procedures, providing us with a workable stylistic foundation for partwriting. These recommendations and restrictions are by no means written in stone; exceptions can and do occur. In such cases we should bear in mind that a particular passage may require its own individual solution, one that may involve unusual procedures.

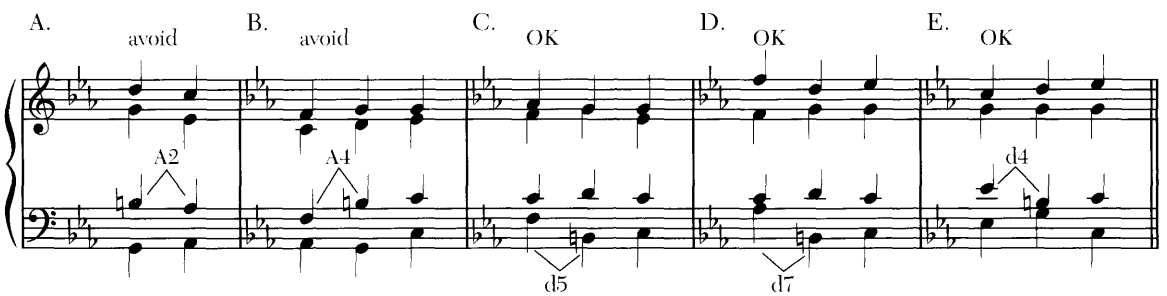
Partwriting presents a number of potential pitfalls for the beginning harmony student. Four general areas where errors can occur are discussed in this chapter: (1) melodic writing, (2) melodic motion approaching and leaving perfect intervals, (3) chordal spacing or structure, and (4) the doubling of specific chord members. You will need to consult this discussion frequently as you develop your partwriting skills.

Principles of Melodic Writing

Our first concern in partwriting is that the individual voice parts should be satisfying as melodic lines. Some basic principles of melodic writing follow.

1. Stepwise motion is always preferable to leaps. Large leaps—anything over a perfect 5th—should be avoided. Exceptions are possible, especially in the bass, or when a voice leaps from one chord member to another as the harmony stays the same.
2. Leaps involving augmented intervals should be avoided (Examples 6.4a and 6.4b). Diminished intervals, however, are acceptable (Example 6.4c–e). Note that all these diminished intervals occur in descending motion to the leading tone, which then resolves upward by half step to the tonic.
3. Consecutive leaps in the same direction should be avoided unless they outline a triad, and they should be balanced by stepwise motion before and after the leaps.

Example 6.4



Connecting Chords

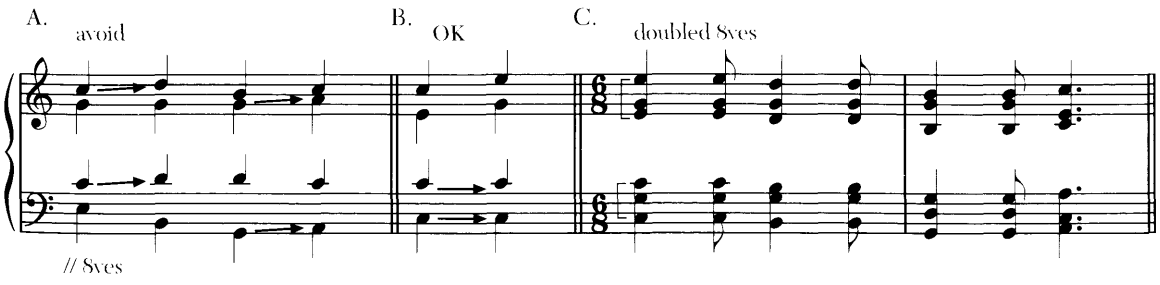
The general principle for connecting one chord to another is simple enough: **Leave any common tone or tones between the two chords in the same voice or voices, and move the other voices to the nearest possible chord member of the second chord.** This principle works in general. We can approach and leave imperfect consonances—3rds and 6ths—by similar, contrary, or even parallel motion. There are a number of restrictions, however, on the ways we approach and leave prefect intervals.

Perfect Intervals in Succession

Remember that there are several possible types of motion between two voices: **parallel motion,** in which two voices move in the same direction to form the same interval; **similar motion,** in which the voices move in the same direction, but to a different interval; **oblique motion,** in which one voice moves while the other one stays on the same pitch; and **contrary motion,** in which the voices move in the opposite direction from one another. When moving from one perfect interval to another, all four kinds of motion can produce problems we should avoid.

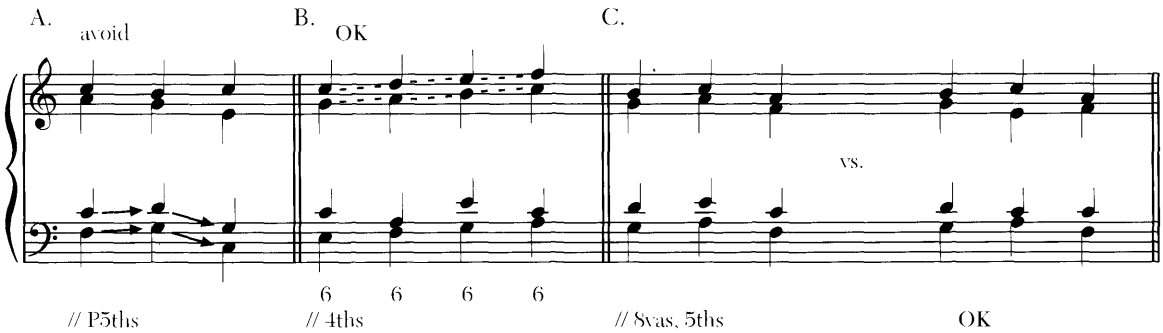
1. **Parallel unisons** and **octaves** are forbidden in four-voice texture of the common-practice period, since writing two voices in parallel unisons or octaves reduces the number of real voices in the texture from four to only three parts (Example 6.5a). Because parallel octaves require motion in both voices, octaves that remain stationary are not parallel (Example 6.5b). In orchestral or piano scores, you may encounter melodic lines that have been **doubled in octaves,** a technique composers use to emphasize or strengthen that part. These octave doublings are easily distinguishable from parallel octaves, because they generally continue for some period of time (Example 6.5c), whereas parallel octaves are momentary or incidental partwriting errors (Example 6.5a).

Example 6.5



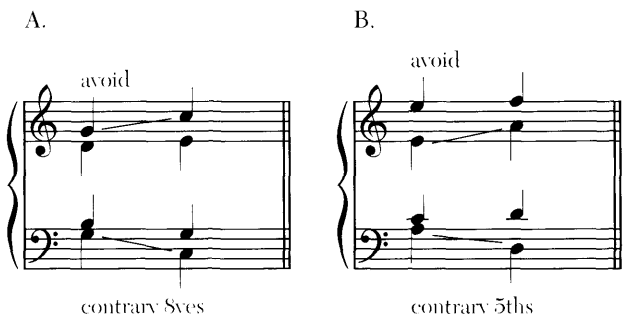
2. **Parallel perfect 5ths** are likewise avoided (Example 6.6a). Similar motion between the soprano and bass often creates the potential for parallel 5ths; in such cases the inner voices must leap by contrary motion (Example 6.6c). However, no restriction is placed on parallel perfect 4ths; in fact, they frequently occur in progressions of successive first-inversion triads (Example 6.6b).

Example 6.6



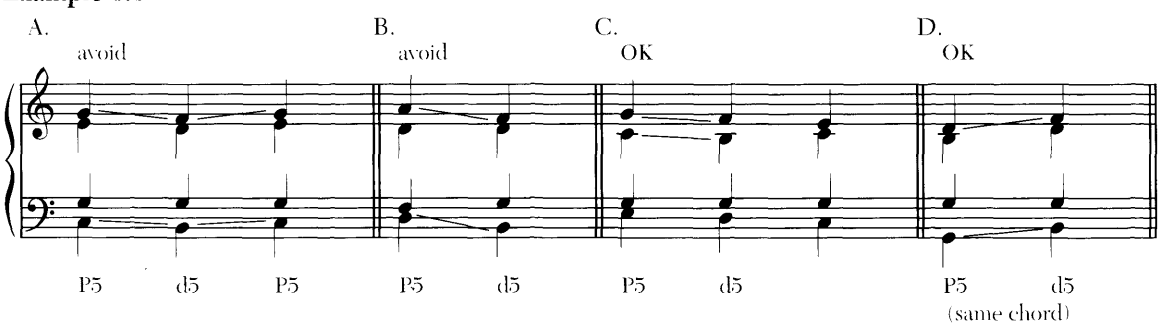
3. **Contrary octaves** or **5ths** occur when the two voices in an octave or 5th move in opposite or contrary directions to another octave or 5th (Examples 6.7a and b). They should be regarded as parallels and therefore avoided.

Example 6.7



4. **Unequal 5ths** most commonly occur when a perfect 5th moves stepwise to a diminished 5th, or a diminished 5th moves stepwise to a perfect 5th. Unequal 5ths should be avoided between the soprano and bass on a change of harmony (Examples 6.8a and b). However, they may occur moving by step between adjacent upper voices (Example 6.8c), or even between outer voices that leap within the same basic harmony (Example 6.8d).

Example 6.8



5. **Direct octaves** or **5ths** occur when two voices approach an octave or perfect 5th by similar motion (Example 6.9a). Avoid direct octaves or 5ths unless the top voice moves by step (Example 6.9a). Exceptions may occur, especially between inner voices in instrumental writing (Example 6.9b). Direct octaves or 5ths are frequently found in the outer voices (soprano and bass) at cadence points, since the melodic nature of some cadences makes them impossible to avoid (Example 6.9c).

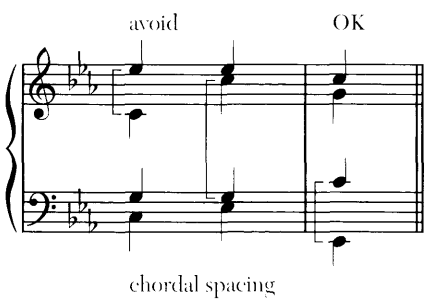
Example 6.9

Chordal Spacing or Structure

The following three examples illustrate some potential problems in the way the voices of a chord are spaced. The restricted distances between the soprano and bass will sometimes necessitate close structure.

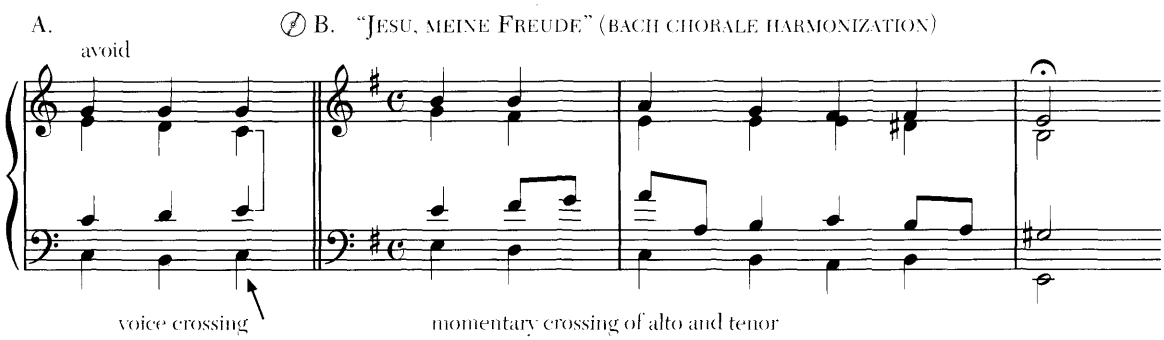
1. In choral writing, intervals larger than an octave should not occur between adjacent upper voice parts (soprano and alto, or alto and tenor), but they are appropriate between tenor and bass (Example 6.10).

Example 6.10



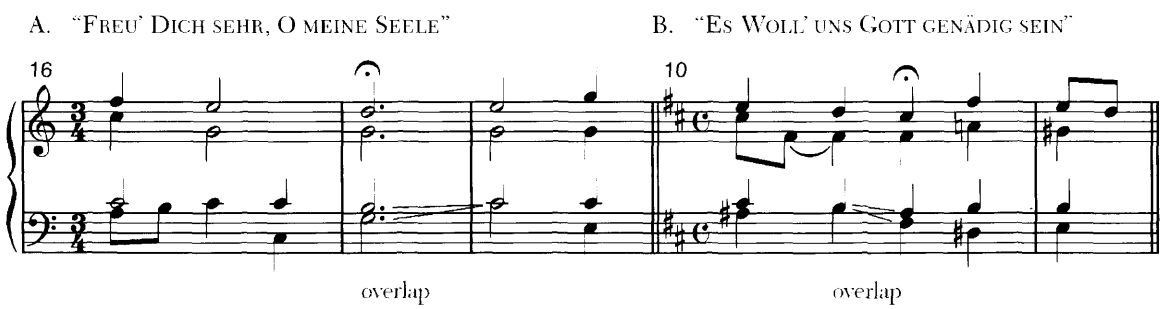
2. **Voice crossing,** where one voice crosses above or below an adjacent voice, is generally avoided between the soprano and alto and tenor and bass parts (Example 6.11a). A composer may allow a momentary crossing between the alto and tenor in order to achieve a better melodic line, as in Bach's harmonization (Example 6.11b).

Example 6.11



3. **Voice overlap** occurs when a note in one part moves higher or lower than the preceding note of the adjacent voice; it usually appears between the tenor and bass (Example 6.12a). In most cases, the overlap occurs between phrases or immediately after the cadence, as shown in the Bach chorale harmonization in Example 6.12b. Although it is probably better to avoid this procedure whenever possible, common-practice composers do resort to it on occasion.

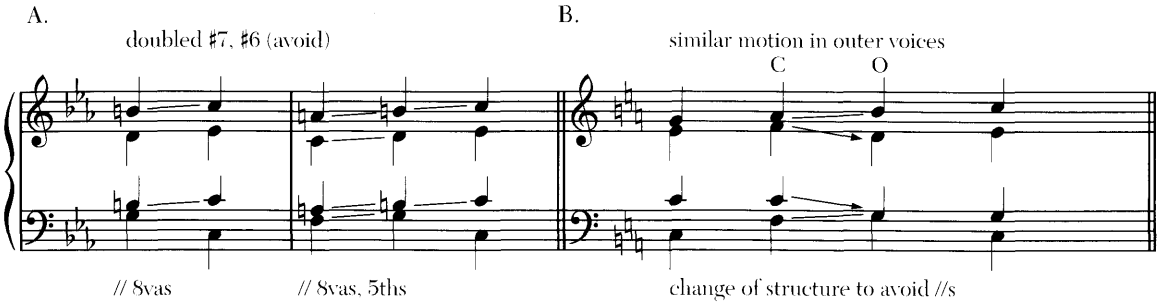
Example 6.12



CHORDAL DOUBLING

The rules for chordal doubling presented in Chapter 5 apply to this discussion too; we will continue to refine these recommendations throughout the text. Refrain from doubling the more active scale degrees, such as the leading tone 7 in major and ♯6 and ♯7 in minor. Since these notes have a strong tendency to move or resolve stepwise to an adjacent scale step, a particular danger of parallel octaves or 5ths exists (Example 6.13a). Also avoid doubling any altered notes. Similar stepwise motion between the soprano and bass also increases the danger of possible parallels; one solution is to change the structure (Example 6.13b).

Example 6.13



GUIDELINES FOR CORRECT PARTWRITING

1. Keep common tones between two chords in the same voices. Other voices move to the nearest possible pitch in the second chord.
2. Conjunct motion is preferable; avoid large leaps.
3. Avoid augmented melodic intervals. Diminished intervals are acceptable, usually in descending motion and resolving upward by stepwise motion.
4. Be cautious about moving all four voices in the same direction, since it increases the likelihood of parallels.
5. Avoid parallel or contrary unisons, octaves, and perfect 5ths. Avoid unequal parallel 5ths in the outer voices between different chords. Avoid direct octaves between soprano and bass except at cadences when the soprano moves by step.
6. Avoid intervals larger than an octave between adjacent upper voices.
7. Avoid crossing voices, and in general avoid overlapping voices.
8. Avoid doubling all tendency tones and altered scale degrees.

Terms and Concepts for Review

voice leading
partwriting
similar motion
oblique motion
contrary motion
parallel motion
parallel perfect intervals (unisons, octaves, and perfect 5ths)
contrary octaves and 5ths
unequal 5ths
direct octaves and 5ths
voice crossing
voice overlapping
octave doublings

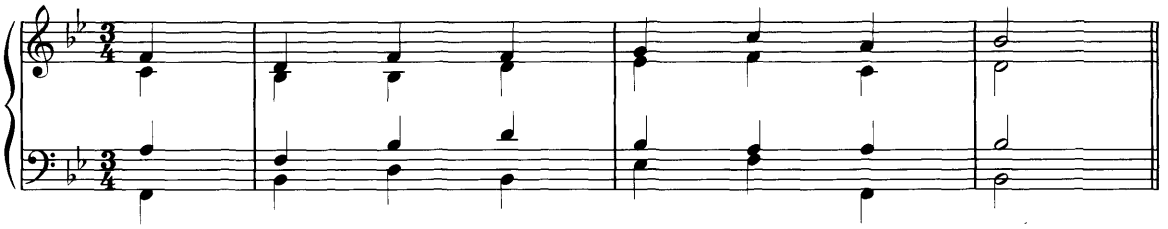
A BRIEF REVIEW SELF-QUIZ

1. Point out any melodic errors in Example 6.14.

Example 6.14

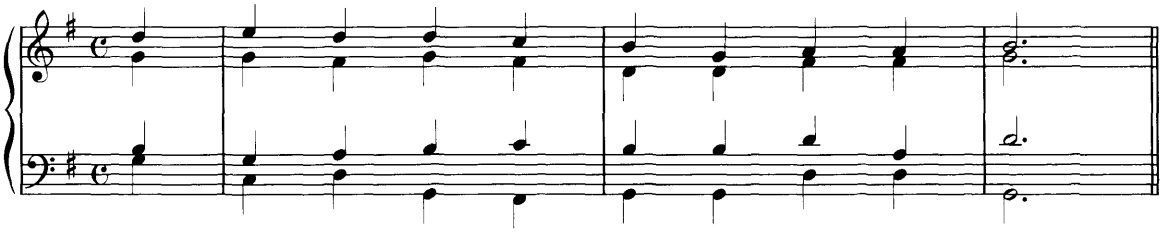
2. Mark any instances of improper parallel octaves, unisons, or perfect 5ths that you find in Example 6.15.

Example 6.15



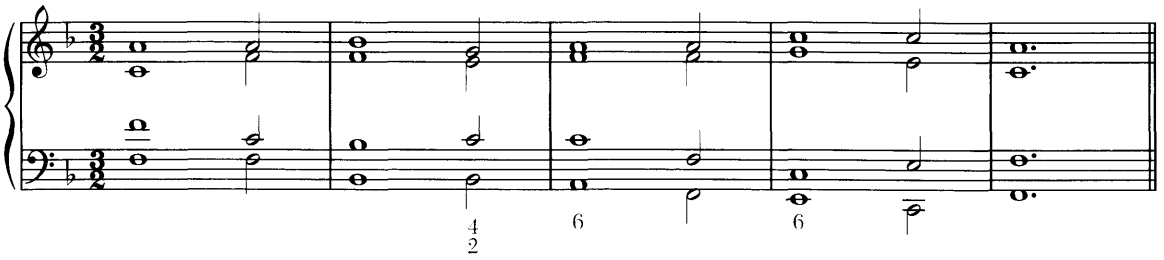
3. Mark all instances of parallel, contrary, unequal, or direct octaves and 5ths in Example 6.16.

Example 6.16



4. Assuming the figured-bass symbols in Example 6.17 are correct, point out any partwriting errors, such as melodic awkwardness, parallels, excessive spacing between voices, improper doublings, misspellings, or other mistakes.

Example 6.17



CHAPTER 7

Melodic Figuration and Dissonance I:

CATEGORIES OF EMBELLISHING TONES

WHILE THE PRECEDING CHAPTERS have provided us with most of the background necessary to begin our study of harmony and voice leading in the common-practice period, they have not addressed the issue of the interaction between melodic line and harmony. In Chapter 2 we discussed the ways in which the metrical hierarchy is constructed from beat division to beat to meter. We will now see that a similar multilayered pyramid structure underlies tonality as well—one that ranges from individual notes to the overall key of a composition. It is important that we learn to distinguish between what is essential or structural in this tonal hierarchy as opposed to what is embellishing or decorative. When we listen to or examine a passage, there is a natural tendency to be drawn to the surface of the music—that is, the immediate note-to-note, chord-to-chord, or measure-to-measure connections. While this obvious and accessible musical surface may contain many momentary pleasures, it consists largely of embellishing elements that rest on a substructure of more essential harmonies and melodic tones. It is the theorist's task to relate the transient beauties of the surface details to the underlying framework. As practicing musicians, we must be aware of both the more obvious surface and the less apparent harmonic and melodic foundation that supports it, since understanding both will enable us to perform the pieces we sing or play with insight and sensitivity. Our first step in this direction is to distinguish between

the essential consonant melodic tones that belong to chords and the embellishing melodic notes that frequently form dissonant relations to those chords. In this chapter we will explore the role of chordal and dissonant embellishing tones resulting from the interaction between melody and harmony.

Essential and Embellishing Notes

In the block-chord harmonies and commercial chord analysis that appear in Example 7.1a, the stemmed chord tones represent the progression's **essential notes** or **tones.** If we begin to elaborate or decorate the upper voice or soprano of this essential harmonic framework with various melodic figures, we will discover that some of the elaborated notes coincide with pitch classes that are present in the chords, while other elaborated notes introduce pitch classes not present in the chords. In Example 7.1b the chord tones are left unmarked and the non-chord tones are circled. While all of these melodic **embellishing tones** serve to impart a forward rhythmic motion to the music, they exhibit several other features that warrant grouping them into two basic categories. Whereas the unmarked **chord tones,** which are consonant with the background harmonies, tend to skip or leap, the circled **non-chord** or **non-harmonic tones,** which are dissonant with the background harmonies, tend to move by step. These dissonant intervals include 2nds, 4ths, 7ths, 9ths, and the tritone (augumented 4th or diminished 5th) measured against the consonant chord tones.

Example 7.1

A.

B.

Generalizing from this particular example, we may say that the pitches of melodic lines are derived from either **chordal figuration,** which uses tones of the supporting harmony (unmarked in Example 7.1b), or **non-harmonic figuration,** which uses tones dissonant to the supporting harmony (circled in Example 7.1b). In order to highlight the difference between its essential and embellishing melodic features, we can make a further reduction of this passage (Example 7.2). Now the consonant chord figurations are indicated as *stemmed* notes (♩), and the dissonant embellishing tones as *unstemmed* note-heads (𝅗𝅥). When appropriate, slur marks denote the melodic connection of the non-chord tone to its adjacent consonant notes. The melodic notes are rhythmically aligned with the underlying harmonies to show the placement of the dissonance—either on the beat or on the offbeat. Using this reductive notation, we can now see the melodic contours and rhythmic positioning of the different embellishing tones.

Example 7.2

This reduction process is our first introduction to understanding the relationships between various levels of the tonal hierarchy in music. Some of the examples in this chapter include both a commercial chord analysis, placed above the staff, and figured-bass symbols to denote the melodic motion above the bass, placed below the staff.

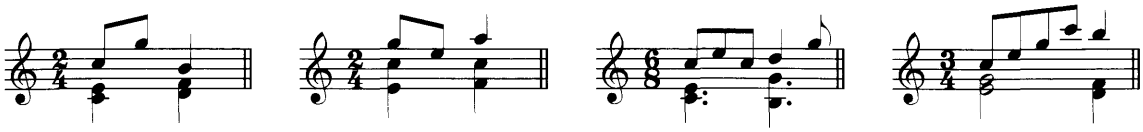
Chordal Embellishment and Compound Melody

We begin by examining consonant chordal figuration before moving on to a consideration of melodic dissonance. You should bear in mind that both categories constitute embellishing tones in the larger sense of the term. While consonance versus dissonance is a significant feature in distinguishing between chordal and non-chord notes, it is not the only one, and as we shall see later, in some situations, these distinctions may become blurred. In all such cases we do better to base our analysis on how we hear a passage rather than how it looks on paper.

Since chordal figuration involves no dissonance, a wide variety of melodic patterns are possible. The passages in Example 7.3 illustrate both chordal arpeggiation and melodic leaps from chord to chord.

Example 7.3

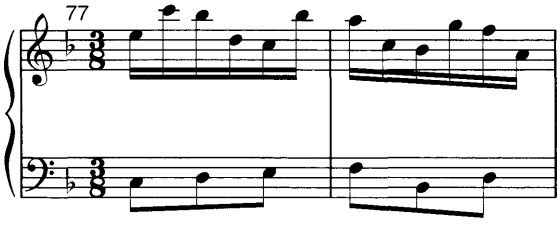
A. B. C. D.



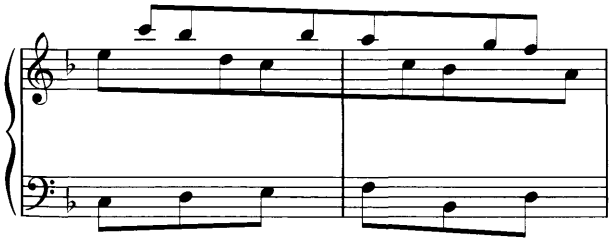
Now play Example 7.4 and examine its two successive reductions.

Example 7.4

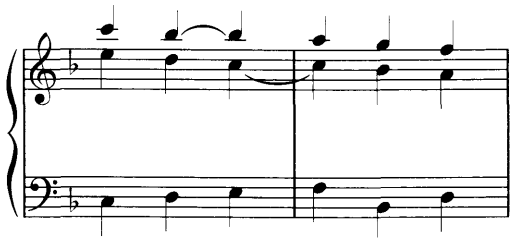
A. DOMENICO SCARLATTI: SONATA IN F MAJOR, K. 367



B. (REDUCTION 1)



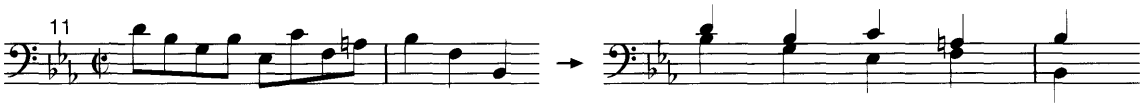
C. (REDUCTION 2)



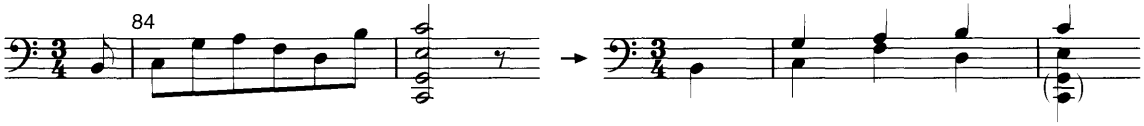
The distribution of pitches in the upper part implies not one but *two* distinct lines within a single melody, a characteristic we call **compound melody.** Compound melodies occur throughout the range of tonal literature and are especially common in unaccompanied music for strings or winds. In Examples 7.5a and b, the individual voices of each compound melody exhibit good linear characteristics and voice leading on their own. Alberti bass figurations in Classical piano music, using a similar technique, suggest several different melodic strands (Example 7.5c).

Example 7.5

A. BACH: BOURRÉE I FROM CELLO SUITE NO. 4 (REDUCTION)

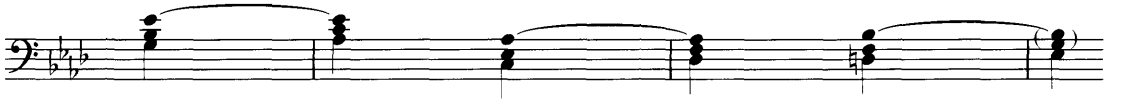


B. BACH: COURANTE FROM CELLO SUITE NO. 3 (REDUCTION)



C. HAYDN: PIANO SONATA IN A-FLAT MAJOR, HOB. XVI:43, I

(REDUCTION)



CATEGORIES OF DISSONANT EMBELLISHING TONES

Dissonant embellishing tones have long been studied and categorized by musicians. They are traditionally grouped and named according to two criteria:

1. Their *melodic profile*, or how the dissonant tone is approached and left.
2. Their *rhythmic accentuation*, or whether the dissonant tone occurs in a strong or weak metric position. Combining these two aspects, we classify dissonant embellishing tones into four basic categories. Each category in turn contains several specific types of embellishing tones, which will be taken up separately. The accompanying abbreviations will be useful in our analyses.
   a. **Unaccented/stepwise** (US): The embellishing note is placed on the offbeat or in a weak metric position; it is approached and/or left by step or common tone.

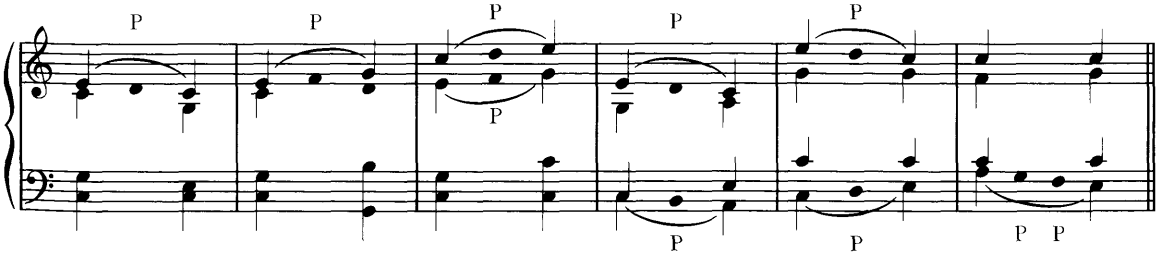
b. **Unaccented/leaping** (UL): The embellishing note is placed on the offbeat or in a weak metric position; it is either approached or left by leap—in rare cases, both.
c. **Accented/stepwise** (AS): The embellishing note is placed on the beat or in a strong metric position; it is approached and left by step or common tone.
d. **Accented/leaping** (AL): The embellishing note is placed on the beat in a strong metric position; it is either approached or left by leap—in rare cases, both.

UNACCENTED/STEPWISE EMBELLISHING TONES

This first category of non-harmonic tones encompasses three different types of unaccented/stepwise melodic dissonance: *passing tones*, *neighboring tones*, and *anticipations*. All three are approached and resolved by stepwise motion, and all three are metrically unaccented.

1. The **unaccented passing tone** (P) bridges the melodic interval of a 3rd (or rarely a 4th) with stepwise motion, either up or down. It may embellish the pitches of the same chord or two different chords. When pairs of passing tones occur simultaneously, they may move in the same direction or in contrary motion. The passing tones in Example 7.6 are notated in a reductive notation that uses slurs between chord members: or .

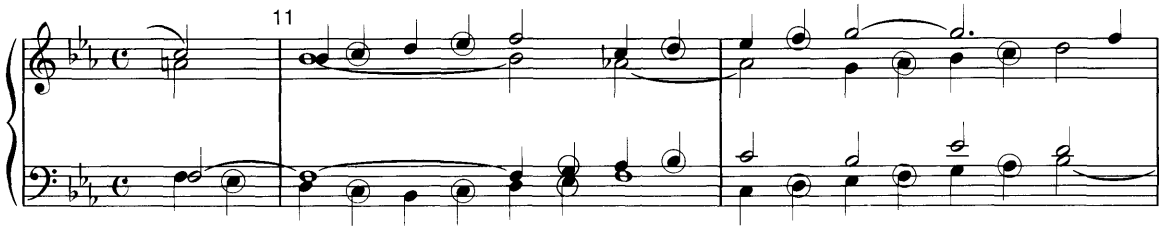
Example 7.6



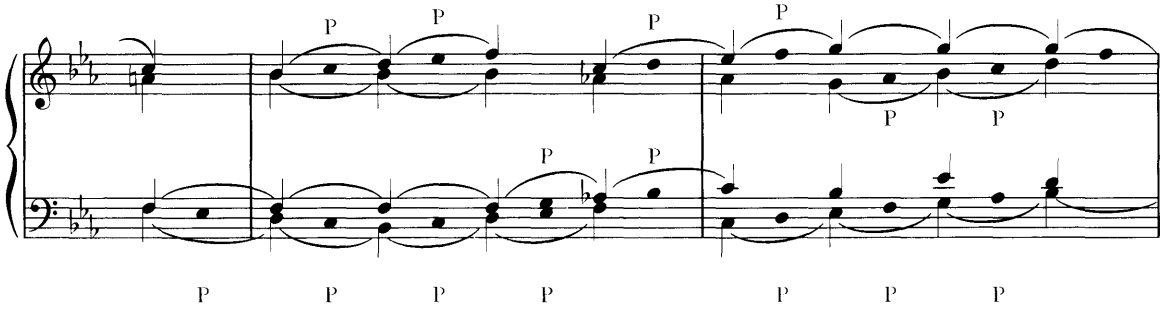
The excerpt from Bach's "St. Anne" Fugue (Example 7.7) makes frequent use of pairs of passing tones in both similar and contrary motion.

Example 7.7

A. BACH: "ST. ANNE" FUGUE FROM *CLAVIERÜBUNG*, BOOK III, BWV 552,2



B.



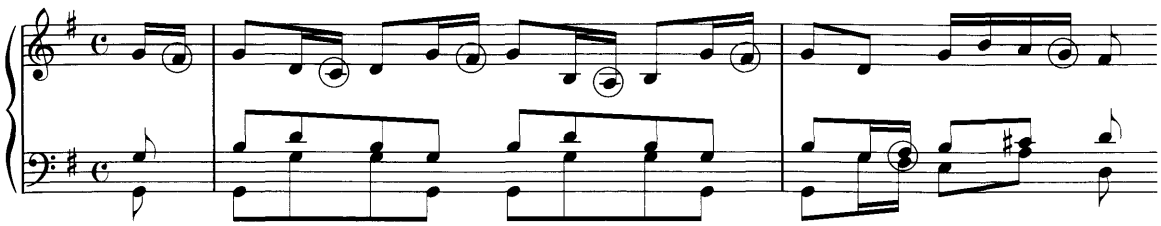
2. The **unaccented neighboring tone** (N) decorates the same chord tone by stepwise motion either above (upper neighbor) or below (lower neighbor): or . Illustrations of neighboring tones, used both singly and in pairs, embellishing the same or different harmonies, appear in Example 7.8. Neighboring tones are more static than passing tones, since they return to the same note rather than moving on to a different one.

Example 7.8

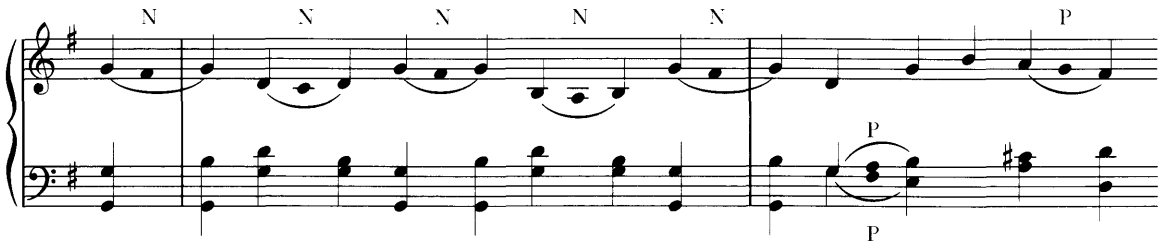
The melodic embellishment in Example 7.9 consists entirely of neighboring tones. It appears first in its printed version and then in reductive notation.

Example 7.9

A. BACH: *BRANDENBURG CONCERTO NO. 3* IN G MAJOR, I



B.

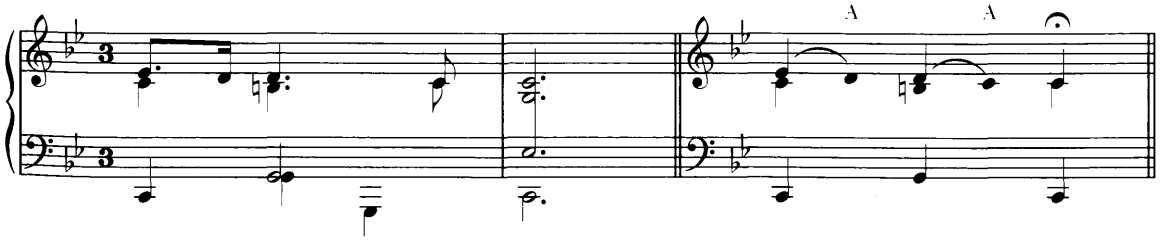


3. The **anticipation** (A) anticipates the next chord tone by arriving there early. It is approached by step from either above or below and always falls on an unaccented beat division: or . While a series of consecutive anticipations is possible (Example 7.10a), this embellishing tone occurs most frequently at cadences, where it usually precedes the final soprano note (Example 7.10b).

Example 7.10

A.

B. COUPERIN: "LA LUGUBRE," SARABANDE



Unaccented/Leaping Embellishing Tones

Unaccented embellishing tones that include a leap to or from the dissonant note in their melodic contour are less common than those which are treated stepwise. We give the generic name of **incomplete neighbors** (IN) to such leaping unaccented embellishing tones, because the neighboring motion is not completed back to the original note. Two basic melodic contours are possible in incomplete neighbors:

1. The dissonant note of the incomplete neighbor may be approached by step and resolved by leap (

or

). This figuration, also called an **escape tone** (E), is commonly found at cadences, especially in conjunction with an anticipation (Example 7.11a).
2. The dissonant note of the incomplete neighbor may be approached by leap and resolved by step (

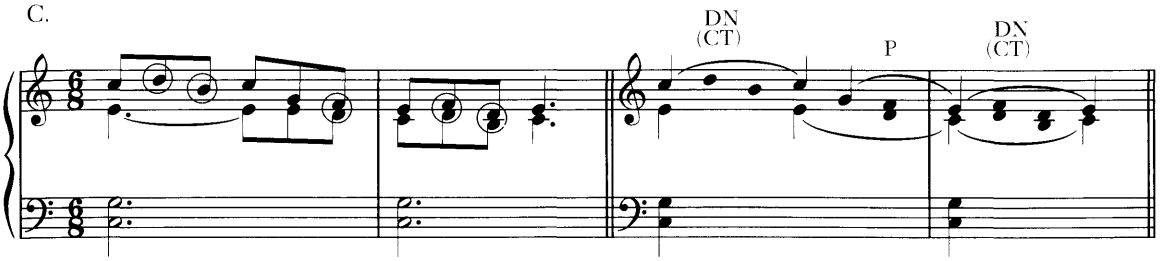
or

). This figuration is sometimes called a **leaping tone** (LT) (Example 7.11b). Some textbooks call this figuration an *appoggiatura*, but we will reserve that term for its more correct historical meaning: an accented melodic dissonance that resolves by step.
3. The escaping tone and leaping tone may be combined to form a **double neighbor** (DN) or **changing tone** (CT):

(Example 7.11c).

Example 7.11

C.

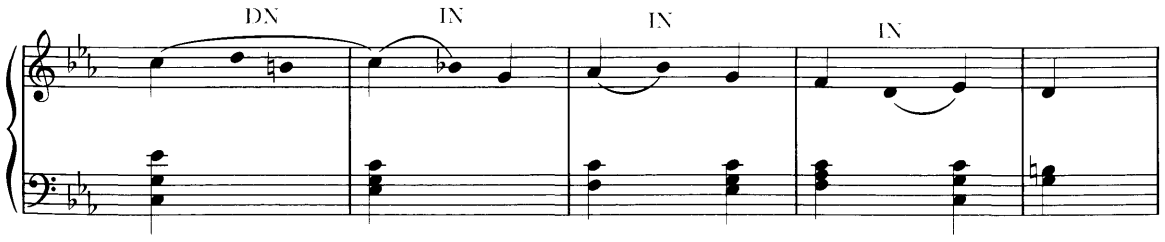


Various incomplete neighbors appear in Example 7.12, first in conventional notation and then in reduction.

Example 7.12

A.

B.



Which types of incomplete neighbors are employed in the Handel and Tchaikovsky passages in Example 7.13?[1]

1. The Handel excerpt employs successions of escape tones, while the Tchaikovsky uses leaping tones.

Example 7.13

A. HANDEL: ARIA FROM SUITE IN G MAJOR

B. TCHAIKOVSKY: SYMPHONY NO. 5 IN E MINOR, II

ACCENTED/STEPWISE EMBELLISHING TONES

Because accented melodic dissonance occurs on the beat and therefore clashes directly with the harmony, it immediately attracts our attention. Such embellishing tones delay their resolution, which then comes on the offbeat. We will first discuss those accented embellishing tones that are prepared and resolved by step. There are three basic types: passing tones, neighboring tones, and suspensions.

1. **Accented passing tones** (AP) tend to resolve downward (Example 7.14a). In the Classical period, they were often written with smaller note-heads to indicate their secondary status; the Mozart excerpt and its realization in Example 7.14b is a typical example.

Example 7.14

A.

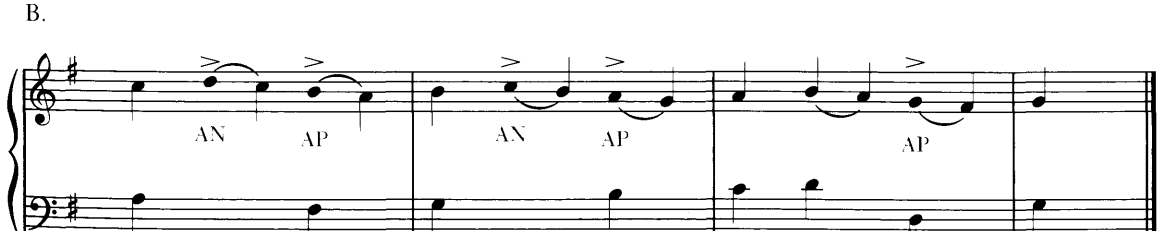
B. MOZART: PIANO SONATA IN C MAJOR, K. 309, III

2. **Accented neighbors** (AN) are less common. Examples of both accented passing and neighboring tones occur in the Minuet passage of Example 7.15. Each dissonant note is marked with an accent mark in the reductive diagram that follows (>) to indicate that it is stressed.

Example 7.15

A. BACH (?): MINUET FROM *ANNA MAGDALENA BACH'S NOTEBOOK*, BWV ANH. 114

B.

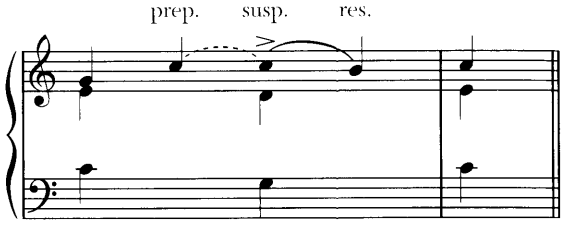


3. A **suspension** (S or susp.) is an accented dissonance that is held over from the pitch of the previous beat and is resolved downward by step: . Because the previous consonant chord tone is retained or suspended, the suspension rhythmically delays its resolution to the following consonance. In Example 7.16 the tied C^5 forms a dissonant 7th and a 4th with the lower voices, resolving with the B^4 to a consonant 6th and 3rd, respectively.

Example 7.16

A.

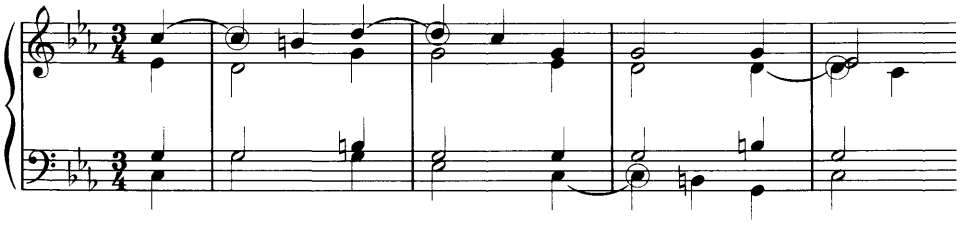
B.



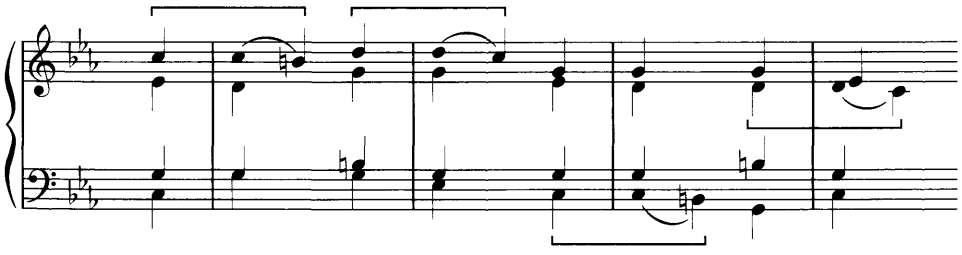
A suspension consists of three components: (1) a consonant **preparation,** usually at least as long as the suspended note; (2) the **suspension dissonance** itself, on the beat or on a stressed beat; and (3) its stepwise downward **resolution** to a consonance, on the offbeat or on an unstressed beat. Suspensions are categorized by their dissonant intervallic relation with the bass voice, but they may form dissonances with other voice parts as well. Identify the preparation, suspension, and resolution of each circled suspension in Example 7.17.

Example 7.17

A.



B.



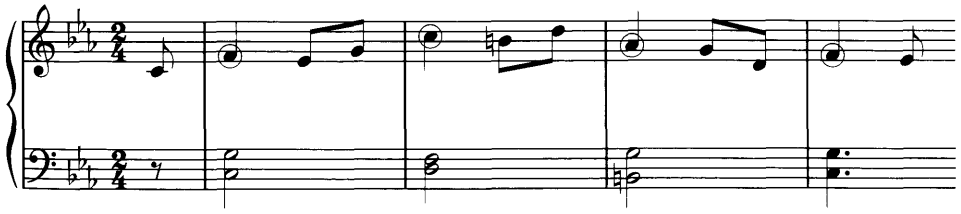
We will return to the topic of suspensions in Chapter 14 for a more detailed discussion.

Accented/Leaping Embellishing Tones

Accented embellishing tones that contain a leap in their melodic contour are the least common form of nonharmonic tones, because of the freedom with which the dissonance is approached or resolved. In such **accented incomplete neighbors** (AIN), the dissonant note is almost always approached by leap and resolved by step: • ≥• AIN or • AIN •≥. The term **appoggiatura** also applies to this particular figuration, since from a historical standpoint an appoggiatura may be defined as any accented melodic dissonance that resolves by step; therefore the accented incomplete neighbors in Example 7.18 could also be labeled as appoggiaturas. The term can be applied to accented passing tones and accented neighbors as well.

Example 7.18

A.



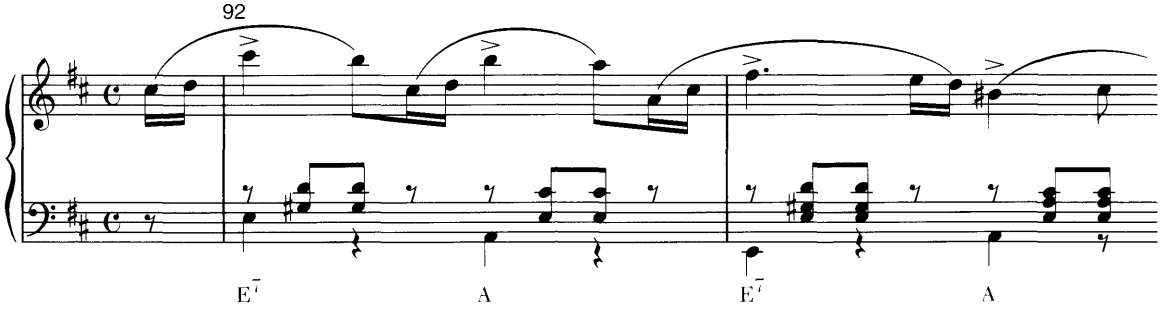
B.

Circle the accented incomplete neighbors in the two excerpts of Example 7.19, noting the way they are approached and resolved. The A^5 in mea-

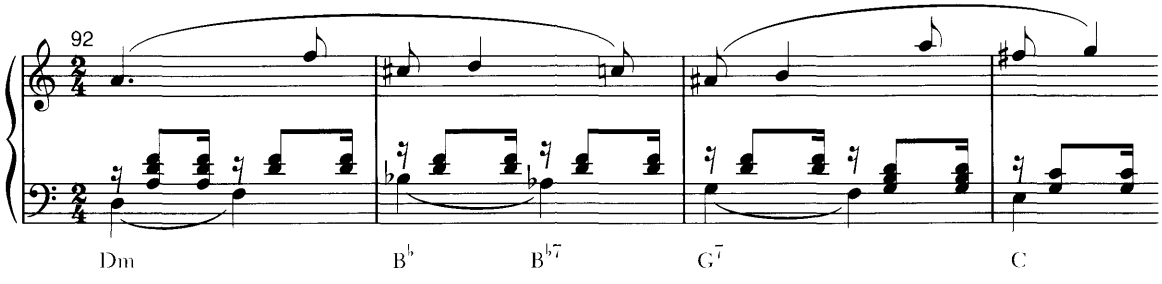
sure 3 of the Schumann should be considered a chord tone of the G^7 chord. This passage also makes use of some altered scale degrees.

Example 7.19

A. WEBER: OVERTURE TO *OBERON*



B. SCHUMANN: SYMPHONY NO. 2, III



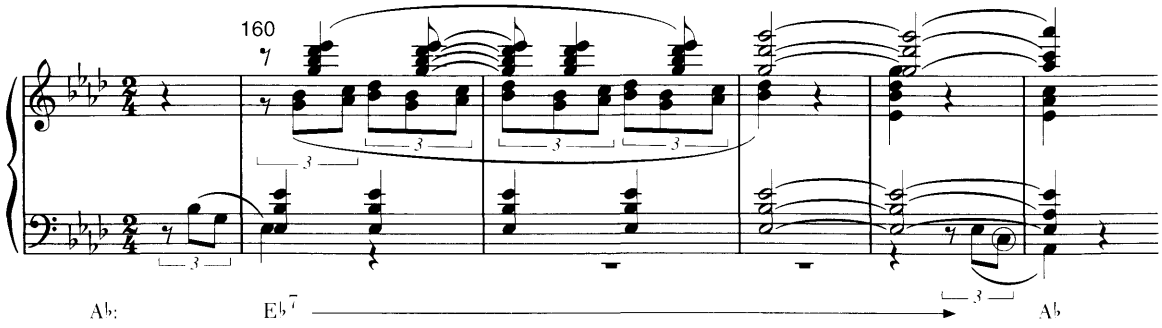
FREE TONES

Accented dissonances that resolve by leap are extremely rare. Example 7.20a shows two accented incomplete neighbors that are approached by step and resolved by leap. A dissonant embellishing tone that is both approached and resolved by leap is called a **free tone.** One such figuration occurs in the bass at the very end of the third movement of Brahms's Symphony No. 1, where the final cadence moves from an E♭ to an A♭ chord in the key of A♭ (Example 7.20b). The circled C^3 is clearly not a part of the E♭7 chord, but rather an embellishing tone that Brahms derived from a melodic motive in the preceding Trio.

Example 7.20

A.

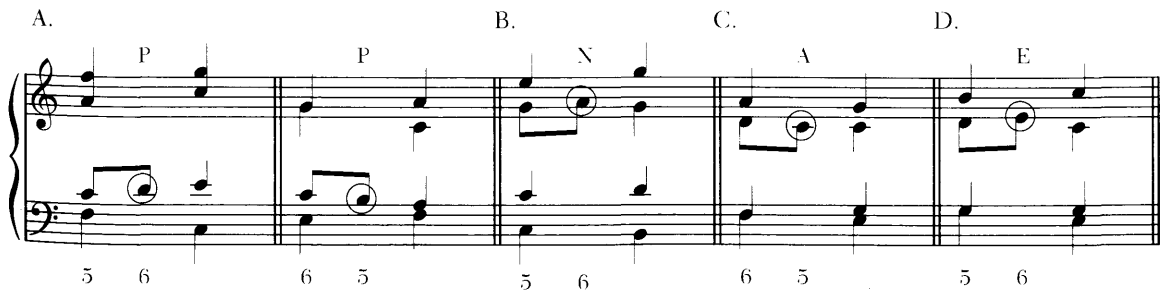
B. BRAHMS: SYMPHONY NO. 1, OP. 68, III



CONSONANT EMBELLISHING TONES

Occasionally certain melodic gestures may sound like and look like typical embellishing tones and yet are completely consonant to the supporting harmony. Such gestures usually involve stepwise intervals that are a 5th and 6th above the bass note. Despite the fact that no dissonance is present, in performance they nevertheless retain the melodic character of certain embellishing tones. Therefore we are warranted in labeling them as passing tones (Example 7.21a), neighbors (Example 7.21b), anticipations (Example 7.21c), and even escape tones (Example 7.21c).

Example 7.21

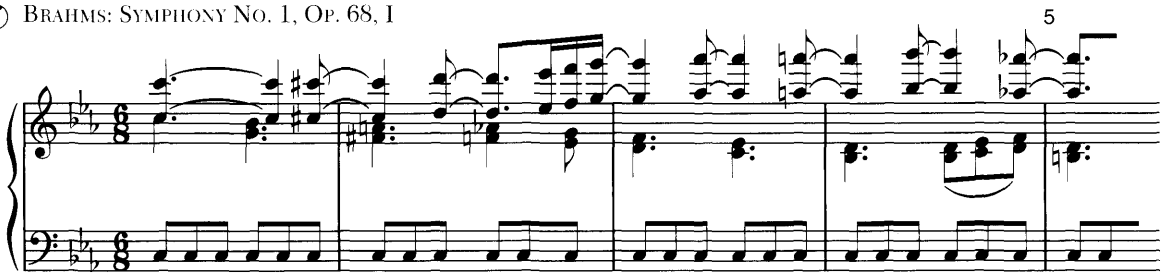


The Pedal Point

A **pedal point,** often shortened to simply **pedal,** is a bass note that is sustained for a number of measures. Its name derives from the bass notes played with the pedals on an organ. Since dissonance usually occurs between the pedal note and the chords above it, one might consider the pedal a form of melodic dissonance. In actuality, however, it is the moving chords in the upper voices that clash with the pedal to create dissonance. Brahms's First Symphony opens with a reiterated bass pedal on the tonic tone (Example 7.22). Another type of pedal is the **inverted pedal,** a long-sustained note in one of the upper voices.

Example 7.22

Brahms: Symphony No. 1, Op. 68, I



The Perception of Embellishing Tones

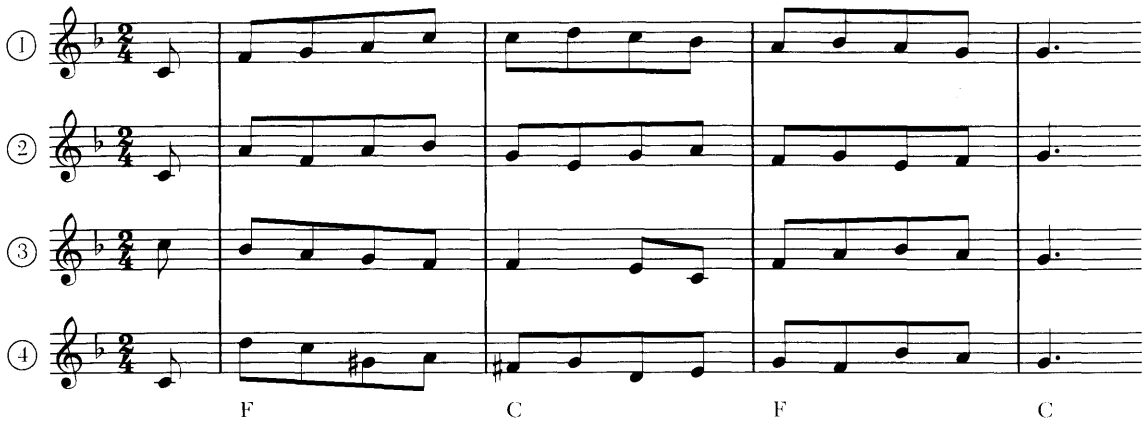
The above categories of embellishing tones are based largely on the way we perceive non-harmonic tones in musical passages. Unaccented/stepwise embellishing tones—passing tones, neighboring tones, and anticipations—are basically decorative in nature. Their rhythmic character is usually more obvious than their dissonant quality, which sometimes passes almost unnoticed. The melodic leap in unaccented/leaping embellishing tones (incomplete neighbors) makes the dissonance more prominent.

Placing the melodic dissonance on the beat emphasizes its presence by delaying the resolution to consonance. Accented passing tones, accented neighboring tones, and suspensions observe the normal stepwise treatment of dissonance. Accented incomplete neighbors, on the other hand, are even more conspicuous because of their leaping melodic motion that tends to isolate or highlight the dissonance.

Using the same chord progressions in the left hand, indicated with commercial chord symbols, play the four short melodies in Example 7.23. First compare the musical effect of the various passages and then identify the different categories of embellishing tones in each phrase.[2]

2. Example 7.23a = US, b = UL, c = AS, and d = AL.

Example 7.23



Summary of Categories of Dissonant Embellishing Tones

A. Unaccented/Stepwise (US) Embellishing Tones
   1. Unaccented passing tone (P)
   2. Unaccented neighboring tone (N)
   3. Anticipation (A)

B. Unaccented/Leaping (UL) Embellishing Tones, or Incomplete Neighbors (IN)
   1. Escape tone (E)
   2. Leaping Tone (LT)
   3. Double neighbor (DN) or changing tone (CT)

C. Accented/Stepwise (AS) Embellishing Tones
   1. Accented passing tone (AP)
   2. Accented neighbor (AN)
   3. Suspension (S or susp.)

D. Accented/Leaping (AL) Embellishing Tones, or Accented Incomplete Neighbors (AIN)

   The term **appoggiatura** may be applied to an AIN that resolves by step, an AP, or an AN. An AIN approached and resolved by leap is called a **free tone.**

Terms and Concepts for Review

essential tones
embellishing tones
melodic dissonance (non-harmonic or non-chord tone)
chordal figuration
non-harmonic figuration
compound melody
unaccented passing tone
unaccented neighboring tone
anticipation
incomplete neighbor
escape tone
leaping tone
double neighbor or changing tone
accented passing tone
accented neighbor
suspension
accented incomplete neighbor
appoggiatura
free tone
pedal point or tone

A BRIEF REVIEW SELF-QUIZ

1. Match the following, letter to number:

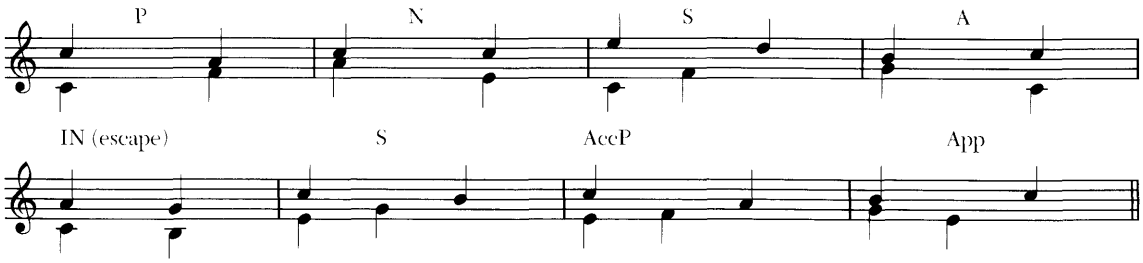
1. Escape tone	a. accented dissonance which resolves stepwise
2. Suspension	b. usually fills in the span of a 3rd
3. Appoggiatura	c. premature entry of next note
4. Neighbor	d. approached by step, resolved by leap
5. Passing tone	e. a single melody which implies two lines
6. Anticipation	f. returns to the first pitch
7. Compound melody	g. is prepared by the same note of origin

2. A number of different embellishing tones occur in Example 7.24. Bracket any chordal figuration and circle each melodic dissonance you find, labeling it with the correct abbreviation. Can you find an example of a consonant embellishing tone?

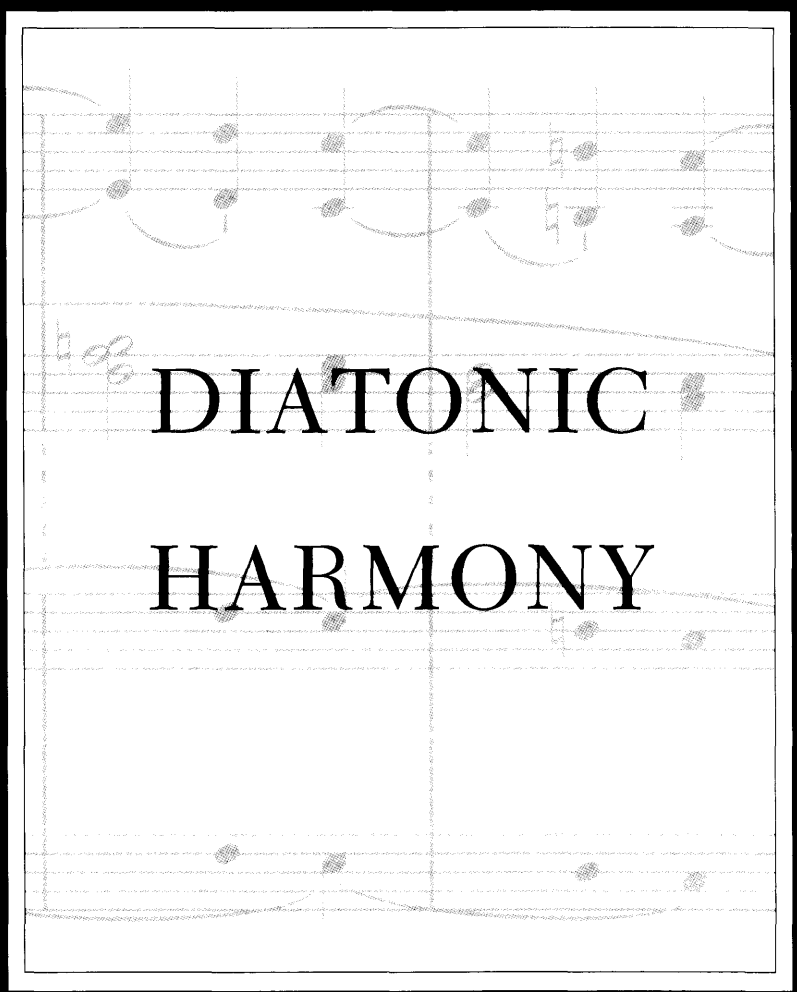
Example 7.24

3. Supply the indicated embellishing tone in the *upper* voice of the two-part texture. Make sure that your added non-harmonic tone creates a dissonance with the lower voice.

Example 7.25



PART TWO



DIATONIC HARMONY

CHAPTER 8

Introduction to Diatonic Harmony

WITH THIS CHAPTER we begin our study of harmony and voice leading in the common-practice period. The general concepts introduced in this chapter will provide the necessary foundation for the more detailed study of individual chords and their tonal function in succeeding chapters. These concepts include the different types of chords employed in tonal harmony; the use of Roman numerals for analysis; the principle of harmonic tendency, or the inclination of certain chords to move to certain other chords; and the influence of linear sequences on harmonic function.

Part Two will concentrate on diatonic procedures; Parts Three and Four will introduce chromatic techniques. Some chapters in Part Two will examine the use of specific diatonic chords, others will focus on linear issues, and others will discuss related topics such as phrase groupings, metric issues, modulation, and sequences.

Aspects of Harmony

Our examination of diatonic chord progressions grows out of the material introduced in Part One and embraces a number of different aspects of harmony. The most important of these are listed below.

1. The various *chord types* used in tonal harmony: the four forms of tertian triads—major, minor, diminished, and augmented—and the five forms of seventh chords presented in Chapter 4.
2. The use of *Roman numerals* to designate the scale degrees on which chords are constructed.
3. *Harmonic function*, or the way in which chords interact and relate to each other.
4. *Harmonic tendency*, or the tendency of certain chords to progress to certain other chords.
5. *Root movement*, or the intervallic distance between the roots of consecutive chords.
6. *Melodic figuration*, or the use of different kinds of consonant and dissonant embellishing tones.
7. *Partwriting* in harmonic progressions, or the connection between the various voice parts of successive chords.
8. *Voice leading*, or the way in which melodic lines and vertical chords interact within the larger harmonic context.

We will introduce only the first five topics in this chapter; the others will be discussed in later chapters. You will find that your knowledge of these aspects of harmony will help you better understand the music you are playing or singing.

Roman Numerals

We have previously used commercial chord symbols to identify chord roots, types, and inversions in harmonic progressions. Although these symbols provide useful information, they do not relate the chords in a particular key to the central tonic or to each other, nor do they give us any indication of the possible function of the various harmonies. Since the nineteenth century, musicians have found that **Roman numerals** are better suited for this purpose. The following two rules explain how Roman numerals are applied to specific harmonies.

1. First, the Roman numeral denotes the *scale degree* that serves as the root on which the triad is constructed. Thus, a Roman numeral I designates a triad built on the first scale degree ($\hat{1}$), IV designates the triad built on the fourth scale degree, and so forth.
2. Uppercase and lowercase Roman numerals as well as other symbols, are used to indicate the *chord type* of a triad.

GUIDELINES FOR USING ROMAN NUMERALS

Uppercase Roman numerals stand for major triads—I, IV, and V in the major scale.

Lowercase Roman numerals stand for minor triads—ii, iii, and vi in the major scale.

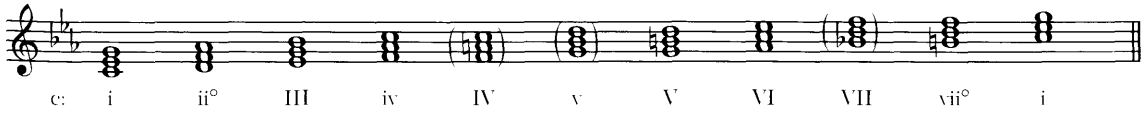
Lowercase Roman numerals with superscripts stand for other classes of triads, such as the diminished triad on the seventh scale degree in the major scale—vii°.

Example 8.1 shows the triads built on the notes of the diatonic scale, along with their Roman numeral designations, for both C major and C minor. Note that in the minor mode, because the sixth and seventh scale degrees appear in both lowered and raised form, there are two distinct forms, major and minor, of the subdominant and dominant triads, as well as two triads built on the seventh degree: the vii° built on the leading tone, and the VII built on the subtonic or flat $\hat{7}$.

Example 8.1

A.

B.



3. *Inversions* of chords are designated by the figured-bass symbols for inversions: ^{6} for a first-inversion triad, $^{6}_{4}$ for a second-inversion triad, and the symbols for inversions of 7th chords—$^{6}_{5}$ for first inversion, $^{4}_{3}$ for second inversion, and $^{4}_{2}$ for third inversion. Thus, in C major ii^{6} designates a first-inversion minor triad built on D, and V$^{4}_{2}$ designates a third-version G seventh chord (see Example 8.2).

Example 8.2

Although figured-bass symbols and the Roman numeral system share these designations of inversions, the two systems should not be confused. Figured-bass numbers are concerned with what notes to play above the bass note; the Roman numeral system is concerned primarily with the scale degree of the triad and indirectly with the harmonic function of the chord.

Although they are more descriptive than commercial chord symbols, Roman numerals tell us very little about harmonic function. To determine how a chord functions, we must understand how it operates in a particular harmonic context. In the chapters that follow, we will learn to distinguish between essential and embellishing chords in harmonic progressions, just as we distinguished in Chapter 7 between essential chord members and those tones which embellish them.

Harmonic Tendency

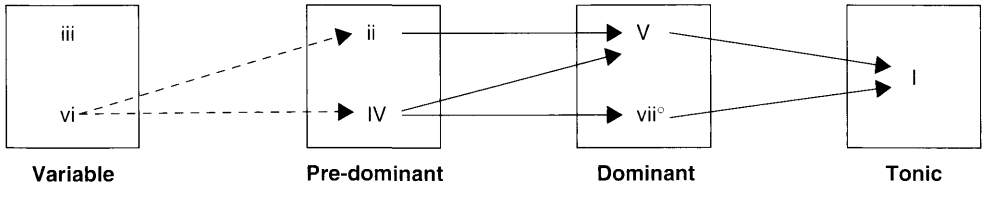
In tonal music, certain chords have an inclination to progress to certain other chords. We call this propensity **harmonic tendency.** The various diatonic chords fall into four basic categories of harmonic tendency.

1. The **tonic,** abbreviated as T or the I chord. The tonic is the chord to which all other harmonies tend to progress or gravitate.

2. The **dominant,** abbreviated as D, which includes V, vii°, and their seventh chords. These chords tend to progress or gravitate directly to the tonic.
3. The **pre-dominant,** abbreviated as PD, which includes IV, ii, and their seventh chords. These chords tend to progress or gravitate directly to some dominant harmony.
4. Since the tendencies of the remaining iii and vi chords are less focused and more variable in their sense of harmonic motion, we will not assign them a specific category. They often precede pre-dominant chords, substitute for the tonic or dominant, or serve as connector chords, linking harmonies of different functions.

These harmonic tendencies are summarized in Figure 8.1. Although the Roman numerals refer to triads in the major mode, the diagram applies equally to the minor mode.

Figure 8.1

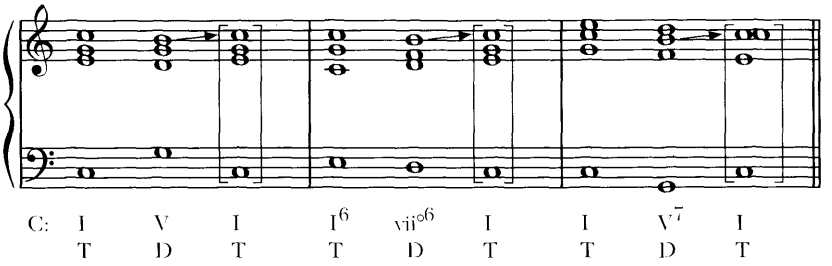


THE UNDERLYING BASIS FOR HARMONIC TENDENCY

The continual recurrence of certain chord progressions in tonal music has conditioned our sense of harmonic tendency, so that we tend to take such normative progressions for granted. However, there is an underlying basis for harmonic tendency. We will focus on two of its aspects: (1) the tendency of an active scale degree ($\hat{2}$, $\hat{4}$, $\hat{6}$, or $\hat{7}$) in a chord to move to a more stable scale degree ($\hat{1}$, $\hat{3}$, or $\hat{5}$) in the following chord; and (2) the frequent occurrence of chordal roots which progress by descending 5ths.

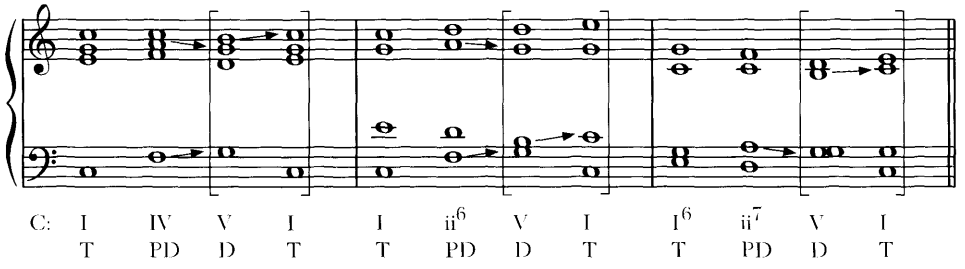
The chords in the dominant family (V, vii°, and their seventh chords) contain two tendency tones—the leading tone, which wants to move to the tonic by half-step motion ($\hat{7}$-$\hat{8}$), and the supertonic, which likewise tends to move to the tonic ($\hat{2}$-$\hat{1}$). In addition, both the V and V^7 resolve to I by a **root movement** that descends a perfect 5th. In Example 8.3, play the first two chords (up to the brackets) of each progression and try to imagine how the second chord will resolve to I. Then play the third chord to confirm this resolution. All of the progressions are in C major.

Example 8.3



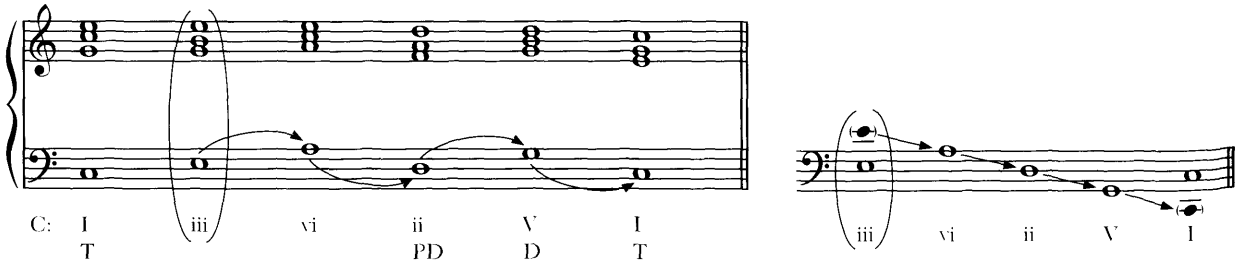
The most active scale degree in the pre-dominant family (IV, ii, and their seventh chords) is the submediant ($\hat{6}$), which tends to move stepwise downward to the dominant ($\hat{6}$-$\hat{5}$). Why do you think this motion is especially strong in the minor mode?[1] The other scale step common to IV and ii is the subdominant, which likewise tends to move stepwise upward to the dominant ($\hat{4}$-$\hat{5}$) in progressions. In harmonic situations involving the V^7, the $\hat{4}$ may tend to move downward stepwise to $\hat{3}$. Play through Example 8.4 as you did in Example 8.3.

Example 8.4



Probably the most common root movement found in tonal progressions outlines a succession of descending 5ths whose eventual goal is the tonic. This 5th cycle, shown in Example 8.5, may originate from a vi or a iii chord, which then works its way through ii to V to I; in the minor mode the Roman numerals would be VI-ii°-V-i. We will encounter many versions of this basic root motion between chords in the chapters that follow.

Example 8.5

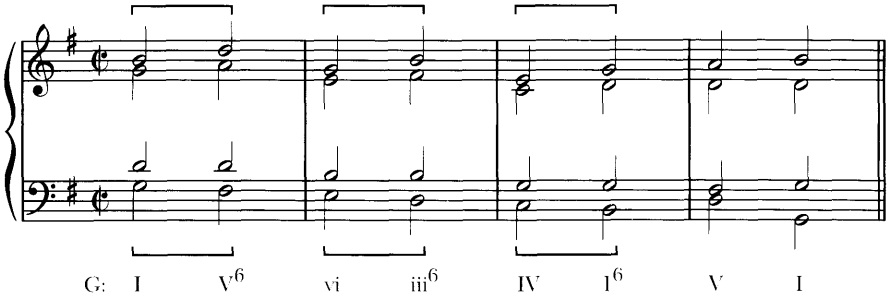


1. Because the distance between $\flat\hat{6}$ and $\hat{5}$ in the minor mode is only a minor 2nd.

The Influence of Melodic Sequences on Harmonic Tendency

Other forces may influence the harmonic tendency of chords. Play Example 8.6, noting the Roman numeral analysis.

Example 8.6



In this passage all the pre-dominant chords do not progress directly to the dominant—in measure 3, IV moves to I^6. Nor do all the dominant chords progress directly to the tonic—in mm. 1 and 2, V^6 moves to vi. Here the melodic motion of the outer voices (soprano and bass) plays an important role in determining the function of the chords. The progression in Example 8.6 employs a **sequence**—that is, a short melodic and harmonic pattern, shown here in brackets, that is successively restated on different scale degrees. In such sequences the strong linear direction of the melodic patterns tends to dictate the chordal succession and therefore overrides the chords' normal tendencies.

This passage provides a valuable lesson, for although Roman numerals provide us with a useful means for expressing harmonic tendency, assuming we know their tonic, dominant, and pre-dominant character, we should not be misled into thinking that all I chords operate as tonic harmony or all IV chords operate as pre-dominant harmony. Rather it is the musical context that ultimately determines the **harmonic function** of chords. We will explore this topic in much greater detail in the succeeding chapters.

Harmonic Models

In order to establish the standard ways in which harmonies operate in the common-practice period, we will concentrate throughout the text on the more common or frequent harmonic idioms of tonal music. These idioms will be presented as four-voice harmonic and melodic **models** that can be applied to a wide range of compositions. They will use the familiar keys of C major and C minor so that we may easily compare different chords in later chapters, relating them to a single key center.

Succeeding chapters will discuss the function of scale degrees and chords in melodic lines and harmonic progressions, as well as provide analytical methods to express these functions. While the harmonic and voice-leading analyses introduced in the following chapters could be viewed as an end in themselves, they actually represent the means to an even more important goal—the proper *performance* of the music. The understanding of how a musical passage operates provides valuable clues for playing or singing it with understanding and sensitivity.

Each chapter will open with a presentation of the common, normative use of the particular chords and techniques under consideration, such as spelling, notation, customary inversions, doublings, and partwriting procedures. As the chapter proceeds, less common procedures will be introduced gradually; this material may be included or omitted at the discretion of the instructor. Each chapter closes with a discussion of melody harmonization, review terms and concepts, and a brief self-quiz.

Terms and Concepts for Review

root movement
partwriting
voice leading
Roman numerals
harmonic tendency
tonic chords
dominant chords
pre-dominant chords
variable chords
sequence
harmonic function

A BRIEF REVIEW SELF-QUIZ

1. Match the number to the letter:

A. dominant
B. sequence
C. scale degree on which chordal root is built
D. vii°
E. vi-ii-V-I
F. pre-dominant triads
G. root movement

1. 5th cycle
2. diminished triad
3. restatement on different scale degrees
4. intervals between chordal roots
5. tends to progress to tonic
6. Roman numeral
7. IV and ii

2. For the two passages given in Example 8.7, provide (1) Roman numerals below the chords with figured-bass symbols to denote inversions, and (2) the tendency classification of each chord—tonic (T), dominant (D), pre-

dominant (PD), or variable function for vi and iii (Var). The first chord is completed for you.

Example 8.7

A.

B.

CHAPTER 9

The Primary Triads:

TONIC, DOMINANT, AND SUBDOMINANT CHORDS

IN THIS CHAPTER we will begin our study of diatonic harmony by considering the tonic, dominant, and subdominant triads in both major and minor modes. For the present, we will restrict ourselves to studying these triads in the root position. This preliminary examination will allow us to observe how the harmonic tendencies of these chords operate, both at cadences and throughout phrases. We will discuss the standard partwriting procedures that connect these chords, and we will use simple voice-leading diagrams to demonstrate the melodic and contrapuntal relationships that occur between the soprano and bass parts. Finally, we will discuss introductory strategies for harmonizing melodies and filling out harmonic models.

TONALITY AS THE EXTENSION OF TONIC HARMONY

Works or movements composed during the common-practice or tonal period usually exhibit what we call **tonal closure**—that is, they begin and end in the same key with a triad built on $\hat{1}$, the tonic scale degree. We can view **tonality** as the melodic and harmonic extension of this tonic triad throughout the overall span of the composition. Each composition exhibits an individual, unique way of extending this tonic in musical space and time. Since this process involves both melody—that is, horizontal or contrapuntal lines—and harmony—vertical combinations or chords—we cannot focus on one element to the exclusion of the other, but must consider both dimensions working together.

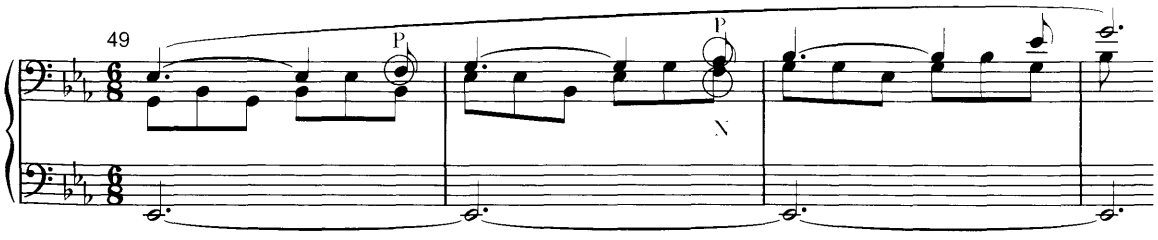
THE PROLONGATION OF TONIC HARMONY

The most obvious way to extend the harmony from the opening tonic chord to the closing tonic chord is to maintain that single chord throughout the piece or section. In the music of the common-practice period, pieces based on a single tonic triad are rare. For one thing, our ears are accustomed to harmonic changes, and we enjoy the sometimes convoluted journey from the opening to the closing tonic. More important, there are ways to prolong tonic harmony that involve movement through additional chords.

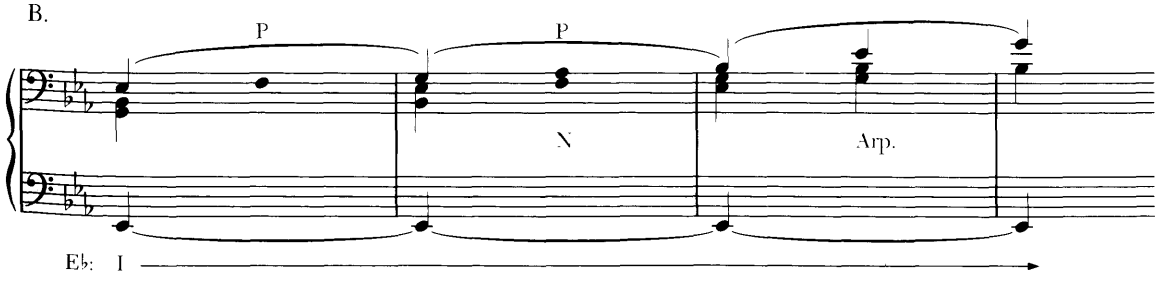
Orchestral introductions to two famous operas are based on a single triad. The Toccata played before Monteverdi's *Orfeo* is a ceremonial fanfare based on a C major triad. A more famous example is the Prelude to Wagner's music drama *Das Rheingold*, which consists of a root-position E♭ tonic chord prolonged over 250 measures. One passage from the Prelude, the leitmotive that represents the Rhine, appears in Example 9.1a. Note that the harmony is prolonged by several means, including **arpeggiation** of the chord (Arp.), **passing tones** (P), and **neighboring tones** (N). The arpeggiated chord tones are of course consonant, but both the passing and the neighboring tones are dissonant embellishing tones (Example 9.1b).

Example 9.1

A. WAGNER: PRELUDE TO *DAS RHEINGOLD*

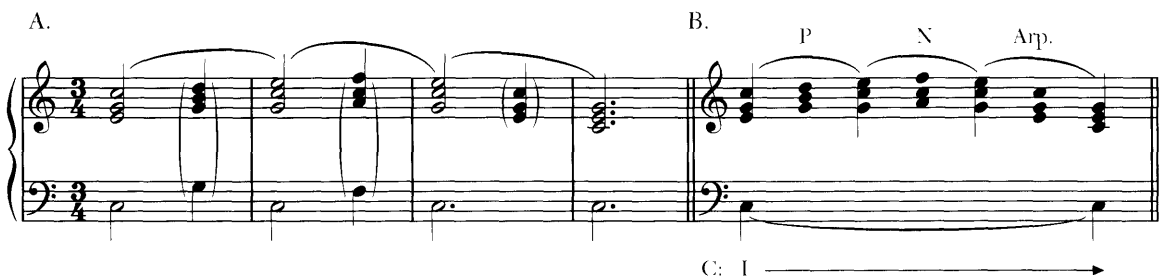


B.



Embellishing motion may involve chords as well as individual notes—a tonic chord may be prolonged by chords that result from simultaneous passing notes or neighboring notes, as well as movement from one spacing of the tonic chord to another, a chordal version of a melodic arpeggiation. Example 9.2a and its reduction in 9.2b show a prolongation of a C major triad that includes a passing chord, a neighboring chord, and an arpeggiated chord. The interaction between essential and embellishing chords will play an important part in our later study of harmony.

Example 9.2



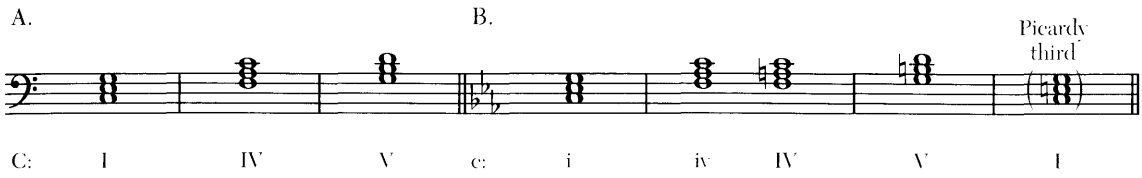
The Tonic, Dominant, and Subdominant Triads

Other harmonies usually span the movement from opening to closing tonic. The most important of those chords are the dominant triad, built on $\hat{5}$, and the subdominant triad, built on $\hat{4}$. Together with the tonic triad ($\hat{1}$), these chords are called the **primary chords,** an expression that suggests an analogy to the three primary colors in the spectrum—red, blue, and yellow—from which all other colors are derived. These chords are the most important in the tonal system; there are entire repertories of popular and folk music whose harmonies never stray beyond these three chords.

Since in any major key all these chords are major triads, they are designated by uppercase Roman numerals: I, IV, and V (Example 9.3a). In the minor mode, the tonic and subdominant triads, normally minor triads, are designated by lowercase Roman numerals—i and iv—but the dominant chord generally remains a major triad (V), since it retains the leading tone, or scale degree $\sharp\hat{7}$. As we have seen, however, in the minor mode both the sixth and seventh scale degrees may be either raised or lowered; therefore, it is possible in minor mode to have a major subdominant chord (IV) as well as a minor dominant (v). In some styles of music from the common-practice period, it is customary in minor keys to substitute a major triad for the final minor tonic triad (I for i); this substitute chord is called a *Picardy third.* The minor mode tonic, subdominant, and dominant triads are shown in Example

9.3b. Note that when we speak of chords and their tendencies in a general sense, applicable to both major and minor modes, we use the uppercase Roman numerals of the major mode to apply to both modes.

Example 9.3



Relationships between the Primary Chords

The relationships between these three chords in both major and minor modes are strong and fundamental to the tonal system. There are two reasons for the strong connections between primary chords. First, the distances between the three roots are all perfect 4ths or 5ths—the subdominant is a 4th up or a 5th down from the tonic, and the dominant is a 5th up or a 4th down from the tonic. We call such pairs of chords *fifth-related.* Cadences involving roots a fifth apart are among the strongest in the tonal system. In addition, as we noted in our discussion of harmonic tendencies (see Figure 8.1), the sixth scale degree, the third of the subdominant or pre-dominant chord ($\hat{6}$), tends to move downward by step to $\hat{5}$, the root of the dominant chord; the third of the dominant chord ($\hat{7}$) tends to resolve upward by half step to $\hat{8}$ of the tonic chord. Therefore, the succession I-IV-V-I (tonic-pre-dominant-dominant-tonic) is a fundamental and very common progression, in both major and minor.

Partwriting Connections between the Primary Triads

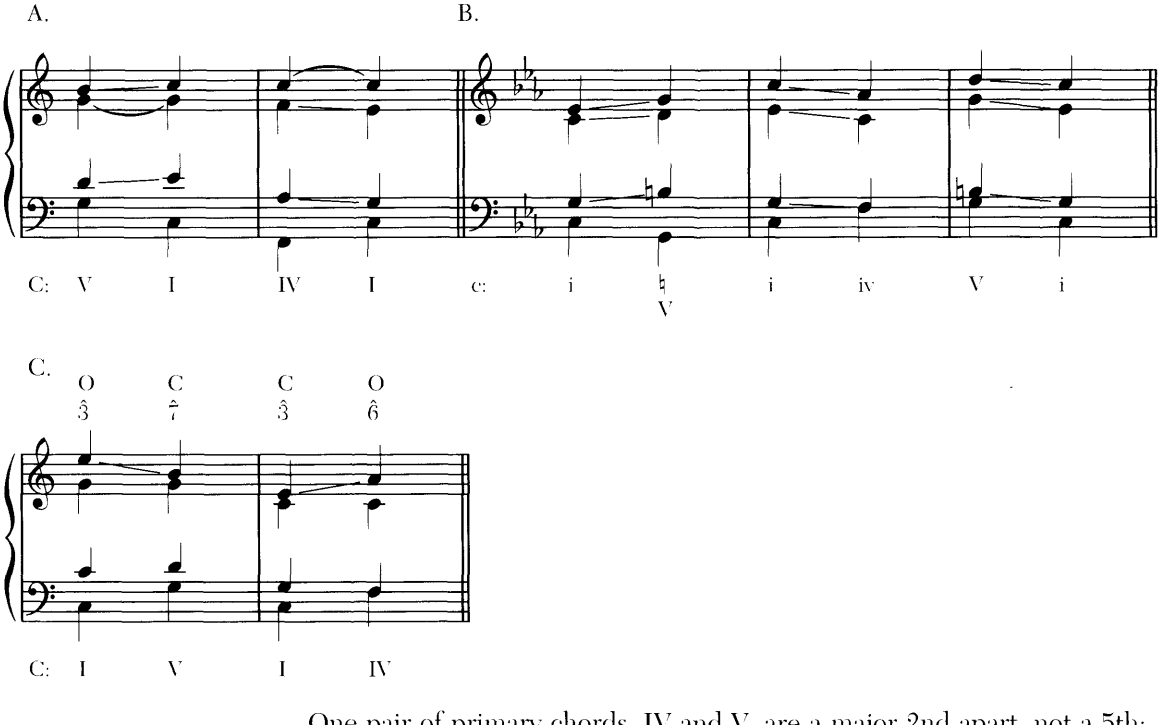
Before examining how these chords are used in cadences and within musical phrases, we need to establish some principles of partwriting, or how to connect these chords. Our first issue is connecting fifth-related chords. The fifth-related pairs among the primary triads are I-IV, IV-I, I-V, and V-I.

The simplest way to connect two fifth-related chords is to **move the upper voices to the nearest members of the next triad while maintaining the same structure**—close to close or open to open. There are three possibilities.

1. The common tone stays in one voice while the other two upper voices move by step, and the structure remains the same (Example 9.4a).

2. One voice moves by step while the other two upper voices skip by a third, and the structure remains the same (Example 9.4b). Note that the tenor in the last example leaps downward from the leading tone to the fifth scale degree ($\hat{7}$ to $\hat{5}$).
3. In an occasional fifth-related progression (between I and V, or between I and IV), the soprano (or inner voice) may leap from the chordal third of one triad to the chordal third of the next: scale degrees, such as $\hat{3}$ to $\hat{7}$ (in I-V), or $\hat{3}$ to $\hat{6}$ (in I-IV). Here you must *change structure* in order to avoid parallel octaves and/or 5ths (Example 9.4c). The type of structure for each triad will depend on the direction of the leap, either up or down.
4. Composers occasionally allow the leading tone to follow its natural tendency and resolve upward by step to the tonic, although this results in a tripled root in the following tonic triad; we will have more to say about this strategy later.

Example 9.4



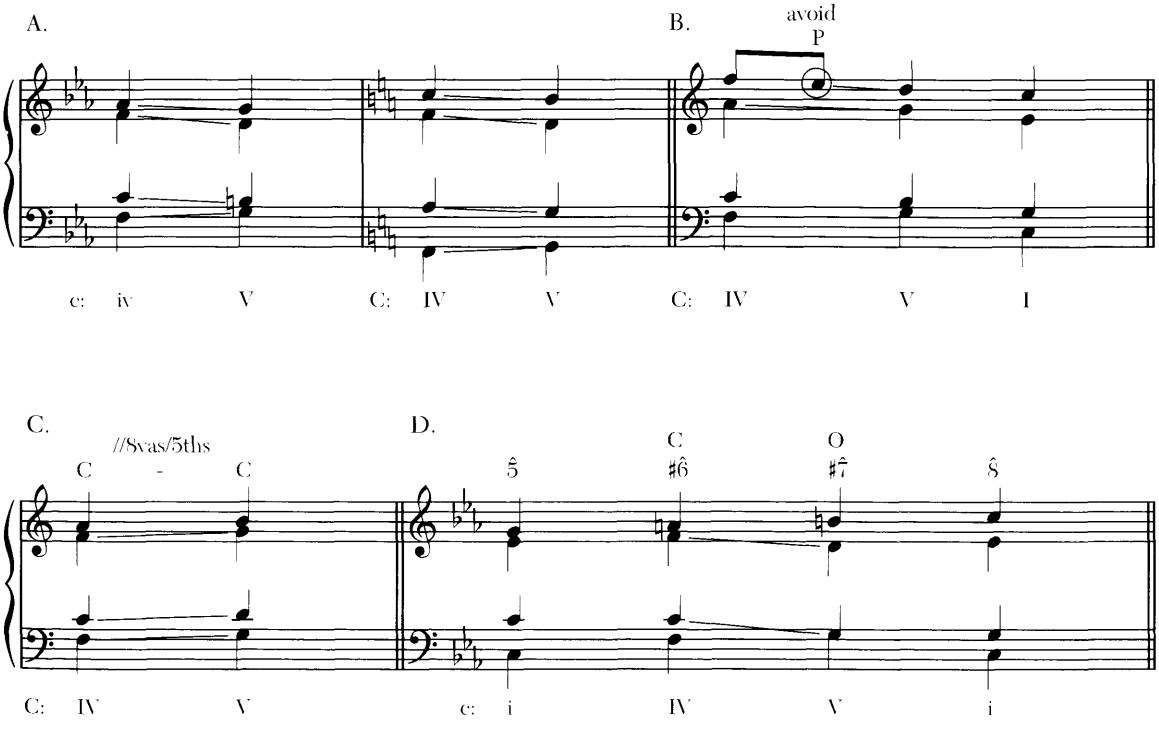
One pair of primary chords, IV and V, are a major 2nd apart, not a 5th; we must therefore employ different partwriting procedures to connect these two chords.

1. If the soprano moves downward in contrary motion to ascending root motion ($\hat{4}$-$\hat{5}$) in the bass, keep the same structure and move the

other voices downward to the nearest member of the next triad (Example 9.5a). Do not add a passing tone between $\hat{4}$ and $\hat{2}$, because it may produce parallel 5ths between the other voices (Example 9.5b).

2. If the soprano moves in stepwise 10ths with the bass, avoid the danger of parallel 5ths and octaves (Example 9.5c) by moving the alto and tenor in contrary motion to the outer parts. This strategy changes the structure of the chords from close in the IV chord to open in the V chord (Example 9.5d).

Example 9.5



THE POLARITY BETWEEN TONIC AND DOMINANT CHORDS

We will study the subdominant chord and the other pre-dominant chords in detail later. For now we will focus on the two most fundamental chords in tonal music, the tonic and dominant triads. There is a strong tonal opposition or polarity between V and I, since V has a strong tendency to resolve to I. There are two basic types of harmonic motion in most musical

phrases: I→V and I→V-I. The music proceeds through melodic and harmonic motion, represented by the horizontal arrow, to its conclusion or **cadence.** As much as we need to focus on cadences and dealing with the partwriting issues they present, remember that a cadence is not simply a two-chord progression but an integral part of the entire musical phrase. The cadence represents the tonal goal of the phrase. A phrase that ends with a cadence on V is called an *open* phrase, usually representing a pause in the music, but not a full stop; a phrase that ends with a cadence on I is called a *closed* phrase, because it brings the music to closure. In Example 9.6, "Home on the Range," note the two types of harmonic motion—an open phrase is followed by a closed phrase. The succession of related but distinct phrases gives the listener a sense of both symmetry and completion.

Example 9.6

♪ "HOME ON THE RANGE" (FOLK SONG)

A cadence or cadential progression consists of two or more chords and is characterized by certain standard melodic formulas in the bass and soprano voices. Strong root-position triads are generally used in cadences. For example, in a V-I cadence, the bass voice usually leaps from the dominant ($\hat{5}$) to the tonic ($\hat{1}$). Next we will examine some of the common cadential formulas. As we introduce additional chords, our list of cadential formulas will continue to expand.

The Authentic Cadence

Examples 9.7 through 9.9 illustrate melodic phrases leading to cadences. Note that the concluding chord generally occurs on a strong beat.

The term **authentic cadence** is applied to a V-I cadence, the cadence of a closed phrase. There are two forms of authentic cadence.

The **perfect authentic cadence** (PA) is characterized by stepwise motion to the tonic ($\hat{2}$-$\hat{1}$ or $\hat{7}$-$\hat{8}$) in the soprano voice over a root-position V-I progression. This cadence, illustrated in Example 9.7, gives us the greatest sense of a strong conclusion. Note that V-I cadences are usually preceded by either a tonic or a subdominant chord, shown in parentheses. Study the soprano lines and partwriting connections in each example.

Example 9.7

The **imperfect authentic cadence** (Example 9.8) is different in one respect from the perfect authentic cadence—the soprano ends on $\hat{3}$ or $\hat{5}$ rather than $\hat{1}$. Possibilities include $\hat{2}$-$\hat{3}$, $\hat{5}$-$\hat{3}$, and $\hat{5}$-$\hat{5}$. As the name indicates, this cadence is less conclusive than the perfect authentic cadence.

Example 9.8

The Half Cadence

The **half cadence,** the cadence of an open phrase, ends on V, and therefore does not create a sense of closure. The half cadence is similar to a subordinate clause or a question in prose; both require that the material continue in order to provide a sense of completion. The half cadences in Example 9.9 might be viewed as incomplete authentic cadences, with the last chord omitted. The soprano generally moves by step to one of the two tendency tones in the V chord, the supertonic ($\hat{2}$) or the leading tone ($\hat{7}$); possibilities include $\hat{3}$-$\hat{2}$, $\hat{1}$-$\hat{2}$, and $\hat{8}$-$\hat{7}$.

Example 9.9

C. "LONDON NEW"

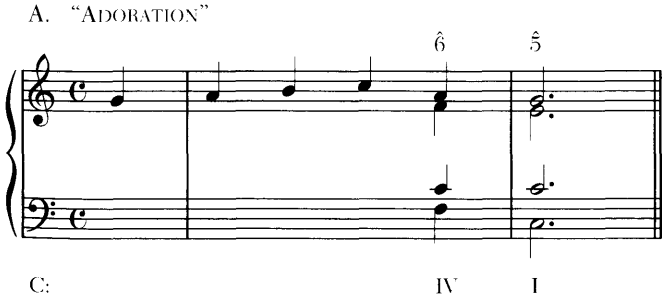
D. "UNDE ET MEMORES"

THE PLAGAL CADENCE

The **plagal cadence** is characterized by root motion from the subdominant to the tonic (IV-I). This cadence may serve as the final cadence of the phrase (Example 9.10a), or more commonly it may function as a tag added after an authentic cadence. Examples of plagal cadences appearing after authentic cadences include the "Amen" chords that conclude many hymns (Example 9.10b) and the majestic plagal cadences that end many of Handel's choral movements.

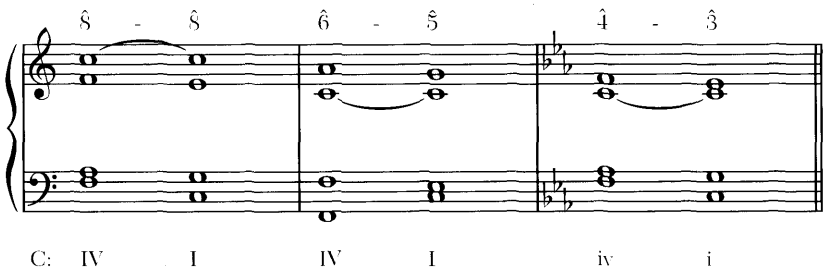
Example 9.10

A. "ADORATION"



B. "JESU DULCIS MEMORIA" (HYMN TUNE)

C.



The weaker effect of the plagal cadence is a result of root movement by ascending 5th as opposed to the stronger descending 5th of the authentic cadence. In addition, the tonic note is often retained as a common tone in the upper voice ($\hat{1}$-$\hat{1}$), although other soprano lines, such as $\hat{4}$-$\hat{3}$ or $\hat{6}$-$\hat{5}$, are possible (Example 9.10c). Note the difference between the two phrases of the chorale harmonization in Example 9.11. The soprano line is the same in both phrases ($\hat{6}$-$\hat{6}$-$\hat{5}$), but the first phrase ends with a plagal cadence in F, whereas the second phrase ends with an authentic cadence in C; because of the key change, the soprano line is now $\hat{2}$-$\hat{2}$-$\hat{1}$.

Example 9.11

♪ "WIE SCHÖN LEUCHTET DER MORGENSTERN" (BACH CHORALE HARMONIZATION)

Summary of Cadence Types

1. Authentic Cadence: root-position triads, V-I.
   Perfect Authentic Cadence: V-I, soprano moves to $\hat{1}$ by step.
   Imperfect Authentic Cadence: V-I, soprano moves to $\hat{3}$ or $\hat{5}$.
2. Half Cadence: ends on root-position V, soprano moves to $\hat{2}$ or $\hat{7}$.
3. Plagal Cadence: IV-I.

Voice-Leading Reduction

Following our discussion of cadences, we now introduce an important technique that will help us understand the essential tonal anatomy of a musical phrase or an entire composition—**voice-leading reduction.** By stripping away the surface melodic and harmonic elaboration in the various voices, reductions allow us to see the underlying tonal skeleton or framework of a passage. Reductive analysis not only reveals the music's essential musical features, but also suggests strategies for performing the music with greater understanding of its structure and unity.

Reductive analysis reveals the essential chord tones in the soprano and bass, the notes that form a contrapuntal duet and represent the basic voice leading. The fundamental harmonies, indicated with Roman numerals, underlie the two melodic lines. We can thus see at a glance the music's essential chordal and linear features and the interaction between them. Voice-leading reductions are a powerful tool not only for analysis, but also for composition, as we shall see later in the chapter. Here are the steps for constructing a voice-leading reduction; we will continue to use and explain this technique in this and later chapters.

GUIDELINES FOR MAKING A VOICE-LEADING REDUCTION

1. Label the harmonies with Roman numerals; pay particular attention to the first and last chords.
2. Circle all embellishing tones to expose the chordal notes in the various voices.
3. On a grand staff notate the main chord tones of the bass line on the lower staff with downward stems.
4. Notate the soprano voice on the upper staff using upward stems for the essential notes. Try to maintain a stepwise line. When several different chord tones occur over the same harmony, choose the one that produces the best melodic line and the best connection to the chord tone of the next harmony. When melodic leaps in the upper voice suggest a compound melody, notate its linear components with different stems for each strand (see Examples 7.4–5).

Cadential Expansion within the Phrase

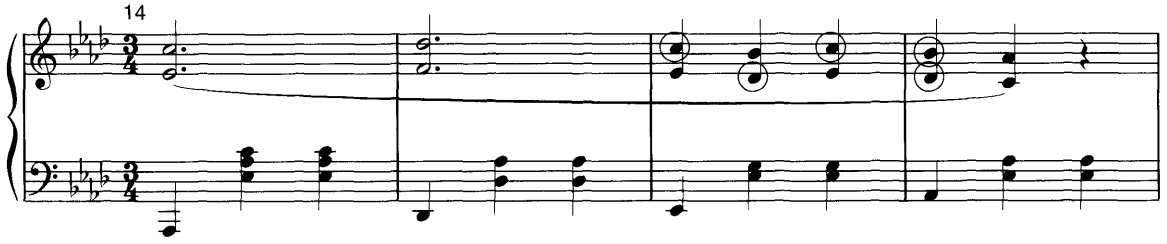
After studying concluding cadence formulas, we now turn our attention to the remainder of the phrase. One common way of designing a phrase is to spread the cadential progression over its entire length. As an example, we can produce a four-measure phrase by spreading the progression I-IV-V-I over four measures, one harmony to a measure.

The next four examples illustrate that process. In the voice-leading reduction of the Chopin waltz (Example 9.12b), note that the embellishing

tones are circled, and the remaining chord tones of the soprano line constitute the underlying melodic motion ($\hat{3}$-$\hat{4}$-$\hat{2}$-$\hat{1}$). The bass line and Roman numerals have been notated in the bass clef, and the alto notes are added to complete the harmony. The Schubert example (Example 9.12c–d) is more complex; the tenor doubles the bass line in octaves for the first three measures, and the sixteenth notes in the treble clef are figurations of three-voice triads; the upper voice ascends by step, $\hat{5}$-$\hat{6}$-$\hat{7}$-$\hat{8}$. Note the parallel 5ths and octaves in measures 2–3. In "Cielito Lindo," the leap from $\hat{6}$ to $\hat{2}$ is unusual, but the reduction makes clear that the basic motion of the melody is actually downward by step—$\hat{3}$-$\hat{2}$-$\hat{1}$.

Example 9.12

A. CHOPIN: *GRANDE VALSE BRILLIANTE*, OP. 34, NO.1



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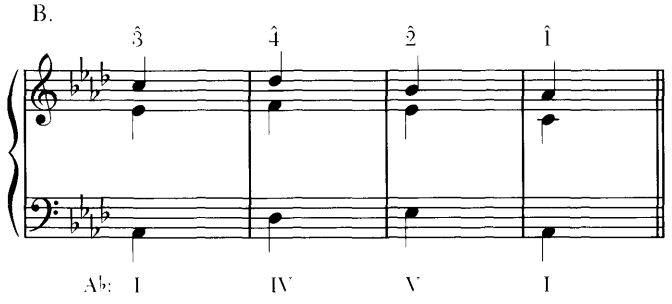
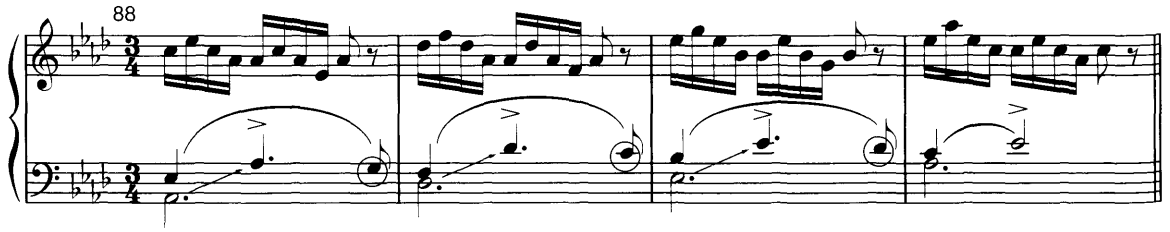
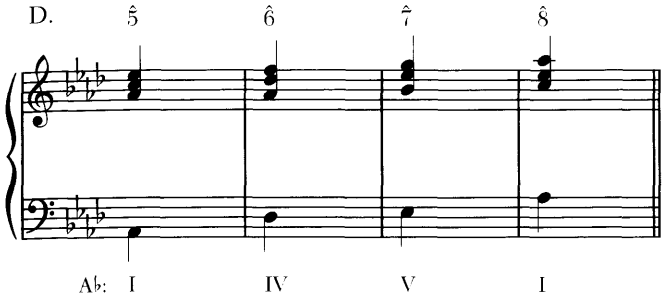


C. SCHUBERT: IMPROMPTU IN A-FLAT MAJOR, D. 899

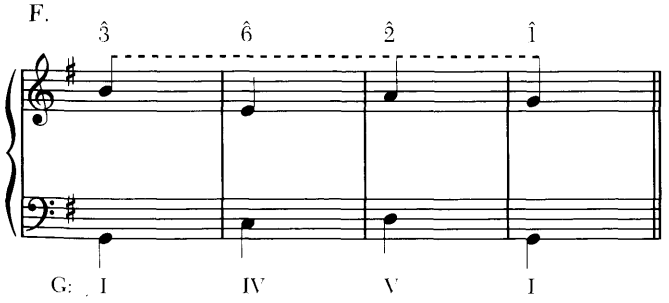


D.



E. "CIELITO LINDO" (MEXICAN FOLK SONG)

F.

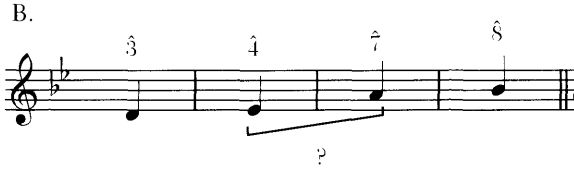


When there is more than one chord tone in the melody over a single chord, our reduction involves another step—choosing the chord tone that best represents the basic melodic motion. Look at the first two measures of Example 9.13a. In the last two measures, placement on strong beats and repetition make A and B♭ likely candidates for essential stemmed notes. But metrical placement would make D and E♭ the essential notes of measures 1 and 2, leading to an awkward tritone leap (4̂-7̂). When leaps in a melody suggest a compound melody, write both strands vertically as harmonic intervals with separate stems. In this case, the resulting upper line ascends by step, 5̂-6̂-7̂-8̂ (Example 9.13c). To complete the lower strand, C^{4} and D^{4} have been added, but they are optional and hence enclosed in parentheses.

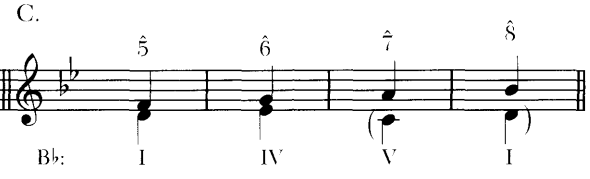
Example 9.13

A. "LITTLE BROWN JUG" (TRADITIONAL SONG)

B.



C.



GUIDELINES FOR USING THE ANALYTICAL SYMBOLS

Stem all structural or essential notes of the tonic triad and cadence chords. Use upward stems for the soprano and downward stems for the bass.

Do not stem pickup or upbeat notes in the dominant chord.

If the soprano part is a compound melody that implies two voices, stem each line separately in opposite directions.

If the soprano part is a compound melody that implies three (or more) voices, stem them all upward as a single chord.

Put scale degree numbers and carats over the essential soprano notes of a phrase.

HARMONIZING MELODIES

Harmonizing melodies allows us to use our knowledge of harmony and voice-leading in a more creative way than realizing figured-bass exercises. In harmonizing a melody, we have some latitude in choosing chords, composing a bass line, and adding embellishing tones. Rather than just moving successively from one chord to another until we reach the end of a phrase, we need a systematic procedure for harmonizing a melody.

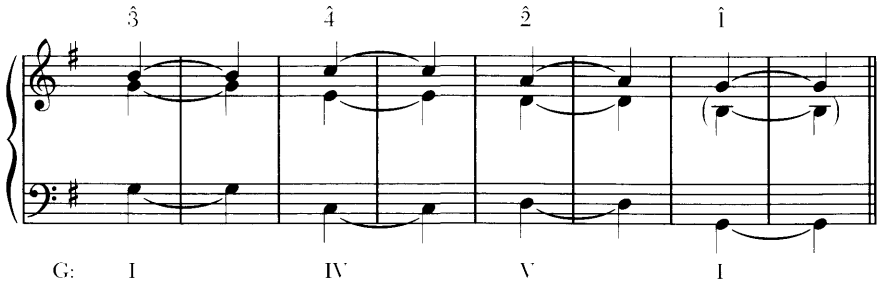
Because for the present we are restricted to root-position primary triads, we are limited in our choice of melodies. For our example we will use the concluding phrase of a folk song.

Example 9.14

"ROLL IN MY SWEET BABY'S ARMS" (TRADITIONAL FOLK SONG)

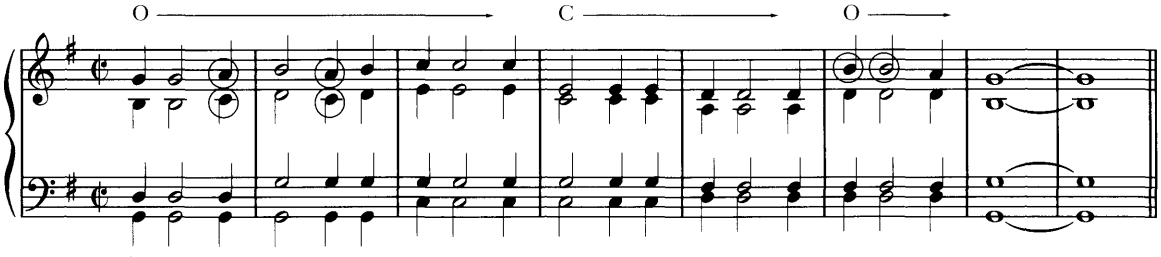
We notice immediately that this phrase is in G major, and that the opening and closing chords are I chords. The phrase concludes with a perfect authentic cadence—V-I, with $\hat{2}$-$\hat{1}$ in the soprano line, ornamented by the appoggiatura on B^4. The underlying progression implied by the melody is two measures of tonic harmony, two measures of subdominant, two measures of dominant, and two of the tonic—I-IV-V-I, each chord lasting for two measures. The presence in the melody of two chord tones for each chord change suggests a compound melody; we therefore extract two strands and stem the notes of both. The result shows that the real upper melody is $\hat{3}$-$\hat{4}$-$\hat{2}$-$\hat{1}$.

Example 9.15



The final stage of harmonizing a melody is to flesh out the basic framework, after first choosing a medium—solo with piano accompaniment, a choral setting, etc. Here we will compose a four-voice harmonization. We begin by adding the inner parts, using the partwriting procedures we discussed earlier. Because of the wide leaps in the melody, we begin in open structure, changing to close structure when the melody leaps down a sixth, and back to open structure when it leaps upward. The resulting basic harmonization illustrates the steps you should follow in harmonizing any melody.

Example 9.16



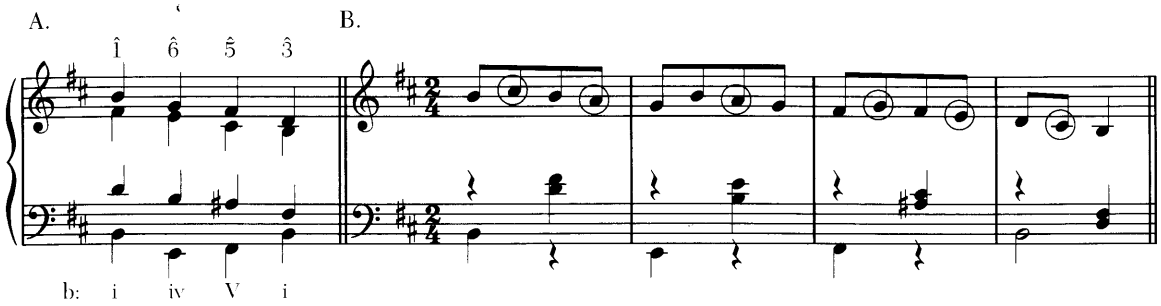
GUIDELINES FOR HARMONIZING A MELODY

1. Decide which notes are chord tones and which are embellishing notes; circle the embellishing notes.
2. The melodic reduction of the tune will give us a clearer picture of its essential features.
3. Determine the chords implied by the soprano line for the opening and cadence of each phrase.
4. Determine the supporting chords implied by the soprano in the interior of the phrase.

Elaborating Harmonic Models

Reductive analysis strips away the outer layers of music to reveal the structural skeleton. Compositional elaboration is the opposite process—putting flesh back on those bones. We will take an abstract model of a four-part progression as a skeleton and fill it out in successive steps to create a complete passage of music. This process entails (1) the addition of melodic embellishing tones, both chordal and dissonant; (2) the choice of note values to create rhythmic figures in a specific meter; and (3) choices regarding all the other elements, such as texture, register, instrumentation, dynamics, and tempo. An example of this process may be found in Example 9.17. The harmonic framework is i-iv-V-i—the familiar basic progression, but in minor mode. The bass line consists of the roots of the chords, and the appropriate Roman numerals are added. The soprano line is $\hat{1}$-$\hat{6}$-$\hat{5}$-$\hat{3}$, and the inner voices have been filled in by following our voice-leading procedures (Example 9.17a). This elaboration keeps the four voices, but arranges them in a pianistic texture, with an elaborated melody in the right hand and bass notes alternating with chords in the left. The chosen meter is $\frac{3}{4}$, and passing and neighboring notes, both chordal and dissonant, fill out the melody (Example 9.17b).

Example 9.17



There are of course many other compositional possibilities. Different choices of medium, meter, texture, rhythmic figuration, and embellishing notes would produce elaborations completely different in character from this one. Try some possibilities yourself.

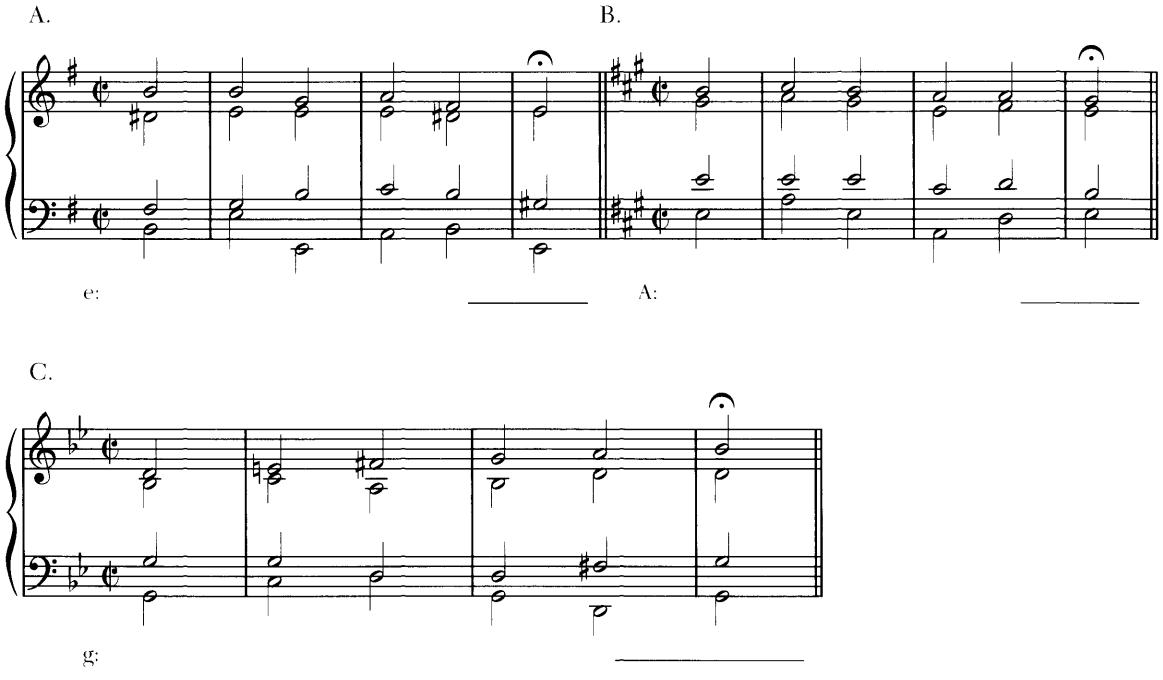
Terms and Concepts for Review

tonal closure
tonality
tonic triad
dominant triad
subdominant triad
tonic prolongation
  by arpeggiation
  by passing motion
  by neighboring motion
cadence
closed phrase
open phrase
authentic cadence
  perfect authentic cadence
  imperfect authentic cadence
half cadence
plagal cadence
voice-leading reduction
cadential expansion within the phrase

A BRIEF REVIEW SELF-QUIZ

1. In the three short passages of Example 9.18, place the correct Roman numeral below each chord; the keys have been provided. Then above each triad indicate its chord structure, where C = close, O = open, and T = tripled root. Finally, identify the type of cadence at the end of each phrase.

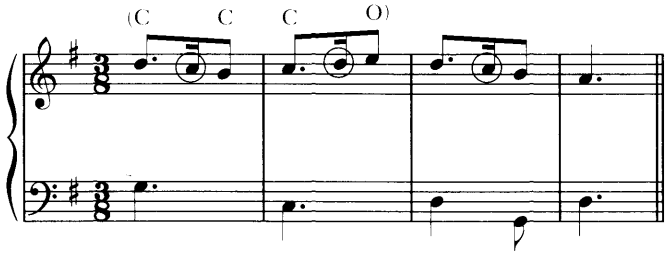
Example 9.18



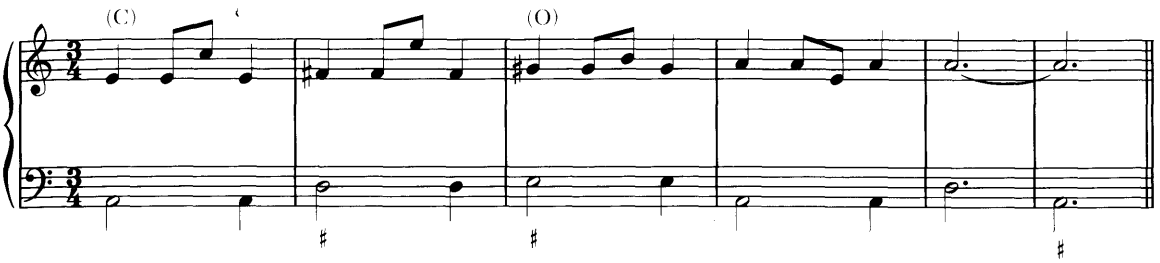
2. In Examples 9.19 and 9.20, do the following:

A. Indicate the key and write the correct Roman numeral below each bass note.
B. Label the type of cadence.
C. Indicate the soprano scale steps at the cadence.
D. Fill in the alto and tenor voices, following correct partwriting procedures. Your parts should include the figured-bass symbols that appear below the bass line in Example 9.20.

Example 9.19



Example 9.20



CHAPTER 10

The Dominant Seventh:

EMBELLISHING THE TONIC HARMONY

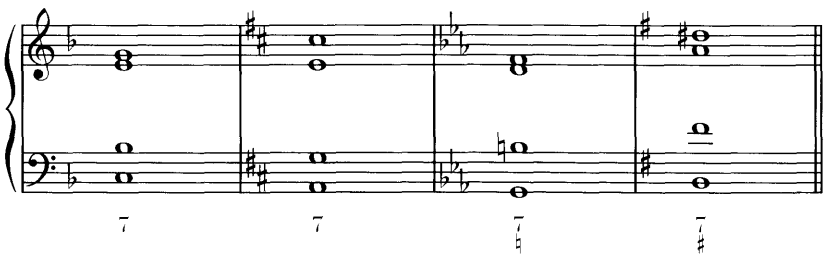
So far we have dealt only with root-position primary triads. In the next few chapters we will begin to expand our harmonic vocabulary, commencing with one of the most common harmonies—the dominant seventh chord. Its dissonant chordal seventh increases the tendency of the dominant to resolve to a tonic triad. In this chapter we will discuss the proper preparation and resolution of its dissonant seventh and also examine how the V^7 functions as both a cadential and embellishing chord. We will then turn to more linear topics by demonstrating how tonic harmony may be prolonged within the phrase, either through chordal arpeggiation of the tonic chord or through the use of dominant and subdominant triads as embellishing chords.

The Dominant Seventh in Root Position

The **dominant seventh** (V^7) is a seventh chord built on scale degree $\hat{5}$. As a frequent substitute for V, it intensifies the tendency of that triad to progress to I. The V^7 is constructed by adding a minor 7th above the root of a major triad, resulting in a major-minor seventh chord (Mm7th). This chord retains

its chord type in both modes; it is spelled the same: G B(♮) D F in C major and C minor. In this chapter we will consider only the root position of the dominant seventh. While its figured-bass indication in the major mode is simply 7, in the minor mode it appears either ♯7 or ♮7, depending on the accidental used to denote the raised 3rd above the root of the chord. Example 10.1 shows a root-position V7 in four different settings; name the keys implied by each one.[1]

Example 10.1



Preparation and Resolution of the V7

Two features of the V7 chord merit our immediate attention. First, although the 7th of the chord, scale degree $\hat{4}$, is a legitimate chord member, it forms a dissonant interval, a minor 7th, with the root of the chord, scale degree $\hat{5}$. In our analytical reductions we will leave the seventh of the chord unstemmed. This dissonant seventh must be prepared and resolved carefully, just as dissonant embellishing tones are handled. Regardless of the approach or preparation of the 7th, its departure or resolution is always *downward by step*, moving from scale degree $\hat{4}$ to $\hat{3}$. Example 10.2 illustrates the most common types of melodic preparations for the chordal 7th.

1. In Example 10.2a the 7th resembles a descending *passing tone* (P—$\hat{5}$-$\hat{4}$-$\hat{3}$), which originates from either a I chord or a V chord.
2. In Example 10.2b the 7th resembles an upper *neighboring tone* (N—$\hat{3}$-$\hat{4}$-$\hat{3}$), which originates from a I chord.
3. In Example 10.2c the 7th resembles a *suspension*, (S—$\hat{4}$-$\hat{4}$-$\hat{3}$), which originates from a IV chord.
4. Finally, in Example 10.2d the 7th resembles an *appoggiatura* (App—$\hat{2}$-$\hat{4}$-$\hat{3}$), which normally originates from a V triad.

1. The implied keys are F major, D major, C minor, and E minor.

Example 10.2

As you can see from these examples, the preparation and resolution of the 7th resembles the melodic contour of four non-harmonic tones—the passing tone, neighbor, suspension, and appoggiatura—depending on its chord of origin.

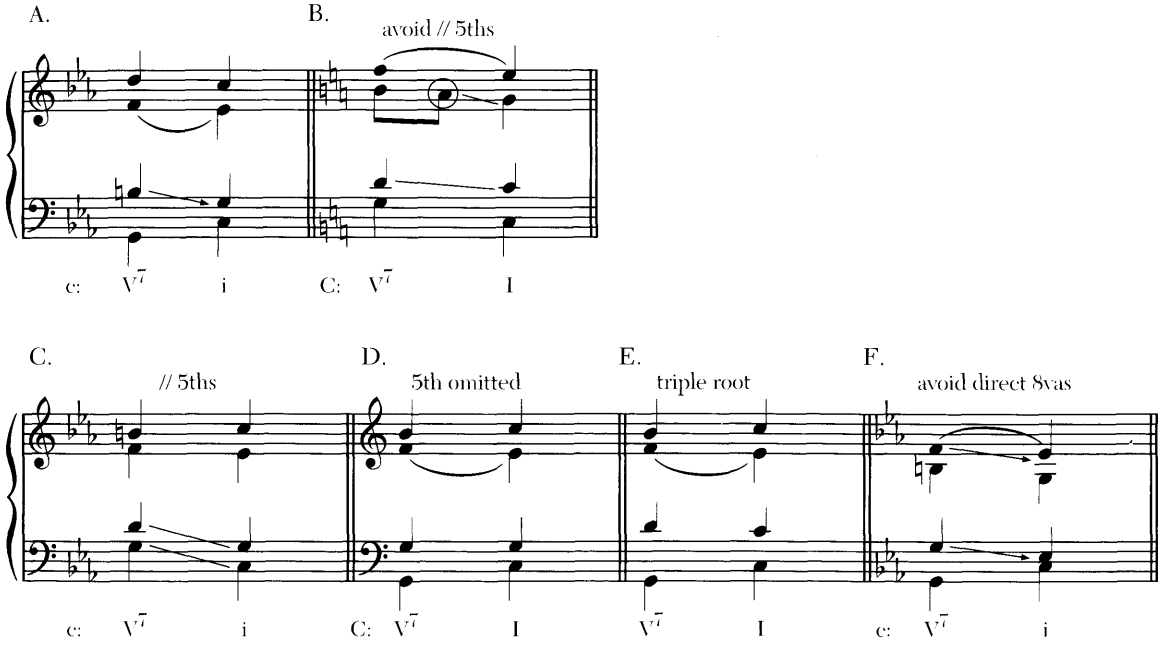
Secondly, in addition to the resolution of the chordal 7th of the V^7, we must pay attention to the resolution of its chordal 3rd, which is the leading tone or $\hat{7}$ of the key. The interval between these two chord members (scale degrees $\hat{4}$ and $\hat{7}$) is a tritone. As a diminished 5th, it tends to resolve inward to a 3rd, whereas as an augmented 4th, it tends to resolve outward to a 6th.

1. If the leading tone of a V^7 occurs in an *inner* voice (alto or tenor), it normally leaps downward to the dominant ($\hat{7}$ to $\hat{5}$) in order to complete the following I chord (Example 10.3a). We have already seen this partwriting in the triadic progression V to I in Chapter 9. Avoid inserting a passing tone ($\hat{7}$-($\hat{6}$)-$\hat{5}$), as it not only sounds awkward but may also create parallel 5ths with another voice part (Example 10.3b). In addition, the inserted passing tone calls our attention to the nonresolution of the leading tone.
2. When the leading tone is in the soprano voice, it must resolve upward by step to tonic ($\hat{7}$-$\hat{8}$). If the root-position V^7 and I are both complete chords, this partwriting will produce undesirable parallel 5ths (Example 10.3c). As a result, either the V^7 or the I must be *incomplete*. The V^7 omits its chordal 5th and doubles its root (Example 10.3d), or the I omits its chordal 5th and triples its root (Example 10.3e). Remember that tripled roots occur only at cadences.

   A final word of caution: Watch that you do not resolve both the root and 7th of the V^7 to scale degree $\hat{3}$ in the tonic triad, as this will

produce direct octaves to the undesirable doubled thirds in the I chord (Example 10.3f).

Example 10.3

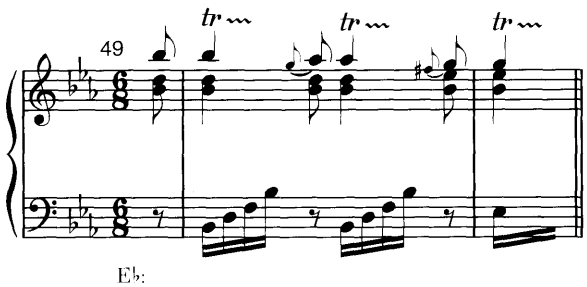


THE CADENTIAL DOMINANT SEVENTH

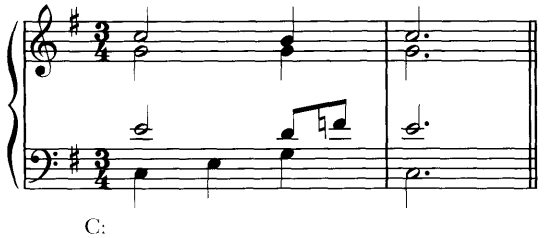
We will first consider how the dominant seventh occurs as an essential (therefore stemmed) cadential chord that immediately precedes the tonic in an authentic cadence. The V^7 seldom appears as the last chord of a half cadence, which prefers the V triad. In the short excerpts below, which show only cadence formulas, find each V^7 and indicate which type of preparation and resolution its seventh receives. In each excerpt the cadential V^7 occurs immediately before the last chord. Example 10.4a approaches the 7th through passing motion, 10.4b through an appoggiatura, 10.4c through neighboring motion, and 10.4d through a suspension. Also note the resolution or non-resolution of the leading tone and whether both chords are complete or incomplete.

Example 10.4

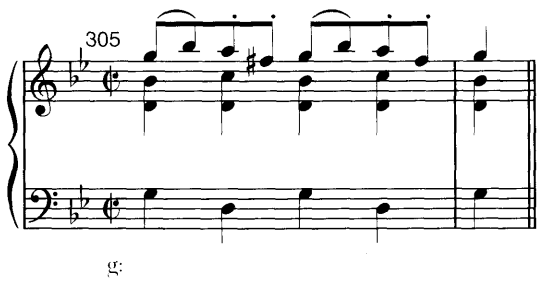
A. BERLIOZ: *SYMPHONIE FANTASTIQUE*, V



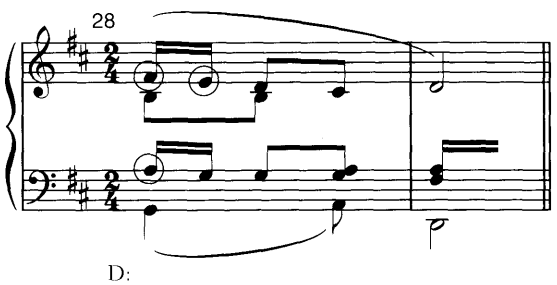
B. "NUN PREISET ALLE GOTTES BARMHERZIGKEIT" (BACH CHORALE HARMONIZATION)



C. MOZART: SYMPHONY NO. 40 IN G MINOR, I



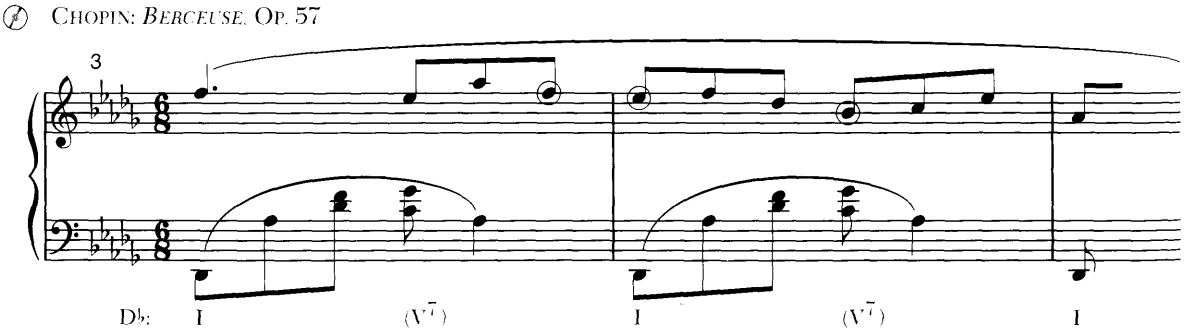
D. MENDELSSOHN: "RETROSPECTION" (*SONGS WITHOUT WORDS*, OP. 102, NO. 2)



Extended alternations of I and V^7 sometimes tend to blur the sense of musical phrasing. In evoking a gentle lullaby in his *Berceuse*, Chopin bases his entire composition on an alternation between these two harmonies (Example 10.5). The last $A\flat^3$ of each measure is the root of the V^7. All dissonant embellishing tones have been circled.

Example 10.5

CHOPIN: *BERCEUSE*, OP. 57

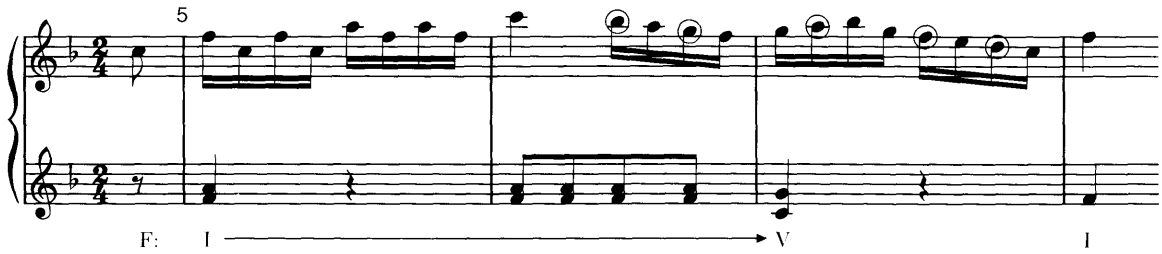


Arpeggiated Tonic Prolongation within the Phrase

We will now take up the topic of how a particular harmony may be prolonged, either through chordal arpeggiation or through the use of other embellishing passing and neighboring chords. The initial tonic harmony of a phrase is often prolonged or extended prior to its cadential formula (I→V-I or I→IV-V). This prolongation is the result of chordal arpeggiation or embellishing passing and neighboring tones. The passage from a Haydn piano sonata (Example 10.6) is a typical case in point. The tonic triad is extended through the opening two measures, first by arpeggiation and then by passing motion between chordal members before the phrase concludes with an authentic cadence (I→V-I).

Example 10.6

Haydn: Piano Sonata in F Major, Hob. XVI:9, III (C. F. Peters Edition, 1937)



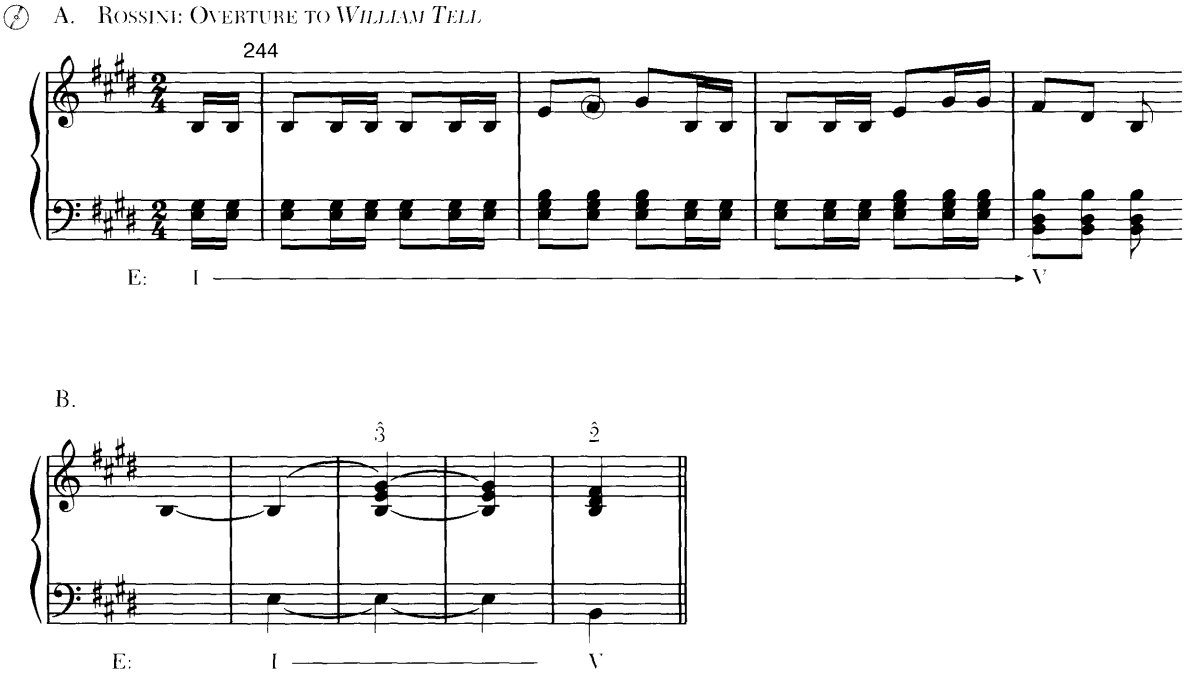
In such tonic prolongations the choice of essential notes to stem in voice-leading reductions can be problematic, especially in the upper voice. It seems obvious to stem the first chord member of the tonic, but it is not easy to arrive at hard and fast rules about which pitches to stem as essential notes during its extension. Sometimes these notes may occur on the downbeat or stressed beats of each measure, or sometimes they may be the last chordal members of the expansion. Try to choose the notes that make the smoothest stepwise voice-leading connection to the essential note of the next harmony. A *slur mark* denotes the extent of these tonic prolongations; less essential chordal members may be left unstemmed. As we shall see later, chordal leaps in dominant and subdominant harmony are treated in a similar manner.

The two phrases of Examples 10.7 and 10.8 both open with prolonged tonic harmony that leads to a half cadence on V. In the reduction of the Beethoven passage (Example 10.7b), we have represented the chordal arpeggiations of the G minor tonic with two framing stemmed notes (the first G^4 and the last $B\flat^4$) that encompass the interior B♭ and D leaps. The final $B\flat^4$ then moves stepwise to A^4, producing a typical $\hat{3}$-$\hat{2}$ half cadence (i→V).

Example 10.7

Some soprano lines display such obvious compound melodies that the different strands or chordal members may be written as vertical harmonies. The well-known Rossini tune (Example 10.8a) can be reduced in this manner (Example 10.8b), resulting in three-part harmony whose upper voice, like the previous example, traces similar melodic motion ($\hat{3}$-$\hat{2}$) over the same chordal background (I→V).

Example 10.8



Take another look at Example 10.6. How would you stem the notes for the opening tonic prolongation in a voice-leading reduction? There are compelling arguments for doing it several different ways.

In passages where two successive phrases are closely linked, the second phrase may open with either dominant or subdominant harmony prolonged in a similar way. The excerpt from Schumann's *Album for the Young* shows an example of the latter (Example 10.9a). Following the extended tonic and the imperfect cadence of the first four-measure phrase (i→V-i), the second phrase opens with an extended iv chord that leads to a perfect cadence (iv→V-i). Disregard the passing chord in parentheses at the end of measure 4. The reduction is given in two stages; the graph in Example 10.9b represents the prolongation of iv, and the further reduction in Example 10.9c reveals underlying stepwise motion in the soprano ($\hat{1}$-$\hat{2}$-$\hat{3}$-$\hat{4}$ over i→iv) before the $\hat{8}$-$\hat{\sharp 7}$-$\hat{8}$ restores the original tonic (iv-V-i).

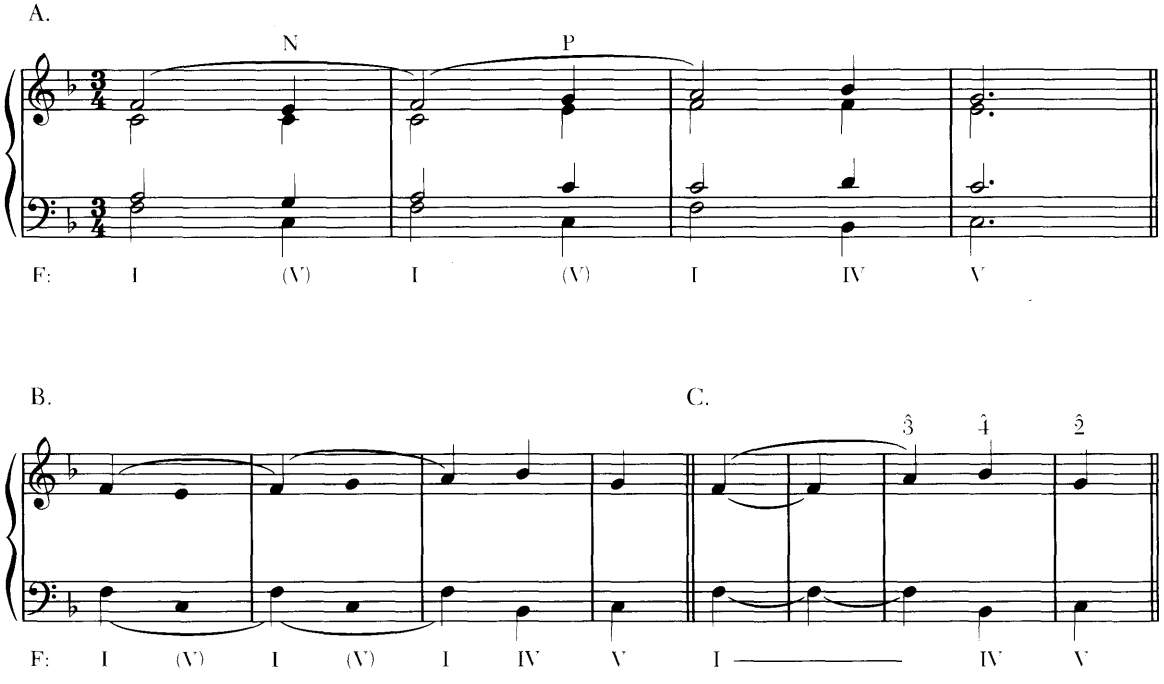
Example 10.9

A. SCHUMANN: "KNIGHT RUPERT" (*ALBUM FOR THE YOUNG*, OP. 68, NO. 12)

Prolongation of Tonic Harmony Using Embellishing Chords

Thus far we have concentrated on the beginning and endings of phrases, noting that the opening chord and concluding cadential progression function as essential harmonies. We will now focus on the interior of the phrase to determine which of its chords have an **essential** or primary function, requiring stemmed notes, and which chords have an **embellishing** or secondary function, whose notes will be unstemmed. Although such judgments are dependent on the context of individual passages, we can establish several general guidelines. In many instances where the initial tonic harmony is prolonged, one may find examples of chordal embellishment in which secondary chords serve to prolong the primary I through passing or neighboring motion. These embellishing chords may include the V, V^7, or even IV. Study the model and its reduction in Example 10.10.

Example 10.10



The final V represents the harmonic goal of the phrase. However, the two dominant triads that precede it in measures 1 and 2 do not function in

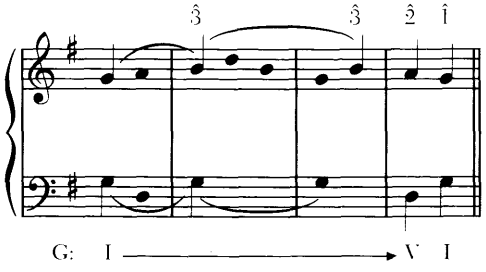
the same way. Instead, they are embellishing or linear chords that result from the passing motion in measure 1 and neighboring motion in measure 2 in the soprano. We can refer to them as *consonant passing and neighboring chords*, whose role is to prolong the tonic harmony within the phrase. Therefore, the harmonic motion of I→IV-V is expanded to I-(V)-I-(V)-I-IV-V, as the embellishing dominants extend the original tonic chord. We place the Roman numerals of these embellishing chords in *parentheses* (Example 10.10a). While the soprano and bass notes of the embellishing harmonies are indicated with unstemmed note-heads, the outer parts of the essential harmonies are stemmed (Example 10.10b). Slur marks connect the passing and neighboring motion, indicated as P and N. The further reduction in Example 10.10c deletes the secondary embellishing chords to show the tonic prolongation.

1. ***The V as an Embellishing Chord to I:*** The dominant triad is frequently used to embellish an initial tonic harmony by either passing or neighboring motion. The two sacred works in Example 10.11 use differing approaches. The single embellishing dominant chord (V) in the colonial hymn tune (Example 10.11a) functions in a passing capacity (G^4-A^4-B^4 in the soprano) during the three-bar tonic prolongation; note the unstemmed chord and slurs in the reduction (Example 10.11b), as well as the stemmed B's in measures 2–3, preceding the cadential $\hat{2}$-$\hat{1}$. In his expressive setting of the Sanctus (Example 10.11c), Palestrina makes effective use of suspensions in the neighboring (measure 2) and passing (measure 4) dominants that precede the authentic cadence. The overall melodic contour in the reduction (Example 10.11d) suggests a rise to the mediant before the stepwise descent to tonic in the upper voice ($\hat{1}$-$\hat{3}$-$\hat{2}$-$\hat{1}$).

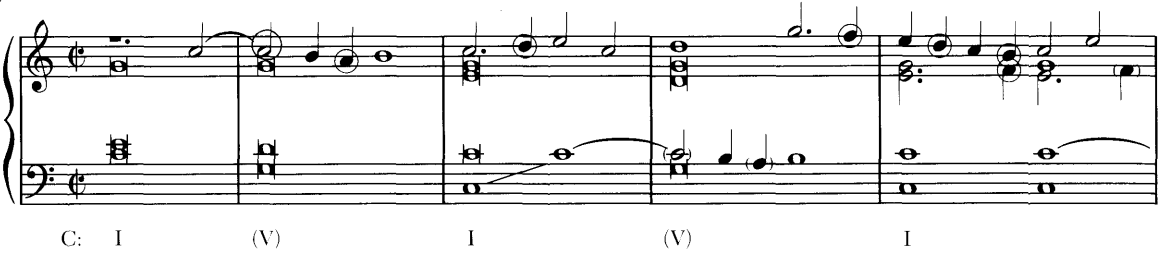
Example 10.11

A. "PLAINFIELD" (AMERICAN HYMN TUNE)

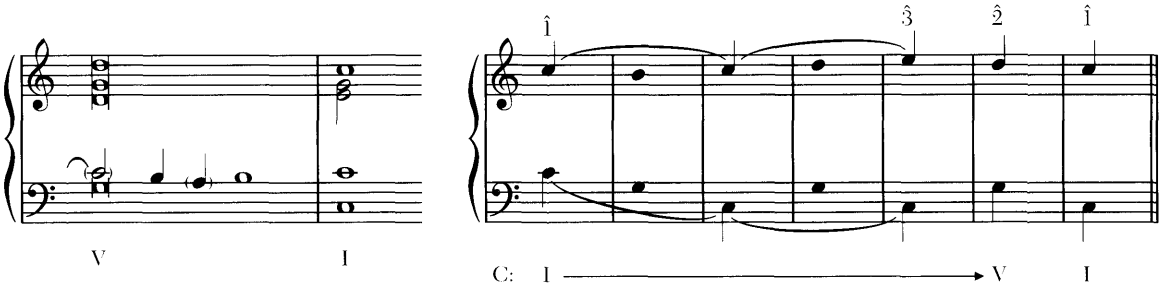
B. (REDUCTION)



C. PALESTRINA: SANCTUS FROM *MISSA PAPAE MARCELLI*



D. (REDUCTION)



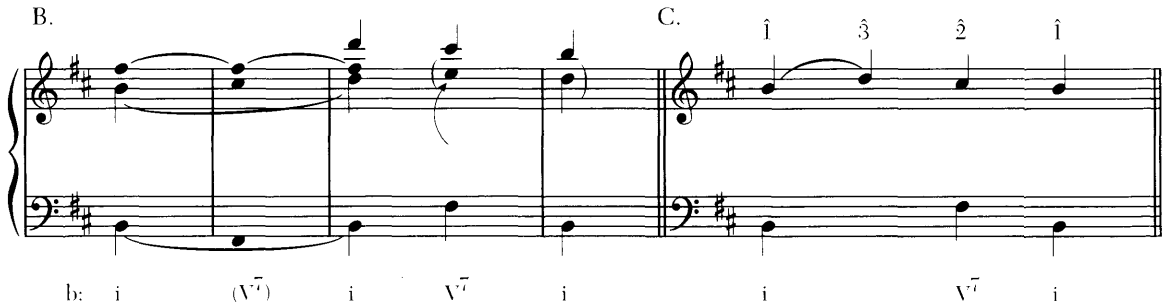
2. ***The V^7 as an Embellishing Chord to I:*** The Schubert excerpt in Example 10.12a contains both cadential and embellishing dominant 7ths; the bass line and Roman numerals show that the V^7 in parentheses in measure 2 embellishes its framing tonic harmony, while the function of the essential V^7 in the next bar is cadential.

Example 10.12

A. SCHUBERT: WALTZ IN B MINOR, OP. 18, NO. 6

B.

C.

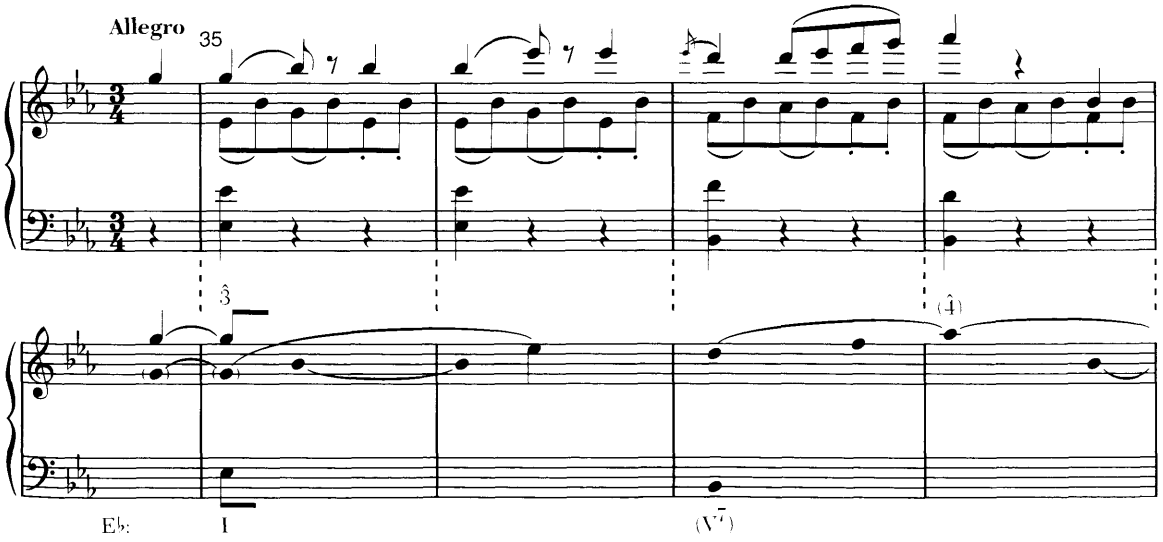


In this waltz the soprano notes on the first beat of the initial three bars (B^4-$C\sharp^5$-D^5) comprise the principal melodic line, while the upper F♯ functions as a kind of inverted pedal. The reduction in Example 10.12b treats this line as a compound melody whose lower voice spans the embellishing V^7 with passing motion, as indicated by the slur. When the tune shifts into the upper register, several notes have been brought up from the middle voices to fill in the implied harmonies, indicated with parentheses. In the final reduction (Example 10.12c) the upper D^6 has been displaced an octave lower to clarify the voice-leading connections. Now we see that the underlying soprano line moves from $\hat{1}$ to $\hat{3}$, followed by stepwise descent back to the tonic at the cadence, denoted by the scale degrees $\hat{3}$-$\hat{2}$-$\hat{1}$.

The excerpt from the Haydn Scherzo in Example 10.13 poses two analytical problems—the wide range of the upper melodic line and a phrase grouping that can be interpreted in two ways. To address the first problem, in our first reductive analysis directly below the music in Example 10.13, we employ a downward octave displacement of some notes in the upper part to clarify the basic voice leading.

Example 10.13

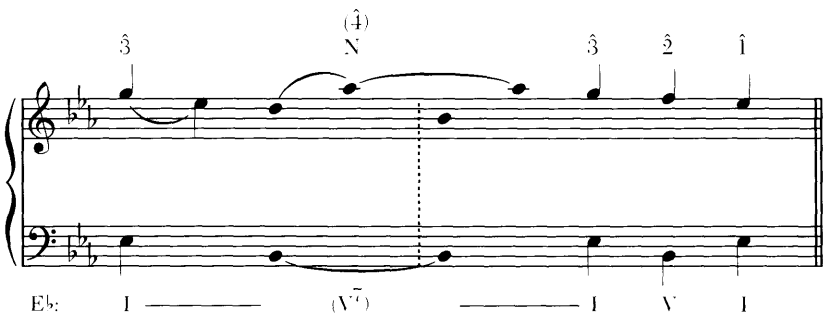
HAYDN: STRING QUARTET IN E-FLAT MAJOR ("JOKE"), OP. 33, NO. 2, II



The second problem is how to interpret the passage's phrase grouping—is it two phrases of four measures each, or is it one long eight-measure phrase? There are two potential difficulties with the two-phrase theory. First, the cadence of the first phrase would end on a V^7 with its chordal seventh ($\hat{4}$) in the soprano, both of which are unusual occurrences at half cadences. Second, the fast tempo of the passage would produce very short four-bar phrases.

If, however, we consider the excerpt a single eight-measure phrase, then the soprano $\hat{4}$ in the middle of the phrase can be explained as large-scale neighboring motion ($\hat{3}$-$\hat{4}$-$\hat{3}$) in which the $\hat{4}$ is supported by an embellishing V^7. This preferred interpretation, shown in further reduction in Example 10.14, suggests a soprano motion of $\hat{3}$-($\hat{4}$)-$\hat{3}$, followed by the obvious $\hat{3}$-$\hat{2}$-$\hat{1}$ authentic cadence in the last two bars. The upper voice suggests a kind of compound melody whose components are notated vertically in the reduction prior to the cadence. The $\hat{3}$-$\hat{4}$-$\hat{3}$ neighboring motion is a very common method of embellishing the tonic, in which the $\hat{4}$ may be supported by either IV or V^7.

Example 10.14



The symbols employed thus far in our reductive analyses are illustrated and defined in the following chart for your reference.

GUIDELINES FOR USING THE ANALYTICAL SYMBOLS

Do not stem the chordal 7th of a V^7 chord in the soprano, unless it is part of the final cadence. Use a slur to connect its preparation to its resolution.

In chordal arpeggiations that prolong tonic harmony, choose the essential notes to be stemmed according to their accent, length, etc. (Often they will be the first and last notes of the tonic arpeggiation.) Leave the other notes unstemmed and connect the entire prolongation with a slur.

In other chordal arpeggiations (such as V or IV), stem the first or most important note and connect the others with a slur.

Embellishing V and V^7 chords remain unstemmed; use a slur to connect the chords that precede and follow them. You may denote the melodic nature of the entire figure with an abbreviation (such as P = passing, etc.)

MELODY HARMONIZATION

For our further study in melody harmonization we have chosen the last section of the folk tune "Blue Tail Fly," whose refrain features an initial tonic prolongation (Example 10.15a).

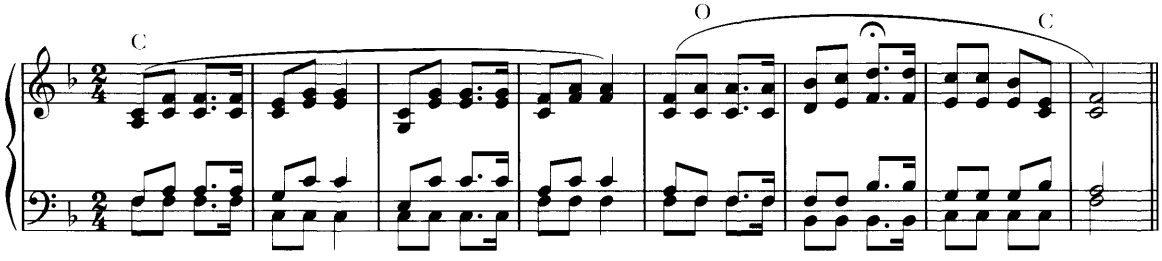
Example 10.15

REFRAIN TO "BLUE TAIL FLY" (FOLK SONG)

The several linear strands illustrated in the reduction (Example 10.15b) clearly derive from the tune's compound melodies and have been aligned to form vertical intervals. The D^5 in measure 6 may represent an octave displacement of D^4 or scale degree $\hat{6}$, which moves on to $\hat{7}$-$\hat{8}$ at the cadence (D^4-E^4-F^4). The C^5-$B\flat^4$ (or $\hat{5}$-$\hat{4}$) suggests a passing V^7 whose destination is an implied A^4 (or $\hat{3}$), shown in parentheses. The underlying upper voice reveals an ascent from $\hat{1}$ to $\hat{5}$ ($\hat{1}$-$\hat{2}$-$\hat{3}$-$\hat{4}$-$\hat{5}$), before resolving to an implied $\hat{3}$. The harmonic scheme for the refrain suggests a prolonged I extended by an embellishing V before the cadential IV-V^7-I.

We can now apply our partwriting skills to produce a four-voice setting (Example 10.16). Since the tune rises to D^5 at its climax before rapidly descending near the end, we should change from close to open structure on the repeated IV in measure 5; the downward leap from C^5 to E^4 will then necessitate a change back to close structure in the final bar. Notice how the soprano $B\flat^4$ drops an octave into the tenor voice at the cadence.

Example 10.16



THE ELABORATION OF A HARMONIC MODEL

In order to better appreciate how a composer might go about elaborating a harmonic and voice-leading model to create an actual piece of music, let us hypothetically peek over Mozart's shoulder as he composes the first section of a minuet in moderate tempo. He could have started with a simple voice-leading sketch for a pair of four-measure phrases, using a harmonic scheme of I→V^7, followed by V^7→I (Example 10.17a). In his first melodic elaboration, an opening two-bar prolongation of the arpeggiated tonic harmony leads to a half cadence ($\hat{8}$-$\hat{7}$); this pattern is reversed in the second phrase, where a two-bar prolongation of the arpeggiated dominant leads to the final $\hat{2}$-$\hat{1}$ authentic cadence (Example 10.17b). Since the cadence chord falls on the third (rather than the fourth) measure of each phrase, Mozart correctly senses that motion must be continued through these bars in order to maintain melodic and rhythmic interest. He therefore prolongs the cadence chord

through a measure of eighth-note figuration that spans the third and fourth bars of each phrase; in the first case, this eighth-note figuration is immediately echoed in another voice part. The redundant V^7-I at the end of this section (end of measure 7 to 8) merely reiterates the earlier real cadence (end of measure 6 to 7). Example 10.17c illustrates a simplified version of Mozart's final elaboration. In his orchestral setting of this Minuet, Mozart scores this passage for two clarinets with a light string accompaniment. While the first clarinet states the melody, the second clarinet performs eighth-note arpeggios in its low register. The echo effect in the fourth bar is played by a solo oboe.

Example 10.17

C. MOZART: SYMPHONY NO. 39 IN E-FLAT MAJOR, III, TRIO (SIMPLIFIED)

Obviously, we have no way of knowing whether the above description duplicates Mozart's actual compositional process. Still, surviving composers' sketches do on occasion reveal remarkably similar procedures.

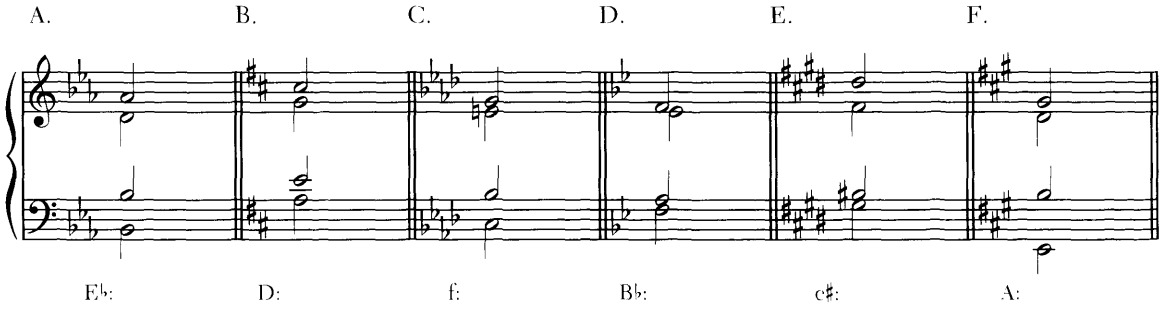
Terms and Concepts for Review

dominant seventh
preparation and resolution of 7th
resolution and non-resolution of leading tone
arpeggiated prolongation of tonic
essential chords
embellishing chords
V as an embellishing chord
V^7 as an embellishing chord

A BRIEF REVIEW SELF-QUIZ

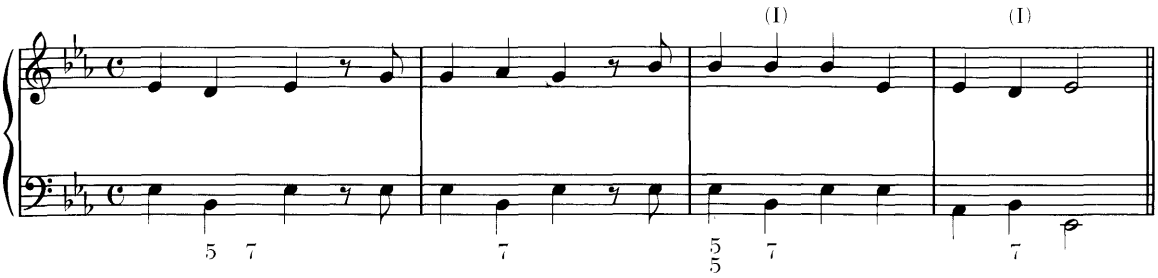
1. Resolve each dominant seventh chord to a root-position tonic triad in Example 10.18. After making sure that the partwriting between the two harmonies is correct, supply Roman numerals. Be wary of potential parallels in parts b and f.

Example 10.18



2. Realize the figured bass in Example 10.19 by filling in the alto and tenor voices. Supply the key, add Roman numerals, and indicate the figuration (P, N, A, or S) used to prepare and resolve each V^7.

Example 10.19



3. Supply a Roman numeral analysis for the pair of phrases in Example 10.20, taking care to distinguish between essential and embellishing harmonies. Make a voice-leading reduction of each phrase, using the guidelines established in the last two chapters.

Example 10.20

A.

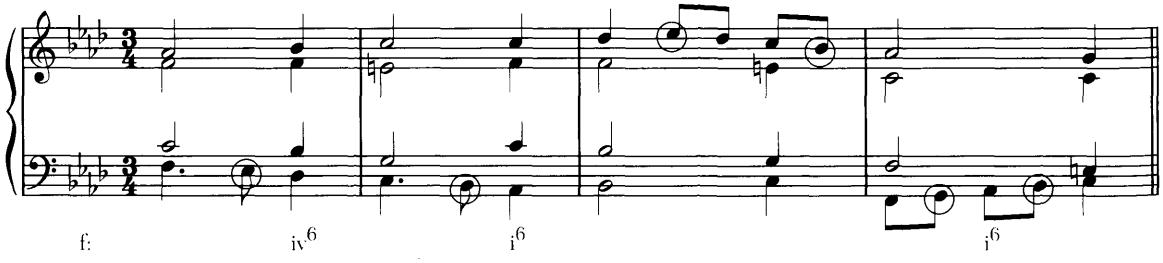
B.

CHAPTER 11

The Tonic and Subdominant Triads in First Inversion; The IV and I as Embellishing Chords

SINCE THE SOPRANO and bass parts are the most important structural voices in a musical texture, they should exhibit good melodic lines. Up to this point, however, we have limited ourselves to root-position primary triads, so that our only choices for bass notes were three scale steps: $\hat{1}$, $\hat{4}$, and $\hat{5}$. We now add the first inversions of the tonic and subdominant (I^6 and IV^6), which will supply two additional scale degrees in the bass ($\hat{3}$ and $\hat{6}$), making it easier to create interesting melodic lines by inserting various embellishing tones between the essential bass notes. For instance, in the following minor-mode passage (Example 11.1), the i^6 and iv^6 now provide chordal anchors for passing motion in the bass.

Example 11.1



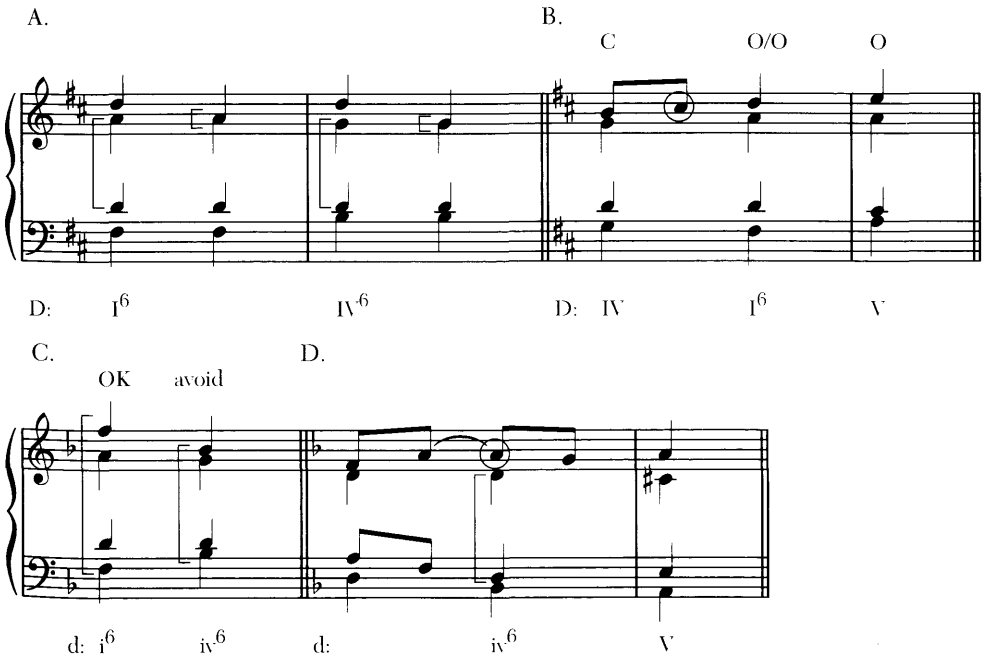
We will begin this chapter by first examining some typical functions of the first-inversion tonic and subdominant triads in musical passages. Later in the chapter we will demonstrate how the I and IV may be used as embellishing chords in prolonging harmonies before concluding with some observations on harmonizing melodies and elaborating models.

PARTWRITING WITH THE I^6 AND IV^6

Once we introduce inversions into our progressions, we will find that the resulting partwriting situations are too numerous and varied to allow us to formulate any binding rules, as we could when we used only root-position chords. In progressions involving the I^6 and IV^6, the best partwriting policy is to seek the smoothest connections between the different voice parts while avoiding errors such as parallel perfect intervals, questionable melodic leaps, and irregular chord doublings.

The standard way to handle doubling of chord notes in these two inversions is to double the note that appears in the soprano at either the unison or the octave; Example 11.2a shows how these two options produce different chord structures. In some situations, doubling the soprano note will lead to partwriting errors; in these cases, it may be necessary to double the note that appears in one of the other voices.

Example 11.2



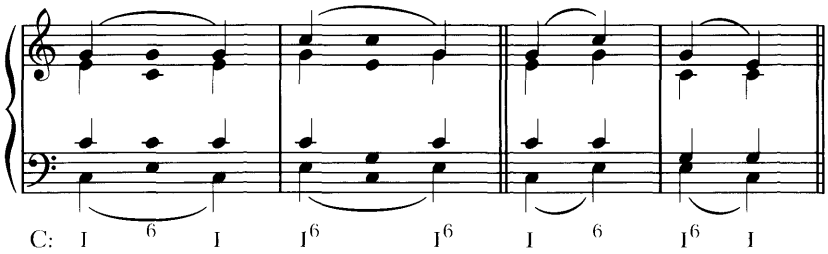
Often an open/octave structure serves as a link between close and open structure or vice versa (Example 11.2b). While the chordal 3rd of a I chord ($\hat{3}$) may appear in both the soprano and bass voices, it is not advisable to double the 3rd of the IV chord, the more active scale degree $\hat{6}$ (Example 11.2c). On occasion it may be necessary to double an inner voice—for example, when a suspension is placed in the soprano of a iv^6 (Example 11.2d). As a general rule, the safest scale degrees to double are $\hat{1}$, $\hat{4}$, and $\hat{5}$, the more questionable ones to double are $\hat{3}$ and $\hat{6}$, and one should never double the leading tone ($\hat{7}$).

THE USE OF THE I^6

The first-inversion tonic triad in major and minor keys (I^6 and i^6) tends to occur in two contexts:

1. The I^6 can extend tonic harmony through three-note arpeggiations, such as I-I^6-I or I^6-I-I^6); in both instances the interior bass note is left unstemmed in reductions (Example 11.3a). In two-note figurations (I-I^6 and I^6-I), however, *both* notes are stemmed (Example 11.3b).

Example 11.3

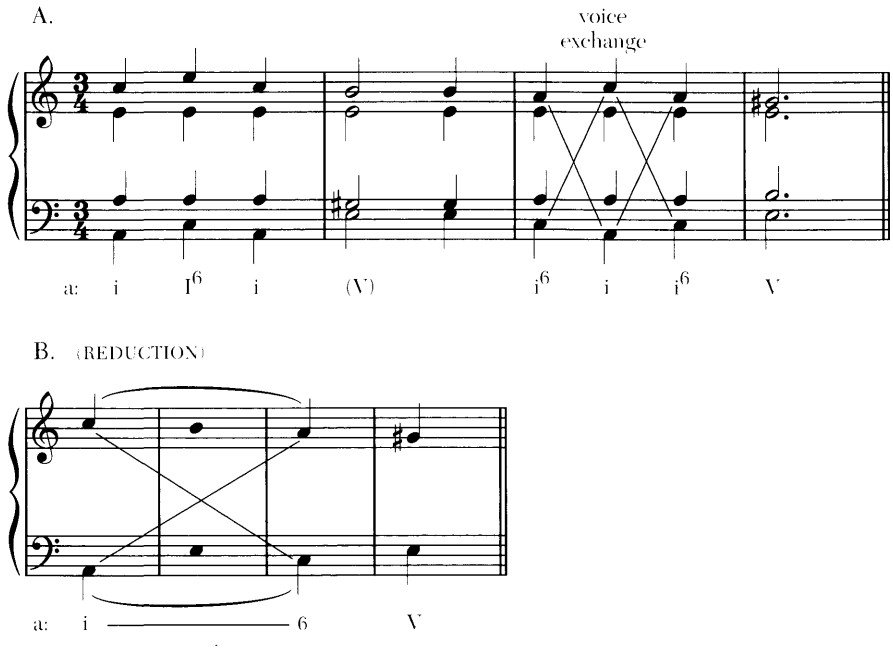


2. The I^6 may be used either to approach or depart from the V, V^7, or IV chords. In such cases we will consider the I^6 an essential chord, as shown in the typical progressions in Example 11.4.

Example 11.4

In the third measure of the harmonic model in Example 11.5a, the scale degrees in the outer voices are *switched*—that is, the $\hat{1}$ in the soprano (A^4) moves to the bass, while the $\hat{3}$ in the bass (C^3) moves to the soprano. We call this device **voice exchange** and use crossed lines between the two parts to denote the switching of notes or scale degrees. In this particular case the outer voices immediately switch back again. In addition to voice exchange between consecutive chords, an embellishing chord may be interpolated between the basic harmonies, such as I-(V)-I^6. The further reduction of the passage in Example 11.4b reveals a long-range voice exchange bridged by an embellishing dominant in measure 2.

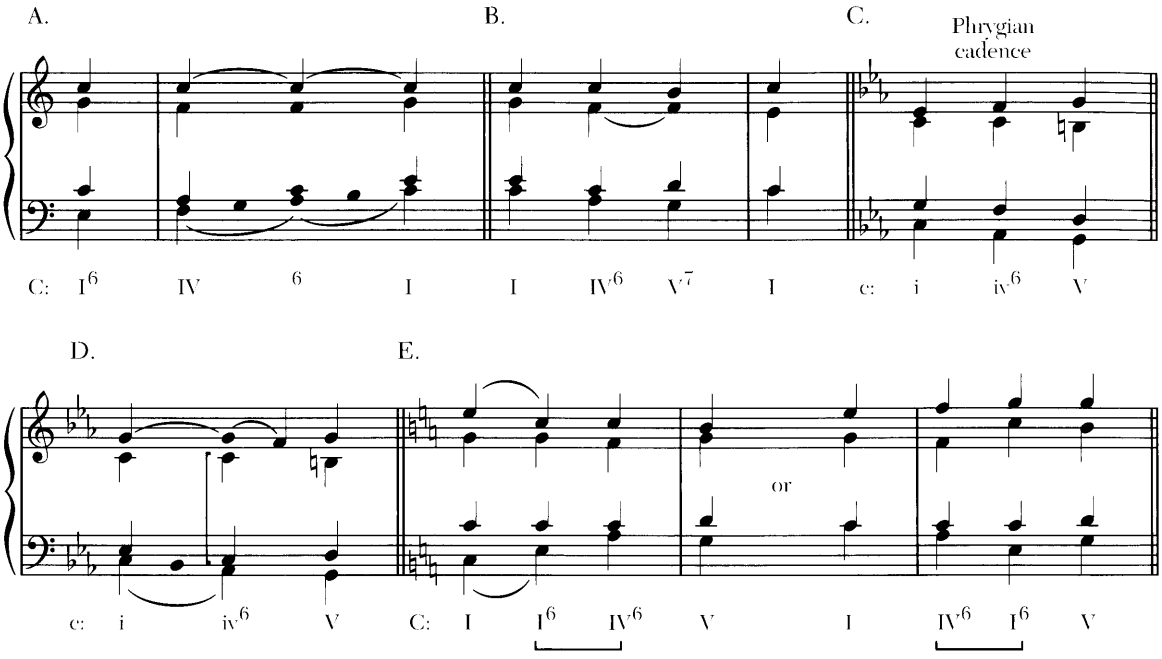
Example 11.5



THE USE OF THE IV^6

The first-inversion subdominant triad in major and minor (IV^6 or iv^6) occurs in three basic contexts, as shown in Example 11.6.

Example 11.6



1. The IV^6, like the I^6, may extend the IV harmony through arpeggiation, allowing the insertion of passing tones (Example 11.6a).
2. The IV^6 also provides another stepwise approach to V, this time from above ($\hat{6}$-$\hat{5}$), as shown in Example 11.6b. In this progression, which occurs frequently as a half cadence in the minor mode (iv^6-V), both of the outer voices normally move stepwise by contrary motion to the dominant; $\flat\hat{6}$-$\hat{5}$ downward in the bass and $\hat{4}$-$\hat{5}$ upward in the soprano (Example 11.6c). Its particular title, the **Phrygian half cadence,** derives from this characteristic voice leading, which is typical of the primary cadence in the Phrygian church mode; see Appendix 2. A 7-6 suspension over the bass is often used to embellish this progression (Example 11.6d); doubling the inner voices in the iv^6 avoids potential parallel octaves and 5ths.
3. Finally, the IV^6 is sometimes linked directly with the I^6, in such progressions as I^6-IV^6 or IV^6-I^6 (Example 11.6e). Since this succession involves two first inversions, you will probably have to change the doubling in one of the triads to avoid possible parallels.

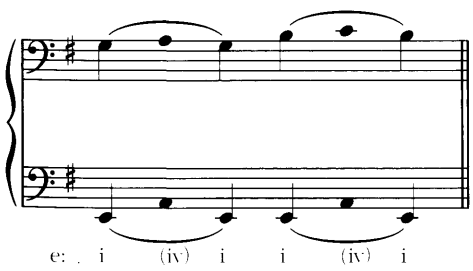
The IV as an Embellishing Chord

Having summarized the typical uses of the I^6 and IV^6, we now return to the principle of harmonic prolongation to examine how the IV and I may function as embellishing chords. As we noted in our previous discussion of triadic prolongations, the subdominant triad may sometimes function as an embellishing chord to I. Play the Tchaikovsky excerpt in Example 11.7a, observing the relation of the pair of iv chords to the E minor tonic.

Example 11.7

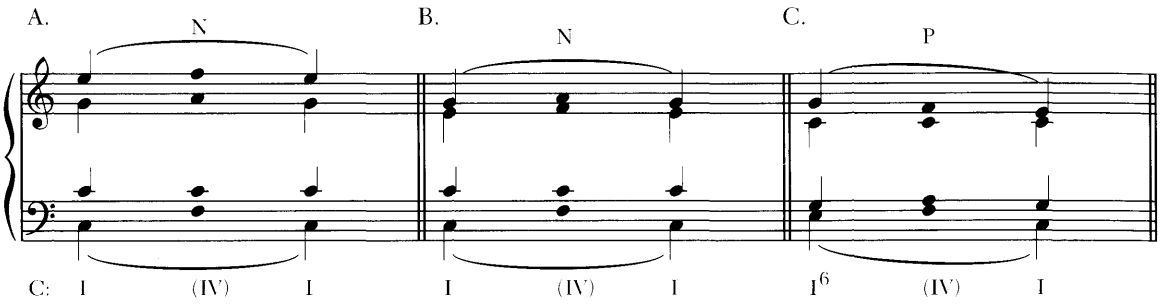
A. Tchaikovsky: Symphony No. 5 in E Minor, I

B.



Here the subdominant harmony does not function as a pre-dominant to V, but instead assumes the role of an embellishing chordal neighbor to the tonic. Like the embellishing V and V^7, the embellishing IV chord is unstemmed and connected with slurs in voice-leading reductions (Example 7b). In most cases the IV is in root position, with the neighboring motion occurring in the upper voices ($\hat{3}$-$\hat{4}$-$\hat{3}$ or $\hat{5}$-$\hat{6}$-$\hat{5}$), as shown in Examples 11.8a and b. Even passing motion ($\hat{5}$-$\hat{4}$-$\hat{3}$) is possible, as Example 11.8c demonstrates.

Example 11.8

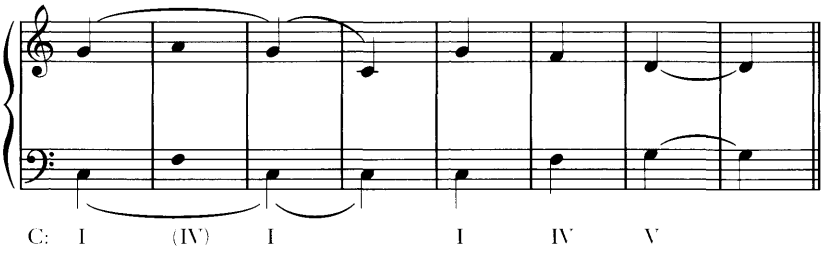


The context of a passage will usually establish the embellishing nature of the IV. In most instances the subdominant is shorter in duration and metrically weaker than the tonic chord it decorates. The overall progression frequently takes the form of I-(IV)-I or I-IV-V-I, in which the embellishment (I-IV-I) occurs early on before the phrase concludes with a confirming cadence (IV-V-I or IV-V). The second phrase of Bob Dylan's well-known tune is a typical instance; its melody with accompanying guitar chords appears in Example 11.9a. The reduction (Example 11.9b) requires no additional comment.

Example 11.9

A. BOB DYLAN: "BLOWIN' IN THE WIND"

B. (REDUCTION)

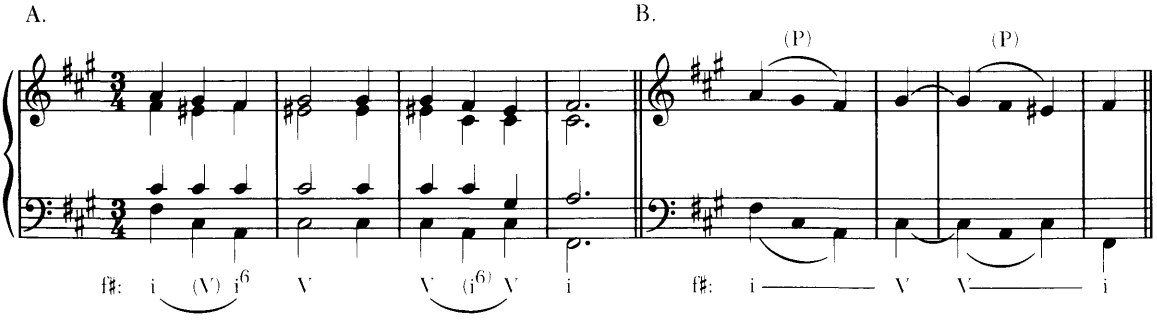


THE I AS AN EMBELLISHING CHORD

We have observed how the V or V^7 and IV can prolong tonic harmony through embellishing motion within the phrase. On occasion, the melodic motion between two dominant chords or between two subdominant chords

creates a consonant passing or neighboring harmony that embellishes the V or IV. In many such progressions this contrapuntal embellishing chord turns out to be a I or I^6 that has momentarily relinquished its role as the fundamental tonic harmony in the key and has taken on the subservient function of elaborating a lesser harmony—the V or IV. An example of this technique may be found in Example 11.10a. The underlying harmonic progression is I-V, V-I. In the first measure the essential harmony is tonic (I-(V)-I^6); in the third measure the essential harmony is the dominant (V-(I^6)-V). Just as the V embellishes the tonic harmony in measure 1, the I^6 embellishes the V in measure 3; the Roman numerals of both are therefore enclosed in parentheses. In the reduction of Example 11.10b, the two embellishing chords remain unstemmed.

Example 11.10



The following chart will serve as a handy summary and reference for the use of analytical symbols in voice-leading reductions.

GUIDELINES FOR USING THE ANALYTICAL SYMBOLS

In three-note arpeggiations of tonic harmony (1-3-1 or 3-1-3), stem the first and last notes and connect with a slur.

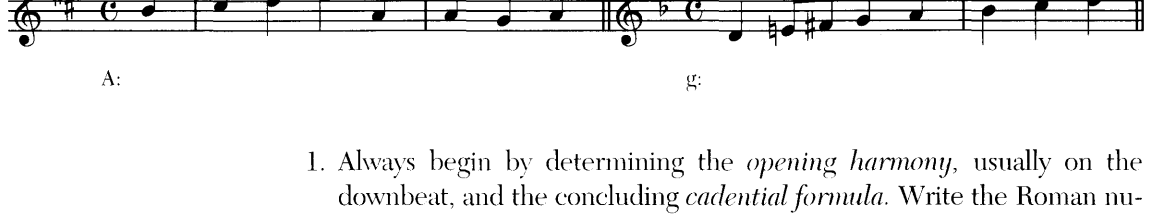
In two-note arpeggiations of tonic harmony (1-3 or 3-1), stem both notes and connect with a slur.

Embellishing IV or I chords are notated in the same manner as embellishing V or V^7 chords—that is, with an unstemmed notehead and a connecting slur.

Melody Harmonization

The melodies we chose to harmonize in the two previous chapters were folk-like in nature, with a relatively slow **harmonic rhythm** or rate of chord change—only one or two chords per measure. Now that we have added the I^6 and IV^6 to our chordal vocabulary, we can create more interesting melodic lines in the bass. Therefore, we will turn our attention to short melodic phrases that feature a faster rate of chord change—usually one chord per beat. Such melodies are typically found in chorale or hymn settings. The step-by-step harmonization procedure outlined below pays particular attention to the composition of the bass line and its relation to the soprano part. Two brief hymn-like phrases, labeled Tune A and Tune B, will serve as our harmonization models (Example 11.11a and b).

Example 11.11



1. Always begin by determining the *opening harmony,* usually on the downbeat, and the concluding *cadential formula.* Write the Roman numerals, soprano scale degrees, and bass notes for these framing chords. These chords will normally be in root position, unless we are dealing with an inverted progression, such as the Phrygian cadence. It is essential that the cadence you choose features typical scale degrees in the soprano. As Example 11.12 shows, Tune A begins with a I chord and concludes with a perfect authentic cadence: $\hat{7}$-$\hat{8}$ over V-I. Tune B begins with i and concludes with $\hat{4}$-$\hat{5}$ over iv^6-V, a Phrygian half cadence.

Example 11.12

2. The next step is to fill in the interior of the phrase. The selection of possible chords to harmonize the soprano notes and the composition of a good bass line to fit those chords must go hand-in-hand. The chart in Figure 11.1 lists the different scale degrees in the soprano and the various available chords that can support them. Some soprano scale degrees, such $\hat{3}$, $\hat{6}$, $\hat{2}$, and $\hat{7}$, have such strong harmonic implications that we have little choice of supporting chords; the implied chords are nearly mandatory. For the other scale degrees—$\hat{1}$, $\hat{4}$, and $\hat{5}$—we have a wider choice of supporting chords.

   When you are composing a bass line to fit your selected chords, (1) strive for a good mixture of similar and contrary motion between the outer parts, and (2) stress the use of imperfect consonances (3rds and 6ths) as vertical intervals between the soprano and bass, reserving the perfect intervals (octaves and 5ths) for the opening and cadence of the phrase. Each tune has been provided with Roman numerals and two possible bass lines in Example 11.13.

   Aside from pointing out obvious melodic or partwriting errors, subjective judgments or evaluations of harmonizations or original pieces are best undertaken under the guidance of an instructor or in class discussions. The fact that one harmonization simply sounds better than another one can sometimes be obvious, but the determination of *why* one sounds better and *why* the other sounds worse is much more difficult to pinpoint and explain in rational terms. I personally prefer the first setting of each tune to its second setting (Example 11.13); for one thing, the second contains several outright

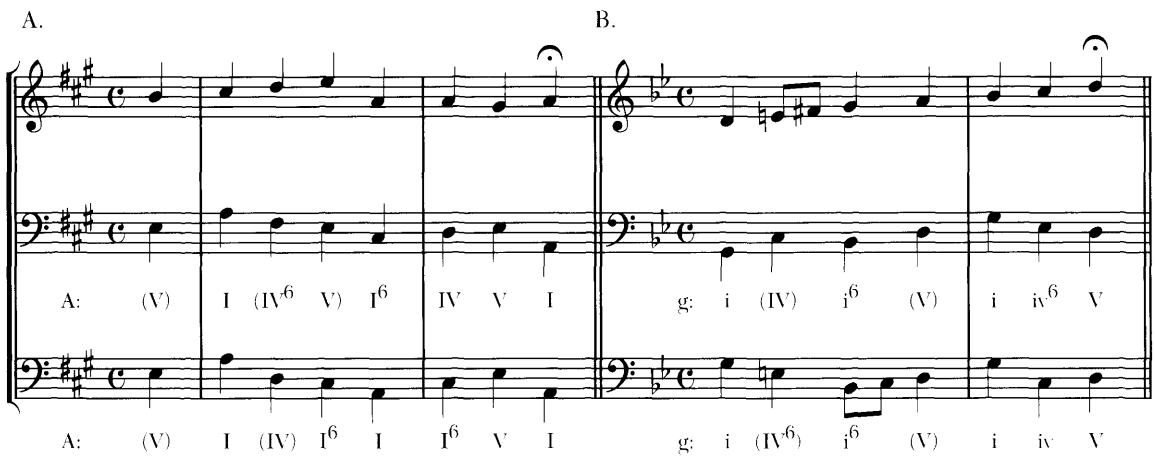
Figure 11.1

Presently available chords to support different scale degrees in the soprano:

soprano scale steps	$\hat{1}$	$\hat{2}$	$\hat{3}$	$\hat{4}$	$\hat{5}$	$\hat{6}$	$\hat{7}$
available chords	I	V	I	IV	I	IV	V
	I^6	V^7	I^6	IV^6	I^6		V^7
	IV^6			V^7	V		
					V^7		

errors. The second setting in Example 11.13a displays direct octaves to A on the last beat of the first bar. In addition to the doubled $\hat{6}$ (E♮), the second setting in Example 11.13b contains parallel 5ths in measure 1 and parallel octaves at the cadence. Compare and discuss the two settings of each tune in your class and see what agreement you reach among yourselves.

Example 11.13

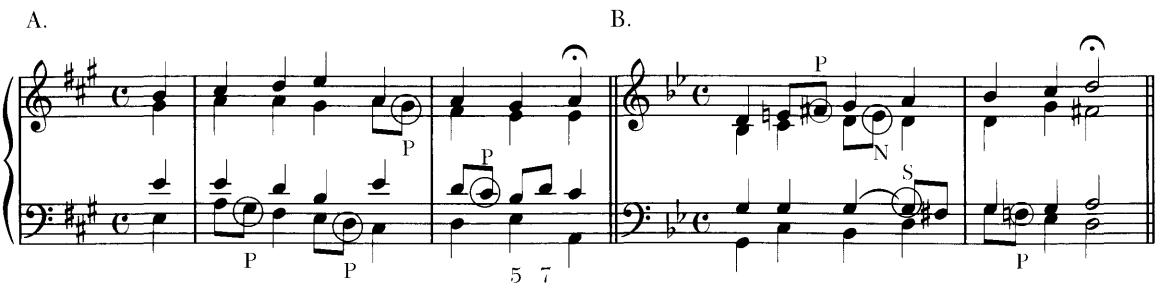


3. The next step is to fill in the inner voices to create a four-part texture, using our standard partwriting procedures (Example 11.14). Can you find an example of voice overlap in one of the settings? Since Tune B spans the upward range of an octave, we should begin in close structure before spreading out to open structure at its cadence; note the doubling of the inner voices at the Phrygian half cadence.

Example 11.14

4. The final step is the elaboration of our note-against-note setting with various embellishing tones. Avoid the temptation to overindulge by using too many non-harmonic tones. At the same time, be careful that those you employ do not create parallel octaves or fifths with other voices. Example 11.15 shows our finished products.

Example 11.15



Summary of Harmonization Procedures

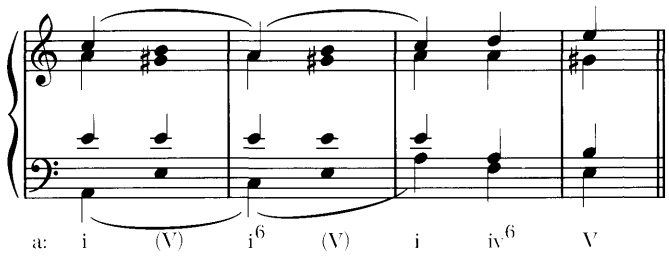
1. Choose the **opening harmony** and the **cadence formula,** including a typical cadential soprano line.
2. Choose **soprano notes, appropriate chords,** and a **good bass line** to fill out the interior of the phrase.
3. Fill in the **interior voices,** following standard partwriting procedures.
4. Add **embellishing tones.**

Elaboration of Harmonic Models

As a complementary activity to melody harmonization, the elaboration of harmonic models, similar to Step 4 above, also stresses creative choices. Two such models appear in Examples 11.16a and 11.17a. The first elaboration relies largely on passing tones and suspensions (Example 11.16b); the scherzo-like $\frac{6}{8}$ setting in Example 11.17b emphasizes unaccented stepwise motion in the form of passing and neighboring tones. Create your own elaborations of these models.

1.16

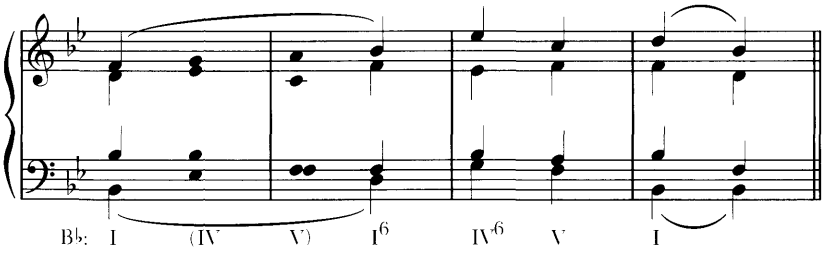
A.



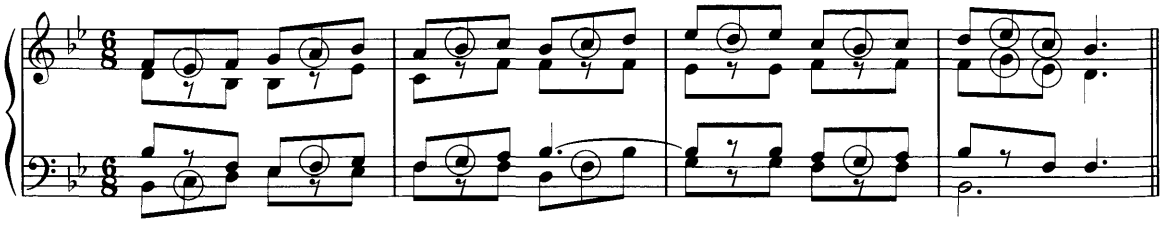
B.

Example 11.17

A.



B.



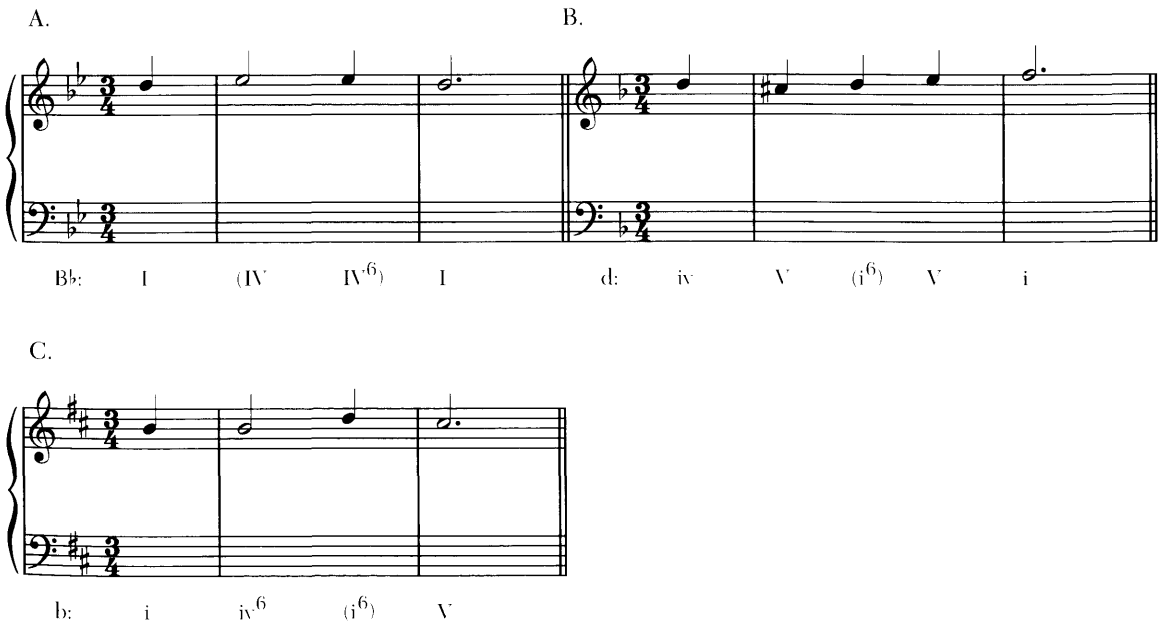
Terms and Concepts for Review

uses of the I^6
voice exchange
uses of the IV^6
Phrygian half cadence
I as an embellishing chord
IV as an embellishing chord
harmonic rhythm

A BRIEF REVIEW SELF-QUIZ

1. The following passages in Example 11.18 contain instances of embellishing tonic or subdominant triads. Write out the bass line from the given Roman numerals, making sure that you spell the chords and inversions correctly. Then add the alto and tenor parts.

Example 11.18



2. In Example 11.19 identify the key and the types of cadences and supply Roman numerals. Fill in the alto and tenor voices, using correct partwriting procedures. Mark any examples of voice exchange and any embellishing chords that you notice.

Example 11.19

CHAPTER 12

Phrase Structure and Grouping

THE DISCUSSION OF long-range melodic goals in Chapter 3 introduced the concept of melodic phrases and cadences. The increasing length and complexity of our musical excerpts now compels us to explore some additional characteristics of musical organization and design, ranging from larger dimensions, formed by grouping phrases into longer formal units, to smaller dimensions, or constructing phrases out of internal motives. In this chapter we will first discuss some features of *individual* phrases; next we will consider the relationships existing between *successive* phrases, resulting in such groupings as periods, double periods, and miniature formal designs. Then we will see how the recurring periodicity of phrase lengths may be varied through extension, contraction, and overlapping. Finally, we will explore the *interior* world of the phrase, focusing on sub-phrases and manipulation of motives. Later chapters will take up the question of the formal design and tonal structures of longer compositions.

PHRASE LENGTH

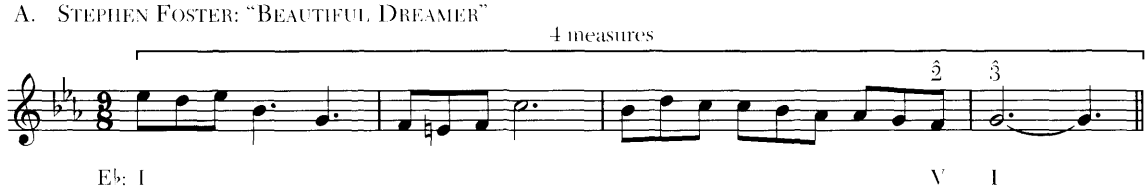
In Chapter 3 we compared musical phrases to grammatical phrases or short sentences—open phrases, which are analogous to subordinate clauses or questions, conclude with a half cadence on V, while closed phrases, which

are analogous to declarative statements, conclude with an authentic cadence on I. In this chapter we will provide the harmonic context for the musical examples by including Roman numerals and scale degrees at the openings and endings of melodic phrases.

We calculate the length of musical phrases by the number of measures they contain, depending on whether they last from the first downbeat through the last measure of the phrase (Example 12.1a), or whether they last from the beginning upbeat to the next upbeat of the following phrase. All the phrases in Example 12.1 are four measures long. Phrase lengths tend to occur in multiples of two measures—either two, four, or eight bars. Whereas in the Classical era of Haydn and Mozart the four-measure phrase was the unquestioned norm, in the preceding Baroque period, a more fluid sense of phrasing prevailed.

Example 12.1

A. STEPHEN FOSTER: "BEAUTIFUL DREAMER"

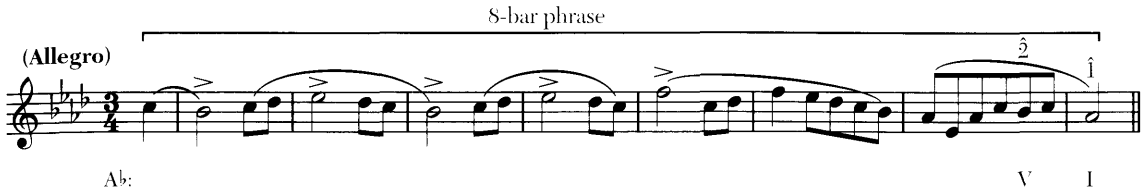


B. "FLOW GENTLY, SWEET AFTON" (ENGLISH FOLK SONG)

We need some guidelines to aid us in determining the extent or length of a phrase—where does it begin and where does it end? Although we do not ordinarily tend to think of phrases in terms of elapsed real time, the duration of most phrases is somewhere between six to twelve seconds. Two features are especially useful in determining a phrase's length—(1) its tempo, and (2) the strength of its cadence. In regard to tempo, music notation can sometimes be deceiving. For instance, two different phrases can take up the same amount of space on the page, but one may be marked Adagio and the other Vivace, so that the former could last twice as long as the latter in real time. Therefore, eight-measure groupings are not unusual in fast tempos (Example 12.2a) and two-measure groupings (Example 12.2b) are not unusual in slow tempos, as both may take approximately the same amount of time to perform.

Example 12.2

A. SCHUBERT: FOUR LÄNDLER, D 814, NO. 2



B. DVOŘÁK: SYMPHONY NO. 9 IN E MINOR ("FROM THE NEW WORLD"), II

Phrases normally conclude with a well-defined cadence, as the two phrases in Example 12.2 illustrate. When a cadence is very weak or there is no cadence, we should suspect that the phrase is not finished and will continue. One such example occurred in Example 10.13—the weak cadence in measure 38 of the Haydn Scherzo actually represents a continuation of the phrase, with the real cadence occurring in measures 41–42. In addition, the Scherzo's fast tempo also suggests a single eight-measure phrase.

Previous chapters of the text provide many examples of phrases to analyze.

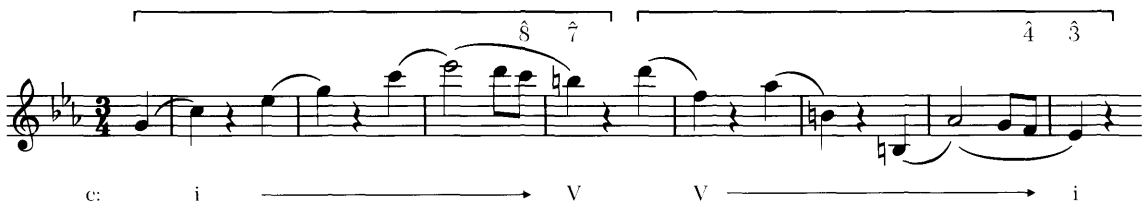
LARGER PHRASE GROUPING: THE PERIOD FAMILY

Phrases in homophonic compositions, like phrases and clauses in sentences, tend to group themselves into larger units that result in a kind of formal and tonal hierarchy. We have already noted the tendency of many melodic phrases in Chapter 3, 9, and 10 to link themselves together in pairs; the "Ode to Joy" theme is a perfect example. This linked pairing creates what we call a **period.** The two phrases in a period are interdependent. The first or **antecedent phrase** usually finds its thematic completion and tonal fulfillment in the second or **consequent phrase.** As a result, many antecedent phrases are tonally *open*, with a cadence on V, while consequent phrases are typically *closed*, with a cadence on I. Play the two periods in Example 12.3 and note that without their consequent phrases, the antecedent phrases seem incomplete and unsatisfactory.

Example 12.3

A. BEETHOVEN: SYMPHONY NO. 9 ("CHORAL"), IV, "ODE TO JOY" THEME

B. MOZART: STRING QUARTET IN C MAJOR ("DISSONANT"), K.465, III TRIO



We classify periods according to (1) their harmonic schemes, or **tonal structure,** and (2) their thematic relationships, or **melodic design.** The first theme in Example 12.3 is supplied with brackets denoting the extent of the two phrases, as well as framing scale steps and Roman numerals denoting the opening and harmonic goal of the phrases. The half cadence at the end of the antecedent phrase, with $\hat{2}$ in the melody, creates the expectation that the following consequent phrase will close with an authentic cadence on $\hat{1}$.

This "question-answer" pairing normally employs one of two basic tonal schemes. In the case of the Beethoven theme, the harmonic motion is I→V, I→V-I. The second design, illustrated by the Mozart excerpt (Example 12.3b), outlines i→V, V→i. Here the dominant is maintained between the phrases. At the end of the first phrase, the soprano moves from $\hat{8}$ to $\hat{7}$, setting up a half cadence that is resolved in the final $\hat{4}$-$\hat{3}$, implying an imperfect close on the tonic. This melodic formula was a favorite idiom of the Classical period.

When both phrases conclude with an authentic cadence, the first phrase is usually less dependent on the second for its tonal completion. The last $\hat{1}$ in the melody of Example 12.4 gives a sense of finality that was missing with the less conclusive $\hat{3}$ of the first imperfect authentic cadence.

Example 12.4

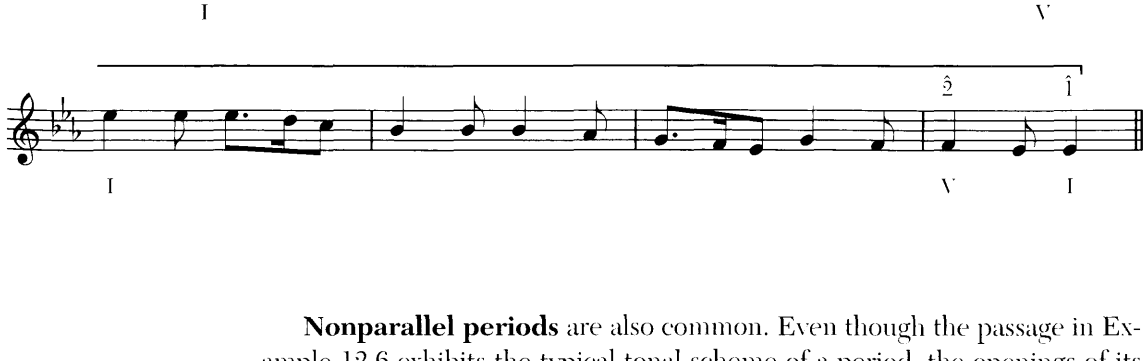
"THE CARNIVAL OF VENICE" (TRADITIONAL)

We can also classify periods according to their *thematic design*—that is, the similarity or difference of their melodic content. When the two phrases of a period begin with an identical or similar idea, we refer to it as a **parallel period**—the ends of the phrases need not correspond exactly as to thematic content. Study the pair of operatic selections in Example 12.5. Do any previous examples in this chapter qualify as parallel periods?

Example 12.5

A. BIZET: HABAÑERA FROM *CARMEN*, ACT I

B. ARTHUR SULLIVAN: "LET'S GIVE THREE CHEERS" (*H.M.S. PINAFORE*)



Nonparallel periods are also common. Even though the passage in Example 12.6 exhibits the typical tonal scheme of a period, the openings of its two phrases are thematically different.

Example 12.6

GLUCK: 29. BALLET FROM *ORPHÉE ET EURIDICE*, ACT II

We use capital letters to denote similarities and differences between successive phrases within periods (A A or A B); a prime sign (') indicates a modified repetition (A A'). Thus a phrase marked A' is a modified version of phrase A, whereas a phrase marked B is substantially different from either A or A'. For instance, Examples 12.5a and b suggest an A A' design, whereas Example 12.6 outlines an A B design. Go back to Examples 12.1 through 12.6 and mark the phrases with the appropriate capital letters.

Sometimes phrases resist pairing themselves into periods, preferring to exist as free-standing units. The term **phrase groups** may be applied to such situations, as shown by the three distinct phrases in Example 12.7.

Example 12.7

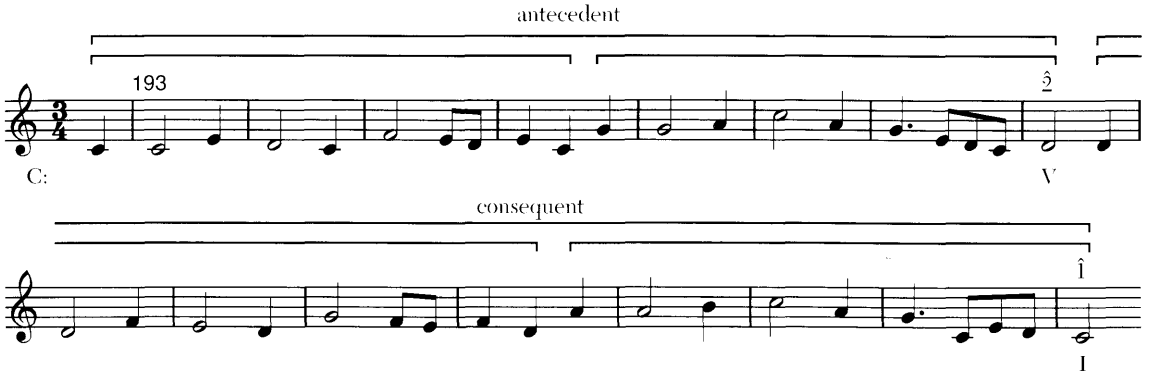
FRANZ GRÜBER: "SILENT NIGHT"

DOUBLE PERIODS

Similar complementary relationships may also occur on higher formal levels, such as between two periods. For instance, if a period ends on V rather than I, the need for the eventual resolution to the tonic frequently requires an additional period, resulting in a **double period.** In Example 12.8, the half cadence on $\hat{2}$ at the end of the *antecedent period* is resolved by the authentic $\hat{1}$ at the end of the *consequent period.*

Example 12.8

SAINT-SAËNS: PIANO CONCERTO NO. 4, II



Summary of Classifications for Phrase Groups or Periods

A. By harmonic scheme:
   Antecedent-consequent: First phrase ends on V, second phrase ends on I.
B. By thematic design:
   Parallel period: Phrases begin with the same melodic idea.
   Nonparallel period: Phrases begin with different melodic ideas.

Phrases may relate in a combination of ways. Pairs of phrases that resist classification by harmonic scheme or melodic design are called **phrase groups.**

These relationships may exist on a higher formal level; **double periods** may be made of antecedent and consequent periods.

As we continue considering the relationship of phrase to period, we begin to construct a formal hierarchy—that is, an ordered system whose units combine to form progressively longer and more important units (Figure 12.1). Similar hierarchical designs are common in short homophonic pieces.

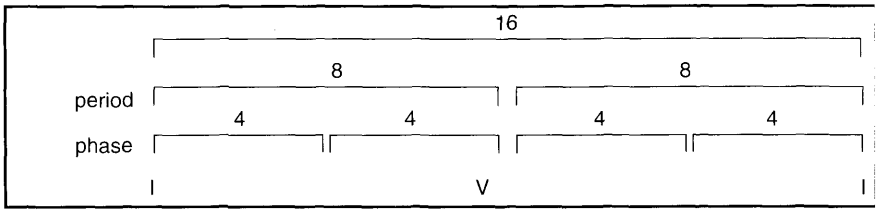


Figure 12.1

Some Miniature Formal Designs

In shorter vocal genres, such as folk songs or hymns, each stanza or strophe of different text is usually set to the same music, resulting in what we call **strophic form.** Each stanza usually consists of a small number of similar or contrasting phrases or periods. Occasionally the concluding portion of each stanza may feature a **refrain,** in which *both* words and music are identical; "The Battle Hymn of the Republic" and "America, the Beautiful" are typical examples. Example 12.9 illustrates a common formal layout for one such stanza or strophe, in which the four phrases produce an A A' B A' design. While the B is harmonically open (V), the A' is closed and ends on the tonic. We sometimes call this design a **small song form** or a **quatrain form,** since it displays four distinct parts. Note that the first half of the hymn in Example 12.9 is a parallel period, with its usual I→V, I→V-I tonal scheme.

Example 12.9

"Amsterdam" (hymn tune)

Short compositions made up of phrase collections may also exhibit a two-part or **binary form** of two contrasting sections: A B, or A A' B B'. Binary pieces are not as common as three-part or **ternary form,** (A B A), probably because the original thematic idea (A or A') does not return at the end to round the piece off. In simple binary designs, both sections (A and B) normally close in the tonic, as shown in the famous Brahms lullaby (Example 12.10). Example 12.9 is cast in a small-scale ternary design; after the contrasting B section, mm. 9–12, the original A idea returns. We will take up ternary form in a later chapter.

Example 12.10

BRAHMS: "WIEGENLIED," OP. 49, NO. 4

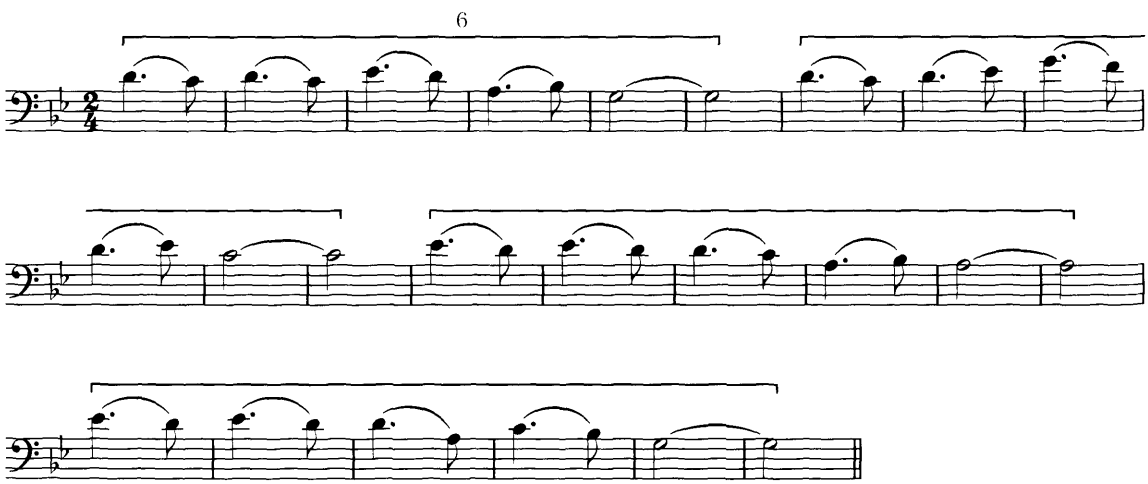
PHRASE PERIODICITY

Music has been associated with word and dance throughout its long history. The repetitive nature of poetic meters and dance patterns is often reflected in the periodic phrasing of their musical settings. The repetition of musical phrases of equal length results in a sense of **phrase periodicity**—that is, the regular recurrence of phrases or even periods. The complete "Ode to Joy" theme in Example 12.11a illustrates a typical four-measure phrase periodicity, as do most of the tunes cited previously in this chapter. However, phrase lengths other than four measures may also set a sense of periodicity at the beginning of a piece. The opening measures of the Brahms Hungarian Dance in Example 12.11b establish a six-bar periodicity.

Example 12.11

A. BEETHOVEN: SYMPHONY NO. 9 ("CHORAL"), IV, "ODE TO JOY" THEME

B. BRAHMS: HUNGARIAN DANCE NO. 1 IN G MINOR (ALLEGRO MOLTO)



Another way to demonstrate phrase periodicity is to raise the sense of meter to a higher or **hypermetric** level. Here one measure of music becomes *one beat* of a hypermetric measure, which now represents the entire musical phrase. For instance, in $\frac{2}{4}$ meter, four-bar phrase periodicity would be indicated as hypermetric *quadruple* meter or a larger $\frac{4}{4}$, in which each quarter beat represents one bar of the former $\frac{2}{4}$ and the entire measure represents the complete four-bar phrase; see Example 12.12.

Example 12.12

PHRASE EXTENSION, CONTRACTION, AND ELISION

Although shorter pieces may convey a sense of four-measure phrase periodicity from beginning to end, in their longer works composers must frequently provide the listener with some needed relief from the predictability of an established periodicity. They have several means at their disposal. These devices may be compared to a baker kneading a lump of dough into various shapes—first stretching it out, then rolling it into a small ball, or even chopping off a piece.

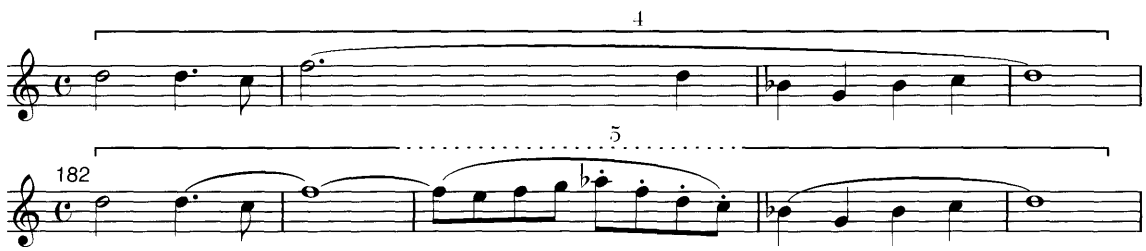
1. A phrase may be lengthened through **cadential extension.** In Example 12.13a the expected cadence occurs in measure 8, but the arrival on the dominant is now extended an additional bar through arpeggiation, as denoted by the dotted lines. The period consists of 4 bars + 5 bars.
2. A phrase may be lengthened through **internal extension.** In his second version of the lovely oboe melody in Example 12.13b, Liszt takes the original measure 2 and expands it via a sort of cadenza, making the second phrase 5 bars versus the original 4 bars. In these two procedures, the elongation may result from the addition or repetition of thematic material or from some type of rhythmic augmentation.
3. A phrase may also be **contracted** by compressing earlier material, or **truncated** by deleting material. In the second phrase of Example 12.13c, the shorter note values contract the first phrase from four to three measures.

4. **Phrase elision** occurs when the cadence of one phrase overlaps the beginning of the next. This dovetailing effect, denoted by overlapping brackets in the examples, often produces a seamless rhythmic flow. Phrase elision often occurs at the first orchestral tutti of Classical symphonies (Example 12.13d).

Example 12.13

A. BACH(?): MARCH IN D MAJOR FROM *ANNA MAGDALENA BACH'S NOTEBOOK*

B. LISZT: *LES PRÉLUDES*



C. BARTÓK: *MIKROKOSMOS*, VOL. 1, NO. 7

D. HAYDN: SYMPHONY NO. 101 ("CLOCK"), IV

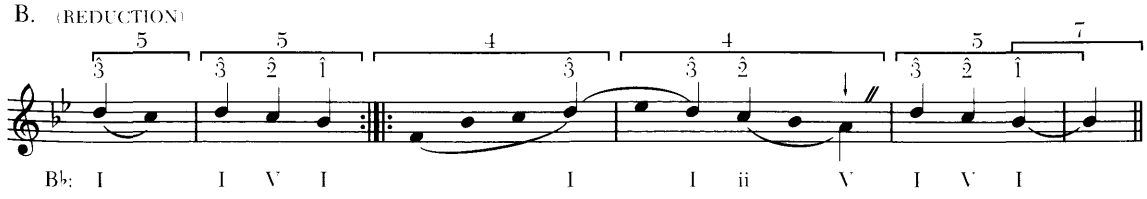
VARIED PHRASE LENGTHS

Extended periodicity may be varied by arbitrarily changing the lengths of the phrases—for instance, making some phrases four measures long and others only three measures. In choosing the "St. Anthony Chorale" as the basis for his *Variations on a Theme of Haydn*, Brahms was doubtless attracted by the different phrase lengths in this tune (Example 12.14a). This tune, originally found in a wind divertimento by Haydn, was probably written by Ignaz Pleyel, a noted piano maker and composer of that day.

Example 12.14

A. BRAHMS: *VARIATIONS ON A THEME OF HAYDN*, OP. 56A

B. (REDUCTION)



The original composer's insertion of an extra measure, denoted in the music by vertical brackets, in each of the two phrases of the first repeated section establishes a five-bar periodicity. The middle section that begins in measure 11 switches to a more common four-bar grouping. The original five-bar grouping returns with the restatement of the original theme in the tonic at

measure 19, although this grouping is cut short by an elision of the second phrase's cadence with the beginning of the codetta. A further cadential extension beginning in measure 27 lengthens the codetta to seven bars. A sketch of this piece's basic tonal scheme (Example 12.14b) shows that the more important half cadence occurs at the end of the second period in measure 18 at the downward arrow, just prior to the return of the original theme in the tonic.

The Internal Anatomy of Phrases: Sub-Phrases and Sentence Structure

Some melodic phrases represent a single unified musical idea that resists division. For instance, the tonal and rhythmic motion of the phrase in Example 12.15 continues to its cadence. Play this tune and stop anywhere in the middle; do you feel a sense of closure or completion?

Example 12.15 WAGNER: "HYMN TO VENUS" FROM *TANNHÄUSER*, ACT II

Some phrases, on the other hand, divide easily into smaller units. Each of the pair of four-measure phrases in Example 12.16 may be partitioned into distinct two-bar **sub-phrases.**

Example 12.16

VERDI: "LA DONNA È MOBILE" FROM *RIGOLETTO*, ACT IV

Whereas the two phrases of Example 12.16 divide into sub-phrases of two measures, the Mozart melody in Example 12.17 displays a measure grouping of 1 + 1 + 2.

Example 12.17

MOZART: PIANO SONATA IN A MAJOR, K.331, I

The relationship of melodic parts in the Mozart excerpt illustrates what is called **sentence form:** the original idea in measure 1 is followed by an altered repetition of the original idea (here, a step lower in measure 2), and next comes a final motion toward the cadence (mm. 3–4). This produces an overall design of A A'→ cadence. Sentence design, which is extremely common in the Classical era, may also be found at the period level, where it extends over two phrases (Example 12.18).

Example 12.18

MOZART: CLARINET CONCERTO IN A MAJOR, K.622, II

MOTIVES AND THEIR DEVELOPMENT

In some phrases we may observe repetitions or modifications of a single short melodic fragment. This melodic fragment, which is usually not longer than one measure in length, is identifiable by its distinctive pitch profile and rhythmic characteristics. We call such a short idea a **motive.** Do not confuse this term with **motif,** a theme with *extra-musical* associations that recurs during the course of an entire opera or multi-movement symphony. Motives are always subjected to some kind of developmental treatment to fill out the remainder of the phrase; the most common of these treatments are listed below.

1. **Repetition:** an exact or modified restatement of the motive on the *same* pitch level (Example 12.19).

Example 12.19

2. **Sequence:** repetition of a motive on a *different* scale degree. This device is usually limited to two repetitions following the original motive (Example 12.20).

Example 12.20

3. **Melodic inversion:** a statement of the motive in which its pitch profile is turned *upside down,* diatonic interval for diatonic interval. This device is also called **melodic mirroring** (Example 12.21).

Example 12.21

4. **Rhythmic modification:** an alteration of the motive's rhythm, often according to some strict proportion. Two standard types are **augmentation,** in which each note value is enlarged by a given figure, usually two, and **diminution,** in which each note value is reduced by a given proportion, usually one-half (Example 12.22).

Example 12.22

5. **Alteration of the harmonic setting:** a resetting of the harmony that imparts a different character to the original motive (Example 12.23).

Example 12.23

The passages in Example 12.24 illustrate some ways in which phrases may be constructed out of motives.

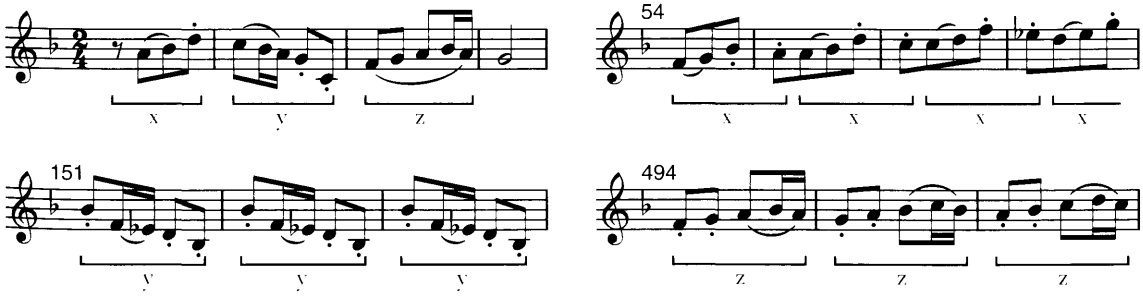
Example 12.24

A. HANDEL: ALLEGRO FROM *WATER MUSIC* SUITE NO. 1 IN F MAJOR

B. CHOPIN: *GRANDE VALSE BRILLIANTE*, OP. 18

C. TCHAIKOVSKY: SYMPHONY NO. 6 ("PATHÉTIQUE"), I

D. BEETHOVEN: SYMPHONY NO. 6 ("PASTORAL"), I



The Handel tune (Example 12.24a) is based on a single motive denoted with an *x* and its descending stepwise sequences. The sequential three-note motive of the initial phrase of the Chopin waltz is freely inverted in the consequent phrase (Example 12.24b). The Tchaikovsky excerpt exhibits a gradual rhythmic compression of the original four-note motive that forms a pattern of rising minor 3rds: B D F G♯ (Example 12.24c). Finally, the opening theme of Beethoven's *Pastoral Symphony* is actually made up of three

separate motives (*x*, *y*, *z*), each of which is later subjected to sequential treatment (Example 12.24d).

Pitch and Rhythmic Motives

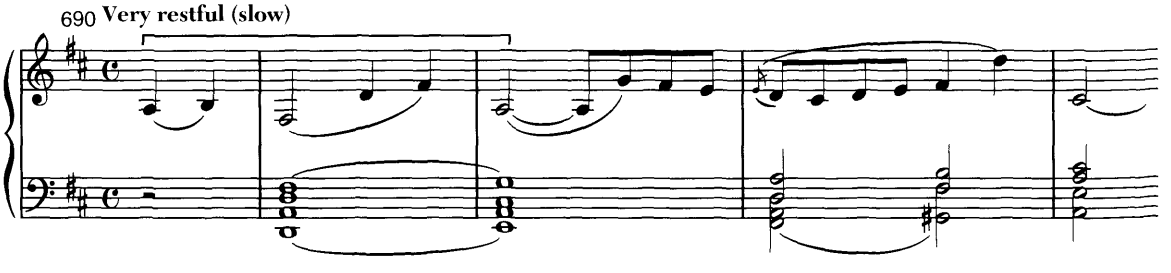
We tend to recognize the subsequent recurrences of a motive by the retention of its distinctive melodic shape and rhythm. However, during its subsequent development a composer may choose to retain only the pitches or only the rhythm of the motive. A **pitch motive** consists of a short series of distinctive melodic intervals that may be restated or transposed in a variety of different rhythmic settings. This technique, closely related to **thematic transformation,** was a favorite procedure of Liszt and Richard Strauss. In Example 12.25, observe the magical metamorphosis of the original six-note pitch motive (Example 12.25a) from the plucky little theme that opens *Don Quixote* (Example 12.25b) to the peaceful resignation of the theme in the final death scene, when the old knight regains his senses (Example 12.25c).

Example 12.25

A. Richard Strauss: *Don Quixote*

B.

C.



On the other hand, a composer can instead employ a **rhythmic motive** whose melodic contour may continually change while its characteristic rhythm is strictly retained. Examine the themes from Beethoven's Fifth Symphony in Example 12.26; what they all have in common is the rhythmic figure of three short note values, followed by one long note value.

Example 12.26

BEETHOVEN: SYMPHONY NO. 5, I–IV

A. 1ST MOVEMENT

B. 2ND MOVEMENT

C. 3RD MOVEMENT

D. 4TH MOVEMENT

Terms and Concepts for Review

phrase length
period
antecedent phrase
consequent phrase
tonal structure
melodic design
double period
parallel period
nonparallel period
phrase group
strophic form
refrain
quatrain form
binary form
phrase periodicity
phrase extension
contraction (truncation)
elision
varied phrase lengths
sub-phrase
sentence form
motive
development of motives
  repetition
  sequence
  inversion
  rhythmic modification (augmentation or diminution)
  alteration of harmonic setting
pitch motive
thematic transformation
rhythmic motive

A BRIEF REVIEW SELF-QUIZ

1. Match the letters to the appropriate numbers:

1. Overlap of cadence/beginning	a. Pitch motive
2. Parallel period	b. Sentence form
3. Consequent phrase follows . . .	c. Different words/same music
4. A A′→ Cadence	d. A A′
5. Melodic inversion	e. Truncated phrase
6. Deleting material	f. Sequence
7. Strophic form	g. Elision
8. A B	h. Upside down
9. Thematic transformation	i. Antecedent phrase
10. Repetition on a different scale step	j. Binary form

2. Taking the four-measure phrase in Example 12.27a as your basic model, indicate in the provided space the various modifications it undergoes.

Example 12.27

A.

B.

C.

D.

E.

3. Trace the opening motive in this passage by circling each occurrence. Identify each type of developmental treatment it undergoes (Example 12.28).

Example 12.28

CHAPTER 13

Linear Dominant Chords:

V^6, vii^{o6}, AND INVERSIONS OF V^7

IN THE PRECEDING CHAPTERS on harmony, we highlighted the important role that the outer voices play in a musical texture. While the soprano usually carries the principal melodic line, the bass provides the foundation for the harmony. Until now our bass lines have been limited to only five scale degrees: $\hat{1}$, $\hat{3}$, $\hat{4}$, $\hat{5}$, and $\hat{6}$. In this chapter we will discuss some additional chords of the dominant family that will utilize the remaining scale steps ($\hat{7}$, $\hat{2}$, and $\hat{4}$), allowing us to compose more melodically interesting bass parts. These chords include the first inversion of the dominant (V^6), the first inversion of the leading-tone triad (vii^{o6}), and the various inversions of the dominant seventh (V^6_5, V^4_3, and V^4_2) in both major and minor modes. In their usual function as passing or neighboring chords that embellish the tonic, these harmonies permit richer contrapuntal relationships and a more varied set of harmonic intervals between the outer parts.

THE V^6, VII^{o6}, AND INVERSIONS OF V^7

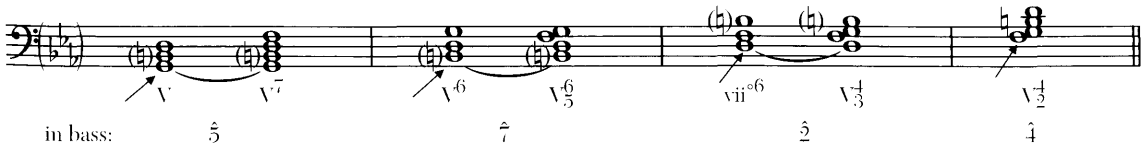
Our two new dominant family triads are the first-inversion dominant and the first-inversion leading-tone triad, harmonies that retain their same chord

type in both major and minor modes. Whereas the first-inversion dominant is a major triad written as V^6 (Example 13.1a), the diminished nature of the leading tone triad requires that we write the Roman numeral of its first inversion as vii^{o6} (Example 13.1b). As we noted earlier in Chapter 4, diminished triads, such as the vii^{o6}, are customarily found in first inversion, since their root position and second inversion contain a dissonant tritone between the bass and an upper voice (Example 13.1c). The three remaining inversions of the Mm7 dominant seventh round out our list of new harmonies: the first inversion (V^6_5), the second inversion (V^4_3), and the third inversion (V^4_2), with the seventh in the bass; all three appear in Example 13.1d.

Example 13.1

We will group these dominant chords by the scale degrees that occur as their bass notes. Whereas the V^6 and V^6_5 have the leading tone ($\hat{7}$ or $\sharp\hat{7}$) in the lowest voice, the vii^{o6} and V^4_3 have the supertonic ($\hat{2}$) in the lowest voice. The subdominant ($\hat{4}$) appears in the bass of the V^4_2. All that is lacking to complete our dominant family are the already familiar V and V^7, both of which have $\hat{5}$ in the bass; these relationships between scale degrees in the bass are plotted in Example 13.2.

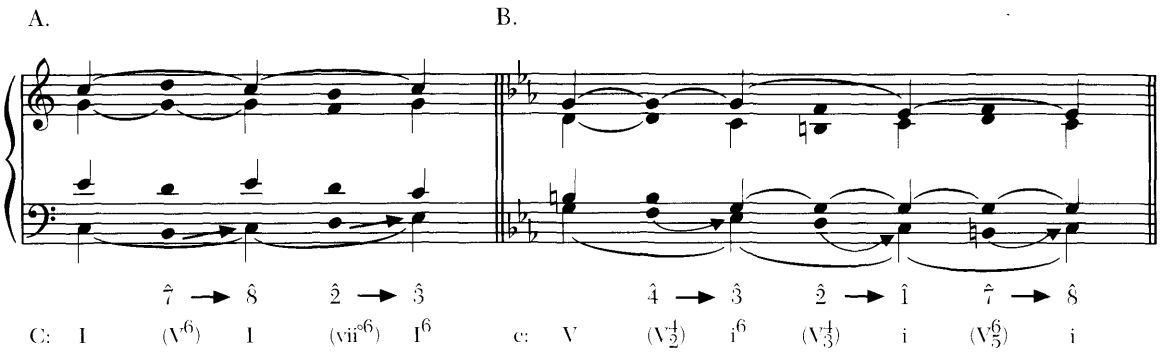
Example 13.2



The five new dominant chords contain active scale degrees in the bass that tend to move or resolve to more stable scale degrees in tonic harmony. For instance, the bass $\hat{7}$ of the V^6_5 usually resolves to $\hat{8}$, the bass $\hat{2}$ of the V^4_3 to either $\hat{1}$ or $\hat{3}$, and the bass $\hat{4}$ of the V^4_2 to $\hat{3}$ (Example 13.3). These chords occur most often within the phrase and typically function as linear or **embellishing dominant** harmonies, which usually decorate the tonic triad by their passing, neighboring, or incomplete neighboring motion in the bass. They appear only rarely as part of the cadence formula, which normally employs the more stable V or V^7 in root position. As a result, we will (1) place

their Roman numerals in parentheses as with our previous embellishing chords, (2) leave them unstemmed in our reductions and models, and (3) employ slurs to demonstrate their stepwise connection to the harmonies that precede and follow them (Example 13.3).

Example 13.3

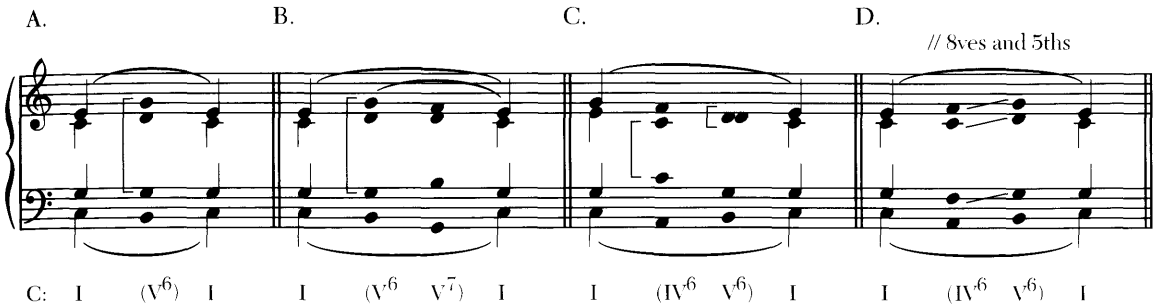


USES OF THE V^6 AND VII^{o6}

The typical functions of these two dominant triads are listed below.

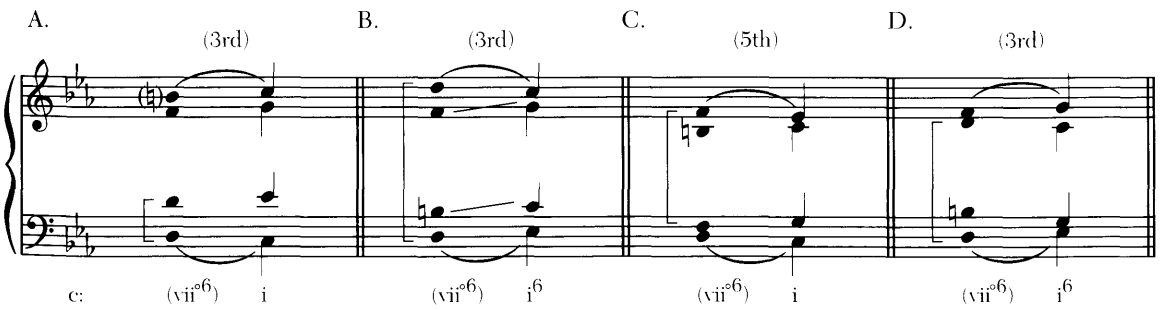
1. **The V^6:** As was the case with the first inversions of I and IV in Chapter 11, the great number of possible voice-leading situations makes it impossible to list specific partwriting guidelines regarding the V^6. You should usually double the soprano voice at the octave or unison. Never double the bass, which is the leading tone of the key. Correct doublings are bracketed in the illustrations of Example 13.4. Since the leading tone occurs as the bass of the V^6, its natural tendency is to resolve to the tonic ($\hat{7}$-$\hat{8}$). There are three typical functions of this inverted dominant:
   A. as a lower neighbor ($\hat{8}$-$\hat{7}$-$\hat{8}$) or an incomplete neighbor ($\hat{4}$ down to $\hat{7}$-$\hat{8}$) to the tonic (Example 13.4a);
   B. as a delayed neighbor to the tonic ($\hat{8}$-$\hat{7}$-$\hat{5}$-$\hat{8}$), when $\hat{5}$ is momentarily inserted between $\hat{7}$ and $\hat{8}$ (Example 13.4b);
   C. as a passing chord in the progression IV^6-V^6-I, using $\hat{6}$-$\hat{7}$-$\hat{8}$ in the bass (Example 13.4c). Be cautious when partwriting this progression, since successive first inversions (such as IV^6-V^6) are always a potential source of parallel perfect intervals (Example 13.4d). In general, double the inner voice in the IV^6 and the soprano voice in the V^6, as shown in brackets in Example 13.4c.

Example 13.4



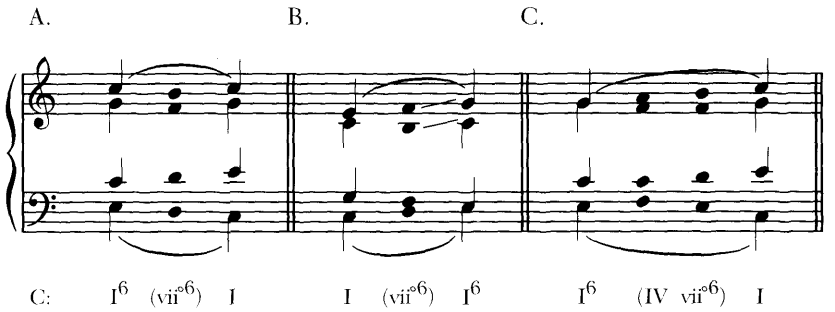
2. **The vii^{o6}:** While you may double either the chordal 3rd (scale degree $\hat{2}$) or the chordal 5th (scale degree $\hat{4}$) of this diminished triad, do not double the root or leading tone (scale degree $\hat{7}$). The motion of vii^{o6} to I normally features stepwise partwriting in the voices; consult the various illustrations in Example 13.5, where the correct doublings are bracketed. Notice that unequal 5ths between upper voices are acceptable in this progression (Example 13.5b).

Example 13.5



Since scale degree $\hat{2}$ occurs in the bass of the vii^{o6}, it normally functions as a passing chord between I and I^6: either $\hat{1}$-$\hat{2}$-$\hat{3}$ or $\hat{3}$-$\hat{2}$-$\hat{1}$ in the bass (Example 13.6a and b). When the soprano moves $\hat{6}$-$\hat{7}$-$\hat{8}$, the vii^{o6} can serve as a convenient exit from the subdominant (IV-vii^{o6}-I), since it avoids the possible parallels of the root-position progression IV-V (Example 13.6c); the IV-vii^{o6}-I progression may occur at cadences as well. Study the doublings and partwriting used with the vii^{o6} in the progressions of Example 13.6.

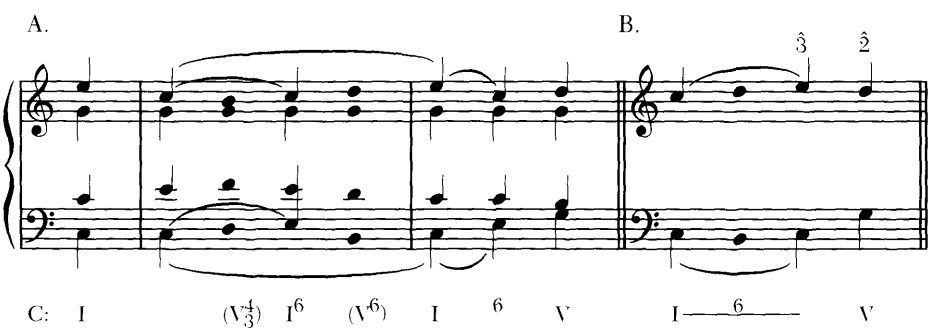
Example 13.6



Embedded Voice-Leading Motion

In passages that employ linear or embellishing dominant triads, you may find examples in which two different levels of voice leading are unfolding at the same time. In Example 13.7a the bass voice's leap from $\hat{3}$ down to $\hat{7}$ at the end of the first measure is inconsistent with the usual behavior of a lower neighbor ($\hat{8}$-$\hat{7}$-$\hat{8}$). In this case the initial I-(V^4_3)-I^6 represents an **embedded motion** within the overall neighboring movement in the bass: C-(D-E)-B-C. The upper slur connecting C^3 and E^3 and the interior stem on E^3 mark the embedded progression; the lower slur marks the long-range neighboring motion in the bass: I-(V^6)-I. A similar situation occurs in the soprano, whose opening downward neighboring motion is embedded in an ascending passing line: C-(B-C)-D-E. Thus the large neighboring motion in the bass ($\hat{8}$-$\hat{7}$-$\hat{8}$) is balanced by the larger passing ascent in the soprano ($\hat{1}$-$\hat{2}$-$\hat{3}$), as denoted in the accompanying reduction (Example 13.7b).

Example 13.7

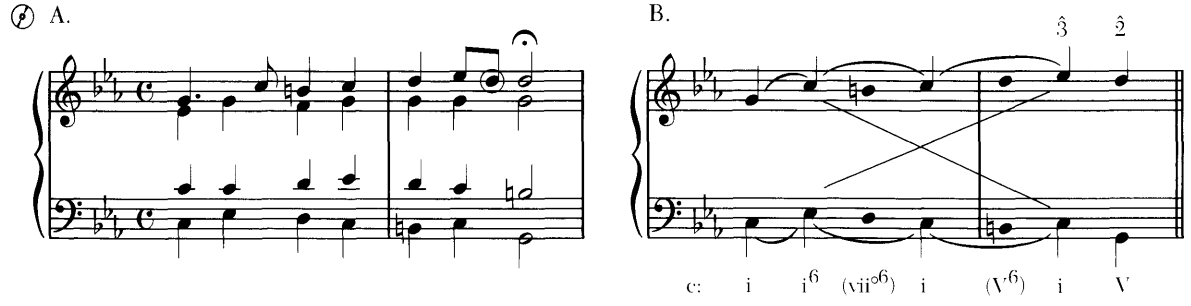


EXAMPLES OF THE V^6 AND VII^{o6} IN MUSIC LITERATURE

Example 13.8 provides two short phrases from chorale harmonizations that incorporate these two embellishing dominant triads. In addition to the typical passing vii^{o6} and neighboring V^6 progressions found in Example 13.8a, observe the long-range voice exchange between C and E♭ in the reduction (Example 13.8b). Compare the first six pitches of the soprano with the last six pitches of the bass; note that the bass has the same six pitches as the soprano, but in retrograde. In the opening measure of Example 13.8c Bach momentarily crosses the alto above the soprano voice, an admittedly rare occurrence. Point out any examples of unequal 5ths you find in these excerpts.

Example 13.8

"JESU, JESU, DU BIST MEIN" (BACH CHORALE HARMONIZATION)



"DAS NEUGEBORNE KINDELEIN" (BACH CHORALE HARMONIZATION)

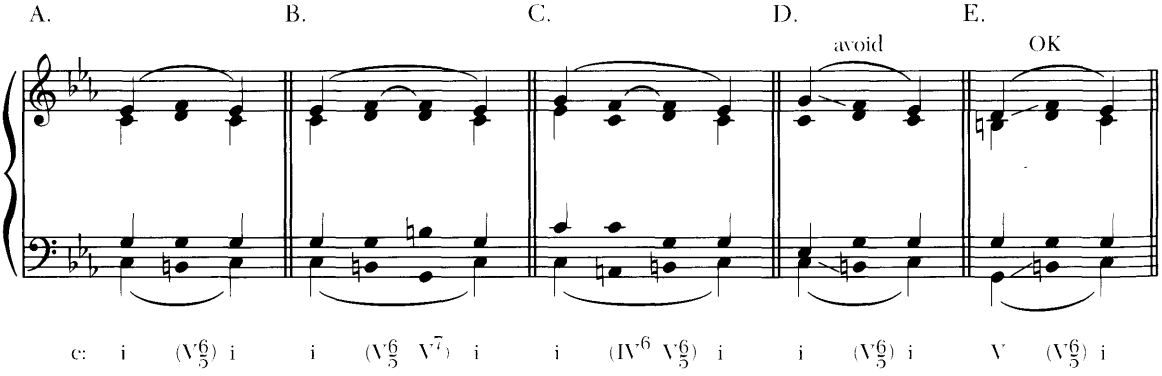
INVERSIONS OF THE V^7

The doubling in inversions of the V^7 chords is usually not a problem, since these chords are almost always complete seventh chords, with each of the four chordal members assigned to a different voice part. Since they share

the same scale degrees in the bass, we can make direct comparisons between the V^6 and V^6_5 (both have $\hat{7}$ in the bass), and the vii^{o6} and V^4_3 (both have $\hat{2}$ in the bass). The third inversion V^4_2 (with $\hat{4}$ in the bass) we will treat separately. In general, the chordal seventh (scale degree $\hat{4}$) in inversions of the V^7 chord is treated in the same way as the 7th of the root-position V^7 chord, discussed in Chapter 10. In both root position and inversions, the 7th is prepared by passing or neighboring motion, suspension, or appogiatura figuration, and it invariably resolves downward by stepwise motion to scale degree $\hat{3}$. In addition, inversions of the V^7 chord function in much the same way as inversions of the V triad.

1. **The V^6 and the V^6_5:** The V^6_5 functions in much the same way as the triadic V^6. Example 13.9a through c illustrate some typical uses of the V^6_5; compare these with their V^6 counterparts in Example 13.4a through c. The chordal seventh in the first two is prepared and resolved by neighboring motion; the last is prepared by a suspension. You would normally avoid unequal fifths between outer parts (Example 13.9d), but as Example 13.9e shows, you may use them when moving from a V to a V^6_5, since the fifths occur within the same basic chord rather than two different chords.

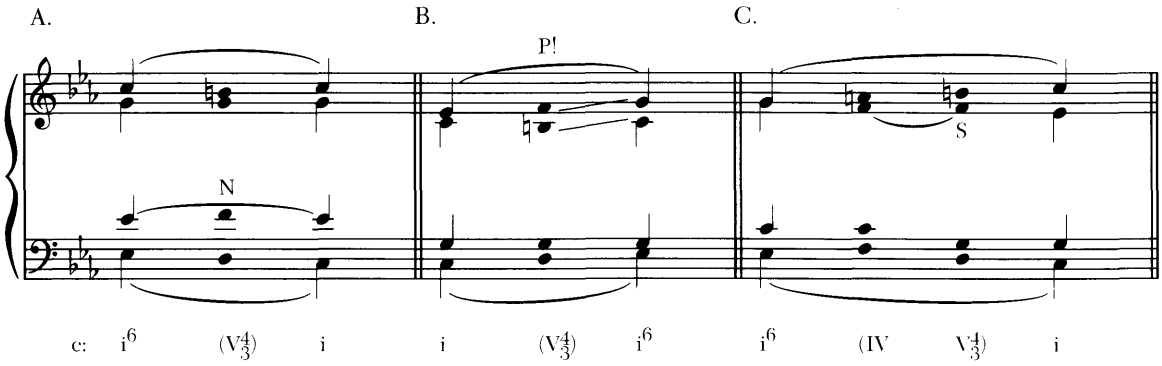
Example 13.9



2. **The vii^{o6} and the V^4_3:** These similar dominant chords likewise tend to function as passing embellishing chords between I and I^6, or vice versa. The typical uses of the V^4_3 in Example 13.10 mimic their vii^{o6} counterparts in Example 13.6. Various preparations and resolutions are illustrated in these three models—by neighbor, passing, and suspension figuration, respectively. Like their vii^{o6}, the V^4_3 is also useful

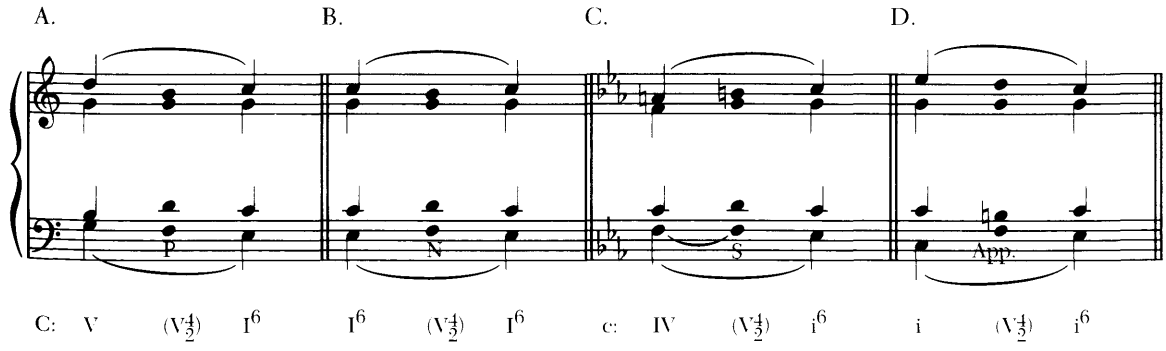
in harmonizing scale steps $\hat{6}$-$\hat{7}$-$\hat{8}$ (Example 13.10c). The upward resolution of the soprano $\hat{4}$-$\hat{5}$ in Example 13.10b contradicts the normal downward resolution of the chordal 7th, $\hat{4}$ down to $\hat{3}$. This voice leading is acceptable because the strong melodic motion of the similar 10ths between the soprano and bass overrides our need for harmonic resolution. Also observe the allowable unequal 5ths between the soprano and alto.

Example 13.10



3. **The V^4_2:** Since the dissonant 7th occurs in the bass voice, the third inversion or V^4_2 is a noticeably striking chord. Example 13.11 illustrates some typical settings, using passing, neighboring, suspension, and even appoggiatura figuration to prepare and resolve the chordal 7th. Although the leap to $\hat{4}$ from $\hat{1}$ in Example 13.11d may seem strange, it is actually quite commonly employed in the bass.

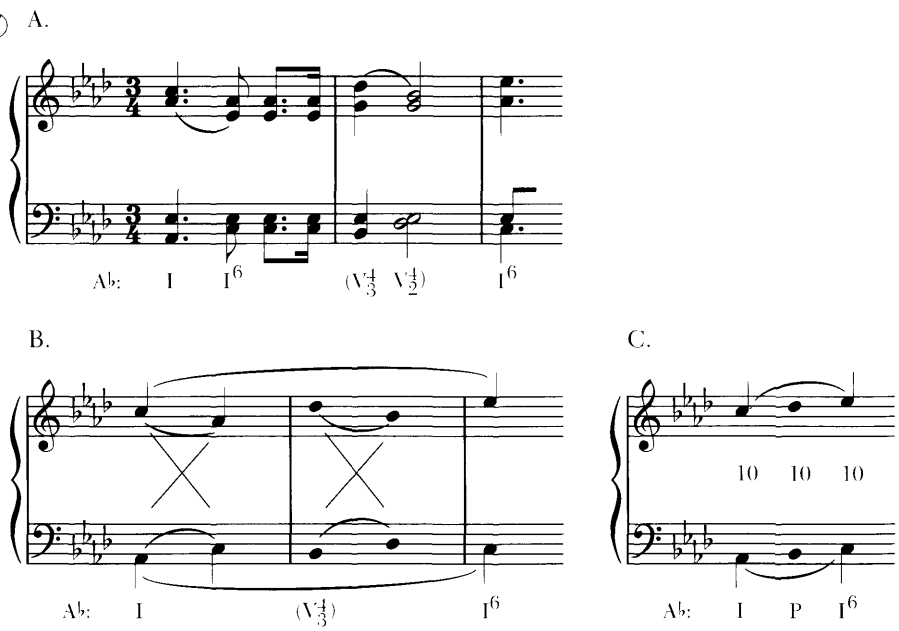
Example 13.11



Examples of Inversions of V^7 in Music Literature

The following excerpts provide examples of various inverted dominant sevenths. Since the openings of slow movements in the Classical period often display multiple uses of inversions of V^7, we will use passages from three of Beethoven's piano sonatas. The opening of his Opus 110 moves from V^4_3 to V^4_2 to embellish the initial tonic (Example 13.12a). The first reduction (Example 13.12b) demonstrates that the V^4_2 arises from a voice exchange repeated from the first measure (I-I^6). The final reduction in Example 13.11c suggests that the entire passage represents passing motion from I to I^6.

Example 13.12 Beethoven: Piano Sonata in A-flat Major, Op. 110, I



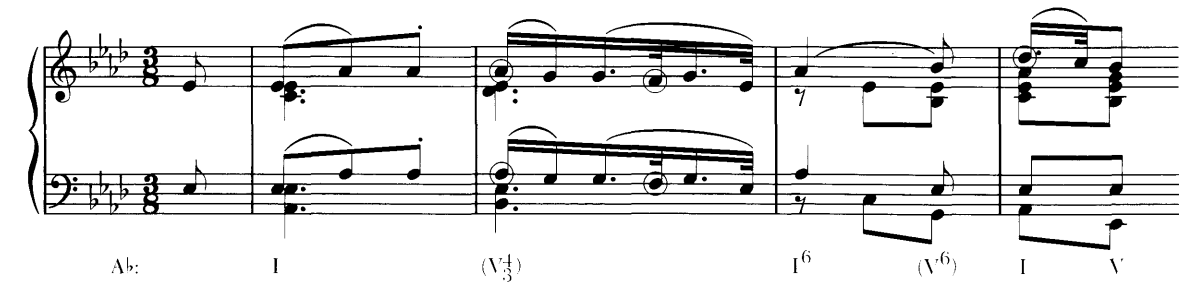
In the opening theme from his early sonata in A♭ major (Example 13.13a), the V^4_3 in measure 2 seems to function in a traditional passing manner ($\hat{1}$-$\hat{2}$-$\hat{3}$). However, the reduction in Example 13.13b reveals that this is merely an embedded passing motion I-(V^4_3)-I^6 within the overall neighboring motion I-($V^{\#6}$)-I prior to the half cadence on V. Beethoven uses an em-

bedded technique in the soprano voice as well, a neighboring followed by a passing motion.

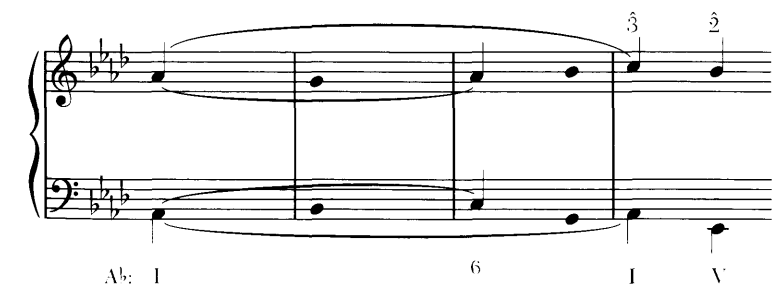
Example 13.13

BEETHOVEN: PIANO SONATA IN A-FLAT MAJOR, OP. 26, I

A.



B.



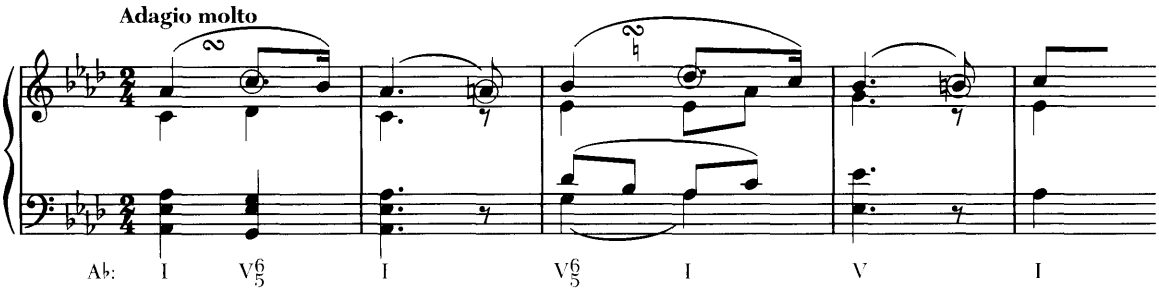
Finally, the voice leading exemplified in the opening four bars of the slow movement from Beethoven's Op. 10, No. 1 is a good example of the importance of embellishing motion as a means to determine the true function of chords. While it might be tempting to label each chord with its proper Roman numeral (Example 13.14a), this analysis implies that those chords labeled with the same Roman numeral are of equal importance and share an identical function. By disregarding the melodic influence of the outer voices, this exclusively vertical approach gives us a misleading idea of the real functions of the chords, both in relation to each other and to the entire passage. A careful examination of the phrase reveals something quite different; consult the reduction in Example 13.14b. The first V^6_5 operates as an embellishing neighbor to I, prolonging tonic harmony for the beginning

two bars. In the next two measures (mm. 3–4) the situation is exactly reversed, for it is now dominant harmony that is extended, with the I chord acting as an interior embellishing chord to the more essential V^6_5 and V. One might go a step further and suggest that the entire excerpt represents an expansion of the tonic through passing motion ($\hat{1}$-$\hat{2}$-$\hat{3}$) in the soprano, as shown in the final reduction (Example 13.14c).

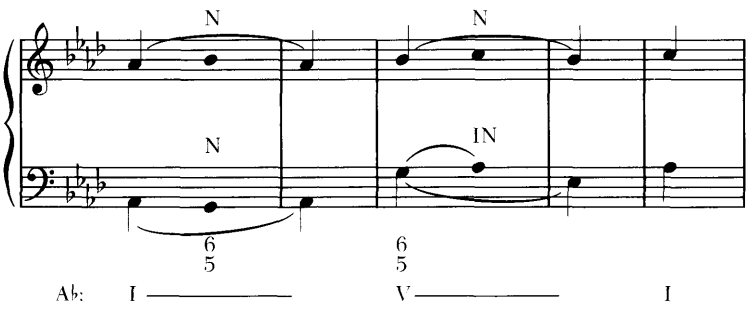
Example 13.14

BEETHOVEN: PIANO SONATA IN C MINOR, OP. 10, NO. 1, II

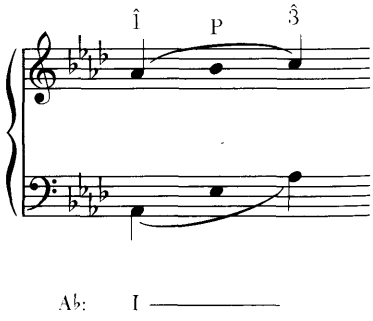
A.



B.



C.

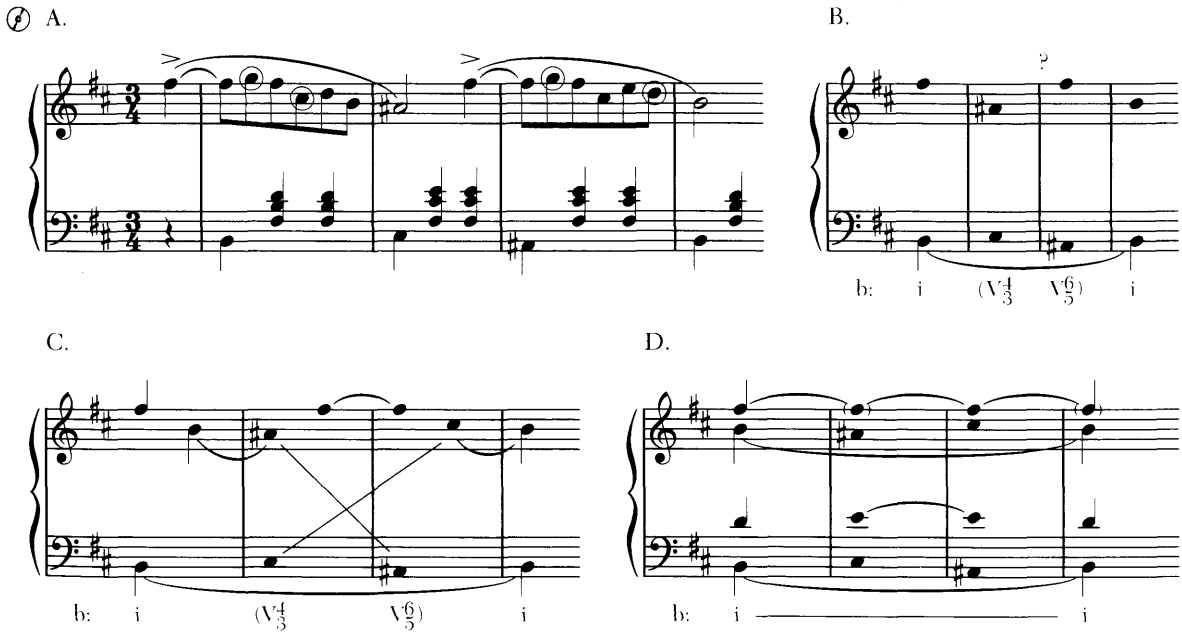


The bass of the Chopin waltz in Example 13.15a suggests a kind of changing tone figuration (scale steps $\hat{1}$-$\hat{2}$-$\hat{7}$-$\hat{1}$) using an embellishing V^4_3 and V^6_5 that act as neighbors to the tonic harmony. Here it is the soprano that proves tricky to reduce. Clearly, measures 1 and 3 begin with an F♯, but how do these F♯'s connect to the A♯ and B in measures 2 and 4 (Example 13.15b)? The upper voice actually implies two different lines or a compound melody; observe the upward and downward stems in Example 13.15c. The

B^4 (in measure 1) connects to the $A\sharp^4$ while the $C\sharp^5$ in measure 3 continues the same pattern to B^4, producing a voice exchange with the bass notes of the inverted dominant sevenths. If we now supply a couple of upper F♯'s in parentheses to indicate the implied retention of the first note, the two-voice implication of the soprano becomes clear (Example 13.15d). We could even fill out the harmony by using the upper voice of the left-hand chords as our tenor line (Example 13.15d).

Example 13.15

CHOPIN: WALTZ IN B MINOR, OP. 69, NO. 2

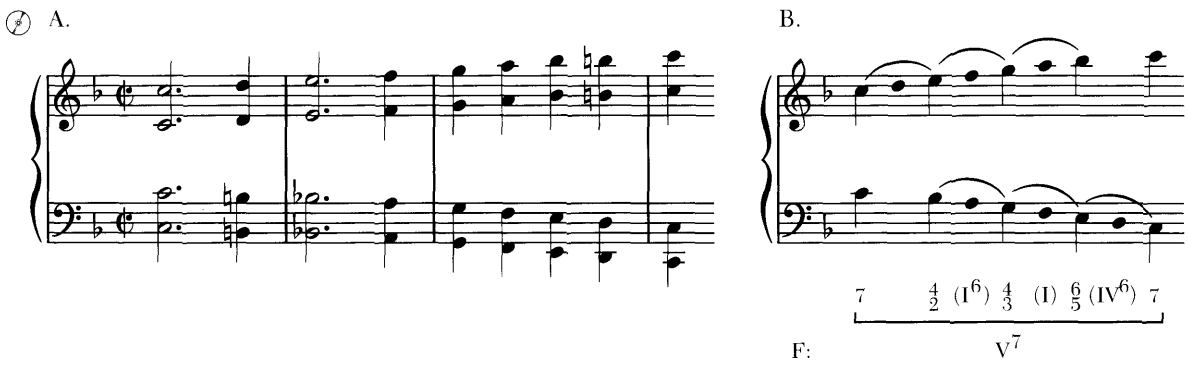


ARPEGGIATED EXTENSIONS OF DOMINANT HARMONY

We have seen how tonic harmony I and I^6 can be prolonged by embellishing dominant chords. In a similar manner, the V^7 may be extended through the use of its various inversions in an ascending or descending bass arpeggiation. These dominant prolongations sometimes serve as introductions to the initial theme of a piece, as in the case with Sousa's march (Example 13.16). Here the I and I^6 serve as embellishing chords whose bass notes bridge the dominant chord members with passing motion. The contrary motion of the two outer voices generates implied inversions of the V^7.

Example 13.16

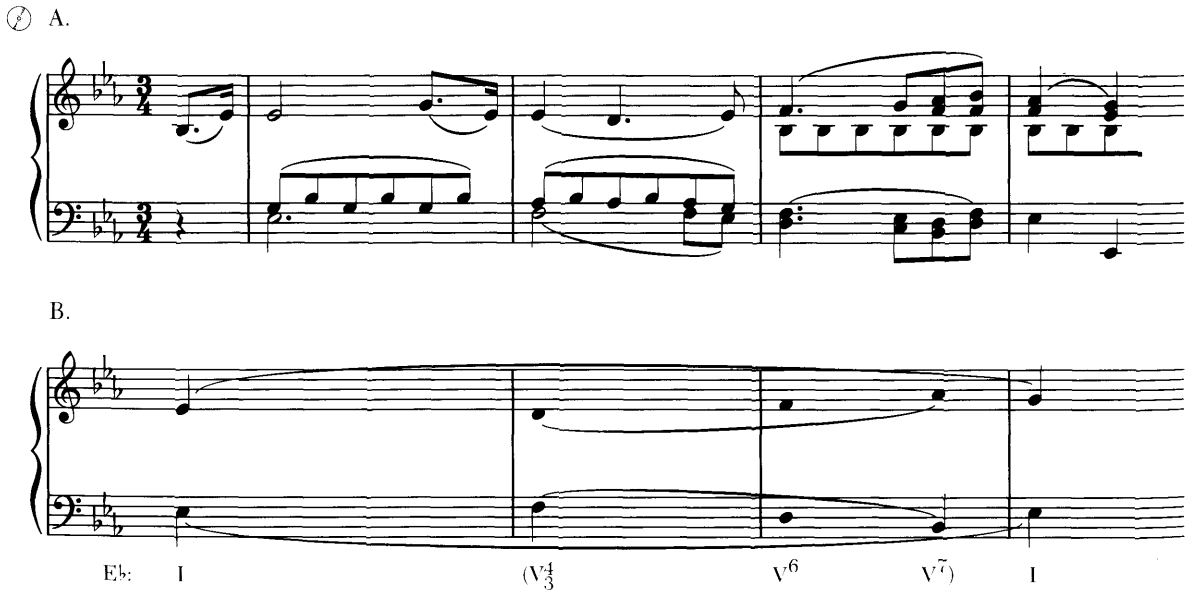
SOUSA: "THE THUNDERER"



In the Beethoven excerpt (Example 13.17), the dominant is extended near the end of the phrase, where the bass arpeggiates through the dominant seventh, producing a V^4_3, V^6, and V^7 in succession before resolving to the tonic. The soprano does the same thing, moving from the 3rd through the 5th to the 7th of the V^7 chord.

Example 13.17

BEETHOVEN: PIANO SONATA IN E-FLAT MAJOR, OP. 31, NO. 3, III



EXCEPTIONAL TREATMENTS OF THE CHORDAL 7TH

The following excerpts represent three exceptional ways of treating the chordal 7th of the dominant seventh.

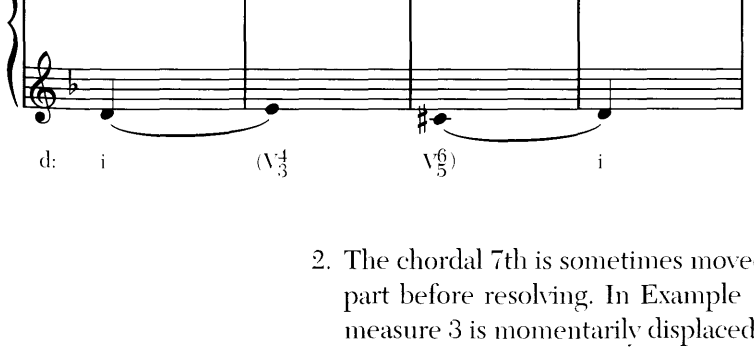
1. In a **delayed resolution** the chordal 7th does not move immediately to $\hat{3}$ but is momentarily diverted. This occurs in the Mozart Fantasia (Example 13.18a), where the soprano G^5 in measure 14 takes the form of a **dangling 7th** within the V^6_5 harmony. This chordal 7th does not resolve until the second half of measure 15, as the accompanying voice-leading reductions demonstrate. The F^5 in measure 14 is not the note of resolution because it is a dissonant passing note against the V^6 harmony.

Example 13.18

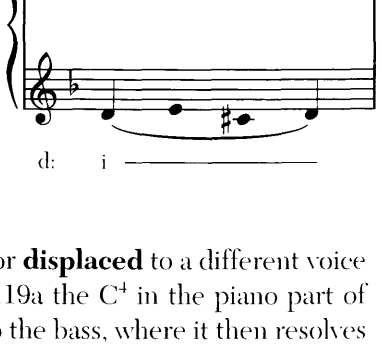
MOZART: PIANO FANTASIA IN D MINOR, K.397

A.

B.



C.

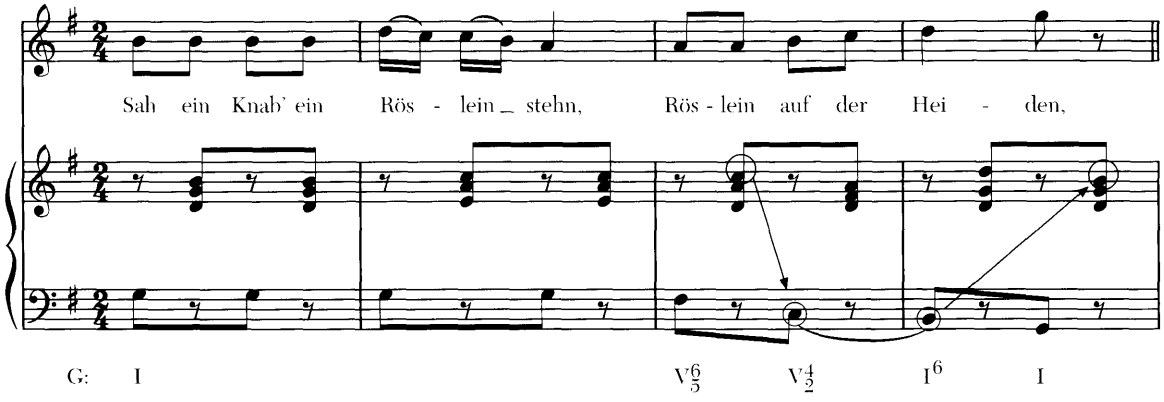


2. The chordal 7th is sometimes moved or **displaced** to a different voice part before resolving. In Example 13.19a the C^4 in the piano part of measure 3 is momentarily displaced to the bass, where it then resolves

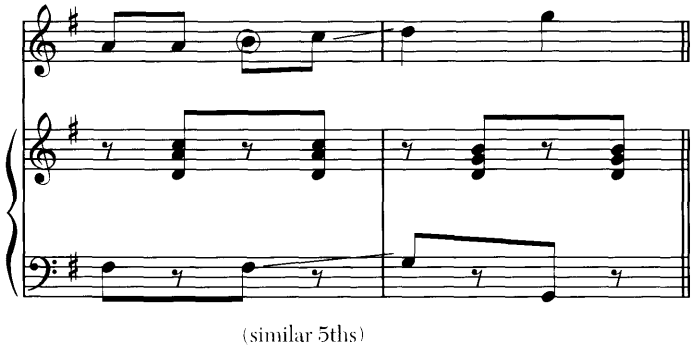
(C^3-B^2) before moving back up to the soprano in measure 4. Schubert must have felt that this device was necessary to avoid the possible unequal 5ths that would otherwise result between the vocal part and the bass in measures 3–4 (Example 13.19b).

Example 13.19

A. SCHUBERT: "HEIDENRÖSLEIN," OP. 3, NO. 3



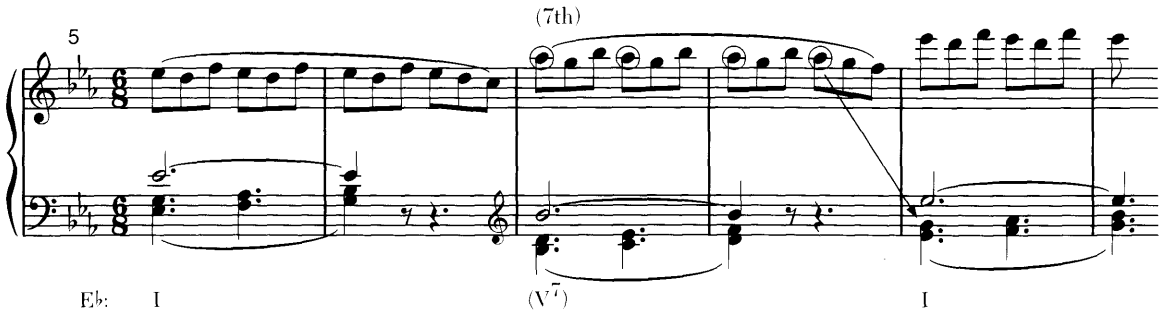
B.



3. Examples of **transferred resolution,** in which the chordal 7th resolves in another voice are rare. In the Beethoven passage of Example 13.20, the resolution of $A\flat^5$ in measures 7–8 is transferred to G^4 in a different voice in measure 9. As we would expect, these irregular treatments are infrequent in the literature.

Example 13.20

Beethoven: Piano Sonata in E-flat Major, Op. 7, I



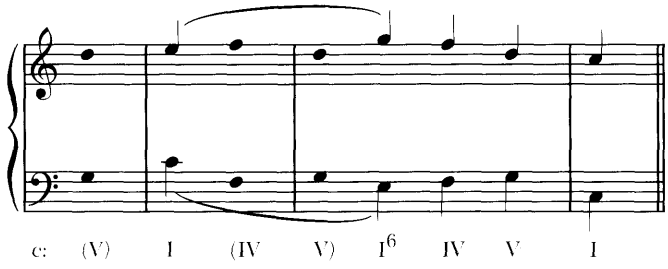
Extended Embellishment of the Tonic Harmony

The initial tonic harmony in a phrase may be prolonged by more than one embellishing chord prior to the cadential formula. This prolongation characteristically takes the form of a IV or IV^6, which is usually followed by some linear dominant chord, such as I-(IV-vii^{o6})-I^6 in major (Example 13.21a) or i-(iv-V^4_2)-i^6 in minor (Example 13.21b). We have already used two-chord embellishing progressions in several of our prior models and excerpts; for instance, see Example 13.6c. In order that this interior prolongation does not resemble or anticipate the more stable root-position progression at the final cadence, inversions of both the embellishing chords and the tonic are usually employed. The short Purcell passage (Example 13.21c) is a typical instance of this technique; its reduction appears in Example 13.21d. In the models and reductions, the Roman numerals of the embellishing progression are placed in parentheses, and the chords are unstemmed and connected to the framing tonic harmony with slurs.

Example 13.21

C. PURCELL: "FEAR NO DANGER TO ENSUE," FROM *DIDO AND AENEAS*, ACT I

D.



Some additional guidelines to aid in your use of analytical symbols are provided below for reference.

GUIDELINES FOR USING THE ANALYTICAL SYMBOLS

Embellishing dominant chords (such as V^6, vii^{o6}, and V^7 inversions) remain unstemmed with a connecting slur from the preceding to the following note.

In embedded voice-leading examples, the tonic note of the embedded figure is stemmed in the opposite direction (upward for the bass and downward for the soprano).

In arpeggiations of embellishing chords, do not stem any of the notes.

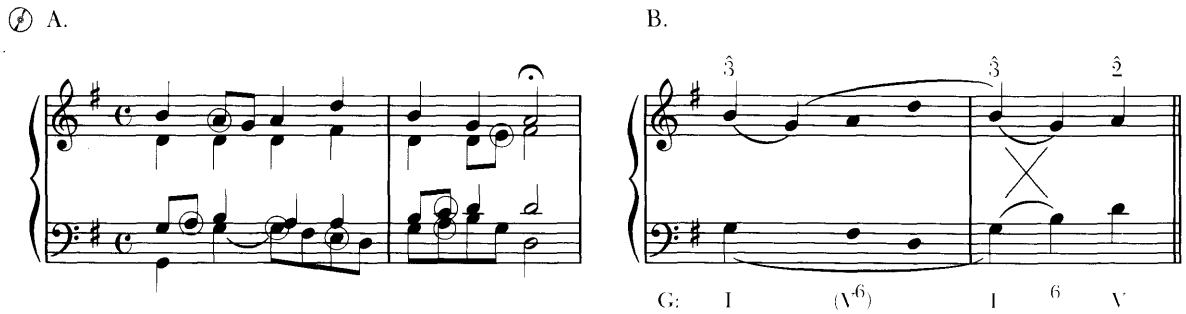
MELODY HARMONIZATION

Although we can now support all the scale degrees of a melody with our chordal vocabulary, we should nevertheless attempt to harmonize only those melodies that actually imply primary chords. Since we now have a

greater variety of linear dominant chords available, we can focus on the melodic characteristics of the bass and the contrapuntal and intervallic relationships between soprano and bass, which are important aspects to consider when composing the interior of melodic phrases. The chorale harmonizations of J. S. Bach are excellent models to study in this respect. His bass lines, which often contain numerous embellishing chords and tones, are sometimes better melodies than the original hymn tunes, as exemplified by Example 13.22.

Example 13.22

"LIEBSTER JESU, WIR SIND HIER" (BACH CHORALE HARMONIZATION)

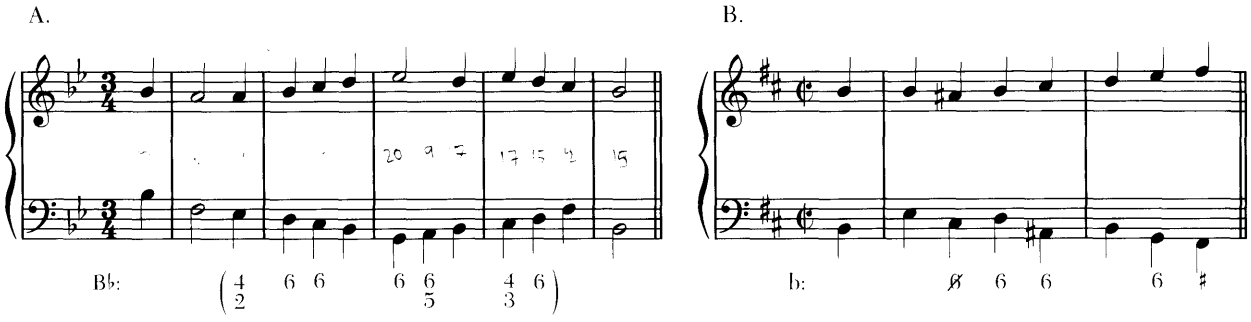


We noted previously in Chapter 11 that we should strive for maximal difference between the contours of the soprano and bass voices in order to produce two distinctive melodic strands in the outer parts. We can ensure this independence through a judicious use of contrary and similar motion. Oblique motion is less common in harmonizations that feature a fast harmonic rhythm, unless the soprano note is repeated. Avoid an excess of similar motion, as it will jeopardize the independence of the parts and may result in parallel 5ths or octaves.

Finally, in the interior of the phrase we should strive for a preponderance of imperfect consonant intervals (3rds and 6ths) between the outer parts. Occasional perfect 5ths and tritones, the result of V^7 inversions, are possible, but the octave should be avoided, unless it occurs as a passing sonority on a weak beat. The beginning and end of the phrase will continue to employ the more stable octaves and 5ths. The bass tends to leap more during the cadential formula because of the greater use of root-position chords.

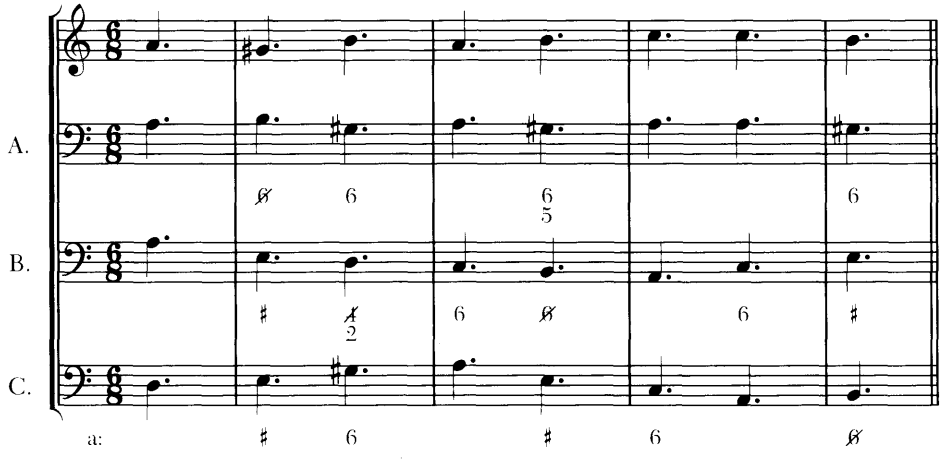
Now examine the passages shown in Example 13.23 and analyze the melodic characteristics of their bass lines as well as the melodic and intervallic relations between the outer parts. Mark the various types of melodic motion between the staves, using the abbreviations C for "contrary," S for "similar," and O for "oblique," and indicate the resulting harmonic intervals.

Example 13.23



Example 13.24 is a hymn tune with three harmonizations, indicated by the different bass lines and figured bass. Evaluate each setting in terms of the previous discussion and point out any errors or questionable procedures, both melodic and harmonic. Then in a class discussion, be prepared to defend your choice of bass line.

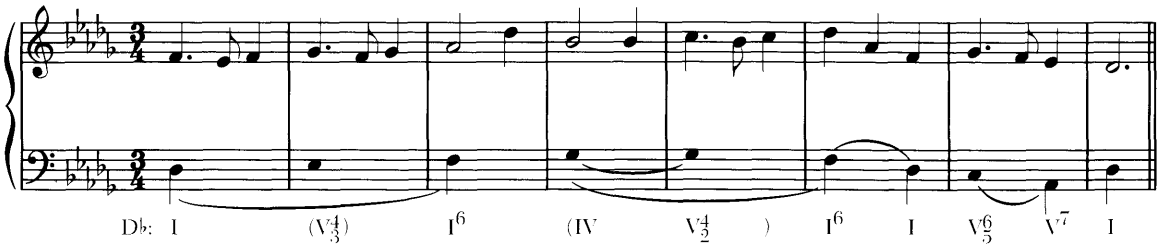
Example 13.24



In setting folk songs, the rate of chord change or harmonic rhythm is usually slower than in hymns, often only one chord per measure. However, the soprano—that is, the tune—will tend to be more rhythmically active than a typical hymn tune. After you sing or play the tune in Example 13.25a, first observe the primary or stressed notes at the beginning of each measure and then examine how the harmonies and bass line support these pitches. As the chordal 7th of a V^7, the last $G\flat^4$ of the tune appears to lack the proper resolution to F, but the four-voice setting (Example 13.25b) shows that it has been transferred down to the tenor part.

Example 13.25

A.



B.

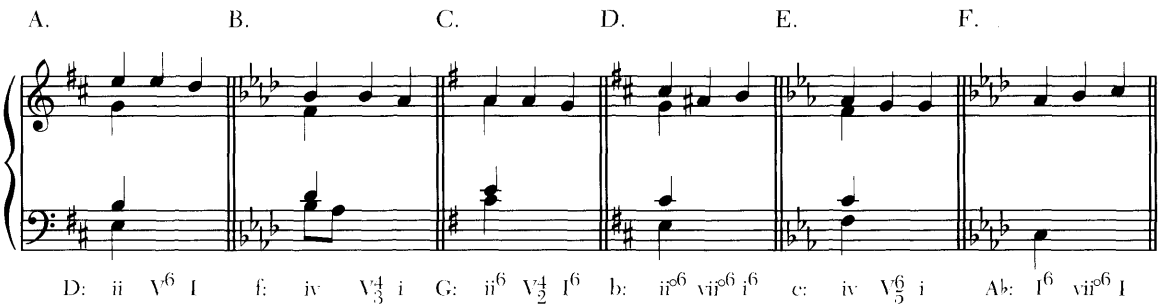
Terms and Concepts for Review

embellishing dominants (V^6, vii^{o6}, V^6_5, V^4_3, and V^4_2)
embedded voice leading
extensions of V^7
extended prolongation of tonic harmony
unusual treatment of the chordal 7th
  delayed resolution
  dangling 7th
  displaced 7th
  transferred resolution

A BRIEF REVIEW SELF-QUIZ

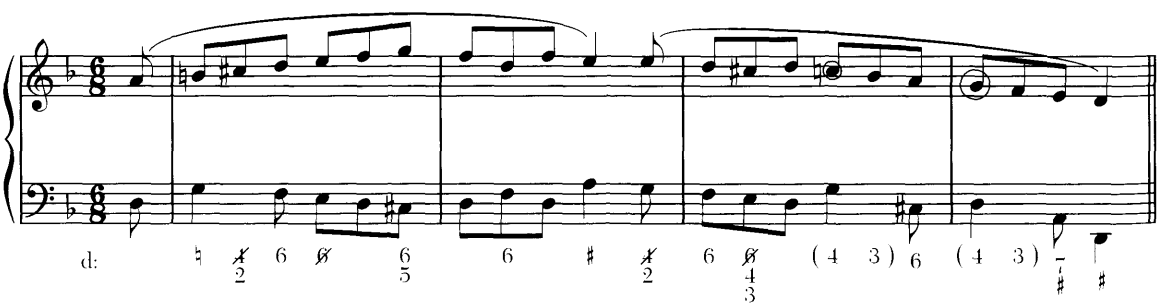
1. Fill in the missing voices in Example 13.26 according to the Roman numerals. Make sure that you prepare and resolve all chordal sevenths correctly.

Example 13.26



2. Analyze Example 13.27 with Roman numerals, noting the presence of any embellishing dominants. Then fill in the alto and tenor voices according to the figured bass, paying particular attention to the preparation and resolution of chordal 7ths in the inversions of V^7. Indicate the type of figuration used in each.

Example 13. 27



3. Analyze the harmonies of the dominant extension in Example 13.28, being sure that you denote all embellishing chords within parentheses. What kind of chords embellish the various dominant inversions? Make a voice-leading reduction of the passage.

Example 13.28

CHAPTER 14

The Pre-dominant II and II^7 Chords

WE HAVE NOW CONCLUDED our study of how the primary chords and their various inversions operate in tonal music. The following chapters in Part II will take up the remaining diatonic chords. Having previously discussed the function of the subdominant triad (IV and IV^6) as either a pre-dominant leading to V or an embellishing neighbor chord to I, in this chapter we will introduce its pre-dominant companion—the supertonic triad and its seventh chord (ii and ii^7) and examine their typical uses as both cadential and embellishing chords, as well as their usefulness in harmonizing melodies.

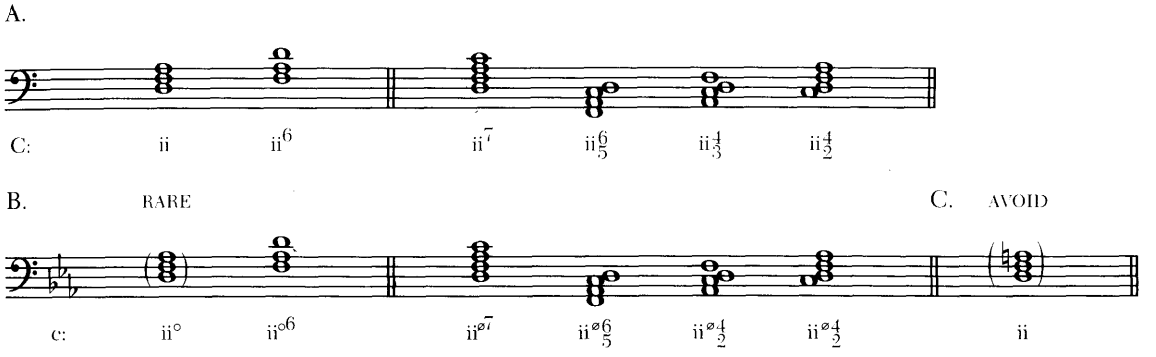
THE SUPERTONIC FAMILY

In our presentation of supertonic harmony, we will treat both the supertonic triad and its seventh chord concurrently. Study Example 14.1, which lists and identifies the supertonic chords in C major and C minor.

1. In the *major mode* the supertonic triad is a *minor* sonority, and its seventh chord is a *minor seventh* (m7). The supertonic triad occurs in root position and first inversion (ii and ii^6); the seventh chord is found in root position and all three inversions: ii^7, ii$^6_5$, ii$^4_3$, and ii$^4_2$ (Example 14.1a).
2. In the *minor mode* the supertonic triad is *diminished*, so that it usually occurs in first inversion (ii^{o6}). With an added minor 7th, it forms a *half-diminished* seventh chord in minor keys, again occurring in all four versions: ii^{ø7}, ii$^{ø6}_5$, ii$^{ø4}_3$, and ii$^{ø4}_2$ (Example 14.1b). A minor triad

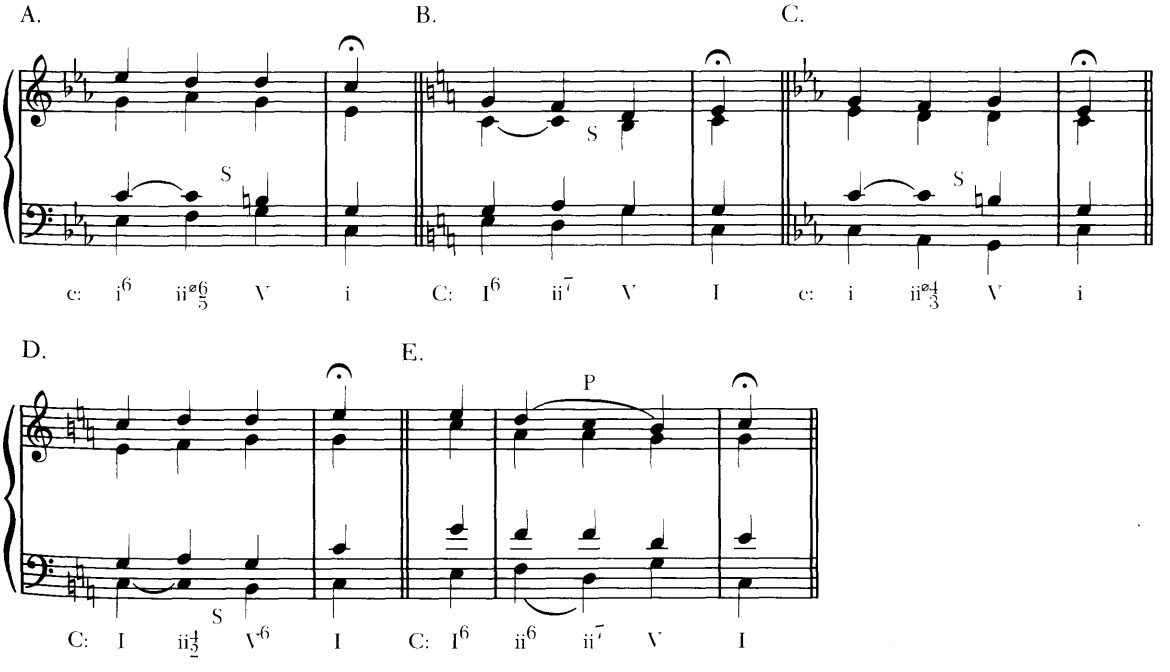
built on the supertonic (ii) incorporating the raised 6th scale degree ($\hat{\sharp 6}$) is theoretically possible in the minor mode, but it has a curiously sour sound and is almost never used (Example 14.1c).

Example 14.1



The various inversions of the supertonic seventh chord almost always use suspension figuration for the preparation and resolution of the chordal 7th (Example 14.2a through d); however, an occasional passing motion may occur (Example 14.2e).

Example 14.2

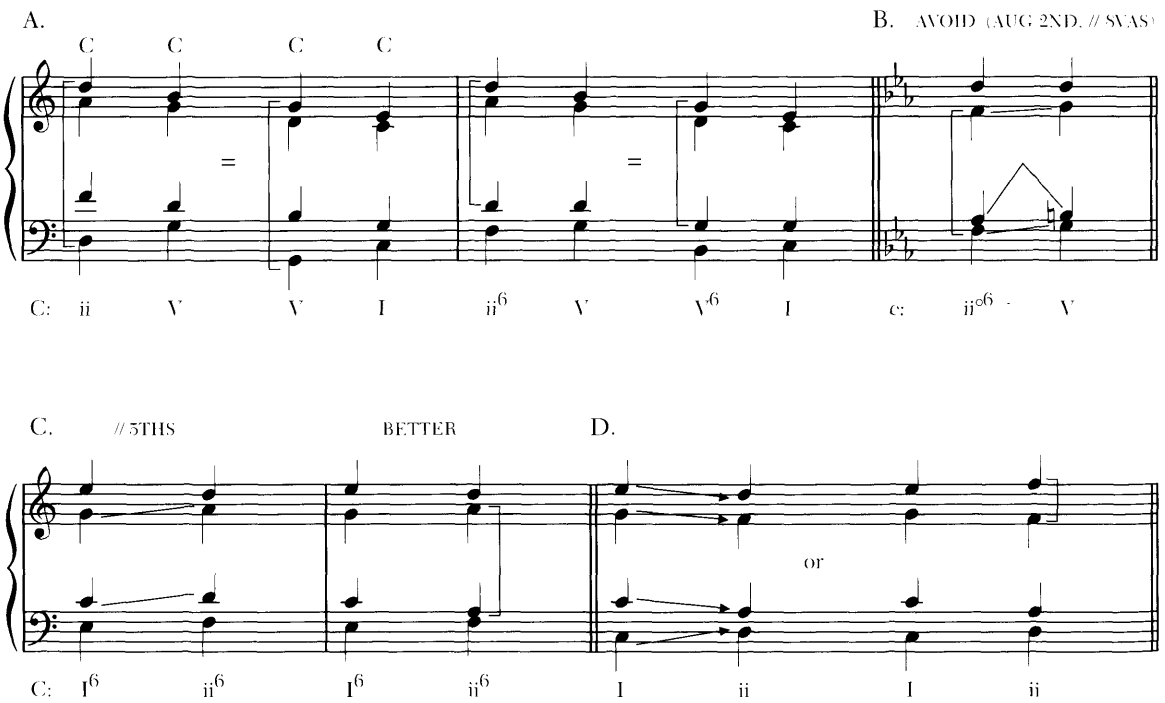


PARTWRITING WITH SUPERTONIC CHORDS

The common partwriting procedures for supertonic chords are listed below.

1. Since their roots are a 5th apart, the progressions ii-V and ii^{6}-V represent diatonic transpositions of V-I and V^{6}-I. Use the same doublings that you would in the V-I and V^{6}-I progressions—that is, double the bass (the root) in the root-position ii chord, and double the soprano note in the first-inversion ii^{6} (Example 14.3a). Handling the ii^{o6} correctly in the minor mode is somewhat more difficult. Doubling the bass in the minor-mode ii^{o6} can produce either parallel octaves ($\hat{4}$-$\hat{5}$) or a melodic skip of an augmented 2nd ($\flat\hat{6}$-$\sharp\hat{7}$), as shown in Example 14.3b. In approaching a ii or ii^{6} from a I^{6}, be wary of using open structure, as parallel 5ths may occur (Example 14.3c). Since the same is also true of the root-position I-ii progression, you must either move the upper voices contrary to the bass or double the third in the ii chord (Example 14.3d).

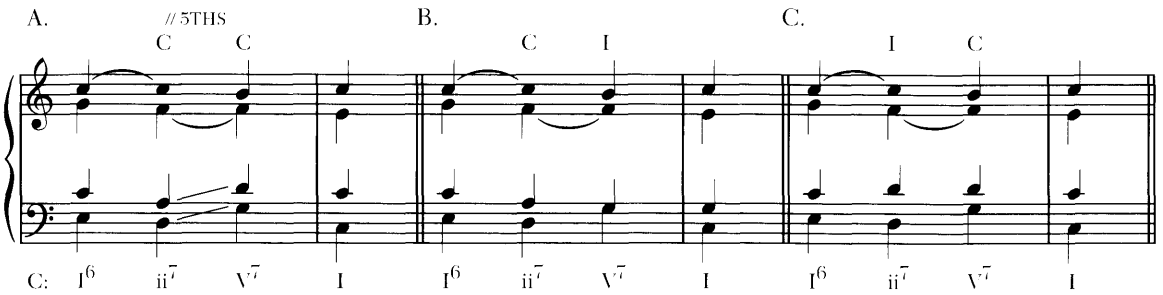
Example 14.3



2. As is the case with inversions of the V^{7}, all four chord tones should be present in inversions of the ii^{7} chord. Provided that the chordal 7th is pre-

pared and resolved correctly, usually by suspension, these inversions present no particular partwriting difficulties; review Example 14.2a through d. However, if you move from a root-position ii^7 to a root-position V^7, one of the chords must be incomplete lest parallel 5ths result (Example 14.4a); in this case omit the chordal fifth and double the root of the V^7 (Example 14.4b) or else do the same with the ii^7 (Example 14.4c).

Example 14.4



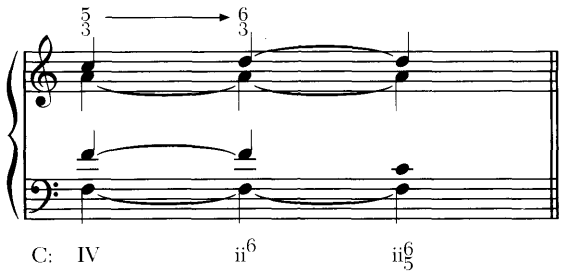
Summary of Partwriting Supertonic Chords

1. When using the supertonic as a pre-dominant chord, maintain the same doublings as in a dominant-tonic progression—double the bass (the root) in root position and double the soprano in the first inversion.
2. When moving from a root-position ii^7 to a root-position V^7, one of the chords must be incomplete to avoid parallel 5ths.
3. In inversions of ii^7, all four chord tones should be present.

The Pre-Dominant ii^6 and ii^6_5 in Cadential Formulas

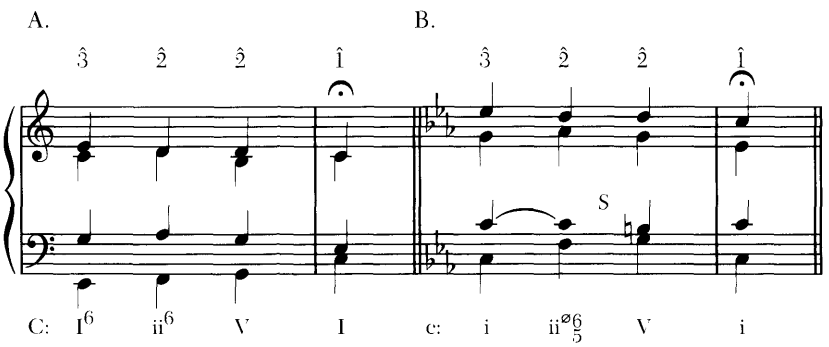
The first inversion of the supertonic triad and seventh chord occurs more frequently than its other forms. The ii^6 and ii^6_5 may be considered as close relatives to the root-position IV: not only do they both function as pre-dominant chords, but they also share the same $\hat{4}$ in the bass, which is a crucial scale degree used in approaching and establishing an authentic cadence—$\hat{1}$(or $\hat{3}$)-$\hat{4}$-$\hat{5}$-$\hat{1}$. While the IV features intervals of a 5th and 3rd above scale degree $\hat{4}$ in the bass, the ii^6 replaces the 5th with a 6th while retaining the common 3rd. Example 14.5 demonstrates this close relationship.

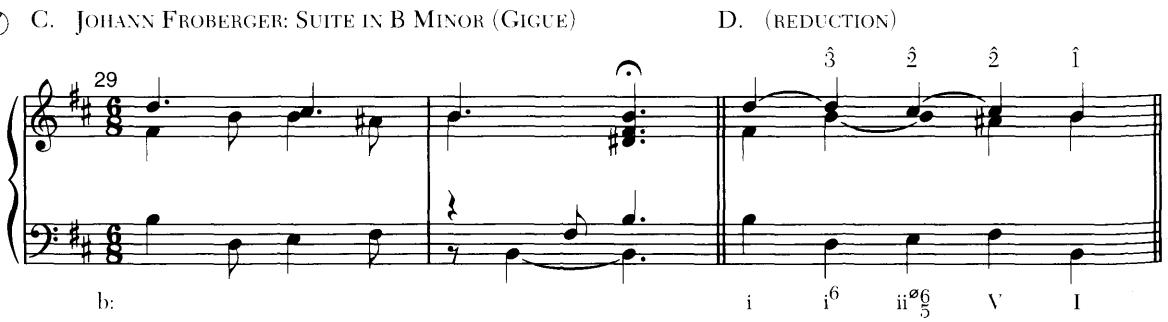
Example 14.5



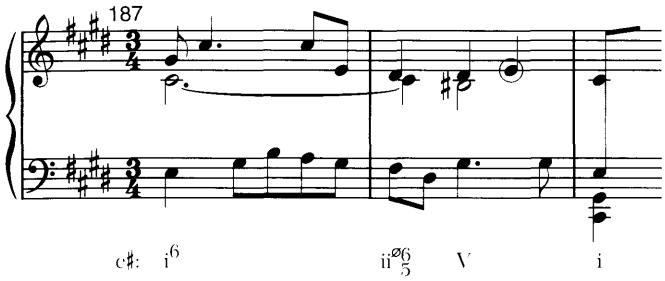
The progression I-ii^6-V(^{7})-I or its seventh-chord version i-ii$^{\varnothing 6}_5$-V(^{7})-i is one of the most frequent cadential formulas in the common-practice period. One reason this authentic cadence sounds so conclusive is the convincing stepwise descent of the soprano to the tonic ($\hat{3}$-$\hat{2}$-$\hat{2}$-$\hat{1}$) coupled with the familiar $\hat{1}$(or $\hat{3}$)-$\hat{4}$-$\hat{5}$-$\hat{1}$ in the bass (Example 14.6a). The supertonic seventh requires preparation of its seventh by suspension ($\hat{8}$-$\hat{8}$-$\hat{7}$), as shown in Example 14.6b. Two passages from music literature that feature this particular cadence appear in Example 14.6c and d. The first uses a perfect cadence ($\hat{3}$-$\hat{2}$-$\hat{2}$-$\hat{1}$). Note the three-voice texture of the Chopin excerpt and the momentary leap from $\hat{4}$ down to $\hat{2}$ in the bass before moving to $\hat{5}$-$\hat{1}$.

Example 14.6



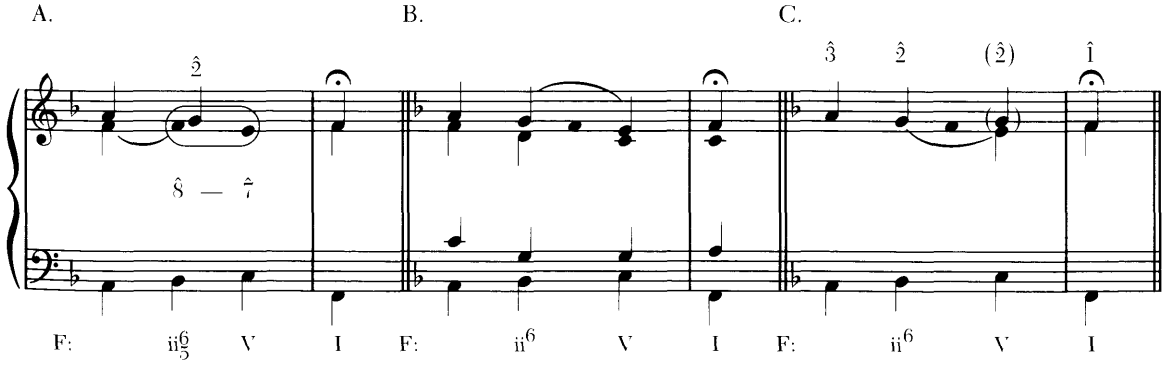


E. CHOPIN: MAZURKA IN C-SHARP MINOR, OP. 50, NO. 3



The ii$^6_5$-V-I cadence normally features an $\hat{8}$-$\hat{7}$ descent in the alto (Example 14.7a). In the triadic version of this progression (ii^6-V-I), the soprano often descends from $\hat{2}$ to $\hat{7}$ via a passing $\hat{8}$: $\hat{2}$-($\hat{8}$)-$\hat{7}$ (Example 14.7b). We may view this progression as a written-out linear version of the ii$^6_5$, with the $\hat{8}$–$\hat{7}$ functioning as an inner voice; note the stemming and slurs in Example 14.7c. There is some justification for assuming that this last ii^6 passage actually implies our original $\hat{2}$-($\hat{2}$)-$\hat{1}$ soprano line, shown in parentheses.

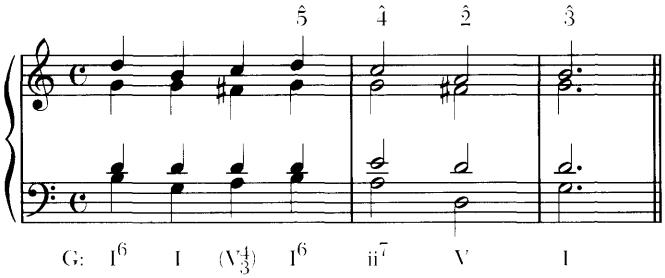
Example 14.7



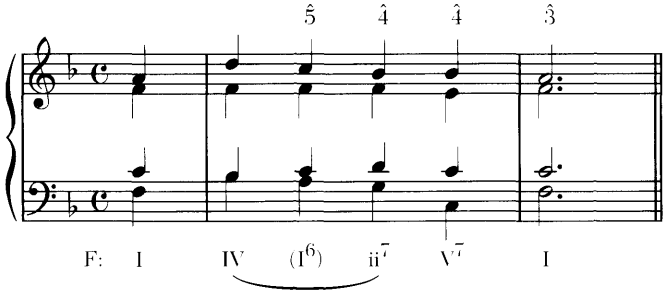
Of course, other soprano lines are possible with the ii^6. Examine the first three passages in Example 14.8 and note the soprano scale degrees of the last four cadence notes: in Example 14.8a, the soprano scale degrees are $\hat{5}$-$\hat{4}$-$\hat{2}$-$\hat{3}$; in 14.8b, $\hat{5}$-$\hat{4}$-$\hat{4}$-$\hat{3}$; and in 14.8c, $\hat{3}$-$\hat{4}$-$\hat{2}$-$\hat{1}$. The ii^6 can also precede the dominant in a half cadence (Example 14.8d); note the embedded voice-leading motion in the bass reduction of its first measure (Example 14.8e).

Example 14.8

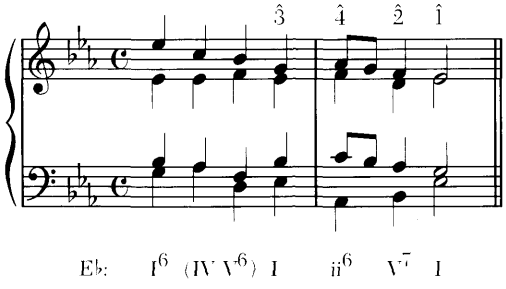
A. "LUTHER'S CHANT" (HYMN TUNE)



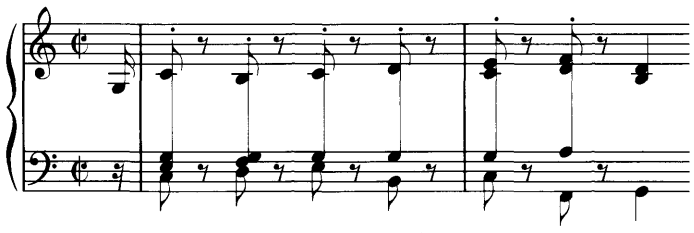
B. "SALISBURY" (RAVENSCROFT'S *PSALTER*, 1621)



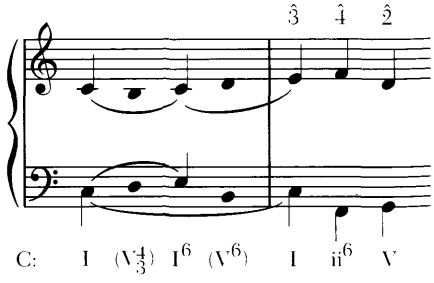
C. WILLIAM BOYCE: "SHARON" (HYMN TUNE)



D. BEETHOVEN: PIANO SONATA IN G MAJOR, OP.14, NO. 2, II

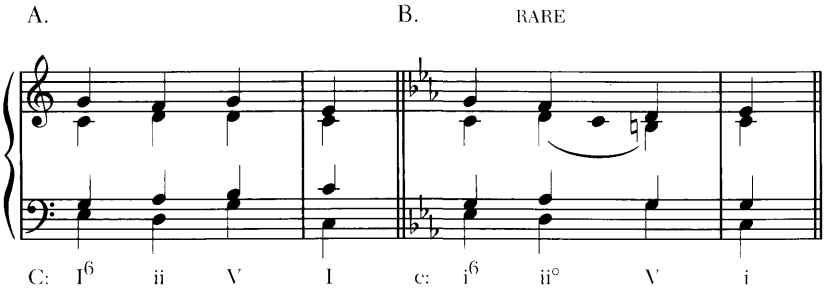


E. (REDUCTION)



Additional forms of the supertonic chord can also appear at cadences, such as the root-position triad (Example 14.9a) and three of its seventh-chord forms (see Example 14.2a through c). In the minor mode, however, we rarely see the supertonic chord in root position; since the supertonic triad in minor is a diminished chord, it usually appears in its first inversion. As a general rule, avoid using the ii° chord in root position in the minor mode (Example 14.9b).

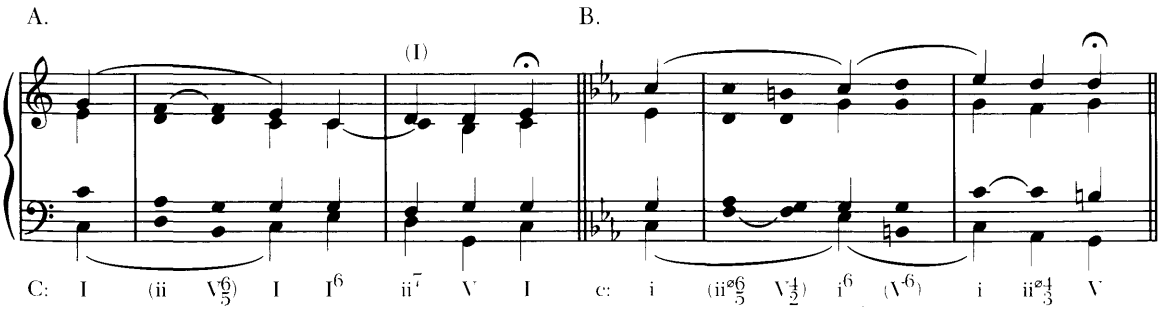
Example 14.9

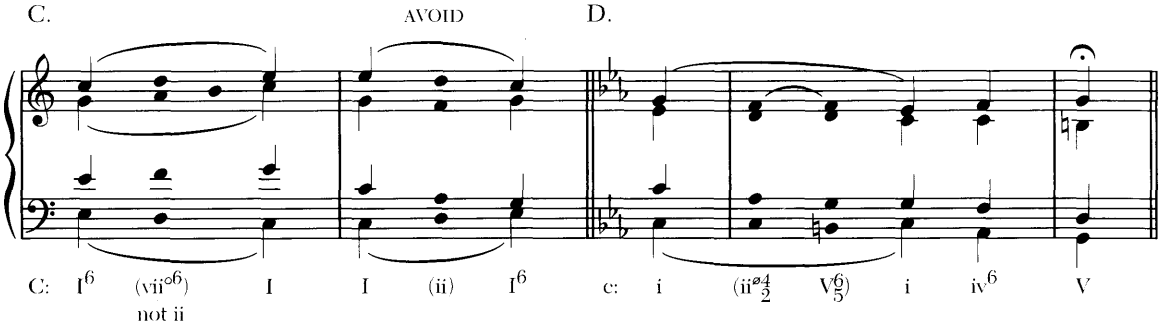


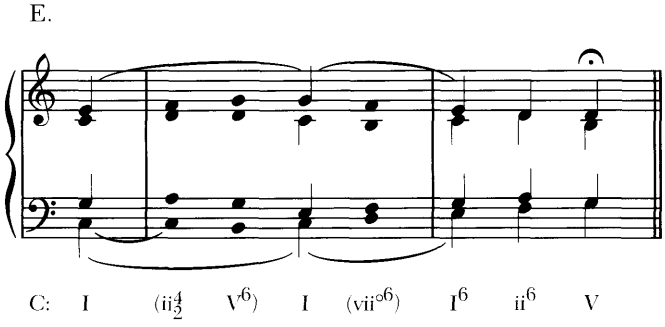
Supertonic Harmony in Embellishing Progressions

Like its counterpart the subdominant, the supertonic triad and seventh chord often occur in short embellishing progressions that serve to prolong tonic harmony within the phrase, such as I-(ii-V7)-I or i-(ii$^{\varnothing 6}_{5}$-V7)-i6. As we have noted before, such embellishing progressions avoid typical cadential melodic formulas in the soprano voice and frequently originate and conclude with weaker inverted I chords. We will continue to designate these interior embellishing chords with unstemmed note-heads and slurs in the voice-leading reductions, and place parentheses around their Roman numerals. Since so many of these progressions exist, we have called attention only to some of the more common ones in Example 14.10.

Example 14.10







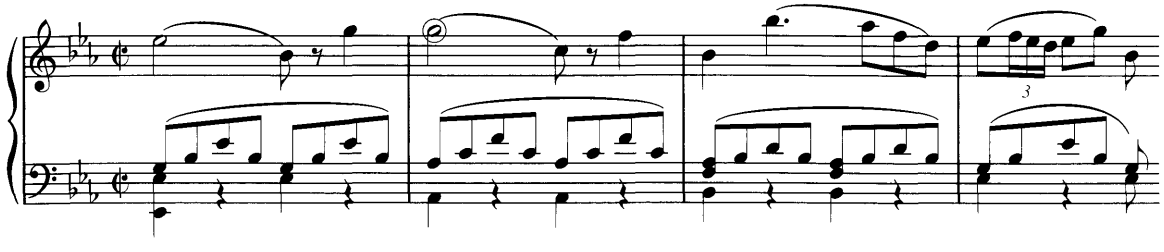
In Example 14.10c the third chord is best considered a vii^{o6} which moves to the tonic. Examples of a direct ii to I rarely occur. Example 14.10d and e illustrate typical uses of the ii$^{4}_{2}$ in both major and minor modes, resolving to either V^6 or V$^{6}_{5}$. This embellishing neighbor progression ($\hat{8}$-$\hat{8}$-$\hat{7}$-$\hat{8}$ in the bass) usually occurs at the opening of a phrase.

Examples of Supertonic Harmony in Music Literature

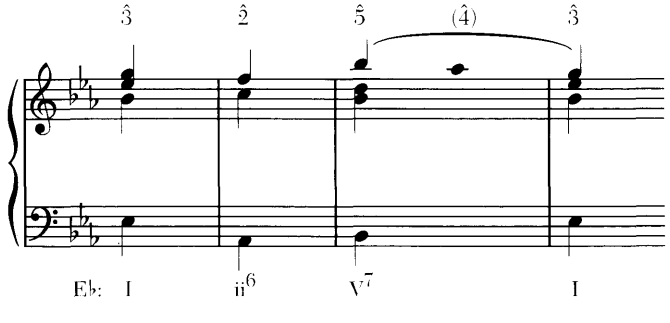
The following excerpts incorporate various supertonic chords. In both Weber's clarinet theme (Example 14.11a) and Strauss's waltz tune (Example 14.11c), the same four-chord cadential progression—I-ii^6-V(^{7})-I—is spread out over an entire phrase. In the reduction of the Concertino passage, the notes of the compound melody are gathered together in each measure and expressed as a vertical chord, resulting in a soprano line of $\hat{3}$-$\hat{2}$-$\hat{5}$-($\hat{4}$)-$\hat{3}$ (Example 14.11c). The same reduction technique applied to the compound melody of the Strauss waltz yields $\hat{3}$-$\hat{2}$-$\hat{2}$-$\hat{1}$ (Example 14.11d).

Example 14.11

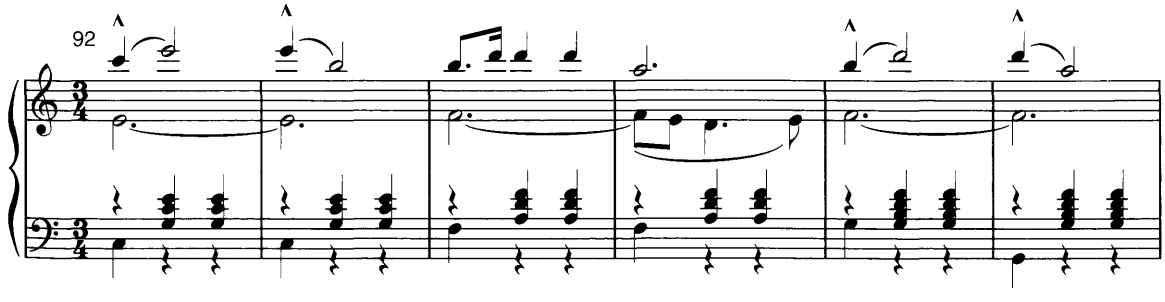
A. WEBER: CONCERTINO FOR CLARINET IN E-FLAT MAJOR

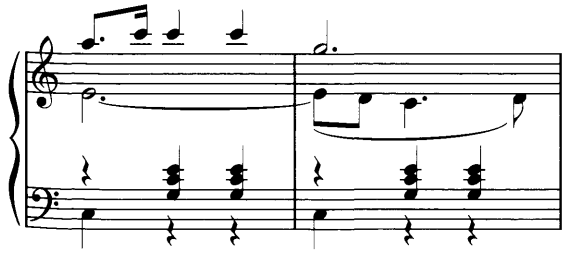


B. (REDUCTION)

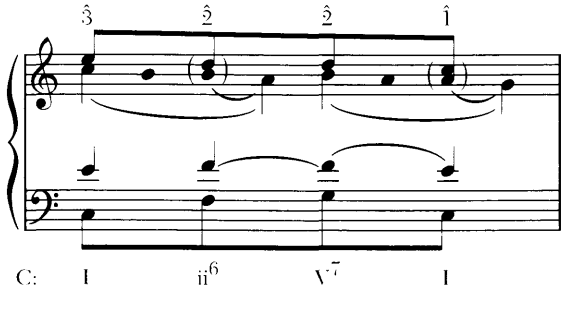


C. JOHANN STRAUSS, JR.: "EMPEROR" WALTZ





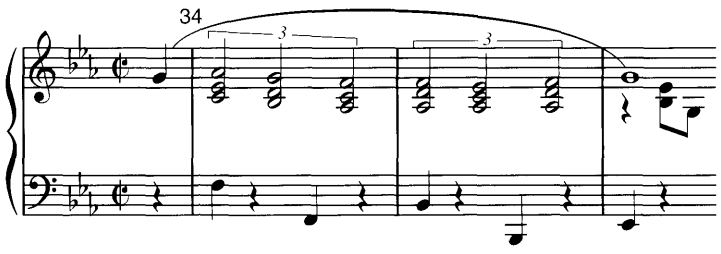
D. (REDUCTION)



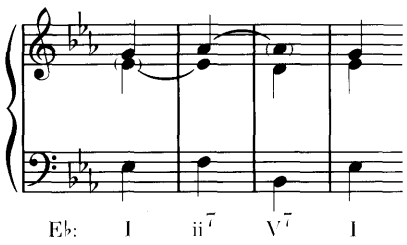
The major-mode progression I-ii^{7}-V^{7}-I occurs in legions of popular songs and ballads. The first sixteen bars of the chorus in Cole Porter's tune (Example 14.12) is based on this recurring succession. The reduction gives a more accurate picture of this phrase's voice leading, with the notes in parentheses suggesting the implied preparation and resolution of the chordal 7ths.

Example 14.12

A. COLE PORTER: "I GET A KICK OUT OF YOU"



B. (REDUCTION)

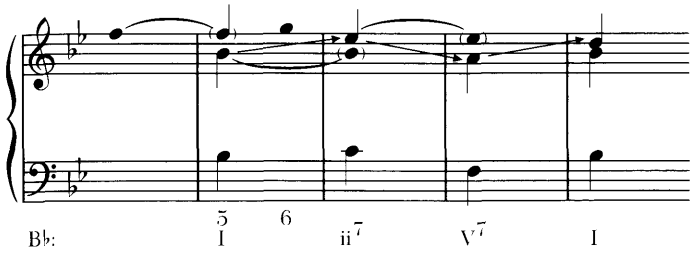


In the following Mozart passage (Example 14.13), the soprano consists of a compound melody that jumps back and forth between its two linear strands. In fact, the reduction, which adds the implied notes in parentheses, shows that its underlying voice leading is almost identical to that of the previous Porter song.

Example 14.13

A. MOZART: PIANO SONATA IN B-FLAT MAJOR, K.333, I

B. (REDUCTION)

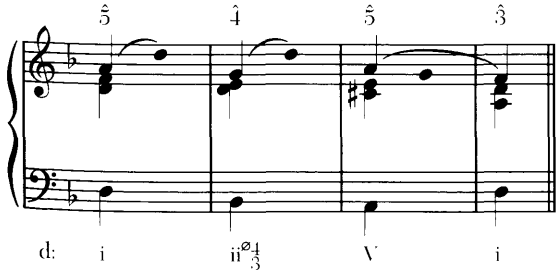


In the famous Schubert song below (Example 14.14), the voice-leading reduction incorporates the tune, the upper two voices of the accompaniment, and the bass line.

Example 14.14

A. SCHUBERT: "STÄNDCHEN" FROM *SCHWANENGESANG*

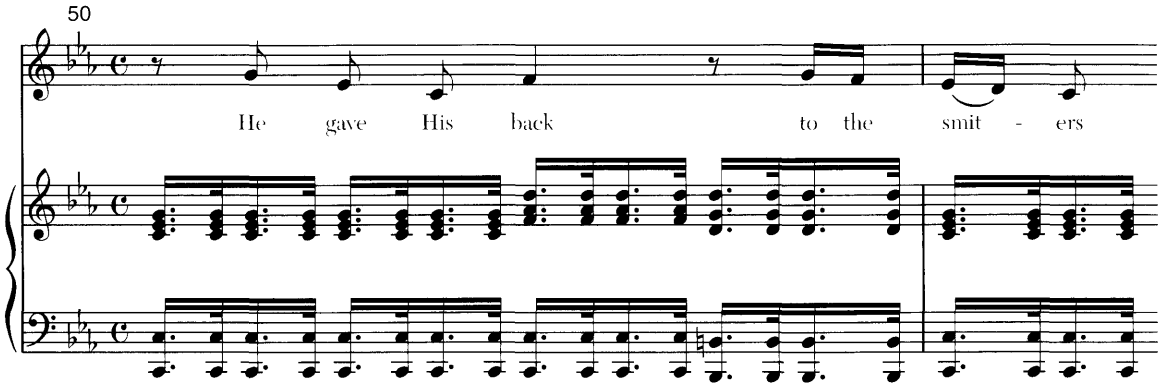
B. (REDUCTION)



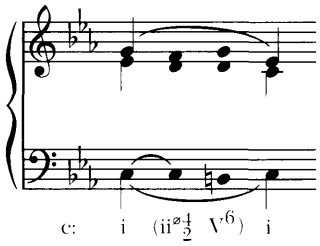
Finally, the unstable and dissonant character of the ii$^{\varnothing 4}_{2}$ is particularly appropriate for the opening of the agitated middle section in this Handel aria (Example 14.15), which depicts the scourging of Isaiah's Suffering Servant.

Example 14.15

A. HANDEL: "HE WAS DESPISED" FROM *MESSIAH*



B. (REDUCTION)



PROLONGATION OF THE PRE-DOMINANT FUNCTION

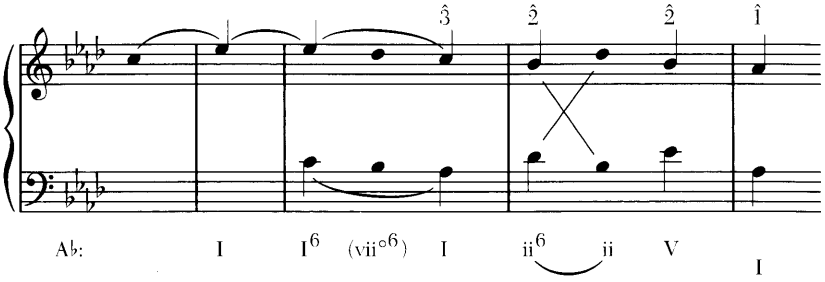
We have previously discussed brief extensions or prolongations of the tonic, dominant, or even the subdominant within a phrase. In the same way, we may also extend both the triadic and seventh-chord forms of supertonic harmony.

1. The supertonic function may be extended by using different inversions of the same chord, such as ii^6-ii (Example 14.16a and b). These inversions are often bridged with a passing first-inversion tonic chord (I^6), as shown in Example 14.16c and d. This device produces a voice exchange between the F's and D's in the Schumann piece; his odd title for this work remains a mystery.

Example 14.16

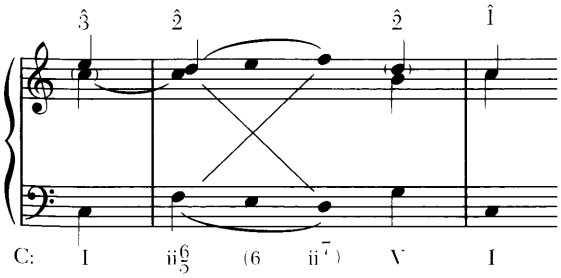
A. HAYDN: PIANO SONATA IN A-FLAT MAJOR, HOB. XVI:43, III

B. (REDUCTION)



C. SCHUMANN: "★★★" (NO. 21) FROM *ALBUM FOR THE YOUNG*, OP. 68

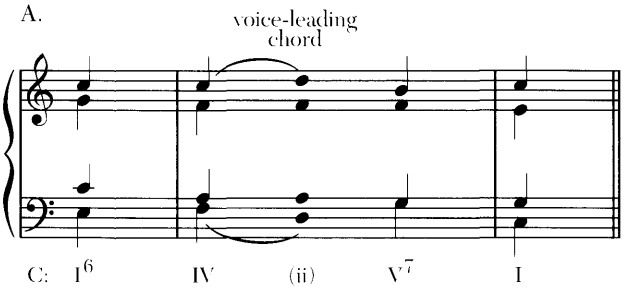
D. (REDUCTION)



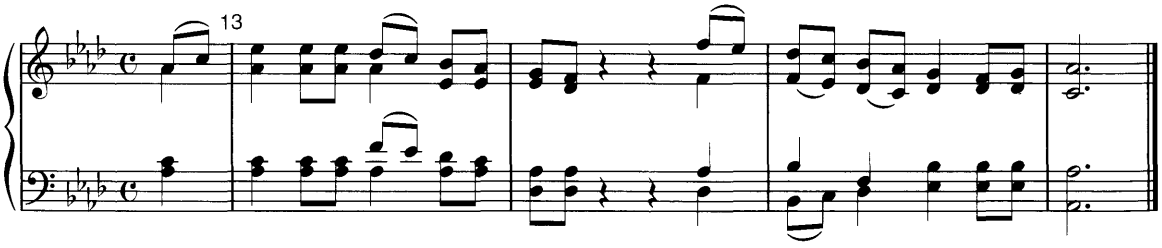
2. You may encounter movement from IV to ii (seldom the reverse) that maintains or extends the pre-dominant function (Example 14.17a). Some theorists explain this progression as the result of linear motion over a bass note, in this case, from a 5-6 motion over $\hat{4}$ in the bass. The 6 (or scale degree $\hat{2}$) is then displaced into the bass voice (as shown in Example 14.17a). In such instances the ii chord is sometimes called a **voice-leading chord,** since it is derived from the linear 5-6 motion. An example of this procedure occurs in "Columbia, Gem of the Ocean" (Example 14.17b). In the reduction (Example 14.17c), the notes in parentheses complete the implied soprano line.

Example 14.17

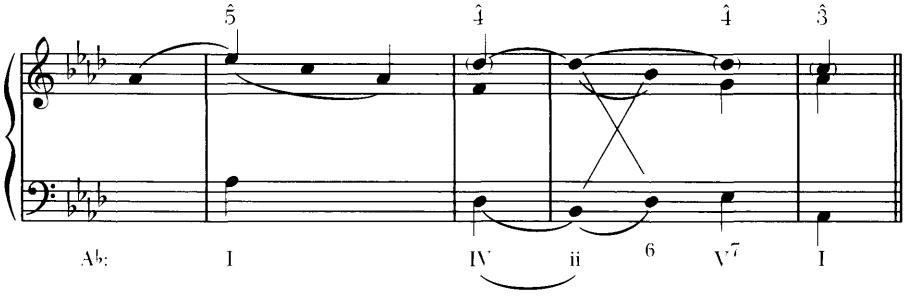
A.



B. THOMAS A. BECKET: "COLUMBIA, THE GEM OF THE OCEAN"



C. (REDUCTION)



Melody Harmonization

The introduction of the supertonic chords expands our vocabulary for melody harmonization. These chords not only offer us more variety in our choice of pre-dominant harmony, but also afford us a better melodic approach at authentic cadences. For instance, previously when we encountered a $\hat{2}$-$\hat{2}$-$\hat{1}$ soprano line, our only choice was to extend dominant harmony, either by adding a seventh (V-V^7) or by using a 4-3 suspension (Example 14.18a and b). Now we have the luxury of approaching the V with either a pre-dominant ii^6 or ii$^6_5$ (Example 14.18c or d). In addition, supertonic harmony provides more variety during embellishing progressions within the phrase.

Example 14.18

For purposes of harmonization, the following soprano scale degrees may be linked to various supertonic sonorities: $\hat{2}$ to the chordal root, $\hat{4}$ to the chordal 3rd, and $\hat{1}$ to the chordal 7th. Curiously enough, scale degree $\hat{6}$ is rarely harmonized with supertonic harmony; it is best supported with IV. In inversions of supertonic sevenths, the soprano should never double the bass, as all four chordal member must be present. In the hymn phrase of Example 14.19, several of these particular scale degrees have been circled as candidates for supertonic chords. We can use the first A♭^{4}, since it will prepare the following A♭ as the chordal 7th of a V^7. The F^4 on beat four, however, is not acceptable, since it moves directly to $\hat{1}$ rather than to dominant harmony. On the other hand, the F on beat three of the next bar is tailor-made for supertonic harmony, forming an authentic cadential $\hat{2}$-$\hat{2}$-$\hat{1}$. The first three harmonic settings (Example 14.19a through c), indicated by a bass line and figured bass symbols, exploit some of the opportunities for supertonic chords. While all three are acceptable, which one do you think exhibits the best melodic bass line?

Example 14.19

The last four settings (Example 14.19d through g) are considerably less than ideal. Study and then critique each outer-voice duet, identifying questionable harmonic intervals, awkward melodic contours, parallel 5ths or octaves, unusual progressions, etc. Check your answers against the comments that follow.

d: Direct octaves on the resolution of V^{7} (m. 1, beats 2–3); uneven rate of harmonic rhythm; rather disjunct bass line; too many perfect 5ths and octaves in outer parts.

e: Weak succession of I^6 chords (measure 2, beats 1–2); parallel octaves (measure 2, beats 2–3); weak final cadence; rather static bass line.
f: Awkward chord progression (measure 1 through measure 2, beat 2); weak final cadence.
g: Weak repetition of A♭ and F (measure 1, beats 1–2); parallel 5ths; (mm. 1–2).

In previous chapters we completed our harmonizations with four-voice settings. With melodies that employ a slower harmonic rhythm, however, we may also wish to set the tune with a simple piano accompaniment. Example 14.20a cites a four-part choral version of the German folk song "Erlaube mir," which features a harmonic background of I-ii^6-V-I. In Example 14.20b we have converted this setting into a piano piece; study the relationship between the lower voices in the two versions.

Example 14.20

A. "ERLAUBE MIR" (GERMAN FOLK SONG)

B.

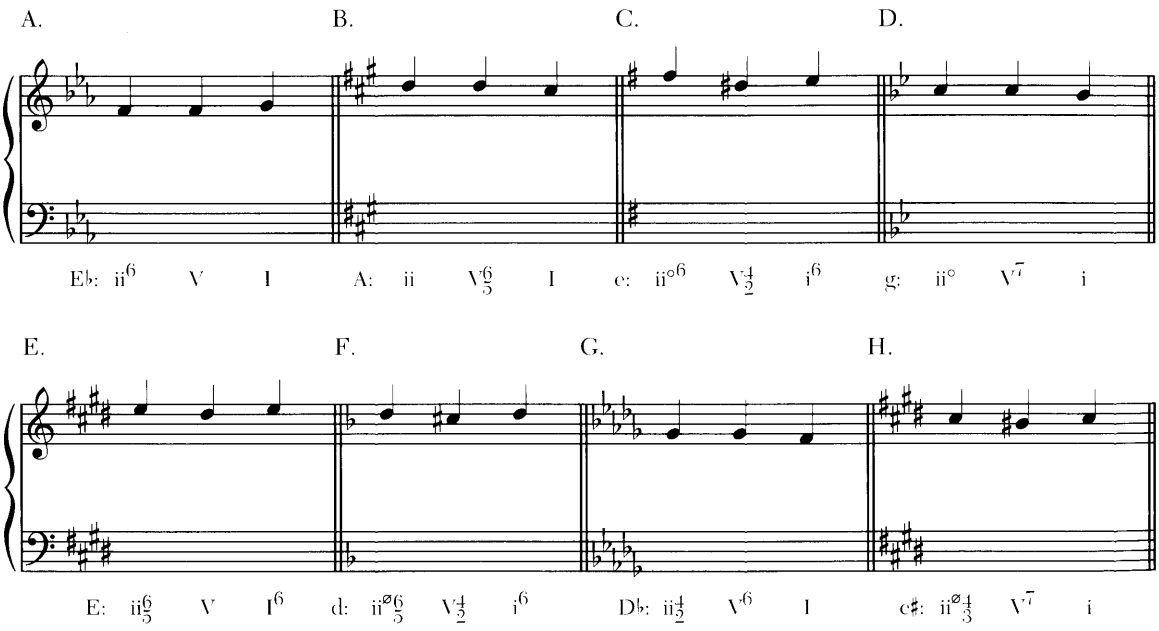
Terms and Concepts for Review

supertonic chords as pre-dominant harmony
preparation and resolution of the ii^7
supertonic chords in embellishing progressions
prolongation of supertonic harmony
voice-leading chord

A BRIEF REVIEW SELF-QUIZ

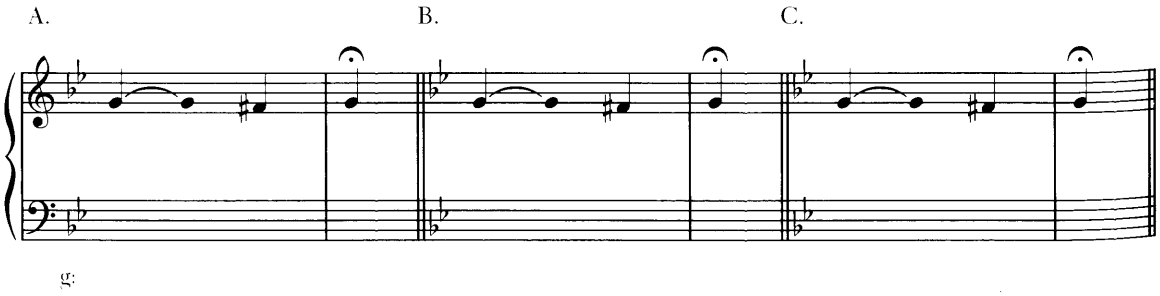
1. Fill in the missing parts of Example 14.21, using four-voice texture, and the Roman numerals as your guide. Make sure that any chordal sevenths are properly resolved.

Example 14.21

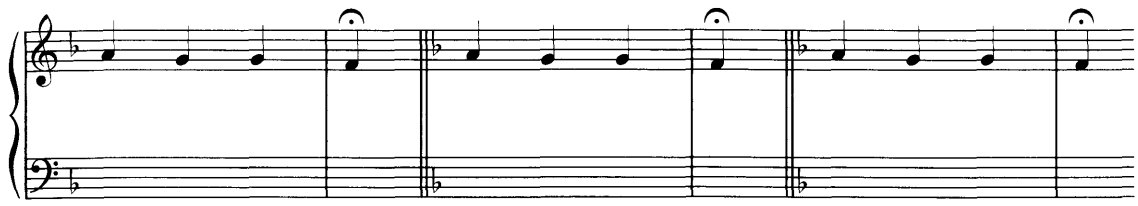


2. Given the same soprano line in Example 14.22a through c, make four-voice settings using a different supertonic seventh for each progression. For the common soprano line in Example 14.22d through f, make four-voice settings using a ii^6, a ii, and a ii$^6_5$.

Example 14.22



D. E. F.



F:

3. Realize the unfigured basses below in four-voice texture, deducing the inferred chords from the notes and intervals of the outer parts. Then make a Roman numeral analysis of both Example 14.23a and b. Indicate any examples you find of (1) a voice-leading chord or (2) a voice exchange that momentarily prolongs supertonic harmony.

Example 14.23

A.

A:

B.

e:

CHAPTER 15

Melodic Figuration and Dissonance II:

SUSPENSIONS AND OTHER USES OF EMBELLISHING TONES

In Chapter 7 we introduced the suspension as an accented embellishing tone whose dissonance was prepared by common tone and resolved downward by step. Since the metrical placement of the dissonance on the beat delays its resolution to consonance until the offbeat or weak beat, the suspension is a particularly affective idiom, a characteristic we will discuss later in the chapter. Because of the number of different types of suspensions, this melodic dissonance warrants a more detailed study than the other embellishing tones. In this chapter we will first examine how suspensions are used in two-voice and four-voice texture before turning our attention to the other aspects of melodic embellishment, such as consecutive and simultaneous nonharmonic tones, some possible problems in the analysis of embellishing tones, and how melodic dissonance may produce an affective response in the listener. The chapter concludes with some recommendations on the most effective use of embellishing tones in harmonizations and compositional projects.

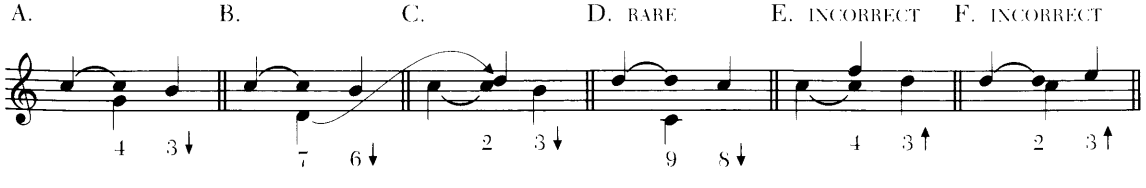
Suspensions in Two-Voice Texture

Since the study of suspensions involves a number of different dissonant and rhythmic relationships, we will begin by examining how this embellishing

tone operates in two-voice texture. We will consider three topics: (1) the various types of suspensions, as determined by their intervallic relation to the bass, (2) the proper preparation and resolution of the dissonant suspension, and (3) the correct rhythmic setting of suspensions. For the first two topics, which focus on the dissonance or pitch aspect of suspensions, we will use the reductive notation explained in Chapter 7, in which the stemmed notes represent the consonant preparation and resolution, and the unstemmed note represents the dissonant suspension; ties and slurs may be added. For the third topic we will reintroduce rhythmic values.

1. We classify suspensions according to their intervallic relation with the bass voice. As you can see in the first three examples, two-part suspensions represent dissonant elaborations of the imperfect consonances—the 3rd and its inversion the 6th. In the **4-3 suspension,** the 4th moves or resolves to a 3rd (Example 15.1a); in the **7-6 suspension,** the 7th moves to a 6th (Example 15.1b); and in the **2-3 suspension,** the 2nd moves to a 3rd (Example 15.1c). Do not confuse these numerical indicators of intervals with scale degrees. The dissonance appears in the upper voice in the 4-3 and 7-6, but it appears in the bass voice in the 2-3. In fact, this 2-3 bass suspension is nothing more than an intervallic inversion of the 7-6 with the two parts switched; 2 replaces 7 and 3 replaces 6. Since the 9-8 resolves into an empty perfect octave (Example 15.1d), it is rarely found in two-voice texture. Example 15.1e and f appear to be suspensions, but are not, because in both cases the suspension appears in the wrong voice—in Example 15.1e the 4-3 should be in the upper voice, while in Example 15.1f the 2-3 should be in the lower voice.

Example 15.1



If we move one of the notes of a suspension an octave higher or an octave lower, we form compound intervals that behave in the same manner as the suspensions formed by simple intervals. Thus, the compound 11-10 suspension behaves exactly like the simple 4-3 suspension, the compound 9-10 suspension behaves like the simple 2-3, and so forth. For that reason, and to avoid confusion, we label all

compound suspensions as if they were simple suspensions in close position; thus, we label an 11-10 suspension as a 4-3, a 14-13 as a 7-6, and so forth.

2. The dissonant suspension note must be immediately preceded or prepared by a consonant note of the same pitch, and must resolve downward stepwise to another consonant note. The first three suspensions in Example 15.2 are supplied with proper preparations and resolutions with each harmonic interval labeled. It is not absolutely necessary that the suspension dissonance be tied to its preparation; in some instances the common tone is rhythmically reiterated.

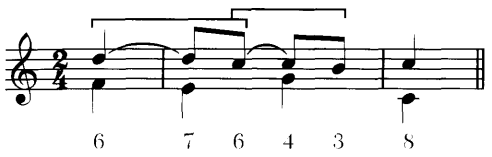
   As the suspended dissonant note resolves, the other voice part in two-voice texture is not required to remain on the same tone but may leap to a different consonant interval. In Example 15.2d the bottom voice skips upward a 3rd as the 7 resolves to 6, creating a 7-3 suspension; we call this a **change of bass.** In Example 15.2e the top voice leaps upward a 4th as the 2 resolves to 3, creating a 2-6 suspension; we call this a **change of upper part.**

Example 15.2

3. We turn now to rhythmic considerations. Suspensions may occur at the beat-division level or at the beat level. If the duration of the suspension dissonance is a beat division (such as an eighth note in $\frac{4}{4}$), then the duration of its preparation and resolution should be at least that long (either a sixteenth note or a quarter note). In the several illustrations in $\frac{2}{4}$ and $\frac{6}{8}$ that appear in Example 15.3a and b, compare the length of the suspension dissonance to the length of its preparation and resolution. On the other hand, if the suspension dissonance is an entire beat in duration (such as a quarter note in $\frac{4}{4}$), then its preparation and resolution are usually of equal length or may be even longer, as illustrated in Example 15.3c and d. In $\frac{4}{4}$, beat-length suspensions occur on metrically accented beats (one and three); in $\frac{3}{4}$, they may appear on either beat one or two. You can find exceptions to nearly all rules, including these rules about the proper duration of the preparation and resolution of a suspension. Note that in the Schumann excerpt (Example 15.3e), the preparation for the suspension D♭ is only one sixteenth-note long.

Example 15.3

A.

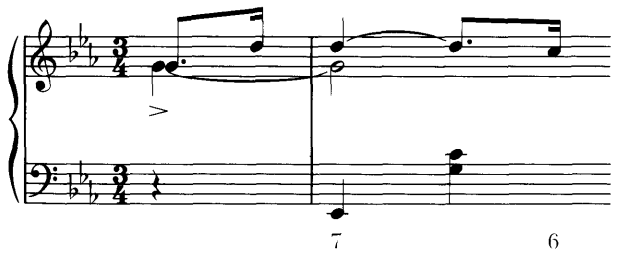


B.

C.

D.

E. SCHUMANN: "CHIARINA" FROM *CARNAVAL*, OP. 9



Example 15.4 illustrates two-voice suspensions in a pair of pieces whose dates of composition are separated by some three hundred years. 7-6 and 2-3 suspensions alternate in the Tchaikovsky symphony. In the Galilei duet, note that, as each suspension resolves, there is either a change of bass or a change of upper part in the other voice.

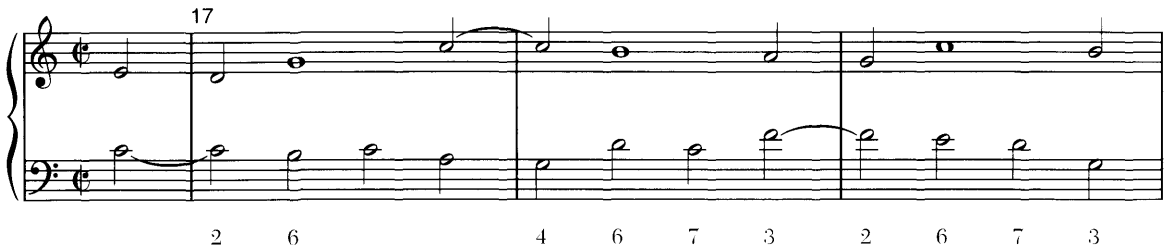
Summary of Basic Information about Suspensions

1. Suspensions are classified by their relationship to the bass—4-3, 7-6, 9-8, or 2-3. Compound intervals are treated as simple intervals.
2. The dissonant suspension note must be prepared by a consonant note of the same pitch and must resolve downward by step to another consonance.
3. The preparation and resolution of a suspension should be at least as long as the suspension dissonance.

Example 15.4

A. TCHAIKOVSKY: SYMPHONY NO. 6 ("PATHÉTIQUE"), IV (1893)

B. VINCENZO GALILEI: DUET FROM *FRONIMO* (1568)



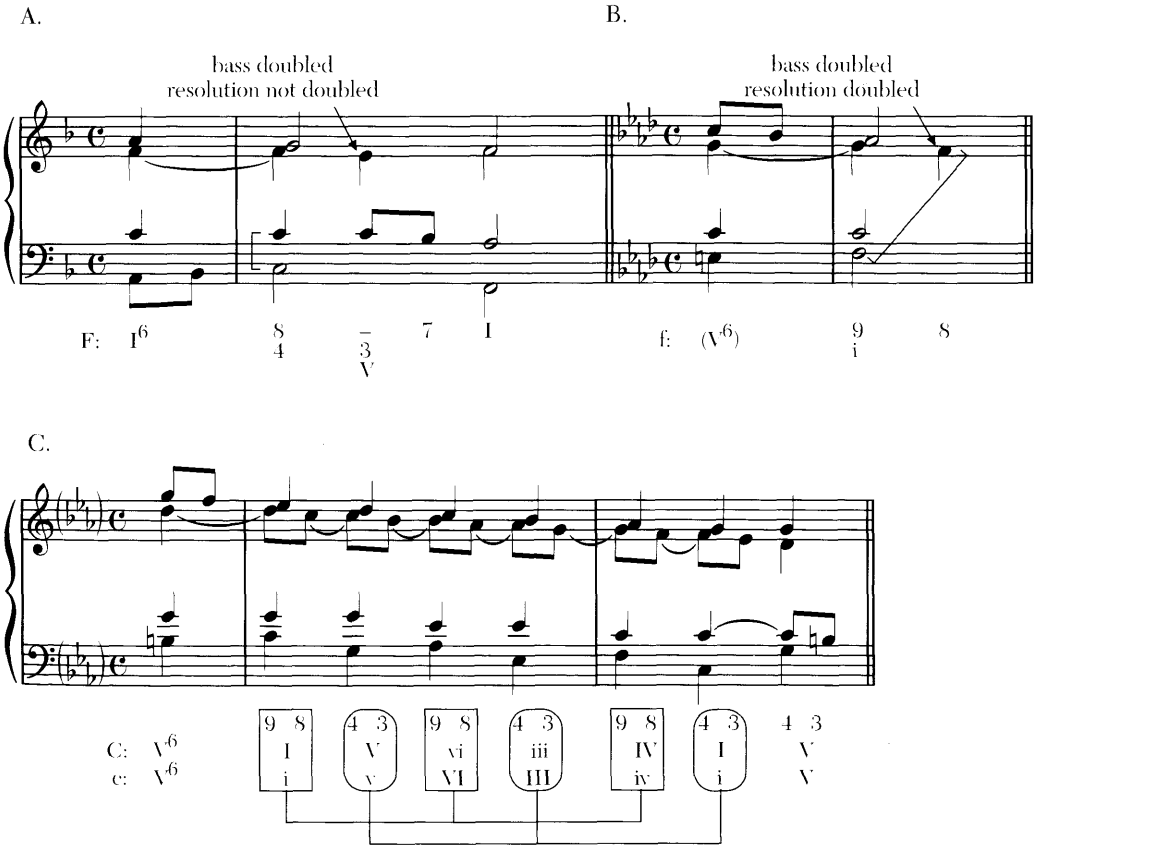
SUSPENSIONS IN FOUR-VOICE TEXTURE

In four-voice texture, you can continue to use the normal doublings of chord tones, but you must treat the resolution of the suspension with special care, as outlined below. Suspensions tend to occur more frequently on triads than they do on seventh chords.

1. In four-voice texture, **4-3** and **9-8** suspensions in the upper voices are often grouped together, since they both resolve to root-position triads. Avoid doubling the resolution note in a 4-3 suspension; it may turn out to be the leading tone (Example 15.5a). Instead, double the bass, the root of the chord. Because of the presence of a complete triad, the 9-8 is a common root-position suspension in four voices. It is necessary here that you double the resolution, which is the octave of the bass note or root of the triad (Example 15.5b). Each of these suspensions shows a preference for specific harmonies in both major and minor modes: the 4-3 tends to occur on V, III, and I, while the 9-8 tends to occur on I, VI, and IV. Because it delays the leading tone, the 4-3 is especially useful for sustaining the tension and motion in extended dominant harmony (Example 15.5a). An interlocking **suspen-**

sion chain of 9-8 and 4-3 suspensions, in which the resolution of one suspension becomes the preparation of the next, illustrates these harmonic preferences (Example 15.5c). This sequential model was already known by the late Renaissance period, as the Monteverdi excerpt (Example 15.5d) demonstrates.

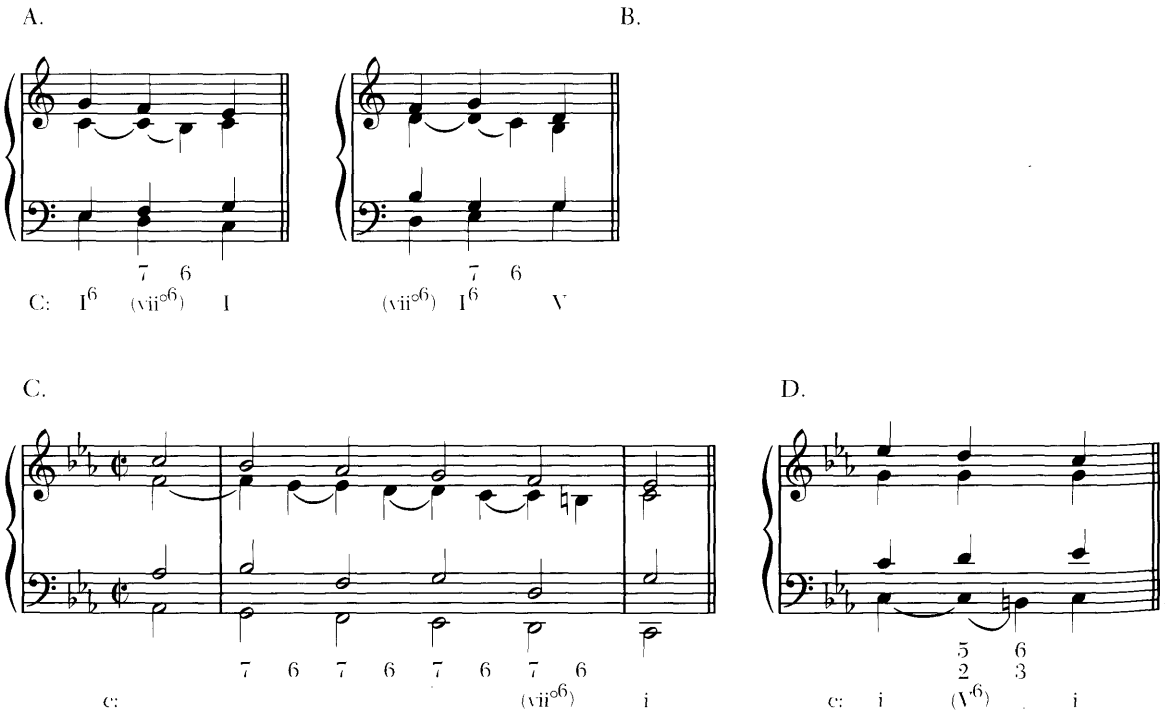
Example 15.5



2. The **7-6** and **2-3** suspensions are likewise grouped together, since they both resolve to a first-inversion triad. You should never double the resolution note in either suspension. The 7-6 is associated with a variety of harmonies; two of its most common uses are given in Example 15.6a and b in conjunction with the vii$^{\circ 6}$ and I^6. We may link several 7-6 suspensions together in a chainlike succession, as shown in Example 15.6c. The stepwise movement of these consecutive first-inversion triads creates several partwriting problems. The doublings must alternate between the bass or root and the soprano to prevent parallel octaves; remember, we cannot double the suspension resolutions, which are in the alto voice. However, you will notice that if we remove the suspensions, there are now parallel 5ths between the soprano and alto. Composers of the common-practice period felt that the inserted 7-6 suspensions were sufficient to cancel or stagger the parallel 5ths. In progressions where the successive first-inversion triads are in close structure, there is now a 4th rather than a 5th between the upper parts, negating any danger of parallels.

The 2-3 (or 10-9) bass suspension also resolves to a $\frac{6}{3}$ first-inversion triad. It occurs most frequently on a V^6, delaying the leading tone in a manner similar to the 4-3 over V (Example 15.6d).

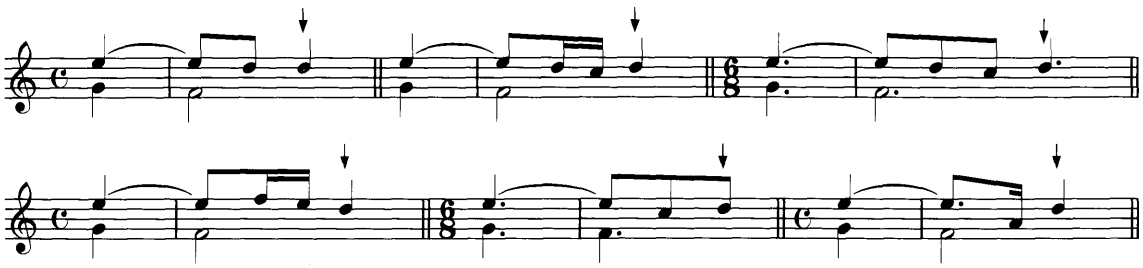
Example 15.6



Ornamental Resolutions

Suspensions are sometimes decorated with melodic embellishments. Although such an embellishment is commonly known as an **ornamental resolution,** this term is a misnomer, since it is actually the *suspension dissonance* that is ornamented, not its resolution. The ornamentation can encompass a wide variety of melodic figurations and span one or more beats in duration. Example 15.7 illustrates some typical figurations; the resolution note is indicated by an arrow. In the last two cases, the resolution is delayed by an intervening leap to a consonant chord tone.

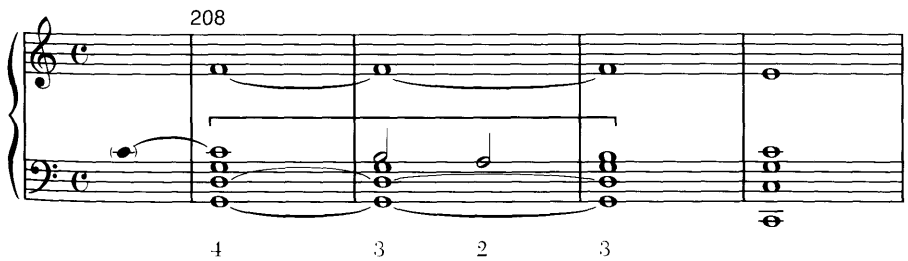
Example 15.7



In Example 15.8 the prolonged cadential extension of an embellished 4-3 suspension over dominant harmony in the climactic passage from the *Meistersinger* Overture effectively heightens our anticipation of its eventual resolution.

Example 15.8

Ⓔ WAGNER: OVERTURE TO *DIE MEISTERSINGER* (SIMPLIFIED)



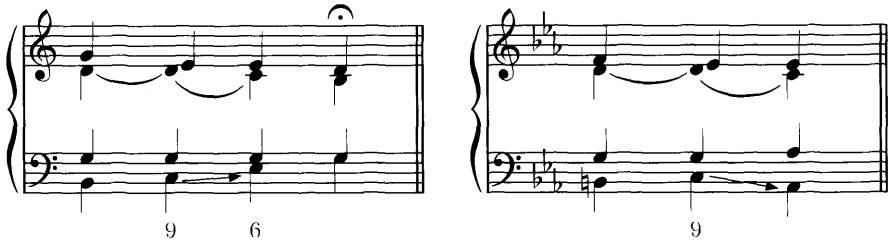
Additional Suspension Techniques

Resolution of a 9-8 suspension with a concurrent change of bass is often encountered in four-voice texture. In the case of tonic harmony, this combination will result in either a I^6 or vi (Example 15.9a). The transfer of the 9-8 to the

tenor voice may result in a rare example of a **2-1 suspension** (Example 15.9b). The displaced 9-8 in the bass voice is even more unusual (Example 15.9c).

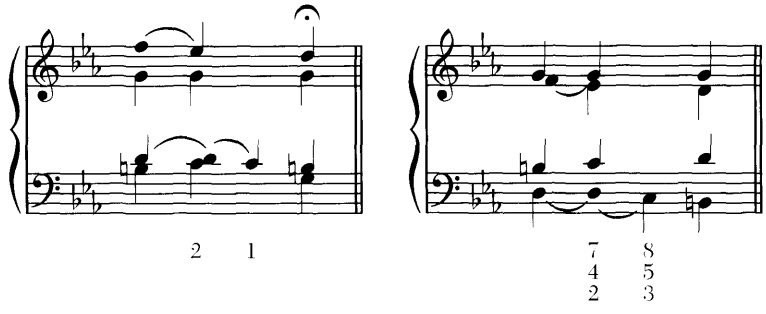
Example 15.9

A. CHANCE OF BASS



B. 2–1 SUSPENSION

C. DISPLACED 9–8 SUSPENSION

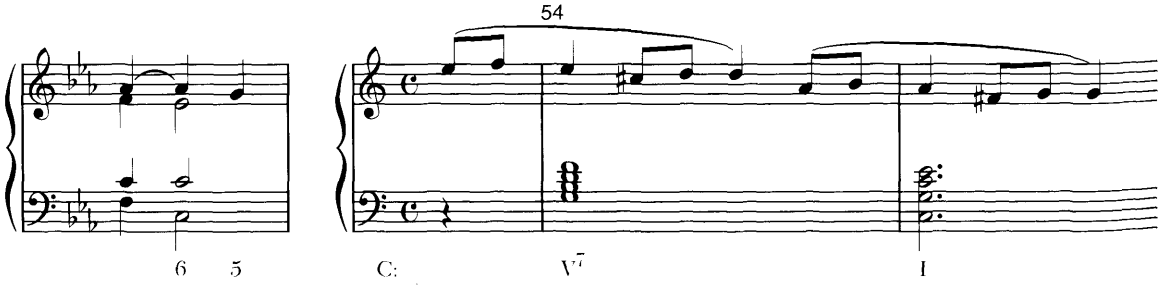


The motion from a 6 to a 5 above the bass may sometimes sound like a suspension (**6-5**), even though no dissonance is actually present between the upper voice and the bass (Example 15.10a). Play the Liszt excerpt in Example 15.10b and study its accompanying reduction. Notice that the preparation note is a chordal ninth.

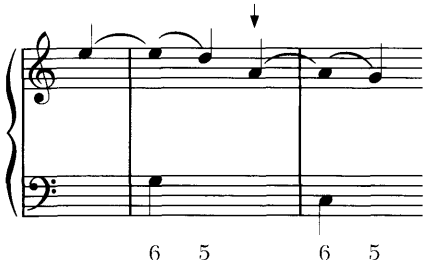
Example 15.10

A.

B. LISZT: PIANO CONCERTO NO. 1 IN E-FLAT MAJOR, II (SIMPLIFIED)



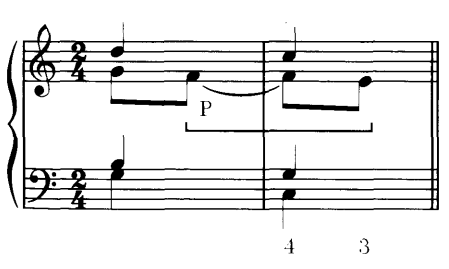
C. (REDUCTION)



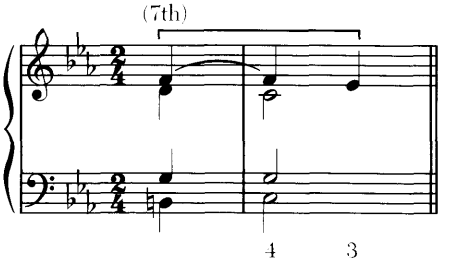
Although the suspension preparation is normally consonant, it may occasionally occur as a dissonant passing tone (Example 15.11a) or as the 7th of a seventh chord (Example 15.11b).

Example 15.11

A.



B.



MULTIPLE SUSPENSIONS

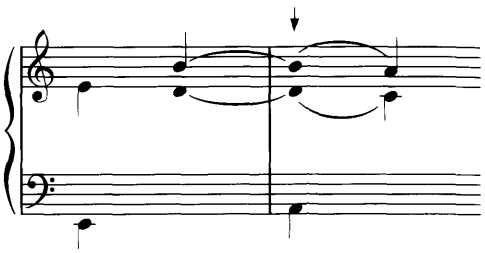
We have previously seen instances of multiple dissonances in Chapter 7, including simultaneous pairs of passing or neighboring tones. **Double suspensions,** in which two tones are prepared, suspended, and resolved together, represent a third type of multiple dissonance.

Two types of double suspensions are possible: the $\frac{9\text{-}8}{7\text{-}6}$ and the $\frac{9\text{-}8}{4\text{-}3}$. Locate each in the two passages of Example 15.12; they are indicated by arrows in the reductions. The Chopin uses a $\frac{9\text{-}8}{4\text{-}3}$ in its second measure while the Strauss uses a $\frac{9\text{-}8}{7\text{-}6}$ in its second measure.

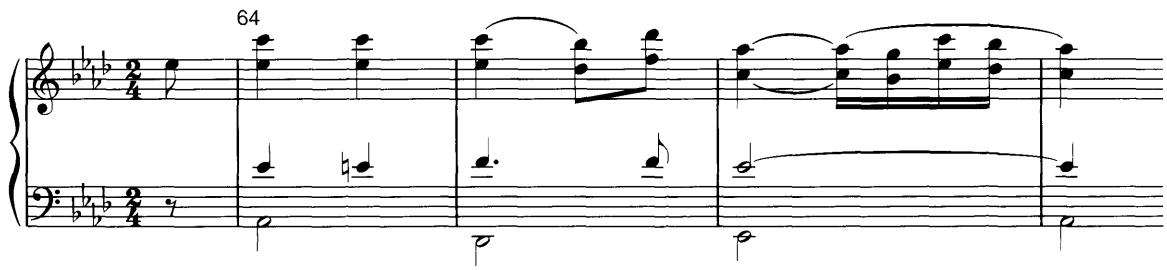
Example 15.12

A. CHOPIN: *GRANDE VALSE BRILLIANTE*, OP. 34, NO. 2

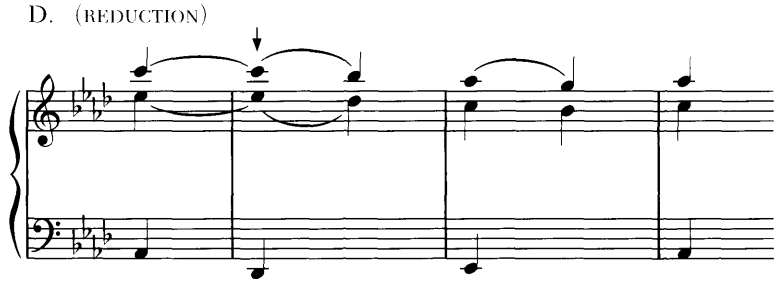
B. (REDUCTION)



C. RICHARD STRAUSS: *ALSO SPRACH ZARATHUSTRA*



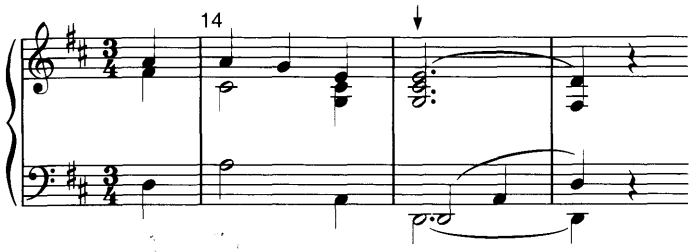
D. (REDUCTION)



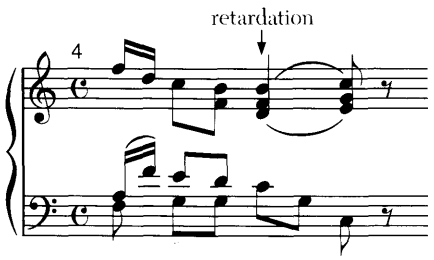
On occasion even an entire chord may be suspended. As the excerpts in Example 15.13 demonstrate, the upper members of a cadential V^7 may momentarily hold over the final tonic of a phrase or piece before resolving. This is a frequent practice in slow movements of the Classical period. In the Beethoven passage (Example 15.13a) the E and G move downward stepwise while the C♯ or leading tone pulls up to the D. Even an upward resolution, given the curious title of a **retardation,** is possible. In Example 15.13b, Mozart actually allows his resolution of the chordal 7th to ascend in this cadence, although in similar situations (Example 15.13c) he usually resolves the $\hat{4}$ and $\hat{2}$ down to $\hat{3}$ and $\hat{1}$.

Example 15.13

A. BEETHOVEN: PIANO SONATA IN D MAJOR, OP. 10, NO. 3, III



B. MOZART: PIANO SONATA IN G MAJOR, K. 283, II



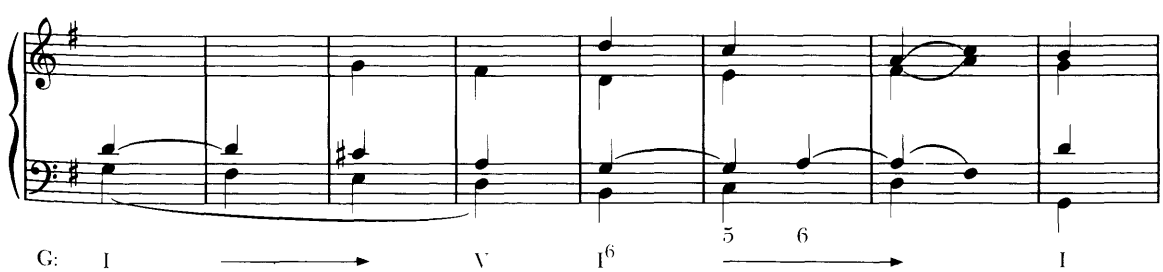
C. MOZART: PIANO CONCERTO IN G MAJOR, K. 453, II

SUSPENSIONS AS A COMPOSITIONAL DEVICE

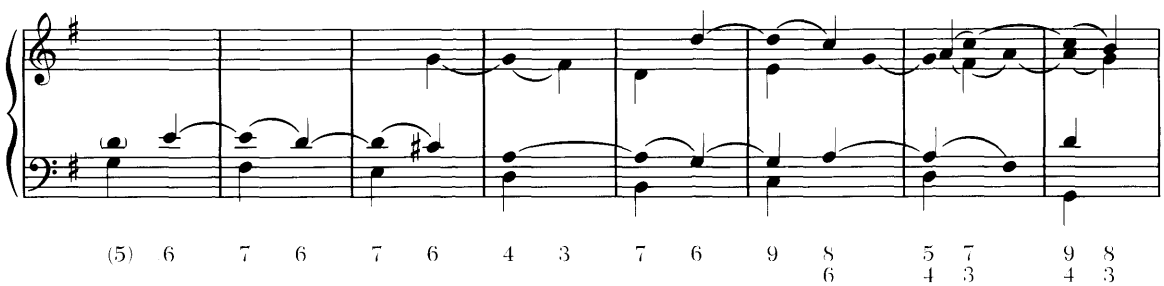
Composers sometimes choose to highlight specific musical devices in their pieces. For example, in sets of variations on a theme, they may prominently feature a particular motive or gesture in each variation. Bach exploits suspension technique throughout the entirety of the twenty-second variation of his "Goldberg" Variations. In order to appreciate how he does this, we will reverse our usual analytical procedure and start with a voice-leading reduction, in a manner similar to our earlier harmonic model elaborations.

Example 15.14

A. BACH: *GOLDBERG VARIATIONS*, NO. 22, BWV 988, MM. 1–8.



B.



C.

The skeletal framework of the first eight measures (Example 15.14a) demonstrates how the voices enter in an imitative fashion. We may elaborate on this reduction by inserting an appropriate suspension in each bar (Example 15.14b). In the score (Example 15.14c), observe how Bach treats the different suspension types through a common embellishment pattern. Identify the various suspensions; note that there is a double suspension in the last measure ($\frac{9\text{-}8}{4\text{-}3}$). There is also a suspension involving a change of voice; the tenor voice in measure 6 moves from G to A when the 9-8 in the soprano resolves, but the bass remains on C.

Melody Harmonization

Since we cannot alter a given melody that is to be harmonized, any soprano suspensions must already be present in the melody. If you compose your

own tune, you can include possible suspensions in it. Therefore, the suspensions you wish to add usually occur in the inner voices (the alto and tenor), with the occasional use of a bass 2-3 figure.

Once you have chosen your supporting harmonies, worked out your bass line, and partwritten the inner voices, you may then determine the most effective placement of suspensions. In light of our current harmonic vocabulary, you may use 4-3's on V and I, 9-8's on I and IV, 2-3's on V^6, and 7-6's on vii^{o6}, I^6, and IV^6; avoid using suspensions on V^7 chords. Given the block chords chosen to harmonize the tune in Example 15.15a, we have inserted suspensions in several appropriate places (Example 15.15b). In the first full measure there are 9-8, 4-3, and 7-6 suspensions in the alto on beats 1, 2, and 4. In the last measure there is a 7-6 in the soprano (beat 2) and a 4-3 in the alto (beat 4).

Example 15.15

Other Features of Embellishing Tones

For the remainder of this chapter we will discuss some additional features of embellishing tones—(1) their consecutive or simultaneous interaction, (2) possible problems in analyzing them, and (3) their affective nature.

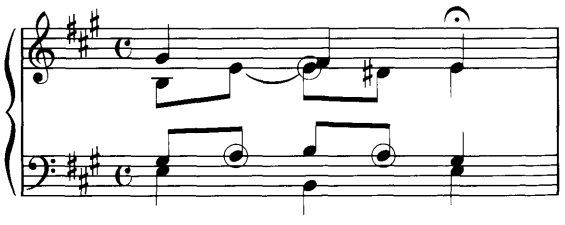
The Interaction of Consecutive or Simultaneous Embellishing Tones

Different types of dissonant embellishing tones may occur in combination, either in immediate succession or even simultaneously. For instance, stereotypical uses of certain melodic figurations frequently occur at cadences. Bach's chorale harmonizations provide some idiomatic examples: (1) a 4-3 suspension combined with an anticipation (sometimes called the **Corelli clash**) in Example 15.16a, (2) the resolution of a 4-3 suspension in conjunction with a passing tone in Example 15.16b, (3) and the simultaneous passing tone and anticipation in Example 15.16c. The parallel 5ths in the last passage are permissible, since they are generated by embellishing or non-essential tones rather than occurring between essential chord tones. Brahms was fascinated with the topic of what constituted "legal" parallels. In his short monograph "Octaves and Fifths" he collected examples from different composers and commented on them.

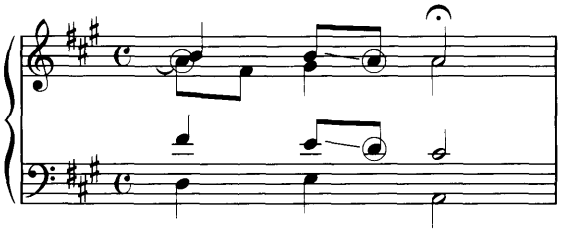
Example 15.16

A. "Komm, Jesu, Komm" (Bach chorale harmonization)

B. "Ich dank' dir, lieber Herre" (Bach chorale harmonization)



C. "Werde munter, mein Gemüte" (Bach chorale harmonization)



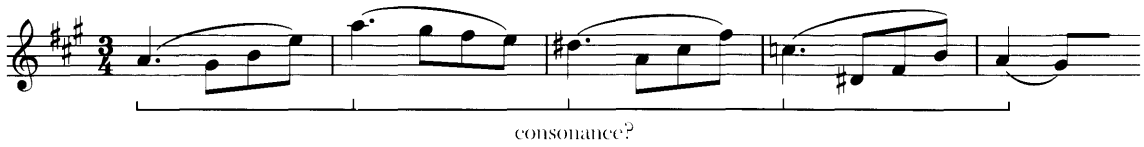
Some Analytical Problems with Embellishing Tones

There are two potential pitfalls when analyzing embellishing tones. First, we may err in identifying non-harmonic tones in a single-line melody unless we take into account the harmonies that accompany or are implied by them.

Looking at the Brahms violin melody in Example 15.17a by itself, we might be tempted to conclude that the longer notes on the first beat of each bar are consonant tones. However, when we examine the chordal background in the complete score (Example 15.17b), we see that our initial impression is really the reverse of what actually occurs; all those notes now turn out to be dissonant appoggiaturas, as shown in the reduction (Example 15.17c).

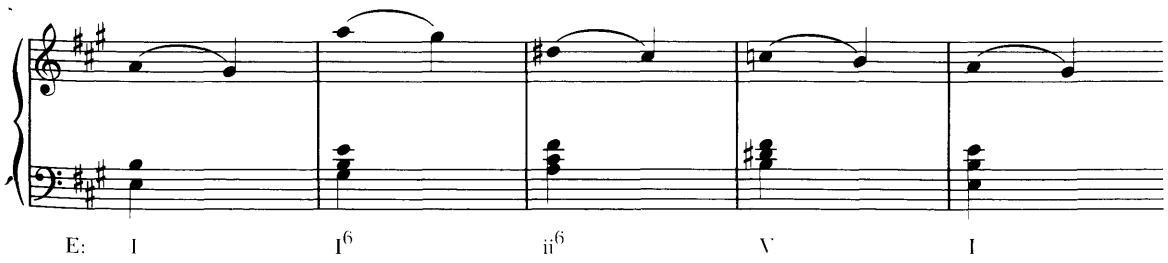
Example 15.17

A. BRAHMS: VIOLIN SONATA IN A MAJOR, OP. 100, I



B.

C.

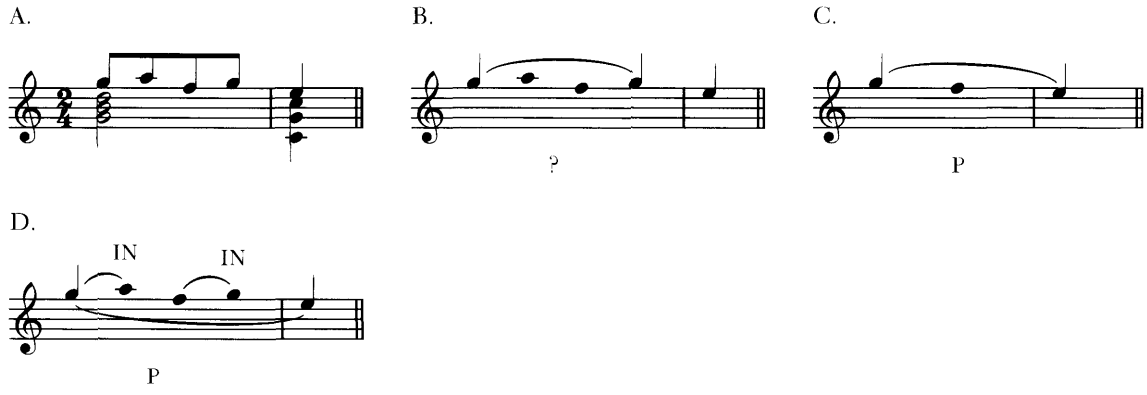


Secondly, problems may arise when two different levels of embellishing-tone activity are operating at the same time. Most such cases are better resolved by listening to the passage rather than looking at the score, which

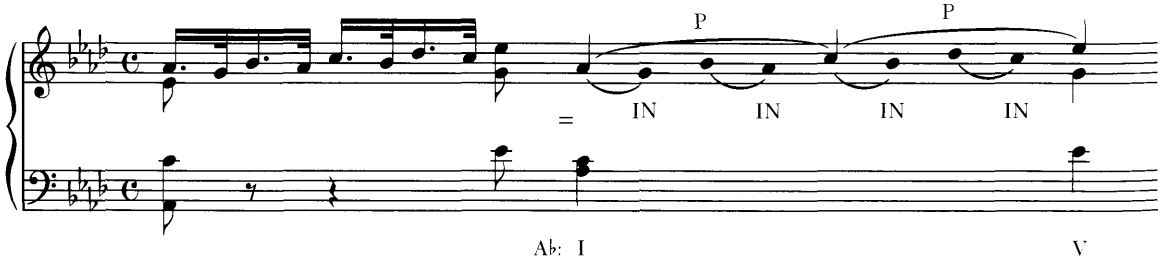
sometimes can confuse rather than enlighten us. Three such instances are cited below.

1. At first glance the initial figure of four eighth-notes in Example 15.18a might suggest a changing tone or double neighbor around G, as indicated by the slurred notes above the question mark in Example 15.18b. However, when we hear the passage, it immediately becomes apparent that we perceive a larger passing motion G-F-E (Example 15.18c), which in turn is embellished by incomplete neighbors (Example 15.18d). If we apply this same principle to the Mozart passage in Example 15.18e, we observe that the second A♭[4] is actually consonant with the supporting A♭ harmony, even though it is functioning as an incomplete neighbor.

Example 15.18

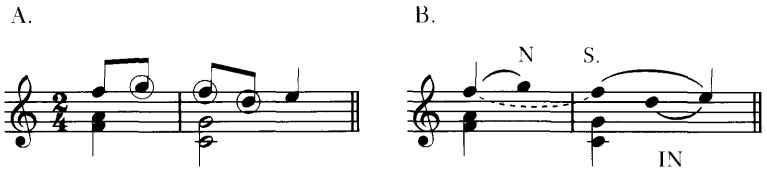


E. MOZART: SYMPHONY NO. 39 IN E-FLAT MAJOR, K.543, II



2. Example 15.19a features three dissonant notes in succession. By assuming two levels of non-harmonic activity, we can see and hear that the larger F-F-E in quarter notes is a suspension, which is then decorated by a neighbor and an incomplete neighbor (Example 15.19b).

Example 15.19



3. Finally, in the Beethoven passage below, one might be tempted to analyze the first of each two sixteenth-notes as a upper neighbor (B-C-B), as marked in Example 15.20b. However, when we listen carefully, we can hear that the C really functions as a passing tone up to D (B-C-D), decorated with a neighboring B. In the same way, the A acts as a passing tone between G and B in the last measure; consult the reduction in Example 15.20c.

Example 15.20

℗ A. BEETHOVEN: PIANO SONATA IN G MAJOR, OP. 79, III

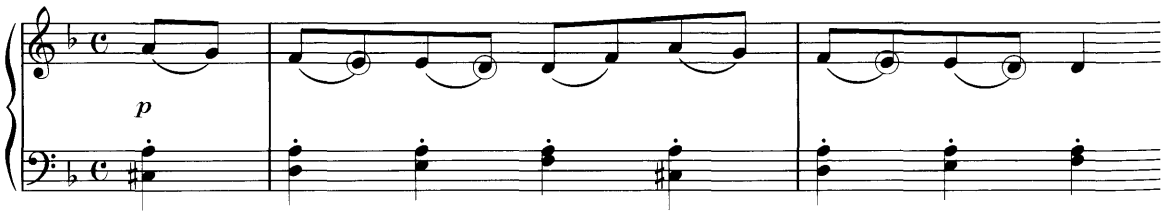
Similar examples that abound in music literature serve as confirmation that the analysis of embellishing tones is sometimes a far from simple or mundane task.

The Affective Nature of Melodic Dissonance

Although our discussion of melodic dissonance in Chapter 7 established definitions and an analytical method for categorizing and graphing embellishing tones, we did not address the question of the affective or emotional force of melodic dissonance and its possible aesthetic impact on the listener. Composers do not use non-harmonic tones haphazardly; rather, they carefully select particular dissonant notes for specific musical effect and affect. For instance, compare two versions of the *allegro* passage that opens Beethoven's "Tempest" D minor piano sonata in Example 15.21a and 15.21b. Which one do you think better conveys the tempestuous feeling Beethoven was trying to impart in this passage? In the first version, which was rewritten, the upper voice employs a bland succession of unaccented stepwise anticipations, circled on the score, which dissipates any sense of turbulence. On the other hand, in the second version, Beethoven's original version, the series of dissonant suspensions on consecutive beats succeeds in creating an atmosphere of agitation and turmoil. Clearly the affect of the two settings is entirely different.

Example 15.21

A. Beethoven: Piano Sonata in D Minor ("Tempest"), Op. 31, No. 2, I



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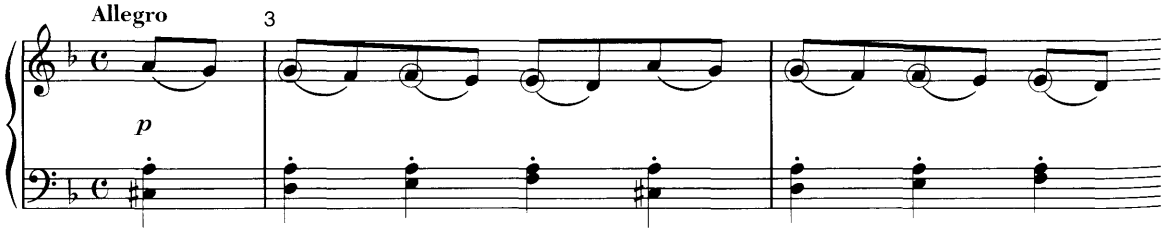


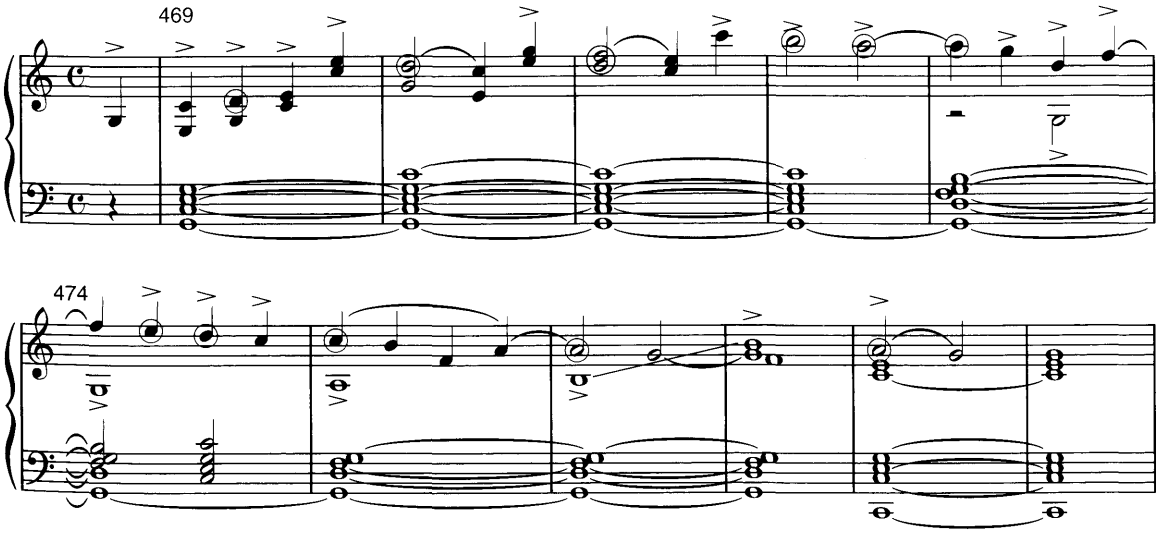
A brief review of the way we grouped embellishing tones into four categories (pages 98–99 of Chapter 7) will help us focus on the affective characteristics of melodic dissonance. Unaccented non-harmonic tones

perform an essentially decorative function, since they fall in the spaces between chords, softening their dissonant effect. This is particularly true of passing tones, neighbors, and anticipations, as noted above, since their stepwise motion minimizes dissonant clashes with the chordal background. Unaccented leaps or incomplete neighbors are more conspicuous, since melodic leaps tend to draw more attention to the dissonant note.

However, the affective force of accented embellishing tones, including suspensions and appoggiaturas approached either by step or leap, is quite different. Their placement on the beat highlights the dissonance. More important, their delayed resolution heightens our expectation for consonance; the longer the accented non-harmonic tone, the greater our wish to hear it resolve. As a result, accented dissonance profoundly affects the character of a passage. In Example 15.21, we observed that removing the suspensions radically changed the nature of Beethoven's original passage. In the climactic measures of Richard Strauss's *Death and Transfiguration* (Example 15.22), accented non-chord tones transform a relatively banal passage into one of great emotional impact.

Example 15.22

RICHARD STRAUSS: *DEATH AND TRANSFIGURATION*



There is nothing especially beautiful about the harmonies in this passage, which consist of only I and V^7 over a dominant pedal. Nor is the melody's basic motive (E-D-C) particularly original or inspiring. Rather, the

spark of genius underlying this passage centers on the bridging motion of the initial D^4, which generates a series of accented passing tones and suspensions, circled in the example. These accented embellishing tones are held for at least one and sometimes two beats. The consistent and cumulative delay in resolving these melodic dissonances within this final transfiguration section creates its strongly affective nature.

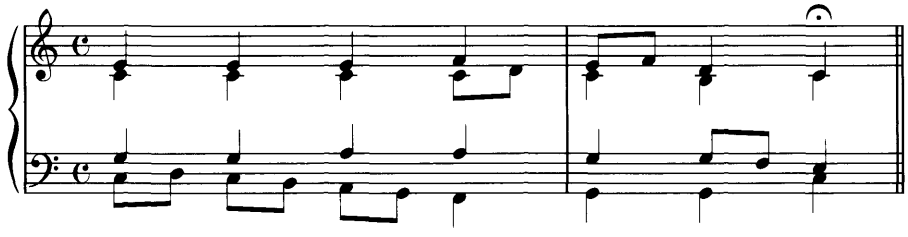
The categories of melodic dissonance listed above therefore represent a kind of affective continuum, ranging from the simple decoration of unaccented stepwise notes, through unaccented leaping notes, to the more striking accented stepwise and accented leaping tones. Composers often tend to exploit one category at a time in a passage or piece; several such excerpts are included in the exercises of Chapter 7 in the accompanying Workbook.

Embellishing Tones in Partwriting and Melody Harmonization

In partwriting exercises or melody harmonization, you may be asked to add appropriate embellishing tones to the individual voice parts. Observe the following recommendations.

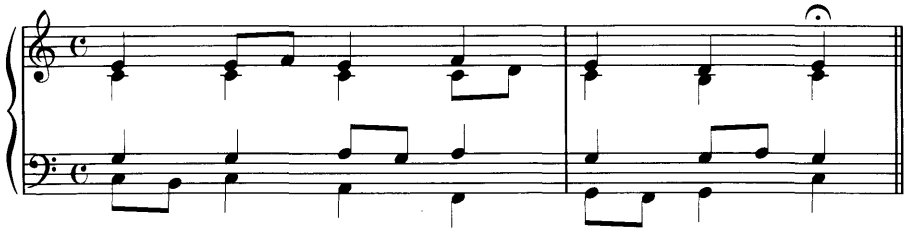
1. Do not cram a passage or phrase full of extraneous embellishing tones. Instead, either try to develop a single active part, such as a running bass in eighth notes with passing or neighboring tones (Example 15.23), or discreetly use various embellishing tones, selecting only those that provide maximum effect. Exercise restraint with incomplete neighbors and accented leaping tones.

Example 15.23



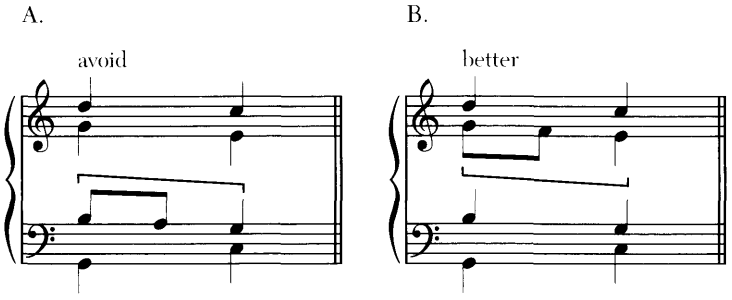
2. Avoid excessive use of neighboring tones, since they tend to produce a static effect (Example 15.24).

Example 15.24



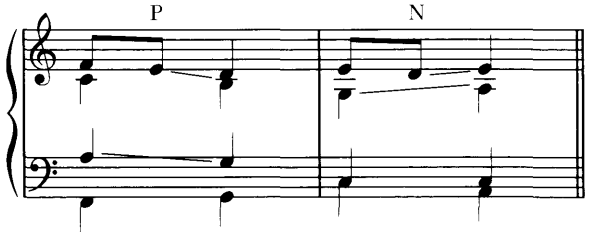
3. Do not insert a passing tone between scale degrees $\hat{7}$ and $\hat{5}$ in a cadence ($\hat{7}$-$\hat{6}$-$\hat{5}$), as this calls attention to the fact that the leading tone fails to resolve to the tonic $\hat{8}$. But passing motion between $\hat{5}$ and $\hat{3}$ is encouraged; contrast Example 15.25a and b.

Example 15.25



4. Be careful when inserting embellishing tones; they may create parallel 5ths with another voice (Example 15.26).

Example 15.26



5. Finally, do not be satisfied if something looks good on paper. If you are not sure how a passage sounds, play it. If it sounds bad, it is usually incorrect.

Terms and Concepts for Review

suspension
two-voice suspensions (7-6, 4-3, 2-3)
preparation
resolution
correct rhythmic setting
change of bass or part
four-voice suspensions (including 9-8)
suspension chain
double suspensions
6-5 suspensions
retardation
ornamental resolution
suspension figures in seventh chords
Corelli clash

A BRIEF REVIEW SELF-QUIZ

1. Bach's chorale harmonization in Example 15.27 contains at least one example of each of the common suspensions discussed in this chapter. Identify each suspension by circling it on the score and writing the correct figured bass below it. Do you find any examples of embellished figuration or a change of bass?

Example 15.27

"DANKET DEM HERREN" (BACH CHORALE HARMONIZATION)

2. The passage in Example 15.28 contains a number of errors that are related either to suspensions in particular or to embellishing tones in general. Circle and number each mistake on the music, and then in the space provided, indicate the type of error.

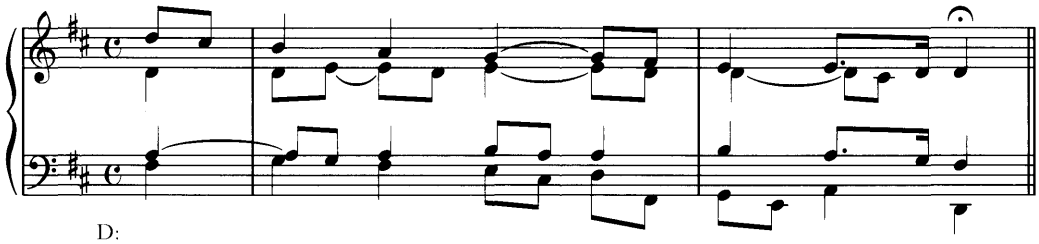
Example 15.28

3. Recopy each two-chord progression in Example 15.29 and supply the indicated suspension in an appropriate voice part. Be sure that you have prepared and resolved the dissonance correctly in each case.

Example 15.29

4. Circle and identify with appropriate abbreviations the embellishing tones in Example 15.30. Some of these may occur in close proximity or even simultaneously.

Example 15.30



CHAPTER 16

The $\frac{6}{4}$ and Other Linear Chords

SINCE ROOT-POSITION TRIADS ($\frac{5}{3}$) and first-inversion triads ($\frac{6}{3}$) contain only consonant intervals above the lowest or bass part, they may be used freely with little concern for how they are approached or left. The $\frac{6}{4}$ or second-inversion triad, on the other hand, is a very different case. Because it contains a dissonant 4th above the bass, composers as far back as the Renaissance period justified its use only if this 4th could be explained as a legitimate dissonant embellishing tone that was properly prepared and resolved. As a result, in the tonal music of the common-practice era, the $\frac{6}{4}$ has traditionally functioned as a contrapuntal or linear chord between more stable harmonies, much like a passing $\text{vii}^{\circ 6}$ between I and I^6, or a neighboring IV between two tonic triads. We will discuss four standard uses of the $\frac{6}{4}$ chord:

1. the accented cadential $\frac{6}{4}$ that normally occurs at authentic or half cadences;
2. the unaccented passing $\frac{6}{4}$ between two harmonies;
3. the sustained or pedal $\frac{6}{4}$, over which a neighboring or passing chord occurs; and
4. the arpeggiated $\frac{6}{4}$.

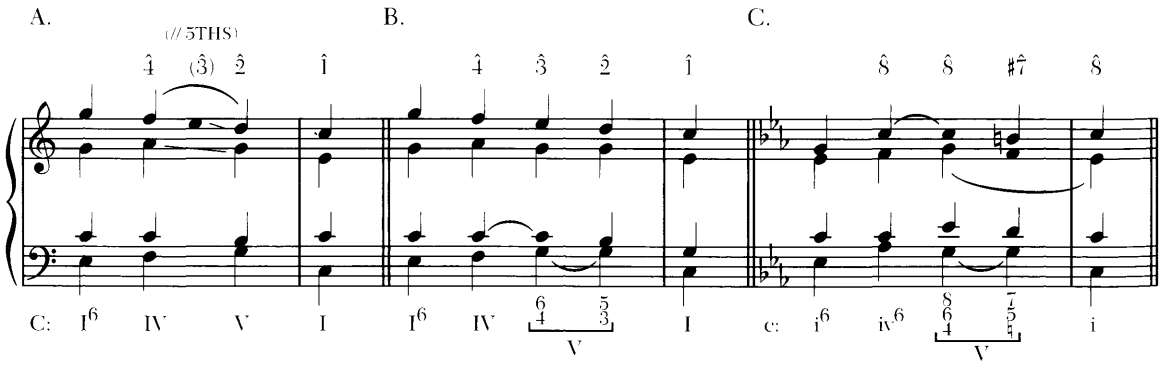
In each of these contexts the dissonant 4th is prepared and resolved in a specific manner. After discussing these uses, we will examine several less or-

thodox progressions and consider some other linear chords that originate from contrapuntal voice leading.

The Accented or Cadential $\frac{6}{4}$ Chord

We have previously noted that in the cadential progression IV-V-I or ii^6-V-I, the insertion of a passing tone in the soprano line $\hat{4}$-($\hat{3}$)-$\hat{2}$-$\hat{1}$ will produce parallel 5ths with the alto or tenor part (Example 16.1a). If, however, we were to anchor this passing $\hat{3}$ with its own supporting harmony, we can avoid these parallels. In Example 16.1b the soprano $\hat{3}$ is supported with a $\frac{6}{4}$ sonority built on scale degree $\hat{5}$ in the bass. Although this chord is spelled as a tonic triad (E and C over a G), its aural impression is quite different. When we hear this $\frac{6}{4}$ chord in context, we find it lacks the stability we normally associate with tonic harmony. In fact, its bass note G sounds more like the root of the chord, while the C seems curiously suspended in an upper voice. Since the $\frac{6}{4}$ chord is immediately followed by a root-position ($\frac{5}{3}$) dominant, together the two chords can be heard as an expansion of dominant harmony. The dissonant 4th above the bass in the $\frac{6}{4}$ is prepared by common tone from the previous IV and resolves downward by step, outlining a typical suspension figuration. Although the consonant 6th above the bass also resolves in the same way (6-5 or scale degrees $\hat{3}$-$\hat{2}$), it requires no preparation. True to its nature as a sort of suspension, this $\frac{6}{4}$ occurs on an accented beat—beat 1 or 3 in quadruple meter or beat 1 or 2 in triple meter. Since this progression occurs as one of the frequent authentic cadential formulas in tonal music, it is usually called a **cadential** or **accented $\frac{6}{4}$.** The soprano normally outlines stepwise motion from the subdominant ($\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$), as in Example 16.1b, but it may also appear as $\hat{8}$-$\hat{8}$-$\hat{7}$-$\hat{8}$ (Example 16.1c). This cadential $\frac{6}{4}$ is indicated in the Roman numeral analysis as part of a suspended *dominant* function, with the melodic motion in the upper parts indicated with figured-bass numbers.

Example 16.1

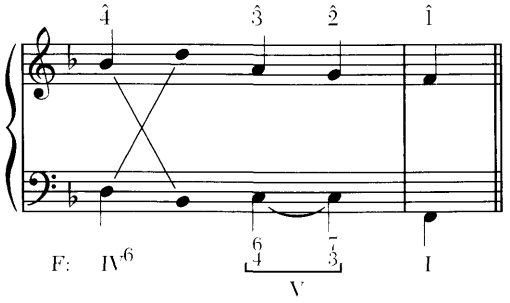


Three excerpts from the literature appear in Example 16.2 with accompanying reductions. While the first two illustrate typical authentic formulas, the Clementi excerpt shows how the dominant $^6_4$ to $^5_3$ may occur as a half cadence, with the final tonic triad of an authentic cadence omitted. This idiom is frequently found in slow movements of the Classical period.

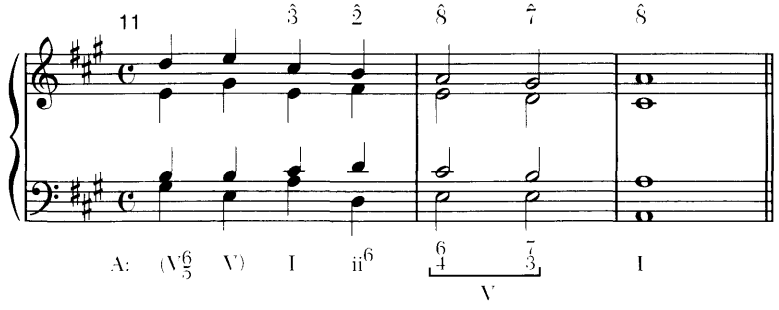
Example 16.2

A. HANDEL: "RENDʼIL SERENO AL CIGLIO" FROM *SOSARME* (1732)

B. (REDUCTION)

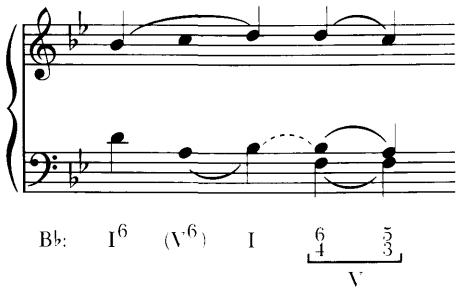


C. "TE LAUDANT OMNIA" (HYMN TUNE)



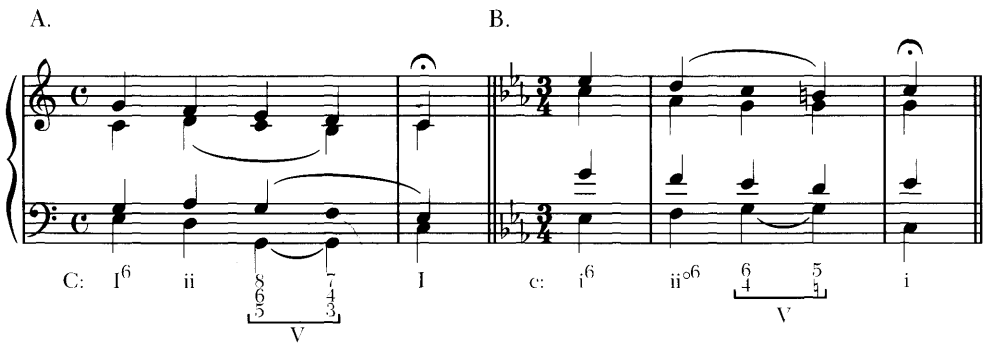
D. MUZIO CLEMENTI: PIANO SONATINA IN F MAJOR, OP. 36, NO. 4, II

E. (REDUCTION)



When the $\frac{6}{4}$ is preceded by a supertonic triad or seventh chord (ii or ii $\frac{6}{5}$), the dissonant 4th is now derived by accented passing motion: $\hat{2}$-($\hat{8}$)-$\hat{7}$-$\hat{8}$. This melodic line occurs in the alto line in Example 16.3a and in the soprano line in Example 16.3b.

Example 16.3



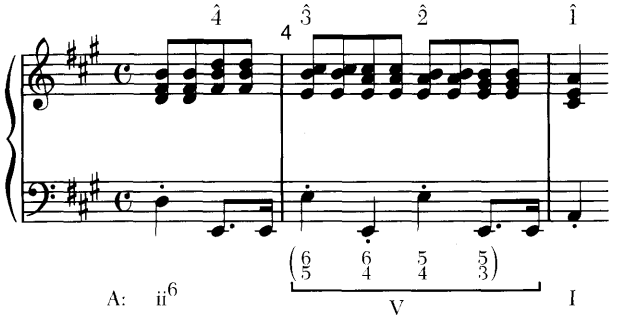
Several partwriting generalizations may be gleaned from the above examples. In addition to the stepwise resolution of the upper voices ($\frac{6}{4}$ down to $\frac{5}{3}$), the bass note of the $\frac{6}{4}$ is almost always doubled. This doubled note ($\hat{5}$) may either remain on $\hat{5}$ or descend to $\hat{4}$ (of a V^4_2) on its way to $\hat{3}$ in tonic harmony. In voice-leading reductions we will stem the soprano $\hat{3}$, the 6th above the bass, as a structural note in a $\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ descent. But because of its dissonant nature, we will not stem the 4th (scale degree $\hat{8}$) when it appears in the lines $\hat{8}$-$\hat{8}$-$\hat{7}$-$\hat{8}$ or $\hat{2}$-$\hat{8}$-$\hat{7}$-$\hat{8}$, either in the soprano or an inner voice; refer to Example 16.1c.

Elaborating the Cadential $\frac{6}{4}$

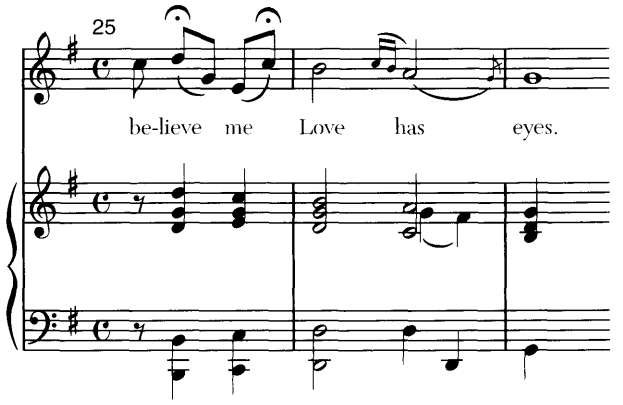
The preceding models illustrate the normative uses of the cadential $\frac{6}{4}$. In actual passages from music literature, these cadences are often elaborated in various ways. Some instances of these elaborative techniques appear in the excerpts below with accompanying comments. Despite the elaborations, these passages follow the same underlying voice-leading principles outlined above.

Example 16.4

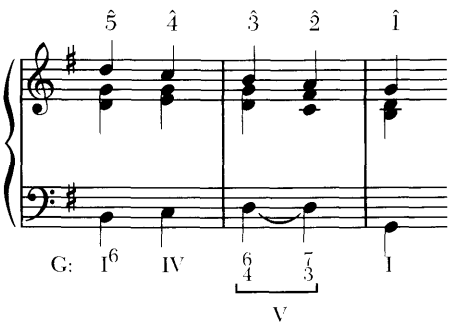
A. SCHUBERT: "WHO IS SYLVIA?"



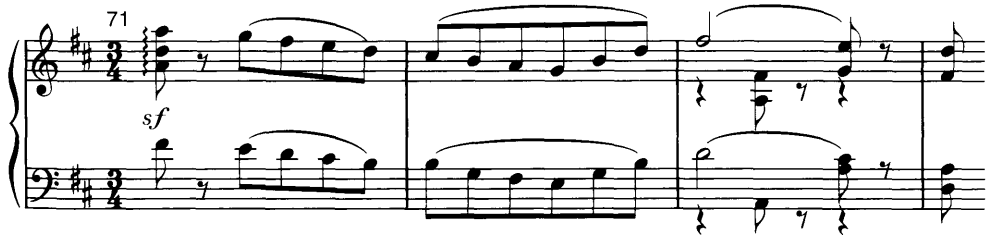
B. HENRY BISHOP: "LOVE HAS EYES"



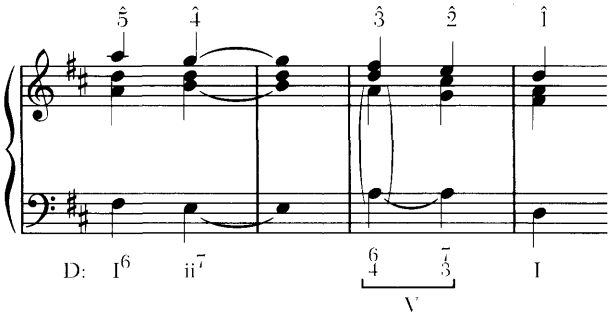
C. (REDUCTION)



D. CECILE CHAMINADE: MINUETTO, OP. 23

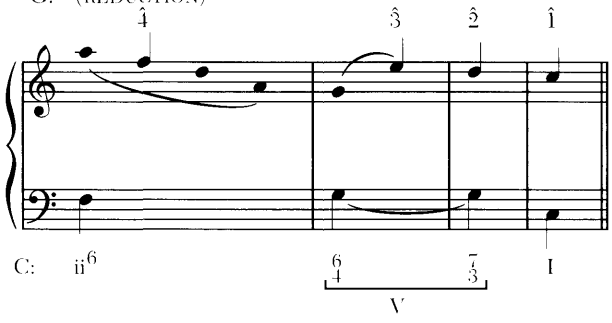


E. (REDUCTION)



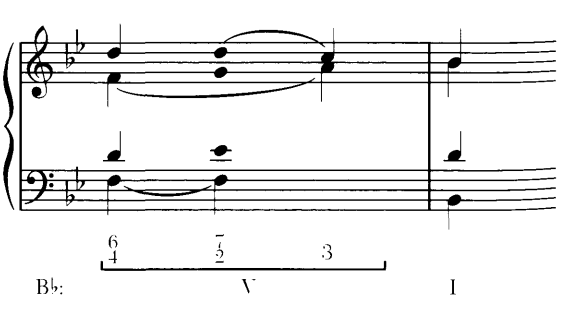
F. MOZART: PIANO SONATA IN C MAJOR, K.309, I

G. (REDUCTION)



H. VERDI: "CELESTE AIDA" FROM *AIDA*, ACT I

I. (REDUCTION)



Schubert decorates the authentic cadence in the piano introduction to his "Who Is Sylvia?" with two charming suspension-like dissonances leading to the $\frac{6}{4}$ and its dominant resolution (Example 16.4a). Actually, this dissonance succession was known as far back as the Renaissance under the designation of a $\frac{6}{5}$ followed by a so-called consonant fourth. While the vocal line elaborates scale degrees $\hat{5}$ and $\hat{4}$ in the Henry Bishop song (Examples 16.4b and c), Cecile Chaminade embellishes the ii^7 that precedes the implied $\frac{6}{4}$ in her Minuetto (Examples 16.4d and e). The Mozart excerpt (Example 16.4f) illustrates a cadential flourish that is typically used in the Classical period to demarcate the conclusion of a longer section of music. The scalar motion in the first two measures tends to disguise the underlying voice leading (Example 16.4g). In addition to the dissonant D-C in the soprano against the E♭ of the V^7, Verdi inserts an expressive chromatic inner voice in the cadence of this well-known tenor aria (Example 16.4h), which in the reduction rises from $\hat{5}$ to $\hat{8}$ (Example 16.4i).

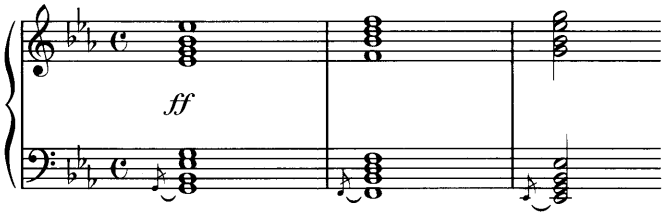
THE PASSING $\frac{6}{4}$ CHORD

The $\frac{6}{4}$ may also occur as a passing sonority between chords of similar function, linking two tonic, dominant, or pre-dominant harmonies. Like other passing chords, the **passing $\frac{6}{4}$** invariably occurs on an unstressed beat. Since it functions as a nonessential linear chord, we will denote it in our reductions simply with its figured-bass symbol rather than the customary Roman numeral and leave its note-heads unstemmed.

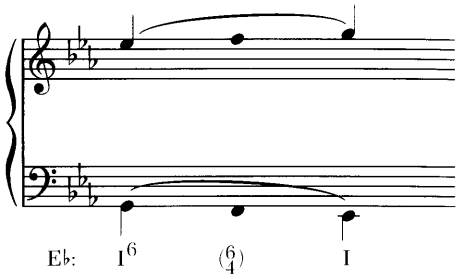
A passing V^6_4 (the second-inversion dominant triad) may function as a passing sonority linking a root-position tonic triad to a first-inversion tonic triad—I-(V^6_4)-I^6—or the reverse—I^6-(V^6_4)-I. This progression, which appears in the opening chords of Musorgsky's "Great Gate of Kiev" (Example 16.5a), is rare in actual practice; composers usually prefer to use the passing vii^{o6} or V^4_3 rather than the V^6_4. The passing I^6_4 (the second-inversion tonic triad) is commonly used to link two pre-dominant chords with stepwise motion. The most common such progression is IV^6-($\frac{6}{4}$)-ii^6_5, which usually continues to an authentic cadence, V^7-I (Example 16.5c).

Example 16.5

A. MUSSORGSKY: "THE GREAT GATE OF KIEV" FROM *PICTURES AT AN EXHIBITION*

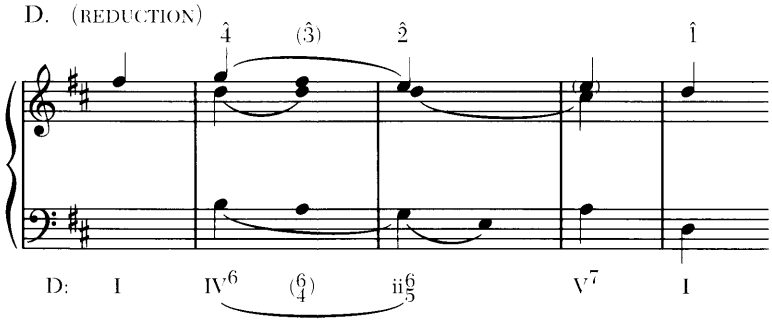


B. (REDUCTION)



C. HAYDN: SYMPHONY NO. 104 ("LONDON"), III

D. (REDUCTION)

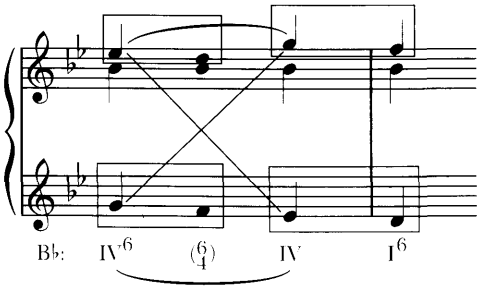


The middle section of Malotte's "Lord's Prayer" features an extension of subdominant harmony that uses a passing $\frac{6}{4}$ (Example 16.6a). Its reduction in Example 16.6b reveals a kind of double voice exchange, as indicated by the boxes.

Example 16.6

A. ALBERT MALOTTE: "THE LORD'S PRAYER"

B. (REDUCTION)



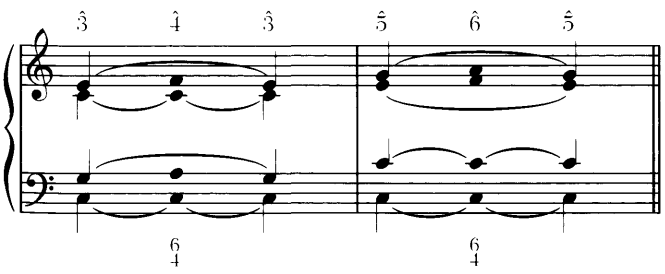
THE PEDAL $\frac{6}{4}$ CHORD

The **pedal** $\frac{6}{4}$ is so named because it features a sustained bass note over which the dissonant 4th may occur in either neighboring or passing motion.

1. The neighboring version consists of a $\frac{5\text{-}6\text{-}5}{3\text{-}4\text{-}3}$ voice-leading progression over a stationary bass note (Example 16.7a); observe the neighbor motion from $\hat{3}$-$\hat{4}$-$\hat{3}$ and $\hat{5}$-$\hat{6}$-$\hat{5}$. It is designated only with a figured-bass symbol and left unstemmed. The Schumann excerpt and its reduction illustrate this unaccented embellishment of both tonic and dominant chords (Examples 16.7b and c). The opening of the "St. Anthony Chorale" (Example 16.7d) contains a pair of decorative harmonies; the first is a $\frac{6}{4}$ neighbor, and the second is an embellishing IV chord, as shown in the reduction of Example 16.7e.

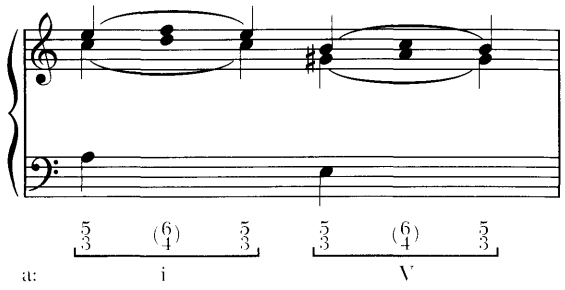
Example 16.7

A.



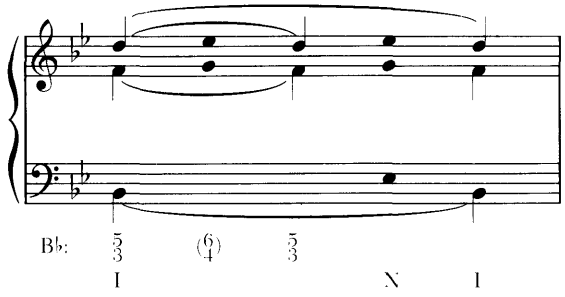
B. SCHUMANN: "THE WILD HORSEMAN" FROM *ALBUM FOR THE YOUNG*

C. (REDUCTION)



D. HAYDN(?): DIVERTIMENTO NO. 1 ("CHORALE ST. ANTONI"), II

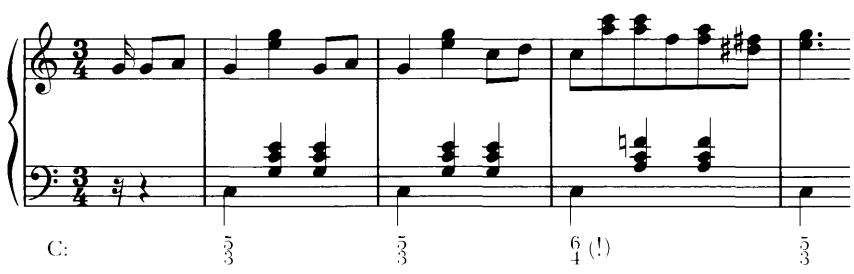
E. (REDUCTION)



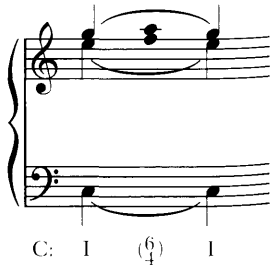
Be careful when identifying the note that functions as the actual bass in accompanimental parts. In most cases the first bass note of the measure of figuration acts as the real bass. In Example 16.8a the chords on beats 2 and 3 in the bass staff are *not* $\frac{6}{4}$'s, since the recurring C^3 on beat 1 is heard as the sustained bass and root. On the other hand, the harmony in measure 3 is a legitimate neighboring $\frac{6}{4}$, as shown in the reduction (Example 16.8b). Note the curious clash of F^4 and $F\sharp^5$ near the end of this bar; the F^4 is a chord tone, whereas the F♯ arises from chromatic passing motion, F-F♯-G, in the soprano.

Example 16.8

A. SCHUBERT: *VALSES SENTIMENTALES*, OP. 50



B. (REDUCTION)

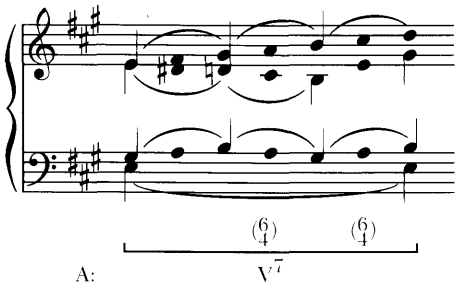


2. The dissonant 4th may also occur as part of a three-chord passing progression over the sustained or pedal bass. In most cases this progression amounts to a kind of dominant prolongation above the bass $\hat{5}$ (Example 16.9).

Example 16.9

A. "LYONS" (HYMN TUNE)

B. (REDUCTION)

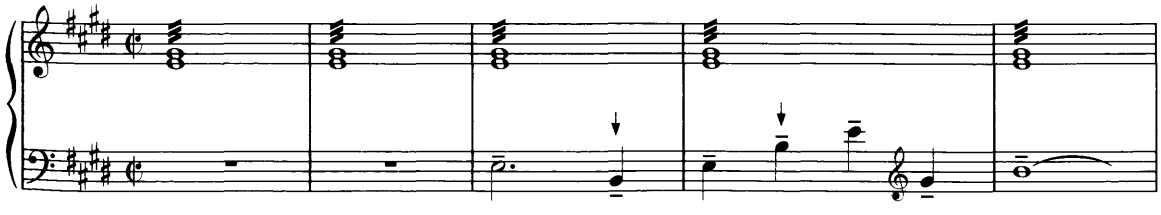


THE ARPEGGIATED $\frac{6}{4}$ CHORD

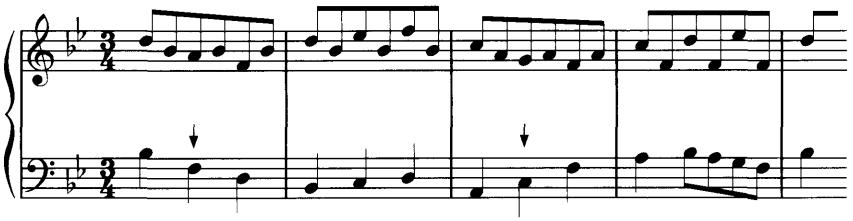
The three uses of the $\frac{6}{4}$ discussed so far are based on treating the dissonant 4th as some form of non-harmonic tone. However, this sonority may also occur as an **arpeggiated $\frac{6}{4}$,** the by-product of a broken chord or arpeggiation in the bass. In Example 16.10a the B's in the opening of Bruckner's symphony produce momentary second inversions; nevertheless, the entire passage should be viewed as an extended E major root-position harmony. Likewise, in the Bach passage (Example 16.10b) the B♭'s and A's ($\hat{1}$ and $\hat{7}$) on the first beat of each measure in the bottom clef act as the primary bass support, despite the incidental $\frac{6}{4}$'s (indicated with arrows) created by arpeggiations. The reduction (Example 16.10c) reveals a large-scale neighboring motion, I-(V^6)-I.

Example 16.10

A. BRUCKNER: SYMPHONY NO. 7, I



B. BACH: MINUET FROM PARTITA NO. 1 IN B-FLAT MAJOR, BWV 825



C. (REDUCTION)

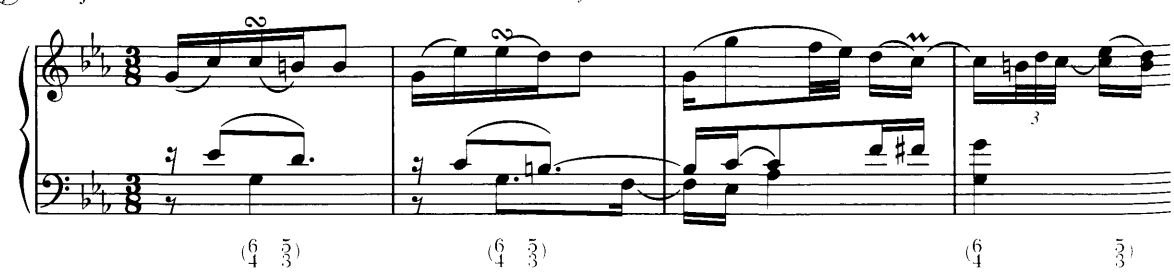
OTHER TREATMENTS OF THE CADENTIAL $\frac{6}{4}$

Since the cadential form occurs more frequently than the other types of $\frac{6}{4}$'s, you may expect to find occasional exceptional treatments of the standard voice-leading procedures. The excerpts below illustrate some deviations from the customary handling of the cadential $\frac{6}{4}$.

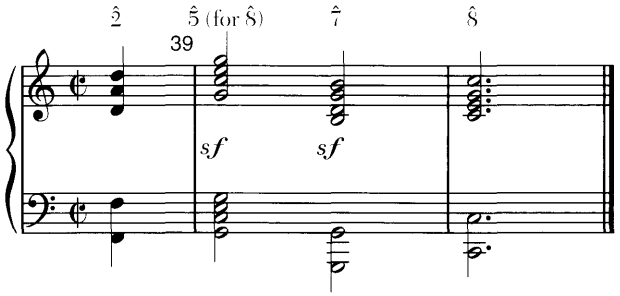
Although this chord is usually associated with the closing of a phrase, Hassler chose to open Example 16.11a with not one but two accented $\frac{6}{4}$ chords. In addition, there is a cadential $\frac{6}{4}$ in the half cadence. Beethoven, rather than resolving the soprano $\hat{2}$ in the usual way, to $\hat{8}$-$\hat{7}$-$\hat{8}$, has the second note leap to an emphatic $\hat{5}$ over the $\frac{6}{4}$ before returning to complete the cadence in normal fashion (Example 16.11b). Mozart is unable to resolve the 4th of his $\frac{6}{4}$ in a downward fashion, since he wishes to conclude with an imperfect cadence on $\hat{3}$ (Example 16.11c). In order to emphasize the final cadential gesture of his sonata, Scarlatti repeats his $\frac{6}{4}$ chord no less than three times; in the first two instances, the bass moves through a V^4_2 upon resolution to reach the bass $\hat{3}$ again (Example 16.11d).

Example 16.11

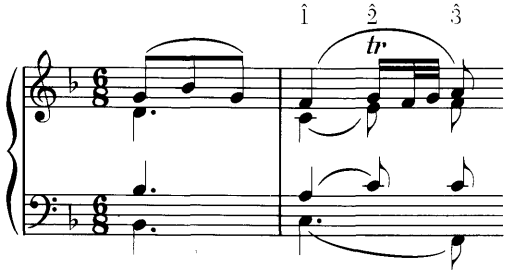
A. JOHANN HASSLER: SONATINA FOR PIANO IN C MAJOR



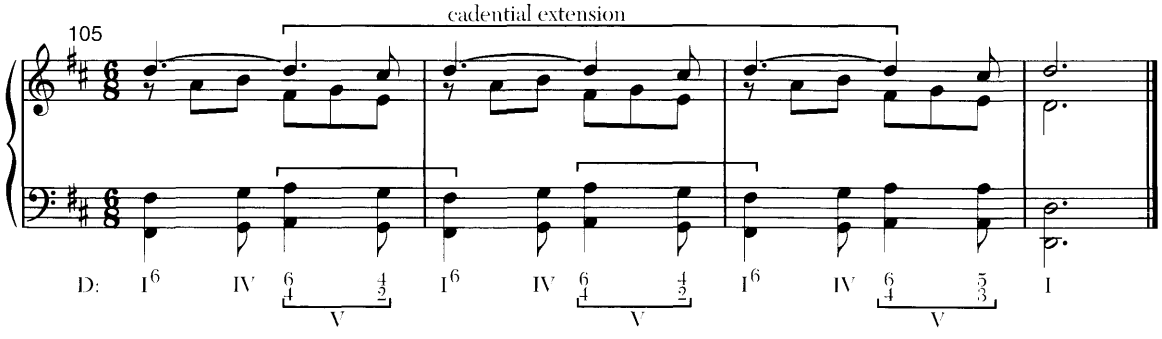
B. BEETHOVEN: "THE GLORY OF GOD IN NATURE," OP. 48, NO. 4



C. MOZART: STRING QUARTET IN D MINOR, K.421, II



C. D. SCARLATTI: SONATA IN D MAJOR, K.492



THE EXTENDED $\frac{6}{4}$ AND THE CADENZA

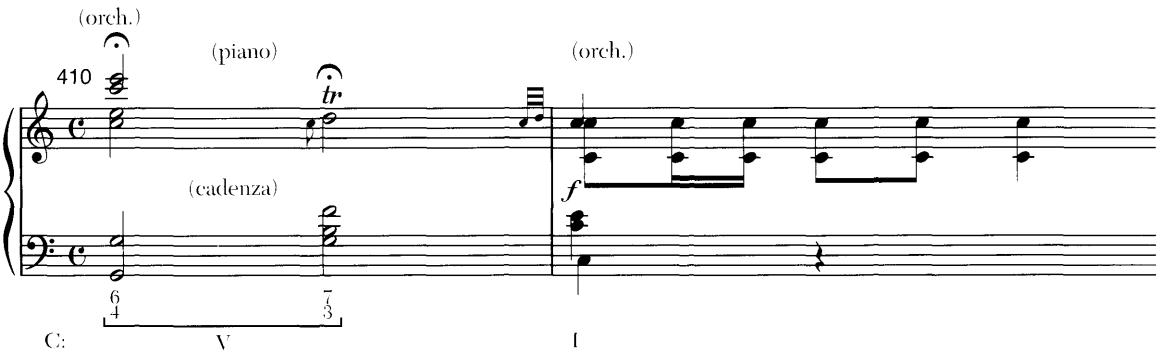
The cadential $\frac{6}{4}$ progression may be extended over several measures, as illustrated previously in the Mozart passage (Example 16.4f), or in Example 15.22, where the oscillation between $\frac{6}{4}$ chords and $\frac{7}{3}$ chords over a dominant pedal near the end of Strauss's *Death and Transfiguration* builds a harmonic tension that is finally released in the tonic resolution of measure 478.

A more extreme case occurs in those movements of Classical concertos that may include a **cadenza** (Italian for "cadence") for the solo instrument. These cadenzas, whose virtuosic flourishes allowed soloists to demonstrate their technical prowess, were originally improvisations based on earlier thematic material from the movement. As time went on, composers increasingly began to supply written-out cadenzas. The typical cadenza opens with a lengthy $\frac{6}{4}$ chord. Following the improvisations, the soloist moves toward the dominant chord, which serves as the resolution of the initial $\frac{6}{4}$. A long trill on $\hat{2}$ in the upper voice leads immediately into the closing orchestral tutti on tonic harmony. Both the $\frac{6}{4}$ and its $\frac{5}{3}$ (or V^7) are set off by fermatas. The framing sonorities of the cadenza for

the first movement of Mozart's C major Piano Concerto, K. 503, are shown in Example 16.12. Since Mozart did not furnish his own cadenza for this concerto, improvisations would be inserted between the fermatas.

Example 16.12

♪ MOZART: PIANO CONCERTO IN C MAJOR, K.503, I



MELODY HARMONIZATION

In order to make effective of use of $\frac{6}{4}$ chords in harmonization, you must become familiar with the idiomatic melodic lines they usually support. Some of the more common are listed below:

1. Cadential $\frac{6}{4}$: $\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$, $\hat{8}$-$\hat{8}$-$\hat{7}$-$\hat{8}$, or $\hat{2}$-$\hat{8}$-$\hat{7}$-$\hat{8}$, where the second chord is the $\frac{6}{4}$.
2. Passing $\frac{6}{4}$: $\hat{7}$-($\hat{8}$)-$\hat{2}$, prolonging dominant harmony, or $\hat{4}$-($\hat{3}$)-$\hat{2}$ and $\hat{6}$-($\hat{5}$)-$\hat{4}$, prolonging pre-dominant harmony.
3. Pedal: neighboring $\frac{6}{4}$: $\hat{3}$-($\hat{4}$)-$\hat{3}$ or $\hat{5}$-($\hat{6}$)-$\hat{5}$ over tonic harmony or passing: $\hat{2}$-($\hat{3}$)-$\hat{4}$ over dominant harmony.

Identify the different types of $\frac{6}{4}$ chords used in the setting below.

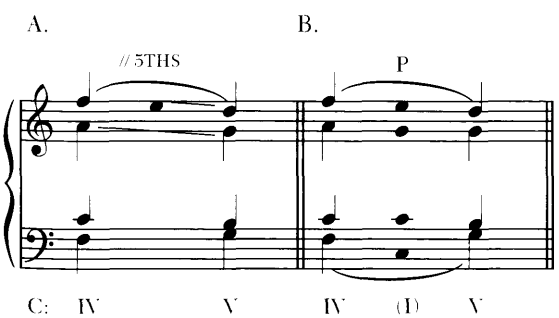
Example 16.13

Other Diatonic Linear Chords

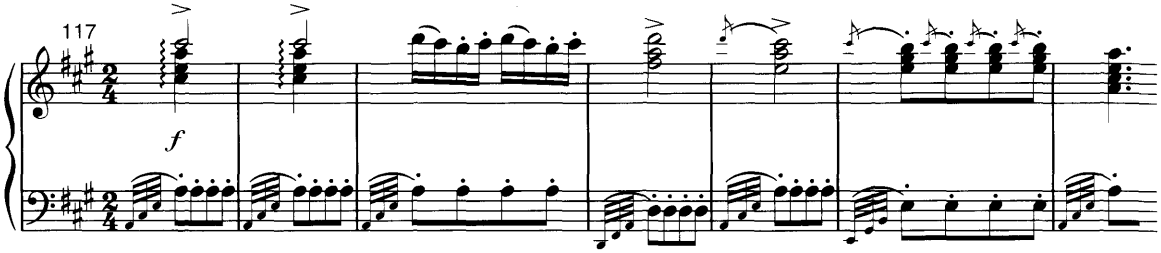
Passing or neighboring sonorities in root position or first inversion function as contrapuntal or linear chords to connect or prolong harmonies. We customarily indicate these embellishing chords by means of unstemmed noteheads and put parentheses around their Roman numerals. It might actually be more appropriate to dispense with Roman numerals altogether and simply write "P" or "N" below the chord to indicate its true function. We have already discussed some instances of these contrapuntal chords in previous chapters, such as the passing vii^{o6} which connects I and I^6, or a neighboring V^6_5, whose bass outlines $\hat{8}$-$\hat{7}$-$\hat{8}$. The remainder of this chapter will examine some additional examples of linear chords.

1. At the beginning of this chapter we noted that the passing tone $\hat{3}$ between $\hat{4}$-$\hat{2}$-$\hat{1}$ in the progression IV-V-I was not permitted because of the presence of parallel 5ths (Example 16.14a). Just as we previously inserted a cadential $^6_4$ to support this passing $\hat{3}$ in the soprano (Example 16.1b), we can also insert a root-position tonic chord in the same manner, so that the I now acts as a consonant passing chord to connect the IV to the V with stepwise motion in the upper voice (Example 16.14b). The phrase from Mozart's famed "alla Turca" movement (Example 16.14c) and its accompanying reduction (Example 16.14d) illustrate how this **consonant passing I** occurs in a typical passage from music literature.

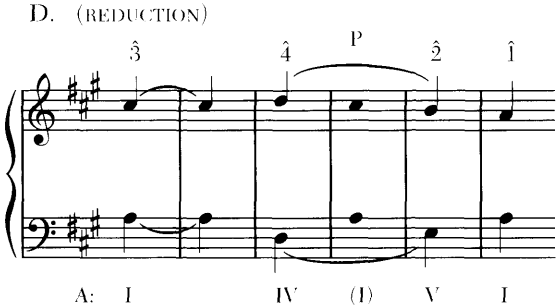
Example 16.14



C. MOZART: PIANO SONATA IN A MAJOR, K.331, III



D. (REDUCTION)

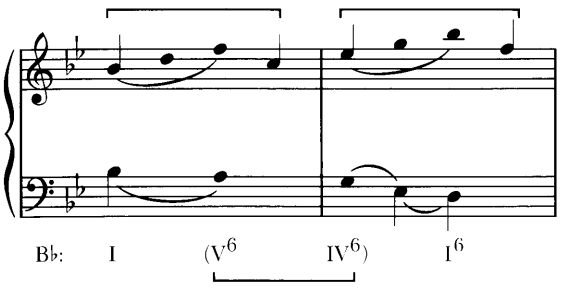


2. The retrogressive **V-IV progression** is somewhat curious, since it reverses the normal tendency of the pre-dominant to dominant. One way of viewing it is to consider the IV an interpolated chord interrupting the basic dominant to tonic motion. As the few excerpts below demonstrate, the V-IV may appear in a variety of musical styles, from a sequential Mozart passage (Examples 16.15a and b) to its recurrent use in the last phrase of a standard blues progression (Example 16.15c). This progression always seems to appear in the major mode.

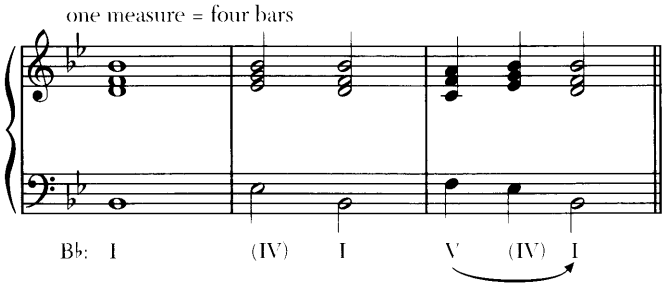
Example 16.15

A. MOZART: PIANO SONATA IN F MAJOR, K.332, II

B.



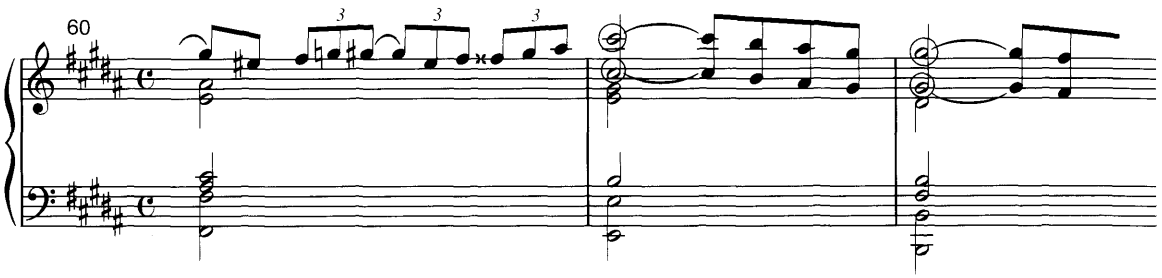
C. BASIC BLUES PROGRESSION



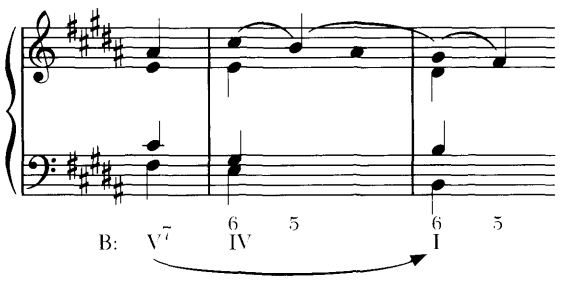
Since the V-IV-I progression sometimes sounds like a plagal cadence, it is used as the closing cadence of many sacred solos and choral works. Example 16.16a and its reduction (Example 16.16b) illustrate a typical example of this procedure. The resultant delay in resolving the dominant to tonic by rerouting it through the subdominant was often exploited by Romantic composers, reaching its apex in the transcendent climax to Isolde's "Liebestod" in Wagner's *Tristan und Isolde* (Examples 16.16c and d).

Example 16.16

(f) C. WAGNER: "LIEBESTOD" FROM *TRISTAN UND ISOLDE.* ACT III



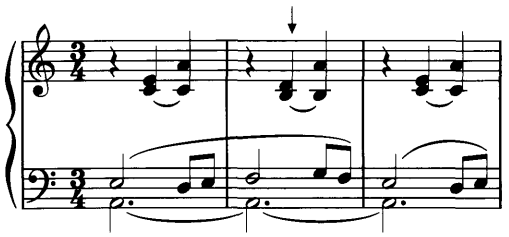
D. (REDUCTION)



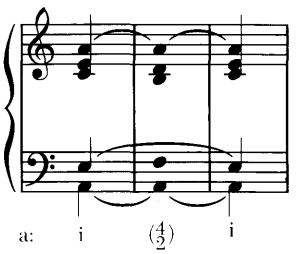
3. Occasionally **apparent seventh chords** may arise as the result of linear voice leading. We might be tempted to analyze the indicated harmonies in the Chopin and Humperdinck passages (Example 16.17a through c) as some form of supertonic seventh chord, either ii^4_2 or ii^6_5. However, closer inspection reveals that neither function as normal supertonic sevenths—not only do their chordal 7ths fail to resolve properly ($\hat{8}$-$\hat{7}$), but they do not progress to dominant harmony. While the former functions as a neighboring chord to the tonic, the passing motion of the latter's plagal cadence carries the soprano upward, $\hat{1}$-($\hat{2}$)-$\hat{3}$. For analytical purposes we simply supply the figured bass in parentheses and use unstemmed note-heads, as we did previously with passing and neighboring $^6_4$'s.

Example 16.17

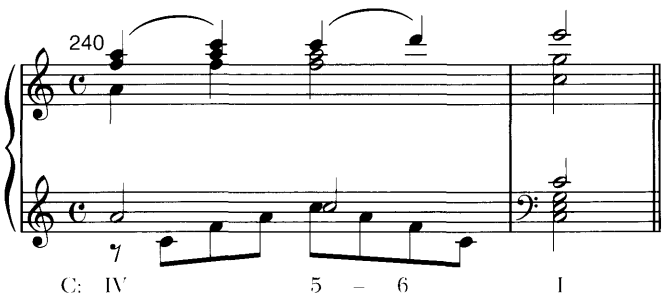
A. CHOPIN: *GRANDE VALSE BRILLANTE*, OP. 34, NO. 2



B. (REDUCTION)



C. HUMPERDINCK: OVERTURE TO *HÄNSEL AND GRETEL*

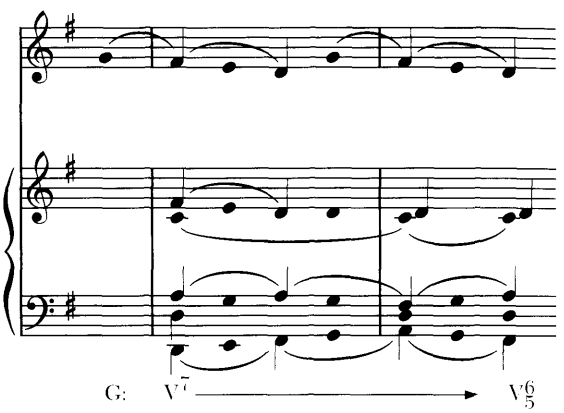


4. Strange transient sonorities may originate from the **interplay of harmony and melodic dissonance.** In many cases confusion can arise when embellishing tones are sounded simultaneously with reiterated chords. Resist the temptation to analyze such sonorities as freestanding chords with their own Roman numeral function. Three examples of this interplay occur in the passages of Example 16.18a through f; play the music first and then examine the reductions. The Schumann excerpt amounts to nothing more than a prolongation of V^7 with passing motion in the various voices. In "The Minstrel Boy" it is the tonic that is being prolonged with passing tones and an appoggiatura. The dominant extension in the final Schubert quotation is further complicated by the presence of a tonic pedal in the bass.

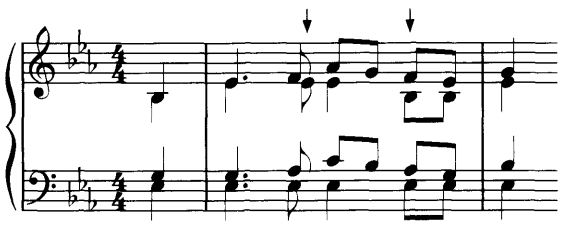
Example 16.18

A. SCHUMANN: "AN DEN SONNENSCHEIN," OP. 36, NO. 4

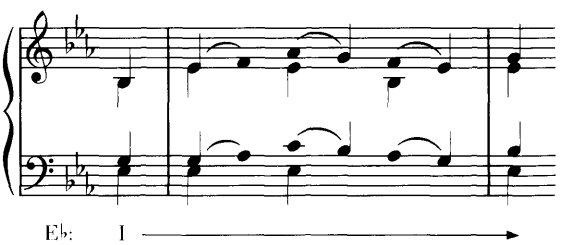
B. (REDUCTION)



C. "THE MINSTREL BOY" (IRISH FOLK SONG)

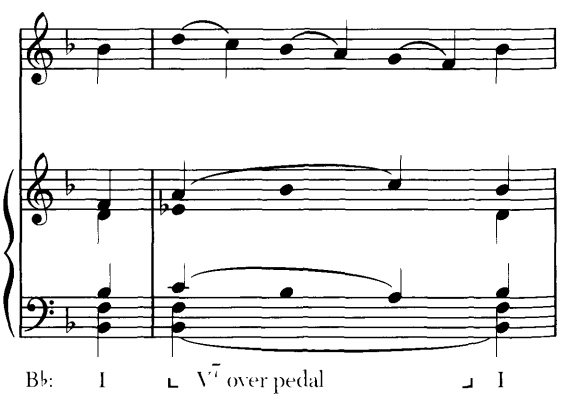


D. (REDUCTION)



E. SCHUBERT: "IM ABENDROT," OP. 173, NO. 6

F. (REDUCTION)



By employing a linear approach, you will be able to explain the true function of many sonorities that otherwise might seem strange or puzzling.

Terms and Concepts for Review

linear chord
cadential $\frac{6}{4}$
passing $\frac{6}{4}$
pedal $\frac{6}{4}$
arpeggiated $\frac{6}{4}$
extended $\frac{6}{4}$
cadenza
consonant passing I
V-IV progression
apparent seventh chords
interplay of harmony and melodic dissonance

A BRIEF REVIEW SELF-QUIZ

1. Circle each $\frac{6}{4}$ that you find in this passage. Then use an abbreviation to indicate the type of each $\frac{6}{4}$. Use C for cadential, P for passing, PN for pedal neighboring, PP for pedal passing, and A for arpeggiated.

Example 16.19

2. Realize the figured bass in the following passages, using four-voice texture. Analyze with Roman numerals and then indicate the type of $\frac{6}{4}$ chord used in each example.

Example 16.20

3. Realize the following unfigured bass passages, employing an appropriate $\frac{6}{4}$ in each; there may be more than one in the last two progressions. Add the appropriate Roman numerals.

Example 16.21

CHAPTER 17

The VI, III, and Other Diatonic Triads

THIS CHAPTER is the last in our study of diatonic triads. We will focus first on the submediant (vi) and mediant (iii) harmonies and then discuss the use of the v^6 and VII triads in the minor mode. Since the vi and iii lie somewhat beyond the fringe of normal pre-dominant, dominant, and tonic harmonies, it is difficult to generalize about their functions. Sometimes they precede pre-dominant chords, at other times they come immediately before the dominant, and on occasion they may even act as substitutes for the tonic or dominant triads.

THE SUBMEDIANT AND MEDIANT TRIADS IN MAJOR AND MINOR

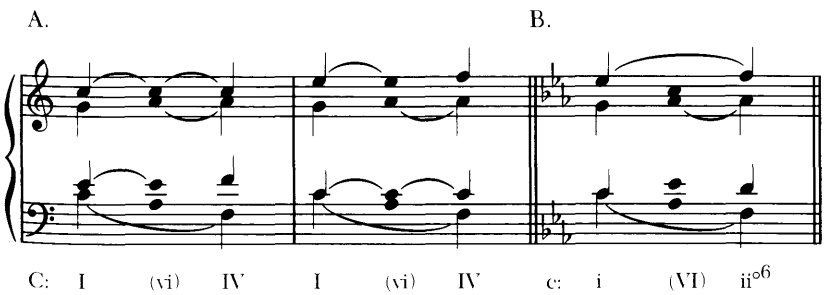
The diatonic submediant and mediant chords occur as minor triads in the major mode (vi and iii), and conversely as major triads in the minor mode (VI and III), as shown in Example 17.1. They usually appear in root position, since their first inversions are actually functionally related to tonic and dominant harmonies, a topic we will take up later in the chapter.

Example 17.1

THE ROOT-POSITION VI BETWEEN TONIC AND PRE-DOMINANT HARMONIES

The main use of the root-position vi is to connect the tonic I to a pre-dominant harmony, such as ii^{6}, ii$^{6}_{5}$, or IV, all built on $\hat{4}$. Since the bass note ($\hat{6}$) of the submediant triad divides the leap from $\hat{1}$ down to $\hat{4}$ into two 3rds, it functions as an embellishing chord that precedes or prepares pre-dominant harmony; in such cases we will leave it unstemmed in our reductions. In this form it may also be thought of as a *voice-leading chord*, since it is derived by a 5-6 motion over $\hat{1}$ in the bass, where the 6 (or $\hat{6}$) is displaced into the bass voice. The root movement from I to vi or vi to IV spans the interval of a descending 3rd. As the bass descends by thirds in this progression, the three upper voices follow the pattern outlined in Example 17.2a. The move from I to vi is the same as the move from vi to IV; two of the upper voices retain common tones between the two chords while the third voice moves by step. On occasion the soprano may move in 10ths with the bass, forcing the inner voices to move in contrary motion (Example 17.2b). Some typical excerpts and model reductions below illustrate this voice leading in four-voice texture.

Example 17.2

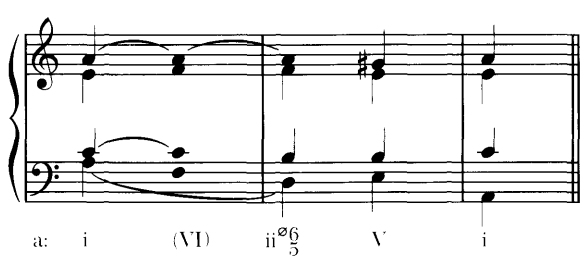


C. ROSSINI: OVERTURE TO *L'ITALIANA IN ALGERI*

D. (REDUCTION)

E. MOZART: PIANO SONATA IN A MINOR, K.310, I

F. (REDUCTION)

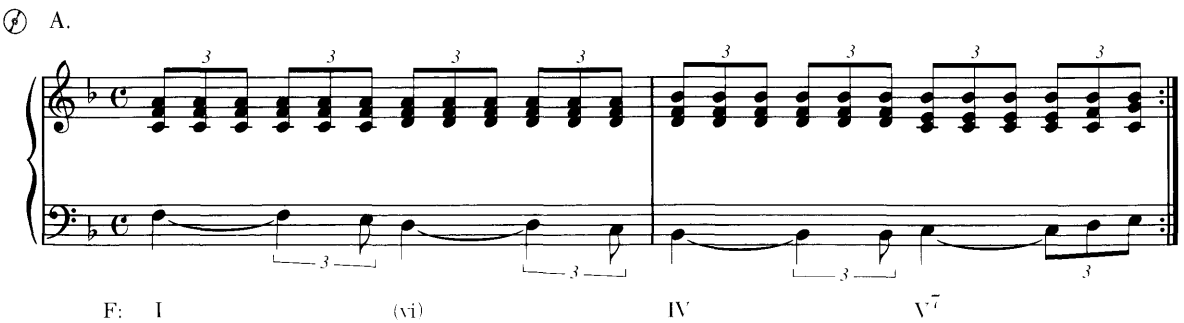


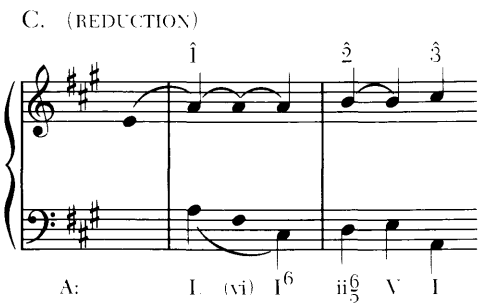
G.

Rossini was especially fond of this progression in his grand finale cadences; a typical example appears in Examples 17.2c and d: I-(vi)-ii^{6}-V-I. Mozart's minor-mode version employs the ii$^{\varnothing 6}_{5}$ chord (Examples 17.2e and f). The root-position submediant or its seventh chord may be found in the opening of innumerable popular songs (such as "Blue Moon" or "The Way You Look Tonight"), where it begins a series of falling 5ths: I-(vi)-ii(^{7})-V(^{7})-I. Example 17.2g illustrates a familiar version of this progression that is frequently heard at informal gatherings around the piano. Similarly, the harmonic succession I-(vi)-IV was a standard progression in many of the popular songs of the 1950s; the incessant piano triplets seem to be a necessary stylistic component (Example 15.3a).

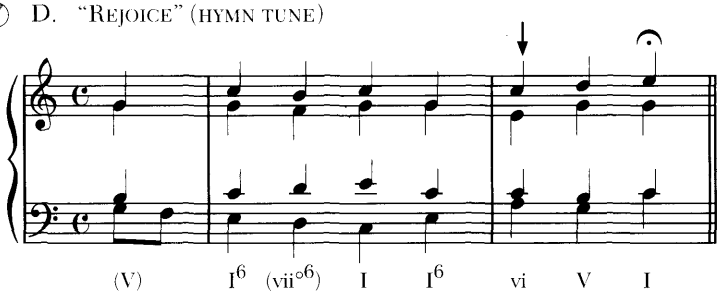
On occasion, an embellishing vi may be interpolated between I and I^{6}, prolonging the tonic function; see the opening phrase of "Rule Britannia" in Examples 17.3b and c. To avoid parallel 5ths when the soprano moves $\hat{1}$-$\hat{2}$-$\hat{3}$, the vi may even substitute for a IV and move directly to V; in such cases we stem the submediant chord, since it substitutes for the usual pre-dominant (Example 17.3d).

Example 17.3





D. "REJOICE" (HYMN TUNE)

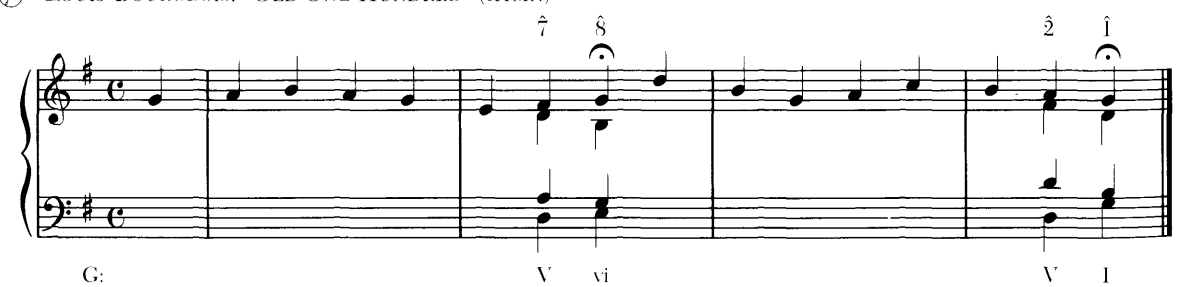


THE VI AS A SUBSTITUTE FOR I: THE DECEPTIVE CADENCE AND PROGRESSION

Another familiar use of the submediant is its substitution for the tonic in a perfect authentic cadence. In our previous melodic analysis of the tune "Old One Hundred" in Chapter 3, we noted the premature arrival of scale degree $\hat{1}$ at the end of the third phrase. In order to avoid a conclusive-sounding cadence on the tonic before the piece is finished, we may substitute a vi chord for the expected I (Example 17.4). This exchange of vi for I maintains the sense of harmonic momentum until we finally arrive at the last authentic cadence.

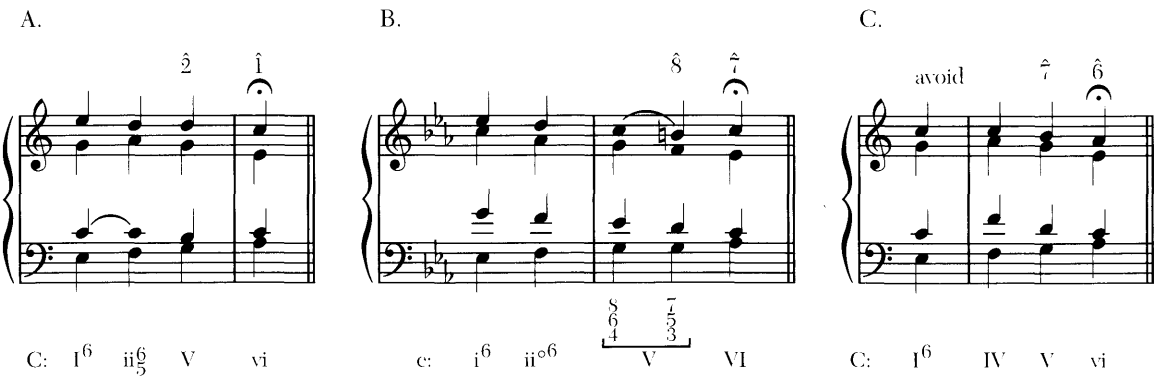
Example 17.4

LOUIS BOURGEOIS: "OLD ONE HUNDRED" (HYMN)



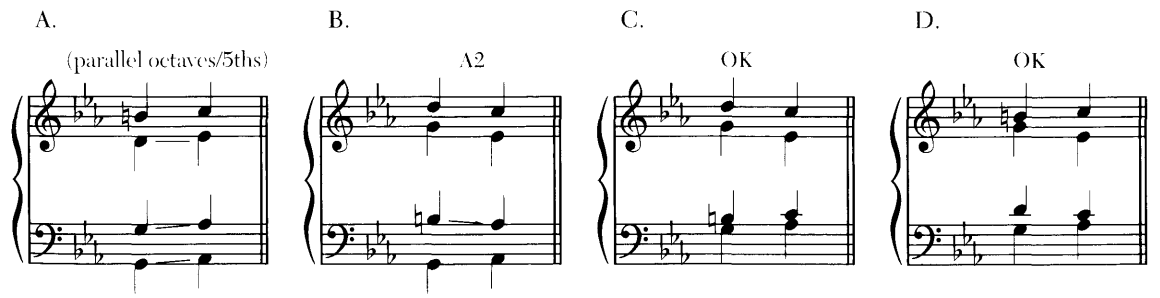
This cadential substitution of the submediant for tonic is called a **deceptive cadence.** Other features of the authentic cadence remain intact—it is still approached by a pre-dominant or $\frac{6}{4}$ (such as I-ii$^6_5$-V) and still features the typical $\hat{2}$-$\hat{1}$ or $\hat{7}$-$\hat{8}$ in the soprano. But in place of the usual resolution to I, the bass moves up a step from $\hat{5}$ to $\hat{6}$ while replacing the tonic with submediant harmony, as shown in the first two models of Example 17.5. Above all, avoid a soprano line from $\hat{7}$ down to $\hat{6}$, since the leading tone's wrong resolution would become obvious (Example 17.5c).

Example 17.5



The stepwise root motion in this deceptive cadence can easily foster partwriting mistakes, such as parallel octaves or 5ths (Example 17.6a) and even an augmented 2nd in minor keys (Example 17.6b). To avoid these, move two of the upper voices contrary to the bass, producing a doubled chordal 3rd in the submediant triad; refer to Examples 17.6c and d.

Example 17.6

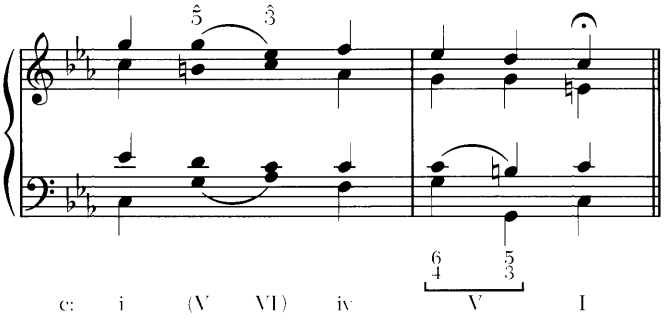


Other Treatments of the V-vi Progression

Deceptive progressions may also occur within the phrase using $\hat{5}$-$\hat{3}$ motion in the soprano (Example 17.7a). In some cases these V-vi progressions seem to form interpolations within the phrase's interior harmonies. The V-vi in the second measure of Handel's aria (Example 17.7b) could almost be omitted, as indicated by the brackets, since the overall voice leading in the reduction is hardly disturbed (Example 17.7c). In "America" (Example 17.7d), the dominant $^{6}_{4}$-$^{5}_{3}$ in measure 2 appears to be leading to an authentic cadence ($\hat{3}$-$\hat{2}$-$\hat{1}$). The detour to vi not only thwarts the cadential expectation but also continues the harmonic flow until we arrive at the real cadence two bars later.

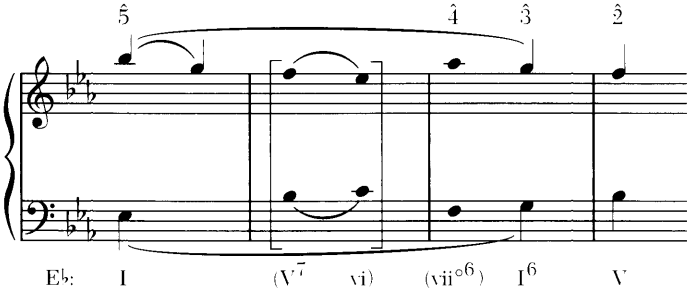
Example 17.7

A.

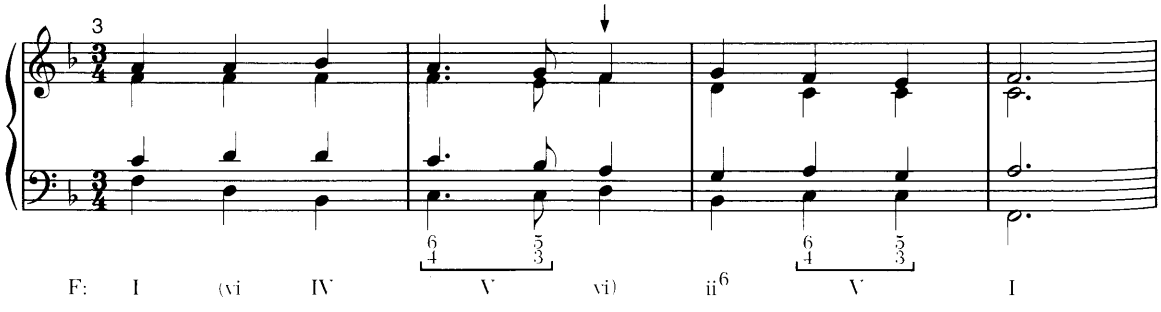


B. HANDEL: "VERDI PRATI" FROM *ALCINA*, ACT II

C. (REDUCTION)



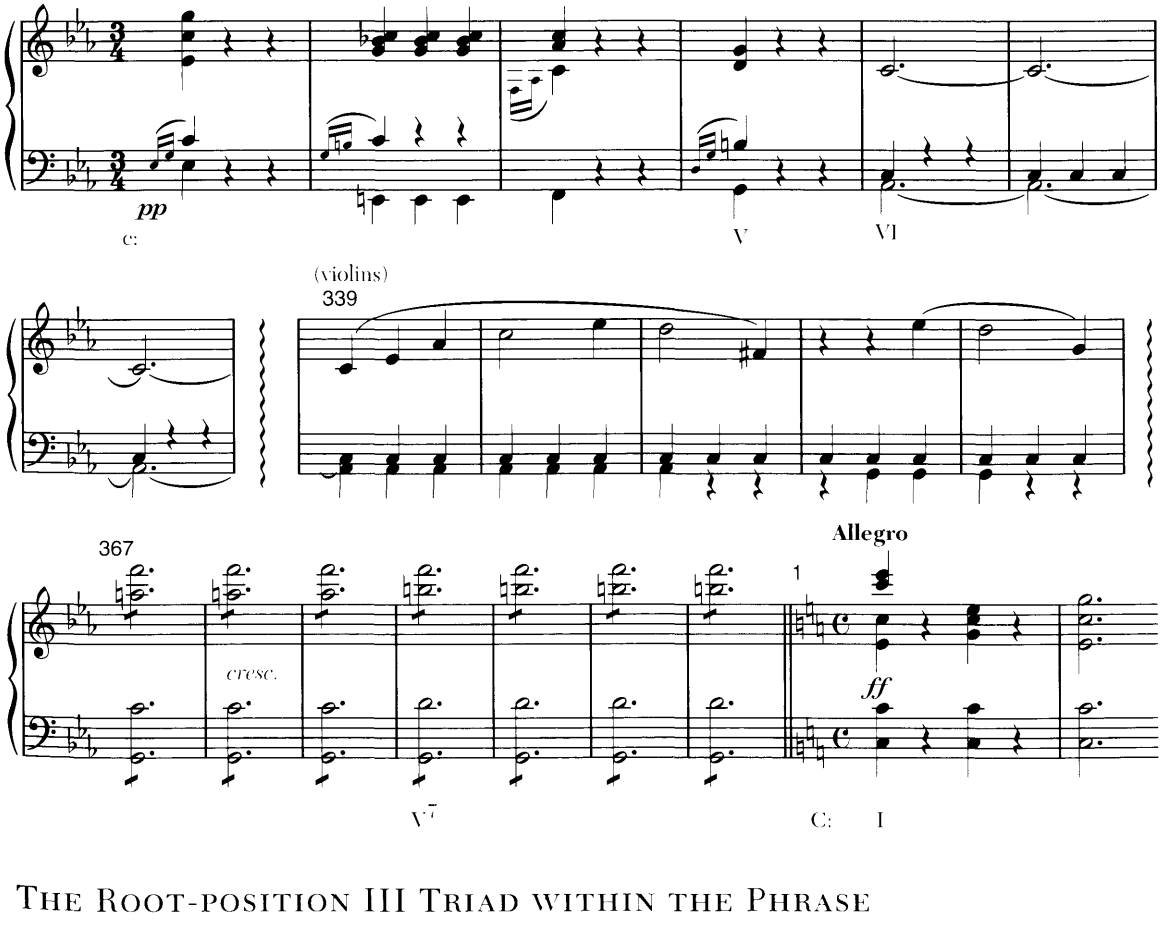
D. "AMERICA"



A deceptive progression may occur in larger contexts to link lengthy sections of music. An example may be found at the end of the Scherzo of Beethoven's Symphony No. 5 in C Minor. Although it is highly unusual for an entire movement to conclude with a deceptive cadence, here the composer uses it as a bridge to link the Scherzo to the last movement. After the deceptive VI chord (m. 324), he holds the listener in suspense with an extended ambiguous passage before arriving on an emphatic V^7 that eventually resolves into the opening C major chord of the Finale (Example 17.8).

Example 17.8

BEETHOVEN: SYMPHONY NO. 5, III TO IV

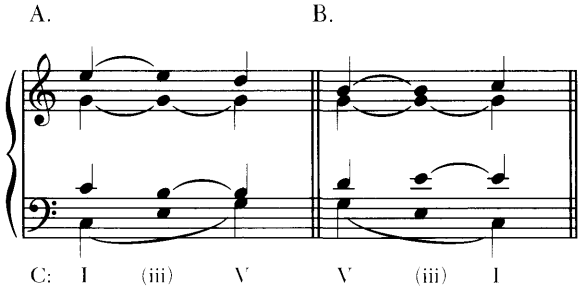


THE ROOT-POSITION III TRIAD WITHIN THE PHRASE

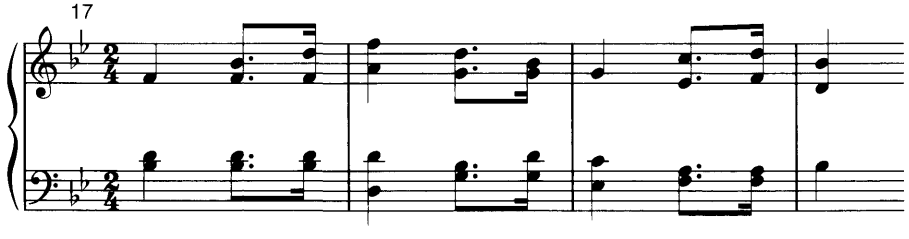
We now turn to the submediant's companion, the diatonic mediant triad (iii in major and III in minor), and examine its role as an unstemmed embellishing chord. Since the mediant, like the submediant, is also related by third to

the tonic (I-iii), its partwriting is similar to I-vi; in most cases keep two common tones and move the remaining voice stepwise, as shown in the reductive models of Examples 17.9a and b. The mediant may initiate a series of falling 5ths (iii-vi-ii-V-I), as in Wagner's familiar bridal chorus (Examples 17.9c and d), or it may support the leading tone in descending $\hat{8}$-$\hat{7}$-$\hat{6}$-$\hat{5}$ motion in the soprano. At the opening of Billings's "Chester," the unstemmed iii moves directly to IV in the manner of an incomplete neighbor (Example 17.9e). The interpolated deceptive progression between measures 2 and 3 of this excerpt (the notes between the brackets in Example 17.9f), recalls the same procedure found in the Handel aria in Example 17.7b. The mediant triad may even substitute for a I^6, as the Johann Fischer fugue illustrates (Example 17.9g).

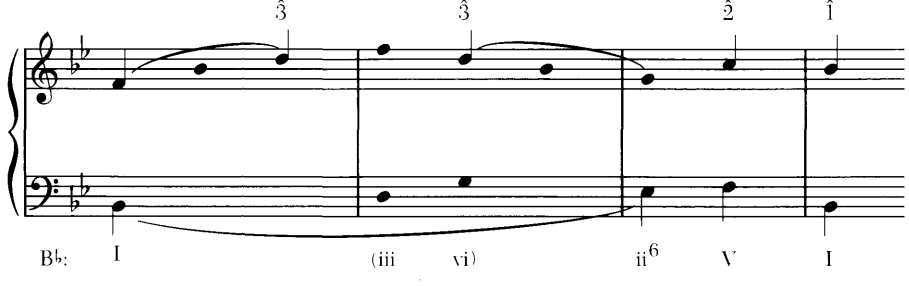
Example 17.9



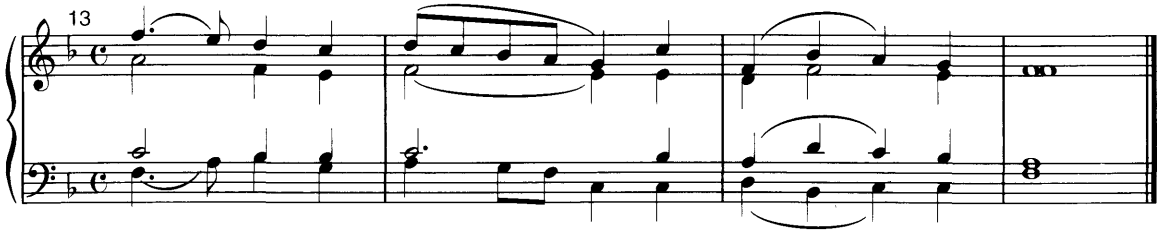
C. WAGNER: BRIDAL CHORUS FROM *LOHENGRIN*, ACT III



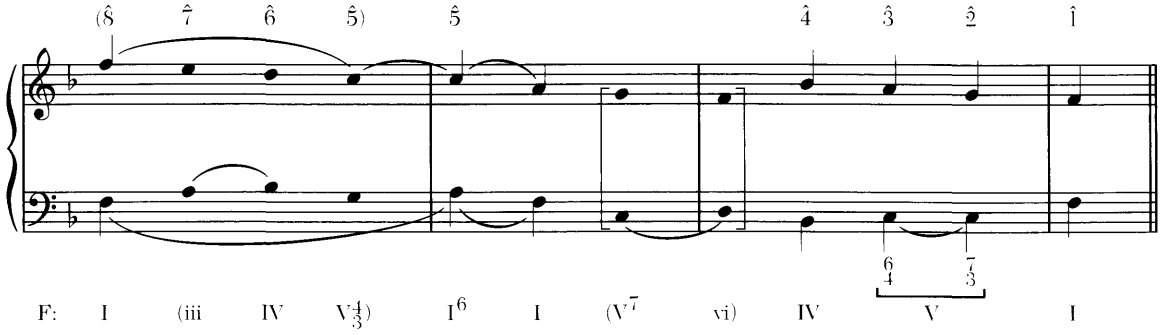
D. (REDUCTION)



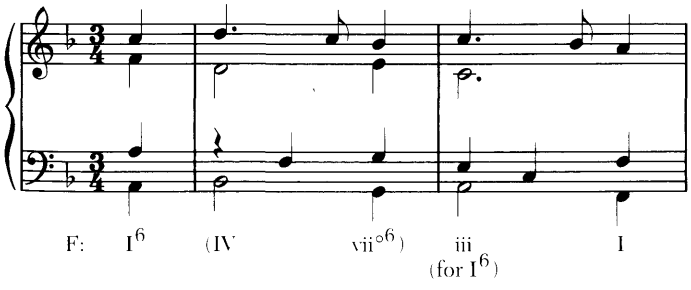
E. "CHESTER" (MELODY BY WILLIAM BILLINGS)



F. (REDUCTION)

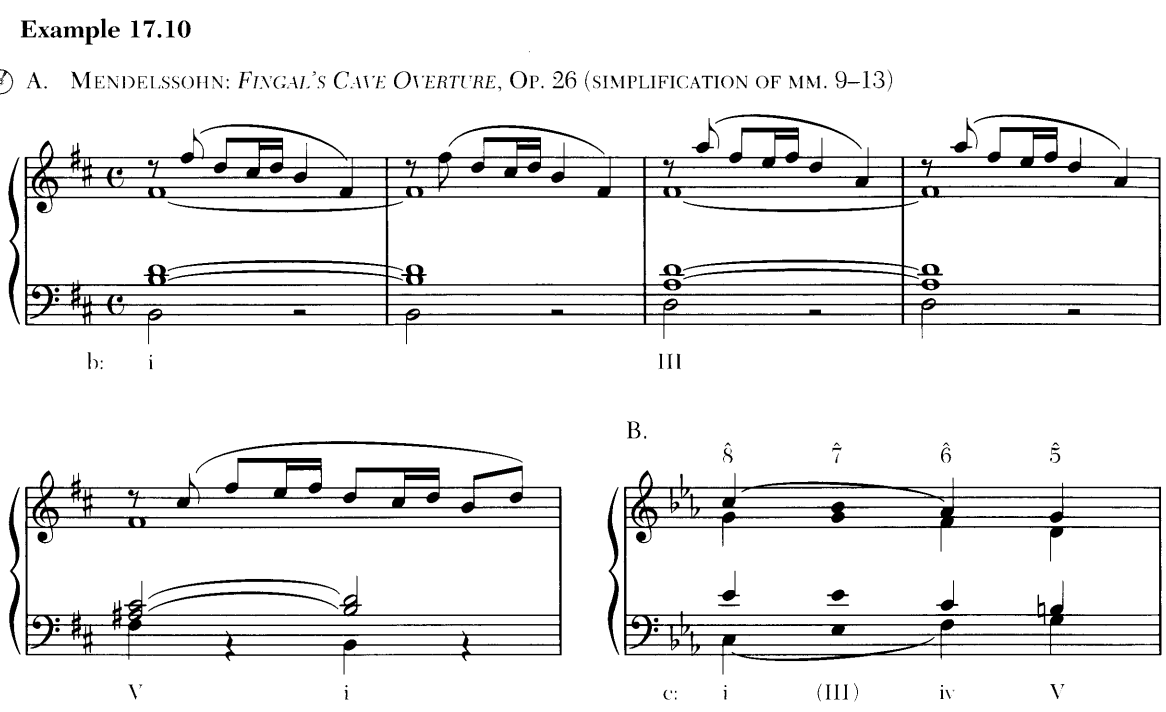


G. JOHANN FISCHER: FUGUE IN F MAJOR FROM *ARIADNE MUSICA*



Since the III triad in the minor mode may function as the tonic of the relative major key, it is tonally stronger than its counterpart iii in major. In the Mendelssohn excerpt (Example 17.10a), the root movement by ascending 3rds produces a i-III-V progression, which is related by inversion to the descending 3rd motion from the tonic, I-vi-IV. All three chords (i, III, V) share one tone in common, either $\hat{5}$ or $\hat{1}$. Although III may support scale degree $\flat\hat{7}$ in the soprano line $\hat{8}$-$\flat\hat{7}$-$\flat\hat{6}$-$\hat{5}$ in minor (Example 17.10b), it rarely substitutes for a i^6.

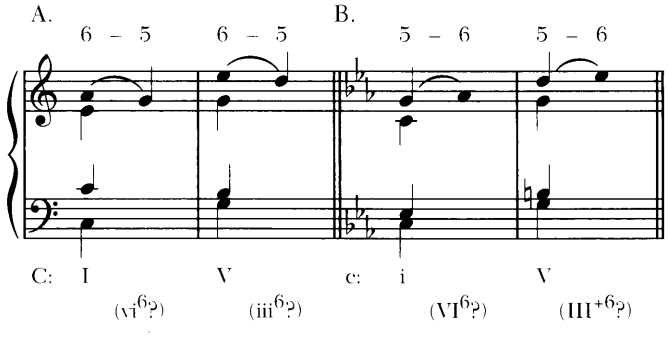
Example 17.10



THE "FIRST-INVERSION" VI AND III AS VOICE-LEADING SUBSTITUTES FOR I AND V

The first inversions of the submediant and mediant chords are rather illusionary, as they are not always what they seem. We may occasionally encounter chords that appear to be vi^6 or iii^6. But since their bass notes correspond to the strongest scale degrees of the key ($\hat{1}$ and $\hat{5}$), we tend to hear them as tonic or dominant harmony. These sonorities are best explained as the result of 6-5 or 5-6 melodic or linear motion over a root-position tonic or dominant triad, as shown in Examples 17.11a and b. We call these "voice-leading chords."

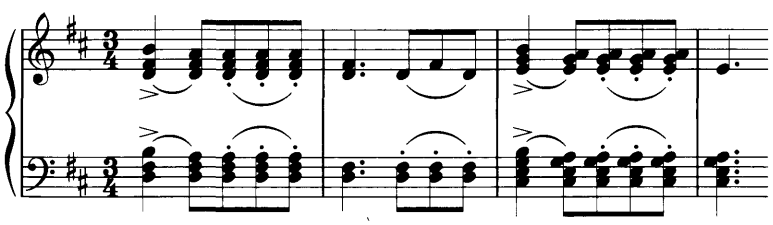
Example 17.11



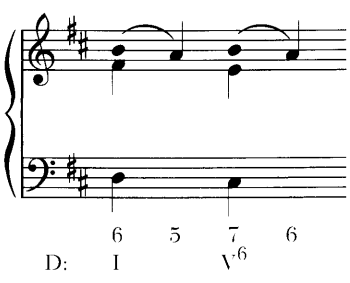
Some typical examples of these 5-6 or 6-5 triads appear in Example 17.12. In no way should we analyze them as vi^6 or iii^6. The reduction of the opening to the Schubert movement (Example 17.12a) reveals a neighboring B-A in the soprano over I and V^6 harmonies (Example 17.12b). In the beginning of his famous "Du bist die Ruh" (Example 17.12c), the vocal line traces an overall stepwise motion, F-G-A-B♭, starting with 5-6 over I, as shown in the reduction of Example 17.12d. What seems like an augmented III^6 in the Bach chorale harmonization (Example 17.12e) is actually nothing more than a V with an accented passing tone. This 6 over the dominant may also omit the resolution to 5 ($\hat{3}$-$\hat{2}$), as shown in Example 17.12f; the last example shows this device occurring over a V^7 (Example 17.12g). Some theorists prefer to call this a V^{13}, but that seems inappropriate, since the 9th and 11th are not present.

Example 17.12

A. SCHUBERT: PIANO SONATA IN A MAJOR, D. 664, II

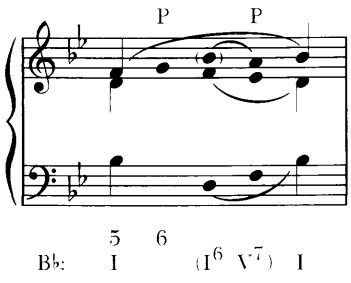


B. (REDUCTION)

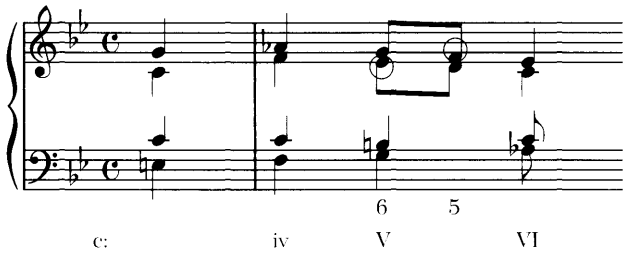


C. SCHUBERT: "DU BIST DIE RUH'"

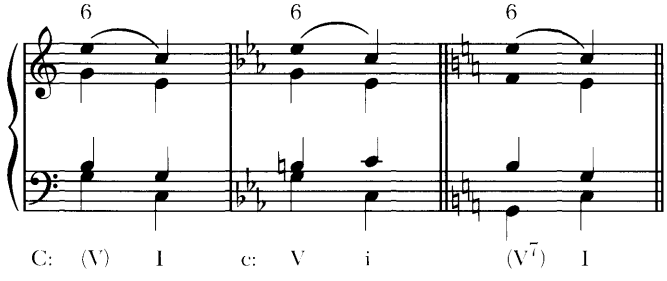
D. (REDUCTION)



E. "VATER UNSER IM HIMMELREICH" (BACH CHORALE HARMONIZATION)



F.



G.

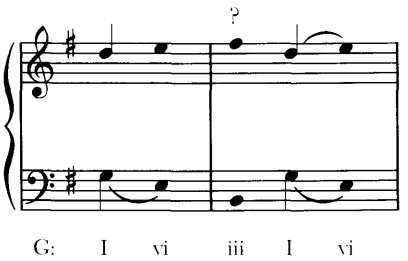
MODAL CHORDS

When composers favor the submediant, mediant, and supertonic chords (vi, iii, and ii) over the dominant and pre-dominant chords in major-key progressions, the sense of normal harmonic function may become less evident. As a result, the music takes on a modal flavor. Modal music, such as music from the Renaissance period (1450–1600) or from folk-music repertories, does not show the normal harmonic functions characteristic of common-practice period music. For this reason, these triads are sometimes called **modal chords.** Russian and Eastern European composers of the nineteenth century were especially fond of this implied modality. A typical example appears at the opening measures of Tchaikovsky's famed *Nutcracker* march, in which no dominant appears at all (Example 17.13).

Example 17.13

A. TCHAIKOVSKY: MARCH FROM *THE NUTCRACKER*, ACT I

B.

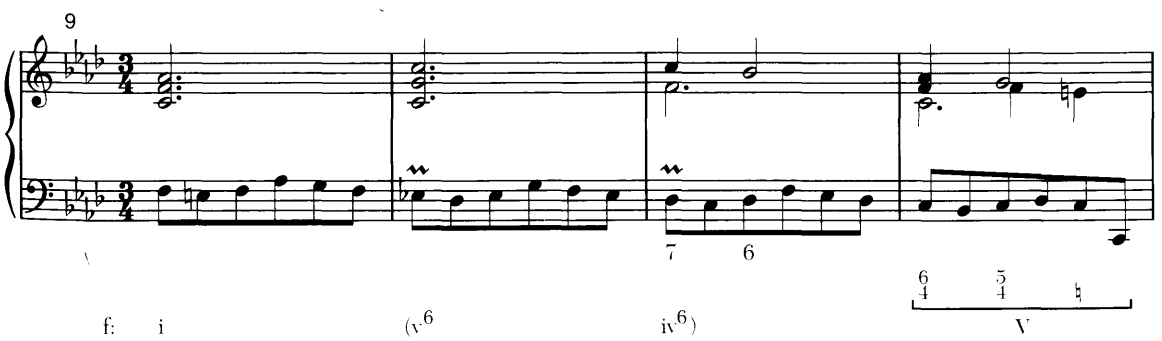


OTHER DIATONIC TRIADS: THE v⁶ AND VII IN MINOR

The two remaining diatonic triads also exhibit quasi-modal functions. Despite its dominant root, the v⁶ in the minor mode shows little or no tendency to resolve to the tonic. Instead, its subtonic or lowered 7th scale degree (♭$\hat{7}$) propels it downward by step to a ♭$\hat{6}$ before arriving at $\hat{5}$. This tetrachordal progression (i-v⁶-iv⁶-V) is frequently found in continuous variation forms such as the passacaglia and chaconne of the Baroque period (Example 17.14).

Example 17.14

JOHANN KUHNAU: CIACONA IN F MINOR



The subtonic VII triad in minor often precedes the III, acting as its dominant. In Spanish flamenco guitar music, it frequently occurs in a direct bass descent $\hat{8}$-♭$\hat{7}$-♭$\hat{6}$-$\hat{5}$, where VII and VI substitute for v⁶ and iv⁶ (Example 17.15). The blatant parallel 5ths above the bass are typical of this style.

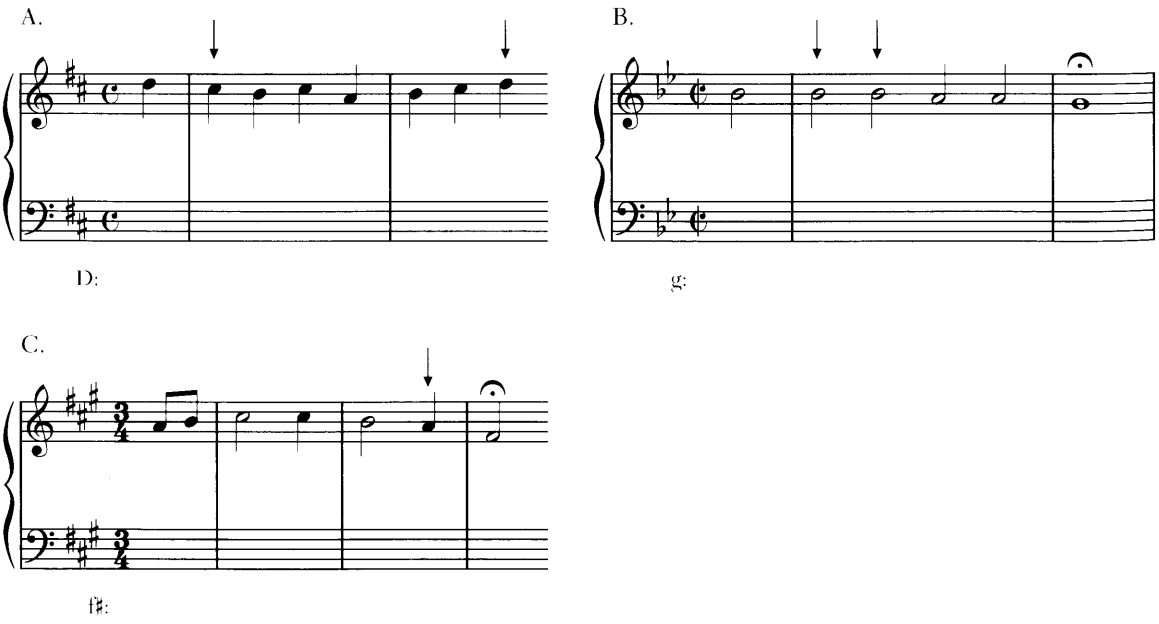
Example 17.15

FLAMENCO GUITAR PROGRESSION

MELODY HARMONIZATION

In harmonizing melodies, you should attempt to associate the vi/VI triad with scale degrees $\hat{3}$ or $\hat{1}$ in the soprano (rather than $\hat{6}$), and the iii/III triad with $\hat{3}$ or $\hat{7}$ (when the $\hat{7}$ descends from $\hat{8}$ to $\hat{6}$). Although these two chords can add harmonic variety to your melodic settings, be careful not to overuse them. Also avoid employing too many deceptive cadences; the less they are used, the more effective they are. The arrows in the three short phrases of Example 17.16 denote likely places for either a submediant or mediant triad. Complete the harmonic scheme of each phrase and then sketch an appropriate bass line.

Example 17.16



Terms and Concepts for Review

VI as a divider between I and IV or II^6
"vi^6" as 5-6 or 6-5 over I
deceptive cadence
III as relative major in the minor mode
"iii^6" as 6-5 over the dominant
partwriting triads a diatonic 3rd apart
modal chords
v^6 and VII in minor

A BRIEF REVIEW SELF-QUIZ

1. A Roman numeral designation and several triad spellings are provided below. Identify the key in which each triad functions as that chord, using the first example as your model.

Example 17.17

vi in major	G B♭ D = B♭ major	B D F♯ =	E G B =	D F A =
VI in minor	G♭ B♭ D♭ =	A♭ C E♭ =	D F♯ A =	F A C =
iii in major	E G B =	B D F♯ =	G B♭ D =	D F A =
III in minor	A♭ C E♭ =	D F♯ A =	F A C =	G♭ B♭ D♭ =

2. Provide a Roman numeral analysis of the three passages of Example 17.18. Be sure to employ parentheses to indicate whether the chord in question is an embellishing harmony. Observe the presence and use of those harmonies discussed in this chapter.

Example 17.18

A.

e:

B.

f:

C.

d:

3. The following four progressions in Example 17.19 contain a variety of partwriting errors. First, analyze the harmonies in each passage with Roman numerals and then write a corrected version by filling in the alto and tenor in the provided staves.

Example 17.19

A.

C:

B.

D:

C.

g:

CHAPTER 18

Rhythm and Meter II:

ADDITIONAL METER SIGNATURES AND RHYTHMIC-METRICAL DISSONANCE

In Chapter 2 of Part One we introduced some basic concepts of rhythm and meter that underlie the music of the common-practice period. We now return to discuss some additional aspects of musical time in this chapter. These topics include the interpretation of meter signatures in very slow or very fast tempos, metrical organizations that display asymmetrical groupings of beats or beat divisions, and some rhythmic devices that conflict with the established metrical hierarchy, resulting in a kind of rhythmic or metrical dissonance.

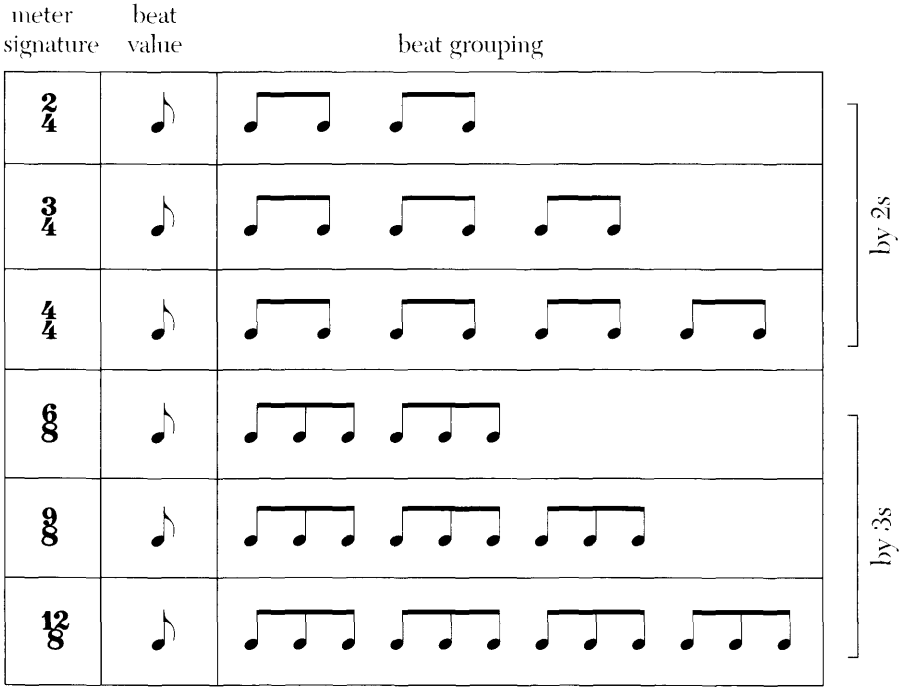
Meter Signatures in Very Slow or Very Fast Tempo

When the tempo of a composition is either very slow, indicated in Italian by *Grave*, *Lento*, or *Adagio*, or very fast, indicated in Italian by *Vivace* or *Presto*, the meter signature must be interpreted differently from those procedures described in Chapter 2. Since in very slow tempos the original beat has become too slow and cumbersome to mark the beat efficiently, we substitute the faster and more manageable *beat division*. For instance, in an *Adagio* $\frac{3}{4}$, each of the three very slow quarter-note beats is divided into

eighth notes, resulting in six faster beats within each bar arranged in a 2 + 2 + 2 grouping (♫ ♫ ♫); for an example, see Example 28.17. In an *Adagio* $\frac{6}{8}$, each of the slow dotted quarter-note beats is likewise divided into eighth notes, resulting in six faster beats arranged in a 3 + 3 grouping (♫ ♫); for an illustration, see Example 38.1. We call this procedure a **divided beat.** The distinction between these two examples of six beats per measure (sextuple meter) lies in the different way the eighth notes or beats are grouped, which is made clear by the way they are beamed. A conductor will mark six eighth-note motions with the baton, but the manner in which the motions are grouped will differ; consult Figure 6 in Appendix 5 on conducting patterns. Figure 18.1 shows the interpretation of various meter signatures in very slow tempos using a divided beat.

Figure 18.1

Analysis of meter signatures in very slow tempos



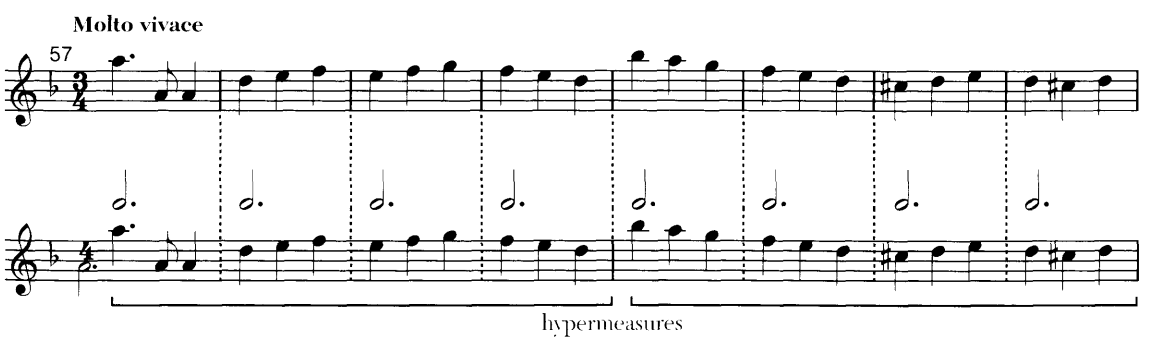
The opposite effect occurs when the tempo is very rapid and the beat becomes too fast for us to mark effectively. In such cases the slower note value representing the entire measure substitutes for the original beat value. For instance, when the signatures $\frac{3}{8}$ and $\frac{3}{4}$ are found in very fast tempos, the

respective beat values become ♩. and 𝅗𝅥., producing a compound beat division with only one beat per measure. As a result, the meter signatures could be represented as $\frac{1}{♩.}$ and $\frac{1}{𝅗𝅥.}$, respectively. This **compound single meter** is frequently found in waltzes (Example 18.11A) and scherzos (Examples 18.1 and 18.10). On hearing a typical Johann Strauss waltz in $\frac{3}{4}$, we tend to tap the beat on each 𝅗𝅥. rather than on each ♩.

Since we now perceive each measure as a single beat, it is only natural that these "beat measures" in turn should group themselves into larger metrical groups called **hypermeasures,** each containing two, three, or four "beat measures." We discussed this topic briefly in Chapter 12. One such example occurs in the Scherzo of Beethoven's Ninth Symphony, written in a fast compound single $\frac{3}{4}$. The composer instructs the conductor to "beat in four" (*quattro battute*), indicating that each bar gets one beat and that each group of four bars forms one hypermeasure containing four such beats ($\frac{4}{𝅗𝅥.}$); see Example 18.1. Later in the movement when the hypermetric grouping momentarily changes from four to three "beat measures," Beethoven writes the instruction "*tre battute*" (beat in three) in the score.

Example 18.1

BEETHOVEN: SYMPHONY NO. 9 ("CHORAL"), II



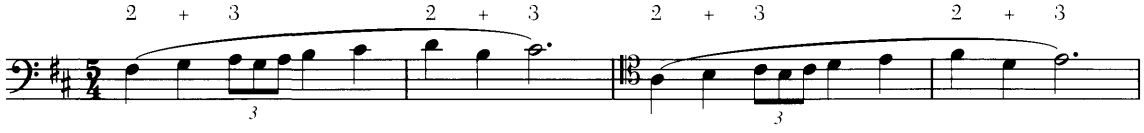
ASYMMETRICAL METERS

The meters we considered in Chapter 2 display regular beat groupings and beat divisions by either 2 or 3. **Asymmetrical meters** disrupt this regularity by incorporating groups of both 2 and 3. During the nineteenth century, Russian composers led the way in exploring the possibilities of these uneven metrical organizations, which tend to occur more frequently in music composed after 1900.

The most common asymmetrical meter is **simple quintuple meter,** such as $\frac{5}{4}$, in which the quarter-note beats are grouped either 3 + 2 or 2 + 3. Although one particular grouping is usually maintained throughout a passage, we may find alternations or a mixing of the two. The Tchaikovsky excerpt in Example 18.2, which displays a 2 + 3 grouping, suggests a kind of asymmetrical dance, prompting contemporary critics to entitle it the "Pegleg Waltz." Note the tenor clef, suggesting that this melody is most likely performed by the cello section of the orchestra, although bassoons are also possible.

Example 18.2

TCHAIKOVSKY: SYMPHONY NO. 6 ("PATHÉTIQUE"), II



Examples of **compound quintuple meter** are practically nonexistent. The unusual Debussy excerpt in Example 18.3 uses a dotted quarter note as the beat, resulting in a signature of $\frac{15}{8}$!

Example 18.3 DEBUSSY: "FÊTES" FROM *NOCTURNES*

FAST COMPLEX METERS

In fast asymmetrical meters, the grouping of beat divisions is complicated. In a fast $\frac{5}{8}$, for instance, the grouping of ♪'s into threes and twos (♩. ♩. ♩ ♩ ♩. or ♩ ♩. ♩ ♩. ♩) produces a **complex beat division;** the term "complex" refers to the inclusion of both two and threes. This grouping in turn creates long beats consisting of threes (♩. ♩. ♩. or ♩.) and short beats consisting of twos (♩ ♩ or ♩). Since there are two of these unequal beats in each measure, either ♩. ♩ or ♩ ♩., we call fast $\frac{5}{8}$ an example of **complex duple meter.** In Example 18.4a the asymmetrical grouping of eighth notes effectively pictures the constant ebb and flow of waves on the beaches of the Isle of the Dead. The Borodin scherzo is likewise grouped in a ♩ ♩. pattern (Example 18.4b).

Example 18.4

A. RACHMANINOFF: *THE ISLE OF THE DEAD*, OP. 29

B. BORODIN: SYMPHONY NO. 3 IN A MINOR, II

Although other complex meters are theoretically possible, they rarely appear in the common-practice literature. In a fast $\frac{7}{8}$ meter, the seven eighth notes are grouped into three long/short beats, resulting in either 2 + 2 + 3 (♩ ♩ ♩.), 2 + 3 + 2 (♩ ♩. ♩), or 3 + 2 + 2 (♩. ♩ ♩). Gershwin's "Fascinating Rhythm" (Example 18.16) uses a 2 + 2 + 3 grouping (♫ ♫ ♪♩).

RHYTHMIC-METRICAL CONSONANCE

There are three levels within the metrical hierarchy: beat division, beat, and meter. Assuming that the meter remains constant in a piece, the extended regularity of these three levels provides the basis of what we might call **rhythmic or metrical consonance,** to borrow a term from the realm of harmony. However, composers may intentionally introduce deviant elements into their music that disrupt the prevailing rhythmic and metrical regularity or consonance. These devices may occur at any of the three metrical levels given above.

RHYTHMIC DISSONANCE

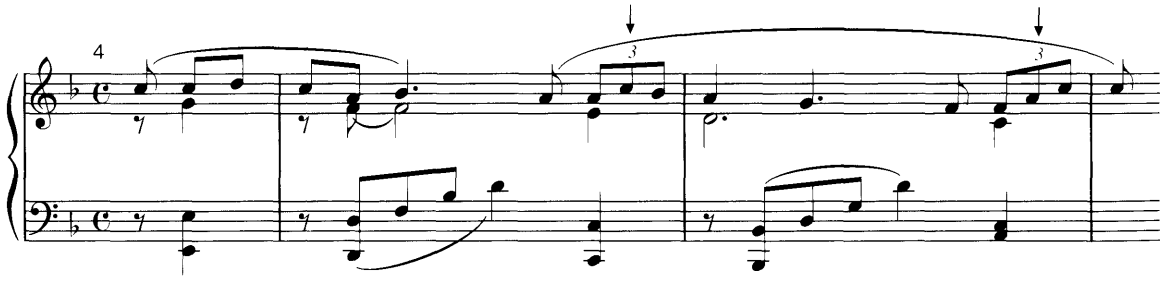
Certain rhythmic elements may momentarily conflict with the normal beat or beat division of the music but not disrupt our sense of meter regularity. We call such deviations **rhythmic dissonance.** In some cases this dissonance may produce only transient disruptions, while in other cases it may influence long passages. In a manner similar to the resolution of dissonant intervals, this momentary rhythmic dissonance usually resolves into the

established rhythmic norm or consonance. In our categorization of these devices, we will begin with those which are often barely perceptible and proceed to those which are more obvious aurally.

Substituted Beat Division involves the exchange of simple and compound beat division. In most cases compound division (written as *triplets*) is inserted into a simple meter (for in $\frac{2}{4}$), or simple division (written as *duplets*) is inserted into a compound meter (for in $\frac{6}{8}$). Although these duplets are traditionally written as in $\frac{6}{8}$, as Paul Hindemith points out in his *Elementary Training for Musicians*, they should be notated as duplets. Examples 18.5a and b show typical examples of both procedures.

Example 18.5

A. CLARA SCHUMANN: *PIÈCES FUGITIVES* OP. 15, NO. 1



B. DEBUSSY: *"EN BATEAU"* (*PETITE SUITE*)

This substitution may also occur within the subdivision of the beat. In the Chopin Nocturne, groups of 5 and 6 thirty-second notes occur within the eighth-note divisions (Example 18.6a). The *Scheherazade* violin solo (Example 18.6b) features a kind of double substitution—smaller triplet groupings ( ) within a large triplet substitute grouping ( ).

Example 18.6

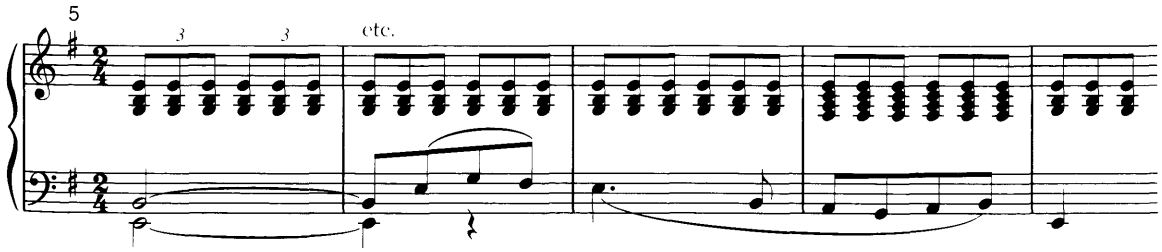
A. CHOPIN: NOCTURNE IN F-SHARP MAJOR, OP. 15, NO. 2

B. RIMSKY-KORSAKOV: *SCHEHERAZADE*, I

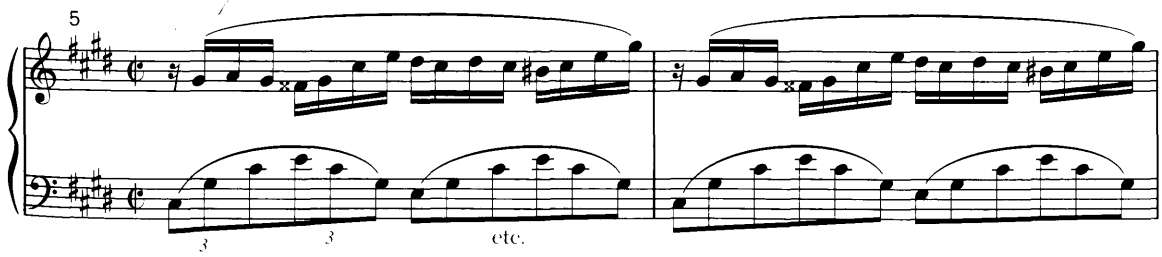
We use the term **superimposed beat division** to denote the simultaneous occurrence of both simple and compound beat divisions, which usually consists of a three-against-two pattern ( ). In the introduction to the Schubert song in Example 18.7a, this superimposition contributes to the depiction of the tempestuous torrent and wind described in the lyrics. Chopin incorporates a more difficult figuration of four against three sixteenth notes throughout the first section of his *Fantaisie-Impromptu* (Example 18.7b). In each passage, however, our sense of duple meter remains undisturbed.

Example 18.7

A. SCHUBERT: "AUFENTHALT" FROM *SCHWANENGESANG*



B. CHOPIN: *FANTAISIE-IMPROMPTU*, OP. 66



Syncopation shifts longer note durations, which normally occur on strong beats or on the beat, to a weaker or unstressed beat or divisions of the beat. For instance, in a typical pattern ♩ ♫ ♩, the quarter note is displaced and falls on the offbeat: ♪ ♩ ♪. Syncopation can take place across the bar line or within the measure, and at the level of either the beat or beat division, as shown in Example 18.8.

Example 18.8

Displaced accents, when dynamic accents or *sforzandi* markings, abbreviated as *sf* or *sfz*, occur on weak beats or beat divisions, often creates an effect similar to syncopation. In Example 18.9 Haydn draws our attention to the upbeat of each measure by *sforzandi*. In performing syncopated passages, you should avoid placing dynamic accents on syncopated notes unless they are specifically called for by the composer, as is the case in Example 18.10.

Example 18.9 HAYDN: SYMPHONY NO. 104 ("LONDON"), III

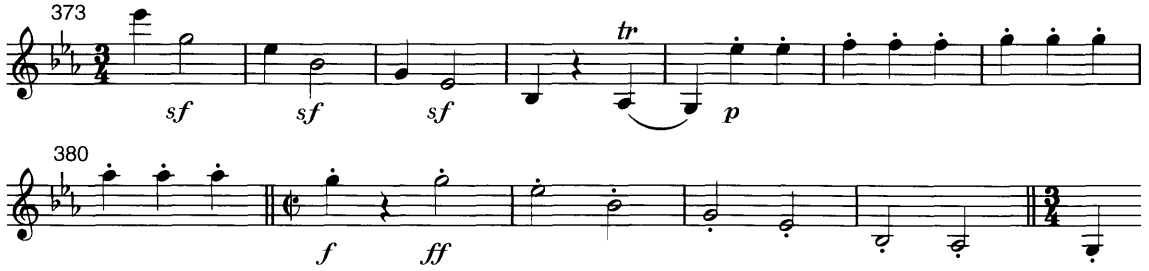
The short passage from a Beethoven scherzo in Example 18.10 contains three of the above devices. The passage opens with a syncopated E♭ arpeggiation, fortified with displaced *sforzandi*. After the brief *piano* respite, these same pitches are repeated, now using substituted beat division, two for three, in place of the former syncopation. Rather than notate the last four measures as half-note duplets, the composer simply changes the meter signature to ¢, which produces the same effect.

Types of Rhythmic Dissonance

1. **Substituted beat division:** Sections in compound meter are inserted in simple meter, or vice versa.
2. **Superimposed beat division:** Compound meter is imposed simultaneously over simple meter, or vice versa.
3. **Syncopation:** Longer notes are placed on weak beats or beat divisions.
4. **Displaced accentuation:** Dynamic accents are placed in weak metrical positions.

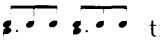
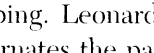
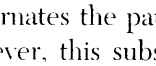
Example 18.10

BEETHOVEN: SYMPHONY NO. 3 ("EROICA"), III



METRICAL DISSONANCE

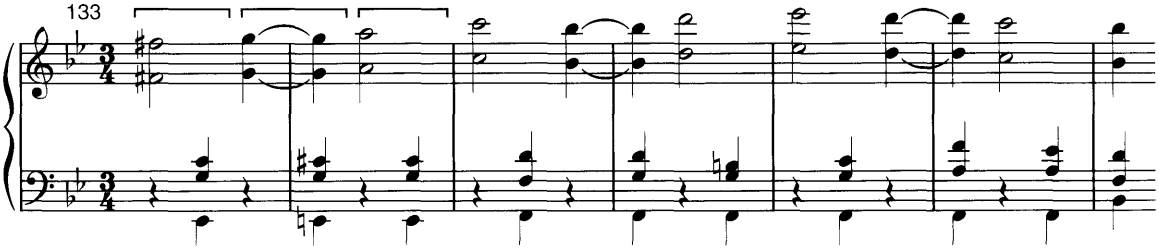
While the devices described above create momentary rhythmic conflicts, they usually do not disturb our overall sense of meter—that is, the number of beats in a measure or the strong-weak positioning of those beats. We will now examine some instances of **metrical dissonance,** in which the beat groupings and their accentuation are more seriously disrupted. Like their counterparts at the beat and sub-beat levels, these dissonances are eventually resolved. We will briefly discuss five such devices.

Hemiola represents a specific kind of simple-compound substitution that is possible when there are six beat divisions in each measure, such as $\frac{3}{4}$ versus $\frac{6}{8}$. It involves the switching of the $\frac{6}{8}$  triple-beat grouping and the $\binom{3}{4}$ duple-beat grouping. Leonard Bernstein's catchy song "America" from *West Side Story* alternates the patterns of 2 and 3 in succession: $\binom{6}{8}$  . However, this substitution may occur simultaneously as well: $\frac{3}{4}$  .

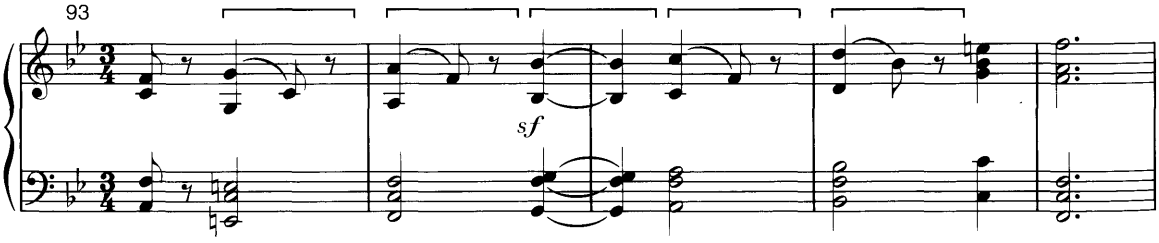
In many $\frac{3}{4}$ pieces, the triple hemiola grouping occurs over the bar line, implying three $\frac{2}{4}$ measures in place of two $\frac{3}{4}$ measures (Example 18.11a). Tchaikovsky resorts to this device time and time again in his waltz movements. The opening to the scherzo of Beethoven's Fourth Symphony features a hemiola that begins on the second beat (Example 18.11b). Example 18.11c illustrates an instance of 2 in the place of 3, in which an implied $\frac{6}{8}$ duple grouping is substituted for the normal $\frac{3}{4}$ triple grouping.

Example 18.11

A. TCHAIKOVSKY: WALTZ FROM *SLEEPING BEAUTY*, ACT II



B. BEETHOVEN: SYMPHONY NO. 4, III



C. CHOPIN: GRAND VALSE, OP. 42

In contrast to substituted beat division, which occurs within the beat, **substituted meter** takes place at the beat or multiple-beat level, resulting in a decided metrical conflict. For instance, three quarter-note triplets can be substituted for the normal pair of quarter-note beats: for . Richard Strauss's "Science" theme from *Zarathustra* (Example 18.12) employs two different forms of this device—the quarter-note triplets in measure 205 suggest a $\frac{6}{4}$ grouping, while the half-note triplets in measure 206 suggest a $\frac{3}{2}$ grouping. In addition to this contrived rhythmic setting, the twelve different pitch classes that appear in succession from the last note of measure 203 to the last note of 206 contribute to the depiction of science in this melody.

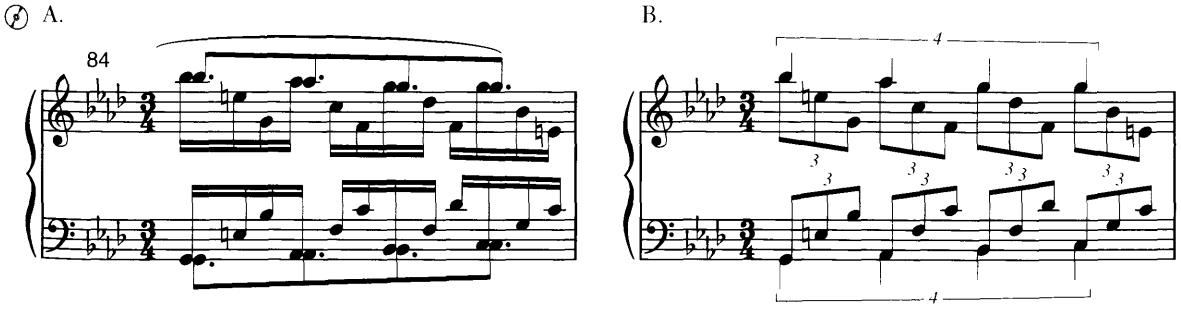
Example 18.12

RICHARD STRAUSS: *ALSO SPRACH ZARATHUSTRA*

Substituted meter may be applied to triple meter as well. In Example 18.13a, Brahms divides the $\frac{3}{4}$ measure into four equal parts (), suggesting quadruple meter, or four beats in the space of three. He could have also written it as a quadruplet figure, as shown in Example 18.13b.

Example 18.13

BRAHMS: CLARINET SONATA IN F MINOR, OP. 120, NO. 1, I



A related procedure occurs in George Gershwin's song "I've Got Rhythm." In the opening measure of the chorus (Example 18.14a), the first four notes occur in the space of three beats; an alternative notation is appended. Unfortunately, this catchy rhythm is usually performed as a simple syncopation (), even by the illustrious singer who first introduced it.

In the initial bar of Glen Miller's standard "String of Pearls" (Example 18.14b), this device is reversed, so that the 4 in 3 occurs at the beginning of the measure. Again an alternate notation, spanning two bars, is given.

Example 18.14

A.

B.

Polyrhythm refers to the superimposition of different beat groupings. Both of the excerpts in Example 18.15 use septuplets (groupings of 7), but they are set against backgrounds of duple meter in the Schumann and triple meter in the Stravinsky. Note the use of displaced accents in the latter, suggesting $\frac{2}{4}$ meter.

Example 18.15

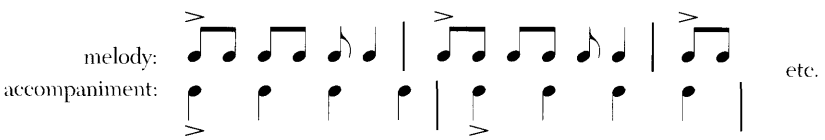
(f) A. SCHUMANN: "EUSEBIUS" FROM *CARNAVAL*

(f) B. STRAVINSKY: *PETROUSHKA*, 1ST TABLEAU (REVISED VERSION)

From here it is but a short step to **polymeter,** the superimposition of two different metric groupings. In Gershwin's "Fascinating Rhythm," successive

groupings in the melody (♫ ♫ ♪ ♪) clash with the continuing regular $\frac{4}{4}$ accompaniment (♩ ♩ ♩ ♩). Although the entire song is written in $\frac{4}{4}$, the polymetric conflict suggests that the two meters could be barred separately, as shown in Example 18.16; however, the bar lines will not synchronize.

Example 18.16 GERSHWIN: "FASCINATING RHYTHM," IMPLIED STAGGERED METERS



Metric shift displaces our sense of metric accent forward or backward by one or more beats. Once we have grown accustomed to this displacement of stressed and unstressed beats, a sudden return to the original accentuation can be surprising and even dramatic, as demonstrated near the end of Brahms's Second Symphony, measures 341–45 of the final movement. The notation of Schumann's pompous little march in Example 18.17 seems at odds with the music's natural feeling of upbeat and downbeat. Although the initial ♩. ♫ of each phrase occurs on the downbeat, it actually sounds more like an upbeat. At the conclusion of the piece, an additional beat, denoted by the arrow, suddenly shifts our sense of accentuation and allows the last chord of the piece to occur on the proper downbeat of the final measure. In this passage the implied stressed and unstressed beats are denoted with — and ˘ , respectively.

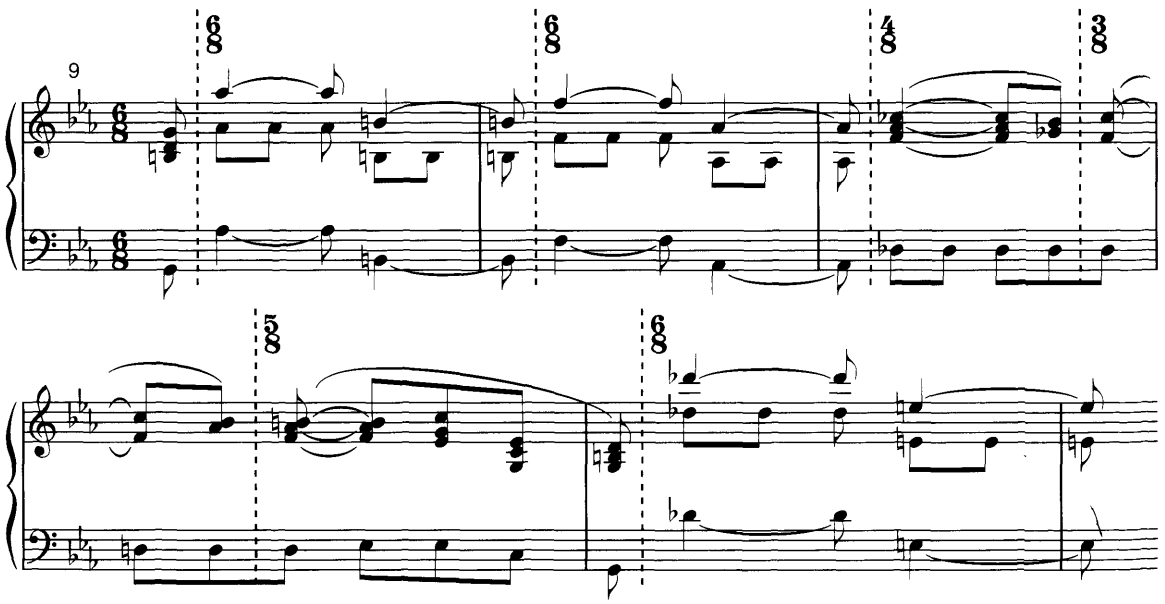
Example 18.17

SCHUMANN: "SOLDIER'S MARCH" FROM *ALBUM FOR THE YOUNG*, OP. 68, NO. 2

Changes of meter and meter signature within a passage are rare in the common-practice period. Again the nineteenth-century Russians were fond of this practice; see Example 5.1 in the accompanying Workbook, in which Musorgsky alternates between $\frac{5}{4}$ and $\frac{6}{4}$; the former implies a grouping of 3 + 2. German Romantic composers usually camouflaged these changes by retaining the same meter signature throughout the piece. In the introduction to his First Symphony (Example 18.18), Brahms not only employs an elaborate series of implied meter changes but also shifts the metric accent to the second eighth note. This passage uses a divided beat, in which the ♪ receives the beat.

Example 18.18

Brahms: Symphony No. 1, I



The opening horn solo in Richard Strauss's *Till Eulenspiegel* represents another instance of this disguised practice. The composer takes a simple tune and distorts its rhythm so as to imply various metric changes, although he continues to employ $\frac{6}{8}$ as the signature. This musical portrait of the prankster was doubtless autobiographical, picturing the rebellious young Strauss thumbing his nose at the reactionary critics of the time. Study Strauss's original $\frac{6}{8}$ notation and the meter changes it suggests in Example 18.19; the eighth-note beat division remains constant throughout.

Types of Metrical Dissonance

1. **Hemiola:** In $\frac{3}{4}$ or $\frac{6}{8}$, three beat groupings occur in the time of two, or vice versa.
2. **Substituted meter:** Large-scale triplets or duplets cut across the measure and suggest a different meter; several beat groupings occurring at once produce **polyrhythm.**
3. **Polymeter:** Two or more metric groupings occur simultaneously.
4. **Metric shift:** The primary accents of a metrical grouping are shifted forward or backward by one or more beats.
5. **Changes of meter:** The prevailing meter is disrupted by the introduction of different metric groupings.

Example 18.19

RICHARD STRAUSS: *TILL EULENSPIEGEL'S MERRY PRANKS*, OP. 28

A. ORIGINAL NOTATION

B. IMPLIED METER CHANGES

The preceding catalogue of disruptive rhythmic devices only begins to explore this topic. The employment of deviant gestures in one or more aspects of music—rhythm, pitch, texture, and dynamics—may signal the beginning of a process that can stretch over extended passages. In great masterworks the use of these devices is never arbitrary, but rather is carefully calculated to play an important role in the overall musical design.

Terms and Concepts for Review

divided beat
compound single meter
hypermeasure
asymmetrical meter
quintuple meter
complex beat division

rhythmic consonance
rhythmic dissonance
substituted beat division
superimposed beat division
syncopation
displaced accent
metrical consonance
metrical dissonance
hemiola
substituted meter
superimposed meter
polyrhythm
polymeter
metric shift
change of meter

A BRIEF REVIEW SELF-QUIZ

1. Match the appropriate letters to the numbers:

1. Syncopation
2. Complex duple meter
3. Compound single meter
4. Hemiola
5. Superimposed beat division
6. Superimposed meter
7. Quintuple meter
8. Displaced accent
9. Divided beat
10. Change of meter

A. Lento $\frac{9}{8}$
B. $\frac{3}{4}$
C. $\frac{2}{4}$
D. Moderato $\frac{5}{4}$
E. $\frac{6}{8}$
F. $\frac{4}{4}$
G. $\frac{2}{4}\ \frac{3}{4}\ \frac{4}{4}$
H. $\frac{5}{8}$
I. $\frac{2}{4}$
J. Vivace $\frac{3}{8}$

2. In the space provided, identify the rhythmic or metrical device employed in each separate measure.

Example 18.20

CHAPTER 19

The Leading-tone Seventh Chord and Other Seventh Chords

IN THIS CHAPTER we will complete our survey of the diatonic seventh chords by first examining some characteristics of the leading-tone seventh ($vii^{\circ 7}$) and its inversions in both minor and major modes. In the minor mode, the chord tones of the leading-tone seventh are all notes of the diatonic scale; in the major mode, however, the seventh of the $vii^{\circ 7}$ is an altered note, the flat sixth scale degree ($\hat{\flat 6}$). The main use of this chord in both modes is as a substitute for the V^7 and its inversions. We will begin our discussion with the leading-tone seventh in the minor mode, and then treat its counterpart, the $vii^{\circ 7}$ in the major mode. Later in the chapter we will examine the remaining diatonic seventh chords—I^7, IV^7, III^7, VI^7, and VII^7.

The Leading-tone Diminished-seventh Chord in the Minor Mode

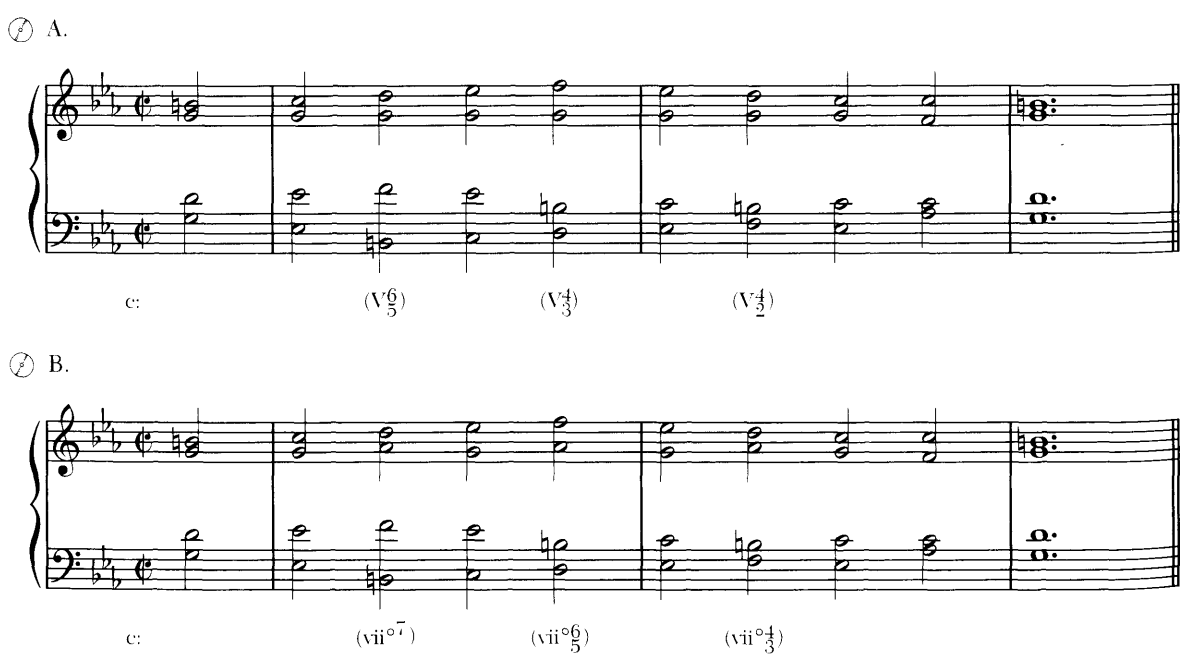
The $vii^{\circ 7}$ is a diminished seventh chord customarily found in the minor mode. It is constructed of three consecutive minor 3rds on scale degree $\hat{\sharp 7}$ or the leading tone (B D F A♭ in C minor). Since this sonority shares three common scale degrees with both the $vii^{\circ 6}$ and V^7, we will classify it with the

family of embellishing dominant harmonies (Example 19.1a). The bass notes of the various viii$^{\circ 7}$ inversions ($\hat{\sharp 7}$, $\hat{2}$, $\hat{4}$, and $\hat{\flat 6}$) function as active neighbors to the more stable chord members of the minor tonic triad ($\hat{1}$, $\hat{3}$, and $\hat{5}$), as shown in Example 19.1b.

Example 19.1

Since the vii$^{\circ 7}$ and its inversions normally function as embellishing harmonies within the phrase, we will leave them unstemmed in our models and voice-leading reductions and place their Roman numerals in parentheses. This chord is symmetrical; it divides the octave into four equal intervals, each consisting of three half-steps. Therefore, this chord has a very weak sense of root. Its embedded pair of tritones and ambiguous sonic properties convey a greater sense of tonal tension than the V^{7}. Play the two passages in Example 19.2 and note the difference between the V^{7}'s in the first and the vii$^{\circ 7}$'s in the second.

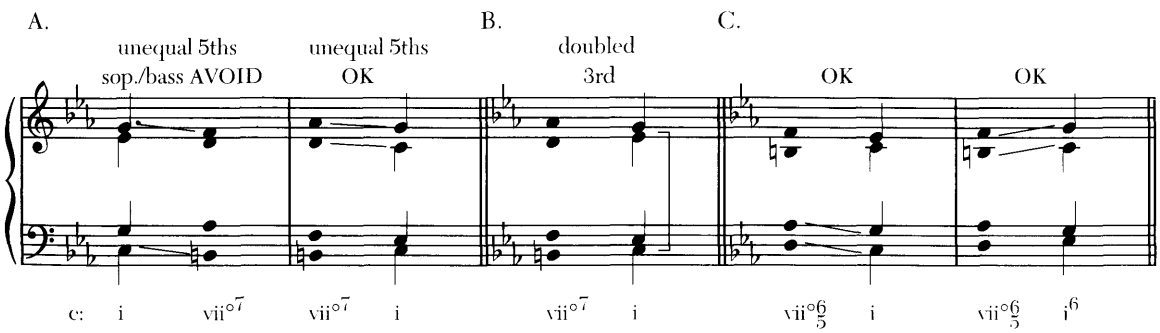
Example 19.2



PARTWRITING WITH THE vii°7 IN THE MINOR MODE

As was the case with other seventh chords, the chordal 7th ($\hat{6}$) of the vii°7 and its inversions is usually prepared by suspension, neighbor, or appoggiatura figuration and resolved downward by step. In certain situations, the stepwise motion found in the chord's resolution to the tonic may produce unequal 5ths between the soprano and bass or the upper voices (Example 19.3a). Composers usually make an effort to avoid these by doubling the chordal 3rd of the tonic triad (Example 19.3b). However, in the case of the vii^6_5, a close cousin to the vii°6, numerous instances of unequal 5ths do occur in the literature (Example 19.3c).

Example 19.3

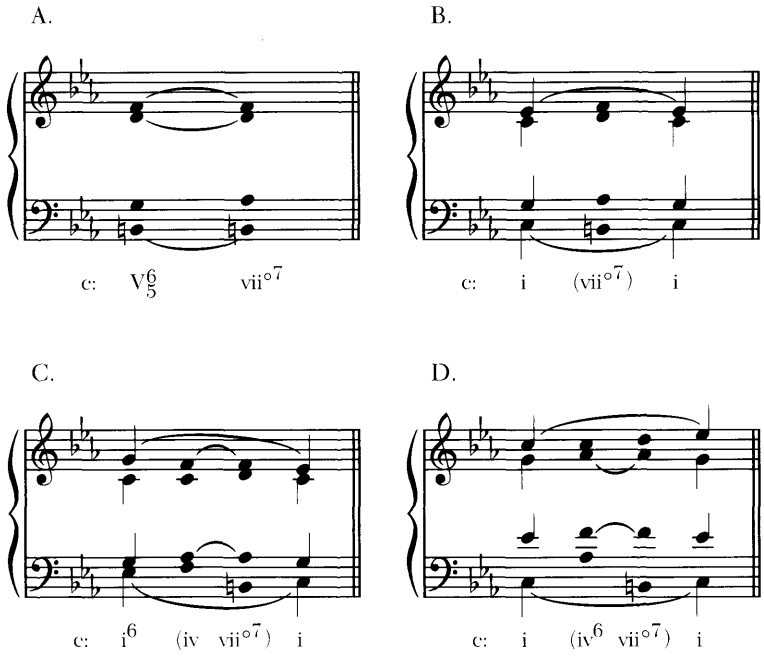


Since the vii°7 is closely linked to the V7 because of their similar pitch-class content, we shall relate the inversions of the vii°7 to inversions of V7 through the bass scale degrees they share in common.

The vii°7

Both the V^6_5 and vii°7 have the leading tone in the bass (Example 19.4a). The three models in Examples 19.4b through d show some typical bass contours, ranging from the stepwise neighbor motion $\hat{8}$-$\hat{\sharp 7}$-$\hat{8}$ through the tritone descent $\hat{4}$-$\hat{\sharp 7}$-$\hat{8}$ to the downward leap of a diminished 7th ($\hat{6}$-$\hat{\sharp 7}$-$\hat{8}$). Notice that a doubled 3rd is used in the last tonic triad.

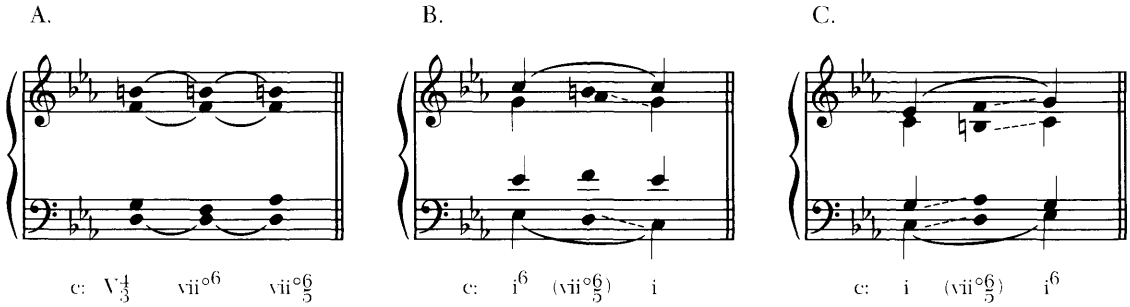
Example 19.4



The vii$^{\circ 6}_5$

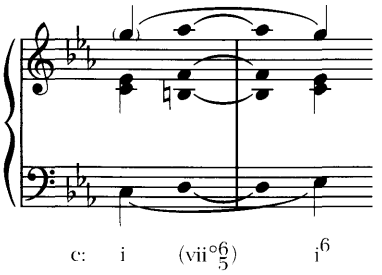
The vii$^{\circ 6}_5$ is closely related to the vii$^{\circ 6}$ and V$^4_3$ (Example 19.5a). They share not only the common scale degree $\hat{2}$ in the bass but the same function as passing chords between i and i^6. As is the case with the other two harmonies, unequal 5ths are characteristic of progressions involving the vii$^{\circ 6}_5$ (Examples 19.5b and c). One can avoid them by doubling the 3rd of the tonic triad, as Haydn does in Example 19.5d.

Example 19.5



D. HAYDN: PIANO SONATA IN E-FLAT MAJOR, HOB. XVI:38, II

E. (REDUCTION)

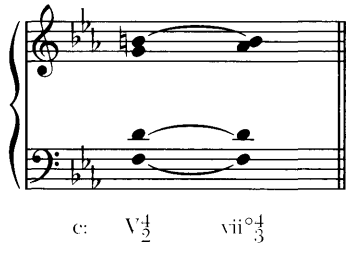


The vii°4/3

Scale degree $\hat{4}$ appears in the bass of both the vii°4/3 and the V^4_2 (Example 19.6a). Like the V^4_2, the vii°4/3 may be found either as a neighboring chord (Example 19.6b) or as a passing chord when moving from a $^6_4$ (Example 19.6c). In codetta or closing sections the vii°4/3 can also suggest an extension of the plagal cadence, since both have $\hat{4}$ in the bass. In the Bach excerpt (Examples 19.6d and e), the upper G♯4 acts as an inverted tonic pedal.

Example 19.6

A.



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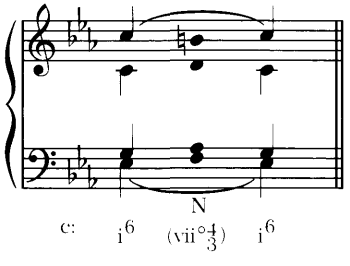

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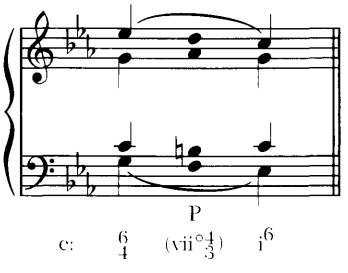
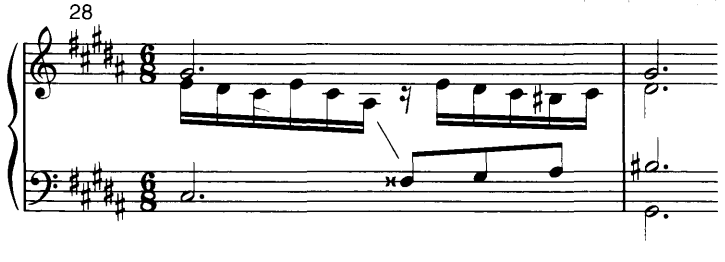
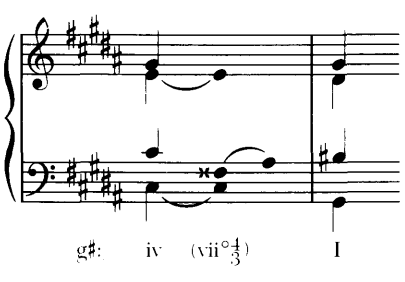


D. BACH: PRELUDE IN G-SHARP MINOR FROM *WELL-TEMPERED CLAVIER*, BOOK I



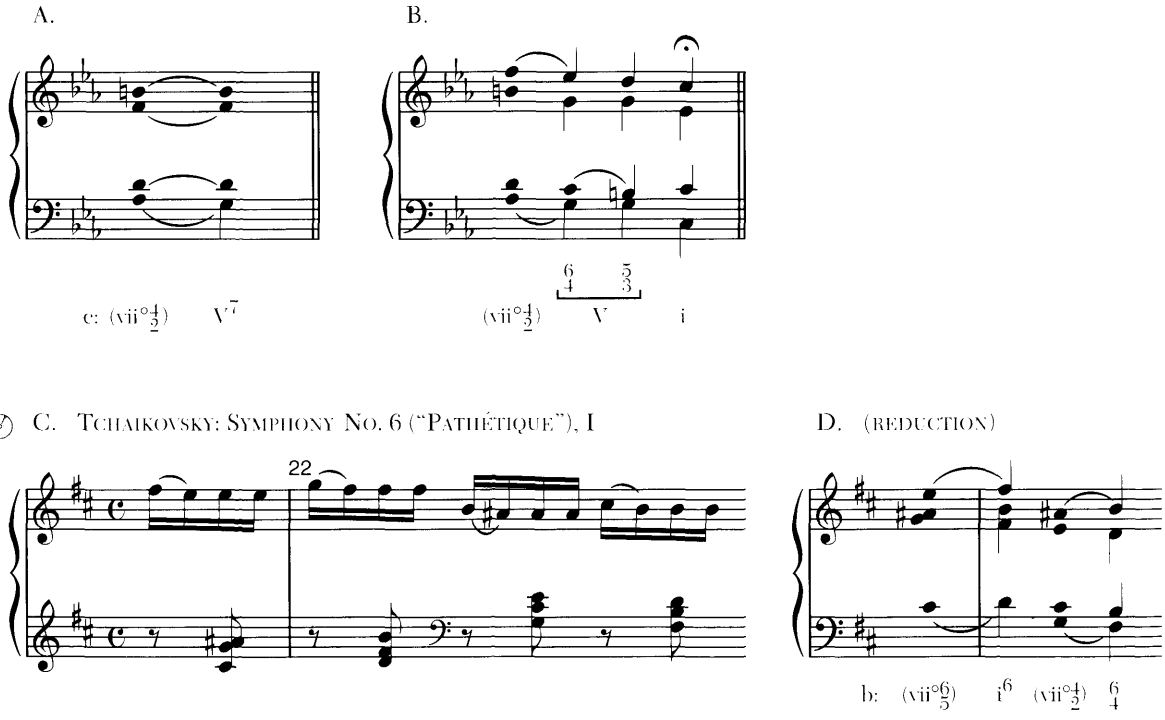
E. (REDUCTION)



The vii°$^4_2$

Since the chordal 7th ($\hat{6}$) of the vii°$^4_2$ is in the bass, it must resolve downward to $\hat{5}$, the root of either a V^7 or a $^6_4$ (Examples 19.7a and b). As a result, it is the least common inversion of the leading-tone seventh. The Tchaikovsky passage makes use of both a vii°$^6_5$ and vii°$^4_2$ (Examples 19.7c and d).

Example 19.7

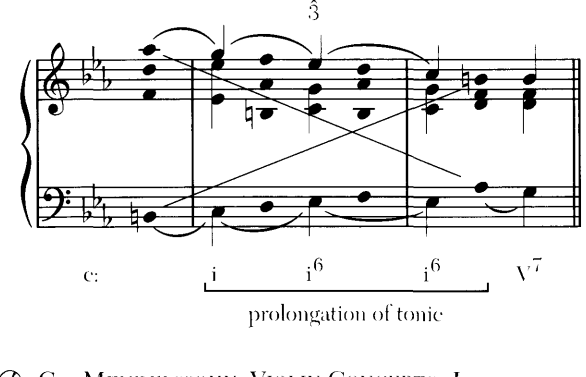


OTHER USES OF THE vii°^{7}

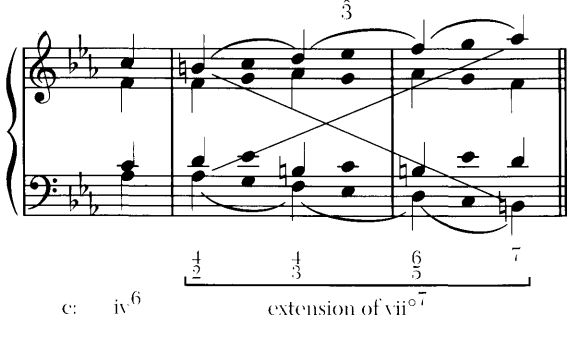
Leading-tone sevenths are often used to prolong a particular harmony. In Example 19.8a the tonic triad is extended by successive inversions of the embellishing vii°^{7}. On the other hand, in Example 19.8b the accentuated positions of the vii°^{7} chord within the measure suggest that it is now the leading-tone seventh that is extended. In arpeggiated vii°^{7}'s you may find instances of melodic augmented 2nds (bracketed in Example 19.8c), a melodic interval that is forbidden when used to connect two different chords.

Example 19.8

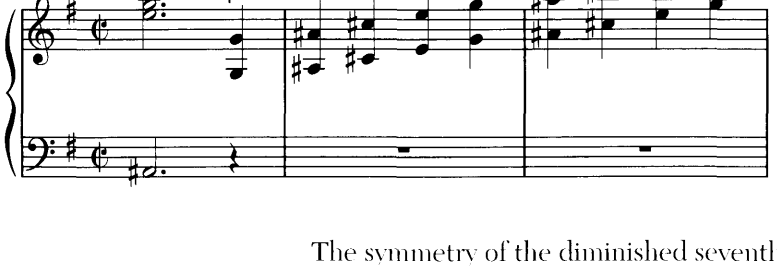
A.



B.



C. MENDELSSOHN: VIOLIN CONCERTO, I

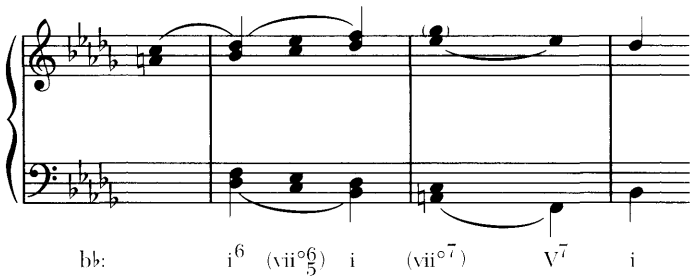


The symmetry of the diminished seventh chord is apparent if we observe how the bass and soprano lines mirror each other around scale degree 3̂ (E♭) in Examples 19.8a and b, producing the effect of a long-range voice exchange indicated by the crossed lines. Bach puts this inversional symmetry to good use near the end of his B♭ minor Fugue, quoted in Example 19.9a. Study the reduction in Example 19.9b. Note that the thirds in the tenor and bass are an inversion or mirror of the thirds in the soprano and alto, delayed by one beat, and that D♭, 3̂ of B♭ minor, is the axis or common note around which the two inversional strands revolve.

Example 19.9

A. BACH: FUGUE IN B-FLAT MINOR FROM *WELL-TEMPERED CLAVIER*, BOOK II

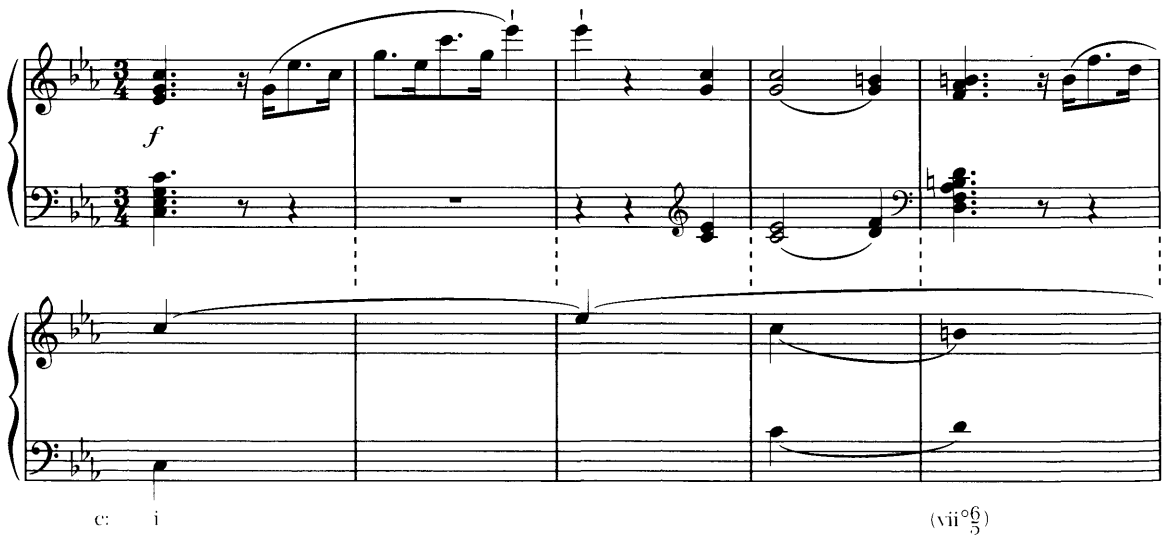
B. (REDUCTION)



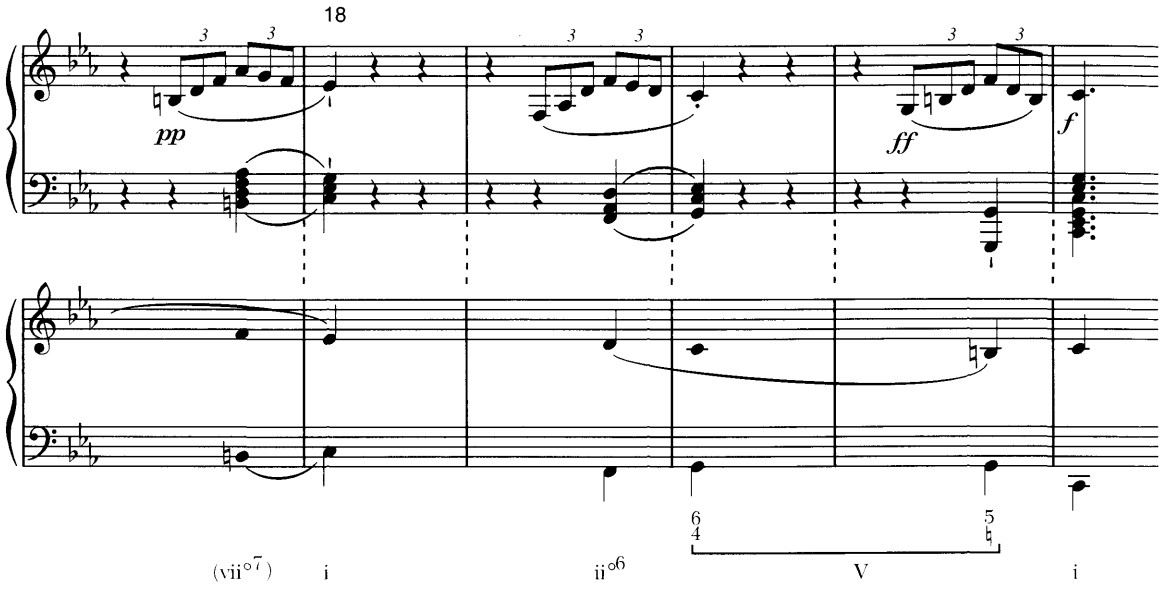
The lengthy tonic prolongation that opens the first movement of Beethoven's C Minor Piano Sonata Op. 10, No. 1 (mm. 1–18) relies heavily on various inversions of the vii°7. A voice-leading reduction is positioned directly below each line of the score in Example 19.10.

Example 19.10

(f) BEETHOVEN: PIANO SONATA IN C MINOR, OP. 10, NO. 1, I



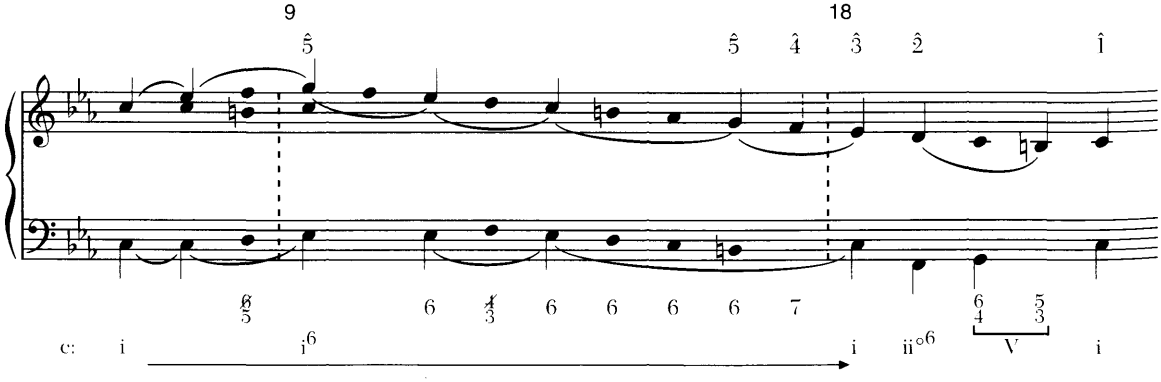
9
p
(vii°6/5) i6 i6 (vii°4/3) i6 i6
(vii°4/3) i6 i6 (vii°4/3) i6 (vii°6/5) 6 V6



The soprano first arpeggiates upward from C^5-$E\flat^5$-G^5 ($\hat{1}$-$\hat{3}$-$\hat{5}$) in measures 1–9, using the vii^{o6}_5 twice. This upper voice then makes two partial descents back to C^5 or $\hat{1}$ (mm. 9–12) before finally moving stepwise through the octave to G^4 or $\hat{5}$ (in measure 16). No less than four leading-tone sevenths in various inversions (vii^{o6}_5 and vii^{o4}_3) support this tonic prolongation (mm. 9–16). After measure 16, the music approaches the section's cadential punctuation through a stepwise descent from G^4 down to C^4 ($\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$), in which the last note of each triplet group fills in the upper voice during the final bars.

The further reduction in Example 19.11 more clearly illustrates the octave descent from $\hat{5}$ down to $\hat{5}$ before the cadential formula.

Example 19.11



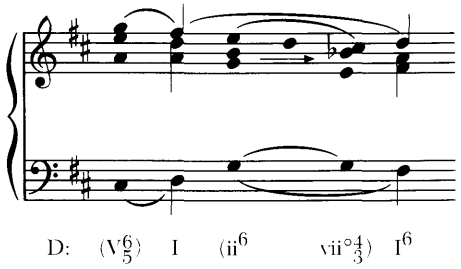
The Leading-tone Seventh Chord in the Major Mode

Because of the altered $\flat\hat{6}$ scale degree, the seventh chord built on the leading tone (vii$^{\circ 7}$ or B D F A♭ in C major) in the major mode tends to stand out more prominently than in the minor mode. Its function is almost identical to its twin in the minor mode, since their active bass scale degrees resolve to more stable members of the tonic triad. An example of a vii$^{\circ 4}_{3}$ appears in the Mozart excerpt (Examples 19.12a and b). This chord is particularly effective when it occurs over a tonic pedal (Example 19.12c).

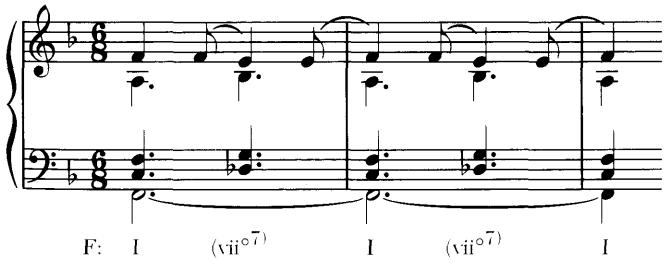
Example 19.12

A. Mozart: Sonata for Two Pianos in D Major, K.448, I

B. (reduction)



C.

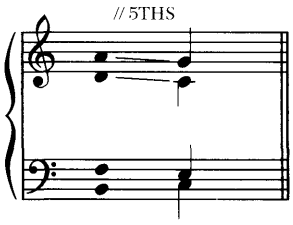


A second or diatonic form of leading-tone seventh is possible in major—a half-diminished seventh (vii$^{\varnothing 7}$) built on $\hat{7}$ and containing a minor 7th between the root and its chordal 7th (B D F A in C major). The function of this chord is very similar to that of the vii$^{\circ 7}$. It is even more important that you double the chordal 3rd of the tonic chord of resolution, since the stepwise motion from $\hat{6}$ to $\hat{5}$ now involves *parallel* rather than unequal 5ths (Example 19.13a). In Baroque compositions the vii$^{\varnothing 7}$ usually appears as a brief passing chord between IV^{6} and I (Example 19.13b). In his *Moment Musical*, Schubert first extends the 7th ($\hat{6}$) of this chord and then resolves it to $\hat{5}$ in a V^{6}, as shown in Example 19.13c and its reduction in 19.13d; in this case, we might

think of this figure as a kind of 7-6 suspension over dominant harmony. Finally, in Example 19.13e, the joyful cry of the Rhinemaidens employs a neighboring vii^{ø7} over a tonic pedal.

Example 19.13

A.

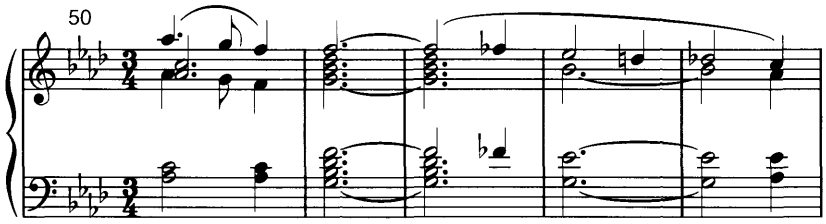


C: vii^{ø7} I

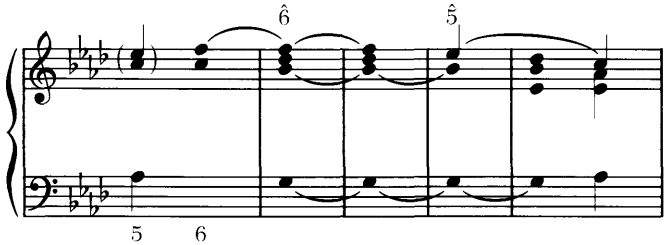
B. "JESU, MEINE FREUDE" (BACH CHORALE HARMONIZATION)

G: IV^{6} (vii^{ø7}) I

C. SCHUBERT: *MOMENT MUSICAL* NO. 6 IN A-FLAT MAJOR



D. (REDUCTION)



A♭: I (vii^{ø7} V^{6} $\frac{6}{5}$) I

E. WAGNER: *DAS RHEINGOLD*, SCENE I

C: (vii^{ø7}) I

MELODY HARMONIZATION

In melody harmonizations we may now harmonize the ♭6̂ scale degree in a minor-mode melody with a vii^{ø7} rather than the more usual iv. The leading-tone seventh chord also presents an alternative to using inversions of the V^{7}.

However, remember that substituting the vii°^{7} for the V^7 will render the character of the music more intense, dark, and foreboding, especially in the major mode.

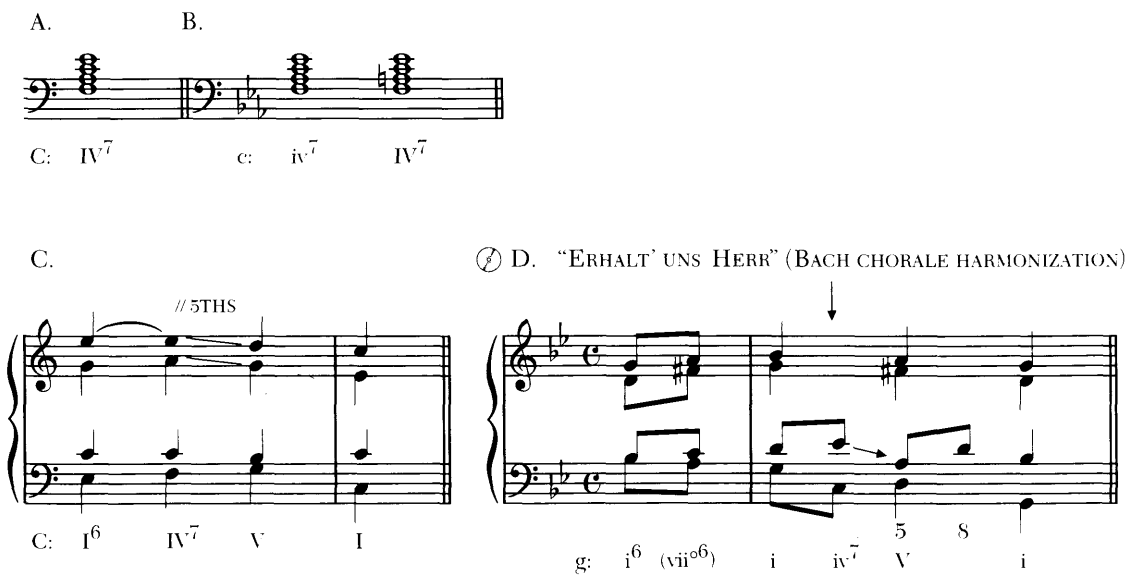
OTHER DIATONIC SEVENTH CHORDS: THE IV^7, I^7, VI^7, AND III^7

Of the remaining diatonic seventh chords, only those built on the subdominant and tonic may be said to lead independent lives of their own.

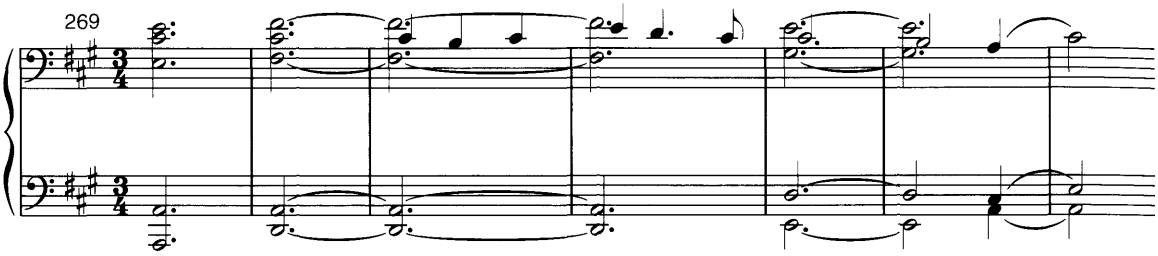
The Subdominant Seventh Chord

There are three forms of the subdominant seventh chord. In the major mode it occurs as a pungent major seventh chord (IV^7, F A C E in C major); in minor it appears either as a minor seventh (iv^7, F A♭ C E♭ in C minor) or as a major-minor seventh (IV^7, F A C E♭ in C minor); see Examples 19.14a and b. The preparation and resolution of the chordal 7th normally uses suspension figuration. It sometimes occurs in root position at authentic cadences (IV^7-V-I in major or iv^7-V-i in minor) with scale degrees $\hat{3}$-$\hat{2}$-$\hat{1}$ in the soprano. Since there is a strong likelihood of parallel 5ths in this setting (Example 19.14c), the alto must leap down to double the chordal 5th in the V chord. Bach often skips back up from the 5th to the octave or 7th in the V before resolving to I: $\hat{2}$-$\hat{5}$-$\hat{3}$ or $\hat{2}$-$\hat{4}$-$\hat{3}$ (Example 19.14d). In his Scherzo Chopin uses a different soprano line ($\hat{5}$-$\hat{6}$-$\hat{5}$-$\hat{5}$) that avoids the danger of parallel 5ths (Examples 19.14e and f).

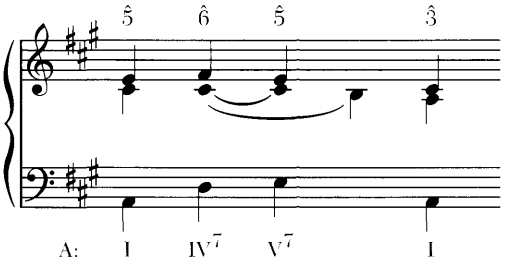
Example 19.14



E. CHOPIN: SCHERZO IN D-FLAT MAJOR, OP. 31



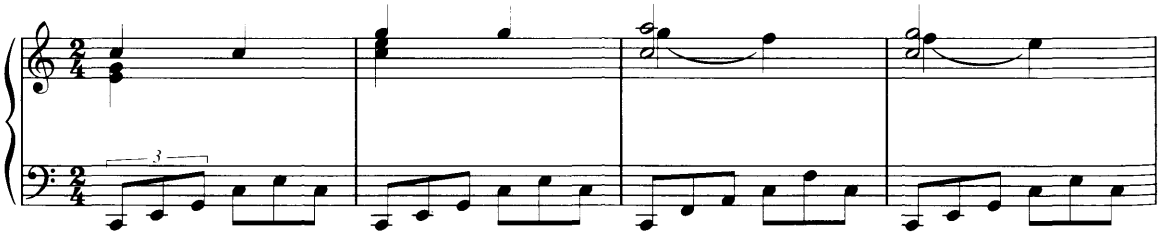
F. (REDUCTION)

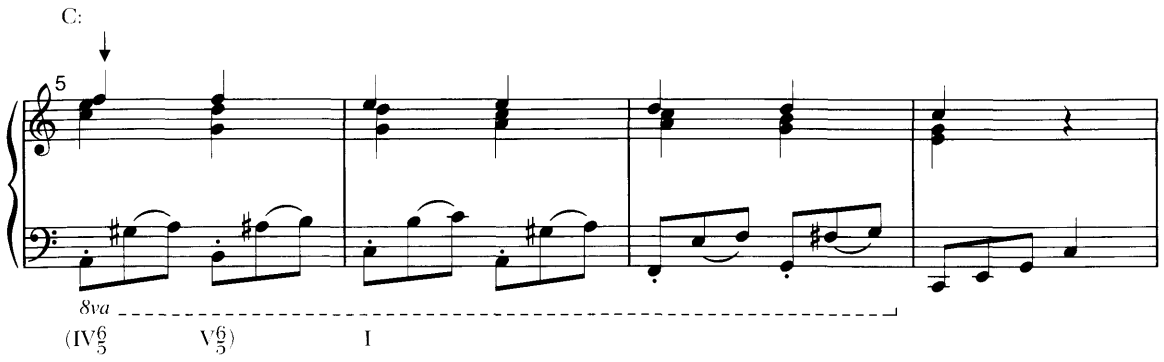


The embellishing IV^6_5 is usually followed by a V^6_5-I, resulting in $\hat{6}$-$\hat{7}$-$\hat{8}$ in the bass. This progression appears in Mozart's charming variation on the familiar "Twinkle, Twinkle, Little Star" tune (Example 19.15a). Note the variety of dissonances that appear on the first beats of measures 3-7. The G^5 in measure 3 is a 9-8 suspension in IV over a tonic pedal, the F^5 in measure 4 is a 4-3 suspension, the E^5 in measure 5 is the 7th of a IV^6_5, the D^5 in measure 6 is a 9-8 suspension, and the C^5 in measure 7 is the 7th of a ii^6_5. Since the IV^4_2 resolves to scale degree $\hat{2}$, that tone may support either a vii^{o6} (Example 19.15b) or even a ii or ii^7 (Example 19.15c). In the opening of Schubert's *Moment Musical* (Examples 19.15d and e), observe how the IV^7 resolves to a ii^6_5 in the manner of a 7-6 suspension; this dissonance is mirrored in measure 3 where a 4-3 occurs over a I^6.

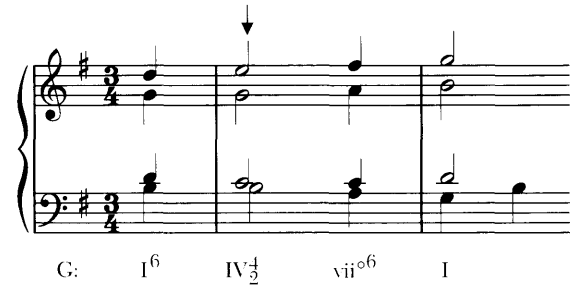
Example 19.15

A. MOZART: VARIATIONS ON "AH, VOUS DIRAI-JE, MAMAN," K.265, VAR. 4

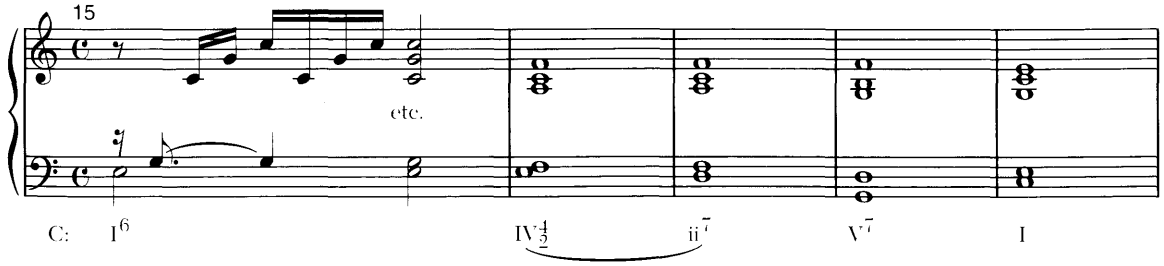




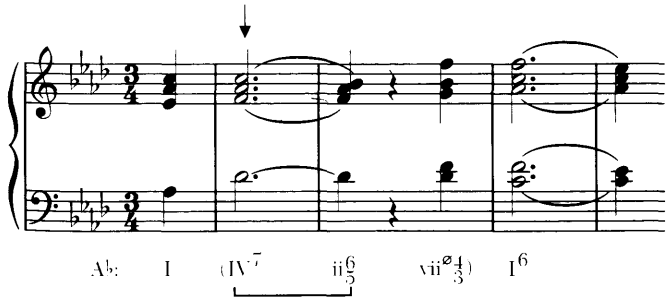
B. "CHRISTUS, DER IST MEIN LEBEN" (BACH CHORALE HARMONIZATION)



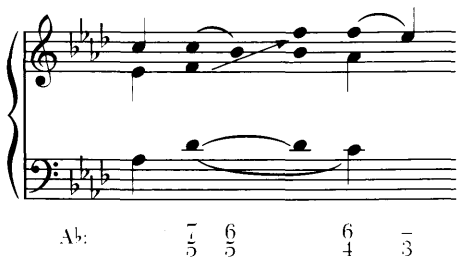
C. BACH: PRELUDE IN C MAJOR FROM *WELL-TEMPERED CLAVIER*, BOOK I



D. SCHUBERT: *MOMENT MUSICAL* NO. 6 IN A-FLAT MAJOR



E. (REDUCTION)

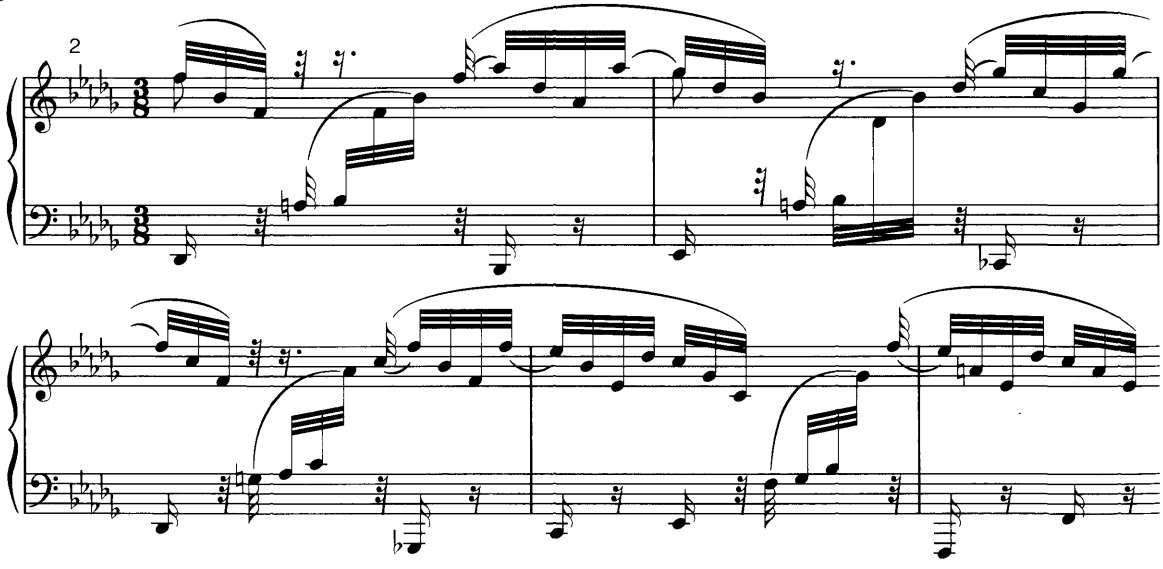


The Tonic Seventh Chord

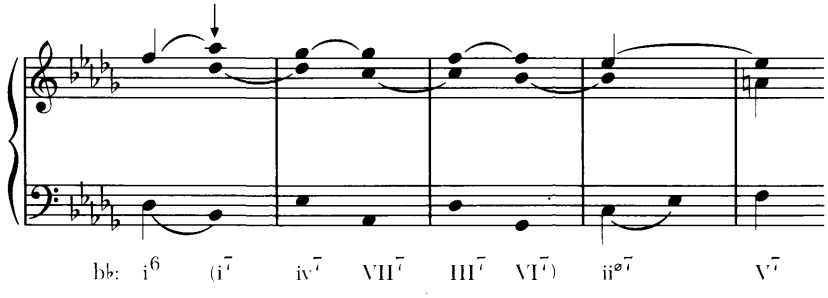
The addition of a 7th to the tonic triad transforms the normally stable I into an active harmony, creating a major seventh chord in major ($I^{\bar{7}}$, C E G B in C major) or a minor seventh chord in minor ($i^{\bar{7}}$, C E♭ G B♭ in C minor). This chord frequently appears in a progression of descending 5ths, either initiating the harmonic sequence (Examples 19.16a and b) or occurring within the sequence (Example 19.16c). In the lovely Rachmaninoff vocalise (Example 19.16d and e), the tonic $\frac{4}{2}$ is derived by passing motion. However, the most frequent use of this harmony occurs as the cadential tonic chord in popular or jazz compositions (Example 19.16f and g).

Example 19.16

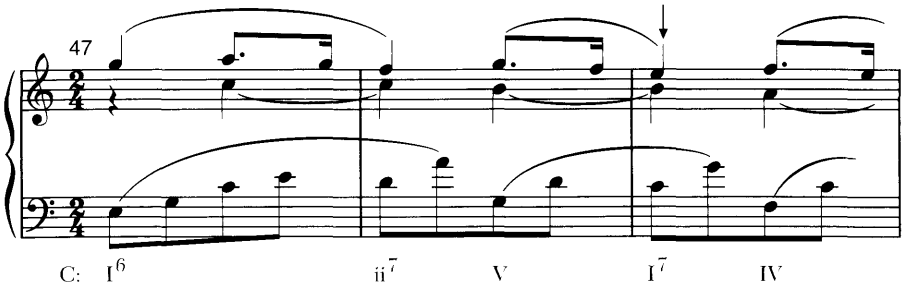
A. BRAHMS: INTERMEZZO IN B-FLAT MINOR, OP. 117, NO. 2



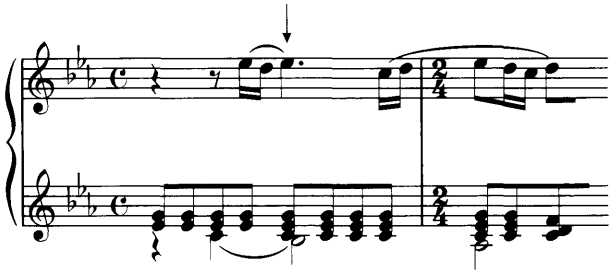
B. (REDUCTION)



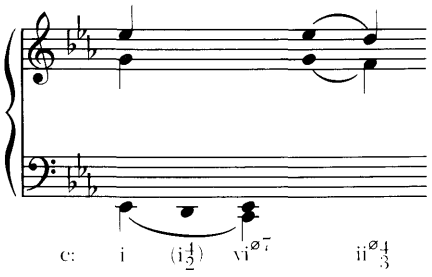
C. FRIEDRICH KUHLAU: SONATINA FOR PIANO IN C MAJOR, OP. 88, NO. 3



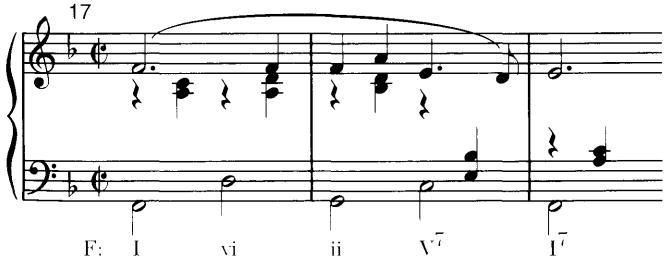
D. RACHMANINOFF: VOCALISE , OP. 34, NO. 14



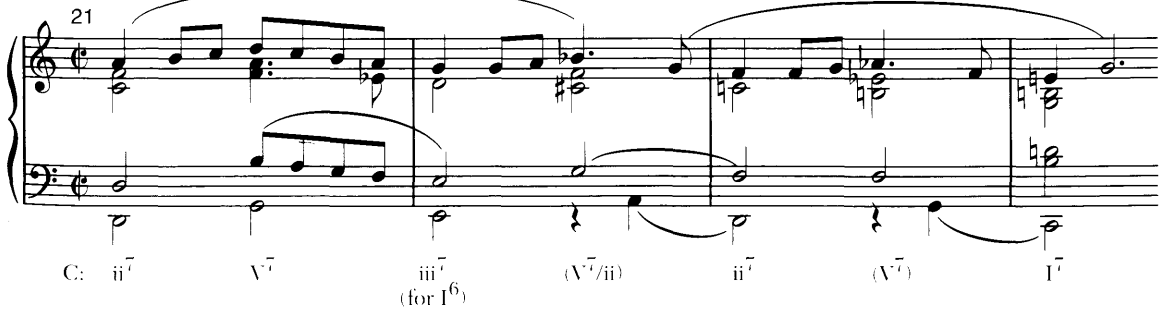
E. (REDUCTION)



F. JEROME KERN: "LONG AGO AND FAR AWAY"



G. RICHARD RODGERS: "YOU ARE TOO BEAUTIFUL"



The Submediant, Mediant, and Subtonic Seventh Chords

Although examples of vi^{7} and iii^{7} in major or VI^{7}, III^{7}, and VII^{7} in minor rarely occur in isolation, they often form part of a sequence of seventh chords that descends by fifths, a topic we will discuss in detail in Chapter 20. One such sequence occurs in the Brahms Intermezzo (Examples 19.16a and b). In popular ballads, the iii^{7} in major often substitutes for a tonic chord (see measure 2 in Example 19.16g). The use of these diatonic seventh chords is largely a matter of personal discretion in melody harmonization. Be wary of parallel 5ths when using the subdominant seventh in root position.

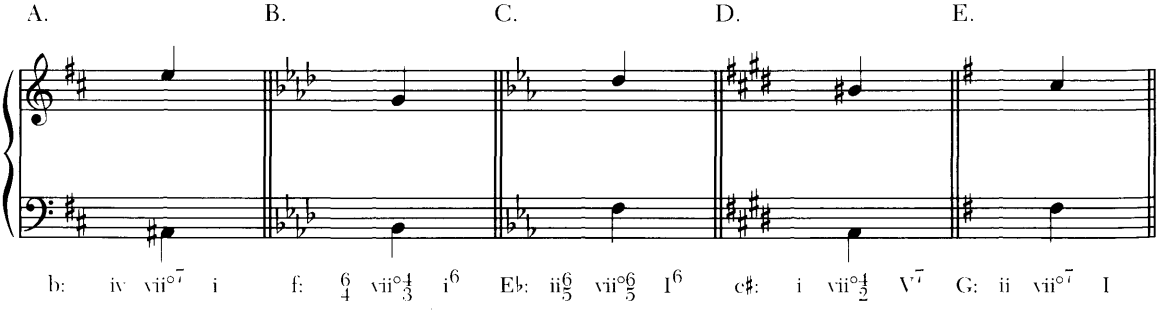
Terms and Concepts for Review

vii$^{\circ 7}$ vs. V^{7}
inversions of vii$^{\circ 7}$ in minor
leading-tone seventh in major
inversions of vii$^{\circ 7}$ in major
the vii$^{\circ 7}$ in harmonic prolongations
the subdominant seventh chord
the tonic seventh chord
the mediant seventh chord
the submediant seventh chord
the subtonic seventh chord

A SHORT REVIEW SELF-QUIZ

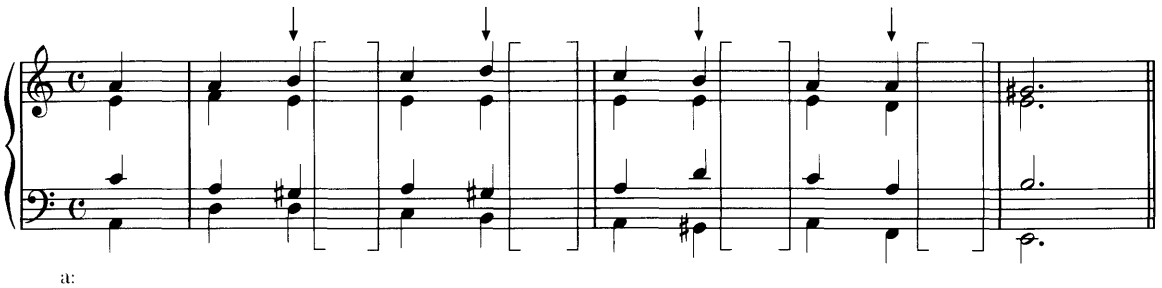
1. Given the Roman numerals, bass, and soprano of one of the diatonic seventh chords or its inversion in Example 19.17, complete the chord. Then resolve it correctly to tonic and prepare it properly using the indicated preceding chord. Note that several examples are set in the major mode.

Example 19.17



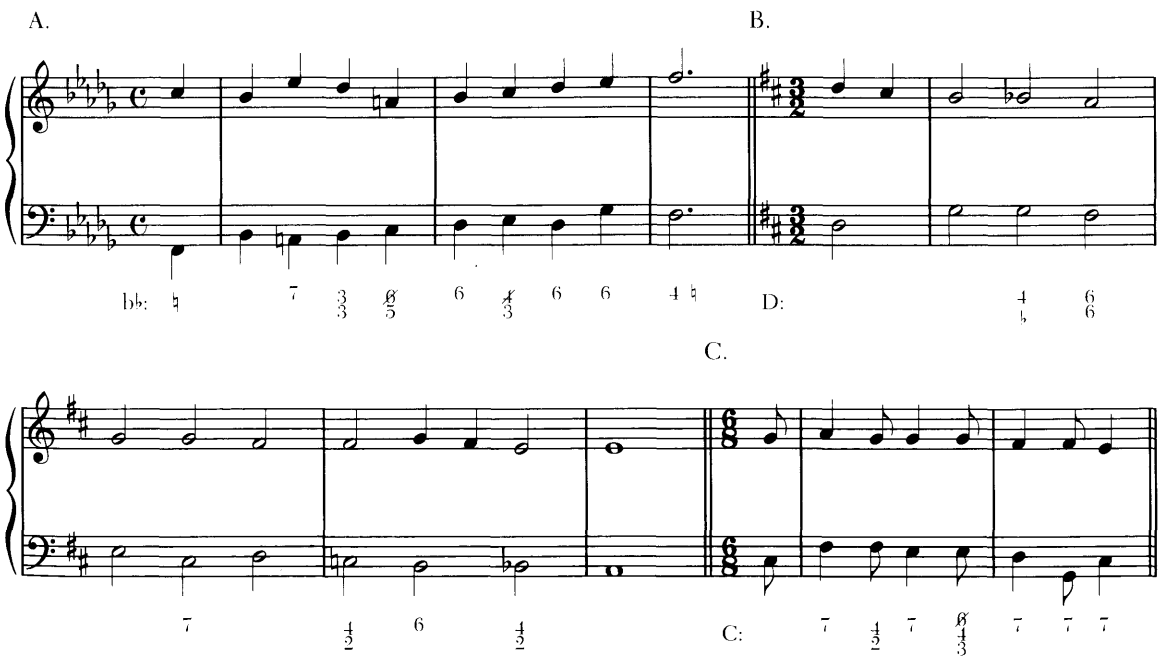
2. The following passage in minor employs a number of embellishing dominant harmonies. In the bracketed space to the immediate right of the each of these, substitute an appropriate vii°7 or its inversion. Be sure that you resolve the chordal seventh correctly.

Example 19.18



3. Realize the following figure-bass exercises in four-voice texture and analyze with Roman numerals. Make sure that all chordal sevenths are prepared and resolved correctly.

Example 19.19



CHAPTER 20

Harmonic Sequences I:

TRIADIC ROOT MOVEMENT BY 5TH, 2ND, AND 3RD

In Chapter 8 we introduced the idea that the natural tendency of harmony to proceed in familiar progressions was sometimes interrupted by melodic lines that create sequential progressions. As we noted, in such cases the linear movement of the voices is stronger than the harmonic tendencies of the chords, so that resulting sequential progressions take precedence over and interrupt typical harmonic progressions, such as the pre-dominant-dominant-tonic model. In this chapter we will explore the topic of harmonic sequences and their use in tonal music in greater detail, restricting our discussion to sequences of diatonic triads whose root movements consist of consecutive 5ths, 2nds, and 3rds. In Chapter 23 we will extend this discussion to sequences of seventh chords. Discussion of longer and more complex sequences of chromatic chords will be reserved for Parts III and IV.

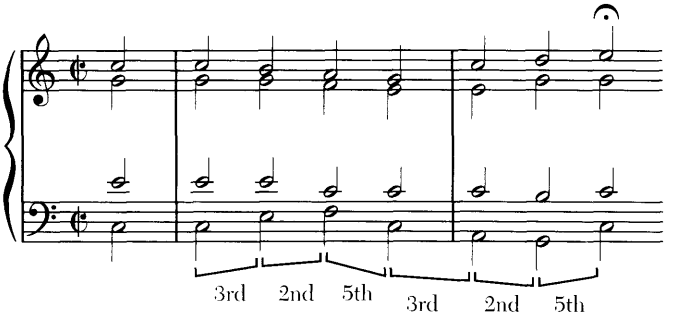
Sequential and Cyclical Root Movement

We first must define what we mean by sequential root movement. A series of chords whose roots move in a series of similar intervals—fifths, for instance—does not make the passage a harmonic sequence. We reserve the term "har-

monic sequence" for a passage in which the chord roots move in recurring patterns and all the voices move in recurring sequential patterns. When the recurring root movements are present but the voices do not exhibit sequential patterns, we refer to the root movement as "cyclical."

Most tonal music exhibits a variety of harmonic root movement. In the short phrase from a hymn setting in Example 20.1, we see an even distribution of three types of root movement—two examples of movement by 5th, two examples of movement by 2nd, and two examples of movement by 3rd.

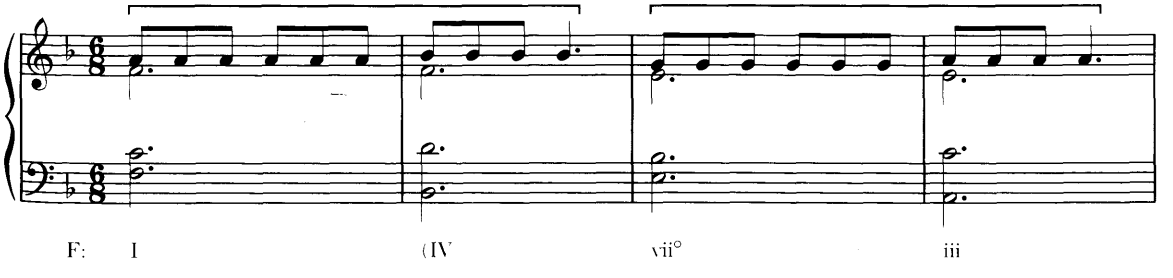
Example 20.1 Setting of "Old One Hundred" (hymn)



Our concern here is with passages that exhibit recurring patterns of both root movement and linear motion. Example 20.2 is a typical example. Note that the opening two-bar phrase is repeated three times, note for note in all the voices, moving down a diatonic step each time. The final repetition changes the soprano line slightly in order to lead to a perfect authentic cadence. The entire texture moves down a step at a time, while the bass line, made up of the chord roots, descends by a series of fifths—I-IV-vii°-iii-vi-ii-V-I. The combination of harmonic and melodic sequences makes this passage an example of **sequential root movement.**

Example 20.2

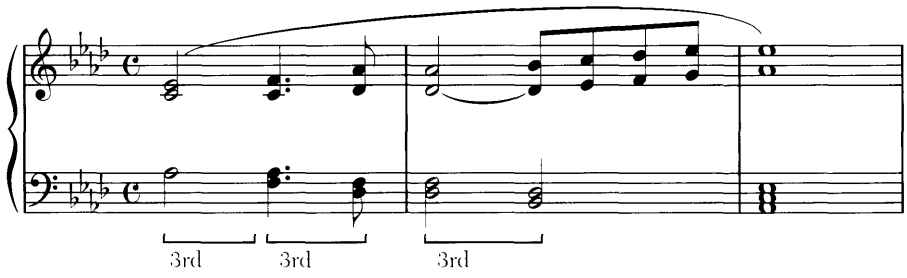
"Vive la Compagnie" (French folk song)



Wagner's setting of the "Dresden Amen" in Example 20.3 is based on a series of similar root movements in the bass line, a descending series of diatonic 3rds (I-vi-IV-ii). The other voices, however, go their individual ways, the tenor descending with the bass, and the soprano and alto moving upward. This passage is therefore an example of **cyclical root movement.**

Example 20.3

℗ WAGNER: PRELUDE TO *PARSIFAL*, ACT I



HARMONIC SEQUENCES

Examples of sequential root movement, in which the melodic motion of the upper voices is coordinated with the bass, restating a melodic gesture as the bass outlines its series of root movements by similar intervals, are called **harmonic sequences.** In this chapter we will examine the most common types of harmonic sequences and the root movements on which they are based. All root movements, both ascending and descending, fall into three basic categories, based on the interval between them or its inversion; roots move by 5th (or 4th), by 2nd (or 7th), or by 3rd (or 6th). Wherever you start, a series of root movements by any of these intervals will eventually cycle through all seven diatonic tones. Figure 20.1 shows cycles of descending 2nds, 3rds, and 5ths, starting downward from C. Ascending cycles work in the same way, and the cycle can be started on any note of the scale.

Figure 20.1

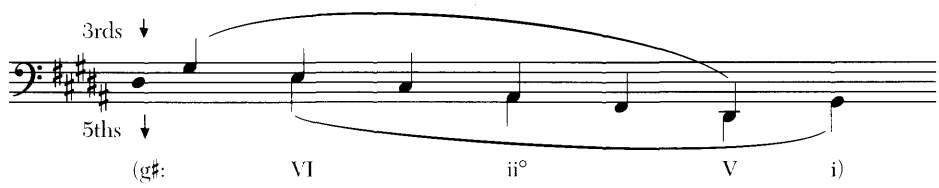
By 2nd	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G
By 3rd	C		A		F		D		B		G		E		C		A		F		D		B		G
By 5th	C				F				B				E				A				D				G
By 2nd									B								A								G

Notice how the various cycles are embedded or nested together. If you pick out every other note of the cycle of 2nds, you produce a cycle of 3rds; if you pick out every other note of that cycle, you produce a cycle of 5ths. Choosing every other note of the cycle of 5ths produces another cycle of 2nds, but at an elevated hierarchic level. Harmonic sequences in the literature often exhibit these interlocking patterns, but usually they stop short of cycling through all seven diatonic tones. The embedded patterns of 3rds and 5ths in the Brahms excerpt (Example 20.4) is a typical example. In the reduction, the upper slur connects the surface-level root movement by 3rds, while the lower slur connects the larger harmonic motion by 5ths. Note that this series of 5ths stops short of a full diatonic cycle.

Example 20.4

A. BRAHMS: INTERMEZZO IN E MAJOR, OP. 116, NO. 6

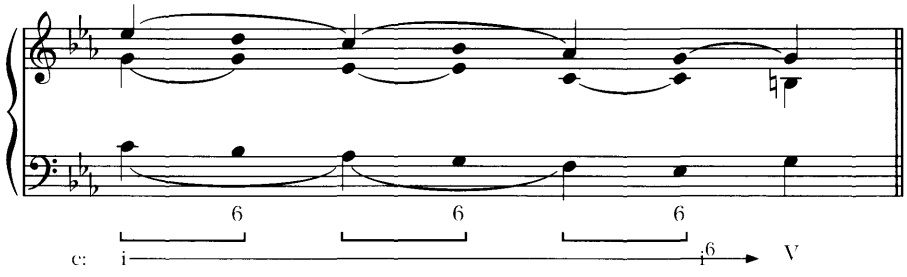
B. (REDUCTION OF BASS LINE ONLY)



We identify harmonic sequences by extracting the series of root movements of the chords, which may appear in inversions. It is the series of *root movements* that determines the type of harmonic sequence—by 5th, 2nd, or 3rd.

These progressions, as we have said, do not always follow standard harmonic tendencies. In fact, it generally makes little sense to label the individual chords in a sequence with Roman numerals, since the movement of both melodic lines and harmonies creates a linear pattern. In addition, sequences are frequently used to prolong the initial harmony. Therefore, in sequences we will label only the first chord and the last two cadence chords with Roman numerals. The contrapuntal motion within the sequence is indicated with figured-bass symbols, as in Example 20.5.

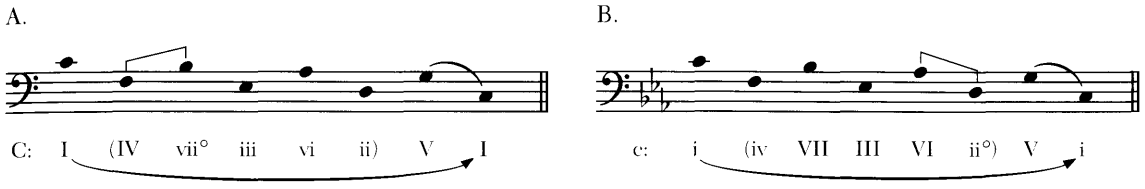
Example 20.5



Triadic Root Movement by Descending 5th

We begin our study of the common patterns of root movement, both descending and ascending, with the descending 5th. We can extend a descending cycle of 5ths through all seven diatonic notes without repeating any note—C-F-B-E-A-D-G-C. Since the complete pattern creates a long-range prolongation of a C tonic, it is especially useful in restoring a sense of tonal stability after a change of key. Example 20.6 shows the consecutive roots of cycles of 5ths in both major and minor modes.

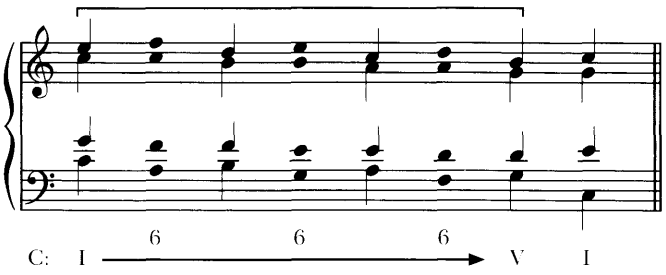
Example 20.6



Somewhere in the cycle, one of the 5ths must be diminished, or the series of perfect 5ths will take us outside the notes of the diatonic scale. Diminished 5ths occur between $\hat{4}$ and $\hat{7}$ in the major mode, and between $\flat\hat{6}$ and $\hat{2}$ in the minor mode, shown bracketed above.

Voice leading in sequences allows for occasional doublings that might not be tolerated in other contexts. Since the pattern established by the opening chords is maintained through the sequence, irregularities of doubling may occur, such as the doubled leading tone in the third chord of Example 20.7.

Example 20.7

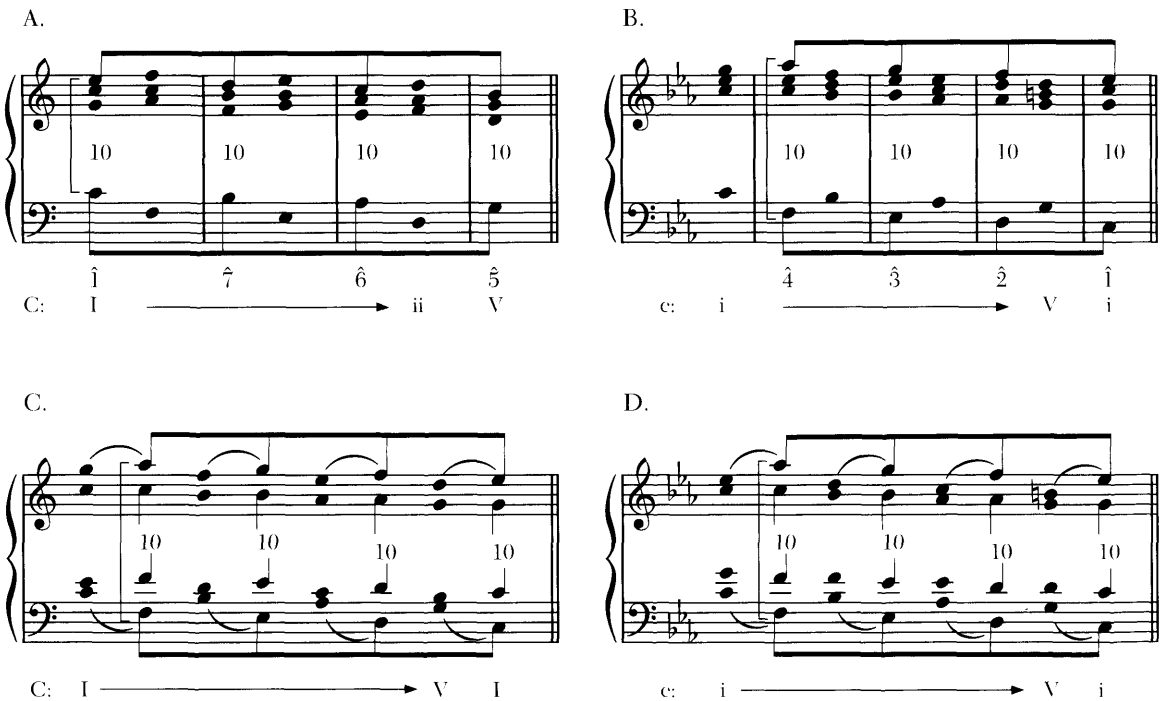


Triads in Descending 5th Sequences

In sequences of triads whose roots move in descending 5ths, the harmonic intervals between soprano and bass of every other chord form a stepwise succession of descending 6ths or 10ths. Remember Figure 20.1; root movement by 2nds is embedded in the movement of every other chord in a descending cycle of root movement by 5ths. To denote this stepwise motion, we will beam together the stems of the descending outer voices, as in Example 20.8. Depending on the metric accentuation of the chords, this stepwise motion will form one of two descending tetrachords in the bass, ending either on the dominant ($\hat{8}$-$\hat{7}$-$\hat{6}$-$\hat{5}$, as in Example 20.8a) or on the tonic

($\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$, as in Example 20.8b). Typical soprano lines move either by alternating melodic 2nds and 3rds (Example 20.8a-c) or 5ths and 4ths (Example 20.8d). Since these root-position triads move by descending 5ths, in your partwriting you should keep the same chord structure. Note also that in the minor mode the leading tone ($\hat{\sharp 7}$) does not appear in the sequence until the last V chord.

Example 20.8

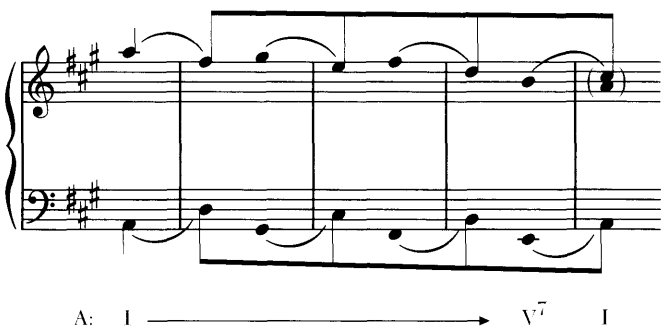


The cyclical theme of the third movement of Rachmaninoff's Second Symphony shows a complete pattern of 5ths downward from I to I, as the reduction makes clear (Example 20.9a and b). The "storm" section of Rossini's *William Tell* Overture employs a cycle of 5ths in the minor mode, decorated with a chromatic motive that alternates between the bass and soprano (Example 20.9c). Complete the voice-leading reduction begun in Example 20.9d, beaming the descending stepwise 10ths in the outer voices.

Example 20.9

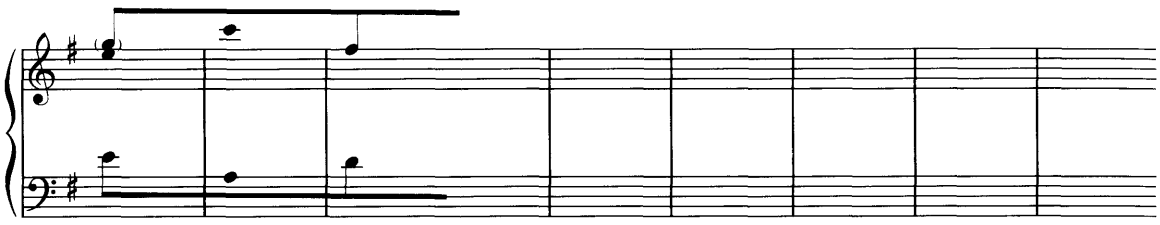
A. RACHMANINOFF: SYMPHONY NO. 2 IN E MINOR, III (SIMPLIFIED)

B. (REDUCTION)



C. ROSSINI: OVERTURE TO *WILLIAM TELL*

D. (REDUCTION)

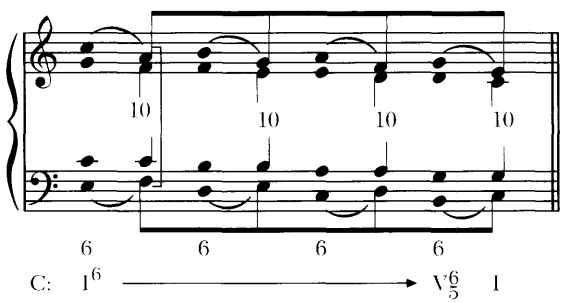


e: i

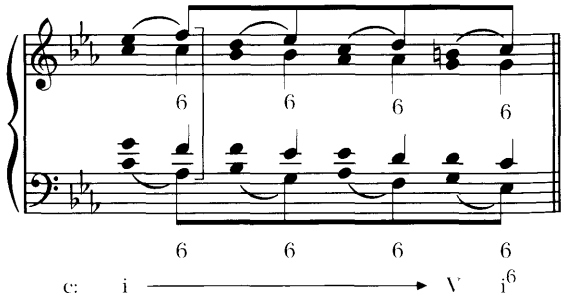
A common strategy for creating smoother voice leading in the outer parts of sequences of descending 5ths is to alternate root-position and first-inversion triads. As the models in Example 20.10 illustrate, either the first chord (Example 20.10a) or the second (Example 20.10b) may be inverted, after which the alternating pattern continues. Note that the succession of beamed descending 6ths in the second model is the exact inversion of the series of descending 10ths in the first. Also observe that in Example 20.10b, which is in the minor mode, the leading tone ($\hat{\sharp 7}$) does not appear until the final V chord.

Example 20.10

A.



B.

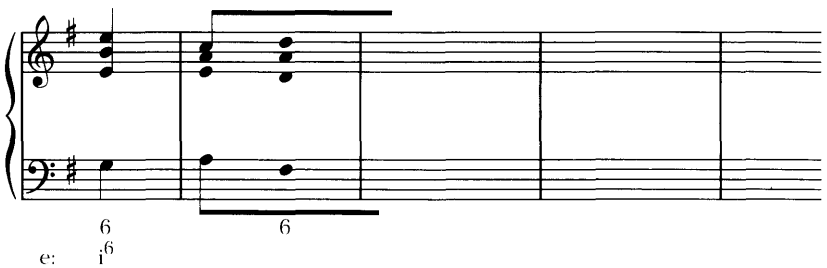


Identify the root movement in the Geminiani excerpt in Example 20.11a. Complete the voice-leading reduction (Example 20.11b), continuing to beam the descending 10ths.

Example 20.11

A. GEMINIANI: SONATA FOR VIOLIN AND CONTINUO IN E MINOR, LARGO

B. (REDUCTION)

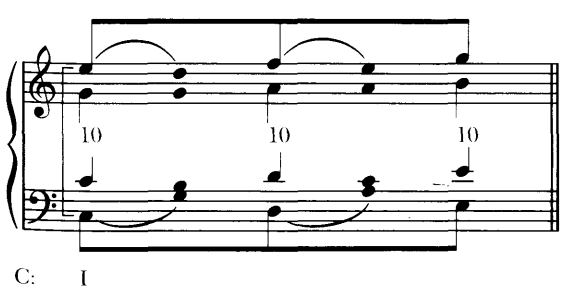


TRIADS IN ASCENDING 5TH SEQUENCES

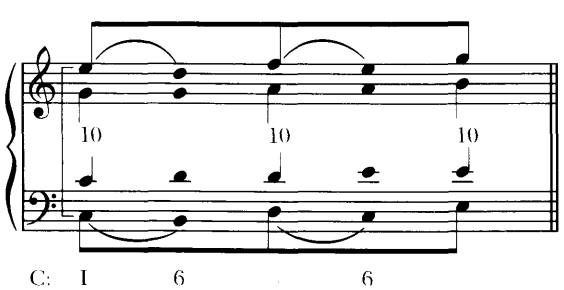
Sequences of triads moving by ascending 5ths are rare, since they direct the harmonic motion away from the tonic harmony. Sequences ascending by 5th appear only in the major mode and rarely progress beyond the mediant triad (I-V-ii-vi-iii). The reason for this limitation is clear; if the series were to continue beyond iii, the next chord would be the triad on $\hat{7}$, or the diminished chord vii°. In the voice-leading models (Example 20.12a and b), we beam every other note in the soprano and bass, revealing a pattern of ascending stepwise 10ths.

Example 20.12

A.



B.

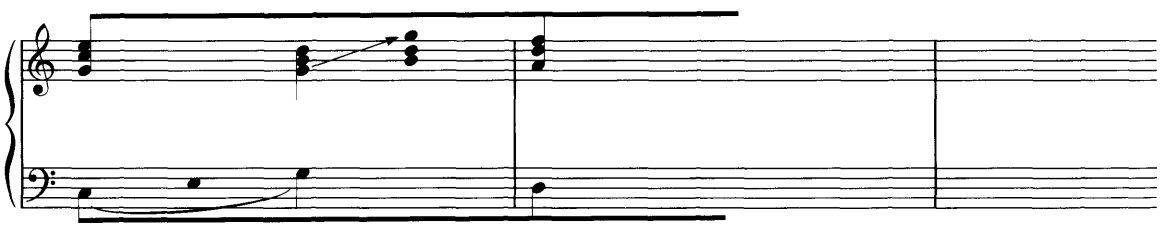


Example 20.13a is the opening of a Bach Prelude for keyboard. Complete the reduction begun in Example 20.13b. As you see, the circled dissonant notes are the first notes of 4-3 suspensions.

Example 20.13

A. BACH: LITTLE PRELUDE IN C MAJOR FROM *CLAVIERBÜCHLEIN*, BWV 924

B. (REDUCTION)



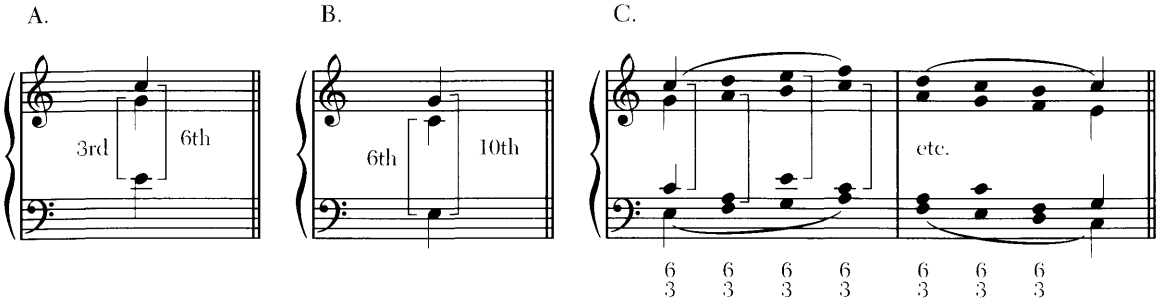
C: I

ROOT MOVEMENT BY 2ND: SUCCESSIVE FIRST-INVERSION CHORDS

In sequences of root movements ascending or descending by 2nds, we often find a series of consecutive first-inversion or root-position triads in sequential stepwise motion. We will consider the first-inversion chords first.

First-inversion triads (6 chords) can be arranged in two ways—as a $\frac{6}{3}$ with a 4th between the upper voices (Example 20.14a) or as a $\frac{10}{6}$ (still labeled a 6 chord) with a 5th between the upper voices (Example 20.14b). When a succession of 6 chords is set in four voices, it is necessary to vary the doubling—first the soprano note and then the alto note of alternating chords—in order to avoid parallel octaves and 5ths (Example 20.14c).

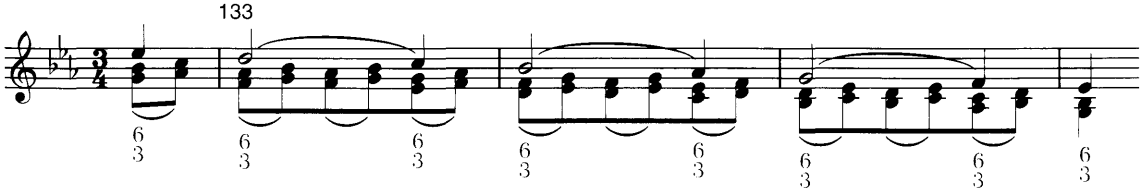
Example 20.14



Two examples of sequential first-inversion triads appear in Example 20.15a and b. The first is a Haydn scherzo whose theme is a simple ascending and descending major scale. In Example 20.15b, note that the descending first-inversion triads are embellished with 7-6 suspensions.

Example 20.15

A. HAYDN: STRING QUARTET IN E-FLAT MAJOR, OP. 76, NO. 6, III



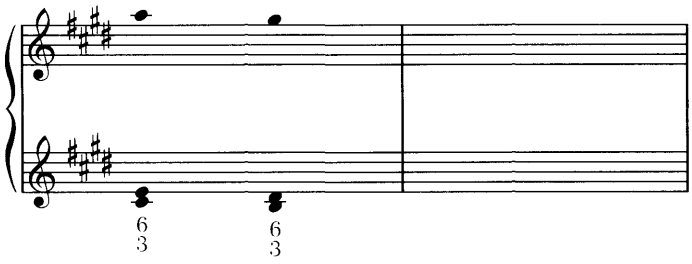
B.

The excerpt from Debussy's Arabesque (Example 20.16a) is a series of first-inversion triads descending by step. The opening theme of Beethoven's "Tempest" Sonata uses an ascending stepwise sequence of first-inversion triads. Complete the reductions that follow each example.

Example 20.16

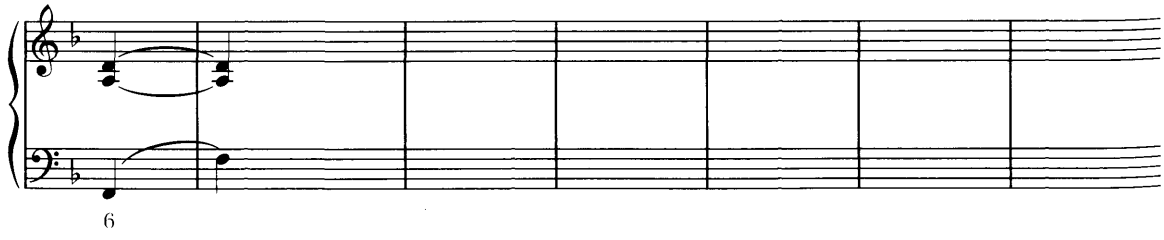
A. DEBUSSY: "ARABESQUE NO. 1"

B. (REDUCTION)



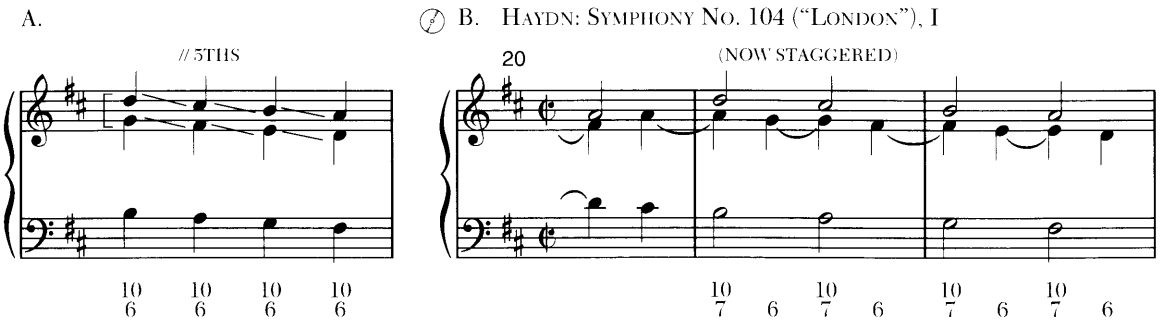
C. BEETHOVEN: PIANO SONATA IN D MINOR ("TEMPEST"), OP. 31, NO. 2, I

D. (REDUCTION)



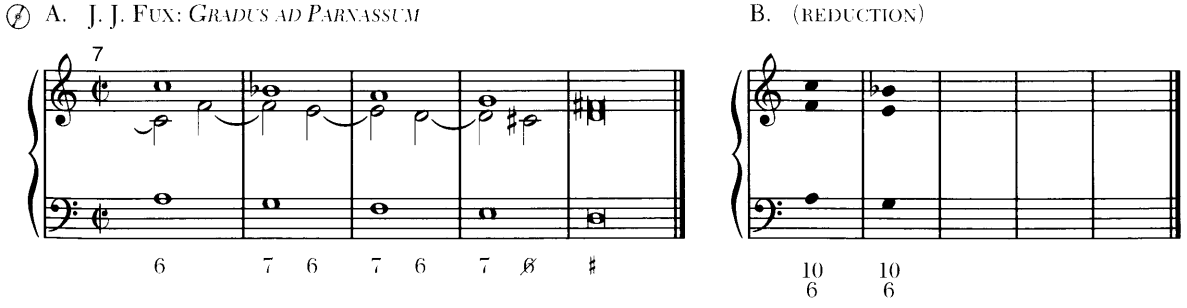
Since the $\frac{10}{6}$ contains a 5th between the upper voices, a succession of such sonorities obviously will produce parallel 5ths (Example 20.17a). The customary way of disguising these parallels is to use a series of 7-6 suspensions; the 5ths are then staggered, being shifted to the offbeats. Compare the effect of the model (Example 20.17a) to the way Haydn uses the same progression, masking the parallels through suspensions.

Example 20.17



As you complete the reduction of the Fux excerpt in Example 20.18, you will again see that the chain of suspensions is necessary to avoid parallel 5ths between the upper voices.

Example 20.18

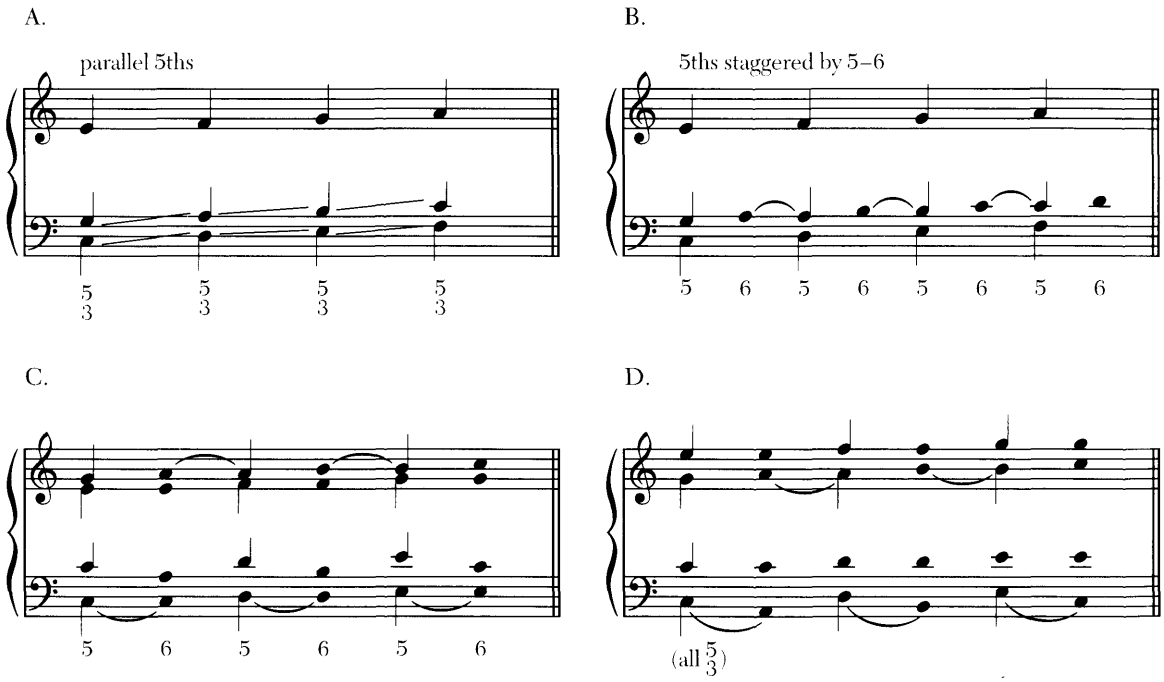


SEQUENCES OF ROOT-POSITION TRIADS IN STEPWISE MOTION

Since a series of ascending triads in root position will produce parallel 5ths between the bass and one of the upper voices (Example 20.19a), it is necessary in this case also to find a way to stagger the intervals and mask the parallels. The standard way to accomplish this is to use 5-6 motion above the bass of each chord, once again breaking up the continuous parallels (Example

20.19b). In Example 20.19c, we alternate the doublings, first doubling the tenor and bass, then the tenor and soprano, to avoid parallel octaves and 5ths. In Example 20.19d, the 6 of the alto's 5-6 motion is doubled in the bass; the result is a series of root-position triads, which are voice-leading chords resulting from the motion of the various lines.

Example 20.19



In Example 20.20, Palestrina begins an ascending stepwise sequence of root-position 5-6 triads, but stops the sequence in the third measure, using the vi chord as a pre-dominant chord to lead to a cadence on C.

Example 20.20

♪ PALESTRINA: AGNUS DEI II FROM *MISSA SANCTORUM MERITIS*

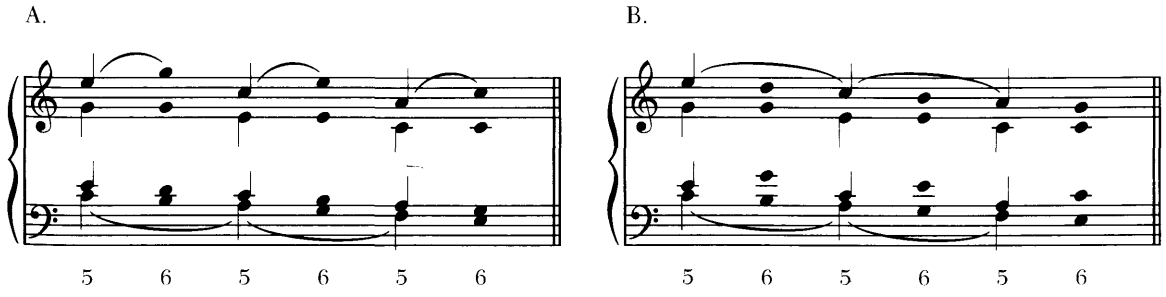
Root Movement by Descending and Ascending 3rd

Root movement by descending 3rds usually begins with the tonic chord and rarely progresses beyond the supertonic triad before breaking the pattern for a cadence: I-vi-IV-ii-V-I. A progression of root-position triads moving by 3rds will produce parallel 5ths between the bass and one of the upper voices (Example 20.21a). Composers mask these parallels by inserting a first-inversion chord between each of the root-position chords. This first-inversion chord, a passing chord that staggers the parallel 5ths, produces an **inverted 5-6** pattern in the bass (Example 20.21b), similar to the rising 5-6 pattern in Example 20.20.

Example 20.21

The three four-voice models in Example 20.22 illustrate variants of the basic 5-6 pattern with different soprano and bass lines. Note that the bass and alto of Example 20.22a and b are the same; the tenor and soprano change places. Example 20.22c illustrates the same change-of-bass procedure we saw in Example 20.19d, producing a series of root-position voice-leading chords.

Example 20.22

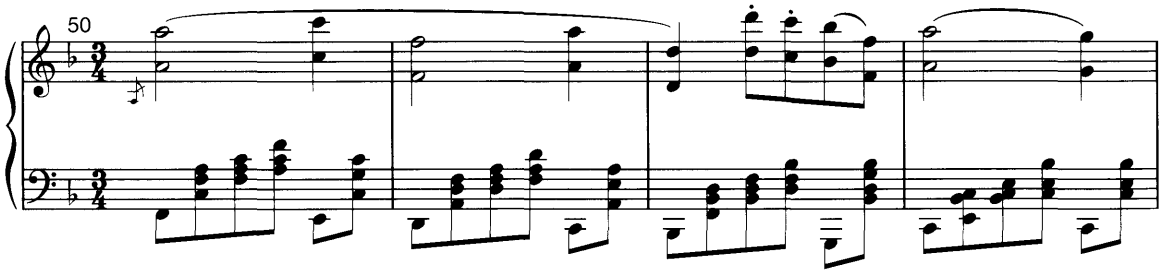


C.

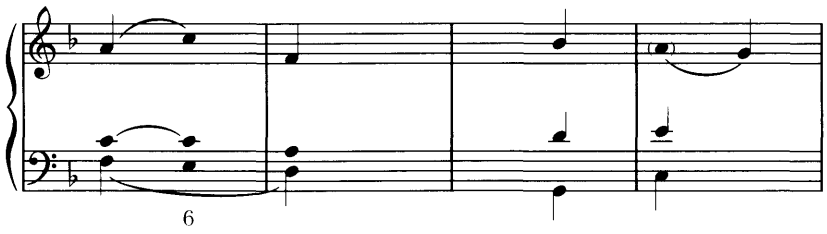
In Example 20.23, all the excerpts employ root movement by a series of descending 3rds. Complete the three reductions so that the sequential patterns are clear. Note that the third excerpt, Example 20.23e, uses only root-position triads in the changing-bass pattern.

Example 20.23

A. MASCAGNI: INTERMEZZO FROM *CAVALLERIA RUSTICANA*

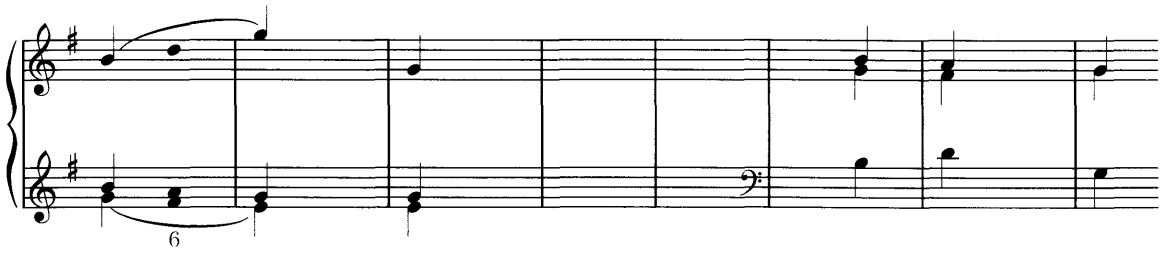


B. (REDUCTION)



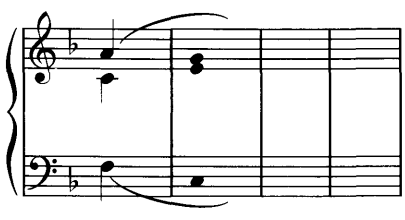
C. MOZART: QUINTET FROM *THE MAGIC FLUTE*, ACT II, K.620 (VOCAL PARTS OMITTED)

D. (REDUCTION)



E. GLIÈRE: SAILORS' DANCE FROM *THE RED POPPY*

F. (REDUCTION)

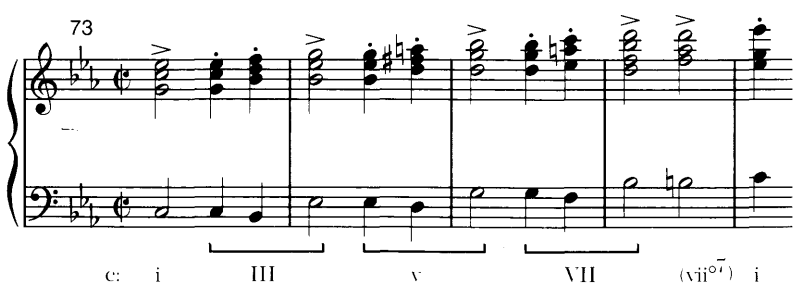


Harmonic sequences employing root movement by ascending 3rds are rare. Once again the standard strategy is to insert passing chords, in this case root-position triads, to stagger and mask the parallel 5ths. Example 20.24a is a model of this procedure in the major mode. The Weber excerpt (Example 20.24b) illustrates the same procedure in the minor mode; the chord pattern ascends by thirds, i-III-v-VII, before coming to a cadence in C minor.

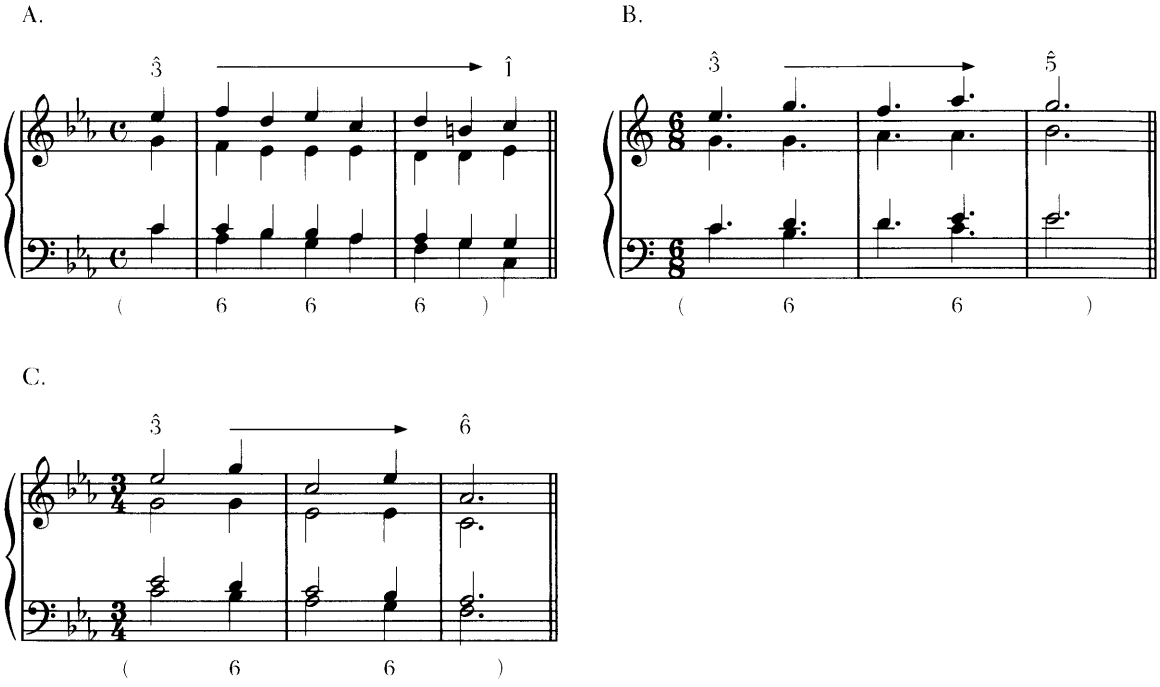
Example 20.24

A.

B. WEBER: OVERTURE TO *DER FREISCHÜTZ*

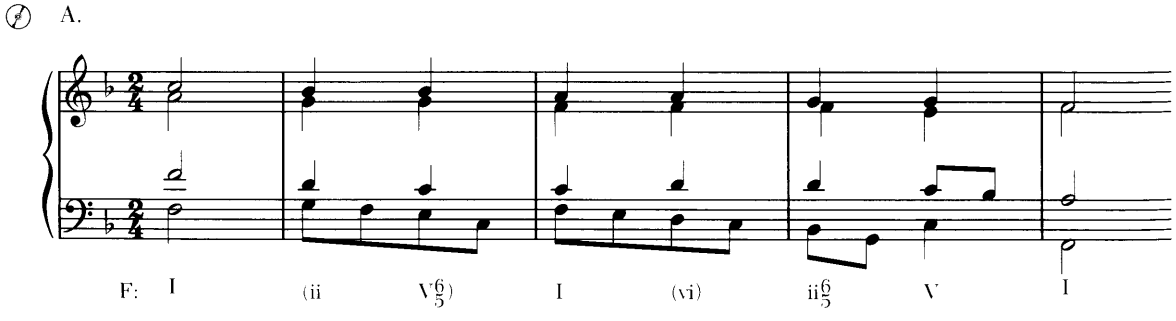


Example 20.27

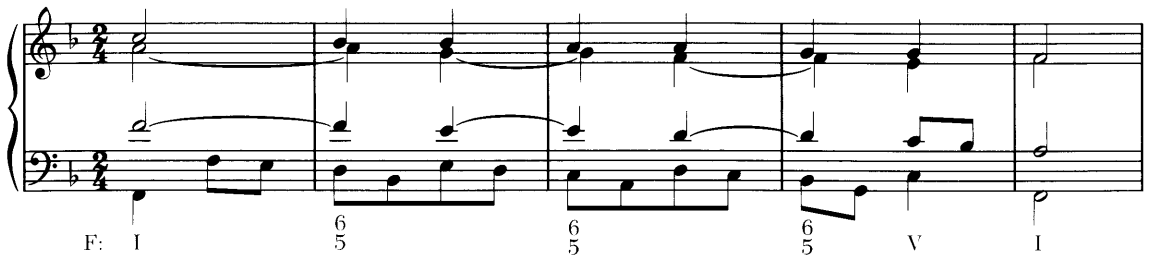


Some melodies may be suitable for more than one kind of sequential harmonization. In that case, if the melody repeats, we can choose to harmonize it with a different sort of harmonic sequence. Example 20.28a is a nonsequential harmonization of a familiar descending melody. Contrast this setting with the second (Example 20.28b), which employs a sequence of descending 5ths with alternating $\frac{6}{5}$ chords and root-position triads.

Example 20.28



B.



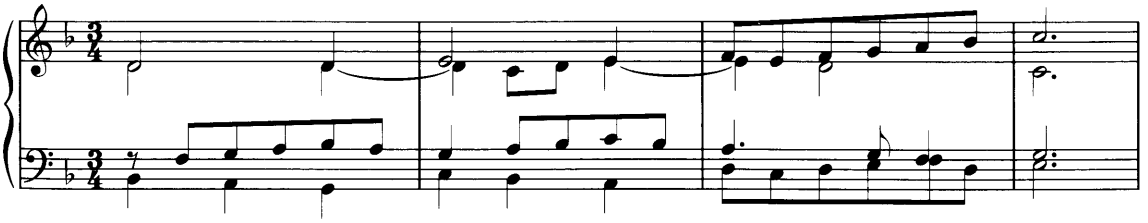
Example 20.29 illustrates two harmonic sequences in Bach's harmonizations of chorales. Identify the sequential models on which these two excerpts are based. Also note Bach's expressive use of suspensions in both excerpts.

Example 20.29

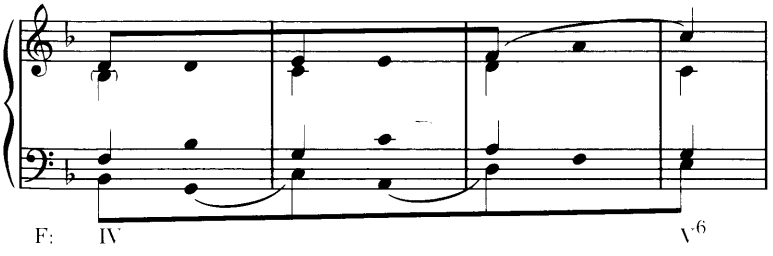
A. "HEUT' IST, O MENSCH, EIN GROSSER" (BACH CHORALE HARMONIZATION)

B. (REDUCTION)

C. "IN DULCI JUBILO" (BACH CHORALE HARMONIZATION)



D. (REDUCTION)



Terms and Concepts for Review

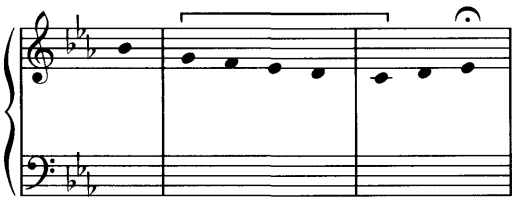
cyclical root movement
sequential root movement
harmonic sequence
root movement by 5ths
cycle of 5ths
staggered parallels
root movement by 2nd
consecutive 6 progression
consecutive 5-6 progression
root movement by 3rd
inverted 5-6 progression
change-of-bass procedure

A BRIEF REVIEW SELF-QUIZ

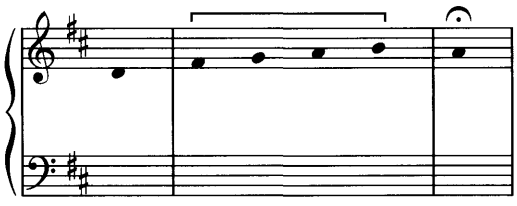
1. Harmonize the melodies in Example 20.30, using harmonic sequences involving root movement by 5th, 2nd, or 3rd.

Example 20.30

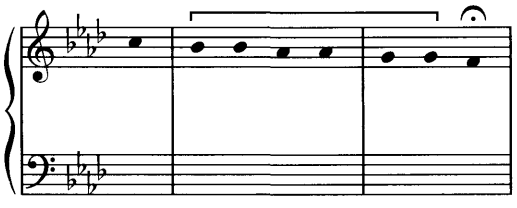
A.



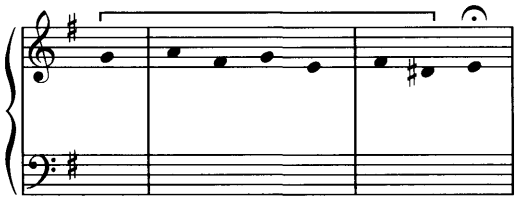
B.



C.



D.



CHAPTER 21

Tonicization and Modulation I:

SECONDARY DOMINANT CHORDS

IN THE PRECEDING CHAPTERS we examined the characteristics and uses of diatonic triads and seventh chords in the major and minor modes. During this discussion we kept our consideration of harmony within the limits of a single key, always assuming that the same tonic prevails throughout a phrase, period, or more extended section. However, in the music of the common-practice period, as composers created tonal plans for longer sections of music, including entire movements and large works, tonal contrast became an important device for organizing musical ideas and creating forms. Composers explored the possibility of moving to different tonics in the course of a piece, while keeping the piece in one overall key.

Momentary **chromatic inflections** in a melodic line, such as an occasional F♯ or B♭ in the key of C major, scarcely disturb our sense of the primary key and may even go nearly unnoticed. However, if both the melody and harmony become involved in this chromatic inflection, we perceive a momentary tonal emphasis on a different scale degree or chord from our original tonic, even while retaining our sense of the original key. For example, the appearance of several F-sharps in the melody of a piece in C major, when coupled with chords that include that tone, such as major triads or seventh chords built on D, may indicate that we are momentarily leaving the key of C and moving to G as a new tonic.

Tonicization and Modulation

The term **tonicization** describes the process by which a scale degree or harmony other than the original tonic temporarily assumes a tonic function. For the time being, the only scale degrees that can assume the role of a tonic are those that are the roots of major or minor triads in the diatonic major and minor scales. Since diminished and augmented triads cannot function as tonic chords, they are therefore not candidates for tonicization. The leading tone, for example, in both the major and minor modes, cannot be tonicized, because it is the root of a diminished triad that cannot function as a tonic chord.

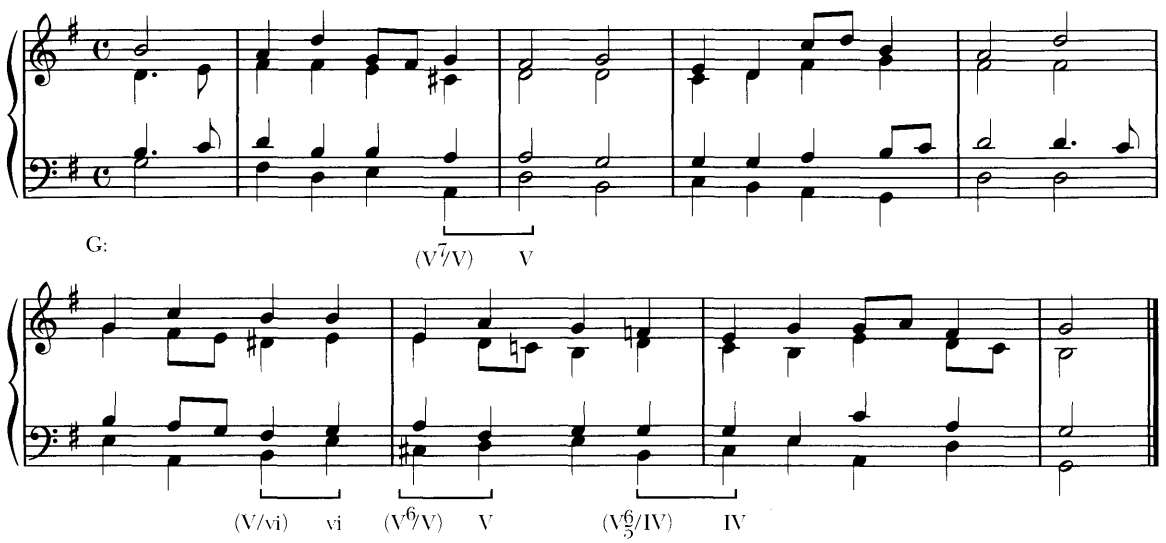
This chapter will focus on examples of momentary, surface tonicization. Chapter 22 will take up the topic of extended tonicization, when we perceive a clear shift from the original tonic to another key center and that new tonic lasts for an entire phrase or even longer. A shift to another key that lasts longer than a momentary tonicization is called a **modulation.**

Secondary or Applied Dominant Chords

The usual aural clue that a scale degree other than the original tonic is about to take on the role of a temporary tonic is the presence of a chord that functions as its dominant—that is, V, V^7, vii^{o6}, etc., of the new tonic. We refer to the dominant harmony preceding this new tonicized chord as a **secondary** or **applied dominant.** The terms are generally used interchangeably; the term "applied" emphasizes that the temporary dominant is attached or applied to the new tonic. Secondary dominants usually occur as alterations of diatonic harmonies, requiring accidentals that do not appear in the key signature of the original key. For example, in C major the secondary dominant signaling the tonicization of V is a ii^7 chord altered by raising its third to F♯, the leading tone of the new key; the secondary dominant seventh chord to vi is iii^7, altered by raising its third to G♯. In Roman numeral analysis, however, we do not denote these secondary dominants as variants of chords built on ii and iii; rather, we denote them by their harmonic function as dominants to the new tonics. Thus, in C major, a secondary dominant on D leading to the tonicization of G is denoted as V^7/V; the first Roman numeral and arabic number represent the type of dominant chord, followed by a slash and the Roman numeral for the triad it is tonicizing. In C major, a dominant seventh on E leading to the tonicization of A-minor harmony is denoted as V^7/vi. Examples 21.1 and 21.2 illustrate the proper Roman numeral analysis of secondary dominants. In Example 21.1, note that the tonicizations are quite brief; most last for no more than a beat or two.

Example 21.1

"COMBE MARTIN" (HYMN TUNE)



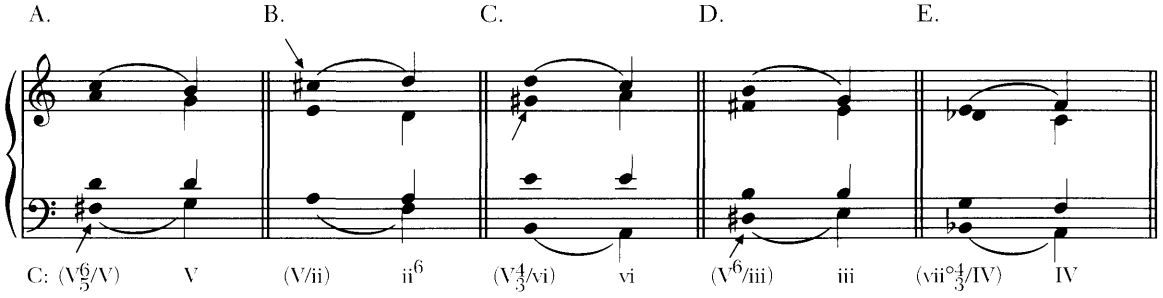
In Example 21.1 most of the chords in the passage are diatonic in the key of G major. The secondary dominants (the first chords in the bracketed progressions marked with Roman numerals), however, all contain accidentals, notes that are not diatonic scale degrees of the scale of G major. Each of these two-chord progressions is a small-scale progression from dominant to tonic. The first progression is V^7-I in D major; the second is V-i in E minor; the third is V^6-I in D major; and the final progression is V^6_5-I in C major. The proper Roman numeral designations for the progressions appear below the staff: V^7/V-V, V/vi-vi, V^6/V-V, and V^6_5/IV-IV. Since applied dominants usually function as embellishing chords, they are unstemmed in reductions and their Roman numerals are placed in parentheses (Example 21.2). To spell out a secondary dominant from Roman numerals, assume that the tonicized triad is the temporary tonic and spell the applied chord in relation to it. To spell a vii^{o7} of ii in F major, for example, assume that G minor (ii) is the tonic, and write its leading-tone seventh chord, F♯ A C E♭. Review the analyses in Examples 21.1 and 21.2.

APPROACHING ALTERED NOTES IN SECONDARY DOMINANTS

The **altered** or **non-diatonic scale degree** in a secondary dominant usually functions as the leading tone ($\hat{\sharp 7}$) of the key that is being tonicized: the altered notes in Example 21.2a–c all function as leading tones to the scale

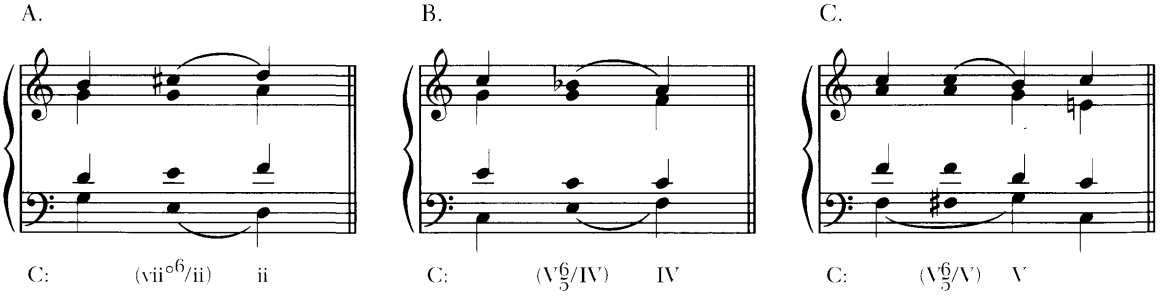
degree being tonicized. Other scale degrees may be altered as well; in Example 21.2d, D♯ is scale degree $\hat{7}$ and F♯ is scale degree $\hat{2}$ of the new key, and in Example 21.2e, B♭ is $\hat{4}$ of the new key, and D♭ is ♭$\hat{6}$.

Example 21.2

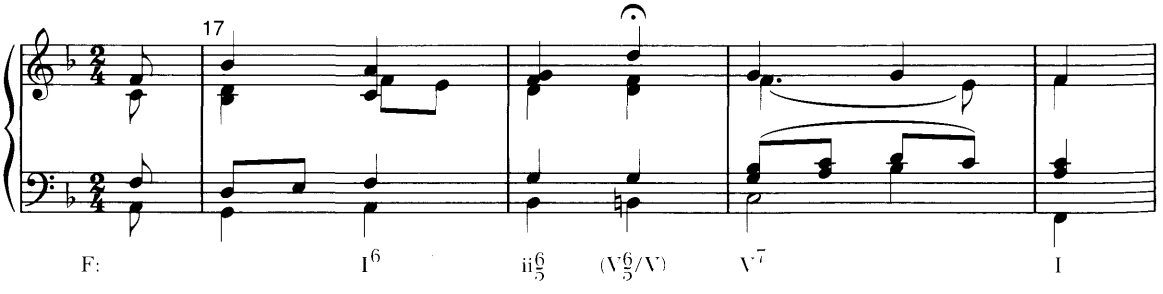


These altered notes are normally approached by diatonic melodic motion, as illustrated in Example 21.1 and Examples 21.3a and b. In Examples 21.3c and d, the altered note is derived chromatically—that is, the diatonic note that precedes it is altered by adding an accidental. The chromatically altered note, usually the leading tone of the new key, can occur within the same chord (Example 21.3d) or may appear as one note of a new chord (Example 21.3c).

Example 21.3



♪ D. EDWARD PURCELL: "PASSING BY"



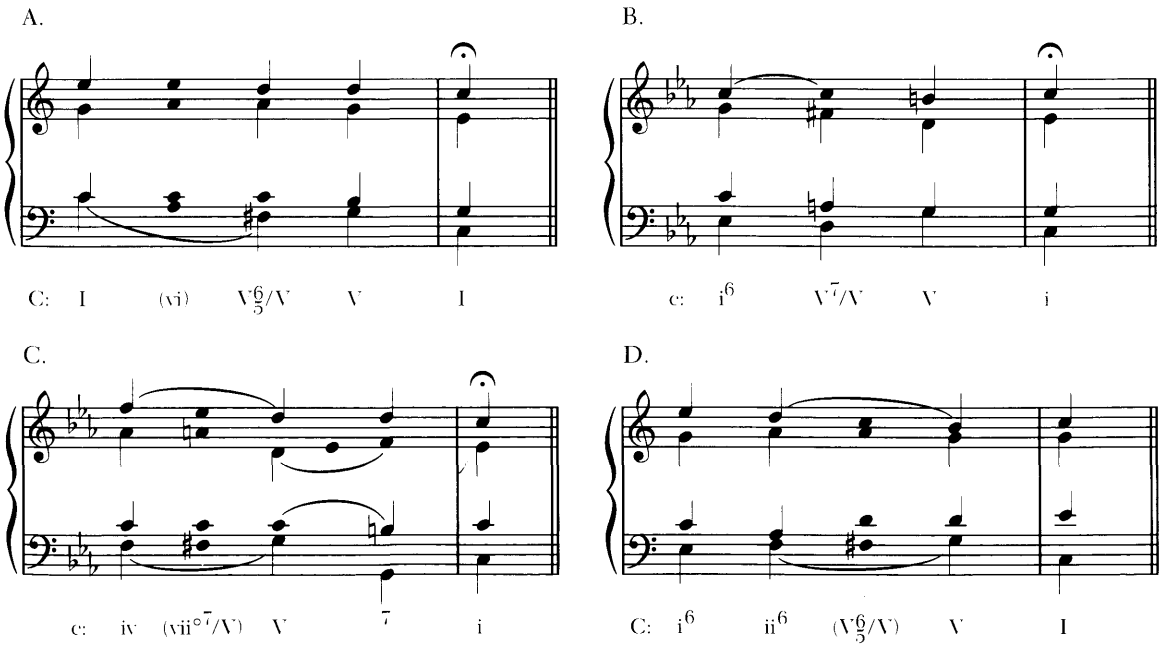
Next we will examine in detail some surface tonicizations of the various diatonic triads in major and minor mode, illustrated by excerpts from the literature and typical harmonic models.

Tonicization of the Dominant

The dominant is the triad most frequently tonicized by means of secondary dominants. The secondary dominant of V always raises the fourth scale degree of the original key; the raised fourth ($\hat{\sharp 4}$) functions as a leading tone pulling upward to $\hat{5}$. In addition to the raised fourth scale degree, the vii$^{\circ 7}$ of V also has a second altered tone, $\hat{\flat 3}$ of the original key.

The various secondary dominants leading to V may substitute for a diatonic pre-dominant chord (IV or ii) in an authentic cadence (V^7/V-V-I rather than ii^7-V-I). In these cases, we mark the essential pre-dominant function of these chords by stemming the chords and not enclosing them in parentheses (Example 21.4a and b). When the standard diatonic pre-dominant chord is present and the secondary dominant is chromatically inserted between a IV or ii^6 and the V in an authentic cadence, the secondary dominant is not an essential chord but an embellishing chord, and we mark that function by leaving it unstemmed and enclosing its Roman numeral in parentheses (Example 21.4c and d).

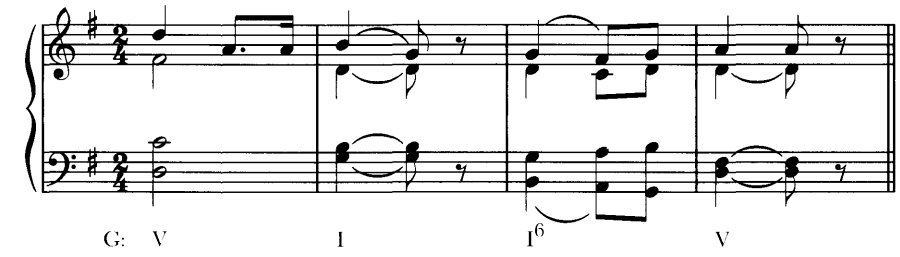
Example 21.4



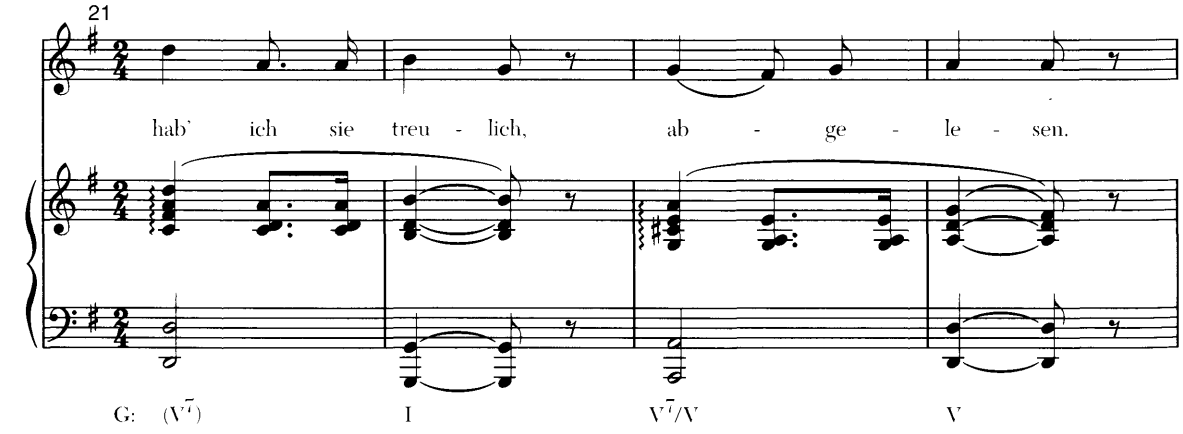
Cadences that close on V exhibit various degrees of finality. In earlier chapters we discussed the simple half cadence, in which the dominant is preceded by the tonic (Example 21.5a) or the subdominant; we do not perceive these progressions as moves to a new tonal center. However, the motion to the dominant is more emphatic when it is preceded by a secondary dominant (Example 21.5b). Stronger still is a genuine modulation, when a cadence on V signals a true shift into the key of the dominant; we will discuss modulation in Chapter 22.

Example 21.5

A.



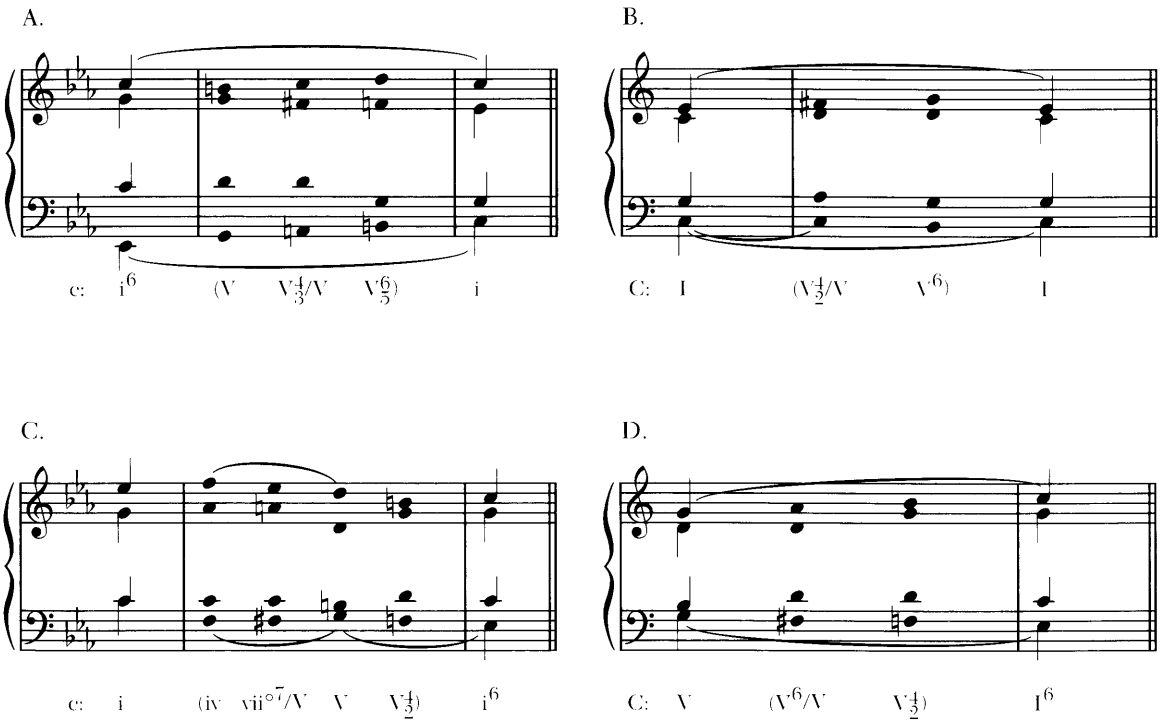
B. ROBERT FRANZ: "WIDMUNG," OP. 14, NO. 1



Secondary dominants of V may function as embellishing chords within the phrase, often resulting from passing motion that bridges two inversions of the dominant, as in Example 21.6a, or through suspension figuration, as in

Examples 21.6b and c. In Example 21.6c, the altered note within the series of embellishing chords is derived chromatically and resolved diatonically; in Example 21.6d, the altered note is derived diatonically and resolved chromatically to the chordal 7th of the V^4_2.

Example 21.6

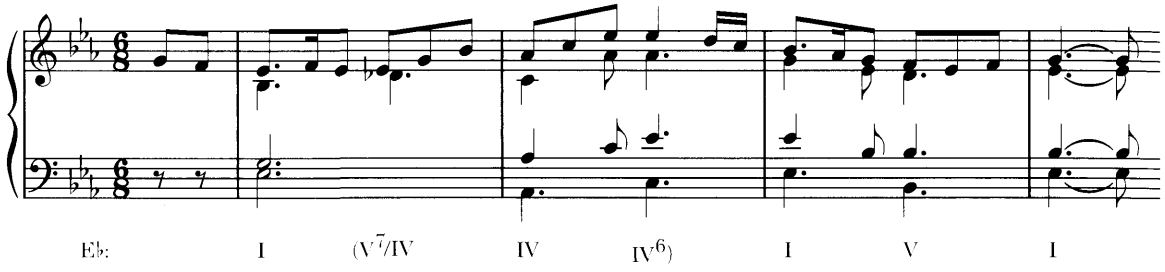


TONICIZATION OF THE SUBDOMINANT

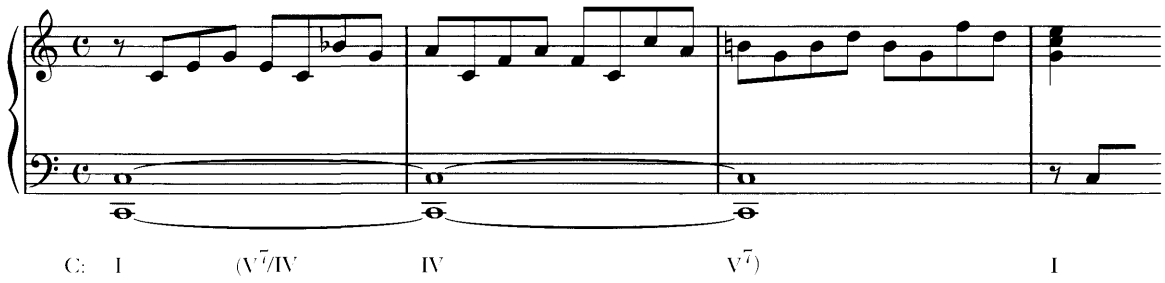
Tonicization of the subdominant frequently occurs in opening progressions. The shift is easy at the opening of a piece; adding one altered note, $\flat\hat{7}$, to the opening tonic harmony creates the secondary dominant of IV, shifting the harmony away from the tonic to the subdominant. In the folk song in Example 21.7a, the tonicized IV functions as an embellishing or neighboring chord to the tonic. The Bach prelude (Example 21.7b) prolongs the opening tonic by using a secondary dominant to move to IV over a tonic pedal; the progression is I-V^7/IV-IV-V^7-I.

Example 21.7

A. THOMAS MOORE: "BELIEVE ME, IF ALL THOSE ENDEARING YOUNG CHARMS"



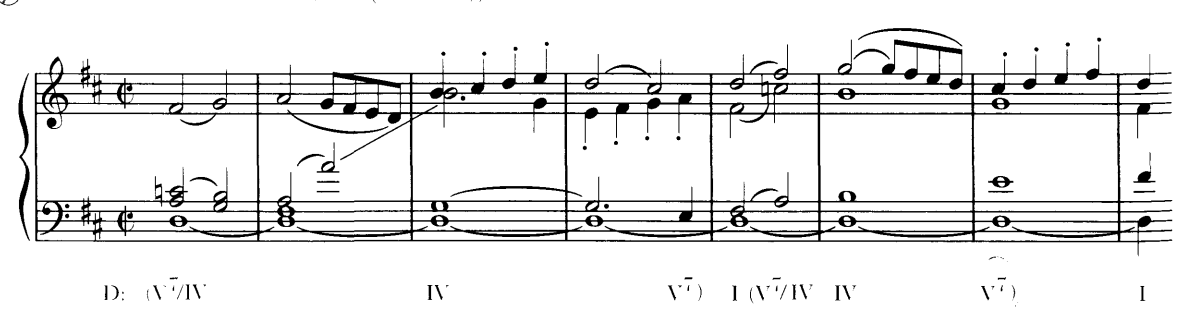
B. BACH: LITTLE PRELUDE IN C MAJOR, BWV 939



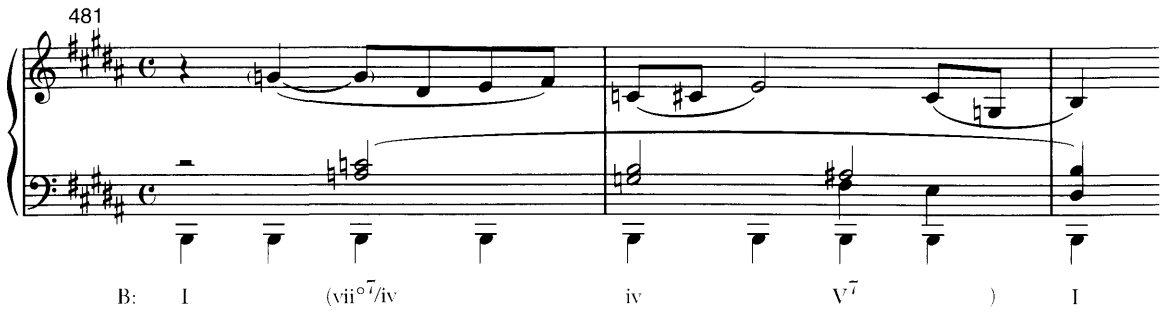
This same progression, used to prolong the tonic, is a standard device in closing passages or codas. Two typical examples of the progression appear in the two excerpts of Example 21.8. Note that both set the prolongation progression over tonic pedals.

Example 21.8

A. HAYDN: SYMPHONY NO. 101 ("CLOCK"), IV



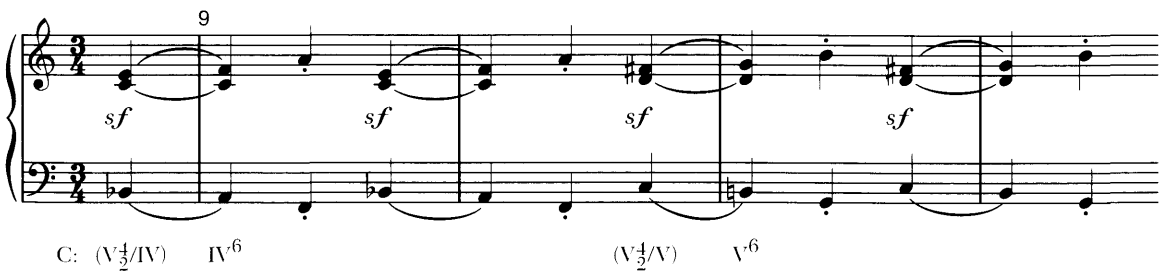
B. TCHAIKOVSKY: *ROMEO AND JULIET*



Example 21.9 is the waltz by Diabelli that was immortalized in Beethoven's variations for piano. The third phrase employs a sequence that moves from IV^6 to V^6; both are tonicized by third-inversion secondary dominants.

Example 21.9

ANTON DIABELLI: WALTZ IN C MAJOR

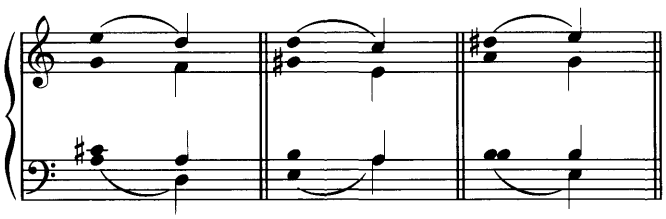


TONICIZATION OF ii, vi, AND iii IN THE MAJOR MODE

Typical models of tonicization of the triads on ii, vi, and iii in the major mode appear in Example 21.10a. Secondary dominants of the supertonic triad, such as V7/ii, contain the raised first degree ($\sharp\hat{1}$) of the original key; the diminished seventh version of the secondary dominant to ii (vii^{o7}) also contains a lowered seventh degree ($\flat\hat{7}$); see Example 21.10b and c. The sequential progression V/ii-ii-V-I, one version of which is given in Example 21.10d, commonly appears at the beginning of the second part or reprise of Classical minuets. By the time Mozart had reached the tender age of four, he understood this progression and used it in his early compositions (Example 21.10e and f).

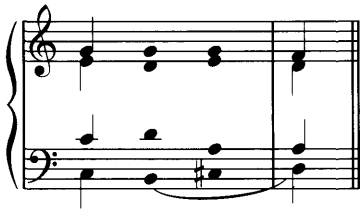
Example 21.10

A.



C: V^7/ii ii V^7/vi vi V^7/iii iii

B.



C: I (V^6 V^6_5/ii) ii

C.

C: I (vii°^{7}/ii) ii

D.

C: (V^6_5/ii) ii V^6_5 I

E. MOZART: MINUET IN G MAJOR, K.1

F. (REDUCTION)

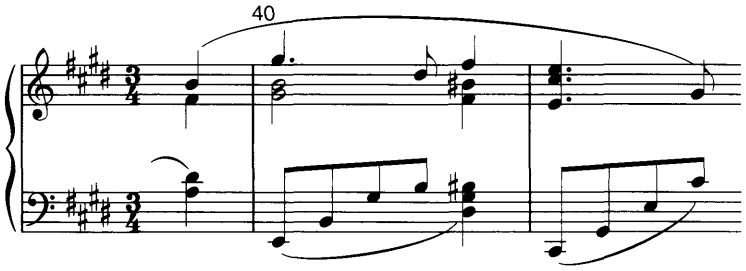
G: V^7/ii ii V^7 I

Secondary dominants to vi and iii require no special treatment. The Brahms excerpt (Example 21.11a) involves passing motion from I to vi through a secondary V^4_3/vi. The reduction points out that the secondary dominant is a passing, embellishing harmony by leaving its notes unstemmed and enclosing its Roman numeral in parentheses. The passage from "America" (Example 21.11c) shows the insertion of a vii°^{7} as a secondary dominant to vi in a deceptive cadence. Another way to understand this progression is to view the motion to vi as a prolongation of the I^6_4 chord, as indicated by the slur and arrow below the staff.

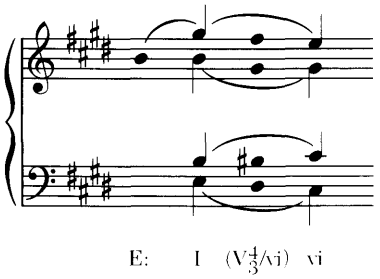
A secondary dominant may resolve in a deceptive cadence, in the manner of a dominant chord in the V-vi deceptive cadence. Look at the turn-of-the-century ballad in Example 21.11d; the second chord in the first measure is V^{7}/vi, but it resolves not to vi but to IV, the sixth scale degree or VI chord of vi. In the Beethoven excerpt (Example 21.11e), a secondary dominant to vi resolves instead to ii^{6}; the cadence resolves not on vi but on ii, the subdominant of vi. Note that in these examples (Example 21.11d and e), the bass note of the secondary dominant resolves upward by half step.

Example 21.11

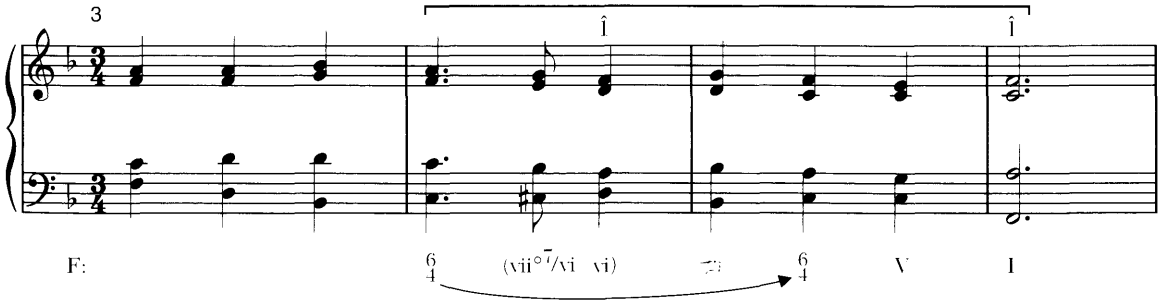
A. BRAHMS: INTERMEZZO IN E MINOR, OP. 119, NO. 2



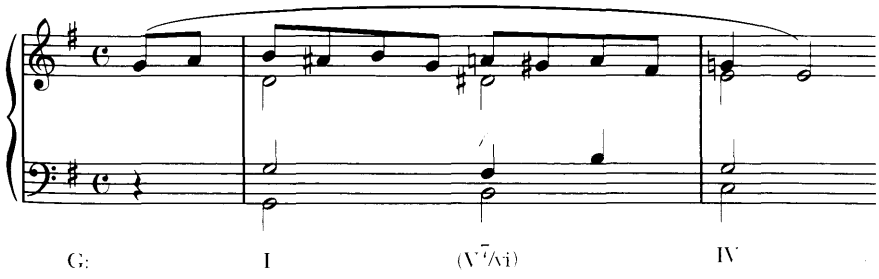
B. (REDUCTION)



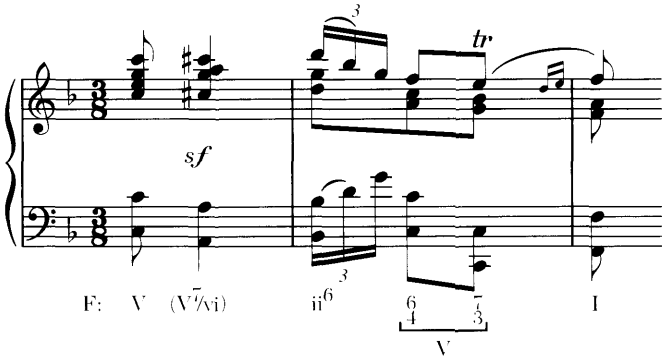
C. "AMERICA"



D. PAUL DRESSER: "BY THE BANKS OF THE WABASH"



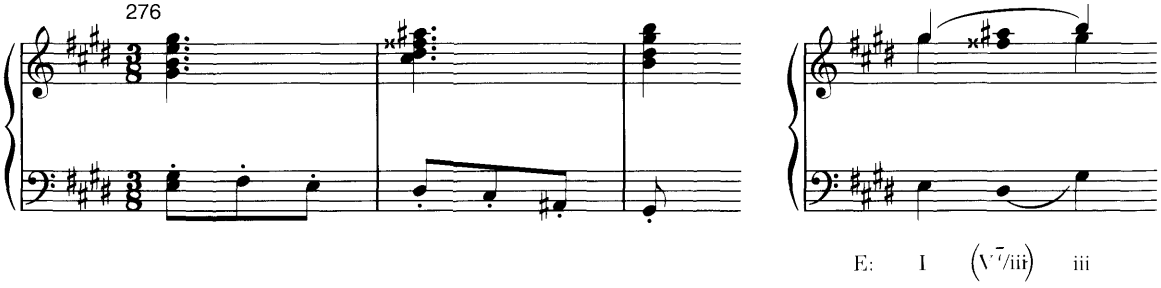
E. BEETHOVEN: SYMPHONY NO. 1 IN C MAJOR, II



Two scale degrees must be altered to form the secondary dominant of iii in Example 21.12; the second scale degree, F♯ in the key of E, is raised to F𝄪, and the fourth scale degree, A, is raised to A♯.

Example 21.12

SCHUBERT: SYMPHONY NO. 8 ("UNFINISHED"), II (REDUCTION)



TONICIZATIONS OF III, VI, AND VII IN THE MINOR MODE

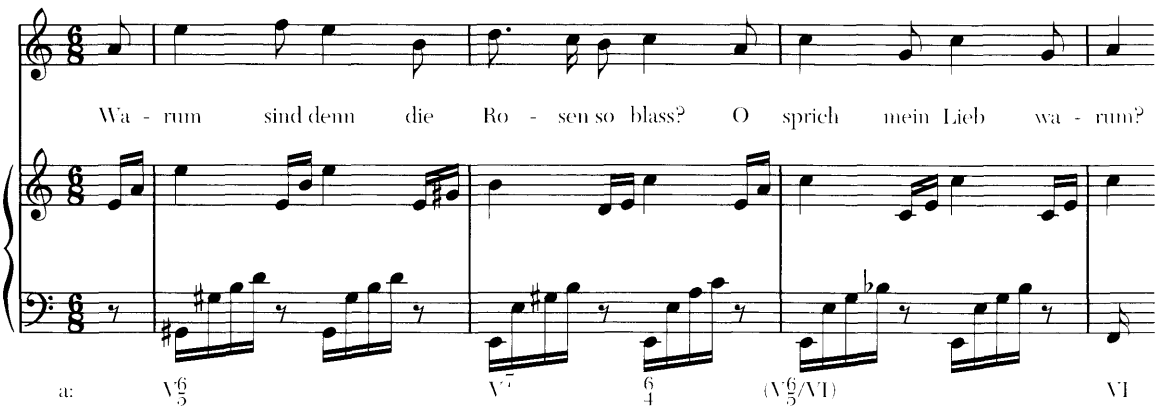
Tonicizations of the three major triads in the natural minor mode (III, VI, and VII) are usually preceded by a secondary dominant. Since V7/III contains no altered scale degrees (Example 21.13a), the tonicization sounds like a momentary shift to the relative major key. In Example 21.13b, Fanny Hensel, the gifted sister of Mendelssohn, moves from the I^6_4 not to the expected V chord, but rather through a secondary dominant to VI (V7/VI-VI), suggesting a kind of tonicized deceptive cadence. Tonicizations of VI and VII frequently occur in sequential progressions. In the passage from Handel's *Messiah* (Example 21.13c and d), the temporary tonicizations of VII and VI form a descending tetrachord in the bass (G-F-E♭-D).

Example 21.13

A.

c: (V) i (V^7/III) III

B. FANNY HENSEL: "WARUM SIND DENN DIE ROSEN," FROM *SECH'S LIEDER*, OP. 1, NO. 3



C. HANDEL: "HOW BEAUTIFUL ARE THE FEET OF THEM" FROM *MESSIAH*

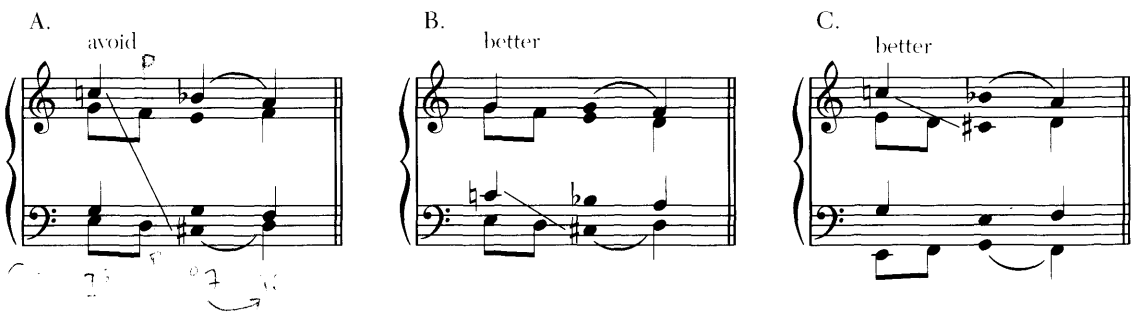
D. (REDUCTION)

g: (V^{-6}) i (V^6_5/VII) VII (V^6_5/VI) VI iv V

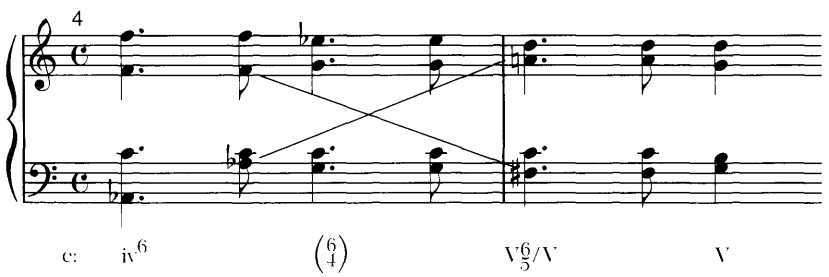
Cross Relations

When tonicizing progressions involve chromatic motion into the secondary dominant, the voice leading must be handled carefully. Chromatic motion occuring between two different voice parts in consecutive chords is called a **cross relation.** Example 21.14 shows three different settings of motion through a secondary dominant of ii; the lines connect the pitches that outline the chromatic motion, C and C♯. Since cross relations between the outer voices, soprano and bass, create a rather harsh sound, they are normally avoided (Example 21.14a). Try to involve one of the inner voices whenever possible; the cross relation is between the tenor and bass in Example 21.14b, and between the soprano and alto in Example 21.14c. In a **chromaticized voice exchange,** two voices move chromatically in opposite directions, and a passing harmony is inserted in between the two chords that contain the notes of the cross relation. Example 21.14d shows a chromaticized voice exchange in a Mozart Mass; the inserted passing harmony is a i^6_4.

Example 21.14



D. Mozart: Kyrie from Mass in C Major ("Coronation"), K.317



Summary of Common Tonicizations

The following tonicizations are listed in approximate order of frequency, starting from the most common.
In major keys: V, IV, vi, ii, iii
In minor keys: V, iv, III, VI, VII

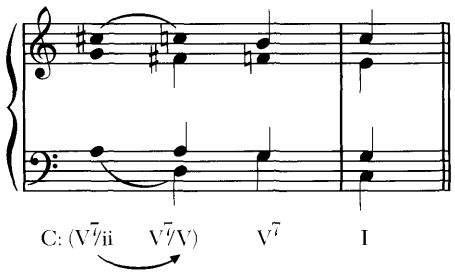
Extended Successions of Secondary Dominants

A secondary dominant may resolve to a major or minor triad, or it may resolve to another secondary dominant. In C major, a V^7/vi (E G♯ B D) may resolve to a diatonic submediant triad (vi) or to a V^7/ii (A C♯ E G); that secondary dominant in turn may resolve to a diatonic supertonic triad (ii) or to a V^7/V (D F♯ A C); see Example 21.15. Composers can link several secondary dominants together to form a succession or chain of secondary dominants. In the following examples, each secondary dominant has been supplied with its Roman numeral to help identify the chords, but in a reduction, since most such progressions are sequential in nature, we would denote only the opening and closing chords with Roman numerals and use figured-bass symbols in between, as we did with sequences in Chapter 20.

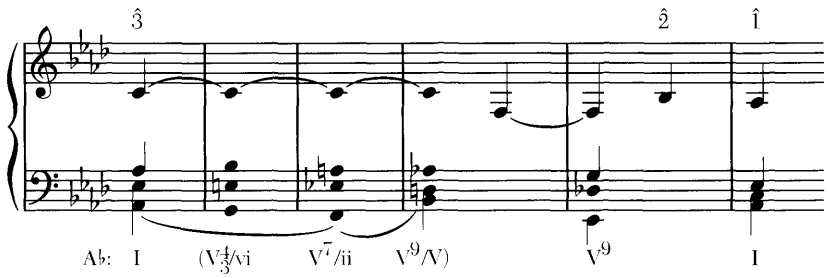
Liszt's famous *Liebesträum* opens with a chain of secondary dominants; a reduction appears as Example 21.15b. The excerpt also includes two examples of dominant ninth chords, a sonority we will discuss in a later chapter. The sliding chromatic tritones in the inner voices that characterize this progression are also a trait of a kind of chromatic harmony we refer to as "barbershop harmony." In the middle movement of the "Moonlight" Sonata, Beethoven writes a chain of secondary dominants; he places the chromatic tritones in the lower voices, alternating between first-inversion and third-inversion dominant chords (Example 21.15c). Chains of secondary dominants normally consist of V^7 chords, but chromatic sequences of vii^{o7} chords are possible as well. A famous example appears in the opening of Mozart's C Minor Piano Concerto, K. 491 (Example 21.15d). The reduction in Example 21.15e reveals the underlying series of roots descending by 5ths—D♯-G♯-C♯-F♯-B. The vii^{o7} chord on B resolves finally to the C minor tonic.

Example 21.15

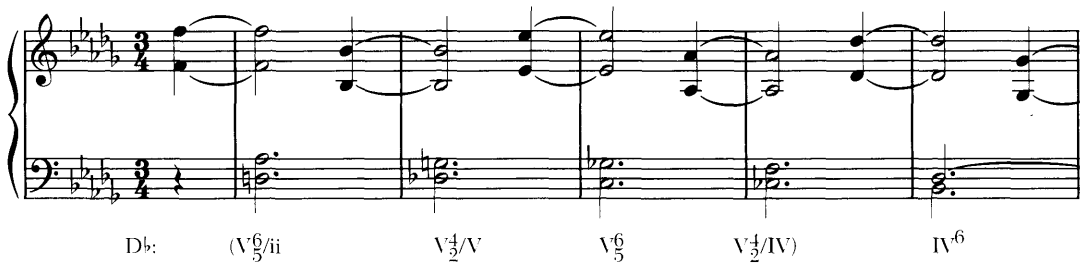
A.



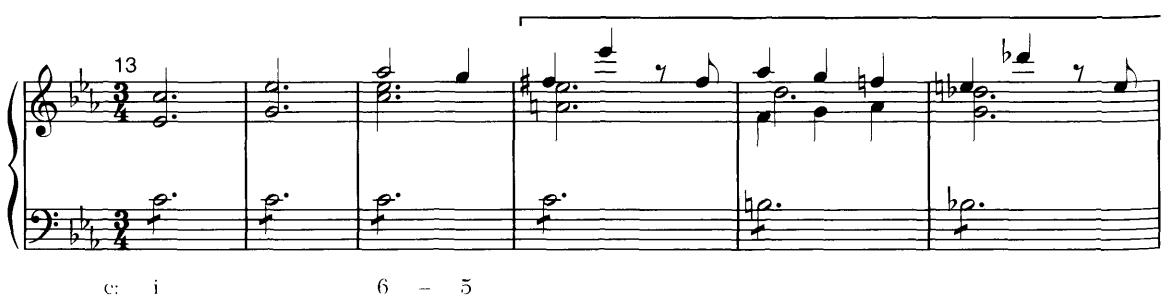
B. LISZT: *LIEBESTRÄUM* NO. 3 IN A-FLAT MAJOR



C. BEETHOVEN: PIANO SONATA IN C-SHARP MINOR ("MOONLIGHT"), OP. 27, NO. 2, II



D. MOZART: PIANO CONCERTO IN C MINOR, K. 491, I



E. (REDUCTION)

We occasionally encounter extended chains of secondary dominants in the literature. The closing D major section of the scherzo from Schumann's Symphony No. 1 in B-flat Major is a good example (Example 21.16a). The reduction (Example 21.16b) shows the underlying pattern. A secondary vii^{o7} leads to what appears to be a cadential I^6_4, but its resolution to the usual $^5_3$ is delayed by the insertion of two more secondary dominants—first vii^{o7}/vi takes us to vi, and then vii^{o7}/V takes us to V, with the customary $\hat{2}$ in the soprano. The composer then interrupts the resolution to I by inserting three more tonicizations through secondary dominants; the tonicizations move us downward through III and ii to the eventual arrival at I. The soprano moves downward an octave over the course of this passage, from A^5 to A^4. A simple cadential formula (ii^6-V^7-I) is added to close the movement. Note that the soprano is still on A as the movement ends. A glance at what happens next explains this A: the first note of the following Finale is A, now the leading tone of the key of B♭ major, and an arpeggiated statement of the B♭ chord re-establishes the overall tonic of the symphony.

Example 21.16

A. SCHUMANN: SYMPHONY NO. 1 ("SPRING"), III

B. (REDUCTION)

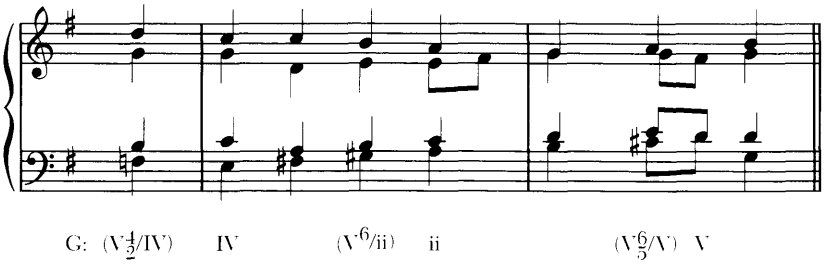
MELODY HARMONIZATION

In order to utilize secondary dominants in harmonizing chorales or hymns, we have to put the altered pitches in voices other than the soprano, since the melodies of most hymns usually consist of notes of the diatonic scale. The bass is a good place to locate the altered notes. When given one of these melodies to harmonize, try to work out several different harmonic settings. Study the three harmonizations of the phrase from a hymn tune in Example 21.17. The first setting is completely diatonic; there are no tonicizations and no secondary dominants. The last two use several secondary dominants; study each setting carefully and identify all the secondary dominants. Note also that, with the exception of the inserted altered notes, the bass line of Example 21.17b is essentially the same as the bass line of Example 21.17a. The bass line of Example 21.17c, however, is completely different. Remember that the secret to harmonization and partwriting often lies in first composing an interesting and attractive bass line.

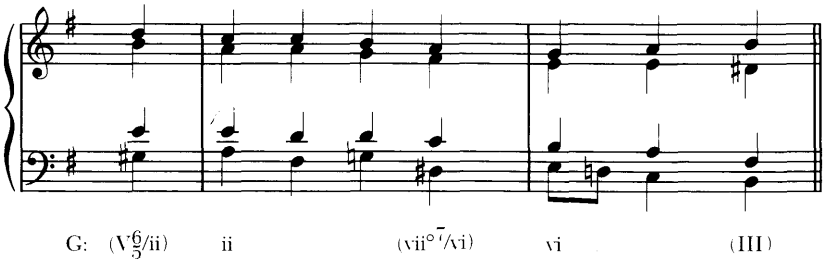
Example 21.17

A.

B.



C.



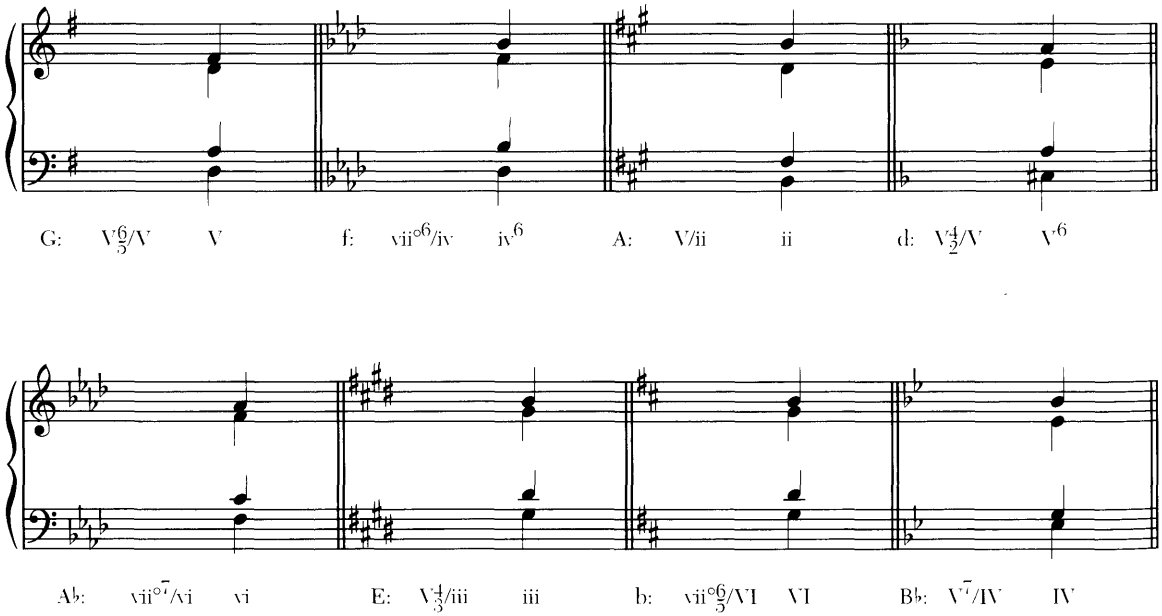
Terms and Concepts for Review

chromatic inflection
tonicization
modulation
secondary dominant
applied dominant
altered scale degrees
cross relations
chromaticized voice exchange
chains of secondary dominants

A BRIEF REVIEW SELF-QUIZ

1. Write the specified secondary dominant to precede each diatonic triad, taking care to spell and resolve the secondary dominants correctly.

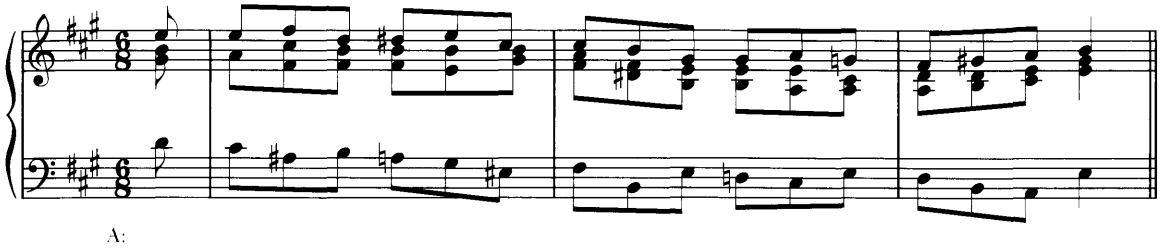
Example 21.18



2. The following two passages in Example 21.19 contain a number of secondary V^7's and vii^{o7}'s. Analyze each example with Roman numerals, making sure that you place the applied dominants in parentheses.

Example 21.19

A.

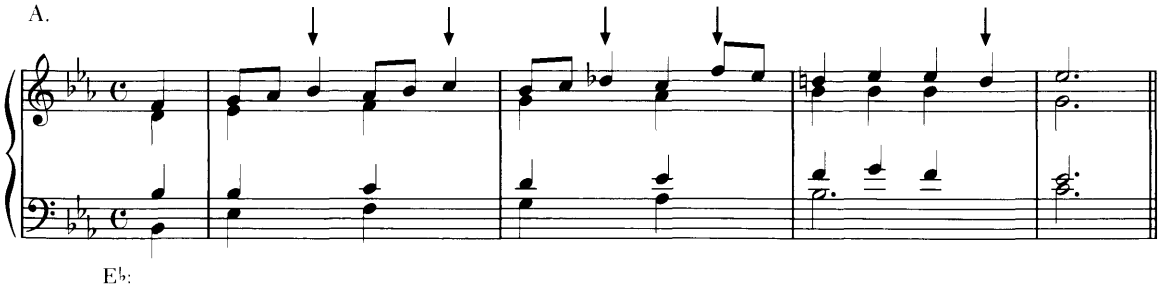


B.

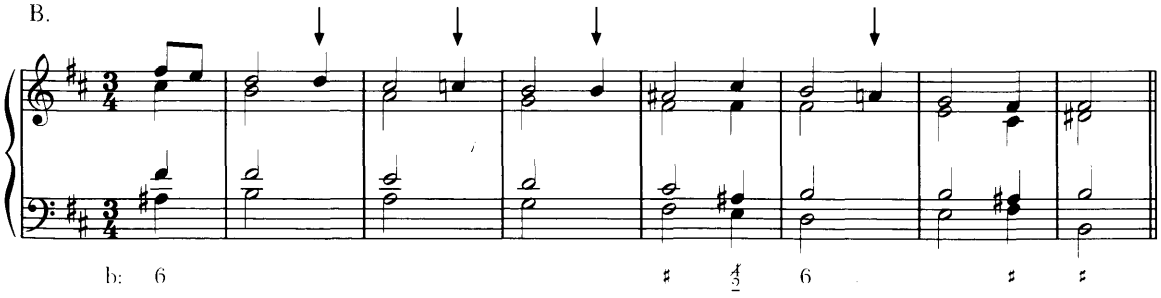
3. Supply the missing chords in the two chorale settings of Example 21.20. Form appropriate secondary dominants, taking care to resolve them properly. Then add a Roman numeral analysis below the staff.

Example 21.20

A.



B.



CHAPTER 22

Tonicization and Modulation II:

MODULATION TO V AND III

In the last chapter, we examined surface tonicizations that did not last for more than a few notes or a single phrase. In this chapter we will begin to examine large-scale tonicizations, called **modulations,** lasting longer than a single phrase, and see how composers utilize modulation in order to provide tonal variety and contrast and to organize their musical ideas into clear tonal structures. For now we will restrict our study to modulations to two specific harmonic areas—the dominant (V) in the major mode and the relative major (III) in the minor mode. We will begin by discussing the difference between momentary tonicization and true modulation; next we will survey the main ways of effecting a key change; finally, we will consider the role that modulations to the dominant and relative major play in the tonal schemes of short pieces. The chapter concludes with strategies for incorporating modulation in melody harmonizations.

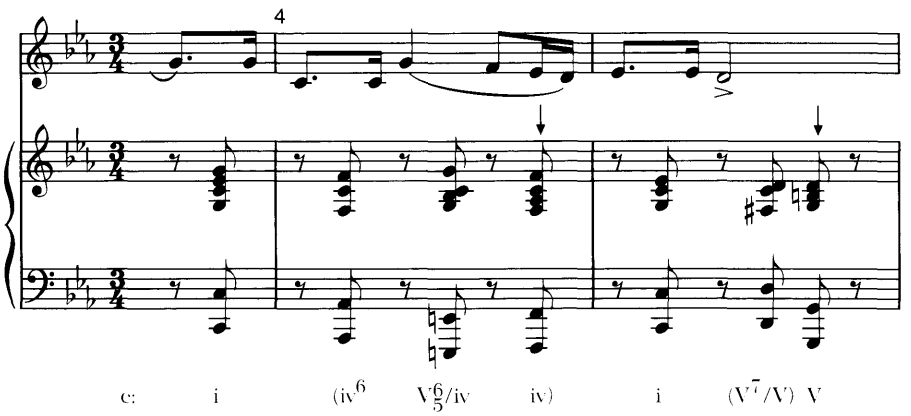
The Strength and Duration of Tonicizations

The difference between a surface tonicization and a real change of key may not always be obvious as we look at a score, but our ears can usually tell us when a real change of key has taken place. Play the Fauré excerpt in

Example 22.1. Although the iv and V chords are preceded by their respective secondary dominant sevenths, these momentary tonicizations do not alter our sense that C minor remains the tonic key of the whole passage. These surface or embellishing tonicizations are not strong enough, nor do they last long enough, to persuade us that we have moved to a new key center; we do not hear this phrase as changing key from C minor to F minor or G major.

Example 22.1

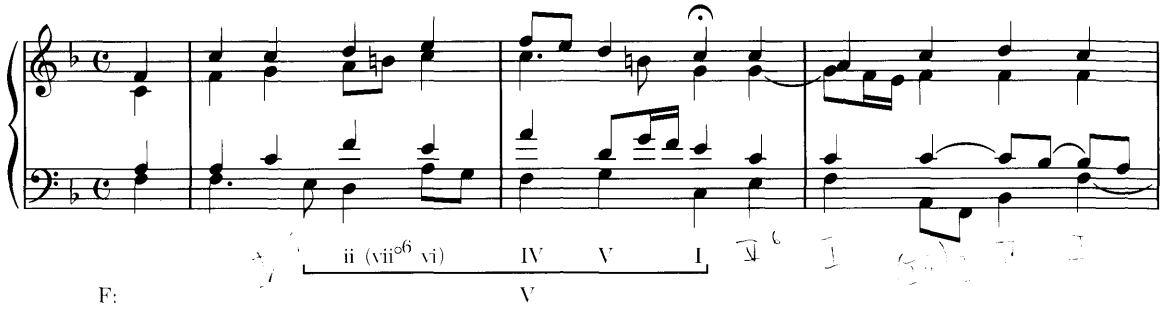
FAURÉ: PIANO QUARTET IN C MINOR, OP. 15, I



Now play the chorale harmonization in Example 22.2. The first phrase begins in F major but cadences in C major; the original dominant is transformed by the harmonic context into a new tonic. Not only is the tonicizing process more extensive than the momentary progressions in the Fauré example, but it also involves a variety of harmonies and progressions in the new key, including a deceptive cadence from vii^{o6} to vi. If the next phrase were to continue in the key of C, we would be convinced that a clear change of key or modulation had taken place. However, since the following phrase returns immediately to the original key of F major, we perceive the elaborate tonicization of V as a **transient modulation** within the basic F tonality. Transient modulations are somewhere between surface tonicizations and full-fledged modulations; we hear them as stronger shifts of key than surface tonicizations, but not as true modulations. We use a special system of symbols to denote transient modulations. A bracket is placed under the Roman numerals denoting the harmonies in the new key, and the tonicized chord is place under the bracket, as shown in Example 22.2.

Example 22.2

(2) "DAS WALT' GOTT VATER UND GOTT SOHN" (BACH CHORALE HARMONIZATION)



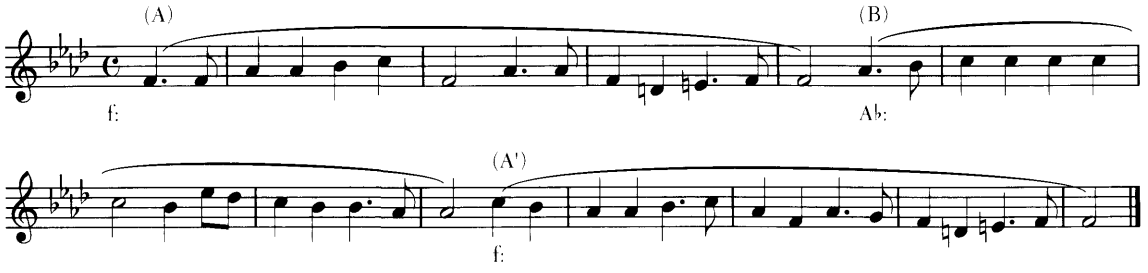
MODULATION

Examples of true modulation, in which the new key lasts for a phrase or longer, are found in the two folk songs of Example 22.3. In both, there is tonal motion away from the original tonic key followed by a return to the original tonic. The first song, as you see, is made up of three eight-measure periods whose melodic content is almost identical (Example 22.3a). The first period, measures 1–8, is set in the tonic key of G major; the middle period, measures 9–16, is set in the contrasting key of D major, V of the original tonic; and the final period, measures 17–24, is set in the original tonic key of G major. The change of key, departing from and then returning to the original tonic, provides the sense of contrast that is necessary to counteract the sameness of the melody. The second song is also made up of three phrases and illustrates the same pattern of departure from and return to the original tonic, but here the three sections vary melodically as well. The first phrase is in the home key of F minor; the second phrase, a new melodic idea, is set in A♭ major, the relative major of the original tonic; the final phrase is a melodic variant of the first phrase and returns to F minor, the original tonic key. The shift to a new key center is an important means of providing musical variety in both songs, whether or not the melodic material is varied.

Example 22.3

A. "ORANGES AND LEMONS" (ENGLISH FOLK SONG)

B. "The Rose of Tralee" (Irish folk song)



Example 22.4 is another illustration of a true modulation. The composer not only remains in the new key for some time—at least a phrase—but also employs a number of harmonic progressions that convincingly establish the new tonic in our ear. The standard way to depict our analysis of true modulations is to enclose the Roman numeral denoting the new key in a box, as in Example 22.4.

Example 22.4

Clementi: Piano Sonatina in C Major, Op. 36, No. 1, I

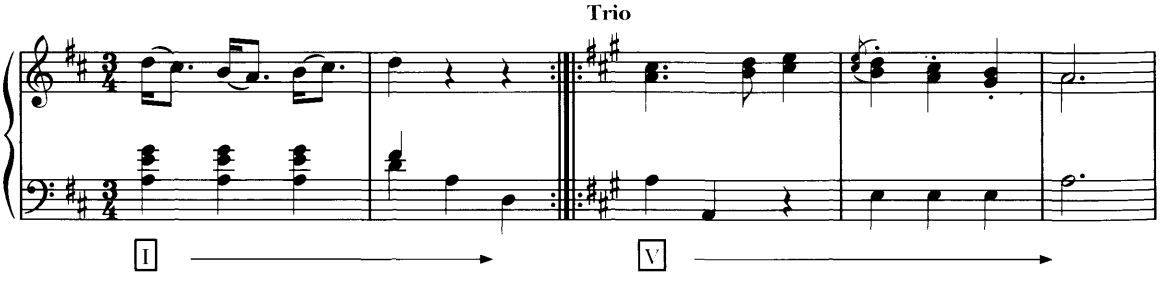
METHODS OF MODULATION

There are three standard ways to modulate from one key center to another—sectional modulation, pivot chord or common chord modulation, and chromatic modulation.

Sectional modulation involves an abrupt shift to a new key at the beginning of a new section, period, or phrase; one section ends in one key and the new section begins in another key. Some theorists use the term **direct modulation** as a synonym for sectional modulation, but in this text we will use the term direct modulation only for abrupt key shifts that occur *within* a section or phrase. To designate a sectional modulation, we place the symbol for the new key, such as V, at the beginning of the new section or phrase. Sectional modulations frequently occur at the beginning of the second section of a three-part or ternary form (ABA), in which the B section is set in a different key. Short sectional pieces such as minuets and trios, waltzes, marches, mazurkas, rags, and polkas frequently employ sectional modulation to the dominant or subdominant. Example 22.5 shows one such modulation in the Minuet of Mozart's "Haffner" Symphony. The minuet section concludes in D major and the trio begins immediately in A major, the dominant (V) of the home key.

Example 22.5

MOZART: SYMPHONY NO. 35 ("HAFFNER"), K.385, III



Sometimes sectional modulation occurs between phrases. We saw this process in Example 22.3. In Example 22.3a the opening eight-bar phrase comes to a cadence in G major, the second phrase begins immediately in D major, and the third phrase begins just as abruptly back in G major. Example 22.3b illustrates the same process in the minor mode, with the second phrase in the relative major (III).

Modulation by pivot chord or common chord takes place *within* a phrase or passage. The diatonic function of a chord within the original key

simultaneously operates as a *different* diatonic function in the new key, thereby providing a pivot between the two keys. Since the pivot chord normally comes right before an altered chord functioning as a secondary dominant to the new key, it usually has the function of a pre-dominant in the new key—IV, ii, or perhaps vi. In a modulation to V in the major mode, for instance, the original I can also function as IV of the new key, vi of the original key can function as ii of the new key, and iii of the original key can function as vi of the new key. In analyzing modulations by pivot chord, continue to analyze chords in the original key as long as possible, and remember that the chord preceding the first altered harmony or secondary dominant is usually the pivot chord.

Typical examples of modulations to $\boxed{\text{V}}$ by pivot chord appear in Example 22.6. Notice how the double function of the pivot chord or common chord is designated; the function in the new key of the common chord is written directly below the symbol for its function in the original key, and the boxed Roman numeral depicting the new key is placed to the immediate left.

Example 22.6

A. SCHUBERT: STRING QUARTET IN G MINOR, D. 173, II

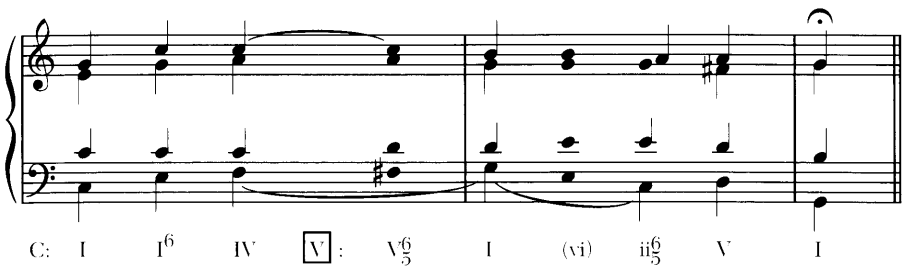
C. BEETHOVEN: SONATINA IN F MAJOR (1792), III

D.

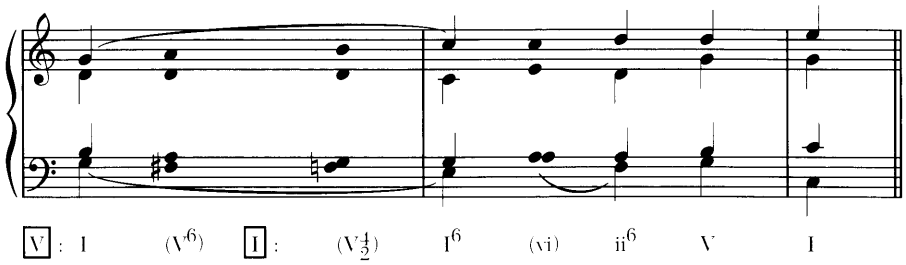
Chromatic modulation is a change of key through chromatic alteration of a diatonic scale degree *within* a phrase. For instance, a shift to the dominant key may be effected through chromatic motion from $\hat{4}$ through $\hat{4}\sharp$ to $\hat{5}$: $\sharp\hat{4}$ of the old key functions as the leading tone ($\sharp\hat{7}$) of the new key. This chromatic line often occurs in the bass or soprano (Example 22.7a). When the harmony returns to the original key, the chromatically altered note must return to its diatonic form—$\sharp\hat{4}$ returns to $\natural\hat{4}$ (Example 22.7b). Since there is no pivot chord in these chromatic shifts to the new key or back to the original key, there is no need to depict a double function of any chord; instead, we insert the boxed Roman numeral of the new key and continue to denote the functions of the chords in that new key. In the Bach chorale harmonization, (Example 22.7c), note that the chromatic line ($\hat{4}$-$\hat{4}\sharp$-$\hat{5}$) occurs in the tenor voice.

Example 22.7

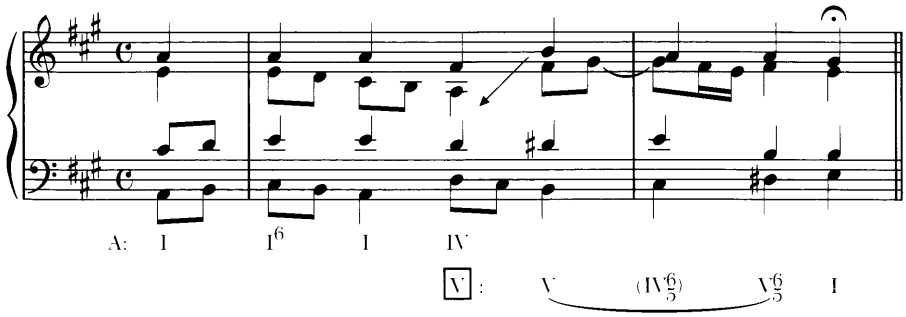
A.



B.



C. "Herr Jesu Christ, wahr'r Mensch und Gott" (Bach chorale harmonization)

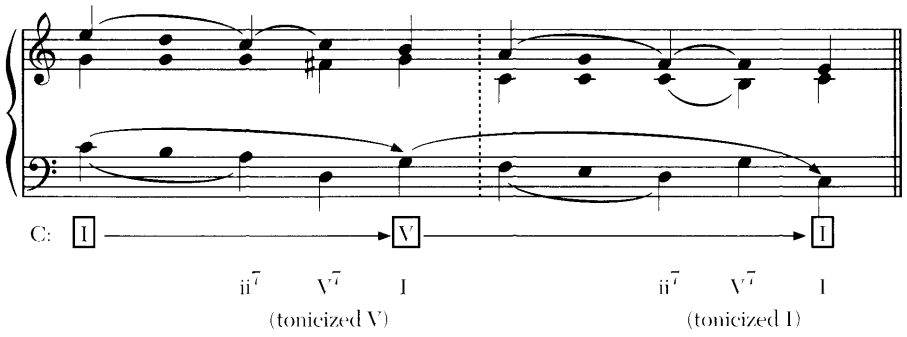


Modulation to the Dominant Key in the Major Mode

To a large extent, tonal harmony revolves around the interaction of the tonic and dominant. It is therefore not surprising that the dominant is the most commonly tonicized harmony in the major mode. Example 22.8 shows a voice-leading model of a typical expansion of the basic progression I-V-I. In the first half, we move from a pivot chord that functions as a pre-dominant

ii^{7}, to a dominant, and finally to I in the new key (V); in the second section we return through a similar set of chords to the original harmony. The tension created by movement to the active dominant harmony is resolved by the answering return to the tonic. Notice that the second half of this model is a transposition of the first half down a perfect 5th; the progression I-V is symmetrically mirrored by IV-I as the soprano descends an octave. This harmonic progression can be found in the opening section of the second movement of Beethoven's "Moonlight" Sonata.

Example 22.8



Intramovement Tonal Schemes Involving Modulation to the Dominant

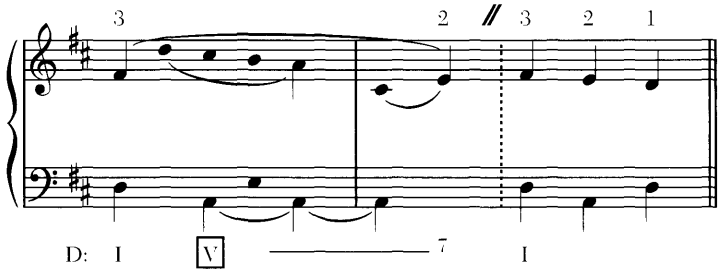
Many short pieces composed in the common-practice period are based on an overall tonal scheme of I-V-I. The Haydn minuet (Example 22.9a) is a typical expansion of this underlying scheme. The first section modulates to the dominant key. Note that this is a true modulation, not a simple half cadence; not only is there an extended progression in the new key, but after the repeat of the first section, the second section starts in that new key. The voice-leading reduction appears in Example 22.9b. After the expanded cadential progression in the first phrase (I-ii$^{6}_{5}$ -vii^{o6}-I), the D major chord is used as a pivot chord, I in the original key and IV in the new key; the change is confirmed by the cadential ii$^{6}_{5}$-V-I in the new key. The dominant is extended into the next repeated section until the appearance of G♮ in the bass at measure 11 suggests V^{7} of the original key, so that the phrase ends in measure 12 with what appears to be a half cadence in D major. The prolonged V^{7} prepares the return to the original tonic, reinforced by a reappearance of the opening thematic idea.

Example 22.9

A. HAYDN: STRING QUARTET IN D MAJOR, OP. 20, NO. 4, III

The further reduction of the piece in Example 22.10 reveals an **interrupted tonal structure,** whose plan can be outlined as I–V–V(7) // I-V-I. The double slash in the second section marks the point of interruption in the soprano line where the $\hat{3}$-$\hat{2}$ fails to resolve to the tonic $\hat{1}$. Following the interruption, the soprano return to $\hat{3}$ and this time descends through $\hat{2}$ to $\hat{1}$. Note that we have placed $\hat{2}$ an octave lower that the original, in order to show that the long-range voice leading descends by step.

Example 22.10



Modulation to the Relative Major in the Minor Mode

Modulation to the mediant or relative major (III) is the most common key change in the minor mode. Like modulations to V in the major mode, modulations to the mediant are found at various formal levels in the music of the common-practice period—as embellishing tonicizations, as transient modulations within a phrase, and as true modulations, extended changes of key confirmed both by their length and by cadences.

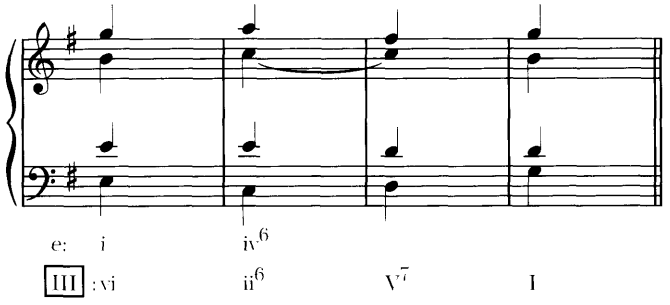
Sectional modulations and modulations through pivot chords to the relative major are common, but there are no chromatic modulations to the relative major, since the leading tone of the relative major is a diatonic scale degree ($\hat{2}$), not an altered diatonic note. The most common chords used as pivot chords between i and III are iv, which becomes ii of the new key; VI, which becomes IV of the new key; and i, which becomes the new vi. In addition, the subtonic (VII) of the original minor key may be used as the dominant of III (V^7/III). Three examples of typical modulations to the mediant through pivot chords appear in Example 22.11; study the excerpts and their reductions, noting the pivot chord in each case. In Example 22.11b, either of the first two triads could function as a pivot chord.

The Haydn passage presents a choice of pivot chords, either i = vi or vi^6 = ii^6 (Example 22.11a and b). The second measure of the Corelli Allemanda is merely a transposition of the first A minor bar a third higher to C major (Examples 22.11c and d). A deceptive progression V-vi introduces the relative major key in Bach's Bourrée (Examples 22.11e and f).

Example 22.11

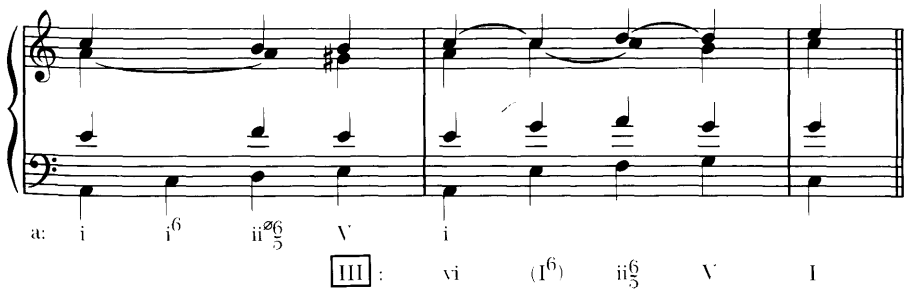
A. HAYDN: PIANO SONATA IN E MINOR, HOB. XVI, 34, III

B.

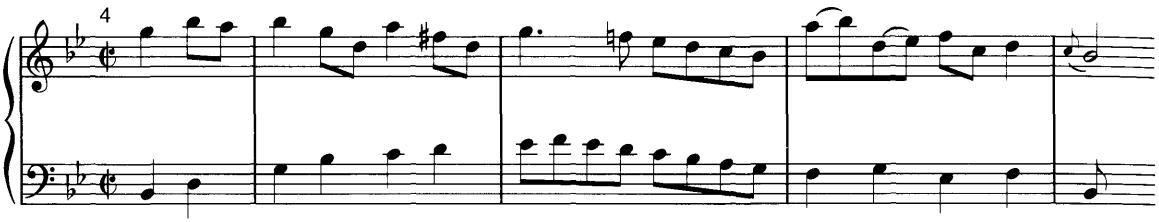


C. CORELLI: ALLEMANDA FROM TRIO SONATA OP. 4, NO. 5

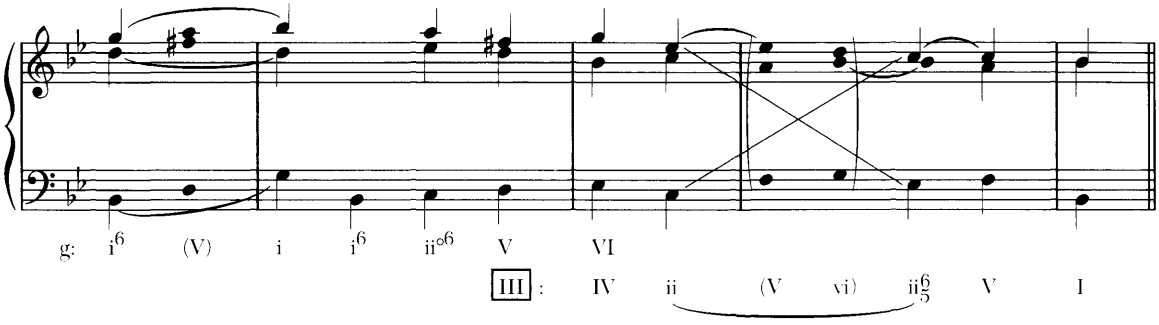
D.



E. BACH: BOURRÉE FROM ENGLISH SUITE IN G MINOR



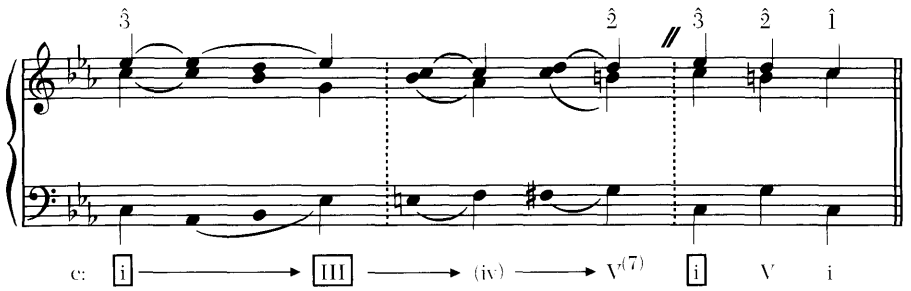
F.



INTRAMOVEMENT TONAL SCHEMES INVOLVING MODULATION TO THE RELATIVE MAJOR

Many short pieces in the minor mode composed during the common-practice period revolve around a shift to the relative minor or mediant key. The shift into and back out of III, however, does not work in exactly the same way as the shift into and out of V in the major mode. A direct return from III back to the tonic is usually awkward and musically unconvincing. Hence it is customary to reroute the motion through a dominant V, resulting in the overall progression i-III–V-i. This long-range scheme frequently occurs in movements in the minor mode in binary, ternary, rondo, and sonata forms. Examine the model key plan in Example 22.12, which is typical of many such movements in the Classical period. After the first section moves to III, the second section moves to V through a temporary tonicization of iv, and the last section moves back into the original key. Note that this model incorporates an interrupted tonal structure; the double slash at the beginning of the third section shows that the descent of the soprano line to $\hat{1}$ is interrupted before it returns to $\hat{3}$ and descends through $\hat{2}$ to $\hat{1}$.

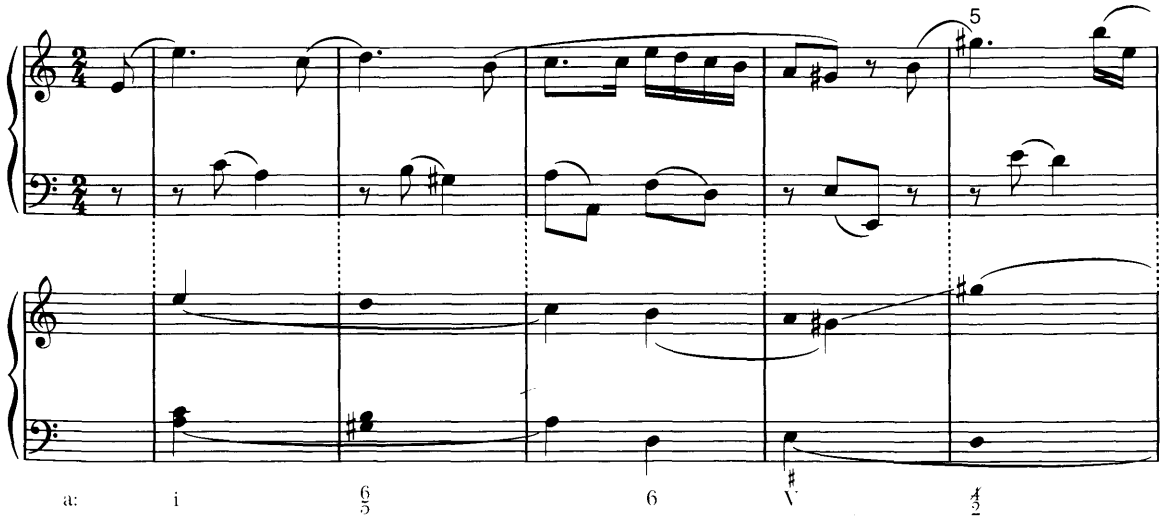
Example 22.12



Example 22.13 shows another piece cast in two repeated sections, like the Haydn minuet (Example 22.9a). The reduction appears directly beneath the score. The first half begins in A minor; the first phrase concludes with a half cadence on V. Then the harmony shifts to C major (III) through a pivot chord—i^6 in A minor also functions as vi of C major—and the change is confirmed by a ii^6-V-I cadence in C major. The second section begins with a tonicization of D minor, iv of A minor, before arriving on V in measure 12. The return of the opening theme back in A minor concludes with a transposed version of the C major cadence in the original key; compare measures 7–8 to measures 15–16.

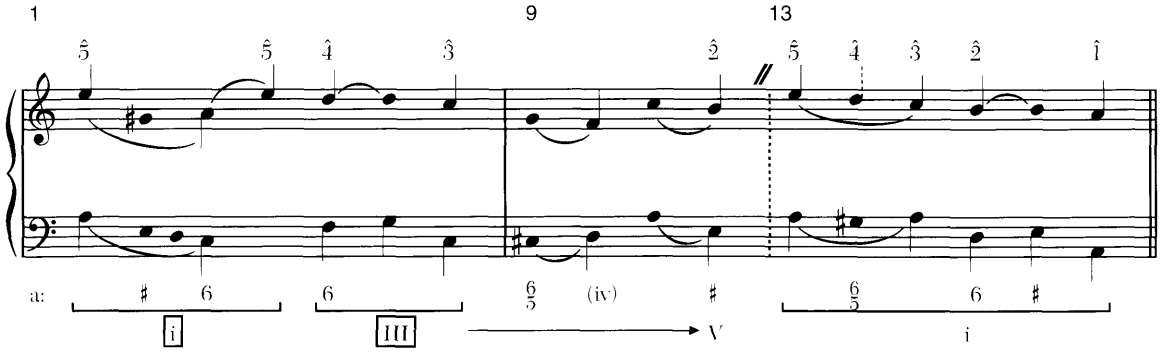
Example 22.13

D. G. TÜRK: "ABENDLIED"



A further reduction (Example 22.14) reveals another interrupted tonal structure. The soprano's stepwise descent from $\hat{5}$ to $\hat{1}$ is interrupted after arriving at $\hat{2}$; the concluding section in A minor repeats the descent from $\hat{5}$, this time arriving at the final tonic $\hat{1}$.

Example 22.14



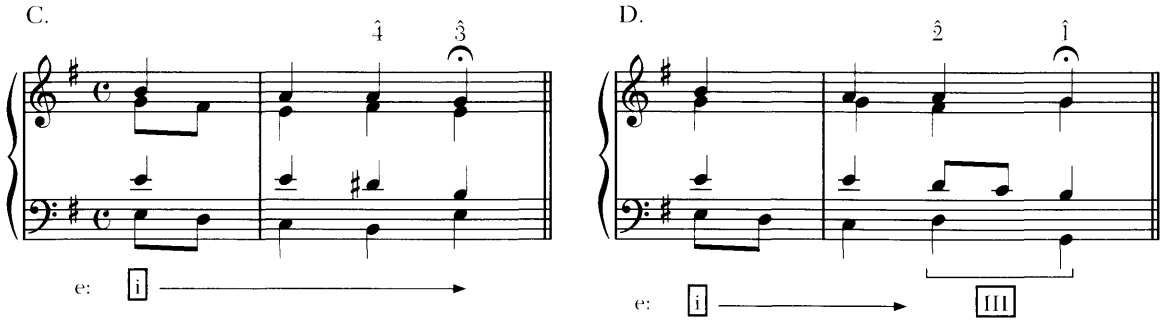
MELODY HARMONIZATION

Although many shorter melodies do not require or even permit a modulation, in harmonizing extended melodies it is vital to move to other key centers. Even in brief melodies, accidentals sometimes make clear that the implied harmony requires modulation. At the conclusion of the first melody in Example 22.15, for instance, the presence of an accidental, F♯ or $\hat{4}\sharp$, signals a possible tonicization; the F♯ functions as the leading tone of the new key, the dominant (V). In Example 22.15b, the outline of the last three notes of the soprano suggests a tonal shift. In the original key, the soprano notes would be $\hat{7}$-$\hat{6}$-$\hat{5}$, hardly a satisfactory way to come to a cadence; the same notes would work much better as $\hat{3}$-$\hat{2}$-$\hat{1}$ in the new key of the dominant. In the minor mode, some melodic cadences may be harmonized either in the original key or in III; compare the two settings in Example 22.15c and d. The first task in harmonizing phrases that modulate is to frame them with an opening chord in the original key and the cadential chords in the new key. Only then should you proceed to fill in the interior of the phrase. Chapter 27 will take up the topic of modulation again; at that point, we will discuss the use of modulation in long-range tonal planning.

Summary of Modulatory Techniques

1. To indicate transient modulations, place the Roman numerals of the new key over a bracket and the tonicized Roman numeral under the bracket:

$$\underset{\text{V}}{\overset{\text{I}^6 \quad \text{ii} \quad \text{V}^6 \quad \text{I}}{\lfloor\!\!\lfloor\!\!\lfloor\!\!



Terms and Concepts for Review

embellishing tonicization
modulation
transient modulation
sectional modulation
direct modulation
interrupted tonal structure
modulation by pivot chord or common chord
chromatic modulation
modulation to V in major mode
modulation to III in minor mode

A BRIEF REVIEW SELF-QUIZ

1. A. In a pivot-chord modulation to the *dominant key,* indicate how the given chord in the original major key will function in the new key. Then spell each triad.

V in E major =	in	major	( )
vi in A♭ major =	in	major	( )
I in D major =	in	major	( )

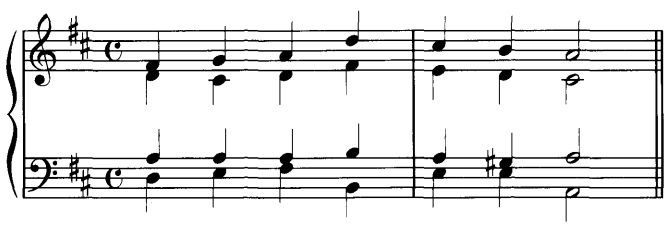
B. Do the same for pivot-chord modulations to the *relative major key* from a minor key.

iv in F minor =	in	major	( )
i in B minor =	in	major	( )
VI in G minor =	in	major	( )

2. Add a Roman numeral analysis to the harmonic models in Example 22.16. As you see, all three contain modulations either to V or to III, employing pivot chords or chromatic motion.

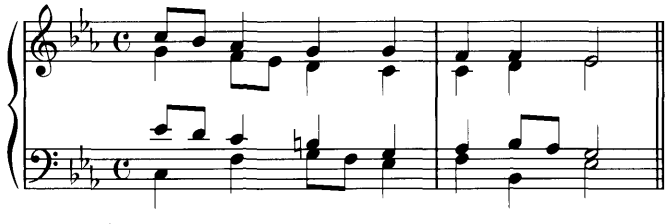
Example 22.16

A.



D:

B.



c:

C.

B♭:

3. Harmonize the short melodic phrases in Example 22.17. In all three, modulate either to V or to III. Write a suitable bass line and add a Roman numeral analysis of the implied harmonies. You need not fill in the inner voices.

Example 22.17

A.

E:

B.

d:

C.

A♭:

CHAPTER 23

Harmonic Sequences II:

SEQUENCES OF SEVENTH CHORDS AND OTHER SEQUENCES

In Chapter 20 we discussed the use of triads in diatonic harmonic sequences. In this chapter we will examine some further aspects of sequential technique. Following a discussion of how seventh chords are used in descending cycles of 5ths, we will explore other types of sequences that involve more complex interval patterns. In addition to demonstrating how secondary dominants may be used in descending cycles of 5ths to produce chromatic lines, we will illustrate how to change key through sequential motion, how to embellish sequences with motivic elaborations, and how to use seventh chords in more sophisticated sequential patterns.

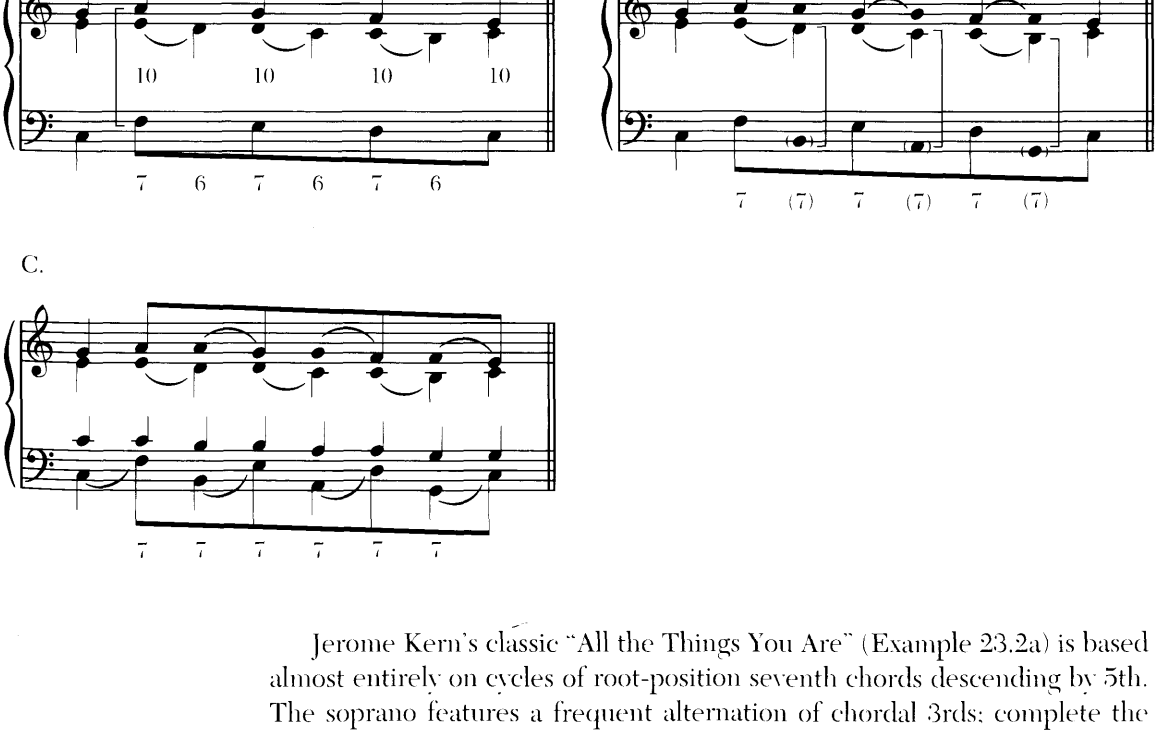
Diatonic Root-position Seventh Chords in Sequences Descending by 5th

Diatonic seventh chords normally occur in harmonic sequences that descend by 5ths. They rarely occur in sequences that feature root movement by either 2nd or 3rd, since it is difficult to prepare and resolve their chordal 7ths correctly. In fact, these sequences descending by 5th seem to use seventh chords as often as triads. Although we have heard these chains of

7ths in innumerable pieces, we never seem to tire of this familiar progression. Its common harmonic basis links such historically diverse works as tutti passages in Baroque concerto grossi to such popular songs as "The Windmills of Your Mind" and the Beatles' "You Never Give Me Your Money."

This sequence of root-position chords originates from a chain of descending 7-6 suspensions. In the sequential $\frac{6}{3}$ triads of Example 23.1a, the 7-6 suspensions in the alto serve to avoid the parallel 5ths by staggering the stepwise descent. If we now support the resolution of each suspension with a note a 10th lower in the bass (Example 23.1b), we create a change of bass when the dissonance resolves. This model now resembles a sequence of incomplete root-position seventh chords in three-voice texture. As each chordal 7th in the soprano or alto resolves, the held note in the other upper voice becomes in turn a new 7th, producing a pattern of overlapping dissonance and resolution. The preparations and suspensions are not tied in these models. In the four-part setting shown in Example 23.1c, we must omit the chordal 5th of every other seventh chord to avoid parallel 5ths in the lower voices.

Example 23.1

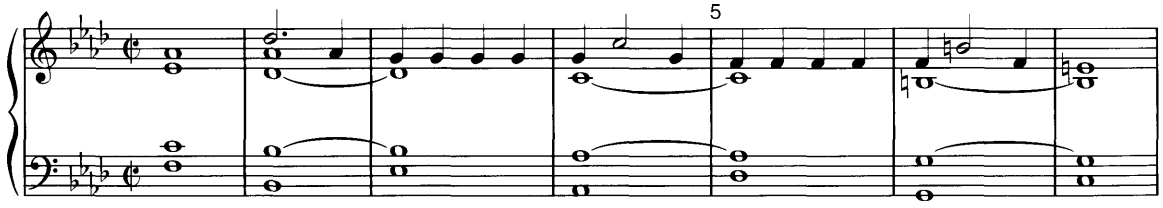


Jerome Kern's classic "All the Things You Are" (Example 23.2a) is based almost entirely on cycles of root-position seventh chords descending by 5th. The soprano features a frequent alternation of chordal 3rds; complete the

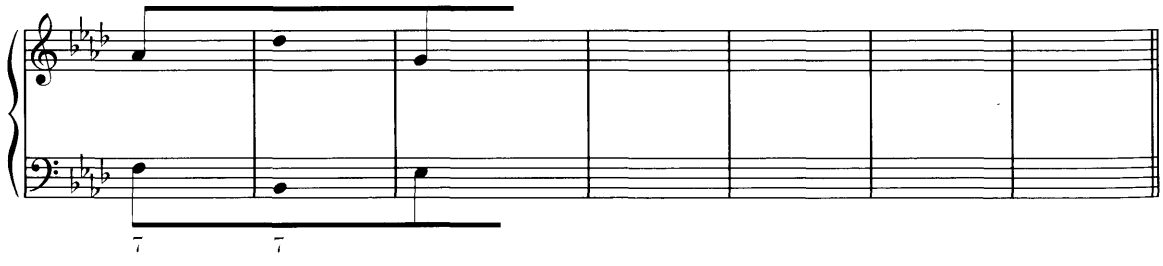
remainder of the reduction in Example 23.2b. The Brahms passage (Example 23.2c) cycles upward, preceding each movement up a 4th (or down a 5th) with the previous triad's first inversion. At first glance, this passage may not appear to be sequential, since the bass is moving in a different direction from the falling stepwise motion in the upper voices. However, if you compare the first chord of each measure, you see that the bass is also descending by step (C-B-A, etc.). Complete the remainder of the reduction in Example 23.2d.

Example 23.2

A. JEROME KERN: "ALL THE THINGS YOU ARE" (SIMPLIFIED)

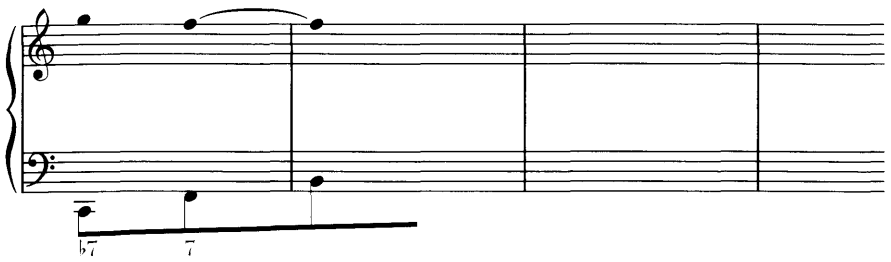


B.



C. BRAHMS: *EIN DEUTSCHES REQUIEM*, VI

D. (REDUCTION)



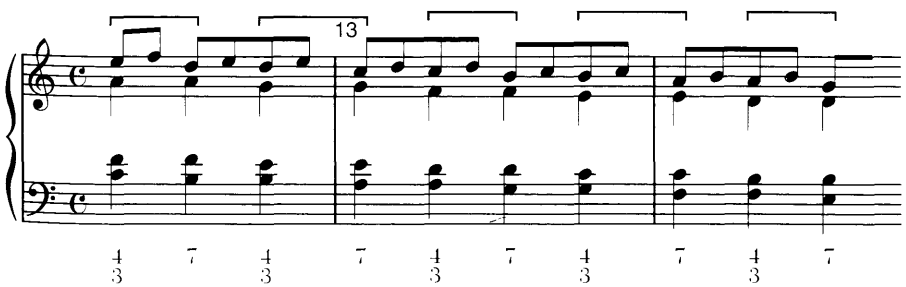
Sequences Using Inverted Diatonic Seventh Chords

Composers frequently employ chordal inversions in seventh-chord sequences. There are two standard successions of alternating inversions: either $\frac{4}{3}$ alternating with ^{7} (Example 23.3a and b), or $\frac{6}{5}$ alternating with $\frac{4}{2}$ (Examples 23.3c and d).

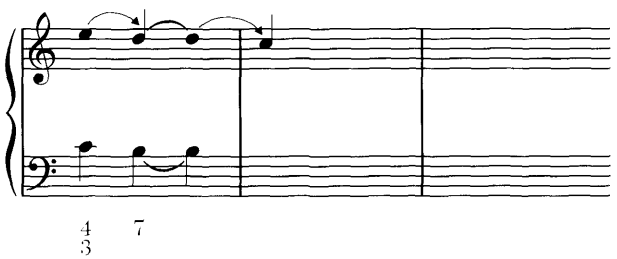
In both cases the outer voices feature common-tone preparations and stepwise resolutions of the chordal sevenths. Complete the reductions begun for you in Examples 23.3b and d; the unstemmed chordal sevenths resolve downward, as denoted by the arrows. Whereas in the Grieg excerpt the sevenths appear only in the soprano and alto parts, they occur in both outer voices of the Bach fugue; note the use of ties.

Example 23.3

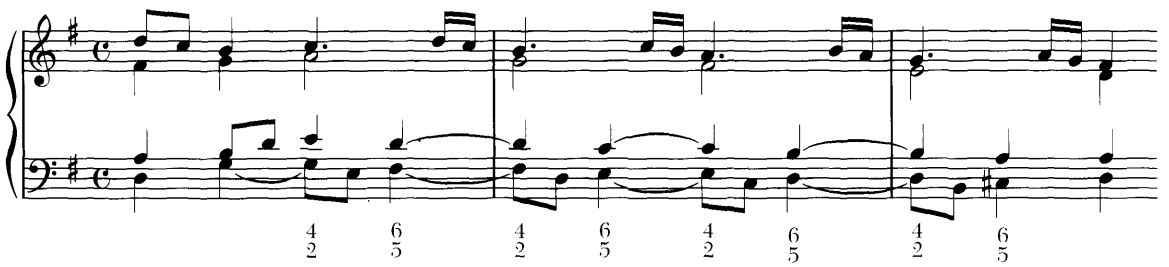
A. GRIEG: MUSETTE FROM *HOLBERG SUITE*, OP. 40



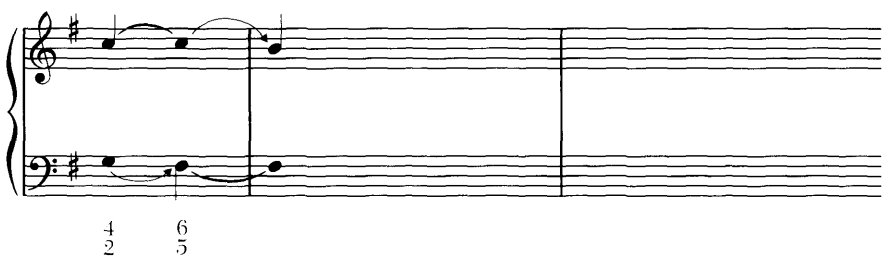
B.



C. BACH(?): FUGUE IN G MAJOR FROM *EIGHT LITTLE PRELUDES AND FUGUES FOR ORGAN*



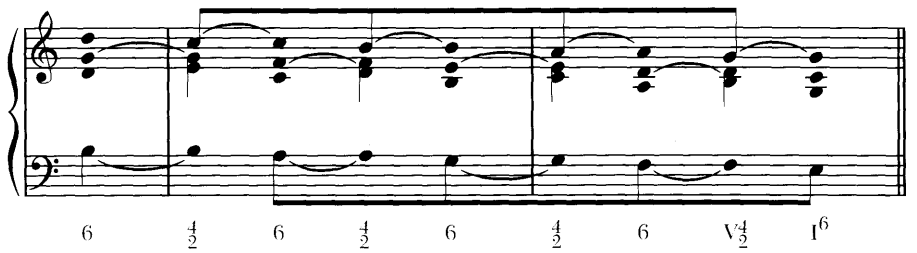
D.



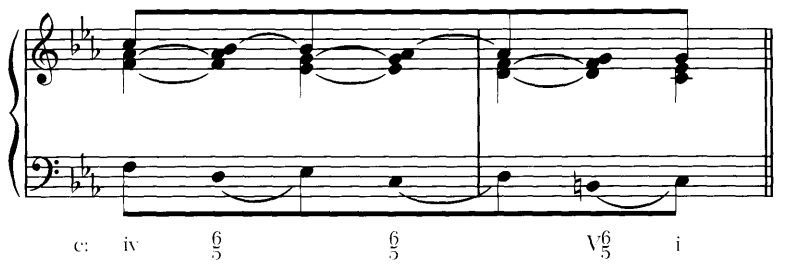
Example 23.4 shows two examples of triads alternating with seventh chords. In such cases, the dissonant seventh chord usually occurs on the accented beat, corresponding to the normal placement of a suspension. The most common of these progressions appear as models in Examples 23.4a and b: $\frac{4}{2}$ alternating with ^{6}, and $\frac{6}{5}$ alternating with $\frac{5}{3}$. The Buxtehude and Corelli excerpts illustrate how they might appear in actual passages of music (Examples 23.4b and c). The syncopated bass line forms a series of 2-3 suspensions with the soprano hymn tune in Buxtehude's chorale prelude, while the inner voice supplies the rhythmic motion. This procedure is reversed in the Corelli excerpt, where the suspension chain occurs between the soprano and alto parts, with the walking bass now providing the motion.

Example 23.4

A.

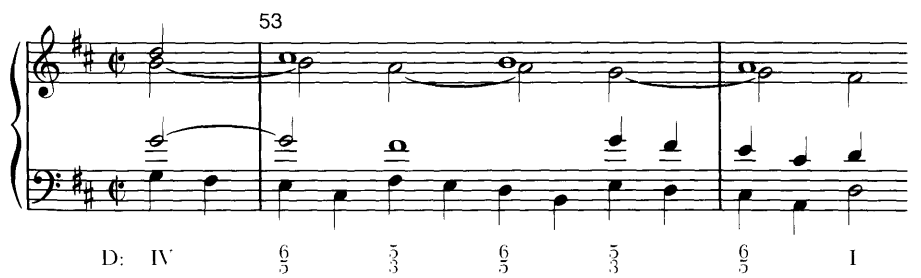


B.



C. BUXTEHUDE: "JESU CHRISTUS, UNSER HEILAND"

D. CORELLI: CONCERTO GROSSO NO. 1 IN D MAJOR, III



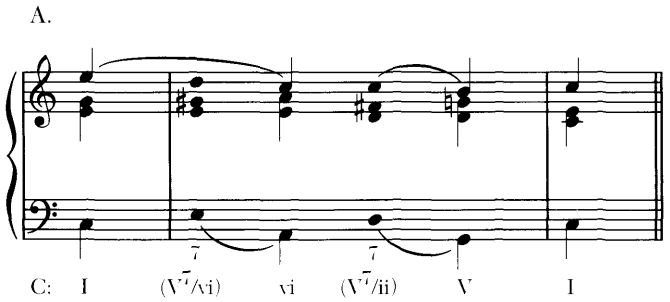
The Use of Secondary Dominants in Harmonic Sequences

The use of applied or secondary dominant chords in harmonic sequences intensifies the sense of resolution in chains of 5th-related chords. While the insertion or substitution of secondary dominants does not disturb the underlying voice leading of the sequence, it does provide additional harmonic color and opportunities for chromatic motion. Such patterns as the C major model in Example 23.5a occur mostly in the major mode.

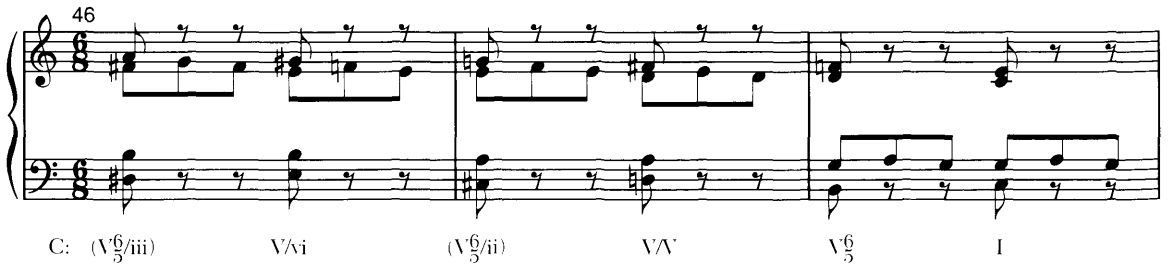
In Mendelssohn's Tarantella (Example 23.5b), the odd-numbered chords of a 6-5 sequence of descending 5ths are altered to form secondary V^6_5 chords, which in turn resolve to triadic secondary dominants (V/vi and V/V). This sequence of applied harmonies produces a completely chromatic line that descends from $\hat{6}$ to $\hat{3}$ in the soprano; consult the reduction in Example 23.5c. Sequences consisting entirely of secondary V^7's produce consecutive chromatic tritones in the upper voices. Although Classical composers, such as Mozart, frequently employed such sequential motion in their development sections, we tend to associate the sliding half steps in this progression with barbershop harmony and turn-of-the-century sentimental ballads, as illustrated in Example 23.5d.

Example 23.5

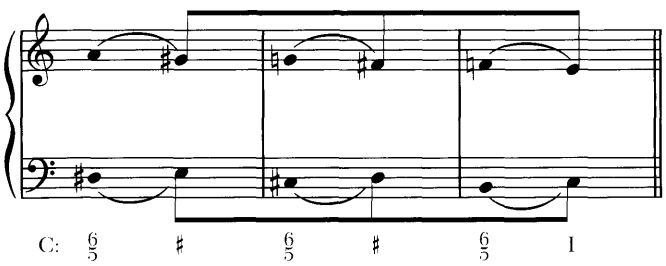
A.



B. Mendelssohn: Tarantella from *Lieder ohne Worte*, Op. 102, No. 3



C.

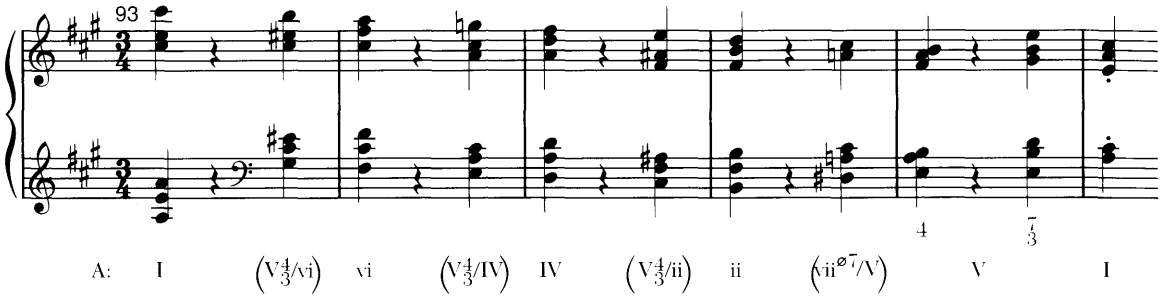


D. KERRY MILLS: "MEET ME IN ST. LOUIS"

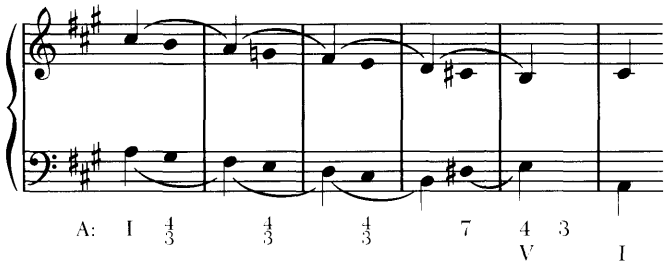
The stepwise descending 10ths in the outer voices of the Schubert excerpt (Examples 23.6a and b) are supported by a descending 3rd sequence (I–vi–IV–ii). Whereas we noted in Chapter 20 that passing first-inversion triads were usually inserted between such third-related chords to avoid parallels, we now see that secondary dominant sevenths in second inversion (V^4_3) have been substituted. Although the underlying melodic motion ascends in the following Beethoven excerpt (Examples 23.6c and d), the principle is similar. Again the inserted secondary V^7's break up the successive octaves found in the outer voices. Since the triad resolutions (I–ii–iii) fall on weak beats, the composer emphasizes them with *sf* markings.

Example 23.6

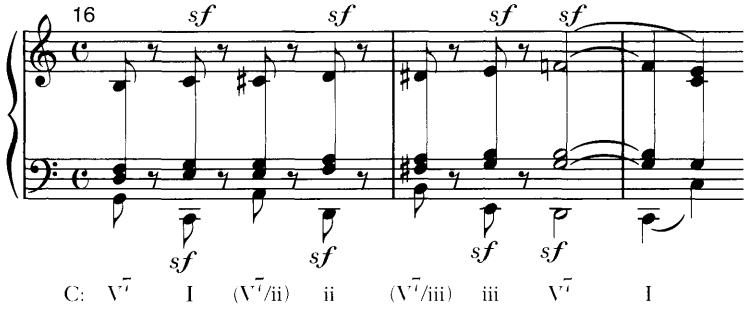
A. SCHUBERT: PIANO QUINTET IN A MAJOR ("TROUT"), III



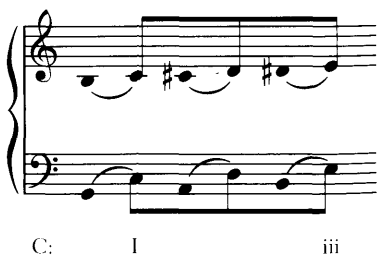
B.



C. BEETHOVEN: PIANO SONATA IN G MAJOR, OP. 14, NO. 2, II



D. (REDUCTION)

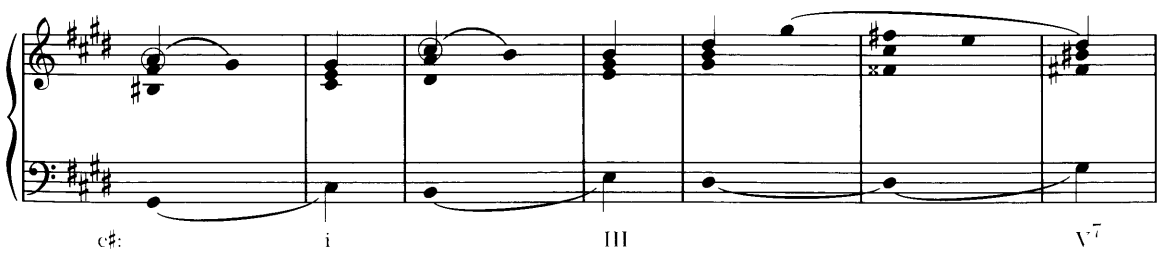


Finally, in his progression by ascending 3rds from i to III to V in C♯ minor, Chopin again precedes each basic harmony with its secondary dominant (Examples 23.7a and b). The secondary V^7's (with added ninths) once more stagger the underlying parallel fifths of the ascending progression; here the final dominant tonicization is supported by a cadential $\frac{6}{4}$ formula.

Example 23.7

A. CHOPIN: WALTZ IN C-SHARP MINOR, OP. 64, NO. 2

B. (REDUCTION)

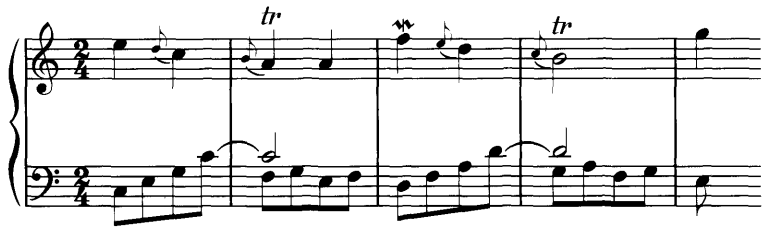


OTHER DIATONIC SEQUENCES

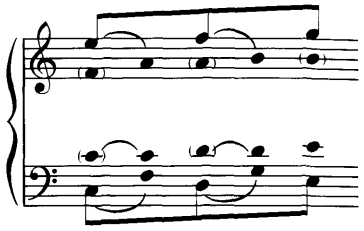
We occasionally encounter harmonic sequences in which several different root movements occur within the same sequence. In the Rameau passage (Example 23.8a) the succession of root-position triads alternates with rising 4ths and descending 3rds. The first beat of every other measure forms a stepwise ascent with similar 10ths in the outer voices, which are beamed in the reduction (Example 23.8b).

Example 23.8

A. RAMEAU: GAVOTTE AND VARIATIONS



B.

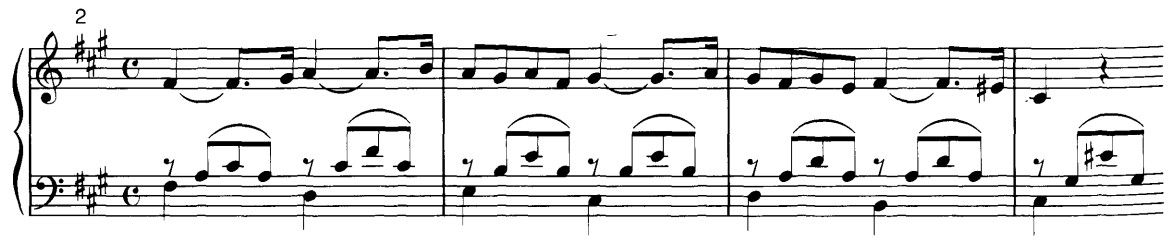


C: I

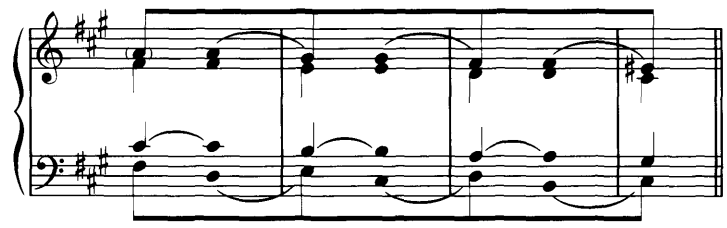
The lovely Fauré theme in Example 23.9a features a repeating pattern of root movement, down a 3rd and up a 2nd. The root-position chords alternate also, between triads and 7ths whose chordal sevenths are prepared and resolved in the traditional way. Notice again that the sequence creates long-range stepwise motion, marked by the beam in the reduction (Example 23.9b).

Example 23.9

A. FAURÉ: PAVANE, OP. 50



B.

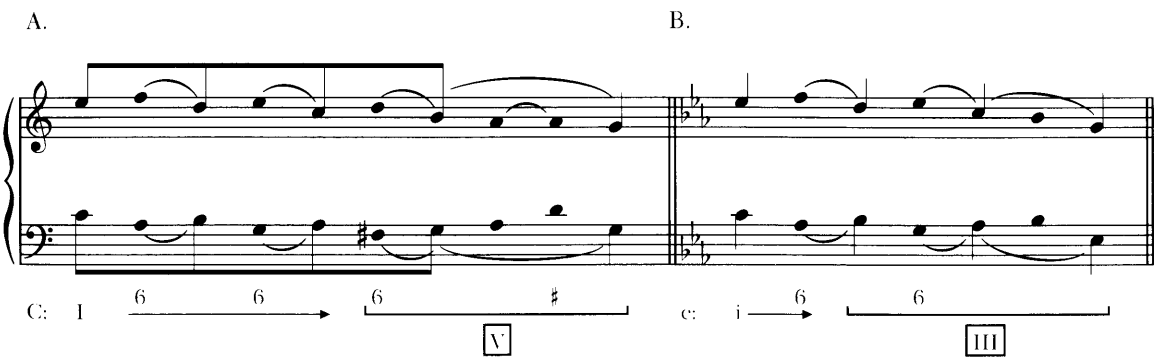


f♯: i 7 7 7 V

Sequences as a Means of Modulation

Composers sometimes use harmonic sequences as a way to modulate from one key to another. For instance, the insertion of an altered tone that becomes the leading tone of the dominant key ($\hat{\sharp 4} = \hat{7}$) into a cycle of descending 5ths allows us to exit the sequence early and then cadentially confirm the new [V] area (Example 23.10a). This technique is also possible in a minor-mode modulation from [i] to [III]. Here we can stop the sequence after the fourth chord; no altered notes are required (Example 23.10b).

Example 23.10



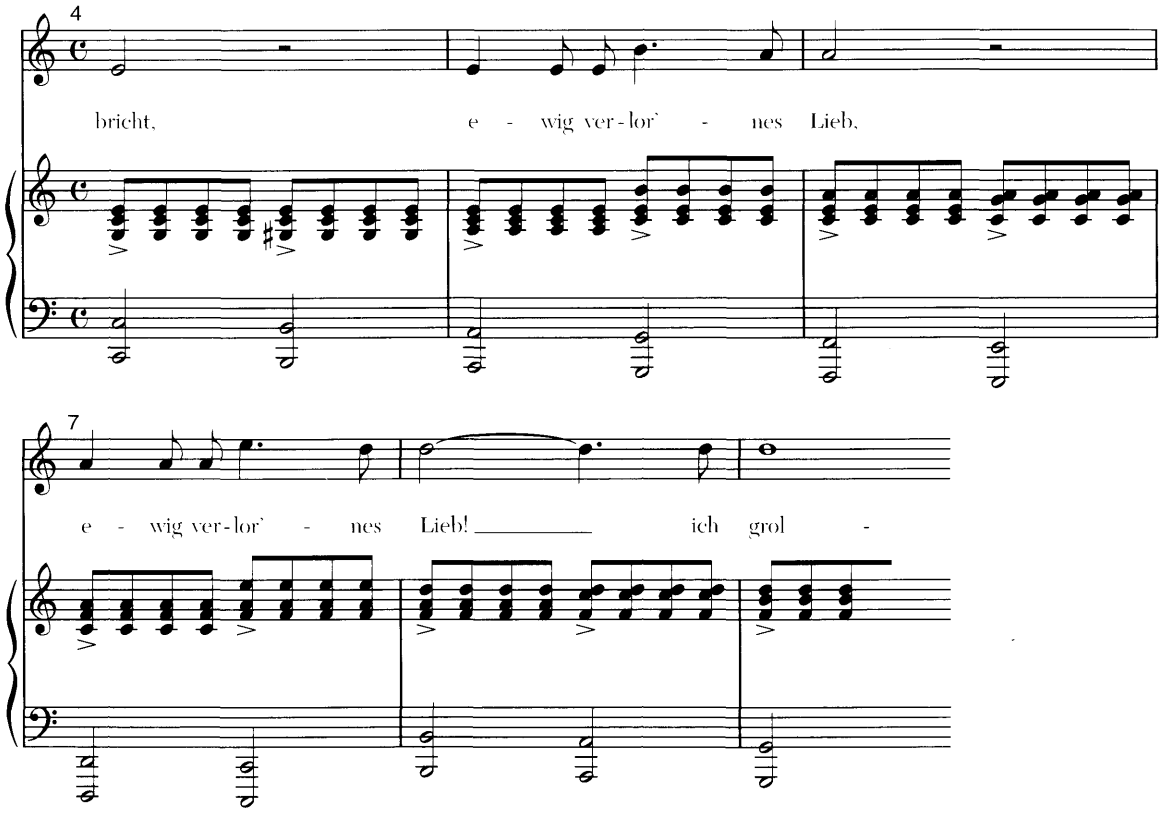
Unusual Treatment of Seventh Chords in Sequential Movement

The following examples demonstrate unusual ways of handling seventh chords in harmonic sequences. The Schumann excerpt (Example 23.11a) represents a rare usage of consecutive seventh chords in a series of root-position chords descending by 3rds. If we look at the vocal line and the bass of the piano part, we can see an obvious sequence occurring every two measures that outlines a larger motion descending by 5th from C to F to B (Example 23.11b). However, the problem of the treatment of 7th chords within the embedded descent by 3rds is more complex. In the voice-leading reduction (Example 23.11c), we have incorporated some structurally important notes from the right-hand piano accompaniment in order to clarify the underlying stepwise motion in the upper voices. Starting in measure 2, the outer voices of the alternating seventh-chord inversions ($^{7}_{5}$ and $^{4}_{3}$) outline a stepwise descent in 10ths. While the chordal 7th of each $^{4}_{3}$ resolves properly

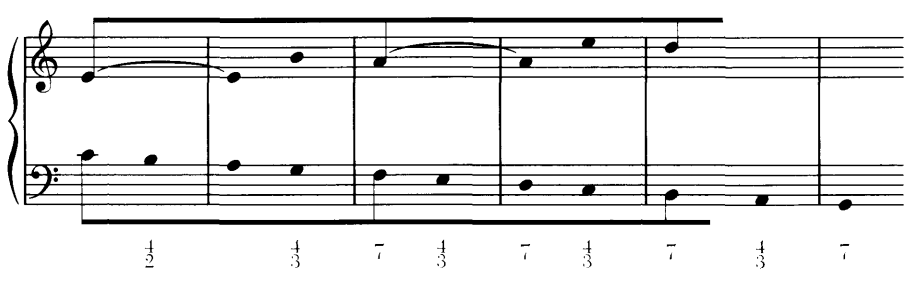
in the reduction's soprano part, the 7th of each root-position seventh chord is moved to the bass, as shown by the arrows. This transfer of the chordal 7th simultaneously prolongs the seventh harmony of the first half of each measure and creates a new passing seventh-chord harmony in the second half of each measure. Altogether, a most remarkable and effective passage.

Example 23.11

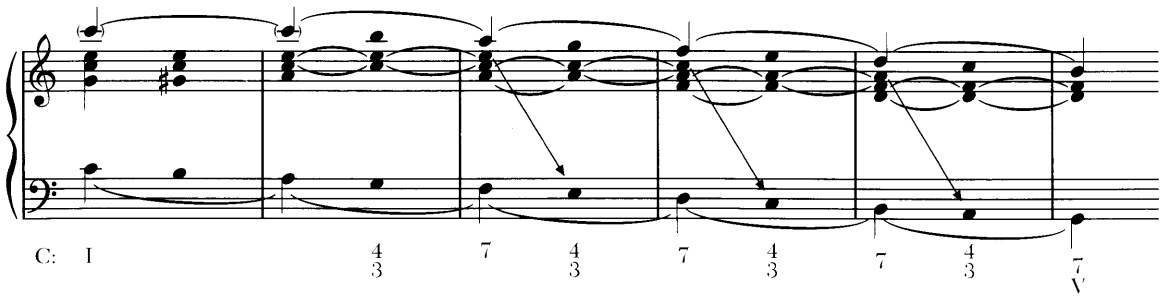
A. SCHUMANN: "ICH GROLLE NICHT" FROM *DICHTERLIEBE*



B.



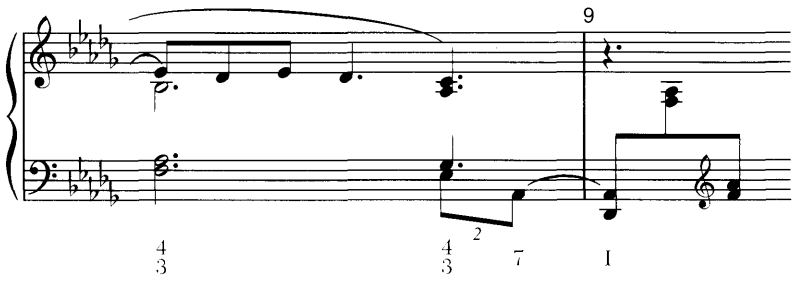
C.



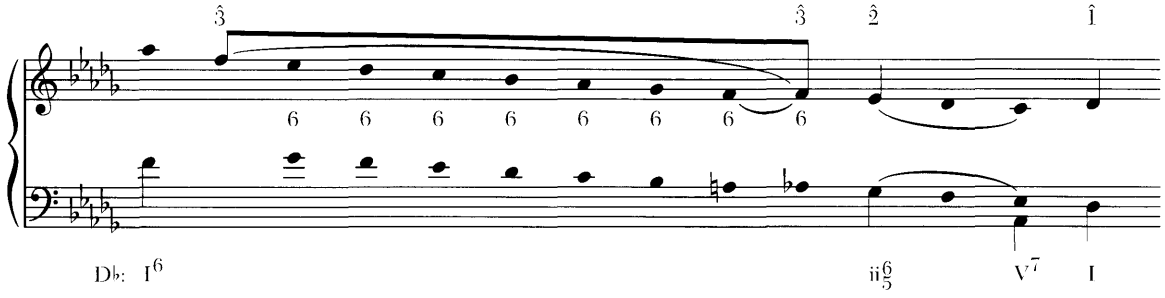
An even freer treatment of the chordal 7th is illustrated in the Debussy excerpt (Example 23.12). This famous piano miniature opens with descending stepwise motion with 6ths occurring between the outer parts; consult the reduction in Example 23.12b. This intervallic framework is filled out by a series of partially sequential seventh chords. The irregular alternation between several inversions of the seventh chord ($^{4}_{2}$, $^{4}_{3}$, and $^{6}_{5}$) keeps the passage from being fully sequential. This progression produces a somewhat static sense of harmonic motion that is finally relieved by the cadential ii^{6}_{5}-V^{7}-I in measure 7.

Example 23.12

A. DEBUSSY: "CLAIR DE LUNE" FROM *SUITE BERGAMASQUE*



B. (REDUCTION)



Summary of Further Sequential Techniques

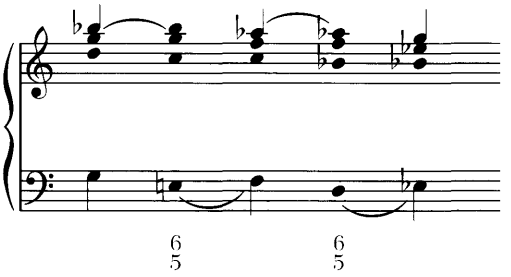
1. Sequences of root-position seventh chords by descending fifths must alternate complete with incomplete (omit 5th) harmonies.
2. In sequences of inverted seventh chords by descending fifths, the harmonies will remain complete. Alternations of ^{7} with $\frac{4}{3}$, or $\frac{4}{2}$ with $\frac{6}{5}$ are possible.
3. Alternations of seventh chords with triads in cycles of descending fifths involve either $\frac{4}{2}$ with ^{6}, or $\frac{6}{5}$ with $\frac{5}{3}$. Both harmonies are complete.
4. In sequences of diatonic triads by root movement of either seconds or thirds, each triad may be preceded by some form of its secondary dominant: I-(V^7/vi)-vi-(V^7/IV)-IV, etc. In addition, successive secondary dominants by descending fifths may be linked together: V^7/vi-V^7/ii-V^7/V-V^7-I.

The Elaboration of Sequences

In choosing excerpts from literature to illustrate various types of harmonic sequences, so far we have purposely selected examples that are mostly devoid of surface melodic figuration. In many musical passages, however, the underlying sequential movement is elaborated with a prominent motivic idea. For instance, in the first movement of Mozart's "Jupiter" Symphony, this elaboration of a sequential pattern (Example 23.13a) takes the form of imitation between the soprano and bass (Example 23.13b).

Example 23.13

A.



B. MOZART: SYMPHONY NO. 41 ("JUPITER"), K.551, I (STRING PARTS ONLY)

In deducing the voice leading of melodically embellished sequences, we should not be too hasty to determine the framework of the outer parts. At first glance, the essential bass and soprano notes in the Handel score of Example 23.14a appear to occur on the first beat of each measure.

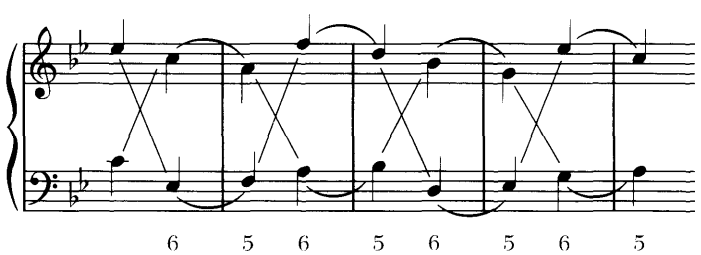
But this is not entirely the case. If we look more closely, we see that the notes that begin some measures are simply the result of *voice exchange*. In fact, voice exchanges permeate this entire example, as shown in the first reduction (Example 23.14b). The result is a kind of compound melody, some notes of which appear in an inner voice (stemmed inward) while other more essential notes appear in an outer voice (stemmed outward). When we

collect these more essential notes and place them in context, the resulting graph gives a better indication of passage's true voice leading (Example 23.14c).

Example 23.14

A. HANDEL: ORGAN CONCERTO IN G MINOR, OP. 4, NO. 3, II

B. (REDUCTION 1)



C. (REDUCTION 2)

Terms and Concepts for Review

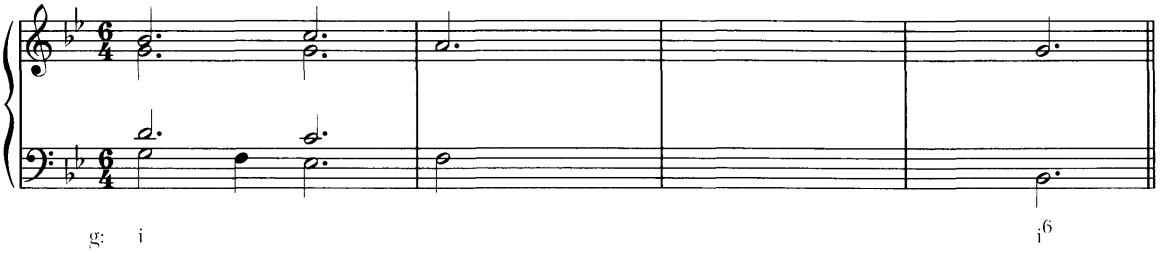
seventh chords in descending 5th sequences
inverted 7th chords in sequences
other diatonic sequences
secondary dominants in sequences
sequence as a means of modulation
unusual treatment of seventh chords
motivic elaboration in sequences

A BRIEF REVIEW SELF-QUIZ

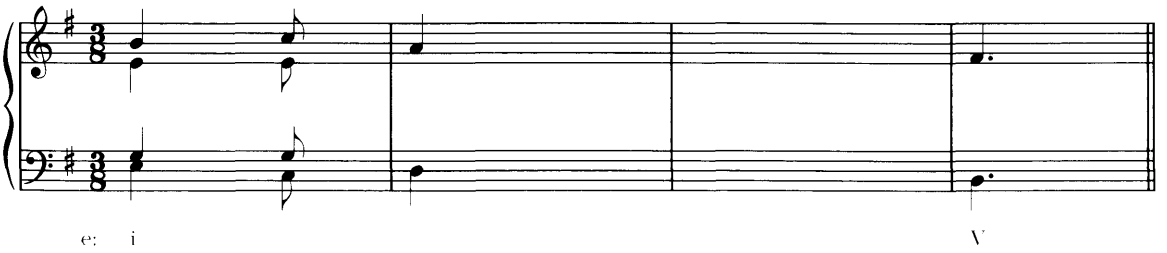
1. Complete the following sequences and indicate the root movement on which each sequence is based.

Example 23.15

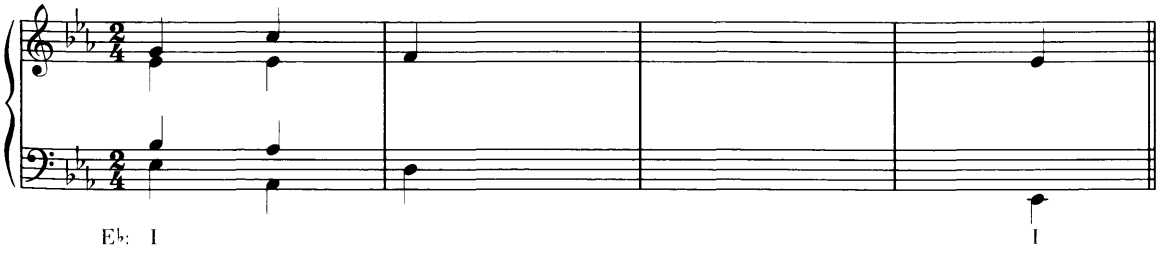
A.



B.



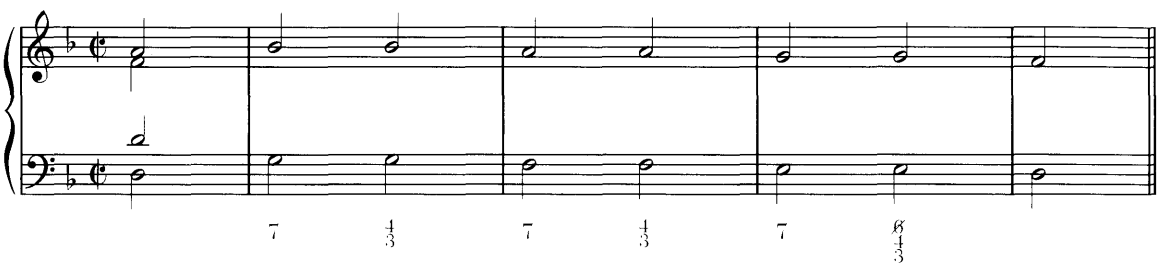
C.



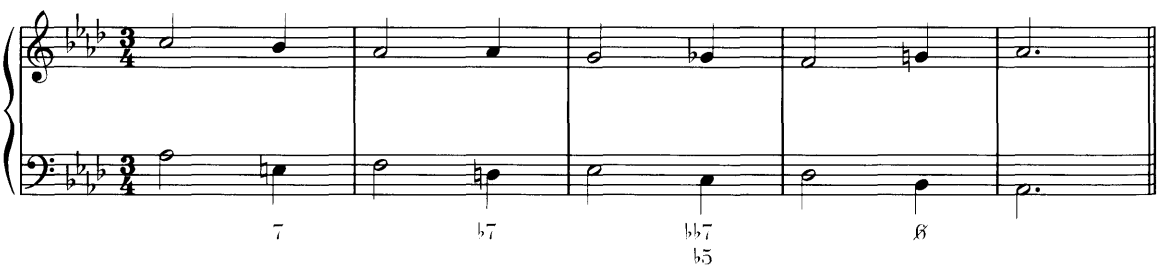
2. Complete the following sequential progressions according to the figured bass; be careful in the preparation and resolution of chordal 7ths. Indicate any use of secondary dominants or changes of key.

Example 23.16

A.



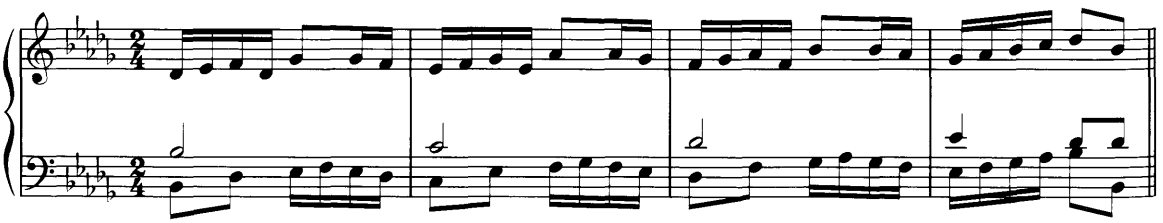
B.

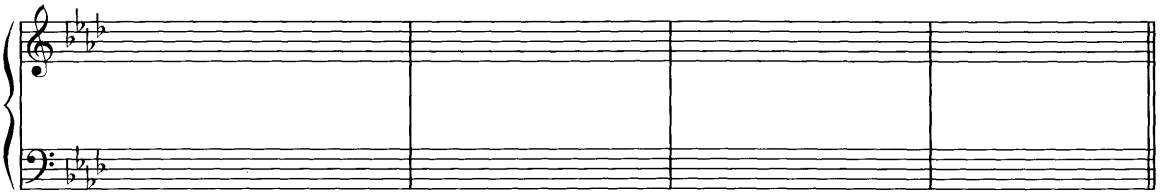


3. Make voice-leading reductions of the following harmonic sequences and then indicate the nature of each root-movement pattern by ascending or descending intervals.

Example 23.17

A.





B.

CHAPTER 24

Simple Forms

In Chapter 12 we discussed short pieces, such as hymns and folk songs, whose structure usually results from the interaction of phrase or period groupings. Armed with a knowledge of diatonic harmonic and melodic techniques and modulation, we are now ready to take up the question of musical form through the examination of complete pieces. In this chapter and Chapter 31, we will examine the formal design and tonal structure of some of the familiar forms that composers used in the common-practice period. We will focus on those features that these pieces have in common, in contrast to our previous discussion of excerpts in the text, in which we tended to emphasize the individual features that make these compositions unique. Although this chapter does quote several movements to illustrate the formal designs we will discuss, because of spatial restrictions, it is not possible to include a number of additional instrumental scores or to engage in extensive analytical comments on the interaction of formal and tonal characteristics. Rather, we will attempt to establish the normative features of various small formal designs within a historical context. Several lists of further pieces for reference appear in footnotes. The accompanying Workbook also includes more scores and lists of works suitable for analytical projects.

Many of these forms, such as one-part form, two-reprise form, ternary form, variations, and rondo are characterized by a prevailing homophonic texture. As we shall see in Chapter 31, contrapuntal forms, such as the invention and fugue, are freer in their formal designs.

Content and Form

In reading about music we frequently encounter the terms "content" and "form." Musical **content** refers to the specific compositional elements or *materials* used within a piece of music, while musical **form** pertains to the *organization* of these compositional materials. If we study only musical content on the one hand or musical form on the other, we obtain an incomplete picture of a piece. For instance, a specific theme in and of itself, which is one type of musical content, does not tell us anything about how the piece to which it belongs is put together. Likewise, the fact that a composition happens to be cast in a three-part or ABA form does not tell us anything about the nature of the themes used in each of its sections. Therefore, when we analyze a musical work, we need to examine both its content and its form.

Formal Design and Tonal Structure

Form itself is made up of two distinct aspects: formal design and tonal structure. **Formal design** includes the similarity or contrast of a composition's themes or motives, phrasing and metrical groupings, texture, instrumentation, dynamics, and proportional relations between its various parts or sections. **Tonal structure,** on the other hand, concerns the tonal scheme, melodic characteristics, harmonic language, register, and voice leading of a composition. While on occasion we may momentarily discuss either the formal design or the tonal structure of a piece to the exclusion of the other, we must never lose sight of the fact that it is the *interaction* of these two factors that is the paramount issue in musical analysis.

One-part Form

Some shorter pieces display a seamless texture that resists being divided into well-defined parts or sections. The texture or figuration of the initial motive or idea usually continues throughout the work, creating a **one-part form**. Brief pieces, such as the C major Prelude in Bach's *Well-Tempered Clavier*, Book I, or some of Chopin's Op. 28 Preludes, are typical examples.

A short one-part prelude by Bach is quoted in Example 24.1. Notice how the opening figuration is continued throughout—in the soprano (mm. 1–3), in the bass (m. 12), alternating between the two voices (mm. 4–8), or in both voices simultaneously (m. 13). The harmonic areas of the simple tonal scheme create a pattern of four-measure phrases: following the original tonic prolongation over a tonic pedal (mm. 1–4), the music moves to the dominant area (mm. 5–8), arriving at a dominant pedal (mm. 9–12) that leads back to the final I (mm. 13–16).

Example 24.1

♪ BACH: LITTLE PRELUDE IN C MAJOR, BWV 939

Binary or Two-reprise Design

The term **binary design** (or **form**) is somewhat ambiguous. In one sense, it is used to describe a composition that consists of two sections of contrasting thematic material, expressed as AB. The short Brahms excerpt in Example 12.10 is a typical example; it divides into two contrasting periods, each with its own distinct melodic profile. This type of binary design is not particularly common in instrumental music, although we might cite the standard military march—for example, familiar Sousa marches—as one instrumental example. Marches typically divide into two large sections; the first A, consisting of a short introduction and two strains, is followed by the contrasting Trio or B part, usually set in the subdominant key. Thus the march is one of the few genres in the common-practice period that do not end in the original tonic key. These binary forms occur more frequently in text-driven vocal music, such as "Trockne Blumen" from Schubert's *Die schöne Müllerin* song cycle.

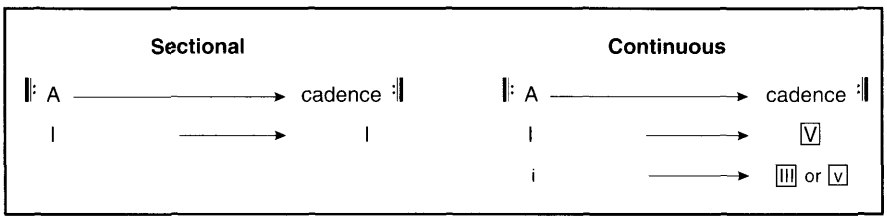
On the other hand, the term "binary" can refer to pieces that simply feature two repeated sections, regardless of their thematic content (𝄆 𝄇 𝄆). We will denote this scheme by the term **two-reprise design** ("reprise" means *repeated*). In some cases the thematic material in the second reprise or repeated section is not markedly different from that of the first reprise, but rather is often loosely based on it.

Two-reprise design may constitute an entire movement or occur as a separate section of a movement (see the later sections on variation form and rondo). The harmonic characteristics of this scheme, including some voice-leading models and reductions, have already been briefly discussed in Chapter 22.

The Two-reprise Design in the Baroque Period

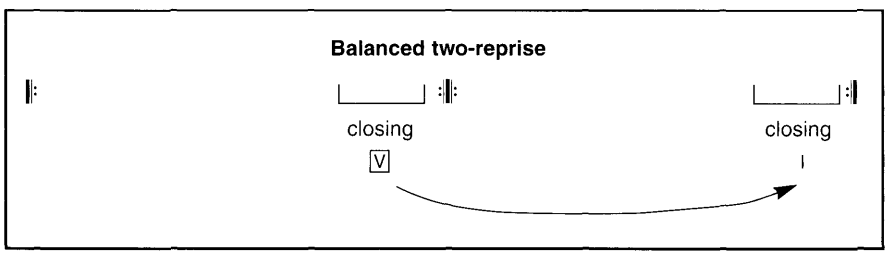
The various dances that make up the typical Baroque **suite** are cast in two-reprise design. Although an entire dance may be loosely based on the opening or principal theme, that theme seldom returns in a literal tonic restatement during the second part or reprise. When the first reprise cadences in the tonic key, it is called a **sectional two-reprise design,** but when the first reprise cadences in or tonicizes a *new* key area (such as V in major or III in minor), it is called a **continuous two-reprise design;** see the two diagrams in Figure 24.1.

Figure 24.1



The cadential phrase or material at the close of the first reprise (in either V or III) sometimes reappears at the end of the second reprise, but now transposed to the tonic key. We call a piece that features this recurrence a **balanced two-reprise design,** as shown in Figure 24.2.

Figure 24.2



A short two-reprise minuet by Handel is quoted in Example 24.2. It may be classified as *continuous*, since the first reprise cadences in the dominant key (mm. 7–8). Although this same cadence formula reappears in the last two measures of the second reprise, suggesting a balanced structure, the initial principal theme does not recur in the second section. The second reprise opens with an ascending 6–5 chromatic sequence (mm. 9–14) before cadencing in the relative key of D minor (mm. 15–16). The music then uses a descending 5th progression to cycle back past I to the subdominant (mm. 17–21) before concluding with a final tonic cadence (mm. 22–24). Each of the minuet's three eight-measure phrases features a well-defined cadence, first in the area of V, then in vi, and then in I.

Example 24.2

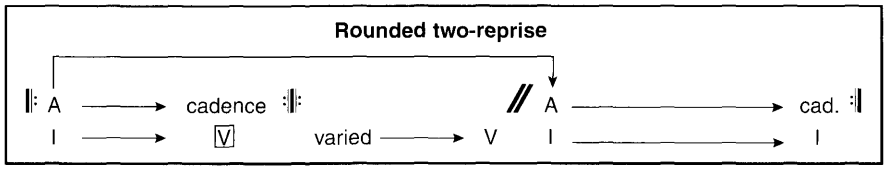
(f) HANDEL: MINUET IN F MAJOR

THE TWO-REPRISE DESIGN IN THE CLASSICAL PERIOD

Several features of two-reprise design in the Classical period distinguish it from its Baroque counterpart. For one thing, this design usually functioned in the Classic period as a separate section of a larger movement. Certain features of the second reprise changed as well. Following the quasi-modulatory section

that opens the second section, the music typically moves toward an extended dominant that serves as the preparation for the literal return of the movement's principal theme in the tonic. This thematic restatement gives rise to what we call a **rounded two-reprise design;** consult Figure 24.3, noting the interruption sign (//) after the V that immediately precedes the return of the original A material. While the great majority of Classical two-reprise designs are continuous and display a return of the original theme in tonic, one can always finds exceptions in which there is no modulation at the end of the first reprise or the principal idea does not reappear in the second reprise.

Figure 3



This design is found in both minuet and scherzo movements of Classical works, where it occurs as the form of both the Minuet or Scherzo proper and the subsequent Trio. The analysis of the Beethoven Menuetto and Trio in Chapter 25 contains a detailed discussion of its typical design and tonal structure. Less complex examples may be found in Examples 22.9a in a major key and Example 22.13 in a minor key; the return of the original theme is greatly abbreviated in the latter piece.

Ternary Form

Compositions in **ternary form** are characterized by three distinct sections—an opening A section whose initial thematic material opens and closes in the tonic key, a thematically contrasting middle B section, usually set in a different key, and a return, either literal or modified, of the original A section back in the tonic. (Since the scheme of a rounded two-reprise form, as shown in Figure 24.3, approximates these requirements, some theorists refer to it as an **incipient ternary form.**) These pieces may also include a short introduction and a closing coda. Ternary design is commonly found in slow movements, such as the middle movements of Classical sonatas or quartets, or short character pieces in the Romantic period, such as the Chopin mazurkas or the Brahms intermezzi.

Following the conclusion of the opening A section in the tonic key, the B section begins immediately by introducing a new melody in a different key or

the parallel mode. A brief **retransition,** usually based on dominant harmony, prepares the return of the first part, which may be a literal repetition or may contain modifications. In the Classical minuet, after the conclusion of the Trio, itself a two-reprise form, the performer jumps immediately to the beginning of the piece for the da capo (literally "to the head") or repetition of the opening Minuet section. If the trio is set in a foreign key, a retransition may be necessary to modulate back to the original tonic center; for instance, see the third movement of Haydn's Symphony No. 104 ("London") in D Major.

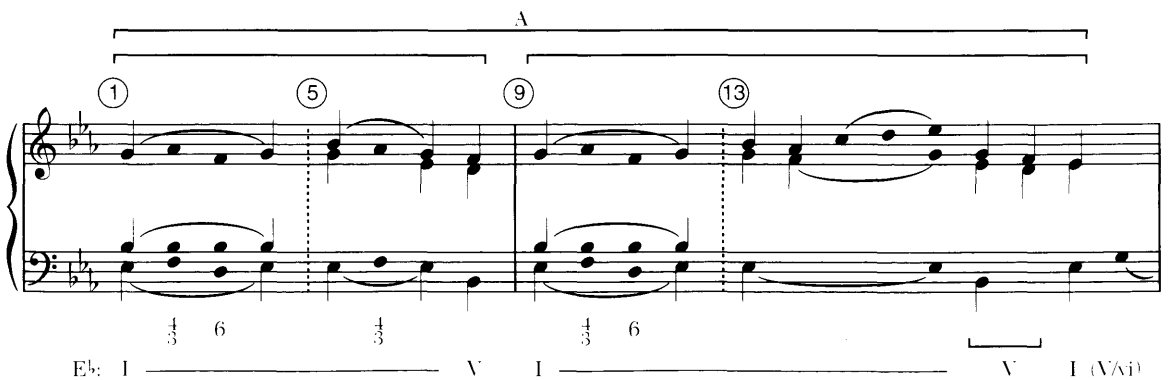
The slow movement from Friedrick Kuhlau's Sonatina in G Major, Op. 20, No. 2, is a clear-cut instance of ternary design. The score and its voice-leading reduction may be found in Example 24.3. The opening A section (mm. 1–16) consists of a parallel double period in the tonic key of E♭ major: two contrasting four-bar phrases (ab) move from I to V, followed by their repetition (ab) with a concluding authentic cadence on I. The middle or B section (mm. 17–29) immediately shifts to the relative key of C minor with new thematic material and a different texture. Its melody sequences downward through B♭ minor and A♭ before reaching the dominant G (measure 26), spanning a descending tetrachordal progression (i-♭vii-VI-V) in C minor, with several of its transient centers preceded by their secondary dominants. A short chromatic retransition (mm. 26–29), which features several diminished sevenths, leads to a literal return of the A section (mm. 30–46). A few tonic chords provide the final cadential extension (mm. 47–49).

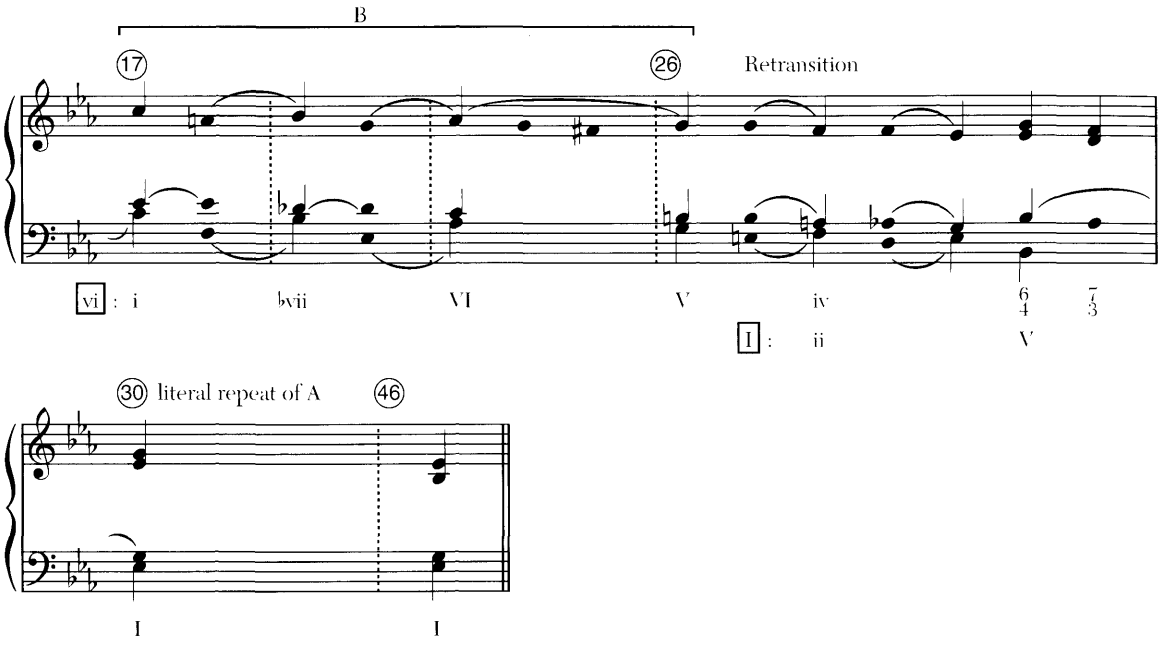
Example 24.3

A. Friedrich Kuhlau: Sonatina in G Major, Op. 20, No. 2, II

tr
17
26

B. (REDUCTION)





The choruses of most popular songs in the 1930s and 1940s utilize a quatrain form, a design we discussed briefly in Chapter 12. Quatrain form is actually a modified type of ternary design with an extra A (AA′BA′); B is the contrasting section, called the *bridge*. The "Dance of the Reed Pipes" from Tchaikovsky's *Nutcracker* ballet employs an extended quatrain design.

Variation Form

The principle of **variation** is found not only throughout the entire corpus of Western music but also in the musics of other cultures. Since the repetition of a musical idea is essential to the establishment of its identity, it is not surprising that composers modified or varied this idea in different ways, either upon its immediate repetition or later on in the piece. Variation implies that some elements of the original material undergo change while other elements remain relatively fixed. We may find examples of this procedure within the sections of a single movement, where the immediate restatement of a phrase may be modified, or in the case of ternary form, where the return of the initial section may be varied. Melodic elaboration is common and can be heard in the ternary *da capo aria*, when the singer embellishes the melodic repetition in the restated or da capo section, or in the *doubles* or

varied repeats of Baroque suite movements. In the slow movement of his Piano Sonata in D Major, K. 311, Mozart embellishes the successive recurrences of the opening melody with increasingly complex elaborations (Example 24.4).

Example 24.4

♪ MOZART: PIANO SONATA IN D MAJOR, K.311, II

We will focus on two variation procedures that serve as the formal basis for an entire composition—continuous variations and sectional variations, also known as "theme and variations."

Baroque Continuous Variations

Continuous variations, in which the variations follow one other without interruption, are typical of the Baroque period. They are customarily based on a theme four to eight measures long and usually feature a reiterated melodic pattern in the bass voice. They are usually characterized by slow tempo, triple meter, and the minor mode, and they tend to remain in the same key throughout, although the middle variations may be set in the parallel major key, as in Bach's D minor Chaconne for solo violin, or the relative major, as in Buxtehude's Chaconne in D Minor for organ. Although some theorists have attempted to make distinctions between various types of Baroque continuous variations, the composers of that period used *passacaglia*, *chaconne*, and *ground* interchangeably for the titles of their compositions. Some writers claim that Bach's D minor Chaconne for solo violin is based not on a recurring bass but rather on chord progression, but careful analysis of this work reveals that it is based on the descending chromatic tetrachord.

In continuous variations, there are usually a large number of variations based on a fairly short theme. Pairings of similar variations or even the repetition of individual variations are common. The bass theme, accompanying harmony, and phrase length are normally retained in each variation, whereas the texture and rhythm tend to vary. In each variation, the voices above the bass usually develop one particular motivic or rhythmic figure that is introduced at the outset. If the theme progresses harmonically from i to V, each new motivic idea is confined to a single variation, as in the Bach Chaconne (Example 24.5a). However, if the harmony concludes on the tonic, the final measure of each variation may introduce the motivic material of the next, as in Bach's Passacaglia in C Minor for organ (Example 24.5b). This bass theme, as indicated in the example, was created by extending an earlier four-measure theme by André Raison.

Example 24.5

A. Bach: Chaconne from Partita No. 2 for Solo Violin in D Minor, BWV 1004

B. Bach: Passacaglia in C Minor, BWV 582

In some continuous movements, several similar variations may be grouped together to create a greater sense of unity. One common formal design resulting from such groupings is the so-called *double rise*, in which a gradual acceleration of rhythmic motion and increase in textural density occurs twice.

The theme and several variations of a passacaglia by Handel are quoted in Example 24.6. The harmonic basis of the theme (mm. 1–4) is a complete cycle of descending 5ths in G minor. The succeeding variations follow one another without pause. In the initial variation (mm. 5–8) the original 5-6 sequence is replaced by exclusive root-position triads built on the running bass. The next two variations (mm. 9–16) are almost identical, except that the outer voices switch their positions—the soprano becomes the bass, and the bass becomes the soprano. In Variation 4 the running figuration returns to the soprano, where it is supported by similar rhythmic motion in the bass.

Example 24.6

(f) HANDEL: PASSACAILLE IN G MINOR

Some famous examples of continuous variations from the Baroque period and later historical eras are listed in the footnote below.[1] Jazz improvisations on standard popular songs also represent examples of continuous variations, since the music flows uninterrupted from one variation to the other.

We may also find instances of **ostinato** during sections of a movement, in which the theme is nothing more than a recurring melodic fragment in either the bass or soprano; an example is the closing section of Igor Stravinsky's *Symphony of Psalms*. The following extract from the Finale of Brahms's Symphony No. 1 uses a descending tetrachord as the ostinato figure.

Example 24.7

BRAHMS: SYMPHONY NO. 1, IV (PIANO REDUCTION)

1. Baroque continuous variations include Dido's Lament from Purcell's *Dido and Aeneas*, Handel's Chaconne in G Major for keyboard, the "Crucifixus" from the Credo of Bach's *Mass in B Minor*, and Pachelbel's famous Canon in D Major. Examples from later periods include Beethoven's *Thirty-two Variations for Piano in C Minor*, WoO 80, the Finale of Brahms's *Variations on a Theme of Haydn* and the last movement of his Fourth Symphony, the Passacaglia from Britten's *Peter Grimes*, and the concluding movement of Paul Hindemith's *Nobilissima Visione*.

SECTIONAL VARIATIONS, OR THEME AND VARIATIONS

As **sectional variations** or **theme and variations** grew in popularity during the Classical period, these forms gradually replaced the older continuous variations. The *theme*, either an original or borrowed tune, normally consisted of a rounded two-reprise form, although it might contain only one or more periods. The entire theme-and-variations set is made up of a series of *individual*, relatively short pieces, each of which is tonally closed and separated by a *brief pause*. Sometimes the theme may be a popular tune; some variations on popular tunes, such as Joseph Arban's *The Carnival of Venice* for trumpet or Arthur Pryor's *The Bluebells of Scotland* for trombone, have become virtuosic showpieces.

Theme-and-variations sets are relatively infrequent in the Baroque era; the most famous example is Bach's *Goldberg Variations* for harpsichord. In Classical-period sets of variations, the underlying harmonies, phrasing, and formal design remained relatively fixed while the melody, texture, register, and rhythm vary from variation to variation. Each variation was based on a different melodic or rhythmic motive. All variations were normally set in the same key, although the mode might change.

The theme and selected variations from Mozart's variations on a well-known tune are cited in Example 24.8. This theme is somewhat of an exception, since it consists of a single two-phrase period without modulation. Compare the soprano and bass of each variation to the original tune, noting any significant modifications. The succession of dissonances starting in measures 3–7 of Variation 2 serve to unify several of the later variations.

Example 24.8

MOZART: VARIATIONS ON "AH, VOUS DIRAI-JE, MAMAN," K.265 (FIRST EIGHT MEASURES OF EACH VARIATION)

VAR.VII.
f
VAR.VIII.
Minore.
p
f
VAR.XI.
Adagio.
p
fp
fp

Variation sets were composed both as separate pieces or as movements of sonatas, quartets, and symphonies. When a variation set appears in Classical multi-movement works, it is usually the slow movement. Variation form may appear in other movements; the opening movement of Mozart's Piano Sonata in A Major, K. 331, and the last movement of Beethoven's Third Symphony ("Eroica") are variation sets. In keyboard variations sets of the period, the next-to-last variation was often cast as an expressive Adagio followed by a lively Allegro Finale; see the last movement of Mozart's Piano Sonata in D Major, K. 284. Composers later wrestled with the problem of how to bring some degree of overall unity or coherence to the variation set. One solution was to divide the variations into distinct groups, using certain variations as transitions to the next group. This approach may be found in Beethoven's *Diabelli Variations* for

piano. Other famous sets of sectional variations are listed in the footnote below.[2]

Rondo Form

Rondo form features the periodic recurrence of an initial theme or section in the tonic, called the **refrain.** Recurrences of the refrain are separated by contrasting sections called **episodes,** which are usually set in a different key or mode and introduce new thematic ideas. Generally only one episode comes after each refrain, creating a formal design of A B A C A etc., in which A is the refrain and B and C are different episodes. We will use these letter names in our diagrams of typical rondo schemes below.

The refrain itself may be a self-contained miniature form, such as a two-reprise design, as in Mozart's "Alla Turca" finale from his Piano Sonata in A Major, K. 331, or ternary form, as in Beethoven's Piano Sonata in G Major, Op. 49, No. 2, II. Subsequent recurrences of the refrain may be literal repetitions, or they may be shortened or even modified, as in the finale to Haydn's Symphony No. 101 ("Clock"), in which each restatement is set in a different texture.

The episodes employ contrasting themes and textures and normally explore tonal areas other than the tonic. Their formal design is sometimes less defined than the refrain, although again the use of two-reprise schemes is common. Composers ordinarily move directly from the cadence of the refrain into the following episode (A to B, or A to C), but typically employ a retransition after the episode to lead back to the refrain (B back to A, or C back to A). These retransitions typically employ a dominant prolongation to prepare the return of the refrain's tonic key.

Although the Classical rondo is usually found as the last movement of a sonata, quartet, symphony, or solo concerto, it occasionally appears as the slow movement, as in Beethoven's Symphony No. 4, or as a separate concert piece, such as Mozart's Rondo in A Minor, K. 511.

2. Famous sets of sectional variations include the second movement of Haydn's String Quartet in C Major, Op. 76, No. 2, whose theme, originally a birthday hymn to the Emperor, later became a national anthem of the Austro-Hungarian Empire, and still later the German national anthem; the slow movement of Beethoven's Fifth and Ninth symphonies, whose first themes undergo extensive variation; Brahms's *Variations on a Theme of Handel* and *Variations on a Theme of Paganini*, which anticipates Rachmaninoff's Rhapsody on the same theme; Elgar's *Enigma Variations*; and Britten's *Young People's Guide to the Orchestra*, a set of variations on a theme by Purcell.

Three basic rondo designs occur in Classical-period compositions: the *five-part rondo*, the *seven-part rondo*, and the *sonata-rondo*. We will examine the sonata-rondo when we discuss sonata form in a later chapter.

The Five-part Rondo

The formal design of the **five-part rondo** is typically A B A C A. The diagram (Figure 24.4) outlines the usual key areas in both major and minor keys.

Figure 24.4

	A	B	(Retrans.)	A	C	(Retrans.)	A	(Coda)
Major	I	contrasting	(V)	I	contrasting	(V)	I	
Minor	I	key	(V)	I	key	(V)	i	

The brief Haydn rondo quoted in Example 24.9 is quite traditional and straightforward. The three refrains are cast in two-reprise design. Following the motion to the dominant at the end of the first reprise, the second section opens with a 5th sequence (V_3^4/ii-ii^6-V_5^6-I) before arriving at V in measure 11. The return of original material shifts toward the subdominant prior to the final tonic cadence. Whereas the second refrain (mm. 40–59) is identical with the first, the sections of the last refrain are written out without repeat signs in order that a 16th-note Alberti bass may be added to the repetitions (mm. 101–133). Both episodes exhibit two-reprise design. While the first (mm. 20–39) is set in the parallel D minor with a brief excursion to F major, the second remains in the subdominant before a retransition on the dominant leads back to the final refrain (mm. 60–79). There is no introduction, and two tonic chords at the end round off the piece.

Example 24.9

HAYDN: PIANO SONATA IN D MAJOR, HOB. XVI:37, III

9
12
f
20
f
p
28
f
p
f
p
34
f
p
p
40

48
f
52
60
68
72

93
p
tr
101
f
tr
109
113

Seven-part Rondo Form

The **seven-part rondo** was a special favorite of Mozart and Beethoven, who used it frequently in the finales of their solo concertos. Its basic formal design appears in Figure 24.5.

Figure 24.5

	A	B	A	C	(Retrans.)	A	B	A	(Coda)
Major	I	V	I	contrasting	(V)	I	I	I	I
Minor	i	III, v	i	key	(V)	i	i	i	i

The overall groupings of the sections of a seven-part rondo form a large ternary or three-part construction that centers around the middle episode or C section. While the refrains (A) continue to remain in the tonic throughout, in the first portion of the movement the B episode is usually cast in either V in major mode or III in minor mode. The return of B in the last section is transposed back to the tonic, thereby resolving the tonal tension created by its first appearance. The tonal motion back to the opening refrain after the contrasting C or middle section is usually preceded by a retransition featuring a dominant prolongation. Occasionally the last appearance of A may be abbreviated or even completely omitted.

Space limitations preclude the inclusion of an entire seven-part rondo movement in this text. The accompanying Workbook quotes the last movement of Beethoven's "Pathétique" Piano Sonata, which is a model example of this form. The rondo waned somewhat in popularity after the Classical period, but continued its close association with concerto finales.[3]

Terms and Concepts for Review

content vs. form
formal design
tonal structure
one-part form
two-reprise form
sectional two-reprise form
continuous two-reprise form
balanced two-reprise form
rounded two-reprise form
ternary form
retransition
quatrain form
variation form
continuous variations

3. Examples of rondo forms in compositions of the Romantic period include Mendelssohn's *Rondo Capriccioso*, the last movement of Franck's Violin Sonata in A Major, the *Introduction and Rondo Capriccio* for violin and orchestra by Saint-Saëns, and the "Gypsy Rondo" from Brahms's Piano Quartet in G Minor, Op. 25. In the twentieth century, the rondo appears in works in neoclassical style, such as Hindemith's Sonata for Clarinet and Poulenc's Trio for Oboe, Bassoon, and Piano.

ostinato
sectional variations (theme and variations)
rondo
refrain
episode
five-part rondo
seven-part rondo

A BRIEF REVIEW SELF-QUIZ

1. Match the following, letter to number.

1. Incipient ternary form
2. Refrain
3. Preceding the return of original material
4. Passacaglia
5. Tonic cadence at end of first reprise
6. "B" episode is transposed back to tonic
7. A succession of dance movements
8. A A′ B A′
9. Form

A. Seven-part rondo
B. Chaconne
C. Rounded two-reprise design
D. Quatrain form
E. Suite
F. Always set in tonic
G. Organization of musical content
H. Retransition
I. Sectional two-reprise design

CHAPTER 25

Analytical Comments on a Menuetto and Trio by Beethoven

ALTHOUGH SOME OF THE EXAMPLES in preceding chapters have consisted of entire movements, we have not had the opportunity to analyze them in detail. In this chapter we will conclude our study of diatonic harmony by examining a complete movement from a larger work, the Menuetto and Trio of Beethoven's Piano Sonata in F Minor, Op. 2, No. 1. Since this short movement contains a variety of tonal and formal idioms that we have discussed in the preceding chapters, it provides an excellent summary of the principles of diatonic harmony. We will first consider a number of factors that characterize this piece and then demonstrate how they interact to create its individuality. Our analysis of this piece should provide a possible model for future analyses, provided you remember that you should always approach each work on its own terms.

Larger Formal Considerations

Since it is necessary that we first understand something about the formal nature and historical characteristics of this piece, we will begin by briefly discussing the design and tonal structure of a typical minuet. A holdover from Baroque suites, the minuet of the Classical period usually occurred as the third

movement of symphonies, string quartets, or even solo sonatas. The stately nature of the original minuet was sometimes replaced by a more playful or scherzo-like quality, especially in pieces of faster tempo. This piece's fast tempo places it in the category of a scherzo, although Beethoven calls it a "menuetto."

By the time of Haydn and Mozart, the minuet had assumed a three-part or ternary form—the **minuet** proper (A), a succeeding **trio** (B), and the subsequent return (**da capo**) of the minuet (A). Each of these larger units consisted in turn of a two-reprise form, demarcated by the usual repeat signs; the minuet's return or da capo minuet normally omitted these repeats. Classical composers imposed a relatively rigid thematic design and tonal structure on the minuet. By far the great majority of both the minuet and trio sections were cast in rounded binary or two-reprise design.

We briefly touched on some characteristics of the two-reprise design in the preceding chapter. After the initial statement of the principal theme (A) in tonic, the first reprise usually modulated, concluding in either $\boxed{\text{V}}$ in major keys or in $\boxed{\text{III}}$ or perhaps $\boxed{\text{v}}$ in minor keys. Although phrases were frequently grouped into four-measure units, composers sometimes engaged in remarkable irregular phrasing, as we shall see in this piece. The length of the first reprise typically ran between 8 and 16 measures.

The first part of the second reprise tended to feature temporary tonicizations, harmonic sequences, and possibly a development or elaboration of the initial theme. The retransition, usually a brief prolongation of V, prepared the return of the A theme and the tonic harmony. The modulation in the original reprise had to be modified on its return so that the remainder of the piece would remain in the tonic key. A balanced relationship between the cadential or closing sections of the first and second reprises was common. The second reprise was, of necessity, longer than the first. Review the presentation of two-reprise design in Chapter 24.

The voice leading of rounded binary forms frequently exhibited an interrupted tonal structure, in which the interruption occurred on the retransition's dominant; see the discussion of interrupted structure in Chapter 23. The descent $\hat{3}$-$\hat{2}$ // $\hat{3}$-$\hat{2}$-$\hat{1}$ is common in major keys, while the descent $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$ // $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ is common in minor keys.

Formal Characteristics of Beethoven's Menuetto and Trio

With few exceptions, the Menuetto and Trio sections of Beethoven's movement closely adhere to the two-reprise design we have outlined above. The schematic designs of both parts in Figures 25.1 and 25.2 are supplied with measure numbers. Compare these diagrams with the score (Examples 25.1 and 25.3) while you listen to the movement.

Figure 25.1

TWO-REPRISE DESIGN IN THE MENUETTO

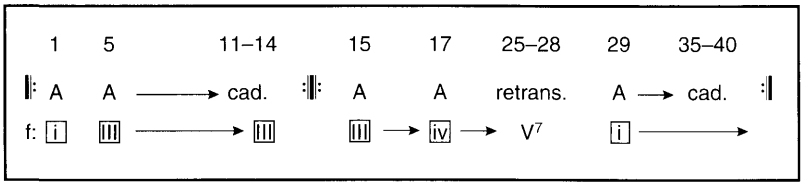
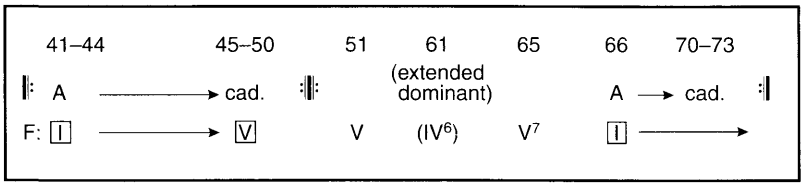


Figure 25.2

TWO-REPRISE DESIGN IN THE TRIO

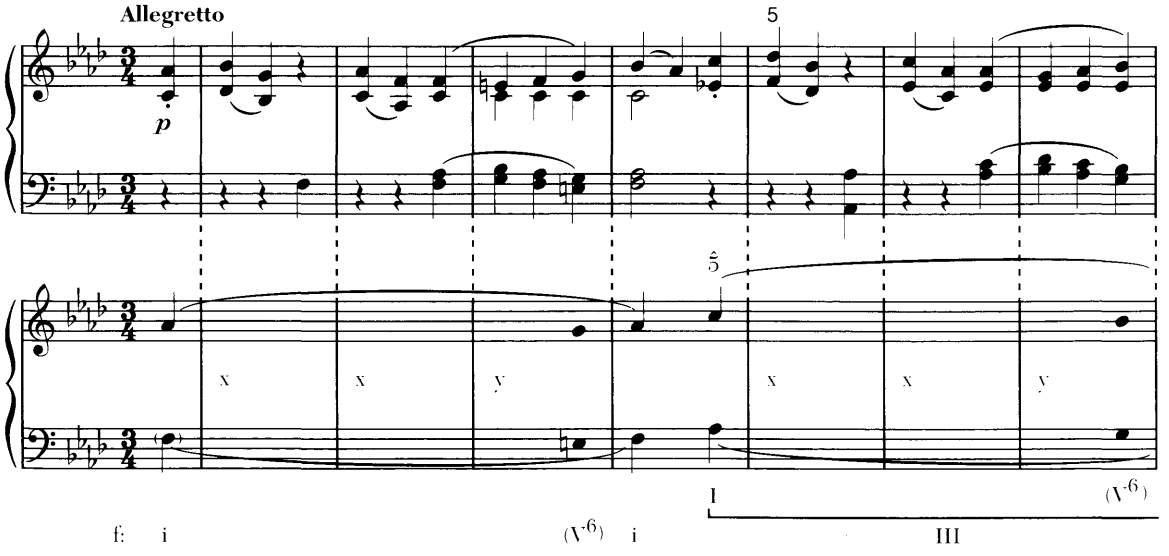


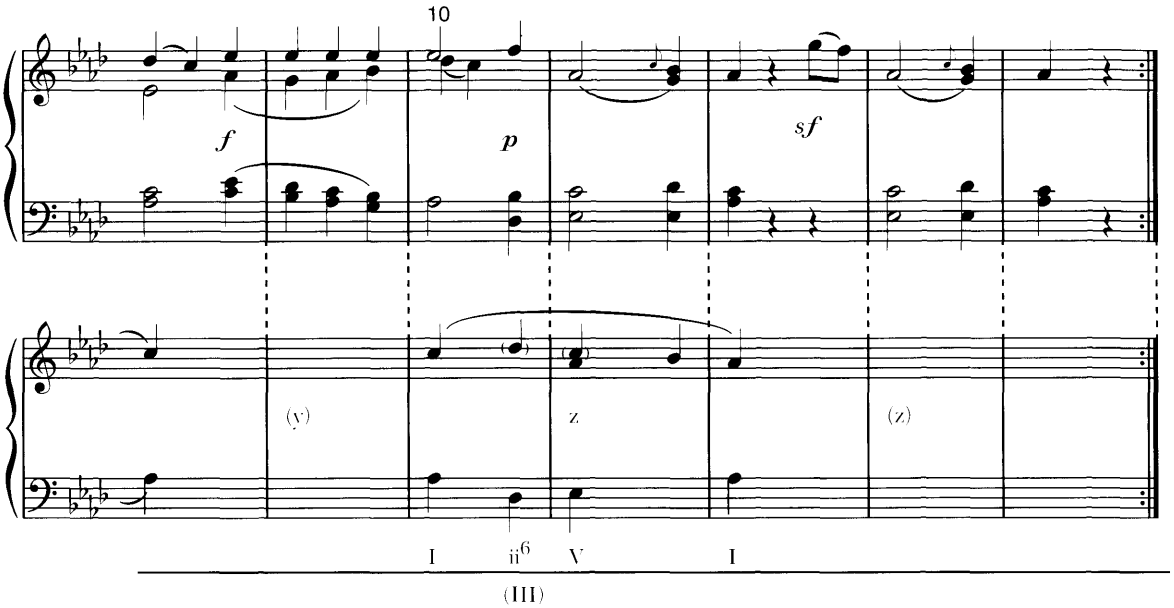
MOTIVE AND PHRASE GROUPING IN THE MENUETTO

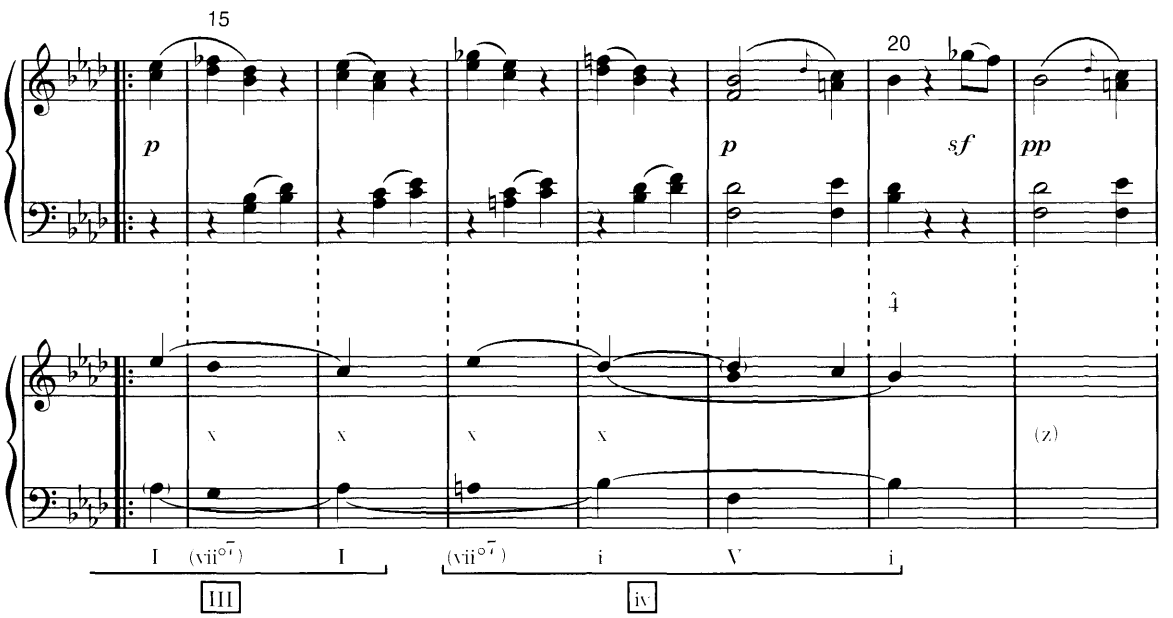
We will begin by examining the motivic content and phrasing grouping of the Menuetto. For the moment, disregard the analytical reduction below the score in Example 25.1; we will return to this graph later.

Example 25.1

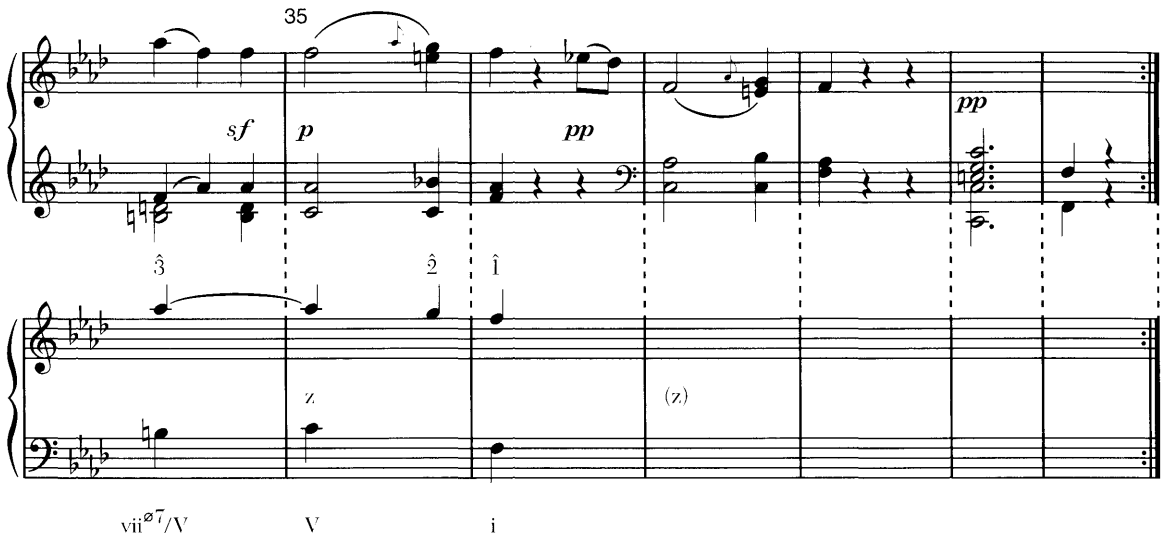
BEETHOVEN: PIANO SONATA IN F MINOR, OP. 2, NO. 1, III, MENUETTO




10
f
p
sf
(y)
z
(z)
I
ii6
V
I
(III)


15
20
p
p
sf
pp
4̂
x
x
x
x
(z)
I
(vii°7)
I
(vii°7)
i
V
i
III
iv

25
28
ff
(repeat of cadence)
(retrans.)
iv
i
vii°7/V
V
30
tr
f
sf
x
etc.
i
i
(vii°6/5)
i6
(vii°4/3)

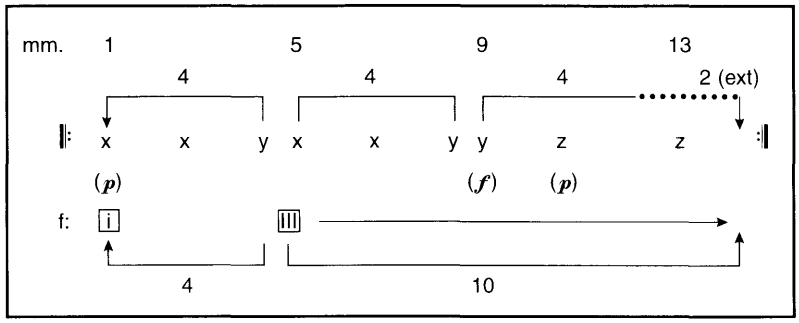


In surveying the Menuetto section, notice that its thematic material is made up of three distinct melodic motives, each with its own formal function. These are labeled *x*, *y*, and *z* in Example 25.2. While the *x* motive and its immediate partial sequence a step lower open each phrase, the *y* motive continues the melodic flow within the interior of the phrase. The *z* motive forms part of the $^{6}_{4}$ cadence (I-ii^{6}-V-I) in measures 10–14.

Example 25.2

Figure 25.3 outlines the motivic succession in the first reprise (mm. 1–14). Beethoven has a slight problem with his initial four-measure phrase. Since the *x x y* succession (mm. 1–4) prolongs the F minor tonic triad with a single embellishing V^{6}, this opening phrase lacks a strong root-position cadence. After the literal restatement of this phrase in the relative major of A♭ or III (mm. 5–8), Beethoven repeats the last two bars of the second or A♭ phrase (notice the *forte* marking) and adds a $^{6}_{4}$ cadence (*piano*) using motive *z* (mm. 9–12). In order to further emphasize its finality, he extends the cadence by two bars with yet another *z*. Thus the successive phrase grouping for the first reprise consists of the original F minor phrase (4 bars), its restatement in

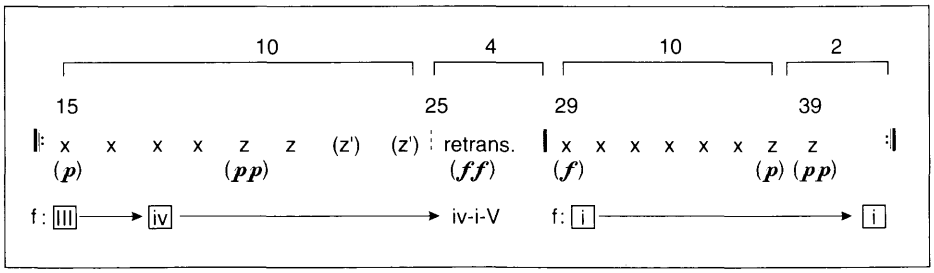
Figure 25.3



A♭ major (4 bars), its partial repetition and cadence (4 bars), and a concluding cadential extension (2 bars). This produces an overall phrase grouping of 4 (the first phrase) + 10 (the second phrase and its extension).

We may diagram the second reprise (mm. 15–40) in a similar fashion (Figure 25.4). This section commences with a fourfold statement of motive *x*, supported by tonal motion from III to iv, or B♭ minor (mm. 15–18). The subdominant key is reinforced by reiterations of the cadential *z* motive, the last two of which are compressed into a single measure. The resulting ten-measure grouping, the opening 6-bar phrase plus its 4-bar cadential extension, recalls the ten-measure phrasing in the latter part of the first reprise. At this point, we anticipate a retransition on a prolonged dominant to prepare the return of the original theme and tonic key. Instead, Beethoven inserts a four-measure passage of *new* material, running eighth notes in octaves, which spans the harmonies iv-i-V (mm. 25–28) at a *fortissimo* dynamic level. The return of the opening tonic theme (m. 28) occurs in the left hand. Since this final section must remain in F minor, the composer avoids any reference to A♭ major and instead embellishes the tonic harmony with vii$^{\circ 7}$ chords (mm. 28–34). A pair of cadential *z* motives lead to the final cadence. This concluding section (mm. 29–38) again reiterates our previous ten-

Figure 25.4



measure grouping. It is interesting that Beethoven added the last two measures and ended the section with an empty F octave. Perhaps he appended two measures at the end to lend additional emphasis to the concluding cadence of the Menuetto section. The use of an F octave avoids any possible chromatic cross relation that might occur between the last F minor chord of the Menuetto and the opening F major harmony of the Trio.

Voice Leading in the Menuetto

In many of our previous reductions we provided two voice-leading graphs—the first stripped away melodic embellishments to highlight the surface voice leading and harmonies, and the second showed the large-scale tonal motion through still further reduction. In our analysis of this piece, we will forego the surface details of the voice leading, sometimes called the **foreground** of a composition, and concentrate instead on the larger voice-leading aspects of the movement, sometimes called the **middleground** of a composition. The elimination of the foreground's details, such as individual chordal prolongations, permits us to see the piece's overall tonal structure at a glance. This process is particularly helpful when we are performing a piece, since we can plan our performance to bring out the composer's underlying melodic and harmonic scheme.

For the following discussion, consult the voice-leading reduction positioned directly under the score in Example 25.1. After the opening prolongation of tonic harmony in phrase one (mm. 1–4), Beethoven employs a sectional modulation that immediately shifts the second phrase to A♭ major. The first reprise then remains in the relative major key until the final $^{6}_{4}$ authentic cadence in mm. 11–14. We have employed Beethoven's original scale degrees of $\hat{6}$-$\hat{1}$-$\hat{2}$-$\hat{1}$ in the $^{6}_{4}$ cadence, but it is possible to normalize this final cadential formula by inserting an implied D♭^{5} and C^{5} in parentheses to complete the descent $\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$.

The second reprise opens with a chromatic bass motion (G-A♭-A♮-B♭) that uses a pair of passing vii$^{\circ7}$ chords to tonicize the areas of III and iv (mm. 15–18). The soprano descends from E♭^{5} to B♭^{4}, $\hat{4}$ in the original key (mm. 16–24). During the $^{6}_{4}$ cadences in B♭ minor, an implied D♭^{5} in parentheses supplies the missing mediant in that key. The running eighth-note passage (mm. 25–28) continues the upper voice descent through $\hat{3}$ (A♭^{4}) to $\hat{2}$ (G^{4}), which is supported by the concluding V (m. 28). Again the G or $\hat{2}$ is implied by the voice leading and is not actually present. Since Beethoven resolves the B♮ in measure 27 to C, he cannot resolve the A♭ to G because of the octave texture.

The soprano regains the original $\hat{5}$ (m. 30) immediately after the restatement of the opening theme and tonic key, and then begins an uninterrupted stepwise descent to the final tonic of the Menuetto: $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ (mm. 30–36). The final few measures represent a cadential extension.

Motives and Phrase Groupings in the Trio

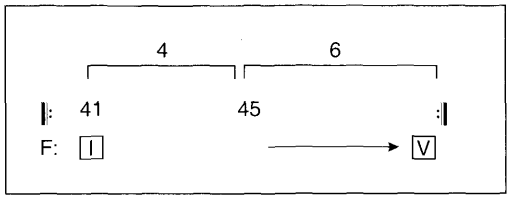
The score and accompanying middleground reduction of the Trio to Beethoven's third movement appear in Example 25.3.

Example 25.3

51
55
V
(6/4)
V6
57
6
6
6

61
66
ff
p
pp
p
4̂
4̂
3̂
IV6
V7
I
(ii)
70
Men.D.C.
3̂
2̂
1̂
(V6)
I
I6
ii6
V
I

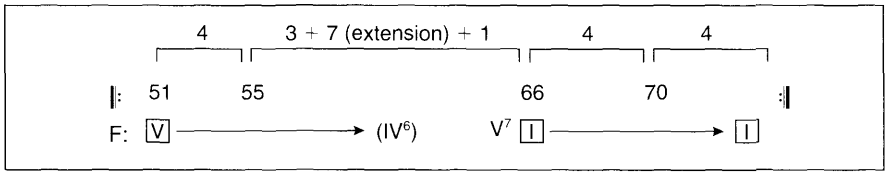
Figure 25.5



The Trio is set in the parallel major key of F major. The running eighth-note figuration of the opening theme continues almost without letup throughout the entire Trio. The first reprise (mm. 41–50) consists of two four-bar phrases, the second of which is extended by two measures (4 + 2)—much like the Menuetto's first reprise—to establish a more emphatic cadence in the dominant key (Figure 25.5). The cadence compensates for the lack of cadential punctuation in the opening phrase, which consists largely of harmonies that linearly embellish the F major tonic: I-ii-V^6-I.

Although the second reprise begins on the dominant, it quickly returns to F major via the stepwise motion in the soprano (E-F-G-A) and the tenor (C-B♮-B♭-A) voices over a $\hat{5}$ pedal (mm. 51–54). The next phrase, also four bars long, follows the same harmonic plan, but now its outer parts are switched, as indicated by the arrows. Upon reaching the B♭^{5} in measure 57, Beethoven inserts a lengthy interpolation (mm. 57–64) that extends the third bar of the four-measure hypermetric grouping. This internal extension ends at measure 65 with a B♭^{4} in the upper voice. The chromatic $\hat{5}$-♯$\hat{4}$-♮$\hat{4}$-$\hat{3}$ now occurs a third time, leading back to the tonic oriented A^4 (mm. 63–66), which has been withheld during the previous part of the second reprise. The return to I in measure 66 is coupled with a restatement of the initial theme, which concludes the Trio with a pair of four-measure phrases safely back in the tonic (Figure 25.6).

Figure 25.6



Middleground Voice Leading in the Trio

The reduction below the score in Example 25.3 reveals the middleground tonal structure of the Trio. The opening phrase (mm. 41–44) prolongs the $\hat{3}$ (soprano) and $\hat{1}$ (bass) of the F major tonic. The $\hat{3}$ is then transferred into the middle voice, which moves downward by step to $\hat{5}$ over an authentic cadence in the dominant key (mm. 50). The upper covering soprano voice is

superimposed over this descent, creating a series of stepwise first-inversion triads that lead to the $^{6}_{4}$ cadence.

Following the dominant pedal that opens the second reprise (mm. 51–54), the soprano moves chromatically from C^{5} to B♮ to B♭ (m. 57), at which point the interpolation occurs. This $B♭^{4}$ (scale degree $\hat{4}$) is reinforced by a IV^{6} in measure 61 and provides the chordal 7th of the eventual V^{7} at measure 65. Thus this middle section of the second reprise represents a large-scale prolongation of dominant harmony that leads to the restatement of the original melody and the tonic of F major in measure 66. The remainder of the Trio represents an extension of the all-important soprano $\hat{3}$ (mm. 66–69) before the final $\hat{3}$-$\hat{2}$-$\hat{1}$ descent in the last phrase (mm. 70–73).

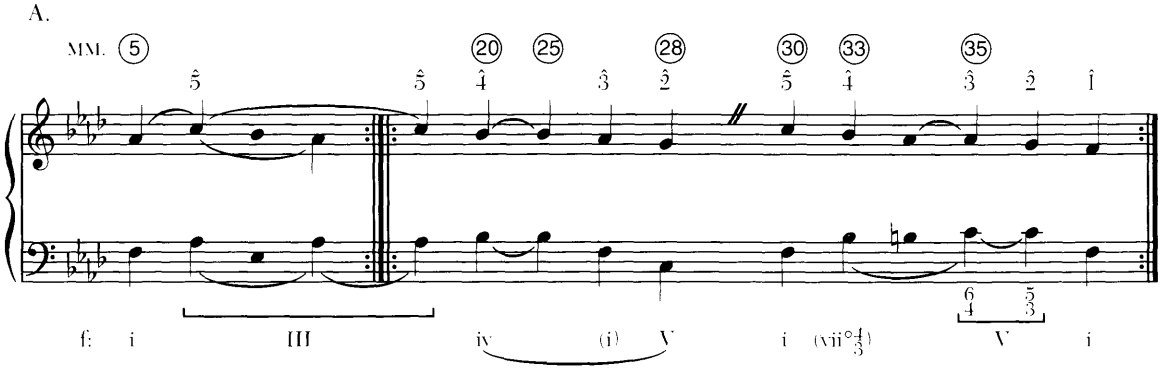
Overall Voice Leading in the Menuetto and Trio

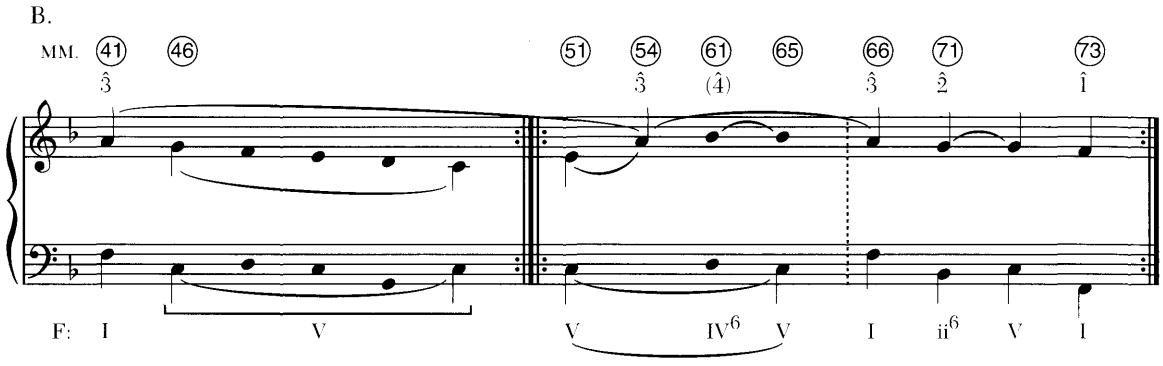
Further reduction of the middleground voice leading finally brings us to the **background** of a composition, which can be thought of as the two-part contrapuntal framework that provides the underlying linear and harmonic foundation for the interplay of musical events. The soprano line of the background tends to descend stepwise to the tonic from either $\hat{3}$ ($\hat{3}$-$\hat{2}$-$\hat{1}$) or $\hat{5}$ ($\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$). The bass line supports the basic harmonic foundation of this two-part framework. Actually, the background is probably of more interest from a purely theoretical standpoint, representing generalized and abstract voice-leading paradigms that are common to many movements in the tonal era.

In Beethoven's Menuetto, the background clearly demonstrates the **interrupted** nature of the work's tonal structure—i-V // i-V-i, which supports the soprano $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$ // $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ (Example 25.4a). The I-V-I harmonic background of the Trio, on the other hand, outlines a $\hat{3}$-($\hat{4}$)-$\hat{3}$-$\hat{2}$-$\hat{1}$ motion in the soprano, in which the $\hat{4}$ functions as a neighboring harmony (Example 25.4b).

Example 25.4

A.





Unifying Factors in the Movement

Like every great composer, Beethoven strove to unify the different musical elements in each of his compositions. This desire is evident not only within individual movements but also between the movements of longer works. For instance, the four movements of the Ninth Symphony reveal a recurring relationship between D and B♭ at both superficial and deeper levels. These unifying features are not always obvious at first but sometimes lie disguised beneath the surface of the music.

This work features a number of subtle similarities between the Menuetto and Trio. For instance, we have already observed that the initial phrases of both the Menuetto (mm. 1–4) and the Trio (mm. 41–44) avoid any strong cadential punctuation. The first convincing cadence of the Menuetto appears in the relative key of A♭ major, whose $^{6}_{4}$ formula concludes the first reprise. Now turn to the phrase in measures 45–50 of the Trio. The same type of cadence, a $^{6}_{4}$, is employed here. The first reprise of the Menuetto modulates to its relative major key; the first reprise of the Trio modulates to its dominant key. Both cadences employ cadential extensions.

Voice exchange between the outer voices plays an important role in the Trio. The initial pair of four-measure phrases (mm. 41–45 and 45–50) first employs voice exchange; the same device is used between the outer voices in the final two phrases of the Trio. Voice exchange appears in the Menuetto also; look closely at the first theme in measures 6–10 and its return in measures 28–30.

We stated earlier that the thematic material of the Menuetto is constructed almost entirely of three short motives. There is one notable exception to this pattern—the passage of eighth-note octaves in measures 25–28, which is different from the other motives in the Menuetto. This passage has an important function within the Menuetto; it serves as the retransition

leading back to the first theme. But it is also closely connected to the Trio, whose thematic material consists almost entirely of running eighth notes. The one exception is the retransition to the return of the opening theme of the Trio. In other words, the unique section of the Menuetto is the retransition, a passage in running eighth notes; the unique section in the Trio is again the retransition, the only passage in the Trio that is not in running eighth notes.

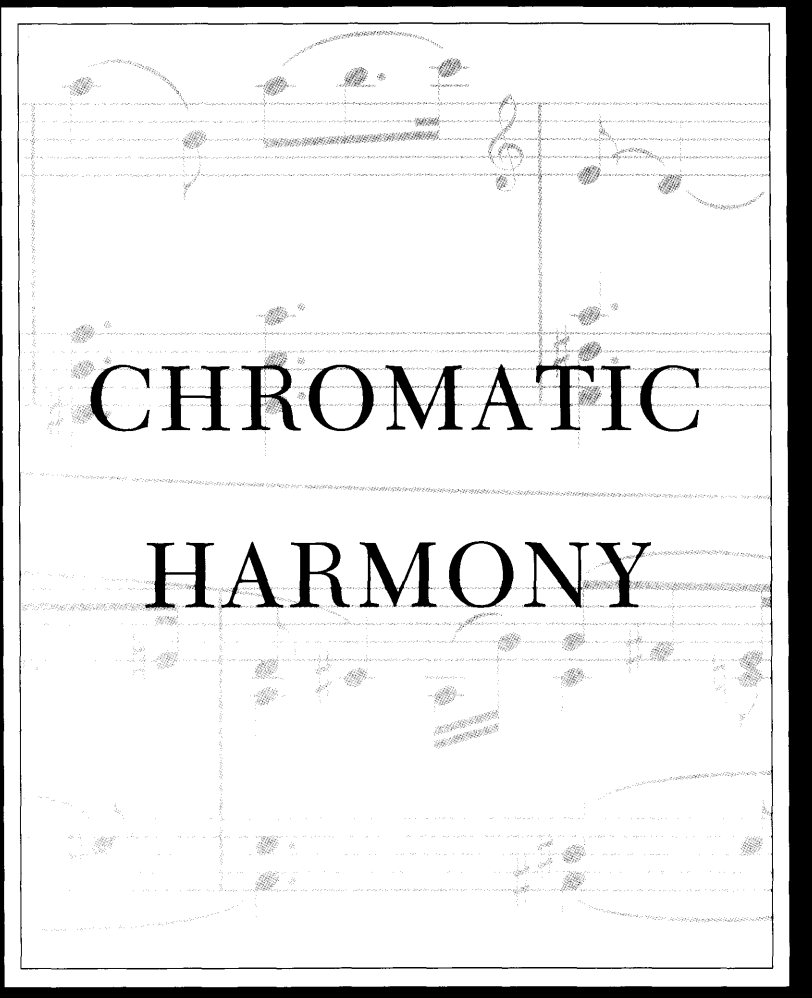
We already mentioned the lack of a strong retransition on the dominant leading to the return of the initial theme in the Menuetto (mm. 25–28). In the Trio, the first section of the second reprise can be viewed as an extended prolongation of the dominant, perhaps intended to compensate for the abbreviated dominant in the Menuetto.

Similar musical relationships abound in this movement. If you take a few minutes to examine it a bit more closely, you will be amply rewarded.

Terms and Concepts for Review

minuet and trio
foreground voice leading
middleground voice leading
background voice leading
interrupted rounded two-reprise form
unifying factors

PART THREE



CHROMATIC HARMONY

CHAPTER 26

Introduction to Chromatic Harmony

NOW THAT WE HAVE COMPLETED our examination of how diatonic triads and seventh chords operate in the music of the common-practice period, we are ready to explore the topic of **non-diatonic** or **chromatic harmony**—that is, the way in which **altered** scale degrees and chords are employed in the major and minor modes.

Compare the two C major settings in Example 26.1; the first version is completely diatonic, whereas the second version introduces four non-diatonic pitches in the bass line. These altered notes illustrate several important features of chromatic harmony that we will discuss in future sections and chapters.

1. Chromatic harmony provides an enlarged tonal palette with which to enrich or color diatonic melodies or harmonies. The term *chromatic* is derived from the Greek word *chroma*, meaning "color."
2. Chromatic harmony intensifies the tendency of certain scale degrees and chords to resolve. For instance, in measures 1–2, the lowered scale degrees $\flat\hat{7}$ and $\flat\hat{6}$ (B♭ and A♭) enhance the descent of the original $\hat{8}$-$\hat{7}$-$\hat{6}$-$\hat{5}$ from tonic to dominant. Likewise, the inserted G♯ acts as a secondary leading tone to the following A ($\sharp\hat{5}$-$\hat{6}$).

3. Two of the altered notes represent enharmonic spellings of the same pitch—A♭ in measure 1 and G♯ in measure 3. We will discuss the ramifications of enharmonics later in the chapter.

Example 26.1

Part Three will explore the wide scope of chromatic harmony, ranging from individual altered chords to large-scale tonal schemes that employ foreign keys. Some chapters (28, 29, 32, and 33) concentrate on specific altered harmonies; others expand on topics already introduced in Part Two—tonicization and modulation, dominant prolongation, and sequences. Chapter 31 investigates the relation of aesthetics to music. The final chapter of Part III, which deals with analytical issues in Wagner's Prelude to *Tristan und Isolde*, provides a summation of the various facets of chromatic practice, much as our discussion of Beethoven's Menuetto in Chapter 25 served as a synopsis of diatonic practice.

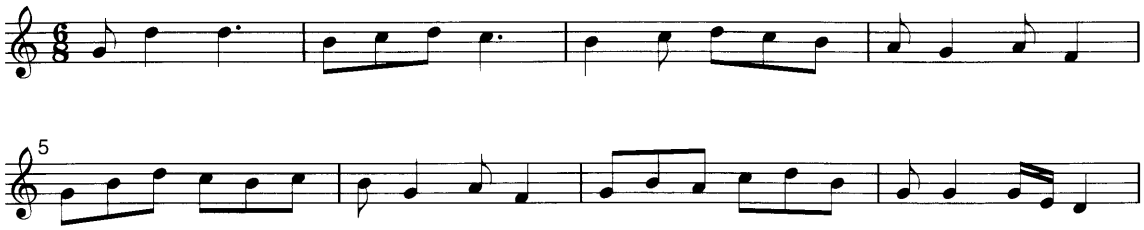
The Historical Evolution of Non-Diatonic Tones

The introduction and use of non-diatonic tones in Western music evolved over a long period of time. Western ecclesiastical chant and medieval secular songs were simple melodies that employed the natural diatonic or white-key notes, with an occasional B♭. Since there was no standard pitch level or reference note at that time, such as our present $A^4 = 440$ hertz, these melodies

were sung at various pitch levels. However, they are always notated with natural pitch classes, as shown in the two melodies of Example 26.2.

Example 26.2

A. EPITAPH OF SEIKILOS (EARLY GREEK MELODY)



B. KYRIE "CLEMENS RECTOR" (GREGORIAN CHANT)

With the introduction of polyphony, or music with several individual voice parts, composers began to focus attention on the harmonic aspect of their music. By the mid-Renaissance, about 1500, a number of additional notes—particularly B♭, F♯, C♯, G♯, and E♭—were used to adjust harmonic cadences in various ways. Composers used them to produce major triads on the final chord of minor-mode pieces, and performers often inserted them at appropriate points in the music, especially in the triad preceding the final chord of the cadence, to supply leading tones. Since these latter accidentals do not actually appear in the score, they were called **musica ficta,** or "fictitious music." In most modern editions, these accidentals are written above the affected note, as shown in the penultimate chord of Example 26.3.

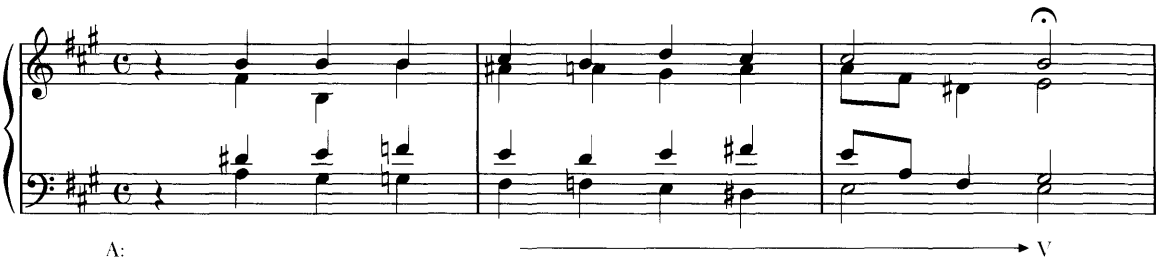
Example 26.3 PALESTRINA: "QUIA FECIT MIHI MAGNA" FROM *MAGNIFICAT*

By the time of Bach and Handel, composers employed a variety of altered scale degrees to expand their tonal resources. Notice the rich diversity

of harmonic sonorities and the chromatic bass line in Bach's chorale harmonization (Example 26.4).

Example 26.4

"ES IST GENUG" (BACH CHORALE HARMONIZATION)



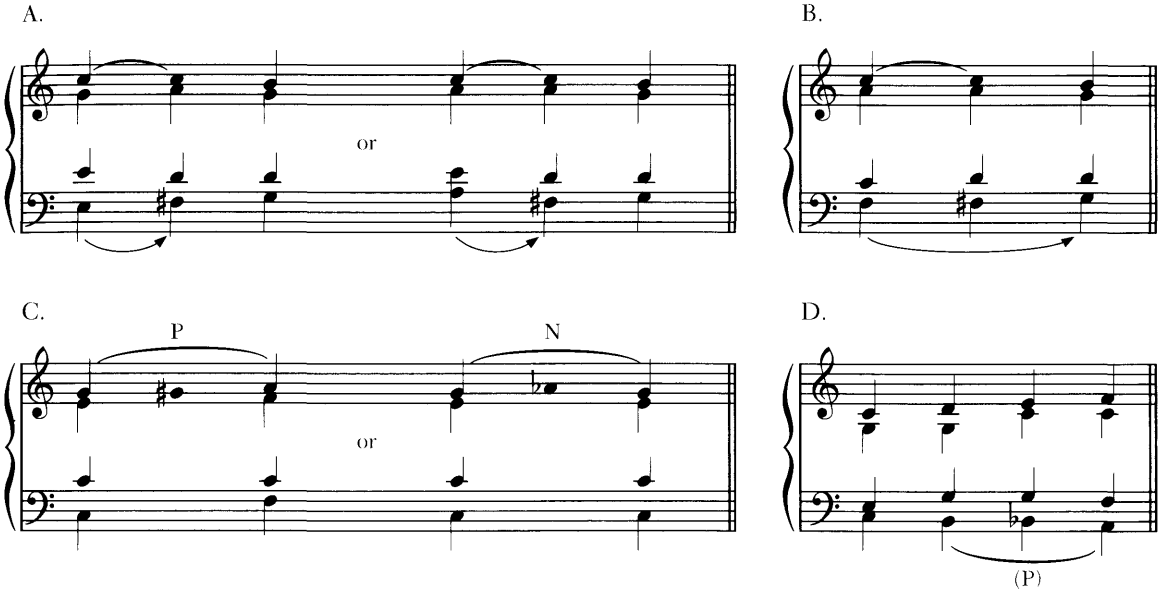
The bass line of Example 26.5 illustrates the various chromatic scale degrees used in the common-practice period; altered chords built on these notes are also shown. The enharmonically equivalent notes (C♯/D♭, D♯/E♭, and G♯/A♭) belong to completely different chordal harmonies within the chromatically extended key of C major. These chords represent only a sampling of the possible altered harmonies in the major mode.

Example 26.5

CHROMATIC MELODIC MOTION

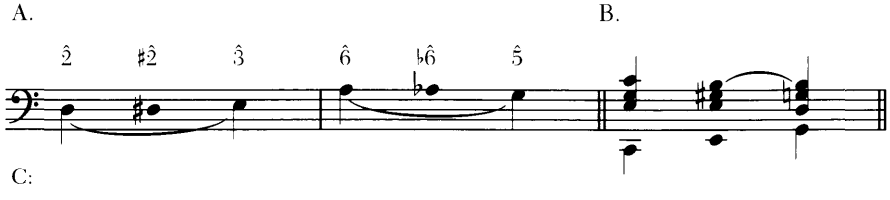
In a general sense, the term **chromaticism** refers to the presence of numerous altered pitches in musical passages in which diatonic tones have been raised or lowered by accidentals. These altered notes may be approached by diatonic melodic motion, as shown in Example 26.6a, or by half-step chromatic motion, through which the F♯ in Example 26.6b is derived from F♮ on its way to G. Altered notes may occur either as embellishing tones in passing or neighboring motion (Example 26.6c), or as a chordal member of a particular harmony. In Example 26.6d we have labeled the passing chord that contains the altered B♭ with (P). Do not equate chromaticism with dissonance—as we shall see, almost all chromatic pitches form consonant relations with their supporting harmonies.

Example 26.6



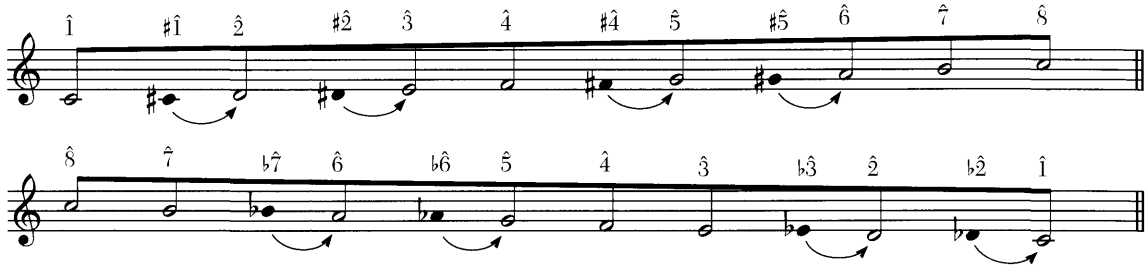
We also use the term **chromaticism** to describe musical passages that display extensive half-step motion in the individual voice parts or between parts. In most passages of this nature, the letter name of a pitch is raised or lowered a half step through an appropriate accidental, such as F♮-F♯, B♮-B♭, G♯-G♮. The technical term for such intervals as D-D♯ or B-B♭ is an *augmented prime*. Contrast this interval with a diatonic minor 2nd, in which two different letter names are always involved, such as G-F♯, A♭-G, A♯-B. The altered or chromatic form of the scale degree will then resolve by minor 2nd: C-C♯-D, B♮-B♭-A, and so forth (Example 26.7a). However, in some instances the altered note may not resolve in the expected way; in Example 26.7b the G♯ resolves not to the expected A but back to a G♮.

Example 26.7



Example 26.8 illustrates the general tendency of raised altered notes to resolve upward by half step, while lowered altered notes tend to resolve downward by half step.

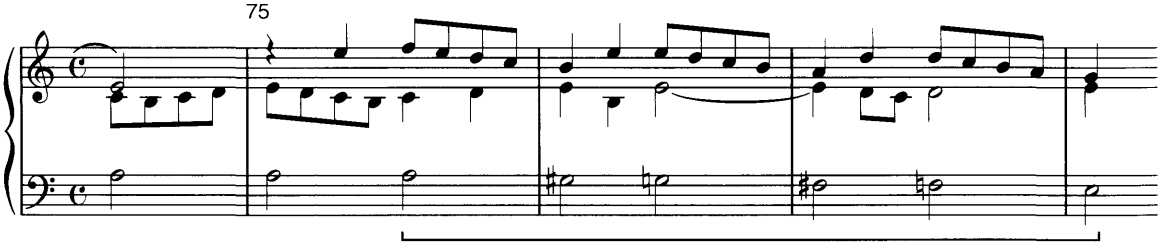
Example 26.8



The bass line in Example 26.9 proceeds entirely by half-step motion: A-G♯-G♮-F♯-F♮-E. Although one might be tempted to label the G♯ and F♯ are the chromatic notes, in actuality, it is the G♮ and F♮ that involve the use of chromatic alteration (G♯-G♮, and F♯-F♮), while A-G♯ and G-F♯ are diatonic minor 2nds. The bracketed section involves both forms of $\hat{6}$ and $\hat{7}$ in the combined melodic minor scale of A minor.

Example 26.9

♪ SWEELINCK: *CHROMATIC FANTASY*



The Brahms variation in Example 26.10 illustrates a concentrated use of surface chromatic melodic motion. Examine each chromatic note carefully and determine the note from which it is derived and the scale degree to which it resolves.

Example 26.10

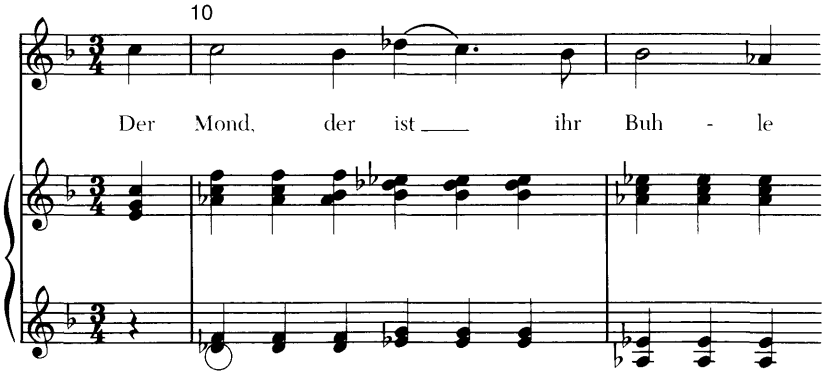
♪ BRAHMS: *VARIATIONS AND FUGUE ON A THEME BY HANDEL*, OP. 24 (VAR. 20)

ENHARMONIC DUALITY

Each diatonic pitch class functions as a single scale degree in a key system. Thus the pitch B is the leading tone ($\hat{7}$) in the key of C major, but in the key of G it would function as the mediant ($\hat{3}$). However, as we noted earlier in Example 26.1, altered notes have an **enharmonic double** or **twin.** Since they can be spelled or notated two different ways, they can also operate as two different scale degrees with distinct and separate functions. The most common pair in the major mode is $\sharp\hat{5}$, which tends to resolve upward to $\hat{6}$, and its enharmonic twin $\flat\hat{6}$, which tends to resolve downward to $\hat{5}$. Composers often exploit this duality. For instance, in Schumann's "Die Lotusblume" in F major, the $\flat\hat{6}$ (D$\flat$) first appears as $\hat{4}$ in the foreign key of A$\flat$ major that opens the second stanza (Example 26.11a). That section concludes with a deceptive motion from V^7 to V^6_5/vi (Example 26.11b), whose enharmonic C$\sharp$ in the bass refuses to resolve to a D but instead pulls back to a C$\natural$ in the following V^4_3/IV. Finally, the chromatic C-C$\sharp$ (as $\hat{5}$-$\sharp\hat{5}$) attains its goal of D ($\hat{6}$) near the climax of the song (Example 26.11c). Other pairs of enharmonic altered notes that may operate in a similar way are $\sharp\hat{1}$ versus $\flat\hat{2}$ and $\sharp\hat{2}$ versus $\flat\hat{3}$.

Example 26.11

(f) A. SCHUMANN: "DIE LOTUSBLUME," OP. 25, NO. 7



Decorative versus Structural Chromaticism

Most surface chromaticism in tonal music is **decorative** in nature, since it involves half-step or chromatic elaborations of an underlying *diatonic* framework. As early as the Baroque period, music theorists were already demonstrating the diatonic basis of chromatic passages. The reduction of the royal theme from Bach's *Musical Offering* by the theorist Johann Marpurg is one example among many (Example 26.12).

Example 26.12

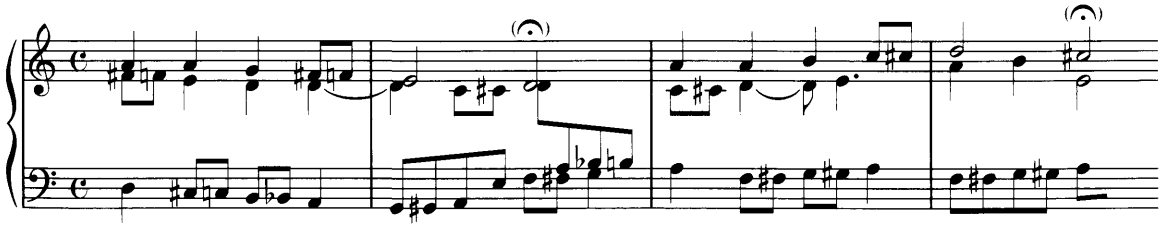
A. FREDERICK II: "ROYAL THEME," USED BY BACH IN HIS *MUSICAL OFFERING*

B. JOHANN MARPURG'S REDUCTION OF FREDERICK'S THEME

The decorative nature of non-diatonic pitches is readily apparent in Kuhnau's chorale prelude in Example 26.13, in which the chromaticism occurs as passing tones. If you remove the accidentals, the underlying diatonic basis is clearly revealed. However, as noted above, in nearly all cases the altered or chromatic note forms part of a consonant harmony; you can verify this by reexamining some of the previous examples.

Example 26.13

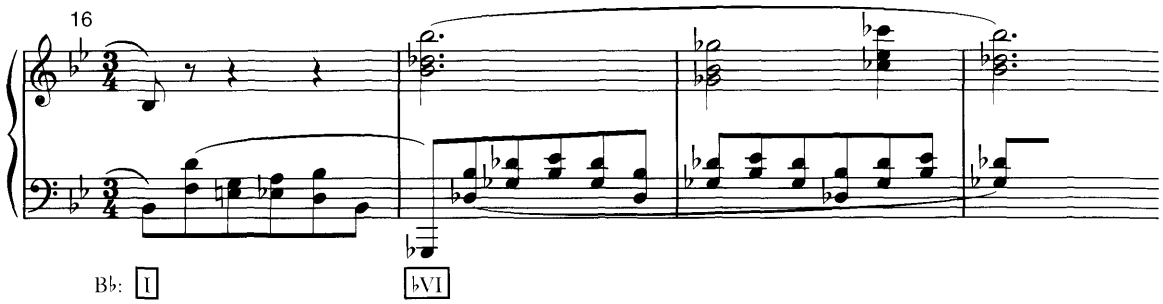
JOHANN KUHNAU: VARIATIONS ON "JESU, MEINE FREUDE" (VAR. 9)



Some instances of chromaticism cannot be reduced to a diatonic basis. For example, the middle section of Chopin's B♭-major Prelude, which opens with a direct modulation from B♭ major to G♭ major (I-♭VI), juxtaposes two diatonically unrelated keys (Example 26.14). Because the altered key of ♭VI is not equivalent to the diatonic key of vi, this progression represents the use of chromaticism at a **structural level,** creating a chromatic key relationship that extends beyond the musical foreground. Here, the D♮ in B♭ major forms a chromatic cross relation with the D♭ in G♭ major.

Example 26.14

CHOPIN: PRELUDE IN B-FLAT MAJOR, OP. 28, NO. 21



Situations may arise in which the density of the chromaticism obscures our overall sense of tonality. Play Example 26.15—what do you think is the basic key? Do you even perceive a key? My suspicion is that Wagner was thinking in terms of B♭ minor, but it is far from obvious.

Example 26.15

WAGNER: PRELUDE TO *PARSIFAL*, ACT III

Although most examples of non-tonal or atonal procedures are confined to the twentieth century, we may encounter isolated instances in the common-practice period. We will examine some of these occurrences in Chapter 40, which deals with harmonic relationships based on equal divisions of the octave.

Using Roman Numerals to Designate Chromatic Harmonies

Along with the standard Roman numerals, we need to use additional and sometimes modified indicators to denote the altered nature of chromatic chords. Most of these symbols fall into three categories, which are illustrated in Example 26.16.

Example 26.16

1. We designate the *chord type* by an appropriate lowercase or capital Roman numeral and by other symbols, such as ° for diminished and + for augmented. In the major mode, for instance, the diatonic versions of iii, IV, V, and ii7 may be changed to III, iv, V+, and ii°7; refer to Example 26.16a.
2. We indicate the *altered root* of a chord by a flat (rarely a sharp) immediately before the Roman numeral: ♭VI, ♭III, and ♭II in major, or ♯iii in minor (Example 26.16b).
3. We denote *seventh chords* that have certain raised or lowered chord members, such as the 5th, in the following way: V+7 or V°7 (Example 26.16c).
4. Finally, in a few cases we will dispense with Roman numerals altogether and employ some other indicator, such as Ger $^{6}_{5}$. In later chapters we will introduce symbols appropriate to the function of other altered chords.

Terms and Concepts for Review

non-diatonic, altered, or chromatic harmony
musica ficta
melodic chromaticism
decorative chromaticism
structural chromaticism
enharmonic duality
Roman numerals in chromatic harmony

A BRIEF REVIEW SELF-QUIZ

1. Match the letters to the numbers.

1. Enharmonic duality
2. Chromatic melodic motion
3. Lowered altered notes
4. V^+
5. Musica ficta
6. Structural chromaticism
7. "Chroma"
8. iv in C major
9. Decorative chromaticism
10. ♭III in C major

a. augmented triad
b. chromatic key relations
c. denotes root is altered
d. tends to resolve downward by half step
e. $\hat{\sharp 5}$ versus $\hat{\flat 6}$
f. elaboration of basic diatonic framework
g. denotes chord quality is changed
h. F-F♯-G
i. color
j. accidentals inserted by performers

CHAPTER 27

Tonicization and Modulation III:

MODULATIONS TO CLOSELY RELATED KEYS

IN THIS CHAPTER we will continue our discussion of modulation by extending the number of possible keys to which we can move from the tonic. First we will look at some of the reasons why composers in the common-practice period preferred to modulate to a select group of tonal areas called closely related keys. Then we will examine these particular key relationships and discuss their relative frequency, the length of sections in the new key, and different ways to modulate to these keys.

CLOSELY RELATED KEYS

Starting from a specific key in a tonal composition, it is possible to modulate to as many as twenty-two other major and minor keys, not counting modulations to enharmonic keys or to the parallel major or minor mode. Although all of these key relationships are theoretically possible, some were used very rarely. In fact, from about 1700 onward, composers displayed a decided preference for modulations to a much smaller group of keys, those whose key signatures differ from the original key by only one sharp or flat. We call

these keys **closely related keys.** It is relatively easy to modulate to these keys, since their tonic chords already appear as diatonic triads within the original key.

One reason for the preference for modulation to closely related keys during the Baroque period is that in the tuning systems of the time, enharmonic notes such as C♯ and D♭ were not the same. Although musicians continued to adjust the tuning system, even as late as the time of Bach the "well-tempered" system still incorporated slight differences between some pairs of enharmonic notes, especially G♯ and A♭. Enharmonic shifts of key did not become common until after equal temperament was established around 1800.

Let us begin our study of closely related keys by diagramming the major and minor triads that are common to the keys of C major and its relative minor, A minor. Each of the five scale degrees or triads shown in Figure 27.1 may be tonicized as a potential *new key* in both major and minor modes. You will note that the diminished triad on B, either vii° in the major mode or ii° in the minor mode, is missing from our list of keys. Because this chord lacks a perfect 5th, its unstable nature prevents it from functioning as a tonic.

Figure 27.1

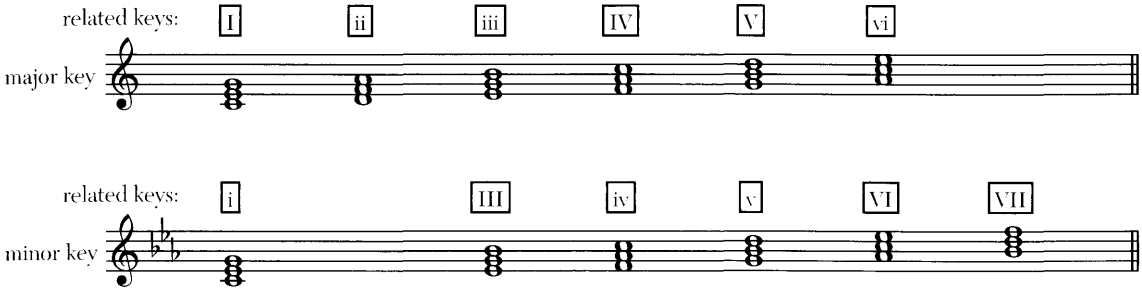
C major:		I	ii	iii	IV	V	vi	(vii°)	I
Keys:		C	d	e	F	G	a		
A minor:	(ii°)	III	iv	v	VI	VII	i		

The close kinship between the keys in Figure 27.1 is implicit in their key signatures, which differ by only one sharp or flat from the original key. We can see this more easily when we group major keys together with their relative minors.

C major/A minor: no accidentals in signature
G major/E minor: one sharp in signature
F major/D minor: one flat in signature

The keys closely related to both a major key (C major) and a minor key (A minor) are given in Example 27.1. Notice the difference in mode between the members of each set: one may move from a *major tonic* to two major keys (V and IV) or three minor keys (ii, vi, and iii) or from a *minor tonic* to two minor keys (v and iv) and three major keys (III, VI, and VII).

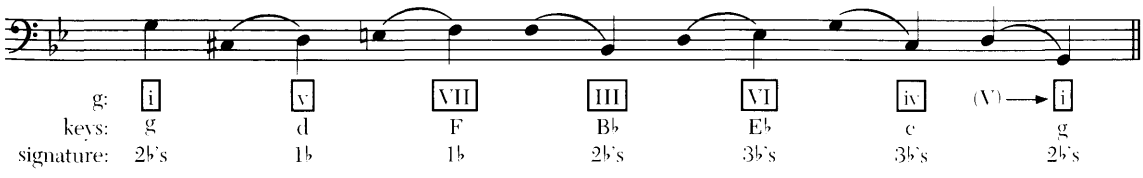
Example 27.1



Parallel keys such as C major and C minor are not closely related, since their signatures always differ by three accidentals. In fact, a **change of mode** from major to minor or vice versa should not even be considered a modulation, since no tonic shift is involved. Modal exchange and modulation by change of mode will be discussed in later chapters.

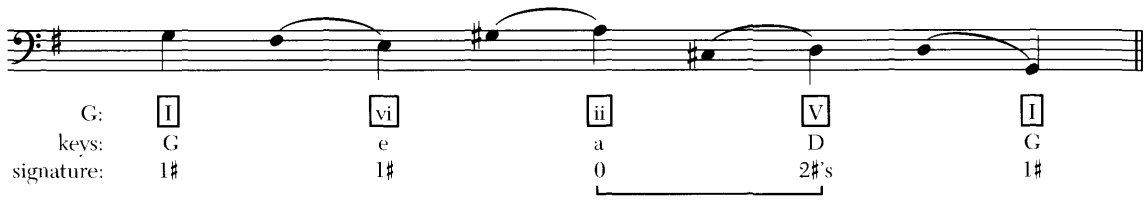
In many common-practice compositions that modulate (and most do), all the new key centers are closely related to the original tonic key, regardless of where they occur in relation to each other. In addition, we may sometimes find that as we progress through a piece, each new key center is also closely related to the previous one. In Example 27.2, which shows a bass line and succession of keys beginning in G minor, D minor (or v) is closely related to the previous G minor or tonic, F major (VII) is related to the prior D minor, B♭ major (III) is related to the prior F major, and so forth.

Example 27.2



This affinity between successive key centers is not always present. In Example 27.3, the third and fourth successive keys, A minor and D major, are not closely related because their signatures are two sharps apart. Nevertheless, both are still closely related to the original tonic of G major.

Example 27.3



In this chapter we will explore additional characteristics of closely related keys, such as their relative frequency, their comparative length, ways to modulate between them, and their role in the tonal scheme of compositions and melody harmonization.

Relative Frequency of Closely Related Keys

The two most common modulations in the major mode are to the dominant key (V) and to the submediant or relative minor key (vi). As we discussed in Chapter 23, motion to the dominant area a perfect 5th higher not only provides a degree of tonal tension but also a logical way to lead back to the original tonic a perfect 5th lower. Motion to the submediant area (vi) shares the same pitch class content with the original key. Modulations to the subdominant (IV), supertonic (ii), and mediant (iii) are encountered in that order of frequency; they tend to be less favored than V and vi. In the case of the subdominant, the root movement descent by perfect 5th is especially strong and may cause us to hear a return to the original tonic as if it were functioning as a V of IV. Compare this move with modulation to the dominant.

Compositions in the minor mode usually modulate to the mediant or relative major (III) and the dominant (v). We must be careful to distinguish between dominant *harmony*, which is always a major triad (V) in the minor mode, and the dominant *key*, which is always a minor key (v) in the minor mode—we have a half cadence on V, but we modulate to v. Other possible closely related goals include the areas of iv, VI, and VII, in that order.

The Extent of the Tonicized Area

The sense of a new key is firmly established in an **extended modulation,** so that the sheer strength and length of such key changes may cause us to temporarily forget the original tonic. Nevertheless, in **closed tonal forms** that begin and end in the same key, we should still think of these new closely

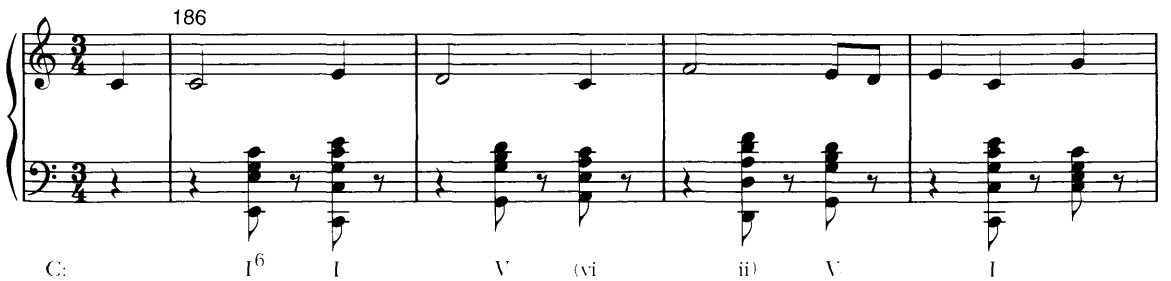
related areas as extended tonicizations of diatonic triads. In this way we never lose sight of their function in terms of the overall tonal scheme of an entire movement. To this end, we will continue to indicate the goal of diatonic modulations according to their scale degree and triadic function, as opposed to designating the keys by their tonic note. Therefore, we will write c: [i]→[III]→[iv]→[v]→[i], not c →E♭→f→g→c. In our analyses, the new key area, enclosed within a box and followed by a colon, is followed by Roman numerals that denote various chordal functions in the new key—for example, [III]: I-ii^6-V-I. Consult the models in Example 27.7 below.

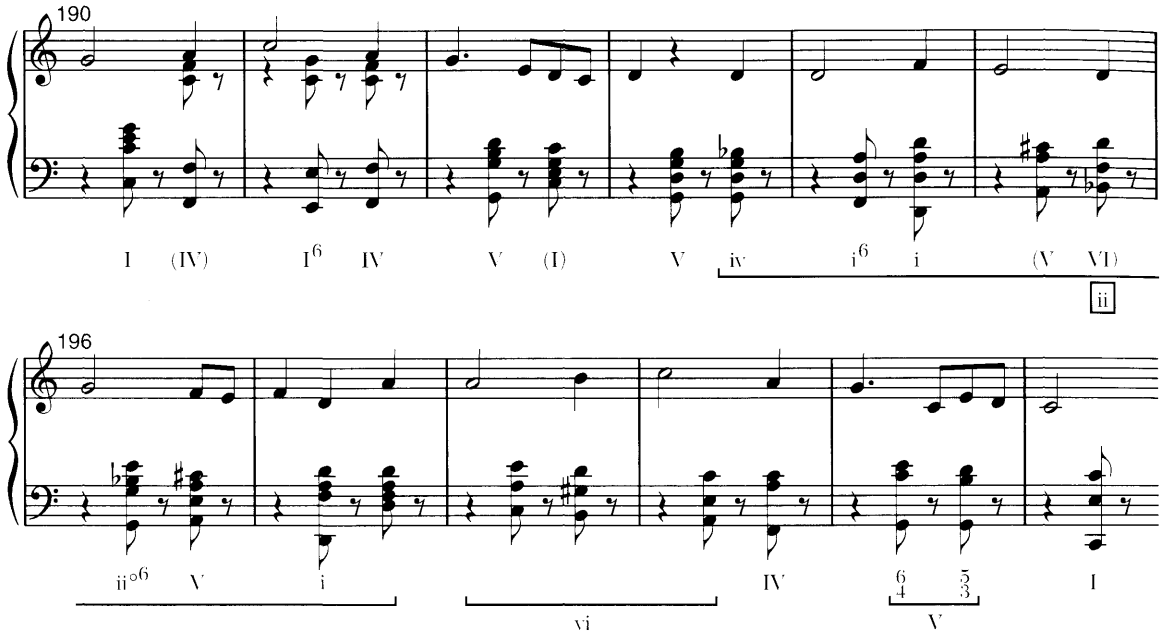
As we saw in Chapter 23, some tonicizations are only transient or temporary. Although we may sense a tonal shift toward a new key at a cadence, this shift is not always confirmed by a continuation in the new key. Instead, the next phrase may either immediately return to the original tonic, like the Bach passage in Example 27.4a, or move to yet another temporary area, like the Saint-Säens excerpt in Example 27.4b, which tonicizes ii and vi in succession. For such **transient modulations,** we normally use a bracket to show the extent of the tonicization, with a Roman numeral below it to denote the key area that is tonicized.

Example 27.4

A. "Ich danke dir, O Gott, in deinem Throne" (Bach chorale harmonization)

B. Saint-Saëns: Piano Concerto No. 4, III



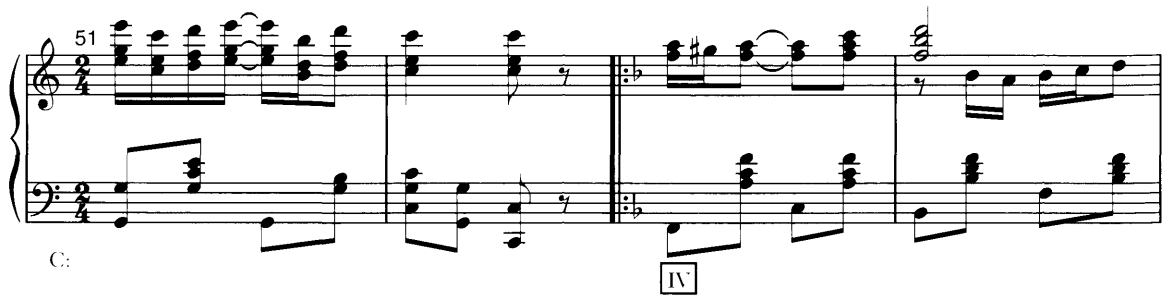


The Process of Modulating to Closely Related Keys

Modulations to closely related keys employ the same procedures that we discussed in Chapter 22: sectional modulation, modulation by pivot or common chord, and chromatic modulation. Sectional modulations—that is, abrupt key shifts at significant formal divisions or junctures—usually progress from a major tonic to V, vi, or IV, or from a minor tonic to III, v, or VI. In Example 27.5, the middle section of this Joplin rag moves to the sub-dominant (IV).

Example 27.5

Joplin: "The Entertainer" (piano rag)



Some closely related modulations using typical pivot chords appear in Example 27.6. As we noted earlier, the common chord often functions as a pre-dominant in the new key. Since modulating passages from actual music literature are often quite lengthy, we have employed shorter harmonic models here. Some modulating excerpts are supplied in the accompanying Workbook.

Example 27.6

Finally, Example 27.7 demonstrates some modulations to related keys using chromatic voice leading.

Example 27.7

We may make several deductions from these models:

1. The chromaticism tends to occur in the outer parts, especially the bass voice.

2. The chromaticism tends to occur early in the phrase, allowing for a strong cadence formula in the new key.
3. The altered or chromatic note usually resolves as a leading tone to scale degree $\hat{1}$ or the tonic of the new key.

Tonal Schemes within a Movement

We have seen that extended tonicizations of various scale degrees allow a composer to extend the tonal scheme of a movement beyond a single key center. Modulations to closely related keys can not only reinforce contrasting thematic material but also infuse previously stated musical ideas with fresh meaning. Within movements that are tonally closed, we usually find the following general tonal scheme:

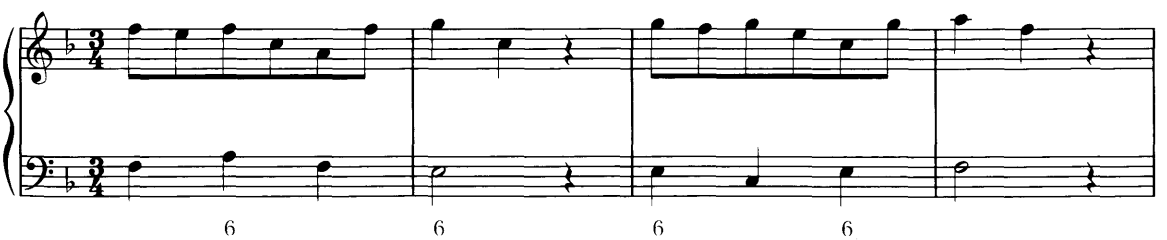
1. the establishment of the original tonic,
2. a modulation to a closely related key or keys, and
3. a return to the initial key.

A retransition section that features prolonged dominant harmony often precedes the return. The choice of keys and their order affords a wide range of possibilities to the composer. The selection of a particular tonal plan contributes to the distinctive character of the piece. While some musical forms, such as the minuet genre discussed in Chapter 25, display a fairly predictable key scheme, others may feature a unique scheme chosen specifically by the composer.

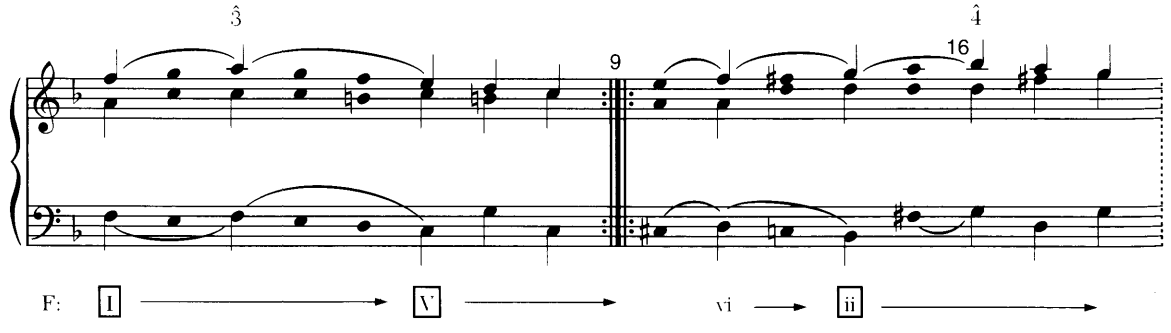
The tonal structures of three short movements by Loeillet, Mozart, and Beethoven are diagrammed below. In the voice-leading reduction (Example 27.8b) of the short Loeillet piece (Example 27.8a), a middle alto part has been added to fill out the harmonies.

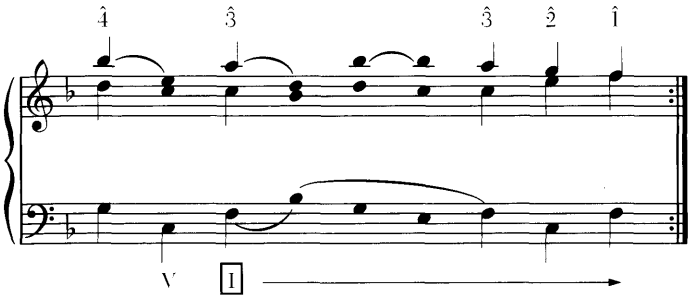
Example 27.8

(♪) A. Loeillet: Solo for Flute and Continuo in F Major



B. (REDUCTION)





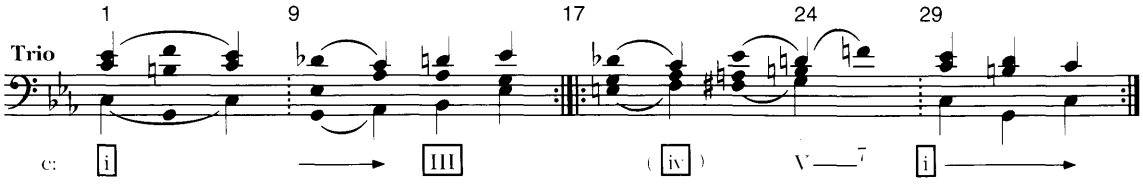
The first reprise concludes with a cadence in V. At the opening of the second reprise, the chromatic C♯ defines the initial A major triad as a secondary dominant of vi, which becomes a secondary dominant itself in turn, and immediately leads to an extended passage in ii. This supertonic key is cadentially confirmed in measure 15. The descending root movement by 5ths that commences at the beginning of the second reprise (A-Dm-D-Gm) continues through dominant harmony past the tonic to IV in measure 19 before turning back via the V^6_5 to the final I chord. After the four-bar grouping in the first reprise, the second reprise divides into two sections, each seven measures in length.

The scale degrees written over the soprano (Example 27.8b) reveal the overall voice leading in the upper part. Following the initial $\hat{3}$ (A^5) in the soprano, the neighboring $\hat{4}$ ($B\flat^5$) resolves back to $\hat{3}$, which then descends near the end via $\hat{2}$ to the final $\hat{1}$.

The tonal scheme of the Trio to the Minuet of Mozart's "Dissonant" string quartet, shown in reduced form in Example 27.9, demonstrates an ascending succession of keys leading to the dominant: i→III→(iv)→V. While the modulation to III is confirmed by a cadence, the motion to iv is more transient in nature. The return of the tonic is preceded by a retransition based on V^7 harmony.

Example 27.9

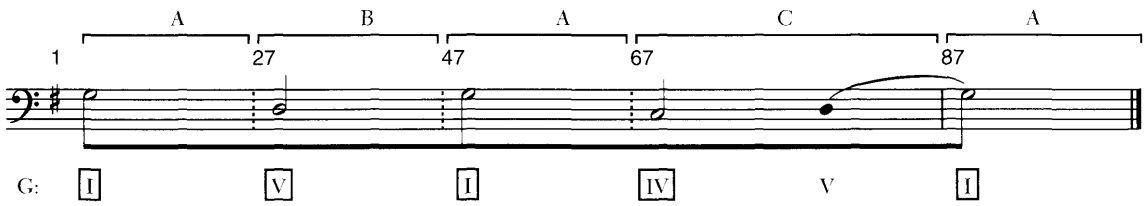
Mozart: String Quartet in C Major ("Dissonant"), K.465, III, basic tonal scheme



Often an examination of the tonal scheme of a piece or movement may give us a clue to its formal design. For instance, many popular songs of the 1930s and 1940s display a thirty-two-measure quatrain form of A A' B A'. The contrasting B section or bridge is frequently differentiated by a change of key. A similar situation can be found in the key scheme of the last movement of Beethoven's Piano Sonata in G Major, Op. 49, No. 2, which has been extracted in Example 27.10. The periodic recurrence of the tonic key suggests that the original theme probably reappears with the tonic, while the contrasting keys suggest locations where different thematic ideas may occur. This conjecture is confirmed by the piece's actual thematic material. The movement is cast in rondo design, in which the first theme or refrain alternates with contrasting ideas or episodes. Thus the underlying key scheme supports the melodic plan.

Example 27.10

BEETHOVEN: PIANO SONATA IN G MAJOR, OP. 49, NO. 2, II, BASIC TONAL SCHEME



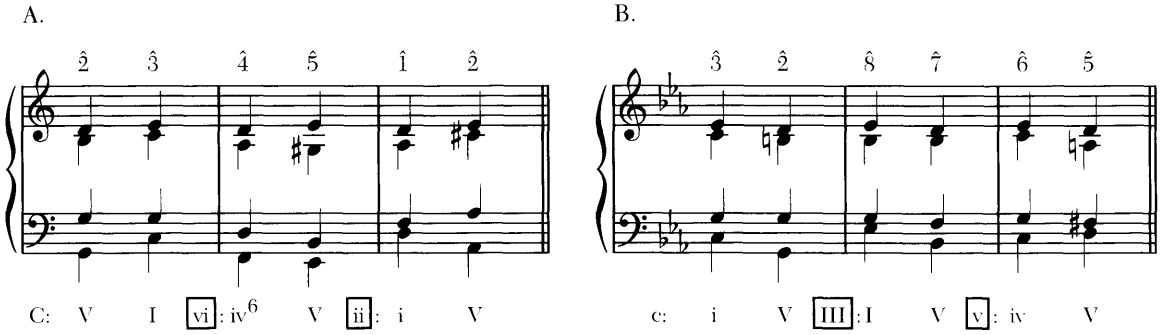
Our brief discussion of these movements illustrates that the process of tonicizing scale degrees elevates them to a higher level of structural importance. However, the series of consecutive key areas is not recursive—that is, the succession of keys through a movement does not always produce chord progressions that are typical of measure-to-measure harmony. Thus, we must be careful not to confuse the different levels of the tonal hierarchy.

MELODY HARMONIZATION

Modulation to closely related keys provides a significant resource for tonal variety and contrast in melody harmonization. Modulations are especially useful for accommodating different patterns of scale degree motion at cadences. Since one function of cadences is to stabilize new keys, potential cadence tones in the melody should be examined first to ascertain whether they reflect a move to a different tonal center. Each pair of soprano scale steps in Example 27.11 suggests several different cadences. For instance, scale degrees $\hat{2}$-$\hat{3}$ in major could support not only the familiar imperfect au-

thentic cadence (V-I) but also a Phrygian cadence in the submediant key (vi : iv^6-V), or even a half cadence in the supertonic key (ii : i^6-V); see Example 27.11a. The succession $\hat{3}$-$\hat{2}$ in the minor mode suggests settings in the tonic (i-V), mediant (III : I-V), or an inverted Phrygian close on scale degree $\hat{5}$: (v : iv-V); see Example 27.11b. In an inverted Phrygian cadence the usual outer voices are exchanged, so that $\hat{4}$-$\hat{5}$ occurs in the bass and $\flat\hat{6}$-$\hat{5}$ occurs in the soprano.

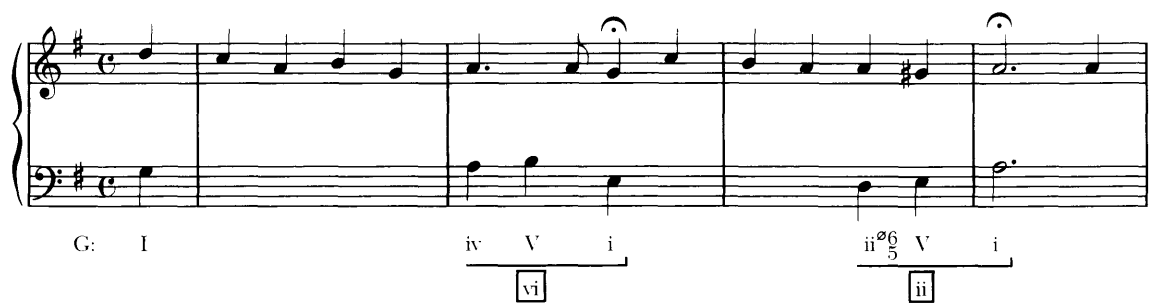
Example 27.11



When harmonizing melodies that may incorporate modulations to closely related keys, first examine the melodic lines leading to the cadence as well as the beginning of the phrase immediately following that cadence. Label potential related keys and then fill in the remainder of the setting, trying to work out smooth transitions between the various keys. Example 27.12 illustrates this method; the cadential notes, with their tonicizing harmonies, are sketched in first. Then the inner voices and the remaining harmonies are filled in. Note the overall progression of keys; they move through a succession of descending 5ths, from vi to ii to V to I.

Example 27.12

A. "BRISTOL" (HYMN TUNE)



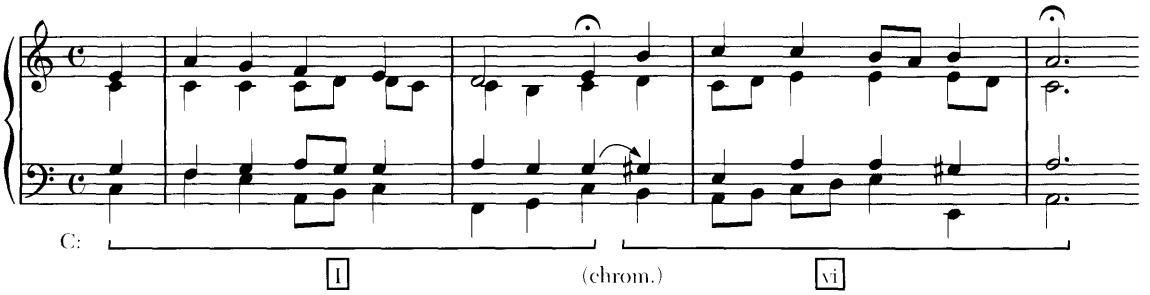
Bach's different settings of the chorale tune "O Haupt voll Blut und Wunden" illustrate his ingenuity in harmonizing this melody.[1] Play the three harmonizations of the first two phrases of the chorale in Example 27.13 and contrast the settings. In Example 27.13a, a chromatic motion (G^3-$G\sharp^3$) provides the means of modulation from I to vi. In Example 27.13b, the submediant key starts earlier, with a pivot chord (ii in C major = iv in A minor), allowing the first phrase to end on a Phrygian cadence in vi. The last setting (Example 27.13c) is more adventuresome; after the first two chords in A minor, the phrase makes a transient modulation to D minor (iv). The C^5 in the third measure produces a cross-relation with the $C\sharp^4$ in the preceding

1. Donald Martino's edition of the Bach chorales transposes multiple harmonizations of the same tune to one key in order to compare them more directly: see his *178 Chorale Harmonizations of J. S. Bach: A Comparative Edition for Study* (Newton, MA: Dentalian, Inc. 1984).

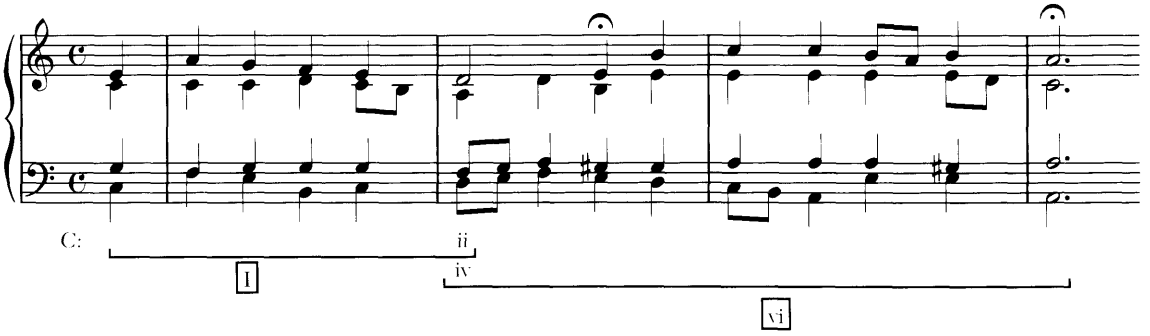
cadence. Bach harmonizes the D with an ambiguous diminished seventh chord to soften the jarring effect of the cross relation and to modulate back to the original key. Even in measure 2, the partwriting has its share of pitfalls; observe the leap G^3-D^3 in the tenor to avoid parallel 5ths and the curious melodic 7th in the bass on beats 3 and 4.

Example 27.13

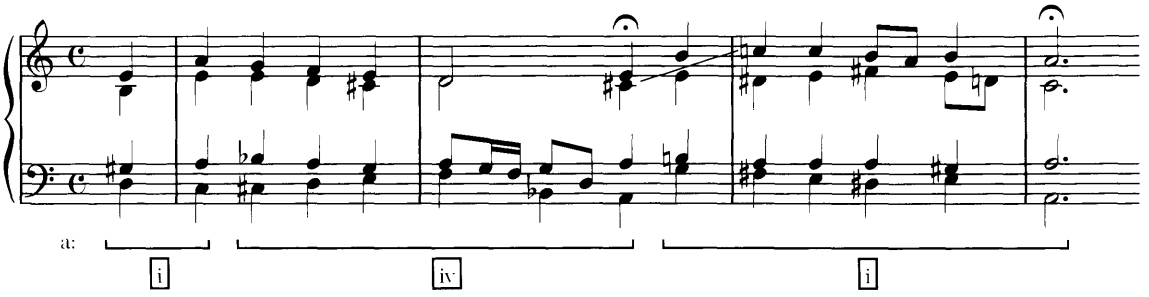
A. "O Haupt voll Blut und Wunden" (three Bach chorale harmonizations)



B.



C.



Summary of Modulations

1. During the Baroque and Classical periods most modulations occurred to closely related keys whose signatures were not more than one accidental removed from the original tonic. From each major or minor tonic there were five such keys (see below); since the vii in major and ii in minor are diminished triads, they cannot serve as potential tonics.
   Major key: I to V IV ii vi iii
   Minor key: i to v iv III VI VII
2. The most frequent closely related keys are V, vi, and ii in the major mode, and III, v, and iv in the minor mode. The first two keys in each mode normally comprise the more extensive tonicizations.
3. Modulations to these keys employ the three techniques mentioned in Chapter 22:
   A. Sectional modulations usually involve direct shifts to V, IV, or vi in major, and III, iv, and VI in minor.
   B. Pivot chord modulations again favor the use of pre-dominant common chords in the new key: ii in I = iv in vi.
   C. Chromatic modulations tend to feature the chromatic inflection (such as $\hat{5}$-$\#\hat{5}$-$\hat{6}$ in a modulation to vi) in the bass voice.
4. In melody harmonizations, scan the scale degrees near cadence points for possible confirmations in new closely related keys. Try to reinterpret the scale steps, such as $\hat{3}\ \hat{3}\ \hat{2}$ as a possible half cadence in C major (E E D) could also appear as $\hat{2}\ \hat{2}\ \hat{1}$ in D minor or ii.

Since the process of tonicization is one of the most important means of injecting tonal variety into melody harmonizations, it is imperative that we become sensitive to the possibility of re-interpreting melodic scale degrees from one key to the other.

Terms and Concepts for Review

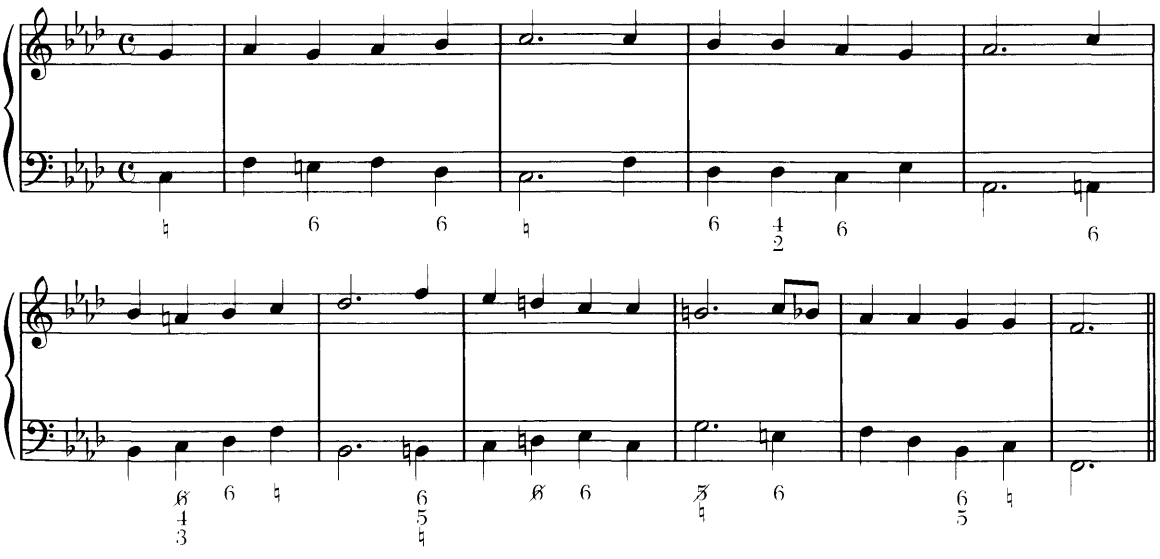
closely related keys
change of mode
closed tonal forms
extended modulation
transient modulations
tonal scheme

A BRIEF REVIEW SELF-QUIZ

1. Figured-bass symbols have been provided for the two-voice framework in the exercises that follow. Using the figured bass to aid you in identifying the chords, provide a Roman numeral analysis; it is not necessary to realize the figured bass in partwriting. Since each passage contains a number of short modulations to closely related keys, be sure that you use the correct method of denoting a pivot chord or chromatic modulation. Below each example list the closely related keys that are *not* used.

Example 27.14

A.



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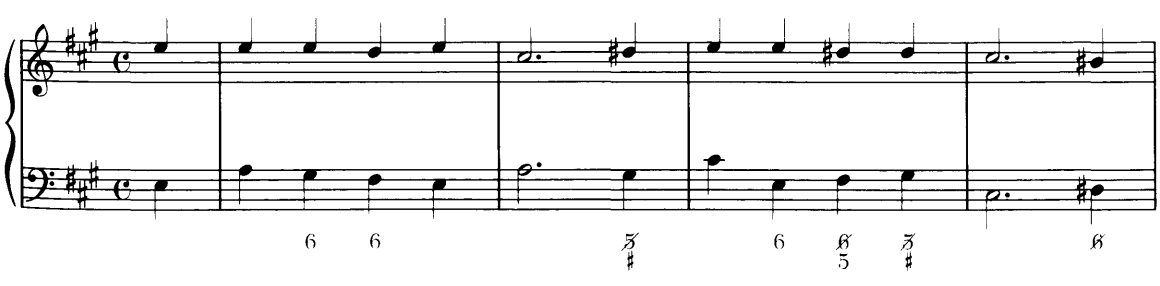
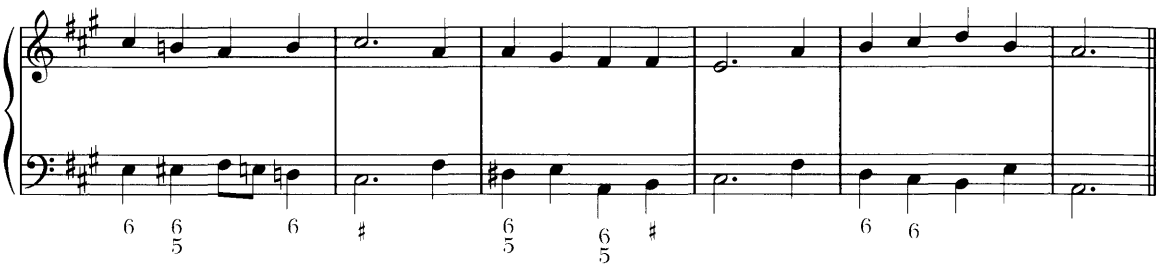
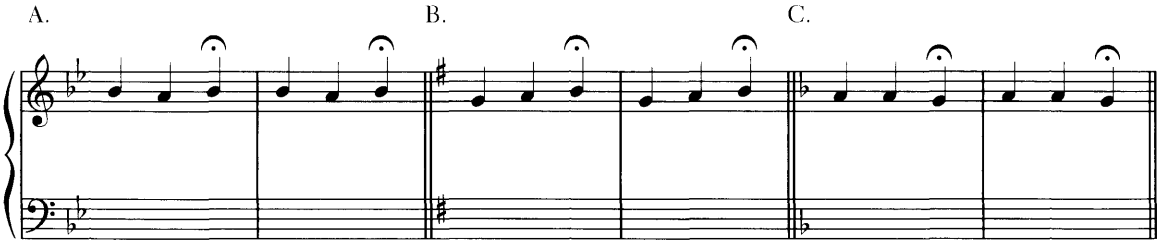




2. Provide a four-voice setting of the three-note melodic cadences below. Use a different key and appropriate cadence for each pair and provide a Roman numeral analysis.

Example 27.15

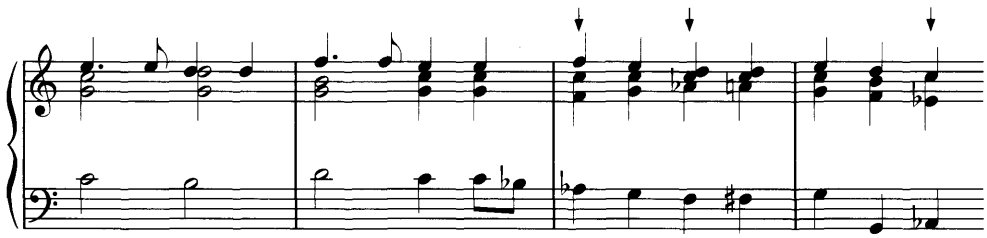


CHAPTER 28

Modal Exchange and Mixture Chords

IN THIS CHAPTER AND THE FOLLOWING TWO, we will focus on specific altered or chromatic chords that are used in tonal music. The altered scale degrees in these chords afford us the possibility of expanding the spectrum of harmonic color available in our previous diatonic progressions. To illustrate this, let us examine the passage in Example 28.1, which starts in C minor and then, following the half cadence on V in measure 4, changes its mode to C major. While the second phrase is clearly in the major mode, the music still retains certain scale-degree inflections that derive from the parallel minor key of the first phrase. These inflections produce three different chords, marked with arrows, each of which contains at least one altered scale degree.

Example 28.1



In this chapter we will focus our attention on relationships existing between the major and minor modes by examining the use of contrasting parallel keys, and the chords that are exchanged or borrowed from one mode to the other.

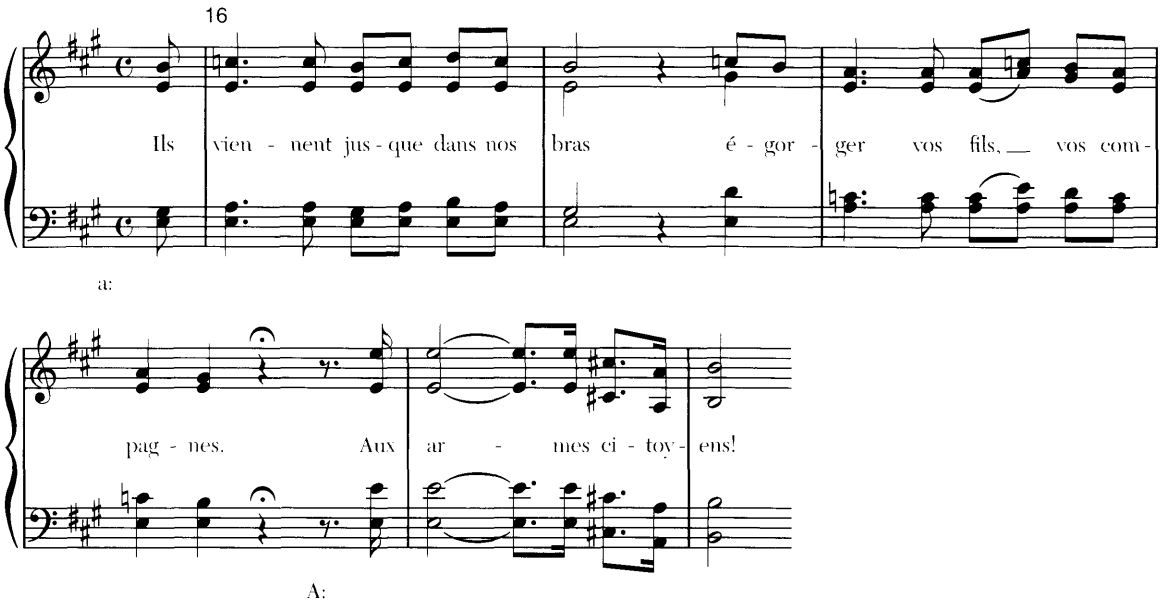
Modal Exchange

The major and minor modes were clearly delineated in the tonal compositions of the later Baroque period (ca. 1670–1750). A movement or an entire piece of music exhibited tonal closure by starting and concluding in the same key and the same mode, although interior modulations were possible. Later composers began to experiment with blurring the modes by introducing passages in the parallel major or minor key. This technique, known as **modal exchange,** was frequently employed by Beethoven and Schubert during the opening decades of the nineteenth century. The use of modal exchange increased throughout that century to the point where in some cases it was difficult to tell whether a passage was in major or minor. Indeed, this modal ambiguity became a distinguishing trait of late Romantic music, providing an additional means of heightening its expressiveness. The later music dramas of Richard Wagner typify this tendency.

In vocal compositions, modal exchange is often utilized in order to highlight the dramatic contrast between two passages of text. Changing from major to minor mode creates the effect of changing the mood from bright to dark; changing from minor to major creates the opposite effect. The French national anthem, "La Marseillaise" (Example 28.2), contains an example of this practice of text painting. The change to minor during the third phrase (m. 16) heightens the effect of the following major-mode call to arms.

Example 28.2

ℓ ROUGET DE LISLE: "LA MARSEILLAISE" (FRENCH NATIONAL ANTHEM)



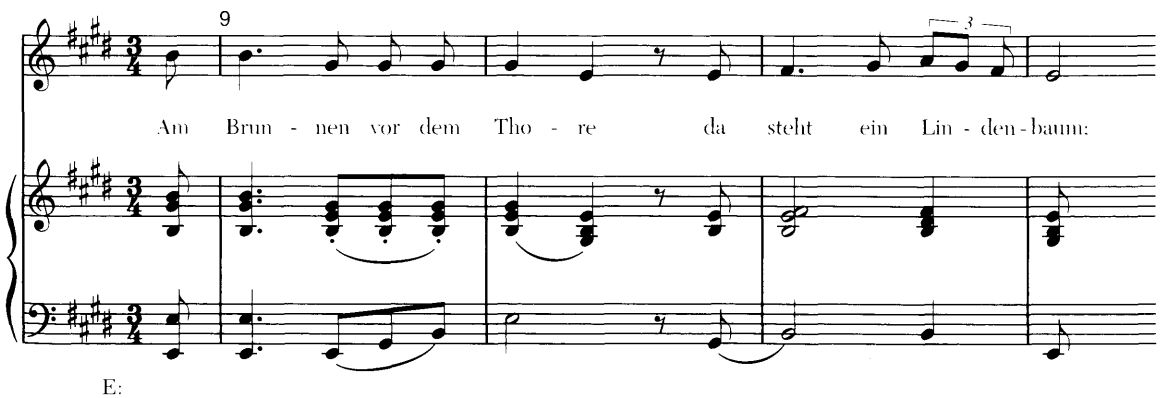
Ils viennent jusque dans nos bras
Égorger vos fils, vos compagnes.
Aux armes citoyens!

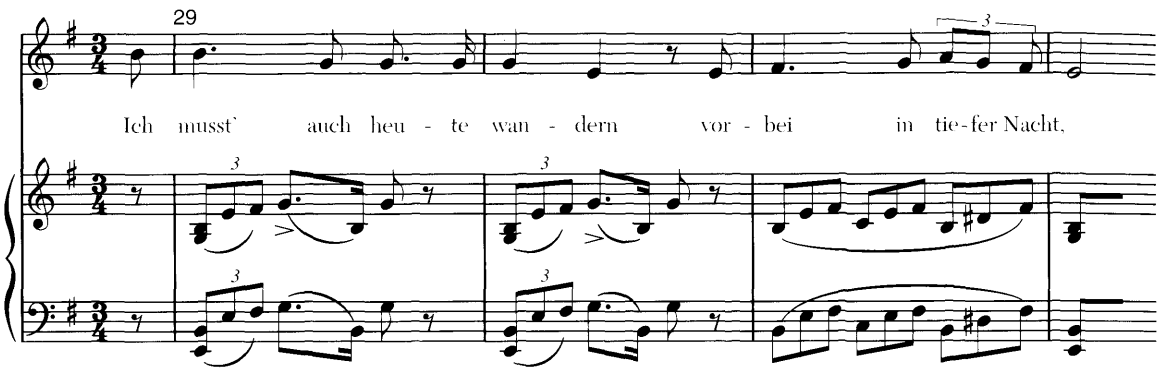
They are practically in our midst, coming
To slaughter your sons, your dear ones.
To arms, citizens!

The alternation of modes in Schubert's famous song "Der Lindenbaum" (Example 28.3) reflects the changing moods of the wandering lover as he sadly recalls his beloved while beholding their favorite tree now wrapped in the winter snow.

Example 28.3

ℓ SCHUBERT: "DER LINDENBAUM" FROM *WINTERREISE*





e:

Am Brunnen vor dem Thore
da steht ein Lindenbaum;

Ich musst' auch heute wandern
vorbei in tiefer Nacht,

By the well before the gate
There stands a linden tree

I had to pass by it now
In the deep night

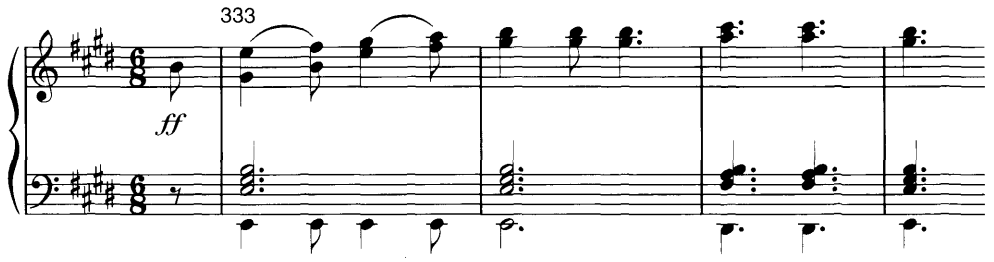
Modal exchange is especially effective in instrumental pieces based on a narrative or story, such as nineteenth-century program music. During his pictorial odyssey of the Moldau, Smetana associates this famous Bohemian river with a recurring minor melody (Example 28.4a). As the river finally surges into the open sea, the mode triumphantly switches to major (Example 28.4b).

Example 28.4

A. SMETANA: "THE MOLDAU" FROM *MÁ VLAST*

e:

B.

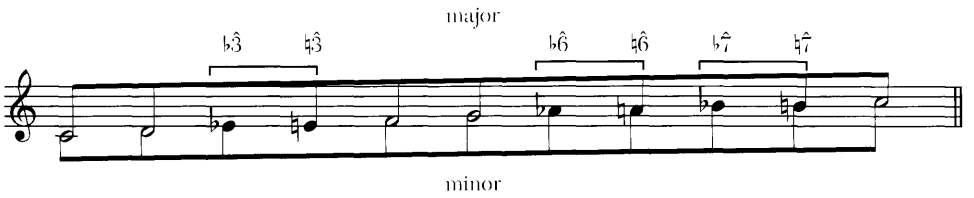


E:

MIXTURE CHORDS

We will now direct our attention to an examination of individual **mixture** or **borrowed chords**—that is, harmonies that contain chromatic inflections or scale degrees borrowed from the parallel major or minor mode. Example 28.5 compares the scale steps of the major and natural minor systems. The notes in the major scale are marked with upward stems; those in the minor scale are marked with downward stems. Since the differing degrees turn out to be $\hat{3}$, $\hat{6}$, and $\hat{7}$, these are the notes or scale steps that can be borrowed or exchanged from one mode to the other. Remember that the raised 6th and 7th scale degrees in minor are already present in the major mode.

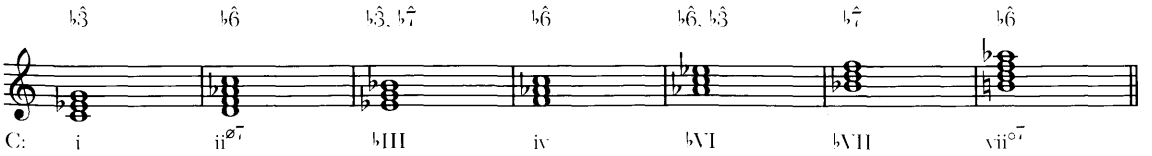
Example 28.5



MIXTURE CHORDS IN THE MAJOR MODE

Most modal borrowing involves scale degrees that are transferred from the minor mode to the major mode. These minor exchanges may be found at all levels of the major mode's tonal hierarchy, ranging from individual chords to entire keys. The primary mixture chords in major feature the lowered scale steps $\flat\hat{3}$, $\flat\hat{6}$, and to a lesser degree $\flat\hat{7}$. Since these degrees impart a somber harmonic color to passages in a major key, they are particularly valuable in suggesting darker associations arising from either a musical or extra-musical origin, such as the text of a song. Example 28.6 lists these chords with their Roman numerals. Carefully observe how we denote each harmony: A lowercase or capital Roman numeral indicates the *chord type* (iv), while a flat sign before the Roman numeral denotes that the *root* of the triad has been lowered (♭VI). Identify the borrowed modal scale degrees in each chord.

Example 28.6



As you see, all of the diatonic chords in the minor mode may occur as mixture chords in the parallel major. Because of its characteristic $\hat{\flat 6}$, the vii$^{\circ 7}$ may be considered a mixture chord in major as well. You should avoid doubling an altered scale degree in these chords unless it functions as the root of the chord.

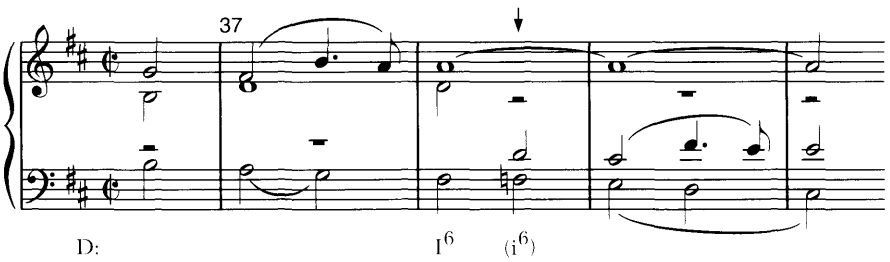
We will now discuss each of the individual mixture chords and their differing harmonic functions.

The i Chord

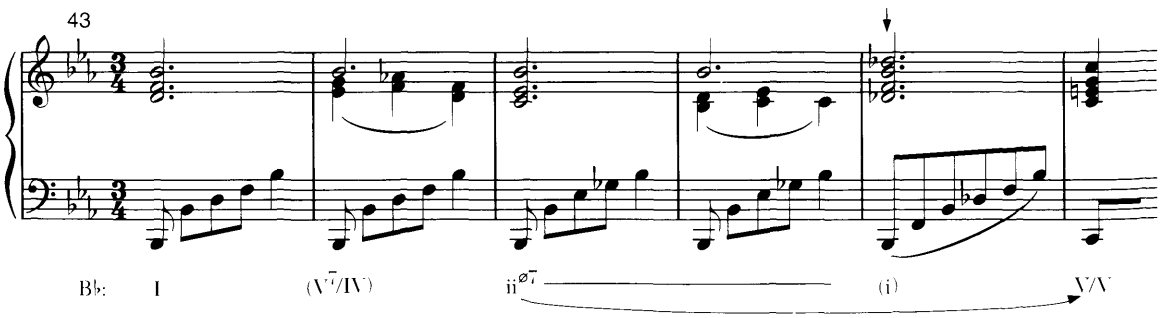
The minor tonic (i) normally occurs as a transient harmony in a passing or neighboring capacity. It may follow the normal I as a chromatic inflection, as in the Beethoven excerpt (Example 28.7a), or momentarily substitute for the major tonic, as in the Brahms quotation (Example 28.7b). In popular songs the tonic (I) is sometimes followed by its minor-seventh mutation (i^{7}), which then functions as a pivot chord (ii$^{\varnothing 7}$) to initiate a tonal shift to a key one whole step lower (Example 28.7c). Charlie Parker's "Ornithology," based on the harmonies of the tune "How High the Moon," opens with several examples of this progression.

Example 28.7

A. BEETHOVEN: KYRIE FROM *MISSA SOLEMNIS*



B. BRAHMS: *EIN DEUTSCHES REQUIEM*, IV



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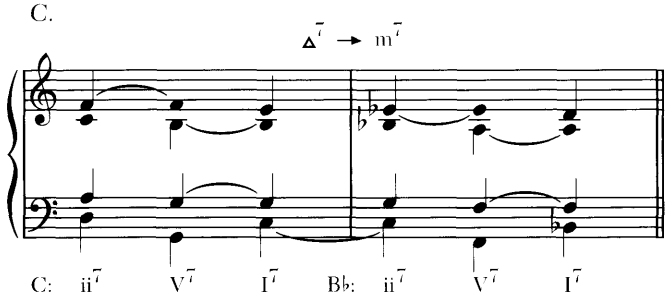
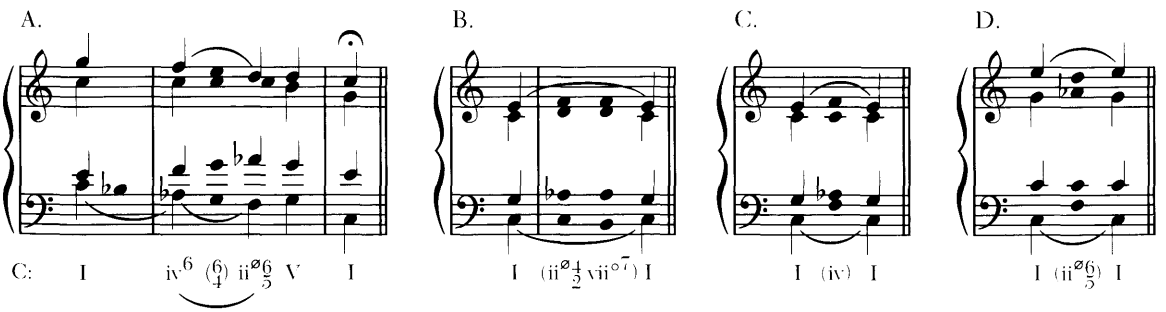


The iv and ii^{ø7} Chords

The iv and ii^{ø7} chords and their respective inversions may function as pre-dominant chords at cadences, may appear in embellishing progressions within the phrase, or may act as neighboring harmonies to the tonic. In all cases the crucial altered scale step is $\flat\hat{6}$, which resolves downward to $\hat{5}$. Examine each of four models in Example 28.8 and determine the basic function of each mixture chord. In Example 28.8a the iv and ii$^{ø6}_{5}$ act as an extended pre-dominant to the cadence; in Example 28.8b the ii$^{ø4}_{2}$ appears in an embellishing progression that opens the phrase, while the harmonies in Examples 28.8c and d suggest neighboring chords to the tonic.

Example 28.8

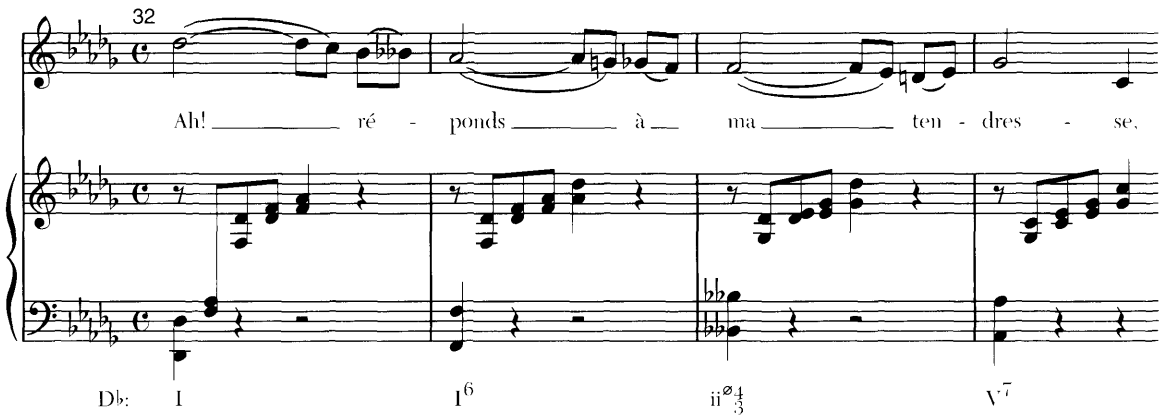


In the Bach harmonization (Example 28.9a) the bass of the first IV^{6} is lowered, changing it to a iv^{6} ($\hat{6}$ to $\flat\hat{6}$), which then resolves to V^{7} and on to I. In the opening of the Saint-Säens aria (Example 28.9b), the $\flat\hat{6}$ in the bass (m. 3) intensifies the ii$^{ø4}_{3}$ pre-dominant function; this note is already anticipated in measure 1 of the vocal line (B𝄫). In Mozart's slow movement (Example 28.9c), the use of the ii$^{ø6}_{5}$ during the momentary tonicizations of V and IV is particularly haunting. Compare this passage to Example 28.7c.

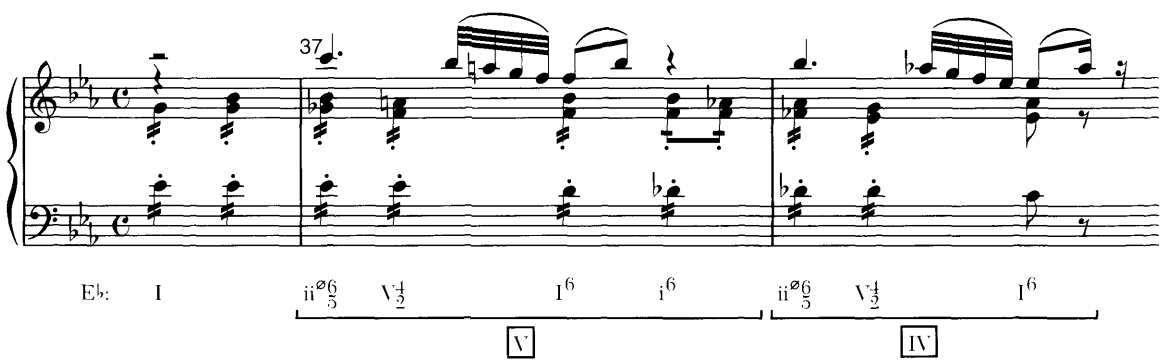
Example 28.9

A. "HELFT MIR GOTTES GÜTE PREISEN" (BACH CHORALE HARMONIZATION)

B. SAINT-SAËNS: "MON COEUR S'OUVRE À TA VOIX" FROM *SAMSON ET DALILA*, ACT II

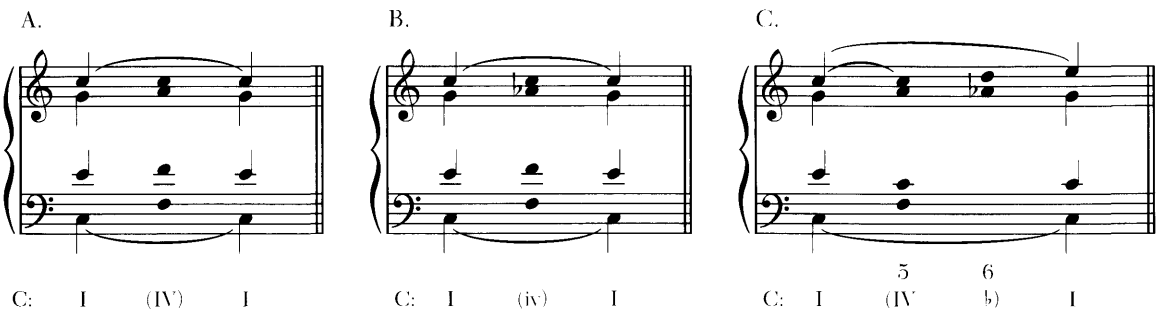


C. MOZART: STRING QUARTET IN B-FLAT MAJOR ("HUNT"), K.458, III



During the Romantic period, increasing disenchantment with the overly familiar authentic cadence (V^{7}-I) led composers to explore new harmonic means of cadentially approaching the tonic. As a result, they frequently resorted to the old plagal formula with a new twist—the added use of a mixture chord. This procedure can be traced in three successive stages in Example 28.10. The first progression (IV-I) in Example 28.10a is altered in Example 28.10b through the introduction of $\hat{\flat 6}$, turning the subdominant into a mixture chord. Then the soprano traces a passing 5-6 motion above the $\hat{4}$ in the bass, on its way to the 3rd of I (Example 28.10c).

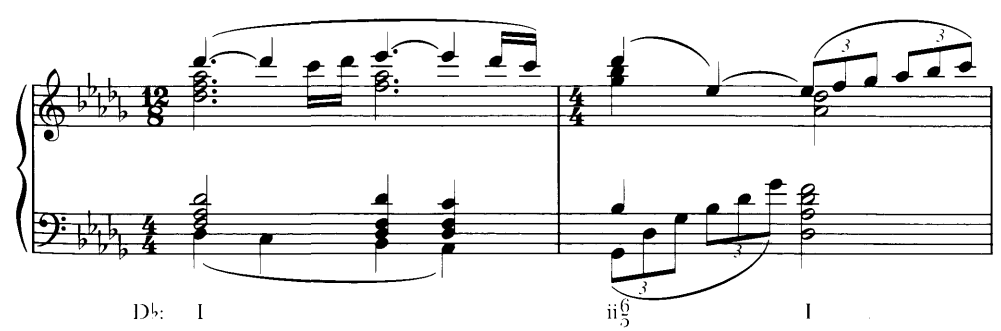
Example 28.10

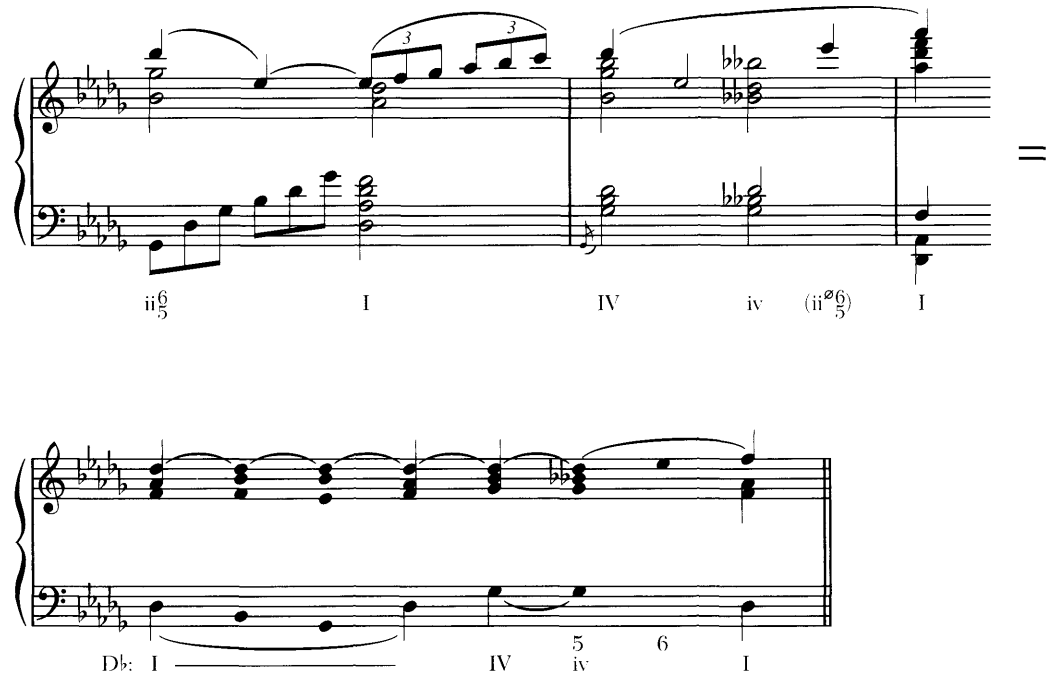


Wagner associated this cadence with transfiguration in the concluding harmonies of several of his operas, one of which is shown in Example 28.11a. Popular songwriters of the 30s and 40s later adopted this progression, frequently using it to underpin the climax near the end of their tunes. The last A section of Jerome Kern's "All the Things You Are," which appears as Example 23.1, ends with the progression IV^{7}-iv^{7}-I-ii^{7}-V-I (Example 28.11b).

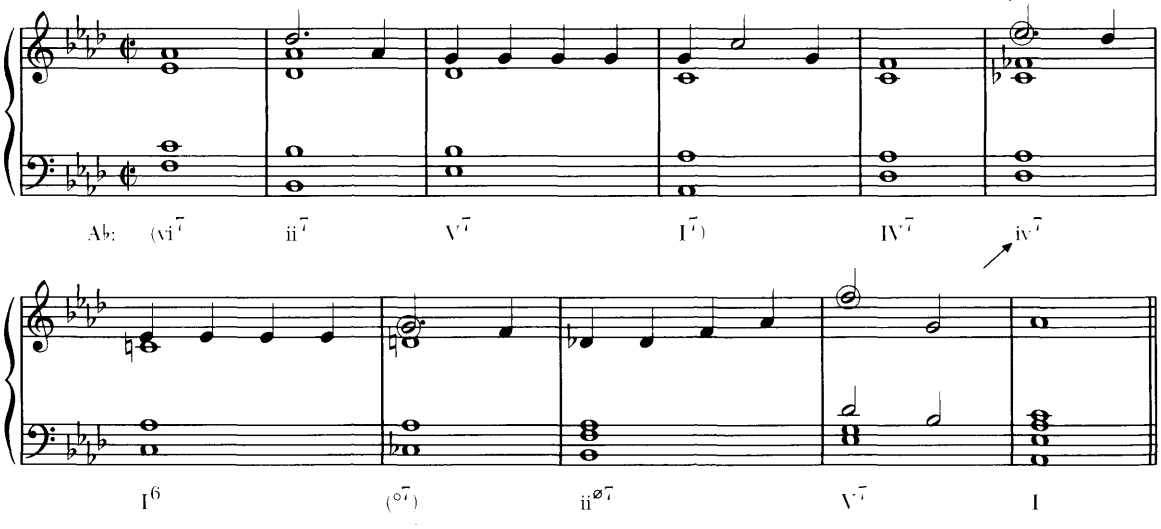
Example 28.11

A. WAGNER: *GÖTTERDÄMMERUNG*, ACT III





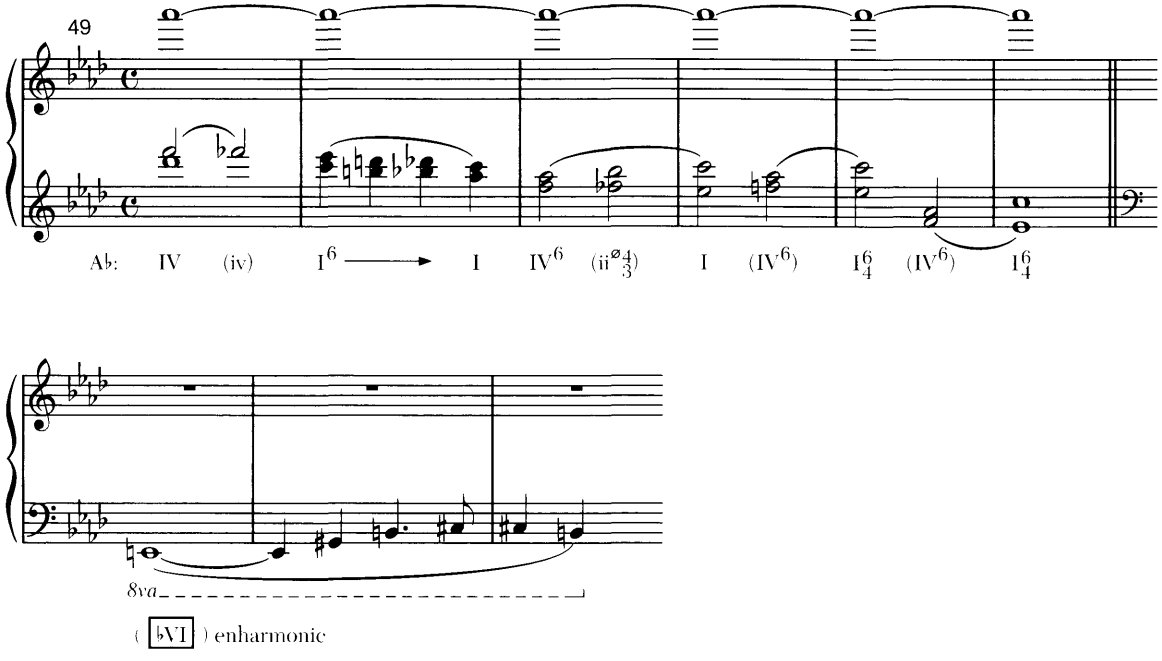
(f) B. JEROME KERN: "ALL THE THINGS YOU ARE"



The iv and ii$^{\varnothing 7}$ are particularly well suited to interject a sense of ominous foreboding in the major mode. In nineteenth-century opera, pre-dominant mixture chords were frequently and effectively exploited in arias when the composer wished to project a feeling of dread. A beautiful example occurs in the final act of Verdi's *Otello,* when the innocent heroine Desdemona sings her aria "Ave Maria" as she prays before the Virgin Mary (Example 28.12). The pronounced $\flat\hat{6}$ or F♭ (notice the iv^6 and ii$^{\varnothing 4}_3$) at its ethereal close anticipates the enharmonic modulation to $\boxed{\flat VI}$ (E = F♭) at Otello's entry, which is depicted by the deep tones of the double bass, suggesting that his intentions are other than making love.

Example 28.12

VERDI: "AVE MARIA" FROM *OTELLO,* ACT IV



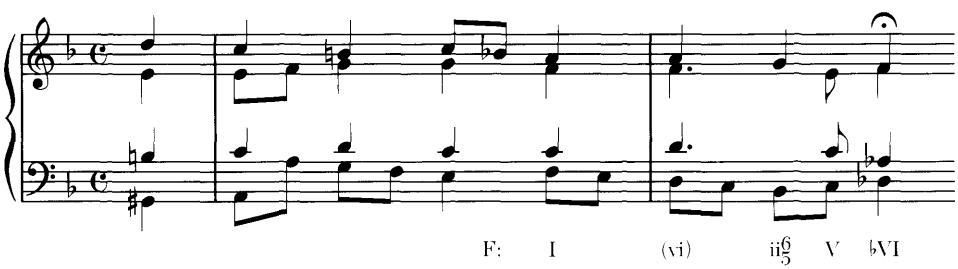
The ♭VI Chord

The lowered submediant (♭VI) is an especially striking harmony and is found in a variety of contexts. It probably occurs most frequently as a substitute for the diatonic vi in deceptive cadences—V-♭VI (Example 28.13a).

In this case the chordal 3rd ($\hat{1}$) of the ♭VI is doubled to avoid either an augmented 2nd or parallels in the partwriting (Examples 28.13b and c). A common-tone $\hat{1}$ is often used to bridge the motion from I to ♭VI (Example 28.13d); the striking chromatic relation between ♮3 and ♭3 is typical of this progression. This chord is often followed by a mixture iv triad (Example 28.13e).

Example 28.13

A. "VATER UNSER IM HIMMELREICH" (BACH CHORALE HARMONIZATION)



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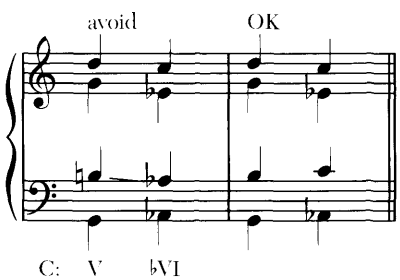

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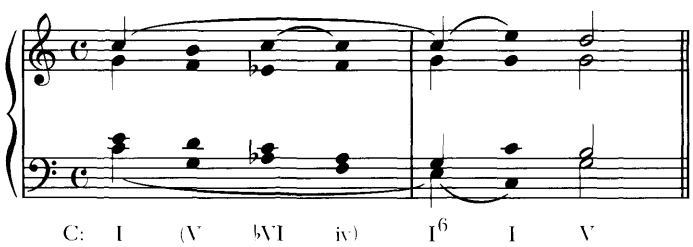
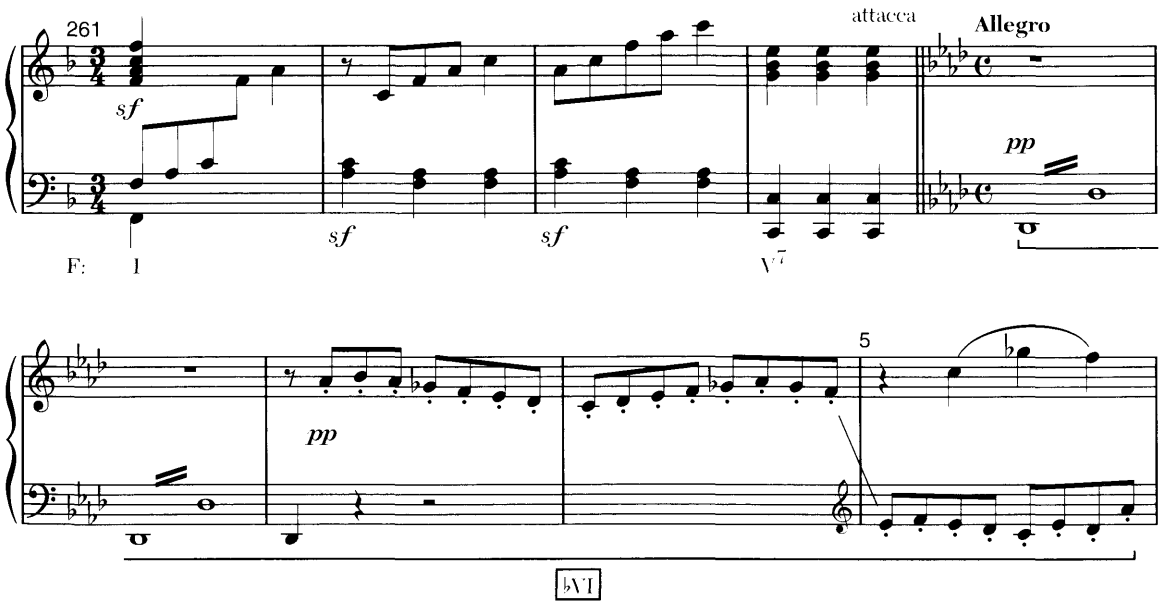


In the scherzo of Beethoven's Sixth ("Pastoral") Symphony (Example 28.14), the tonicized ♭VI of the deceptive cadence abruptly interrupts the "Merry Gathering of the Country Folk" with a premonition of the impending F minor "Storm." The appearance of ♭VI at the opening of the new section initiates a series of modulations to distantly related keys not shown here.

Example 28.14

BEETHOVEN: SYMPHONY NO. 6 ("PASTORAL"), III TO IV

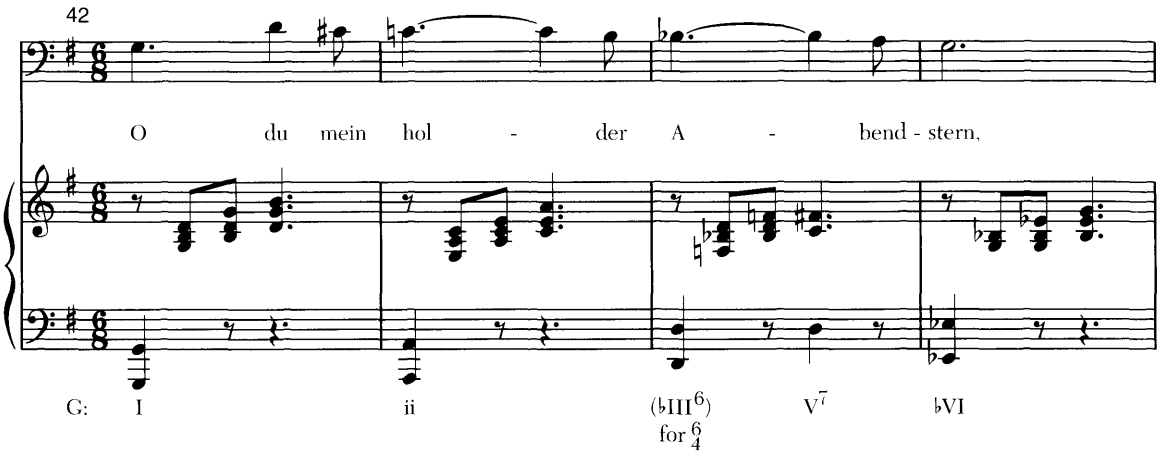


The ♭III Chord

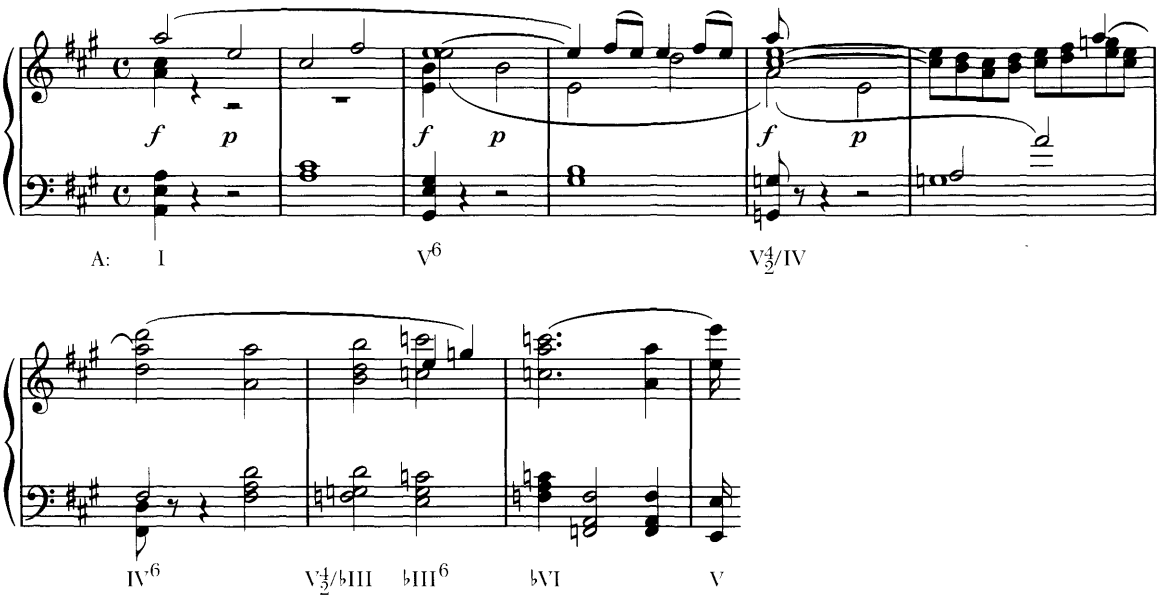
The major triads ♭III and ♭VII are found less commonly. The familiar aria in Example 28.15a substitutes a $\flat III^6$ for a cadential $\frac{6}{4}$; the V^7 that immediately follows also resolves deceptively to a ♭VI. In the Beethoven introduction (Example 28.15b) the $\flat III^6$ in measure 8 is preceded by its secondary dominant and moves to a ♭VI before resolving to the dominant. Notice that this passage's bass line moves chromatically from A down to E (A-G♯-G♮-F♯-F♮-E).

Example 28.15

A. WAGNER: "HYMN TO THE EVENING STAR" FROM *TANNHÄUSER*, ACT III



B. BEETHOVEN: SYMPHONY NO. 7, I



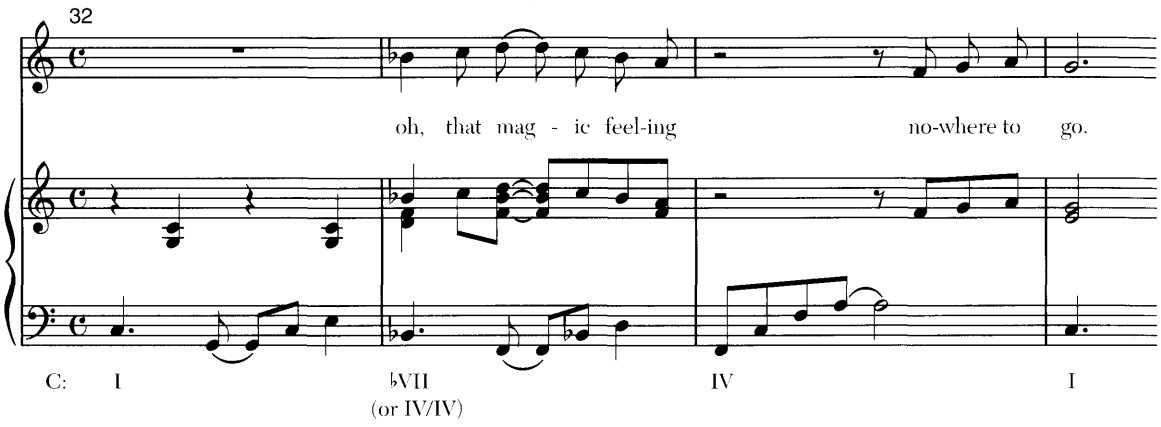
The ♭VII Chord

Although the ♭VII is comparatively rare in classical music of the common-practice period, it occurs with greater frequency in certain popular styles of the twentieth century. In addition to appearing as a quasi-modal substitute for V in folk and rock ballads (Example 28.16a), it often serves as an embellishing IV/IV, producing an ascending 4th progression: I-♭VII-IV-I (Example 28.16b). This succession occurs as the underlying harmony in many rock choruses, such as the Beatles' "Hey, Jude."

Example 28.16

A. GEORGE HARRISON: "SOMETHING"

B. LENNON AND MCCARTNEY: "YOU NEVER GIVE ME YOUR MONEY"



MIXTURE CHORDS IN THE MINOR MODE

We have focused primarily on mixture chords in major that have been borrowed from the minor mode. Although individual mixture chords in the minor mode borrowed from the parallel major are actually quite rare (examine Example 28.17), we may find such relationships occurring at a deeper level, such as between sections of a movement or even between entire movements. We can hardly regard the major tonic (I) as one such example, since it occurs either as a Picardy third at the end of minor-mode compositions or as a secondary dominant to iv. The minor mediant (iii) and submediant (vi) appear more commonly as key centers than as individual chords.

Example 28.17

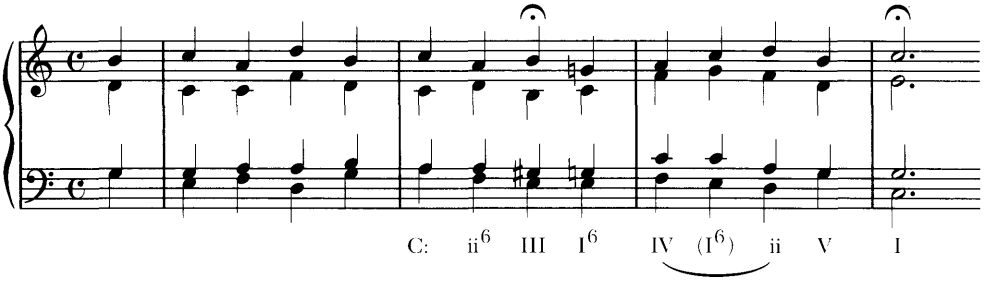
THE III TRIAD AS A SECONDARY MIXTURE CHORD IN MAJOR

Although the III triad (E G♯ B in C major) normally functions as a V/vi in a major key, on occasion it may appear in a different context—as a cadential goal of a phrase or progression (see Example 28.18a). Some theorists have classified this harmony as a **secondary mixture chord**—that is, a diatonic triad such as iii whose altered 3rd (G♯) does not result from modal mixture. It is normally preceded by a ii^6, suggesting a Phrygian cadence in the relative

minor: ii^{6}-III = [vi] :iv^{6}-V. Notice the typical soprano $\hat{6}$-$\hat{7}$ in "St. Anne" or $\hat{1}$-$\hat{2}$-$\hat{3}$ in "Annie Laurie." The chord that follows this progression, however, is usually not a vi but rather a tonic triad as in Example 28.18b or a V^{7} as in Example 28.18c that immediately returns to I. In the Verdi excerpt, the III is extended through the insertion of its secondary V^{7} (A C♯ E G) in measure 3.

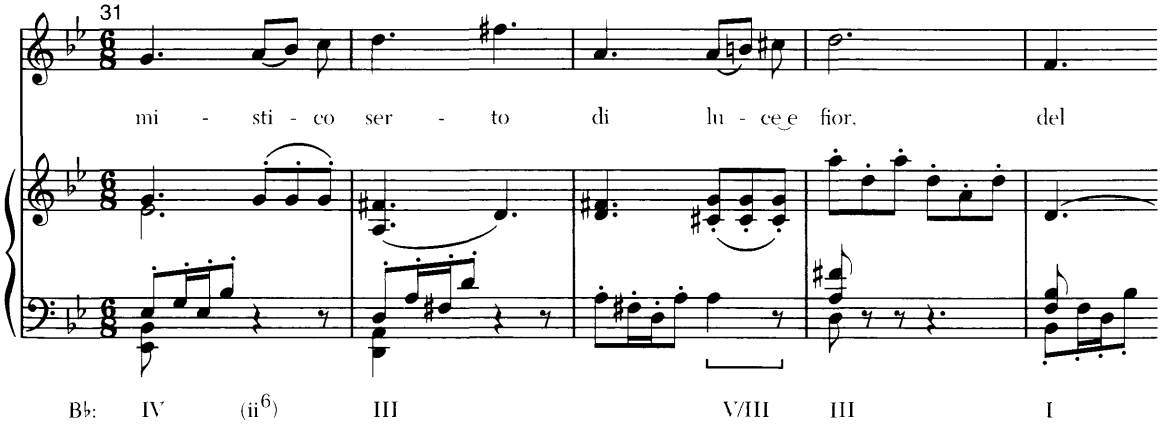
Example 28.18

A. "St. Anne" (hymn tune)



B. "Annie Laurie" (Scottish folk song)

C. Verdi: "Celeste Aida" from *Aida*, Act II

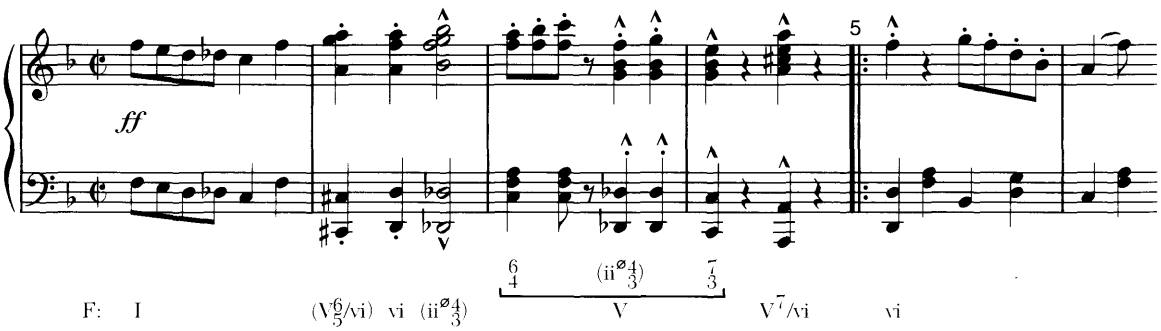


The Relationship between Scale Degrees ♯5 versus ♭6

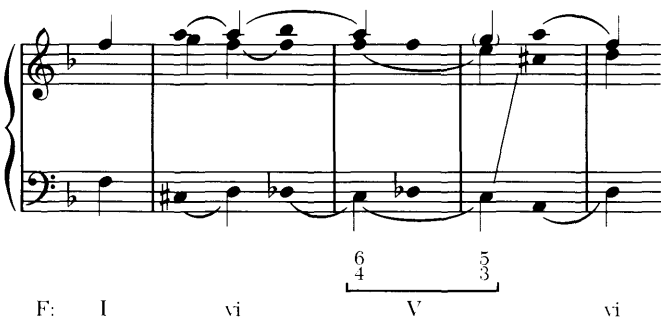
One of the most frequent enharmonic relationships in the major mode occurs on the half step between scale steps $\hat{5}$ and $\hat{6}$. If you spell this note as a ♯$\hat{5}$, you indicate its tendency to resolve upward to $\hat{6}$, but if you spell it as ♭$\hat{6}$, you indicate its tendency to resolve downward to $\hat{5}$. This enharmonic conflict between ♯$\hat{5}$ (C♯) and ♭$\hat{6}$ (♭D) occurs throughout the introduction to Sousa's F major march "Hands Across the Sea," spawning two completely different harmonies—a secondary dominant (the C♯ implying V^6_5/vi) and a mixture chord (the D♭ implying $ii^{ø4}_3$). Play the excerpt in Example 28.19 and examine the accompanying reduction, noting the voice-leading tendencies of the pitches to either rise or fall. The interaction between these two enharmonic scale degrees plays a significant role in much of the German Lieder literature of the early nineteenth century.

Example 28.19

A. SOUSA: "HANDS ACROSS THE SEA" (MARCH)



B. (REDUCTION)



A related example occurs in the Finale of Beethoven's Eighth Symphony (see Example 28.20). An unexpected *forte* C♯ (♯$\hat{5}$) octave is heard near the end of the opening theme (m. 17). Although we tend to hear it as a ♭$\hat{6}$ or D♭, it is never resolved. Upon the third presentation of the initial material later in the movement, this same curious note appears again. The music gives us an aural picture of Beethoven pondering the question "What am I going to do with this note?" First it is respelled enharmonically and set in the key of D♭ major (mm. 372–73), but that possibility is immediately rejected. Then the parallel minor (C♯ minor) takes a turn (mm. 375–76), but with no better results. Finally, after several emphatic restatements, it functions as the dominant to F♯ minor, to which the movement momentarily modulates (mm. 377–383).

Example 28.20

Beethoven: Symphony No. 8 in F Major, IV

Summary of Modal Exchange and Mixture Chords

1. Modal exchange involves switching the mode of a passage from major to minor, or from minor to major.
2. Mixture chords feature scale degrees borrowed from the opposite mode, usually $\flat\hat{3}$, $\flat\hat{6}$, and $\flat\hat{7}$ in minor transferred into a major key. These chords, such as i, ii$^{\varnothing 7}$, ♭III, iv, ♭VI, and ♭VII retain their same harmonic function. Avoid doubling the altered notes unless they are the root of the chord.
3. The III in major, a secondary mixture chord, typically occurs at a quasi-Phrygian cadence: ii^{6}-III, which then will return to tonic harmony.

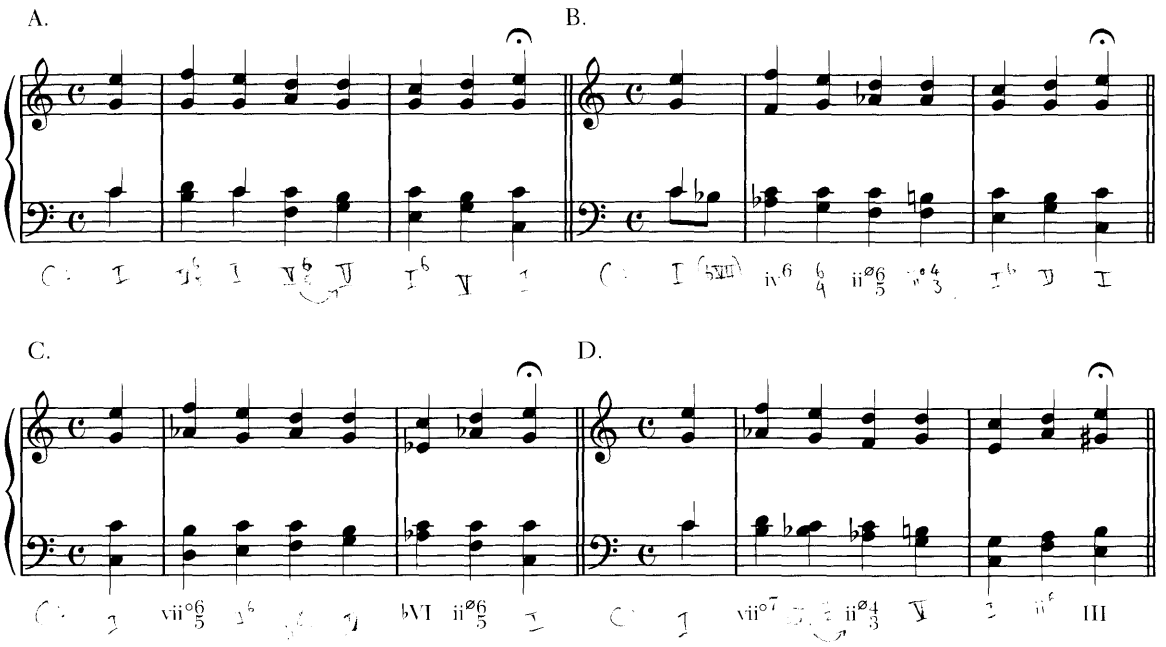
Melody Harmonization

Since most melodies do not employ lowered scale degrees such as $\flat\hat{6}$ or $\flat\hat{3}$, these altered notes must be inserted into other voices when harmonizing a diatonic tune. Be discriminating in your use of mixture chords—overuse can make your harmonization sound trite and affected. If your tune has a text, you may wish to use certain altered chords to set particular words with appropriate musical text painting.

Cadencing on the III triad provides an alternative to using an imperfect authentic close, especially if the soprano moves $\hat{1}$-$\hat{2}$-$\hat{3}$. Remember that partwriting with the III chord in this context is similar to using a Phrygian cadence.

Several examples of mixture chords are illustrated in the melody harmonizations of Example 28.21. In the initial setting (Example 28.21a), the melody and its harmonic support are entirely diatonic. The following three passages (Examples 28.21b through d) incorporate various mixture chords that change the underlying harmonies and the bass lines. Make a Roman numeral analysis of these last three settings, noting the ways in which the different altered chords are employed.

Example 28.21



Terms and Concepts for Review

modal exchange
text painting
mixture or borrowed chords
mixture chords in major:
i
iv and ii$^{\varnothing 7}$
♭VI
♭III
♭VII
III as a secondary mixture chord
III as a cadential goal

A BRIEF REVIEW SELF-QUIZ

1. Spell the indicated mixture chords in the given major keys; use the provided models.

Example 28.22

RN	D major	A♭ major	F major	B major
iv	G B♭ D			
♭III	F A C			
♭VI				
ii$^{\emptyset 7}$				
♯III				

2. Analyze the following two passages with Roman numerals, noting the various mixture chords. Be sure you use the correct symbols to denote the various harmonies.

Example 28.23

A.

G:

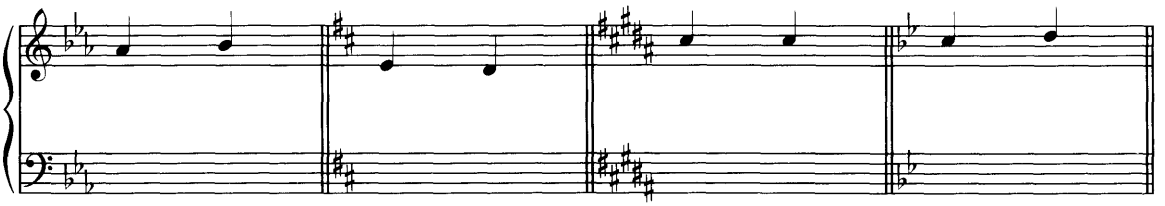
B.

F:

3. In the following brief exercises, the key, Roman numerals, and soprano line are provided. Complete the bass line and the inner voices. Watch your spelling of mixture chords.

Example 28.24

A. B. C. D.



E♭: iv^{6} V D: V^{7} ♭VI B: ii$^{\varnothing 6}_{5}$ V B♭: ii^{6} III

E. F.

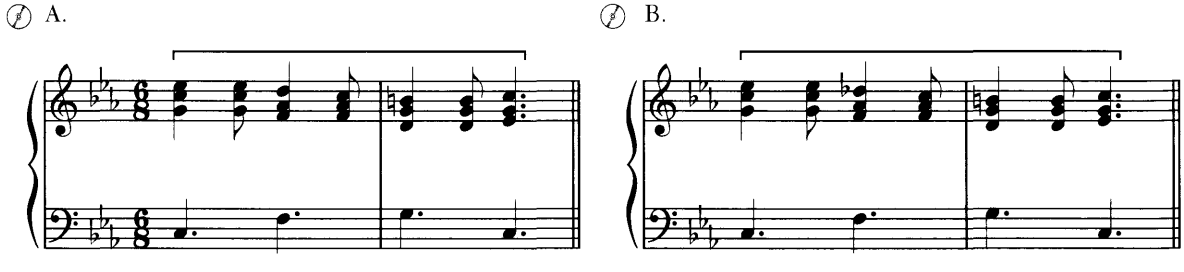
G: I ♭VII IV I A♭: I ♭III iv V

CHAPTER 29

The Neapolitan or ♭II Chord

IN THE NEXT TWO CHAPTERS we will examine several altered chords whose striking aural properties have prompted musicians to identify them with specific names. Play and contrast the pair of pre-dominant to dominant to tonic progressions in Example 29.1.

Example 29.1



The only note that is changed in the second passage is D♭ (or scale degree ♭$\hat{2}$), the root of a triad that we call a **Neapolitan sixth** or **♭II^6.** The origin of the term is obscure; while the "sixth" refers to the first inversion (or

6), the "Neapolitan" probably alludes to its use in operas composed in the Italian city of Naples during the seventeenth century.

Despite the alteration of one note in the pre-dominant harmony of the second passage, the resulting musical effect is altogether different. The half-step relationship to the tonic (D♭ in C minor) gives it a peculiarly dark and forbidding quality that is unique among chromatic chords. As a result, composers often reserved it for texts or dramatic situations suitable for its dark nature. In his later songs Schubert time and again makes a direct correlation between the Neapolitan and despair or death. The Neapolitan is tonicized in the closing measures of his "Erlkönig," when the child is found dead in his father's arms. This harmony is especially prominent in the depiction of tragic wanderings in his song cycle *Winterreise*. In his operatic *Ring* cycle, Wagner continually associates it with decay and destruction.

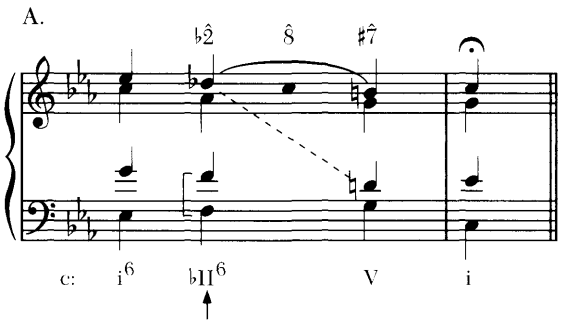
A Question of Terminology: iv ♭6–5 versus ♭II^6

You will notice in Example 29.1b that the D♭ moves through C on the way to the B♮ of the V harmony (♭$\hat{2}$-$\hat{8}$-♯$\hat{7}$), forming a ♭6-5 linear motion over $\hat{4}$ in the bass. Because this voice leading occurs so frequently, some theorists prefer to think of this chord as a ♭6-5 over a *subdominant* triad or iv♭6-5. However, since this chord may also appear *without* the passing $\hat{8}$ motion (♭$\hat{2}$ going directly to ♯$\hat{7}$) or in *root position*, we will consider it a distinct triad in its own right and give it the Roman numeral designation of ♭II^6; the flat before the II denotes that its root has been lowered (♮$\hat{2}$ to ♭$\hat{2}$). As such, it is a major triad built on the ♭$\hat{2}$ scale degree—D♭ F A♭ in the key of C minor or major.

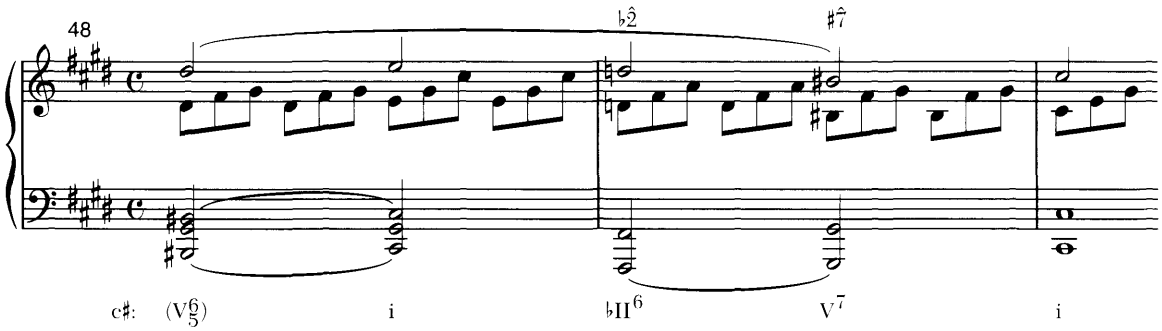
The Neapolitan Sixth in Minor and Major Modes

We typically find the ♭II^6 in the minor mode, where it usually substitutes for a diatonic pre-dominant (iv or ii$^{\varnothing 6}_{5}$) in authentic cadences. When partwriting this progression in four-voice texture, you should double the bass ($\hat{4}$) of the Neapolitan triad rather than its more active ♭$\hat{6}$ or ♭$\hat{2}$ scale degrees. Composers make no attempt to avoid the resulting chromatic cross relation between ♮$\hat{2}$ and ♭$\hat{2}$; see the dotted line in Example 29.2a. When the ♭II^6 moves directly to V, the missing $\hat{8}$ creates a diminished 3rd between ♭$\hat{2}$ and ♯$\hat{7}$. This permissible melodic interval appears in the opening Adagio of Beethoven's "Moonlight" Sonata in C-sharp Minor, Op. 27, No. 2 (Example 29.2b); this famous movement makes frequent use of Neapolitan harmony.

Example 29.2

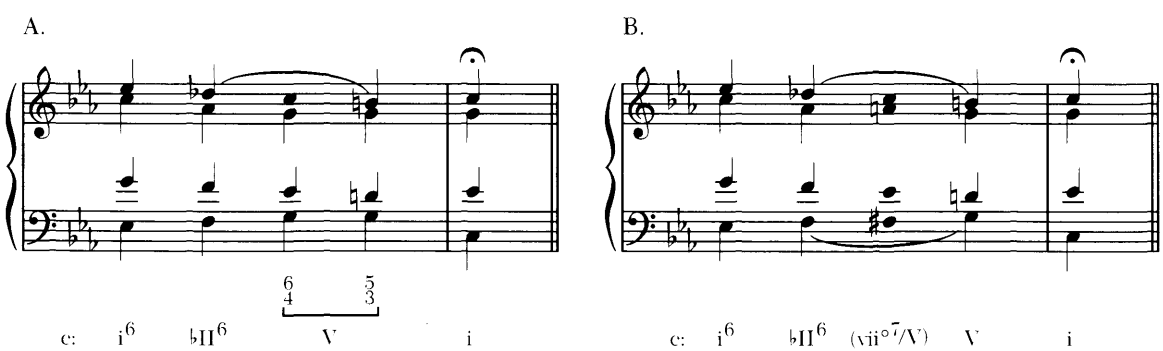


(♪) B. BEETHOVEN: PIANO SONATA IN C-SHARP MINOR, OP. 27, NO. 2 ("MOONLIGHT"), I

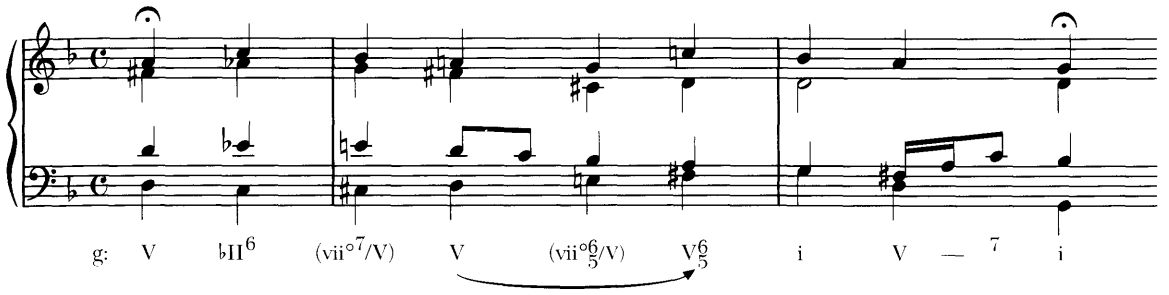


The passing $\hat{8}$ between $\flat\hat{2}$ and $\sharp\hat{7}$ is frequently supported with its own harmony, either a cadential $^{6}_{4}$ (Example 29.3a) or a vii$^{\circ7}$/V (Example 29.3b). In the Bach excerpt (Example 29.3c), the V then moves through a vii$^{\circ6}_{5}$/V and V$^{6}_{5}$ before arriving at i; incidentally, this is the only ♭II^6 that occurs in all of Bach's extant chorale harmonizations. When the soprano moves from $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ (rather than our previous $\hat{3}$-$\flat\hat{2}$-$\hat{8}$-$\sharp\hat{7}$-$\hat{8}$), it is necessary to double the chordal 5th of the V to avoid unequal 5ths between the vii$^{\circ7}$ and V in the upper voices (Example 29.3d).

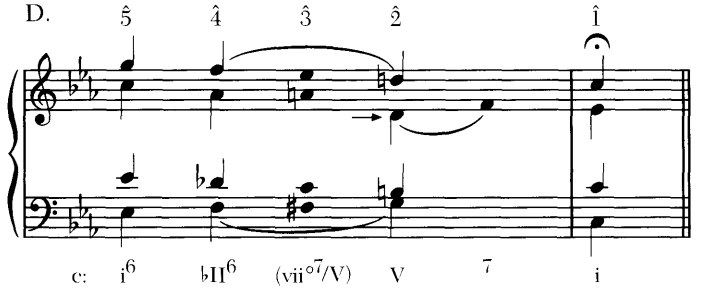
Example 29.3



C. "ACH GOTT, VOM HIMMEL SIEH' DAREIN" (BACH CHORALE HARMONIZATION)



D.



The Neapolitan sixth is less common in the major mode, although it is occasionally found. While no particular adjustments are necessary, the soprano line cannot descend from $\hat{3}$ because of the following augmented 2nd between $\hat{3}$ and $\flat\hat{2}$ (E-D♭ in C major). In the major-mode passage of Example 29.11b, the $\flat II^6$ is preceded by a soprano $\flat\hat{3}$ in V/♭II harmony.

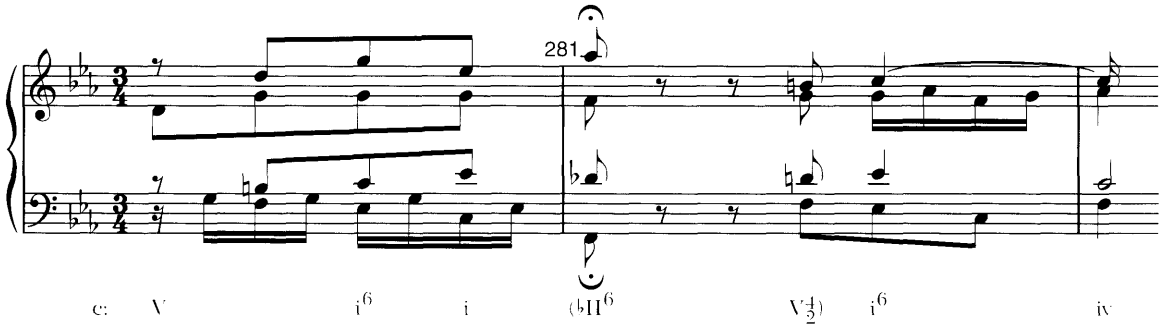
THE $\flat II^6$ AS AN EMBELLISHING CHORD

In addition to its customary use at cadences, the Neapolitan sixth may assume an embellishing role within the phrase. Following a Neapolitan used this way, the dominant harmony frequently resolves to a weaker i^6 through either a V^4_2 or a vii^{o4}_3 (Example 29.4a). Note the function of the circled tones in the upper voice of the Schumann excerpt—they are dissonant appoggiaturas that resolve upward. Although the sustained Neapolitan under the fermata forms the climactic point of Bach's C minor Passacaglia and Fugue (Example 29.4b), it nevertheless appears in an embellishing role: i-($\flat II^6$-V^4_2)-i^6.

Example 29.4

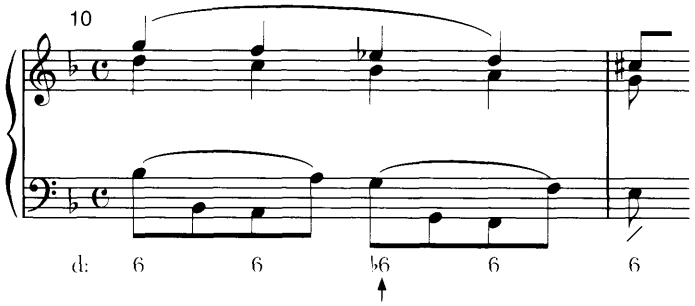
Ⓐ A. SCHUMANN: *PAPILLONS*, OP. 2, NO. 10

Ⓑ B. BACH: PASSACAGLIA AND FUGUE IN C MINOR, BWV 582



In the sequence of stepwise sixth chords in Mozart's sonata (Example 29.5), the ♭II^6 moves directly to i^6.

Example 29.5 Ⓑ MOZART: PIANO SONATA IN D MAJOR, K.284, III



Other Characteristics of the ♭II⁶

In order to emphasize its particularly dark quality, composers sometimes prolong or elaborate the Neapolitan harmony with some kind of melodic flourish or gesture. In the last movement of his "Moonlight" Sonata (Example 29.6), Beethoven extends the ♭II⁶ over three measures before resolving to the cadential $\frac{6}{4}$ via a vii°⁷/V.

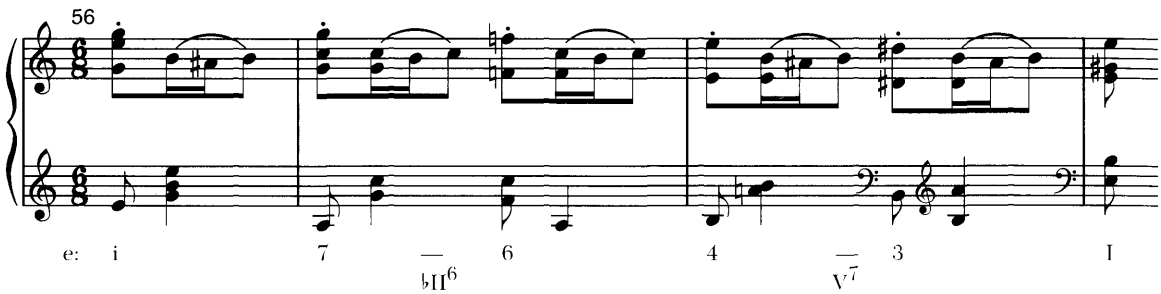
Example 29.6

Beethoven: Piano Sonata in C-sharp Minor, Op. 27, No. 2 ("Moonlight"), III

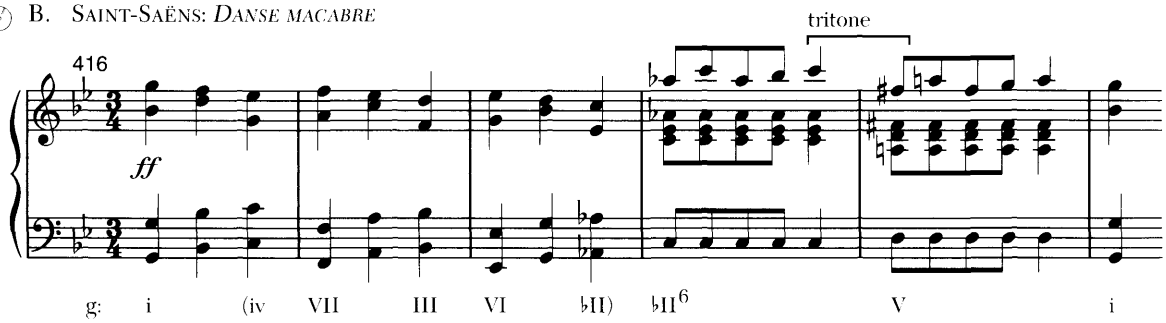
Composers may also intensify this chord through the use of dissonance. Amy Beach elaborates her Neapolitan cadence by adding 7-6 and 4-3 suspensions to the ♭II⁶ and V chords (Example 29.7a). On the other hand, Saint-Säens employs a tritone leap in the top voice (C^6-$F\sharp^5$) to reinforce the demonic character of his *Danse macabre* (Example 29.7b).

Example 29.7

A. AMY BEACH: "FIRE-FLIES" FROM *FOUR SKETCHES* OP. 15, NO. 4



B. SAINT-SAËNS: *DANSE MACABRE*



OTHER USES OF THE NEAPOLITAN CHORD

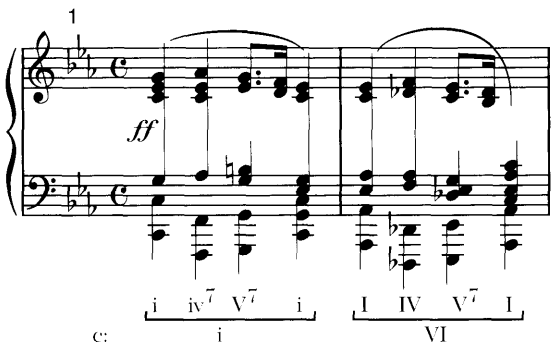
Composers have used the Neapolitan sixth in other interesting ways. In the first three measures of Chopin's Ballade in G Minor, Op. 23, we see a rare use of the Neapolitan as the opening harmony of the piece. Strauss, in the B major conclusion of *Also sprach Zarathrusta,* emphasizes ♭2 (C) in the bass, recalling the "nature" motive—C^4-G^4-C^5 in the trumpet—that opens the work. Another way to use the Neapolitan as a unifying device is to hint at the Neapolitan early in a work to suggest that it will play an important role later in the movement, a procedure that Edward Cone calls a "promissory note." Examples of this procedure may be found in Beethoven's "Appassionata" Piano Sonata, Op. 57; his String Quartet Op. 59, No. 2; his String Quartet Op. 95, in F Minor; and Brahms's Clarinet Sonata in F Minor, Op. 120, No.1.

We occasionally find the Neapolitan chord in root position rather than its customary first inversion, so that the ♭$\hat{2}$ instead of $\hat{4}$ occurs in the bass. The final cadence of Chopin's funereal C minor Prelude is frequently cited as an instance of the **♭II in root position** (Example 29.8b). The opening two

measures of this short piece (Example 29.8a) reveal the chord's origin. After the initial i-iv^7-V-i, the same progression is repeated in VI (A♭ major), in which the D♭ triad functions as IV. The return of this material in the last measures (Example 29.8b) sets up the expectation that a cadence in the submediant area will again follow the cadence in i, but instead the dominant of i substitutes for V/VI, directing us back to the final tonic, so that we tend to hear the last D♭ triad as a root-position Neapolitan in C minor.

Example 29.8

A. CHOPIN: PRELUDE IN C MINOR, OP. 28, NO. 20

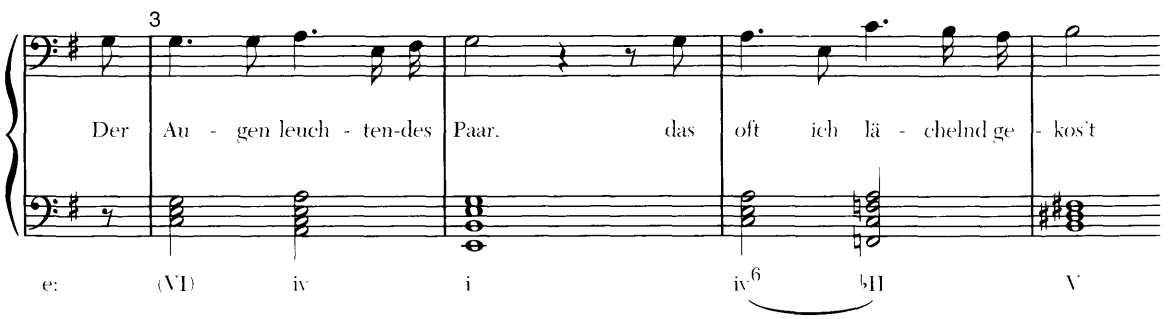


B.

A poignant example of the root-position ♭II may also be found in the final scene of Wagner's *Die Walküre*, where the god Wotan bids a touching farewell to his daughter. Here the Neapolitan extends the pre-dominant function—iv^6-♭II (Example 29.9).

Example 29.9

WAGNER: WOTAN'S FAREWELL FROM *DIE WALKÜRE*, ACT III (SIMPLIFIED)



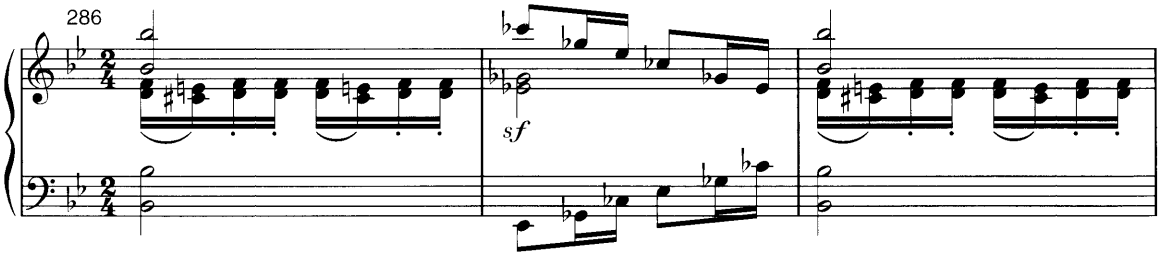
Der Augen leuchtendes Paar,
das oft ich lächelnd gekos't

The radiant pair of eyes,
which I often caressed with a smile

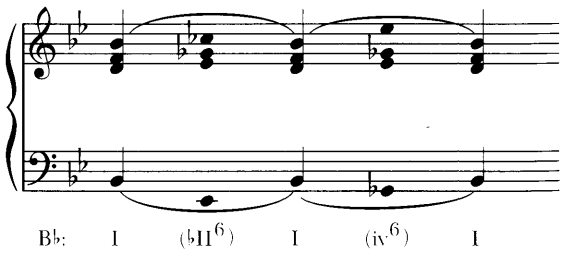
The Neapolitan functions as a **neighbor to the tonic** in the Brahms excerpt of Example 29.10a, substituting for an embellishing iv. In the conclusion of his *Ring* cycle, Wagner further extends the final plagal cadence from IV to iv to ♭II, all over $\hat{4}$ before the eventual resolution to the tonic (Example 10c). The theme above the ♭II harmony is the final appearance of the motif "The Destruction of the Gods." This passage again demonstrates the close relationship of the mixture iv to the Neapolitan.

Example 29.10

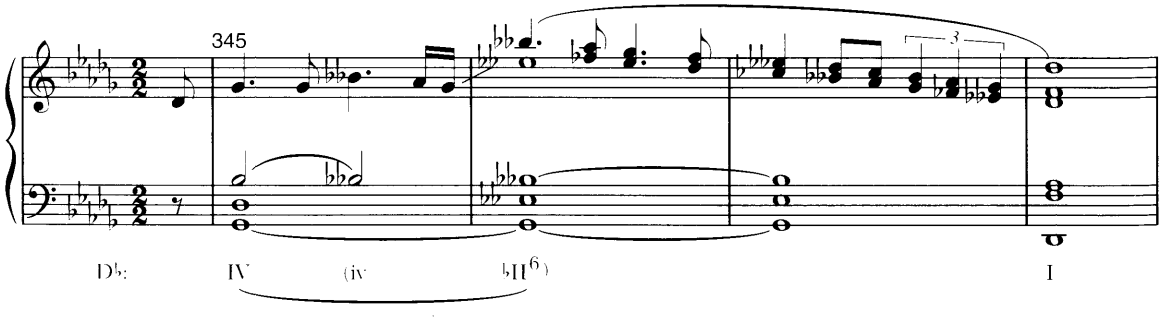
A. BRAHMS: *VARIATIONS ON A THEME OF HAYDN*, OP. 56A (VAR. 6)



B. (REDUCTION)



C. WAGNER: IMMOLATION SCENE FROM *GÖTTERDÄMMERUNG*, ACT III (SIMPLIFIED)



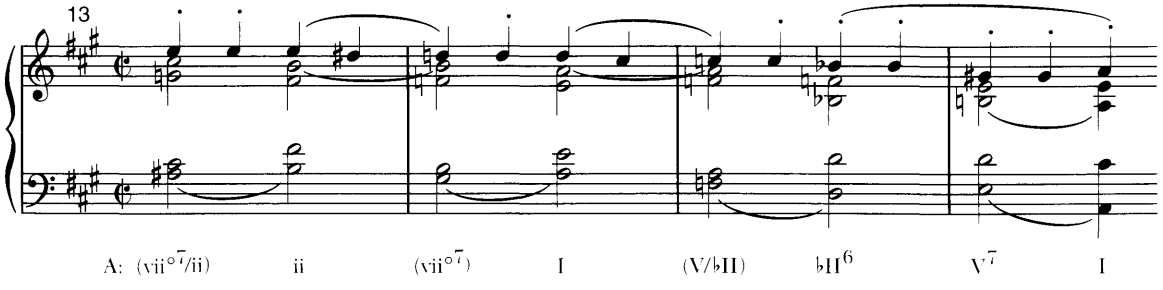
TONICIZATION OF THE NEAPOLITAN HARMONY

When the Neapolitan chord is momentarily tonicized, it is preceded by its secondary dominant, the VI triad, which we then analyze as V/♭II. Example 29.11a illustrates this progression in minor and Example 29.11b shows it in major.

Example 29.11

A.

B. MOZART: CLARINET QUINTET IN A MAJOR, K.581, IV

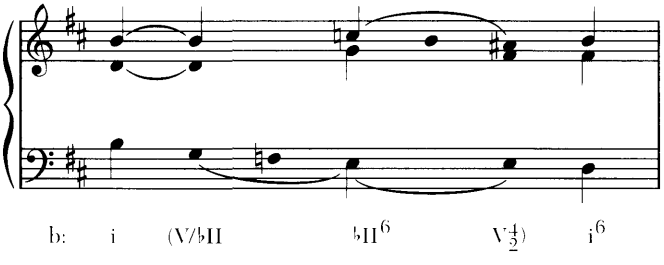


We may also encounter extended tonicizations or modulations to the realm of ♭II. In the Chopin passage (Example 29.12), the ♭II is first tonicized and then prolonged for several measures before it moves back to i^6 via a V^4_2. Study the approach to and departure from the Neapolitan in the voice-leading reduction, which shows that the entire passage is actually prolonging the tonic chord in a simple embellishing progression with very slow harmonic rhythm: i-♭II^6-V^4_2-i^6. In measures 75–88 of Schumann's *Davidsbündlertänze* No. 8, the long progression of tonicized triads is framed on both sides by a ♭II chord. A more extended movement to the area of ♭II may be found in measures 107–14 of Beethoven's Rondo in C Major, Op. 51, No. 1. Entire movements of multimovement works cast in ♭II are quite rare; see the slow movement of Schubert's F major Octet and his F minor Fantasy for piano four hands. In the latter, the scherzo is set in the Neapolitan (F♯ minor) and the middle trio is set in a double Neapolitan relationship (G minor) to the home key.

Example 29.12

A. CHOPIN: PRELUDE IN B MINOR, OP. 28, NO. 6

B. (REDUCTION)



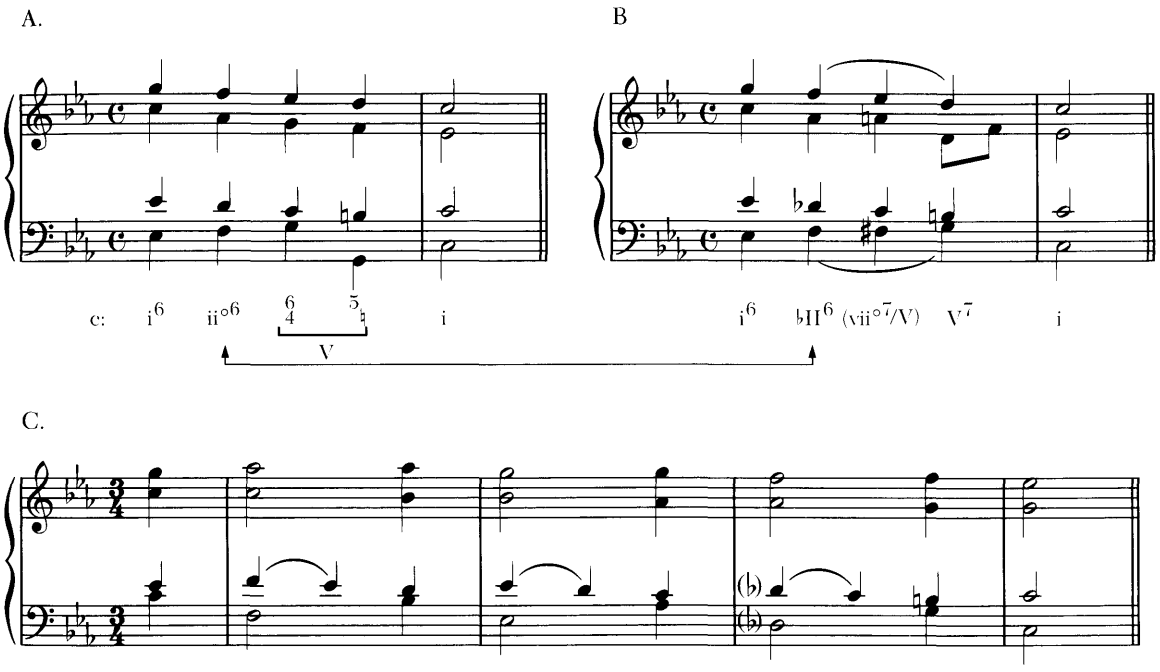
MELODY HARMONIZATION

Unless the given tune actually employs a ♭$\hat{2}$ scale step, $\hat{4}$ must occur in the soprano to permit the use of the Neapolitan chord. Its function is normally that of a pre-dominant harmony in an authentic cadence; refer back to Example 29.3. Always double scale step $\hat{4}$ in the bass.

Examine the first two passages in Example 29.13. The descending soprano ($\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$) is usually harmonized with a $^{6}_{4}$ cadence, as shown in Example 29.13a. Contrast this with the alternative setting in Example 29.13b, where the use of the ♭II^{6} and secondary dominant vii$^{\circ 7}$/V imparts an entirely different character to the passage. Now play the root-position progression by descending 5ths in Example 29.13c, first with a D♮ in the bass of the third

measure and then with a D♭, noting the contrasting musical effect. An interesting example of an extended 5th progression with ♭II substituted for ii° may be found in the theme from the movie *The Godfather*.

Example 29.13



Summary of Neapolitan Chords

1. The Neapolitan 6th (♭II^6) normally functions as an altered pre-dominant in minor-mode cadences; ♭II^6-V-i. The melodic motion from $\hat{\flat 2}$ to $\hat{\#7}$ is often bridged with a passing $\hat{8}$, supported by either a vii$^{\circ 7}$/V or a $^6_4$. The chordal third of the Neapolitan is usually doubled.
2. In addition to extending the pre-dominant function (iv^6 to ♭II^6), the Neapolitan may occur as an embellishing chord within the phrase (♭II^6-V$^4_2$-i^6), or as a neighbor to tonic (i-♭II^6-i).
3. The root-position ♭II may occur within a cycle of fifths, where the root ($\hat{\flat 2}$) can be doubled.
4. In minor-mode melody harmonizations, look for cadential lines using $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$, where the Neapolitan will support $\hat{4}$.

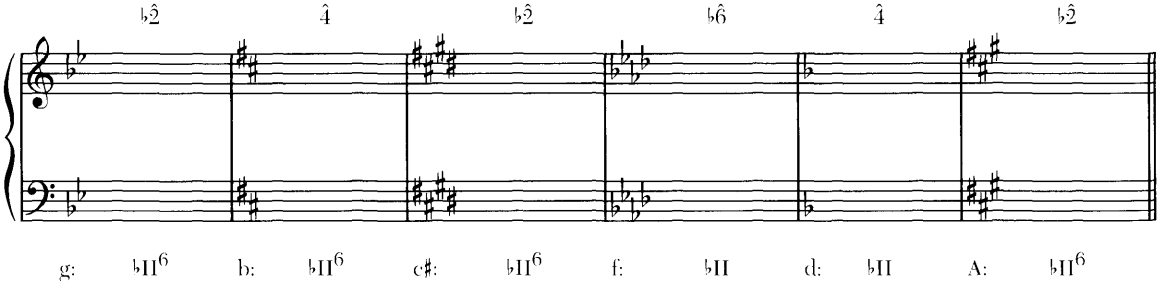
Terms and Concepts for Review

Neapolitan sixth
$\flat II^6$
♭II in root position
$\flat II^6$ as a cadential chord
$\flat II^6$ as an embellishing chord
Neapolitan as a neighbor to the tonic
tonicization of the Neapolitan ($V^7/\flat II$)

A BRIEF REVIEW SELF-QUIZ

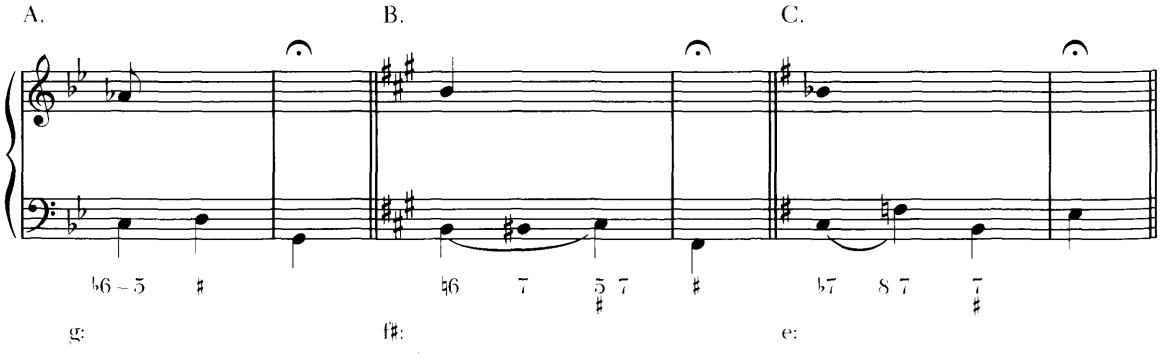
1. Write out the indicated Neapolitan chord in four-voice texture, using the given soprano scale degrees and keys. Avoid doubling the flatted supertonic in first inversions.

Example 29.14

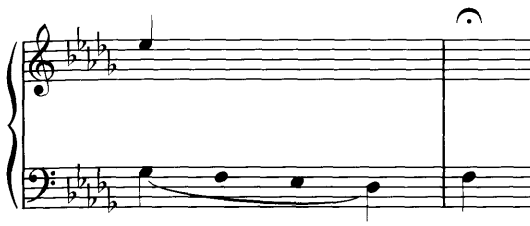


2. The following progressions contain some typical uses of Neapolitan harmony. Realize the figured bass by composing an appropriate soprano line (refer to the previous models), filling in the inner voices, and then adding a Roman numeral analysis.

Example 29.15

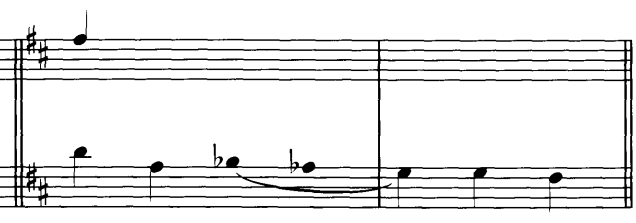


D.



6 6 ♭6 6 ♮

E.



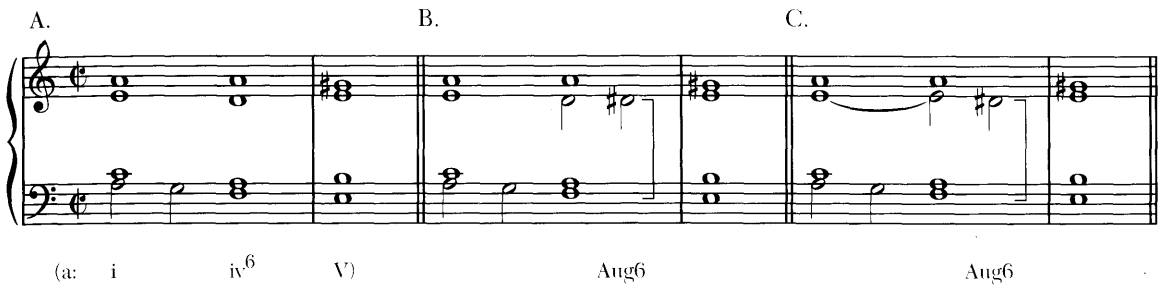
7 ♮5 ♮6 4 ♭2 ♭6 ♭ 4 2 6

CHAPTER 30

Augmented Sixth Chords

IN THE PREVIOUS TWO CHAPTERS we have seen how altered scale degrees in mixture and Neapolitan chords intensify their tendency to resolve—the $\flat\hat{6}$ in mixture chords pulls downward to $\hat{5}$ by half step, the $\flat\hat{2}$ in the Neapolitan pulls downward through $\hat{8}$ to $\sharp\hat{7}$. The harmonies in this chapter exhibit a similar tendency, since they exert a strong linear pull or motion toward dominant function—either a V or cadential $\frac{6}{4}$. We see this tendency of these half steps as far back as the late Renaissance period. Examine the diatonic Phrygian cadence in Example 30.1a and contrast it to the two variants that follow. In Example 30.1b a chromatic passing tone (D♯) is inserted between the D and E, while in Example 30.1c the 7-6 suspension resolves not to D but to D♯. In both cases, the intervallic distance between the bass note F and the upper D♯ is an *augmented sixth* rather than a major 6th. While the F tends to pull *downward* to E, the D♯ tends to pull *upward* to E an octave higher. It is this characteristic double half-step resolution of the augmented sixth outward to an octave that distinguishes the family of **augmented sixth chords.**

Example 30.1



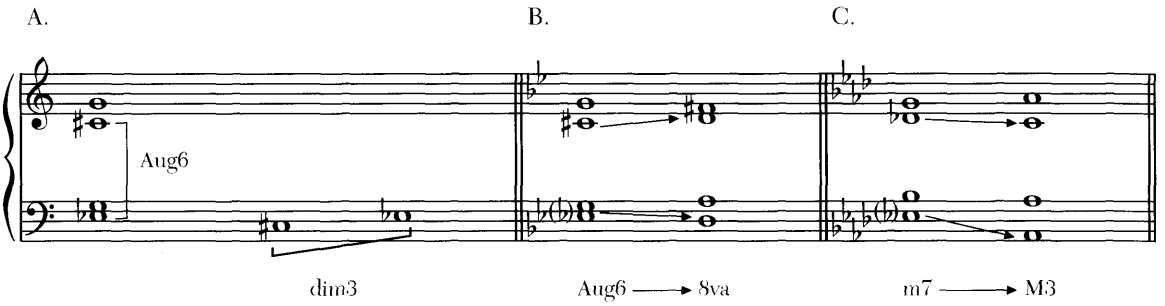
Following an examination of typical occurrences of these harmonies in minor and major modes, we will discuss some less common usages of these chords, such as their movement to secondary dominant chords, their inversions, and other chord types that resolve the same way as augmented sixths.

The Three Common Forms of Augmented Sixth Chords

After limited use in the Baroque period (see Example 30.5b), augmented sixth chords were found more frequently during the Classical era, when composers commonly employed them to intensify the approach to the V at important cadential and structural points within a movement—for example, in preparing the dominant that precedes the second theme group in sonata form, and in intensifying the motion to the dominant prolongation that is typical of retransitions in sonata, ternary, and rondo form.

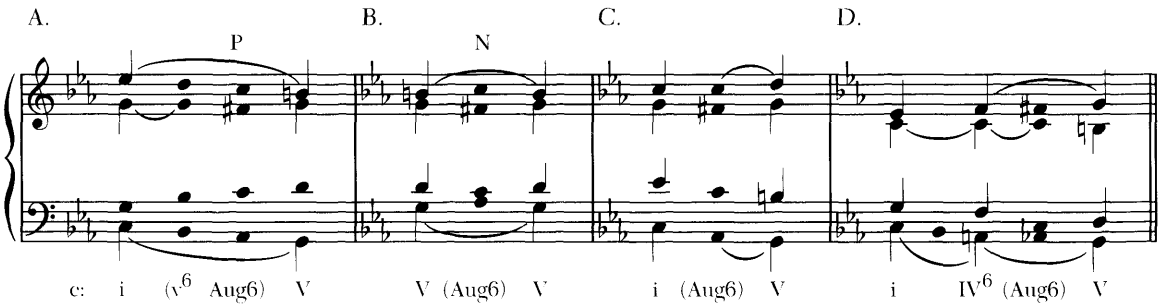
The sonority containing an augmented 6th, such as the E♭ G C♯ chord in Example 30.2a, is somewhat of a harmonic maverick, since it is the only harmony we have studied thus far that is not constructed entirely of major and minor 3rds. The inversion of the 6th from E♭ up to C♯ is C♯-E♭, a diminished 3rd. Do not confuse the interval of the augmented 6th (and its ♭$\hat{6}$-$\hat{5}$ and ♯$\hat{4}$-$\hat{5}$ octave resolution) with its enharmonic twin, the minor 7th, which has the same number of half steps. The upper note of the minor 7th resolves *downward*, as in the resolution of a V^7; contrast Example 30.2b with Example 30.2c.

Example 30.2



The typical augmented 6th chord functions as an embellishing chord whose components demonstrate a strong tendency to pull to the dominant by half-step motion (Aug6th-V). This harmony usually results from passing (Example 30.3a) or neighboring (Example 30.3b) melodic motion. While the augmented 6th may be approached diatonically (Example 30.3c), just as often it is derived from chromatic linear motion (Example 30.3d). In analysis augmented 6th chords will usually remain unstemmed with their harmonic designation placed in parentheses. Due to the presence of $\hat{\flat 6}$ and a possible $\hat{\flat 3}$, augmented 6th chords occur more frequently in the minor mode.

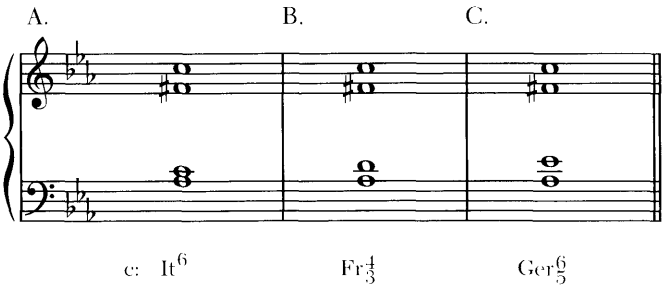
Example 30.3



The names of three varieties of augmented 6th chords in tonal music were coined by an obscure English theorist, John Calcott, in *A Musical Grammar* (1806). He based these terms on a highly subjective correlation between his perception of the chord's traits and his biased notions of various nationalistic characteristics: the "elegance" of the Italian sixth (or It^6, A♭ C F♯, as in Example 30.4a), the "strength" of the German sixth (or Ger$^6_5$, A♭ C

E♭ F♯, as in Example 30.4b), and the "feebleness" of the French sixth (Fr^4_3, A♭ C D F♯, as in Example 30.4c). Because of their linear derivation, employing functional Roman numerals hardly seems appropriate with these chords. Therefore, we will use the abbreviations given above, with figured-bass symbols to indicate the various inversions. You should practice spelling these chords upward from the ♭6 scale degree, which customarily appears in the bass.

Example 30.4



We will now treat the separate forms of the augmented 6th chords in succession, beginning with how each one is used in the minor mode.

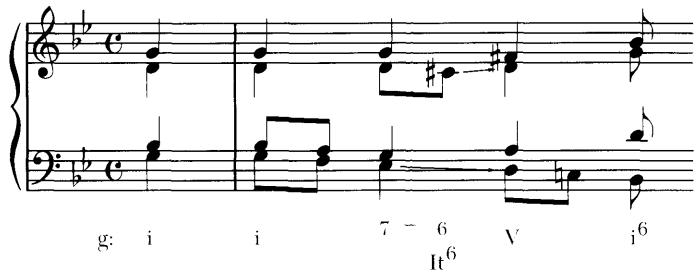
The Italian, French, and German Augmented Sixth Chords in the Minor Mode

The **Italian sixth (It^6)** in the minor mode consists of only three scale steps: ♭$\hat{6}$, $\hat{1}$, and ♯$\hat{4}$ (= A♭ C F♯ in C minor). In partwriting in four-voice texture, *never* double the ♭$\hat{6}$ or ♯$\hat{4}$, since both are active scale degrees. Rather, double the tonic note ($\hat{1}$); the two tonics then resolve in opposite directions to the 3rd and the 5th of the dominant chord that follows (Example 30.5a). We noted in a previous chapter that when a secondary dominant substitutes for a pre-dominant at a cadence, it is stemmed in analysis. The same holds true for the augmented 6th as well; see Example 30.5b, where Bach uses a 7-♯6 suspension on the It^6 chord. On the other hand, since the soprano neighboring motion of Example 30.5c is part of a larger passing motion from i to V (through v^6 and the It^6), it is not stemmed. The same is true of the double-chromatic approach from IV^6 in Example 30.5d, in which the unstemmed It^6 functions as a passing chord.

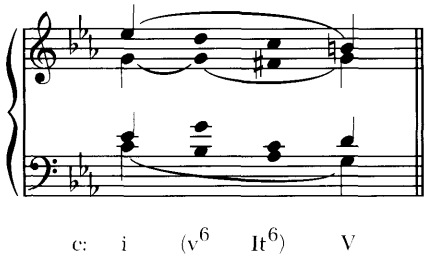
Example 30.5

A.

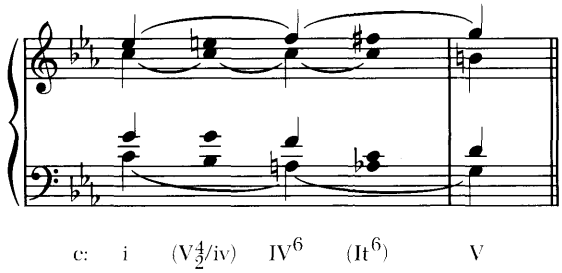
B. "ICH HAB' MEIN' SACH' GOTT HEIMGESTELLT" (BACH CHORALE HARMONIZATION)



C.



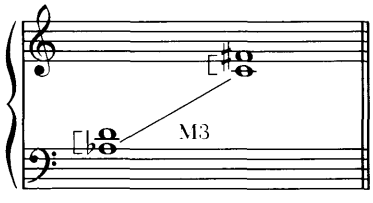
D.



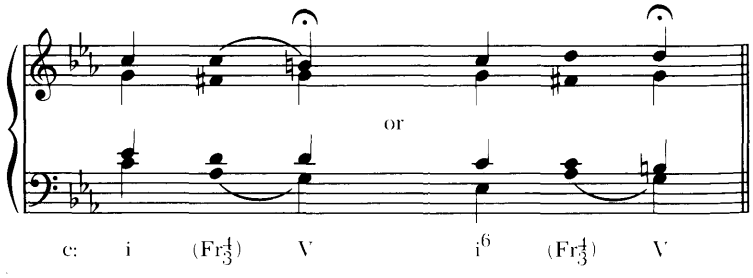
Adding scale degree $\hat{2}$ to the It6 produces the **French sixth (Fr $\frac{4}{3}$),** A♭ C D F♯ in C minor. The construction of this exotic chord is curious; it contains two tritones separated by a major 3rd (Example 30.6a). Partwriting with this chord presents no problems, since the $\hat{2}$ is common to both the Fr $\frac{4}{3}$ and the following V; the suspended 7th (scale degree $\hat{8}$) of the former resolves to $\hat{\#7}$ (Example 30.6b). In Donizetti's immortal sextet (Example 30.6c), the Fr $\frac{4}{3}$ functions as a neighbor to the tonic $\frac{6}{4}$ before moving on to V^7.

Example 30.6

A.



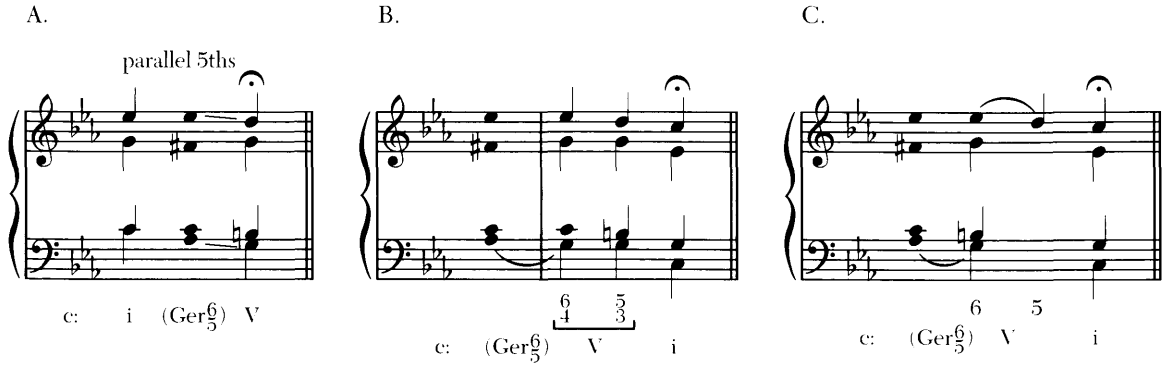
B.



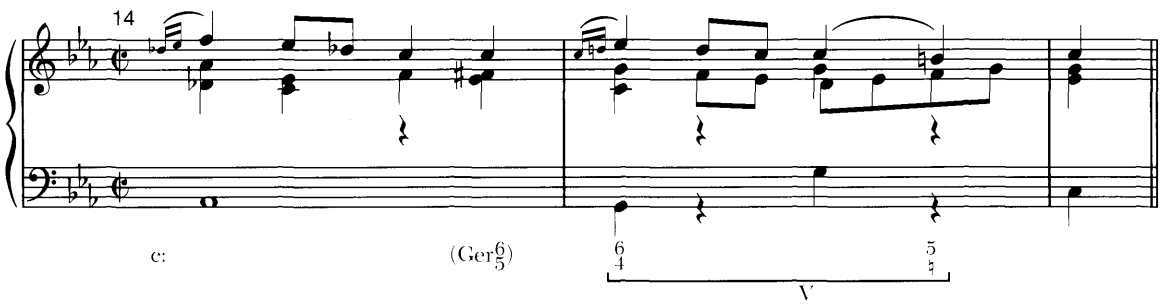
♪ C. DONIZETTI: SEXTET FROM *LUCIA DI LAMMERMOOR*, ACT II (VOCAL PARTS OMITTED)

The **German sixth (Ger $\frac{6}{5}$)** substitutes a ♭$\hat{3}$ for the $\hat{2}$ of the French sixth (A♭ C E♭ F♯ in C minor). Here the partwriting is trickier, since a direct resolution to V will produce parallel 5ths (Example 30.7a). There are two ways to avoid this problem, both of which delay the motion from ♭$\hat{3}$ to $\hat{2}$. You may either progress to a cadential $\frac{6}{4}$ (Example 30.7b) or use an accented 6-5 suspension over the dominant (Example 30.7c). The $\frac{6}{4}$ is more common, as illustrated in Example 30.7d.

Example 30.7



D. MOZART: PIANO CONCERTO NO. 24 IN C MINOR, K. 491, III

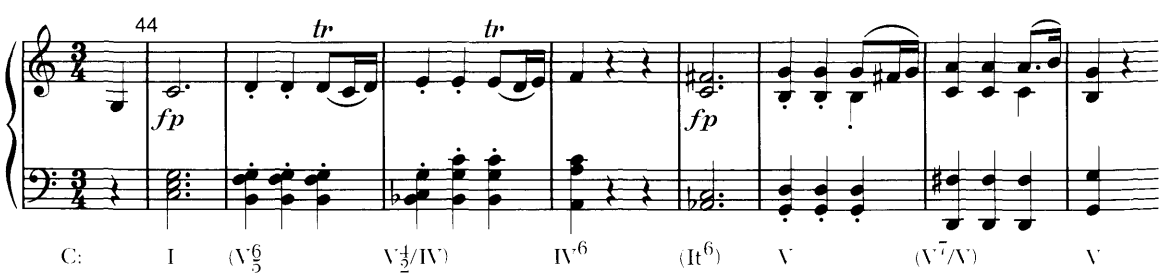


AUGMENTED SIXTH CHORDS IN THE MAJOR MODE

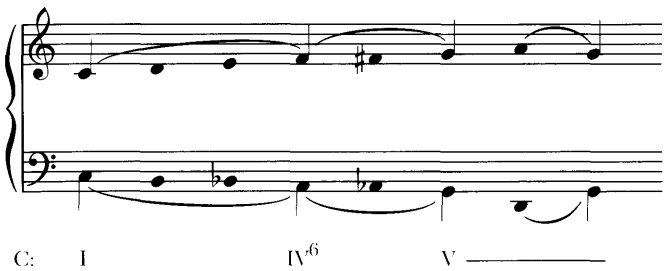
The It6, Fr $\frac{4}{3}$, and Ger $\frac{6}{5}$ are spelled exactly the same way in major keys as they are in minor, although now most of their chord members are altered scale degrees: $\flat\hat{6}$, $\sharp\hat{4}$, and possibly $\flat\hat{3}$. One common way of approaching an augmented 6th chord in major is from a IV^6 via double chromatic motion, as Beethoven demonstrates in Example 30.8a. Here the It^6 results from a chromatic descent in the bass that precedes the tonicized dominant (V^7/V-V) at the cadence. In another major-mode passage (Example 30.8b), Beethoven resolves the $\sharp\hat{4}$ of the It^6 to the chordal 7th of a V^7 rather than the usual dominant octave ($\hat{5}$), a less common procedure.

Example 30.8

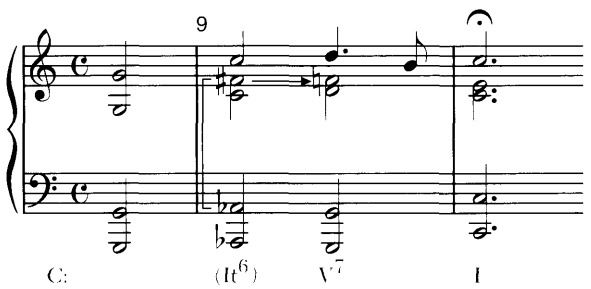
A. BEETHOVEN: STRING QUARTET IN G MAJOR, OP. 18, NO. 2, III



B. (REDUCTION)



C. BEETHOVEN: "THE GLORY OF GOD IN NATURE," OP. 48, NO. 4

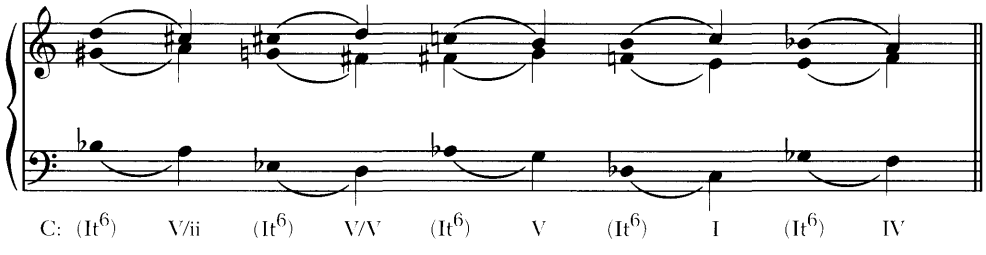


Composers of the Romantic period became increasingly interested in the augmented 6th sonority and consequently expanded its usage into new areas. The remainder of this chapter will document some of these possibilities, but note that these uses are relatively infrequent compared to the standard augmented 6ths presented above.

SECONDARY AUGMENTED SIXTH CHORDS

The voice leading found in an augmented 6th to V progression may also be *transposed* to other harmonies and scale degrees, spawning a family of **secondary augmented sixth chords** that resolve to a major triad substituting for the normal V. For instance, in a major key an augmented 6th may resolve to a secondary dominant. In the sequence of descending 5ths in Example 30.9, each secondary dominant is preceded by an It^6. Observe how these harmonies are designated in the analysis.

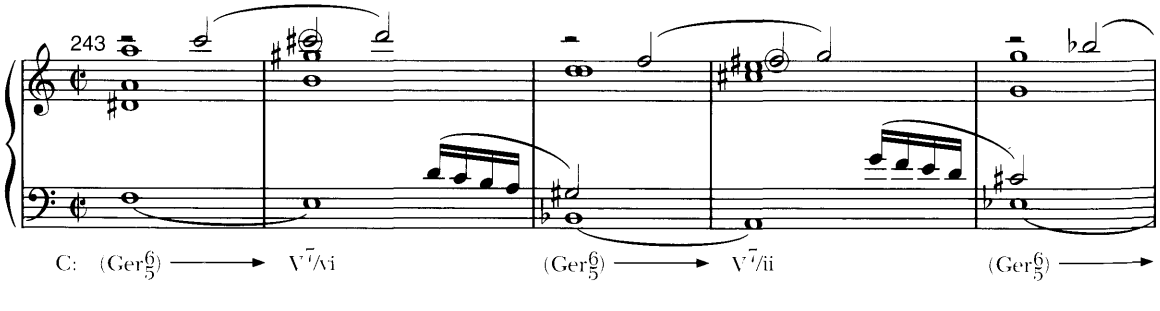
Example 30.9



Mozart puts this pattern to good use in the ingenious elaboration found in the Finale to his "Jupiter" Symphony (Example 30.10). The chromatic motive in the upper voice (C♭-C♯-D, F♭-F♯-G) not only provides additional spice but also effectively avoids parallel 5ths. A more complex version of this procedure may be found at the beginning of the recapitulation of the first movement of Brahms's First Symphony, measures 333 to 343.

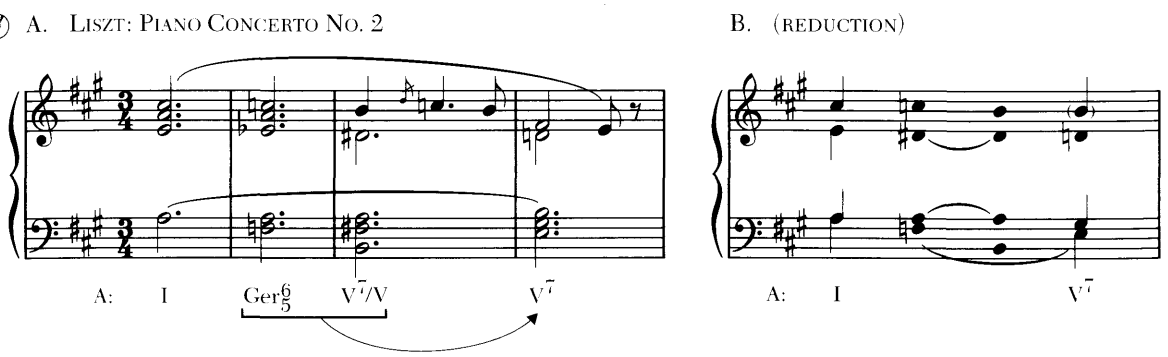
Example 30.10

𝄞 MOZART: SYMPHONY NO. 41 ("JUPITER"), K.551, IV



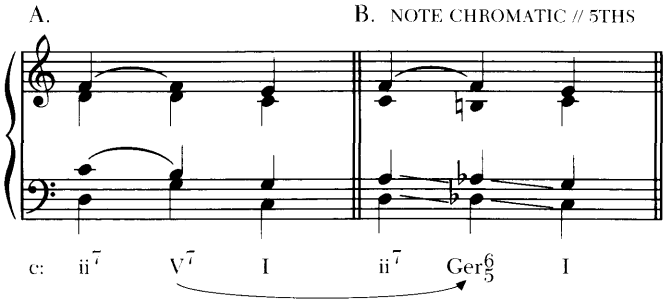
The secondary dominant V^7/V and the Ger$^6_5$ function in a similar way, since they both tend to move to V. In the opening of his Second Piano Concerto (Example 30.11), Liszt precedes the V^7 with a Ger$^6_5$ and a V^7/V in succession, suggesting resolutions in the bass by half step and descending perfect 5th, respectively. This relationship is sometimes called a **tritone substitution;** the roots of two chords that function in a similar way are a tritone apart, in this case F and B. Notice that the D♯ in the Ger$^6_5$ becomes the chordal 3rd of the V^7/V, which then pulls down chromatically to the 7th of the V^7.

Example 30.11



Tritone substitution is a favorite technique in jazz harmony. However, rather than using both chords, players substitute one for the other. For instance, in a progression of seventh chords by descending 5ths (Example 30.12a), a Ger$^6_5$ on D♭, a tritone removed from the V^7, takes the place of the expected dominant, producing a progression of descending half steps (Example 30.12b). A similar example occurs near the end of the bridge to Cole Porter's "I've Got You Under My Skin." In a normal cycle of 5ths (Am^7-D^7-Gm^7-C^7), an A♭^{7} is substituted for the D^7, so that the V^7/ii becomes a Ger$^6_5$/ii.

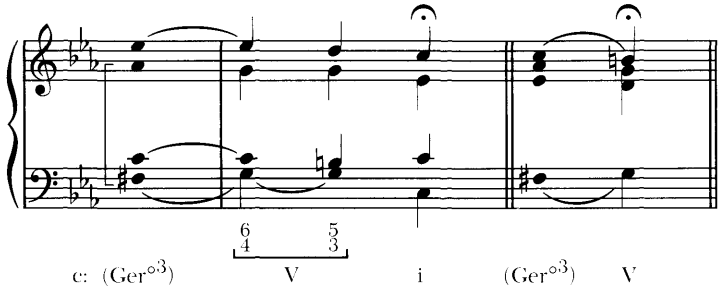
Example 30.12



INVERSIONS OF THE AUGMENTED SIXTH CHORDS

Although the ♭$\hat{6}$ of an Aug6th chord normally occurs in the bass voice, we may sometimes find other chord members there. When the ♯$\hat{4}$ appears in the lowest part, a diminished 3rd (the inversion of the augmented 6th) results between it and the upper ♭$\hat{6}$. Since this inversion, known as a **diminished third chord,** usually employs the German form of the chord, it will be denoted as a Ger°3 (or sometimes simply °3). By the way, this inversion eliminates the danger of parallel 5ths inherent in the normal Ger$^6_5$ (Example 30.13).

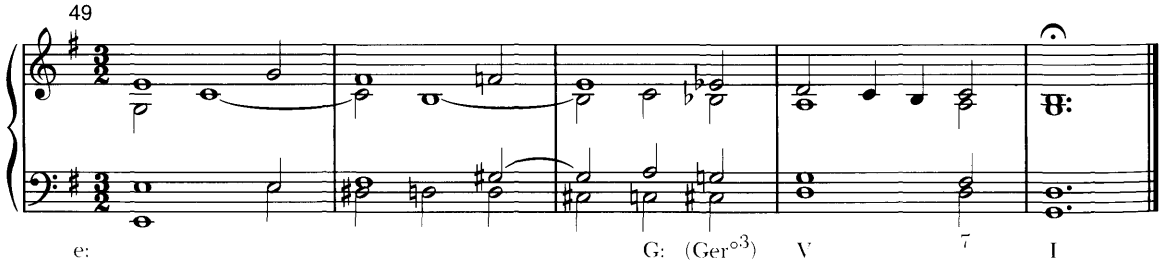
Example 30.13



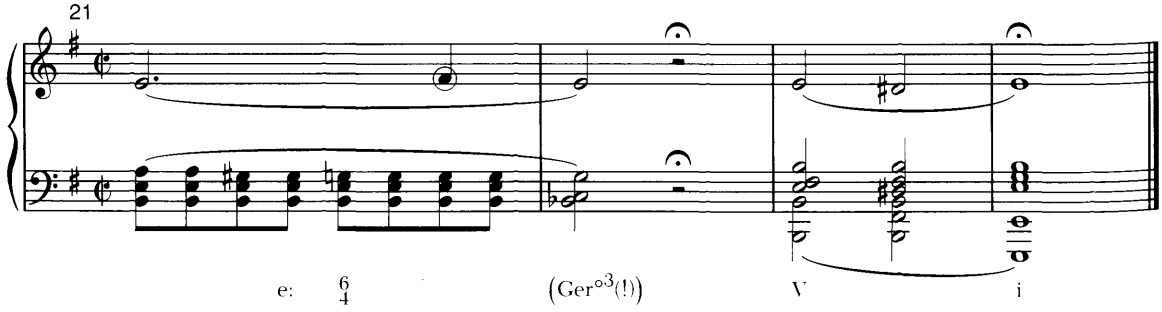
Example 30.14 illustrates three examples of Ger°3 chords. The "Crucifixus" movement of the Credo of Bach's *B Minor Mass* is based on the reiteration of a descending chromatic tetrachord in the bass. Near the end of the movement the music begins a modulation to the relative major (G major), the key of the triumphant "Et resurrexit" that follows (Example 30.14a). Rather than descending to the dominant of E minor, the C^3 in measure 3 pulls *upward* to C♯, producing a Ger°3 chord that prepares the authentic cadence in G major. Near the end of Chopin's E minor Prelude (Example 30.14b), the composer inserts what appears to be a V^4_2/♭II chord. This harmony actually functions as an enharmonic Ger°3, pulling back instead to V. Finally, in the excerpt from Verdi's *Requiem* (Example 30.14c), the use of the Ger°3, each preceded by a $\flat II^6$, successfully avoids parallel 5ths.

Example 30.14

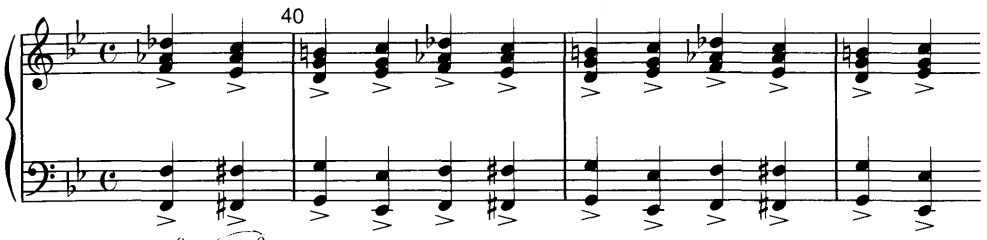
A. BACH: CRUCIFIXUS FROM *B MINOR MASS*, BWV 232



B. CHOPIN: PRELUDE IN E MINOR, OP. 28, NO. 4



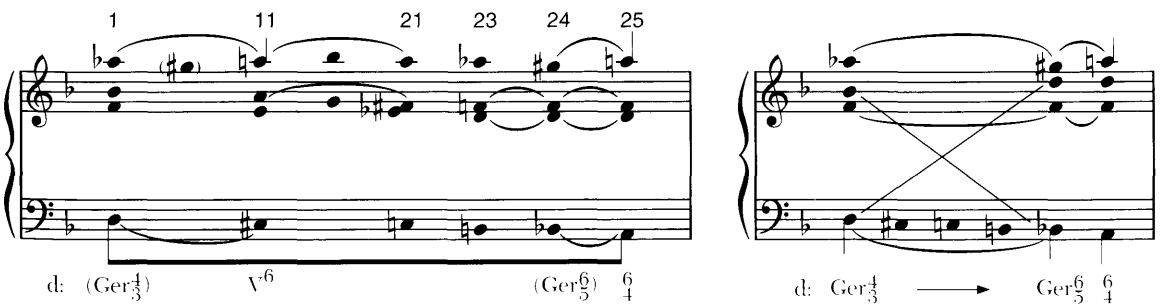
C. VERDI: "DIES IRAE" FROM *REQUIEM*



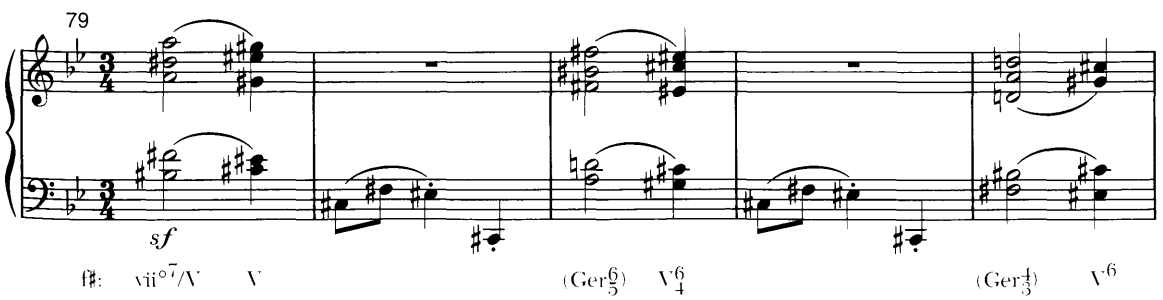
On occasion we may encounter other inversions of augmented 6th chords. Examples 30.15a and b are voice-leading reductions of the opening twenty-five measures of Brahms's Piano Concerto No. 1 in D Minor. The prolonged first chord, which Brahms spells as a $V^6_5/\flat II$ (DFA$^\flat$B$^\flat$), actually turns out to be an enharmonic Ger6th chord in $^4_3$ inversion. Its resolution to a V^6 initiates a chromatic descent in the bass voice, eventually reaching a normally spelled Ger $^6_5$ that moves on to the $^6_4$ half cadence. The excerpt from the Chopin Nocturne (Example 30.15c) extends a dominant triad in F♯ minor. In the motion to V, the composer first uses a vii$^{\circ7}$-V in measure 1, followed by a Ger$^6_5$-V in measure 3, and a Ger$^4_3$-V in measure 5.

Example 30.15

A. BRAHMS: PIANO CONCERTO NO. 1, I (MM. 1–25) (REDUCTION 1) B. (REDUCTION 2)



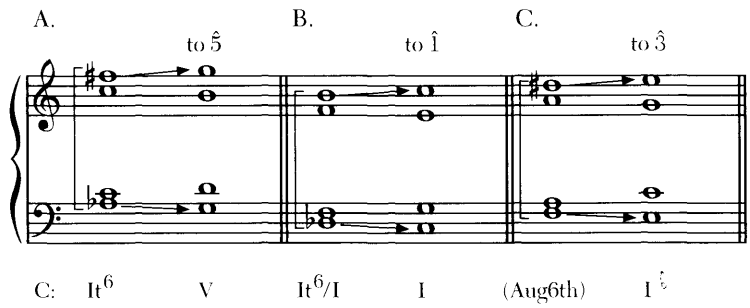
C. CHOPIN: NOCTURNE IN G MINOR, OP. 15, NO. 3



Other Resolutions of Augmented Sixth Chords

During the later Romantic period, composers experimented with new ways to resolve augmented 6th chords. While the augmented 6th interval itself normally resolved to scale degree $\hat{5}$ via $\flat\hat{6}$ and $\sharp\hat{4}$ (Example 30.16a), it was possible to construct augmented 6th chords whose augmented 6th would resolve to scale degree $\hat{1}$ in a tonic triad via $\flat\hat{2}$ and $\sharp\hat{7}$ (Example 30.16b) or even to scale degree $\hat{3}$ via $\hat{4}$ and $\sharp\hat{2}$ (Example 30.16c).

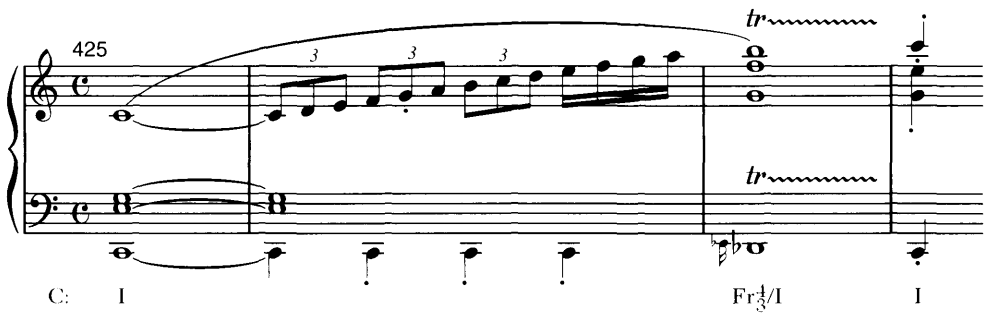
Example 30.16



The concluding cadence of the last movement of Schubert's C major String Quintet (Example 30.17a) employs a Fr$^4_3$ on $\flat\hat{2}$ that resolves directly to the tonic. A basic blues progression adds another twist—in Example 30.17b, the F^7 in C major may be considered a transposed Ger$^6_5$, in which the $\hat{4}$ and enharmonic $\sharp\hat{2}$ move to the chordal 3rd of tonic harmony, as shown in the reduction of Example 30.17c.

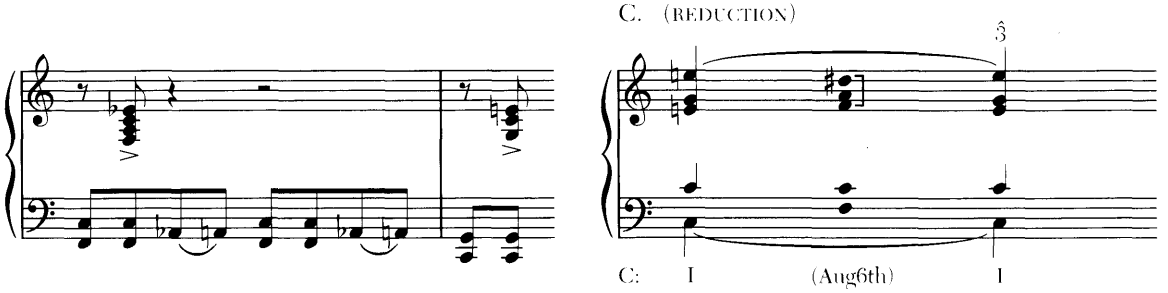
Example 30.17

A. Schubert: String Quintet in C Major, IV



B. TYPICAL "BOOGIE" BLUES

C. (REDUCTION)

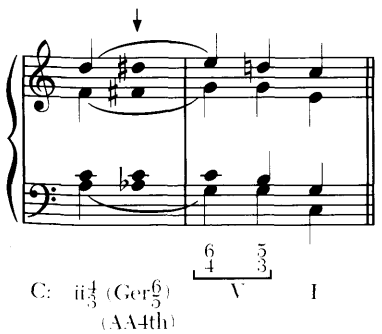


ENHARMONIC AUGMENTED SIXTH CHORDS

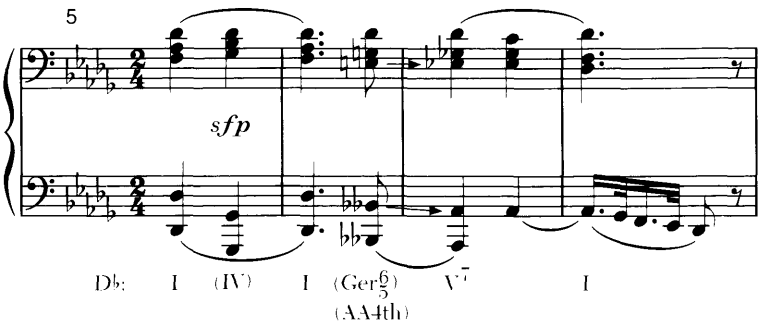
When a Ger^6_5 is used in the major mode, it is occasionally written with an enharmonic $\sharp\hat{2}$ in place of the $\flat\hat{3}$, producing a triple chromatic approach to the $^6_4$ harmony that usually follows it. This sonority is sometimes called a **doubly augmented fourth chord** (AA4th); in C major the interval of the doubly augmented 4th lies between A♭ and D♯, A♭ C D♯ F♯ in C major (Example 30.18a). This enharmonic notation, however, does not negate the parallel perfect 5ths that we hear between the tenor and bass in measure 3 of the Beethoven sonata (Example 30.18b).

Example 30.18

A.



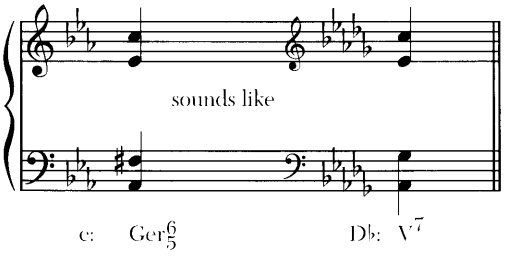
B. BEETHOVEN: PIANO SONATA IN F MINOR, OP. 57 ("APPASSIONATA"), II



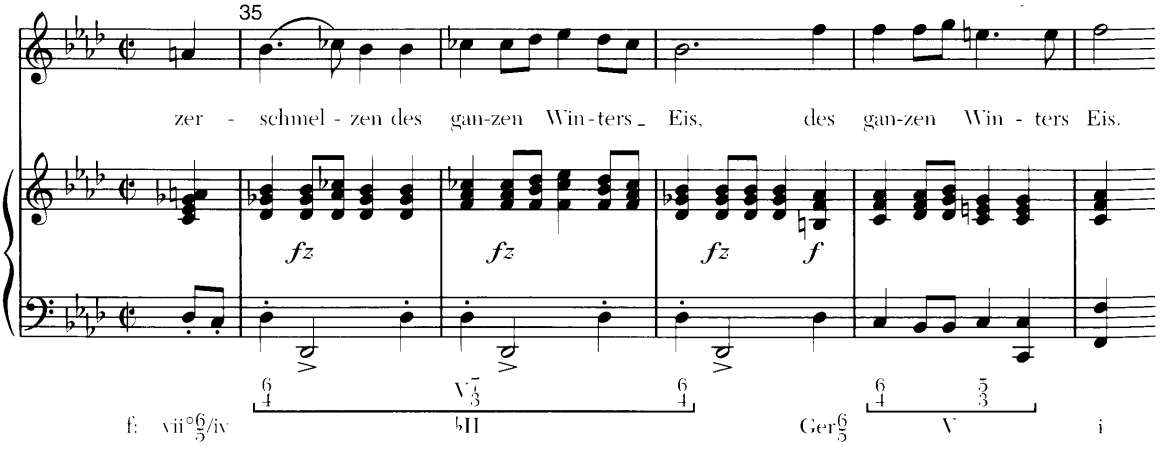
Although an isolated Ger^{6}_{5} and V^{7} are spelled differently, they sound exactly the same; play Example 30.19a. Composers have exploited this sonic similarity in various ways. The Ger^{6}_{5} (in C major, A♭ C E♭ F♯) can be spelled enharmonically as a $\text{V}^{7}/\flat\text{II}$ (A♭ C E♭ G♭). Therefore, it is closely related to Neapolitan harmony. The poignant passage from Schubert's "Frozen Tears" appears to prolong ♭II in F minor via a cadential $^{6}_{4}$ figure (mm. 1–3 in Example 30.19b). The secondary dominant seventh (D♭ F A♭ C♭) suddenly resolves to V of the original key via its enharmonic spelling as a Ger^{6}_{5} (D♭ F A♭ B♮). Later we will see how the enharmonic relation between these two chords can prove useful in creating startling modulations to foreign keys a chromatic third or half step away.

Example 30.19

A.



B. SCHUBERT: "GEFROR'NE THRÄNEN" FROM *WINTERREISE*



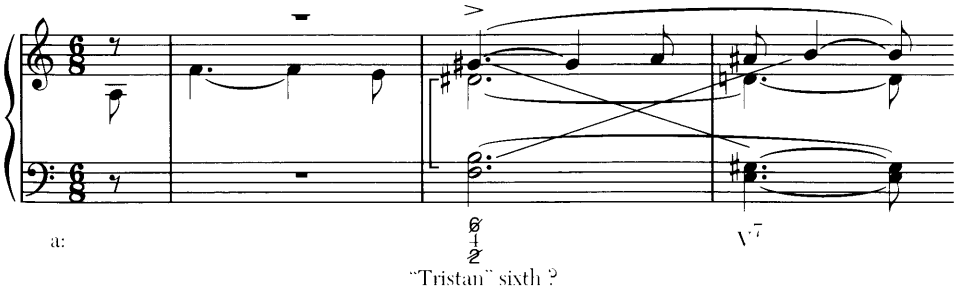
. . . zerschmelzen des ganzen Winters Eis . . . would melt all of Winter's ice.

More Exotic Augmented Sixth Chords

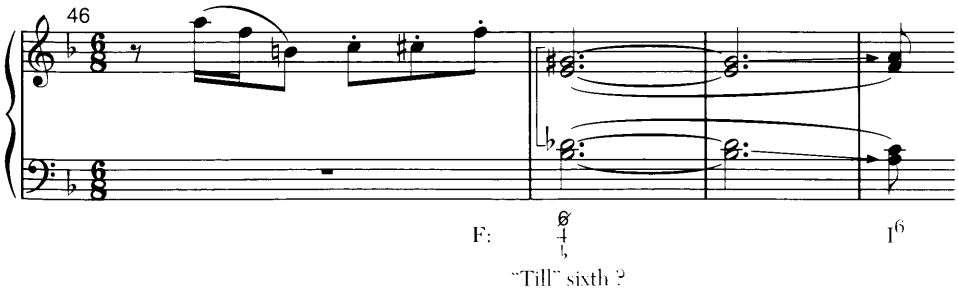
The defining interval in augmented 6th chords is the augmented 6th itself; the other notes in the chord merely produce sonic variants of this basic harmonic function. In rare instances, composers experimented with adding different pitches to the augmented 6th. Some of the results are illustrated in Example 30.18. In the so-called "Tristan chord" that opens Wagner's music drama (Example 30.20a), the F-D♯ is accompanied by a B and G♯, producing the sound of a half-diminished seventh chord; in this case the D♯ resolves to the 7th of the following V^7. We will have occasion to speak more about this remarkable sonority in our analysis of the *Tristan* Prelude in Chapter 38. The "Till Eulenspiegel chord" in Richard Strauss's famous tone poem also uses the same half-diminished seventh sound, but its augmented 6th (B♭-G♯) resolves to the 3rd of the tonic F major triad (Example 30.20b). The introduction to Duke Ellington's theme song "Take the A Train" uses a whole-tone chord (A♭ C E F♯) that resolves directly to the tonic (Example 30.20c). Finally, the Schoenberg progression in Example 30.20d includes two augmented sixths (G♭/E♮ and B♭/G♮), both of which resolve correctly.

Example 30.20

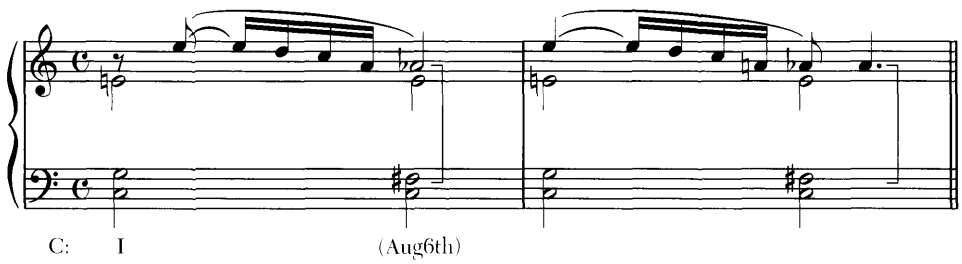
A. Wagner: Prelude to *Tristan und Isolde*, Act I



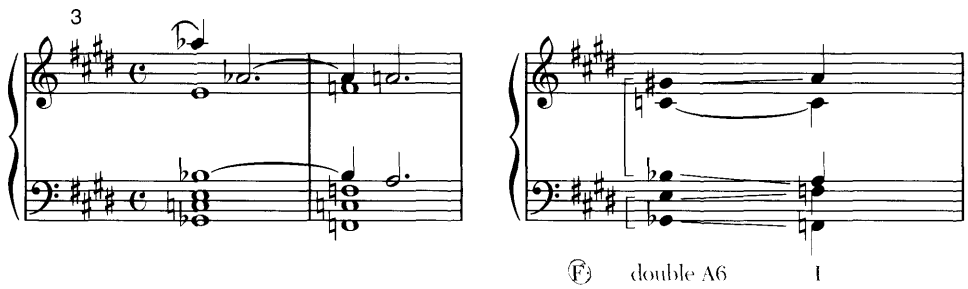
B. Richard Strauss: *Till Eulenspiegel's Merry Pranks*, Op. 28



C. BILLY STRAYHORN: "TAKE THE A TRAIN"



D. SCHOENBERG: *CHAMBER SYMPHONY* NO. 2 E. (REDUCTION)



Summary of Augmented Sixth Chords

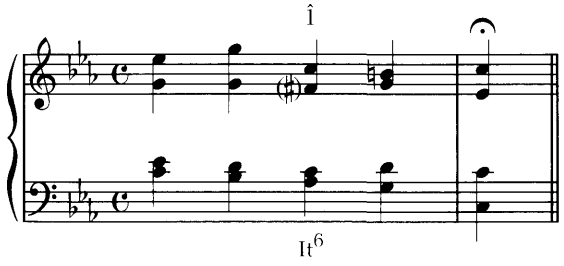
1. Augmented 6th chords typically feature scale degrees $\flat\hat{6}$ (in the bass) and $\#\hat{4}$ (in an upper voice), each of which resolves to the dominant $\hat{5}$. These linear harmonies most frequently occur as neighboring or passing chords in the minor mode.
2. The three forms of these chords retain their characteristic Aug6ths between $\flat\hat{6}$ and $\#\hat{4}$. In terms of C minor, the Italian 6th (It^6) adds $\hat{1}$ (A♭ C F#), the French 6th (Fr^4_3) adds $\hat{1}$ and $\hat{2}$ (A♭ C D F#), and the German 6th (Ger^6_5) adds $\hat{1}$ and $\flat\hat{3}$ (A♭ C E♭ F#). While the first two resolve to V, the Ger^6_5 usually resolves to $^6_4$ in order to avoid parallel 5ths. Double the tonic scale degree ($\hat{1}$) in the It^6.
3. Transpositions of the Aug6th to V progression produce various secondary augmented 6th chords, such as It^6 to a V/V , or Fr^4_3 to I.
4. In addition to other inversions, such as the diminished-third chord or $Ger^{o}3$ (F# A♭ C E♭), different types of Aug6ths featuring more exotic chord types may occasionally appear.

Melody Harmonization

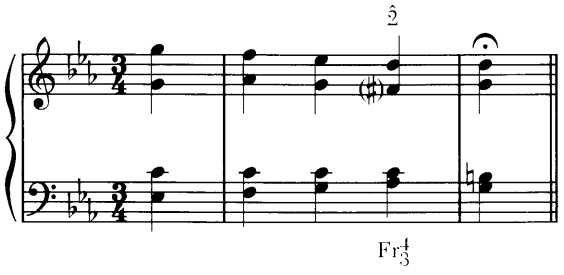
In harmonizing diatonic melodies in the minor mode, we can use augmented 6th chords to support scale degrees $\hat{1}$ (the It^6), $\hat{2}$ (the Fr^4_3), and $\hat{3}$ (the Ger^6_5). The altered scale degree $\sharp\hat{4}$ can, of course, be used with all three versions. These chords usually occur at either a half cadence or an authentic cadence. The three passages in Example 30.21 illustrate how these chords may be put to effective use in setting diatonic notes in the soprano voice. Play each progression first with the diatonic harmonies, and then add the suggested F♯, which turns each chord into an augmented 6th.

Example 30.21

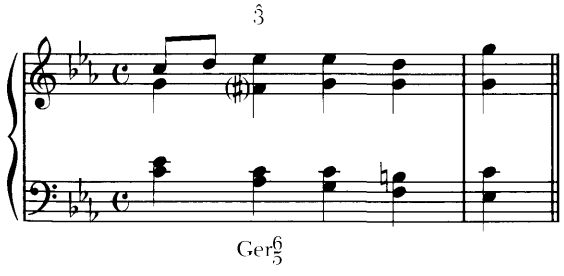
A.



B.



C.



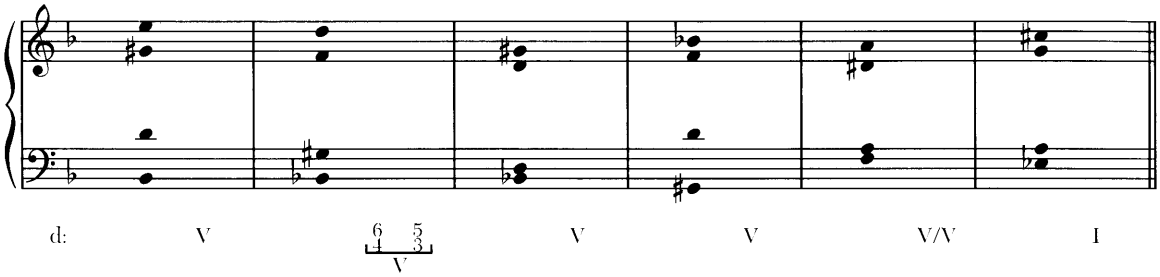
Terms and Concepts for Review

augmented 6th
augmented 6th (Aug6th) chords
chromatic linear chords
Italian sixth (It^6)
French sixth (Fr^4_3)
German sixth (Ger^6_5)
tritone substitution
secondary augmented sixth chords
diminished third chord ($Ger^{o}3$)
enharmonic relations between V^7 and Ger^6_5
doubly augmented fourth chord (AA4th)
other Aug6th chords and their resolutions

A BRIEF REVIEW SELF-QUIZ

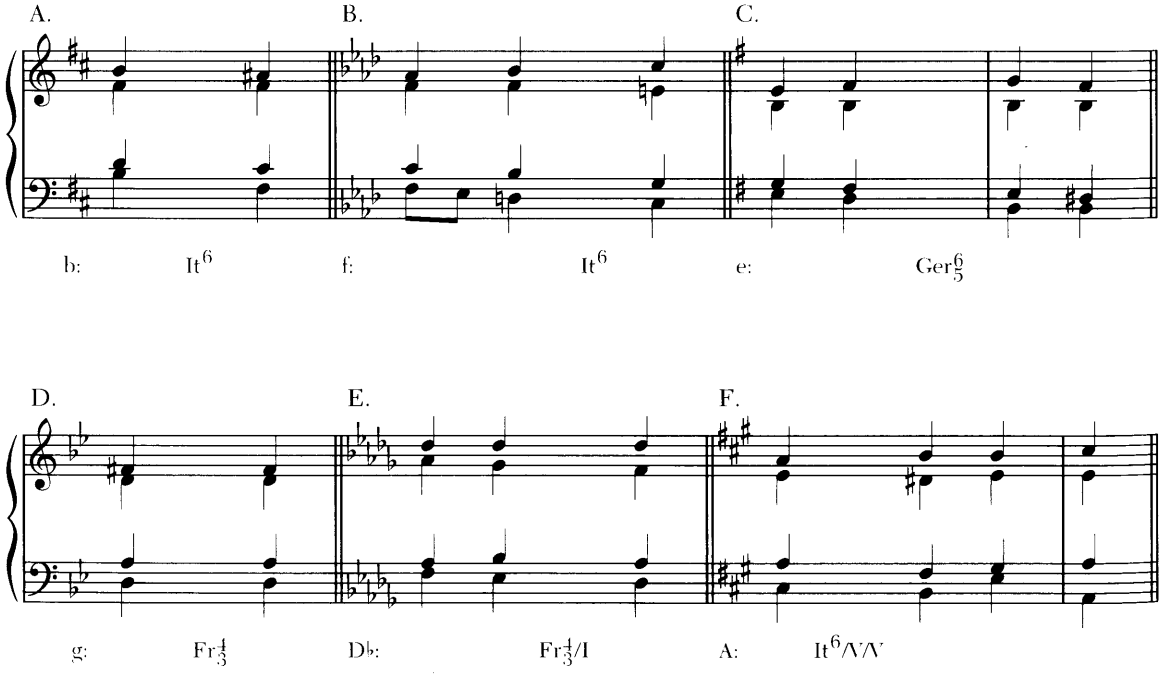
1. A variety of augmented sixth chords appear in the key of D minor. Identify each by its proper designation and then resolve it correctly to the indicated chord.

Example 30.22

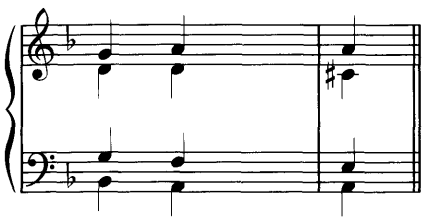


2. In the progressions below, fill in the indicated Aug6th chord, using correct partwriting with the adjacent harmonies. Then complete the Roman numeral analysis.

Example 30.23



G.



d: Ger$^{\circ 3}$

CHAPTER 31

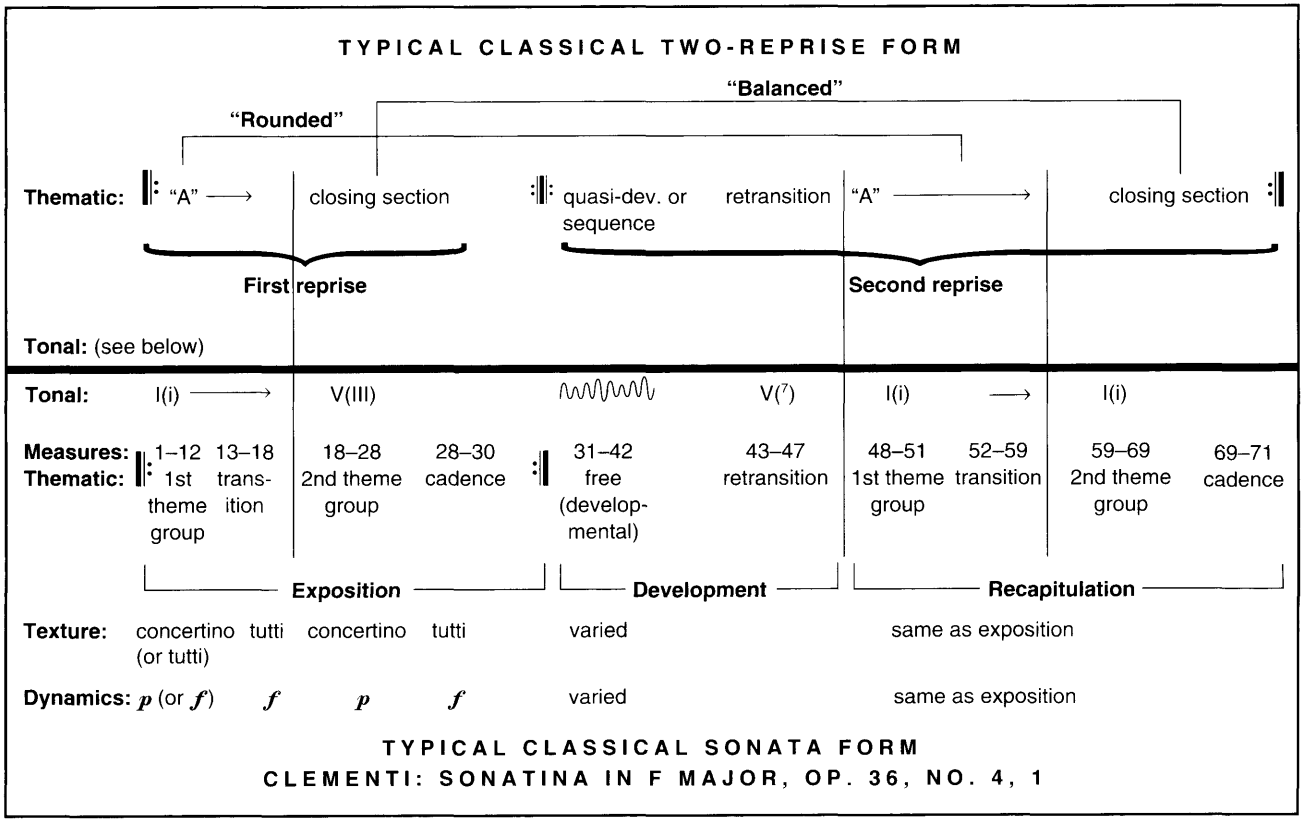
Extended Homophonic and Contrapuntal Formal Designs

In Chapter 23 we discussed some of the simpler formal designs and tonal structures found in homophonic music. In this chapter we will conclude our investigation of homophonic forms by examining some more complex and extended designs, such as sonata, sonata-rondo, and concerto forms. In addition, we will introduce several genres typical of works that employ contrapuntal texture, such as the chorale prelude, invention, and fugue.

Sonata Form

Although we use the term **sonata** to refer to a multi-movement work for a solo instrument with or without accompaniment, we use the term **sonata form** to refer to the design and structure of a single movement. The sonata-form scheme may be found in the first, the last, and even the slow middle movement of a multi-movement composition. The tonal structure and design of sonata form of the Classical period evolved from the rounded two-reprise form, which we discussed in Chapters 23 and 25. Figure 31.1 shows how sonata form represents an expansion of the key scheme and formal proportions of two-reprise design as found in the Clas-

Figure 31.1 TYPICAL CLASSICAL TWO-REPRISE FORM



sical minuet. The top of the diagram outlines a stereotypical two-reprise design with its usual continuous, rounded, and balanced features. The basic characteristics of sonata form are aligned directly beneath their counterparts in two-reprise form.

The first reprise or first repeated section of the two-reprise form expanded to become the **exposition** in sonata form, the section following the double bar the **development**, and the rounded section the **recapitulation**. Typical thematic and tonal characteristics are specified in the middle of the diagram, and additional descriptions of normative textural and dynamic characteristics appear at the bottom. This sonata-form model with its measure numbers is based on an actual piece—the first movement of Clementi's Piano Sonatina in F Major, Op. 36, No. 4, the score of which appears in Example 31.1. Although this brief movement is a diminutive version of sonata form with an abbreviated development, it nevertheless contains all the salient attributes of a full-blown sonata movement.

Example 31.1

MUZIO CLEMENTI: SONATINA IN F MAJOR, OP. 36, NO. 4, I

18
fz
fz
dolce
fz
fz
28
f
31
p
cresc.
f
p

43
f
dimin.
p
52
f
fz
59
fz
p
fz

After discussing the main features of each major division of sonata design, we will outline the movement's basic tonal structure and discuss several modifications that subsequent composers have made to this form.

Exposition

In addition to presenting the principal themes of the movement, the exposition sets up a polarity between two basic key centers—in major I and V, and in minor i and III or occasionally v. The tonal tension created by the motion to the contrasting key will later be resolved by the return to the tonic in the recapitulation section. If enclosed with repeat signs, the exposition should be repeated; omitting this instruction may distort the essential proportions of the movement.

1. In sonata form, the opening theme of the original two-reprise form is often expanded into a **first theme group**. This first theme group may contain several different musical ideas, all of which are related by their appearance in the tonic key.
2. A **transition** directs the tonal motion away from the tonic toward the new or contrasting key, often by means of sequential patterns. In symphonic works this transition is usually played *forte* by the full orchestra and normally concludes with an emphatic half or authentic cadence in the new key area.
3. The **second theme group** is set in the contrasting key. This group is generally more regular in its phrase groupings, as well as quieter and more lyrical than the opening theme group, often employing a smaller

instrumental force in symphonies. Although its themes are usually new, a composer may take a theme from the original tonic group and restate it in the contrasting key during the second theme group, producing what we call a **monothematic exposition**. This procedure occurs in the opening movement of Haydn's Symphony No. 100 in G Major, subtitled the "Military."

4. The **closing section** of the exposition serves to confirm the contrasting key and is largely cadential in function. It normally displays active, virtuosic gestures, such as arpeggios, scales, and trills, and is almost always played *forte*. A brief new **closing theme**, usually *piano*, or even a **codetta** may occur as a final appendage to the exposition.

Development

The term "development" suggests that the material of the exposition will now undergo expansion, fragmentation, sequential treatment, or other developmental procedures. These techniques are usually employed in the development, but the most significant feature of the development is its *modulatory* nature. The composer generally uses the development to explore various key relationships. Since developments usually follow no fixed pattern, irregular phrase groupings and striking contrasts of texture, register, and dynamics are typical. Perhaps the term "fantasia section" would be more appropriate. The German term for the development, *Durchführung* ("leading through"), more clearly stresses its transitory nature.

Toward the end of the development, a **retransition**, usually based on a dominant prolongation, prepares the return of the original thematic material in the tonic key at the beginning of the recapitulation.

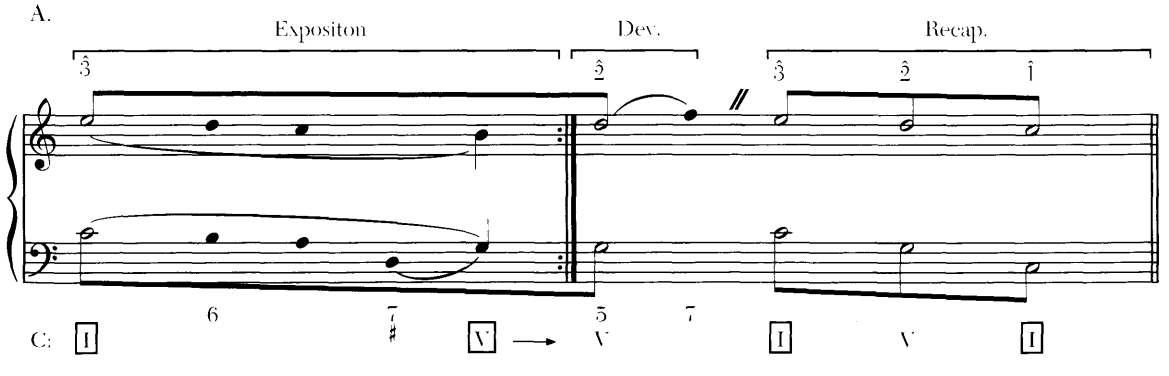
Recapitulation

The musical events heard in the exposition return in the original order during the recapitulation. There is one significant difference: The dominant or mediant key used for the second theme group and closing section of the exposition is now replaced by the tonic key. This difference creates an interesting problem in the transition between the two theme groups. In the exposition this transition effected a modulation to the new key area. Now it must somehow give the sense of modulating while remaining in the same tonic key. In order to achieve this, the transition frequently tonicizes IV, which then returns to I via V. The cadential section—including the closing theme, if any—serves to reinforce the movement's conclusion in the tonic. In sonata-form movements from the early Classical era, the development and recapitulation were repeated, harking back to its origins in the two-reprise form. However, this practice was abandoned later in the period.

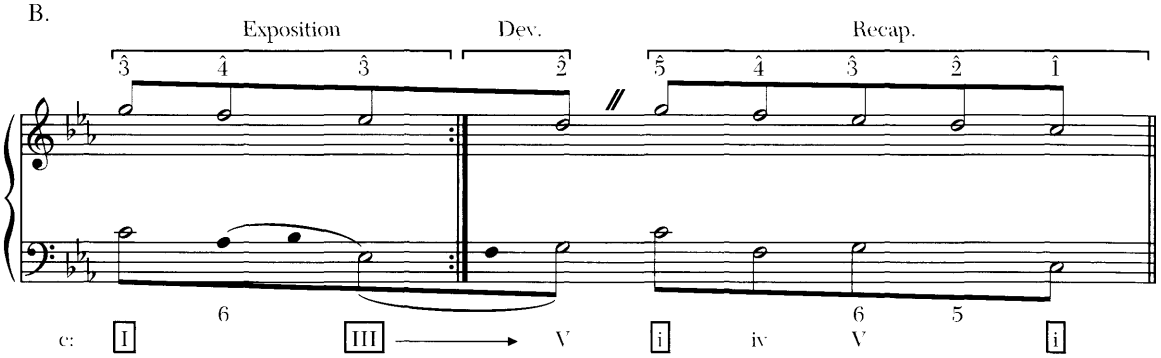
Tonal Structure of Sonata Form

The tonal structure of a sonata-form movement may be viewed in terms of the intersection of its basic harmonic or key scheme with its long-range voice leading or *background*; refer to the analysis of the two-reprise Minuet in Chapter 25, which shares a similar tonal plan. The voice leading typically forms a descending pattern in the upper voice that is interrupted at the primary dominant prolongation just prior to the recapitulation. We have already seen this type of tonal structure in shorter two-reprise excerpts of Chapter 22. In a major key, the long-range harmony within the exposition, development, and dominant retransition usually progresses from I to V, and the long-range soprano line moves from $\hat{3}$ to $\hat{2}$. The recapitulation then begins again in I and moves through V to the final I, with the upper line tracing $\hat{3}$-$\hat{2}$-$\hat{1}$. In Example 31.2a, which summarizes this structure, note that although the development is represented only by its concluding dominant, in actuality there may be a succession of many keys leading up to that retransitional V. In a minor key the long-range harmonic motion from exposition to retransition normally incorporates the mediant key area (i-III-V), with the upper voice typically beginning on $\hat{5}$ and making a stepwise descent down to $\hat{2}$ (Example 31.2b). The recapitulation then outlines a basic i-iv-V-i pattern, with the soprano beginning on $\hat{5}$ again and working its way down to the final $\hat{1}$. These voice-leading graphs demonstrate how the three-part *design*, exposition to development to recapitulation, of sonata form is reconciled with its two-part *tonal structure* in both major and minor modes. Typical treatments of Classical sonata form include the first movement of Mozart's Symphony No. 40 in G Minor, the second movement of Beethoven's Symphony No. 1 in C Major, and the last movement of Haydn's Symphony No. 92 in G Major ("Oxford").

Example 31.2



B.



The Introduction

First-movement sonata forms are sometimes preceded by a slow **introduction**. Most introductions consist of three parts: (1) a tonic opening, (2) a tonal transition, which often includes sequences or applied dominants, and (3) a dominant prolongation, which prepares the tonic key that begins the *allegro* exposition of the main movement. Introductions to major-key movements are frequently in the parallel minor mode. Motivic ideas stated in the introduction may reappear in the fast section. Typical slow introductions may be found in the opening movements of Haydn's Symphony No. 100 in G Major ("Military") and Beethoven's Piano Sonata in C Minor, Op. 13 ("Pathétique").

Later composers gave their introductions grander proportions and more important roles in the succeeding movements. In Franck's D minor Symphony and Tchaikovsky's Symphony No. 4 in F Minor, material from the opening introduction recurs in later movements, resulting in a **cyclical** symphony. Although the initial material in these two works undergoes little change, the foreboding minor-mode clarinet theme that opens Tchaikovsky's Symphony No. 5 eventually recurs in the parallel major at the finale's triumphant conclusion.

The Coda

A **coda** is sometimes appended to the closing section of the recapitulation. In early sonata-form movements, the coda consisted of little more than an extension of the closing section accompanied with great fanfare, rhythmic activity, and affirmations of the tonic. Beethoven pioneered the conception of the coda as a kind of second development section, although with less daring harmonic excursions—see the first movement of his Symphony No. 3 in E♭ Major ("Eroica"). During the coda of the first movement of his Symphony No. 5 in C Minor, an apparently new theme is introduced and developed.

Finally, examples of so-called **sonatina form** may sometimes be found in slow movements or miniature piano pieces. Since the development in sonatina form is usually omitted in order to keep the movement brief, the end of the repeated exposition leads directly into the retransition and recapitulation.

Composers in the Classical era and succeeding Romantic period modified sonata form in various other ways, such as substituting a foreign key for the usual contrasting key in the exposition, or introducing a false recapitulation in the wrong key during the development.

Sonata-Rondo Form

In some seven-part rondos (recall the discussion in Chapter 23), the middle or C section does not introduce new thematic material but instead assumes the character of a quasi-development section, exploiting prior material through modulatory procedures. Such a design is called a **sonata-rondo form**, since the first part (A B A with its movement to the dominant) now resembles an exposition, the middle or C section resembles a development, and the last part (A B A, all in tonic) resembles a recapitulation; consult Figure 31.2. Mozart was fond of using this design for the finales of his piano concertos. The Concerto in B♭ Major, K. 450, is almost a textbook example, and the last movement of his Piano Sonata in B♭ Major, K. 333, exhibits traits of both sonata-rondo and concerto form, including a brief cadenza.

Concerto Form

The opening movement of solo concertos in the Classical period presents an amalgamation of characteristics from the extended da capo aria of the Baroque era and the sonata form of the Classical period. Some writers trace the origin of concerto form to the Baroque concerto grosso, but a more compelling theory suggests the form originates in the da capo aria, through the concertos written by North German composers, and then to the concertos of Johann Christian Bach, the "London Bach," whose concertos Mozart knew

Figure 31.2

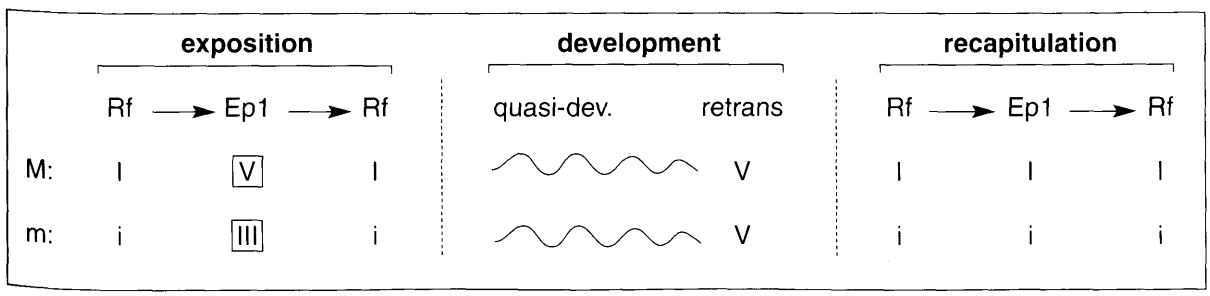
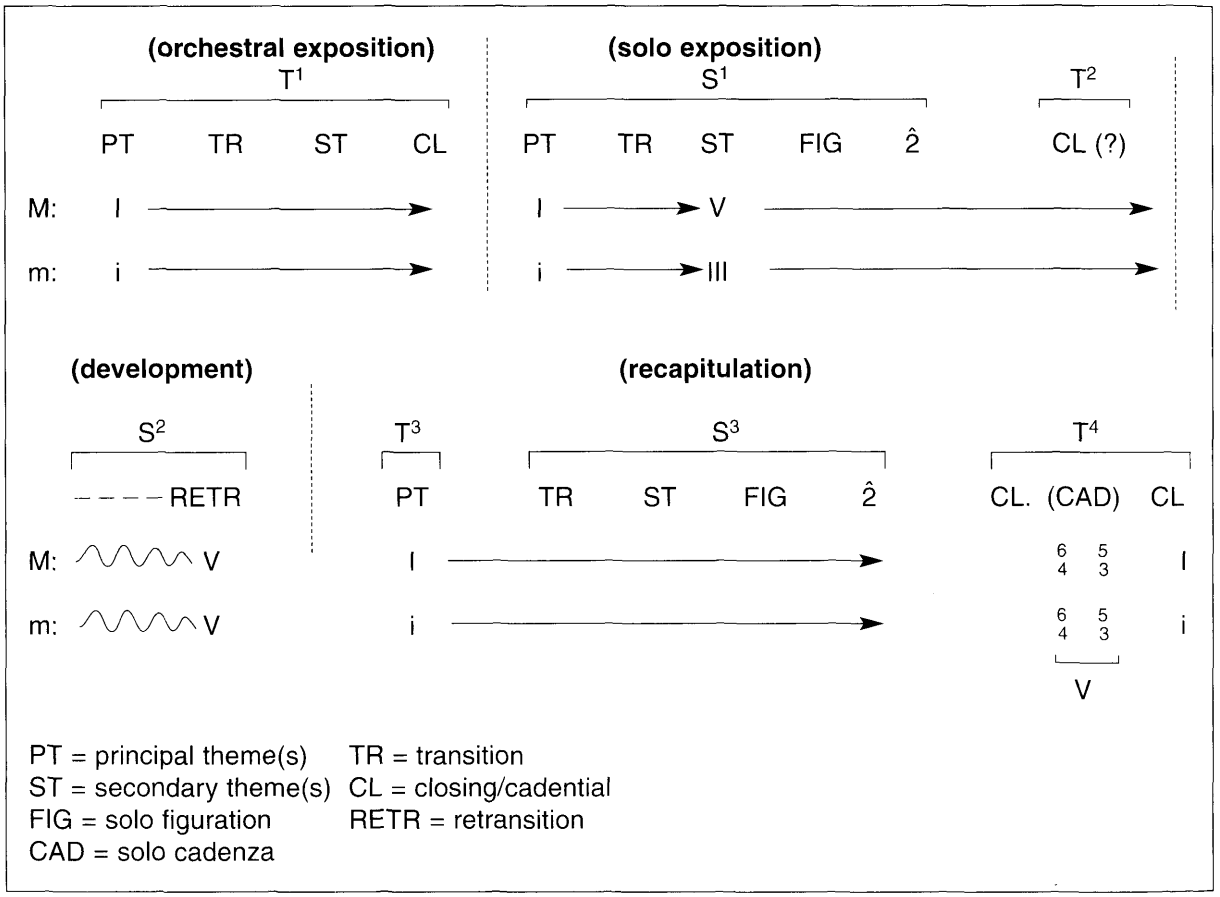


Figure 31.3



and imitated.[1] The typical tonal structure of sonata form was superimposed over the succession of tutti sections, for full orchestra, abbreviated with a T, and solo sections, abbreviated with an S, in the aria, resulting in the so-called **concerto form** of the Classical era. This design is diagramed in Figure 31.3.

The opening orchestral tutti (T1) presents the principal and secondary theme groups in the tonic, closed off by a series of cadential gestures or ideas; some theorists refer to this as the "orchestral exposition." In the following solo section (S1) the same material is restated but with the customary modulation to the contrasting key, either $\boxed{\text{V}}$ or $\boxed{\text{III}}$; this part is sometimes called the "solo exposition." An appended section, abbreviated "Fig." for figuration, is devoted to showing off the skills of the performer before a long trill on $\hat{2}$ over V brings this part to a close. The next orchestral tutti (T2) confirms the contrasting key, often

1. See Denis Forman, *Mozart's Concerto Form* (New York: Praeger, 1971).

with closing material from T1, before moving into S2, which corresponds roughly to a development. The usual retransition brings us to T3, which marks the beginning of the recapitulation, which quickly dissolves into S3, in which the secondary theme group and figuration section are restated in the tonic key. The final T4, which completes the movement in tonic, is usually interrupted for an improvised cadenza, consisting largely of an elaborate dominant prolongation.

While adhering to the basic design outlined above, both Mozart and Beethoven introduced a variety of wonderful modifications that give individuality to their concertos. Although some Romantic composers such as Brahms continued to exploit the older double exposition, others, such as Grieg, Tchaikovsky, and Rachmaninoff, resorted to a more traditional single-exposition sonata form, with lengthy interpolations and written-out cadenzas for the soloist.

Contrapuntal Forms

In contrapuntally oriented compositions, the term "form" often refers more to a genre than to a fixed design or stereotypical model. We will examine three examples from the later Baroque period—the chorale prelude, the invention, and the fugue.

Chorale Preludes

The Lutheran **chorale** was the traditional hymn of Protestant Europe in the Baroque period. Chorale melodies were often cast in **bar form** (AAB), in which the first several phrases are repeated forming the two *Stollen*, AA, followed by a different set of phrases, the *Abgesang* or B. While the congregation sang the tune in unison, the organist provided differing harmonic accompaniments, depending on the text of each verse. In the Lutheran service the organist would first play a verse of the chorale to remind the congregation of the tune, since the hymnals contained only the words. As time went on, these preliminary settings of the chorale became increasingly elaborate. The resulting contrapuntal settings of the chorale are usually called **chorale preludes.** Many of these compositions set the preexisting chorale melody, or the cantus firmus, in a variety of ways. The tune customarily appears in the soprano or bass voice. In simple chorale preludes, the melody continues without interruption through the entire piece, while in more complex pieces the tune is segmented into individual phrases that are separated by sections of contrapuntal writing called **interludes**. Bach's well-known "Jesu, Joy of Man's Desiring" is a fine example of the latter process—in fact, the famous melody that opens this piece is an elaboration of the first chorale phrase. A brief chorale prelude based on the Christmas tune "Vom Himmel hoch" is quoted in Example 31.3; the phrases of the chorale cantus, which appears in the upper voice, are separated by short interludes.

Example 31.3

(f) FRIEDRICH ZACHAU: "VOM HIMMEL HOCH" (CHORALE PRELUDE)

Invention

In 1722 Bach composed a collection of keyboard pieces called *Clavierbüchlein* for his eldest son Wilhelm Friedemann, who was a child prodigy. When Bach later published some short two- and three-part works from this book under the title *Inventions and Sinfonias*, he rearranged the order and key schemes and made some revisions. Since their original purpose was pedagogical, they explore such practical issues as fingering, key signatures of increasing difficulty, and, more importantly, the art of composing short imitative compositions. These inventions display great economy of means, since most or all of the musical material is derived from each piece's initial motive or theme.

Even though Bach's two-part inventions are *not* based on a stereotypical formal model but rather exhibit considerable diversity or organization, we can identify some of their general characteristics.

1. Most begin with imitation, either at the octave or the upper 5th. The opening statement may consist of a brief motivic idea, as in the C major and E minor inventions, or it may be a longer theme, as in the D major Invention. In those which open with a **double theme**, the two voices are written in such a way that the soprano and bass can later switch voices, a technique called **double** or **invertible counterpoint** (see the discussion of the second reprise of the Beethoven Trio in Chapter 25 and note the brackets marking this device in Bach's E♭ invention, Example 31.4).
2. After the initial imitation, the theme or themes recur throughout the piece in other keys, resulting in a general tonal scheme of tonic to related keys to tonic. In some cases the recurring thematic statements are paired together in a kind of tonic-dominant relationship, such as $\boxed{\text{III}}$ followed by $\boxed{\text{V/III}}$.
3. These recurring thematic statements are often separated by modulatory sections called **episodes**. Episodes may be based on motivic fragments from the original thematic idea or may introduce new material. They usually employ sequential patterns and conclude with a well-defined cadence in a new key.

Bach's Two-Part Invention in E-flat Major, quoted in Example 31.4, incorporates double counterpoint in the opening double theme of measure 1–4.

Example 31.4

♪ BACH: TWO-PART INVENTION NO. 5 IN E-FLAT MAJOR, BWV 776

16
20

Fugue

The **fugue** was the prevailing imitative genre of the Baroque period, appearing in both instrumental and vocal works. The fugue is a contrapuntal and basically monothematic composition that opens with imitation. It is typically written in three- or four-voice texture, rarely for two or five or more voices, and each voice is strictly accounted for. Unlike the stereotypical forms of the Classical period, the fugue is actually more a compositional *procedure* than a form, since its design and tonal structure vary considerably from one piece to another. Nevertheless, it is possible to generalize about some aspects of fugue construction.

In the **fugal exposition**, or opening imitative section, the entries of the voices, all based on the same theme, occur in a predetermined tonal scheme of tonic-dominant-tonic-dominant. Note that the term "exposition" in descriptions of the fugal process means something completely different from the exposition section of a sonata form. A statement of the theme in the tonic key is called the **subject**, and a statement of the theme in the dominant key is called the **answer**. The answer or imitating voice may feature **real imitation,** in which the original melodic intervals of the subject are strictly retained, or **tonal imitation**, in which one or more intervals are modified in order to fit into the prevailing tonal scheme. If the accompanying counterpoint set to the thematic answer is retained through the fugue, it is called the **countersubject**. The subject and accompanying countersubject are always written in invertible counterpoint; this technique allows the voices to be switched. A short **bridge** sometimes links the end of the answer in V to the tonic of the following subject in I.

There is no set pattern for the entry of the different voices or the time interval between their entries. In Bach's *Well-Tempered Clavier* the subjects are relatively short, while in some of his larger organ fugues subjects extend up to eight measures in length. Once the final entrance of the subject or answer is completed, the exposition ends. Some composers choose to repeat the exposition with modifications, called a **counterexposition**.

Following the exposition, subsequent entries of the subject in the tonic or contrasting keys usually alternate with episodes that employ sequential writing. These episodes often modulate to and cadentially confirm a new key just prior to the subject's next entry in that new key. This procedure is analogous to the Baroque concerto grosso: the exposition sections of the fugue correspond to the tutti or ripieno sections, and the episodes correspond to the concerto's solo sections.[2] Eventually the music returns to the original key with at least one last subject set in the tonic.

Various contrapuntal techniques may be employed in the course of the fugue. We may find examples of **inversion** or **mirror technique**, in which the melodic intervals of the subject are turned upside down; **triple counterpoint**, in which the three different voices may be switched, producing six different arrangements between the parts; short passages of strict **canonic imitation; augmentation** and **diminution**, in which all the note values of the subject are proportionally lengthened or shortened; and **stretto**, in which the temporal distance between the original entries of the theme is shortened. **Double fugues** combine two distinct subjects. They may be presented at the opening of the exposition, as in the Finale of Haydn's String Quartet in F

2. See Edward Cone, *Musical Form and Musical Performance* (New York: W. W. Norton, 1968), 71.

Minor, Op. 20, No. 5, or each subject may be accorded its own exposition, with the thematic combination occurring later in the piece, as in Contrapunctus X from Bach's *Art of the Fugue*. Examples of fugues from later eras include the "Kyrie eleison" from Mozart's unfinished *Requiem*, the opening movement of Beethoven's String Quartet in C♯ Minor, Op. 131, the Finale of Brahm's *Variations on a Theme of Handel*, the concluding ensemble number of Verdi's *Falstaff*, the riot scene in the second act of Wagner's *Die Meistersinger*, the set of fugues in Hindemith's *Ludus Tonalis*, and the last movement of Stravinsky's *Concerto for Two Pianos*.

The F major Fugue from Bach's *Well-Tempered Clavier*, Book I, is quoted in Example 31.5. Examine its design and tonal structure, which adhere fairly closely to the procedure described above; note several instances of stretto around the middle of the fugue.

Example 31.5

BACH: FUGUE IN F MAJOR FROM *THE WELL-TEMPERED CLAVIER*, BOOK I

26
tr
37
46
56

Terms and Concepts for Review

sonata form
exposition
development
recapitulation
sonatina form
first theme group
transition
second theme group
monothematic sonata form
closing section
closing theme or codetta
introduction
coda
sonata-rondo form
first-movement concerto form
orchestral exposition (T1)
solo exposition (S1)
cadenza
chorale
bar form
chorale prelude
interlude
invention
invertible (double) counterpoint
double theme
episode (invention or fugue)
canon
fugue
fugal exposition
subject
answer
real imitation
tonal imitation
countersubject
bridge
counterexposition
inversion (mirror) technique
triple counterpoint
stretto
double fugue

A BRIEF REVIEW SELF-QUIZ

1. Match the numbers to the appropriate letters.

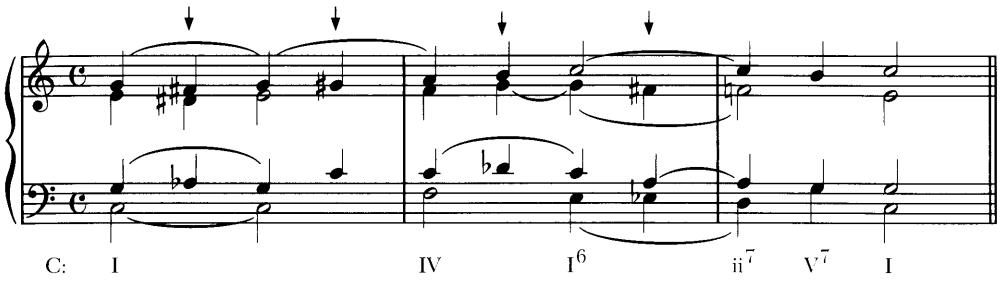
1. Six ways of rearranging the voices	a. Coda
2. Stretto	b. Triple counterpoint
3. Monothematic sonata form	c. Canon
4. Prepares return of first theme and tonic	d. Modulatory passage connecting two sections
5. Often lacks a true development	e. Temporal distance between subjects shortened
6. Transition	f. Based on two subjects
7. Alternations of tutti and solo	g. Sonatina form
8. Double fugue	h. Retransition
9. Beethoven often used as a second development	i. Concerto form
10. Exact imitation throughout	j. Development substituted for middle section
11. Sonata-rondo form	k. Second theme group uses first theme

CHAPTER 32

Embellishing Chromatic Chords

In Chapters 28 through 30 we examined some specific types of altered or chromatic harmonies, such as mixture chords, the Neapolitan, and augmented sixths. Many of these chords function as essential harmonies in cadential progressions. However, there are chromatic chords which function primarily as *embellishing* harmonies through passing or neighboring motion within the phrase. By decorating or elaborating the underlying voice leading, they impart a wider range of tonal colors to diatonic progressions. These chords constitute various types of sonorities—some are augmented triads, some are diminished sevenths, while others are conventional chords, such as the V^7, that have undergone chromatic alteration. In all cases, they are unstable harmonies that perform a secondary embellishing role to more stable chords. Play and examine the passage in Example 32.1: the essential diatonic chords are identified with Roman numerals. The slurs denote the approach to and departure from those chromatic embellishing harmonies, which are indicated with arrows. The chromatic embellishing chord on beat 2 of measure 1 is derived by neighboring motion; the chord on beat 4 of measure 2 is derived by passing motion.

Example 32.1

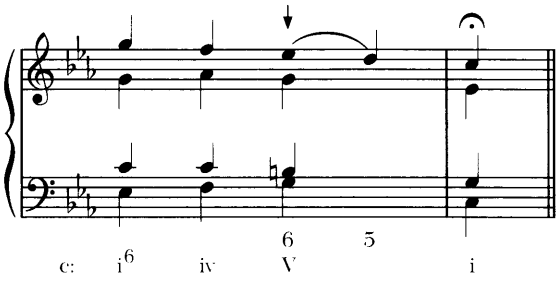


In this chapter we will first demonstrate the various uses of these embellishing harmonies before turning our attention to some altered chords in both modes that defy normal functional categorization.

Augmented Triads as Passing or Neighboring Chords

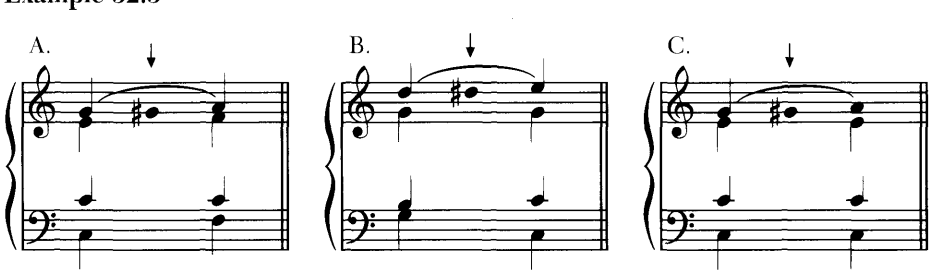
Like the diminished triad, the augmented triad is an ambiguous sonority that cannot be tonicized because it lacks a perfect 5th (consult Chapter 4). Consequently, the augmented triad normally functions as an embellishing or linear chord in harmonic progressions. We have already discussed its use in the minor mode forming a passing 6-5 over V (Example 32.2).

Example 32.2



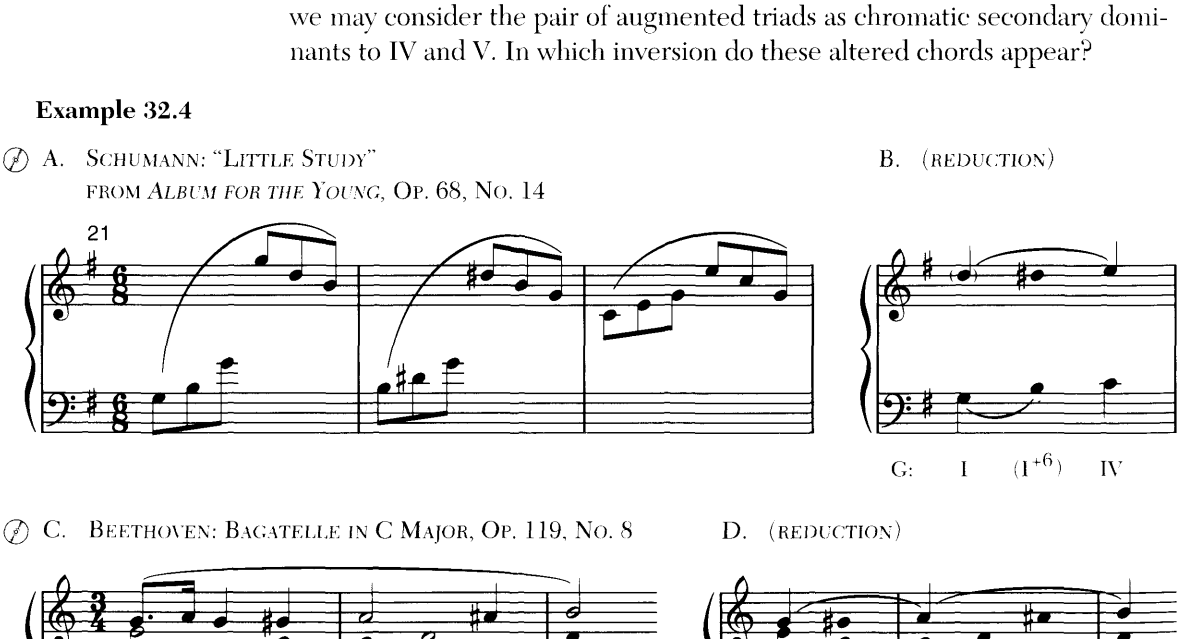
In the major mode, embellishing augmented triads may result from chromatic *passing* motion within the successions I-IV (Example 32.3a) or V-I (Example 32.3b), or from bridging a 5–6 motion over tonic harmony (Example 32.3c). Some theorists prefer to use Roman numerals to denote root-position augmented triads, denoting that last progression as I-I♯5-IV. However, a simple 5-♯5 linear indication written as a figured-bass symbol is sufficient to denote this triad's passing nature.

Example 32.3



When a first-inversion triad contains a raised chordal 5th, we will use the Roman numeral designation I^{+6}; the plus sign denotes the triad type (augmented) and the 6 denotes the inversion. The chord symbol is enclosed in parentheses to show the chord's passing origin; see the Schumann passage of Examples 32.4a and b. In the Beethoven quotation (Examples 32.4c and d), we may consider the pair of augmented triads as chromatic secondary dominants to IV and V. In which inversion do these altered chords appear?

Example 32.4



Augmented triads also result from half-step *neighboring tone* motion in embellishing progressions. Compare the two models in Example 32.5a to

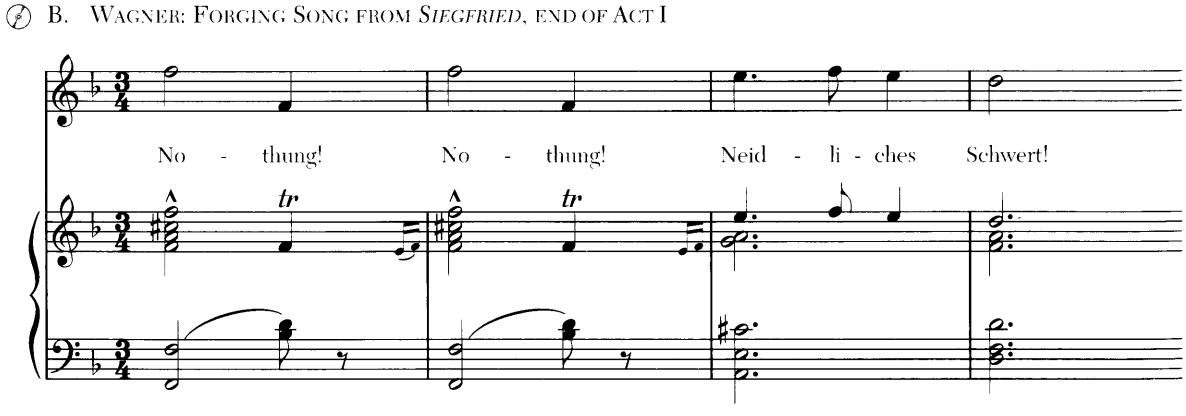
the passage from Wolf's song (Example 32.5b), whose forlorn mood is portrayed to a large extent by the harmonic coloring provided by the augmented triads. Once again we use Roman numeral symbols enclosed in parentheses to denote this neighboring motion.

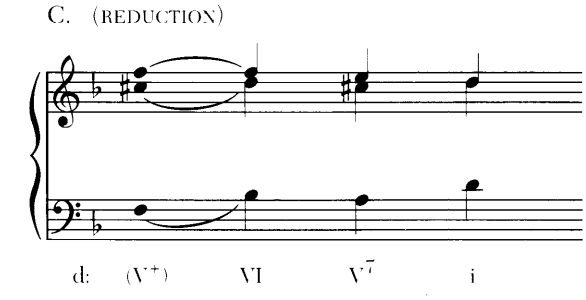
Example 32.5

The unique pungent quality of this triad was exploited as far back as the Late Renaissance, when it was often used to invoke or depict grief, pain, or death. In the elaborated cadence of the Orlando Gibbons madrigal (Example 32.6a), the raised chordal 5th is spelled as a lowered 6th (E♭). Notice the word it underscores in the text. Wagner, on the other hand, associated the augmented triad with energy, fire, or fear in his operatic *Ring* cycle. In Siegfried's forging song (Example 32.6b), the V^{+} resolves deceptively to a VI in D minor; notice the parallel 5ths in its reduction. In his late works, Liszt extended or "composed out" augmented triads in several ways. In his song "Blume und Duft" (1860), for example, the keys or significant harmonies of the various sections form an augmented triad—A♭, a prolongation of an augmented 6th chord in mm. 1–4; C, in the first section, mm. 5–20; E at the end of the second section, mm. 22–27; and A♭ again in the piano coda, mm. 28–31.

Example 32.6

A. ORLANDO GIBBONS: "THE SILVER SWAN"
more,
Fare - well all
14
more, Fare- well all joys, O
joy, O death come close mine eyes
death come close mine eyes

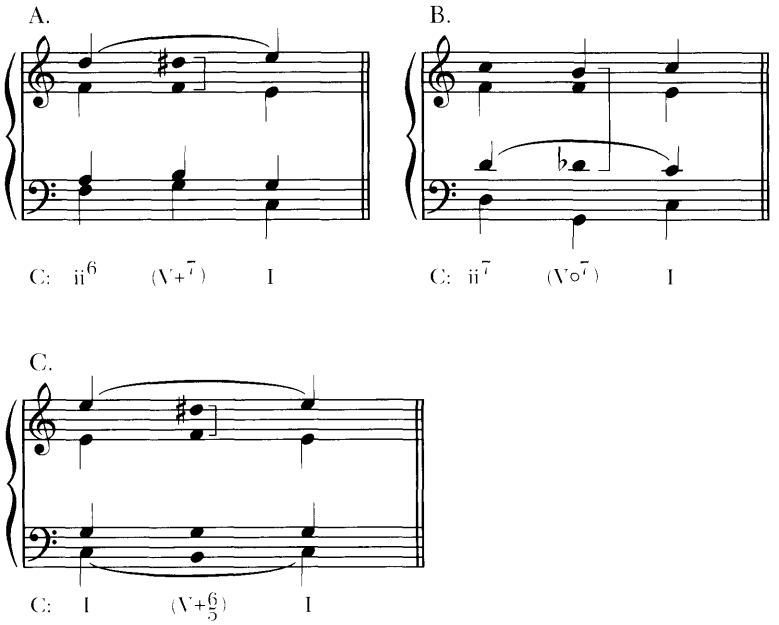

B. WAGNER: FORGING SONG FROM SIEGFRIED, END OF ACT I
No - thung! No - thung! Neid - li - ches Schwert!
tr
tr


C. (REDUCTION)
d: (V+) VI V7 i

ALTERED V7 CHORDS

Another type of embellishing chord results when the chordal 5th of the V7 is chromatically raised or lowered by one half step, as shown in Examples 32.7a and b.

Example 32.7



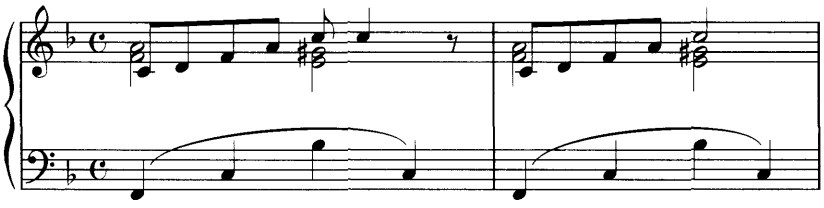
In both cases, the chromatic alteration produces an unstable **altered V7** sonority which contains the interval of an augmented sixth—F up to D♯ in the first model and D♭ up to B in the second. The Roman numeral labeling of altered V7 chords has never been standardized. The method we will use denotes the quality of the chordal 5th by means of the "°" for diminished "+" for augmented, followed by figured-bass symbols that indicate the inversion. Notice that the ° and + symbols are *not* written in superscript, lest we confuse them with the 7 that follows. With the V+7, we resolve the augmented 6th ($\hat{4}$ up to $\sharp\hat{2}$) by moving outward melodically to an octave on the 3rd of the tonic triad. The augmented 6th of the V°7 ($\flat\hat{2}$ up to $\hat{7}$) expands melodically to the tonic octave. In most cases the chromatic note is derived by passing motion, although its first inversion occurs as a neighboring chord in Example 32.7c. Only in rare instances do these chords occur as essential cadential dominants.

The serpentine chromatic motion of these altered dominants made them a favorite harmony in sentimental ballads of the early 1900s, such as the

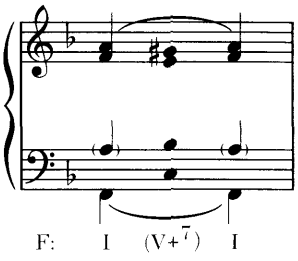
Ethelbert Nevin song in Example 32.8a. In other pieces, they may even function as applied or secondary dominants. In the Strauss excerpt (Example 32.8c), for instance, the V+^{7} functions as an altered V^{7} of IV.

Example 32.8

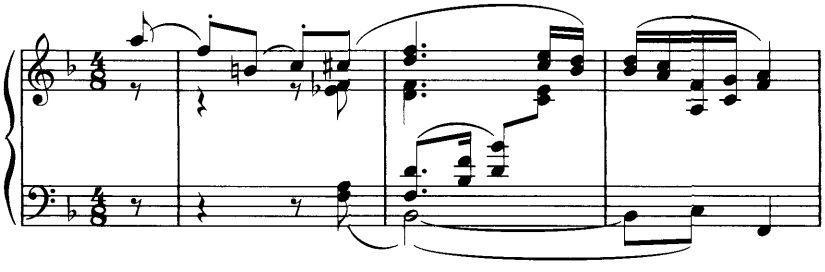
A. ETHELBERT NEVIN: "MIGHTY LAK' A ROSE," BEGINNING OF CHORUS



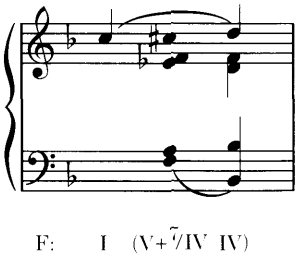
B. (REDUCTION)



C. RICHARD STRAUSS: *TILL EULENSPIEGEL'S MERRY PRANKS*, OP. 28



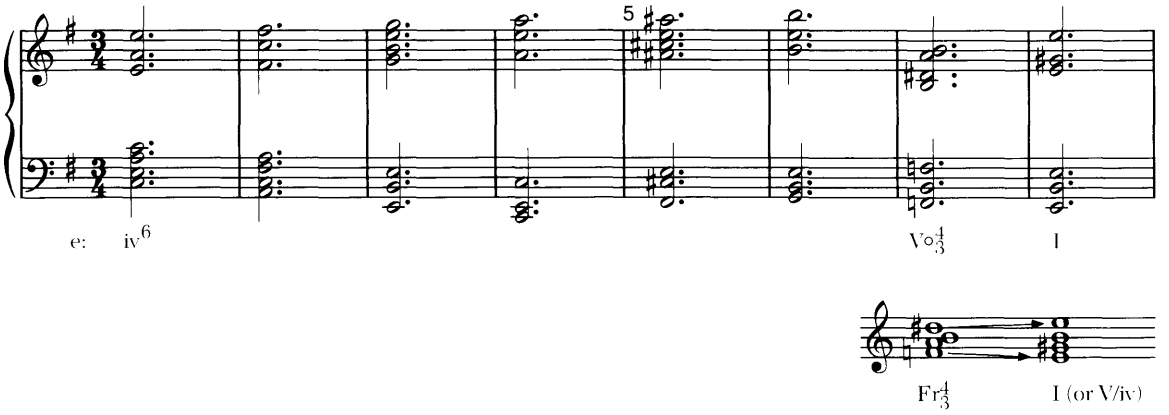
D. (REDUCTION)



Both the V+^{7} and V$^{\circ 7}$ may be considered whole-tone chords, since their constituent notes occur in the whole-tone scale. For instance, in C major all the notes of both the V+^{7} (G B D♯ F) and V$^{\circ 7}$ (G B D♭ F) are in the whole-tone scale F G A B C♯ (D♭) D♯. In fact, the $\frac{4}{3}$ inversion of the V$^{\circ 7}$ is identical to the Fr $\frac{4}{3}$, as shown in the following Brahms passage (Example 32.9) where it resolves directly to the tonic. The recurring theme on which the set of variations in his Finale is based first appears in the soprano, but after four statements, it reverts to its usual position in the bass. Since the progression that underlies this theme opens with an A-minor chord, we might be tempted to consider the final E major triad as V in that key. For the remainder of the movement, however, the theme usually begins and ends in the tonic key of E minor. What is unusual about the V$^{\circ 4}_{3}$ in this passage is that it functions as the cadence chord.

Example 32.9

BRAHMS: SYMPHONY NO. 4, IV

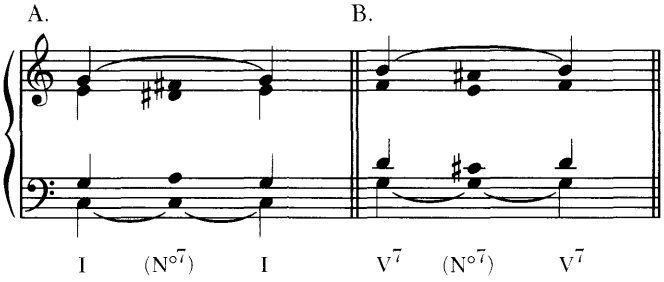


EMBELLISHING OR COMMON-TONE DIMINISHED-SEVENTH CHORDS

We have previously treated the diminished seventh chord as an embellishing dominant (vii^{o7}) that precedes the tonic or some other diatonic triad as a secondary dominant. In such cases, all of its chord members resolve stepwise. We may, however, encounter a diminished seventh chord that contains a common tone with the chord that follows it. We call this family of chromatic chords **common-tone diminished sevenths**. A common-tone diminished seventh may be spelled by taking the chord of resolution and making its root the 7th of the diminished seventh chord. Using I in C major, for instance, the root is C; therefore C becomes the 7th of the diminished chord D♯ F♯ A C.

These **embellishing diminished sevenths** function either as neighboring or passing chords. In the former case, they usually act as neighbor to either I (Example 32.10a) or V7 (Example 32.10b). We denote these diminished seventh chords by labels that stress the function of their linear derivation and resolution. Thus (N^{o7}) is a neighboring diminished seventh chord, not to be confused with the Neapolitan), and (P^{o7}) is a passing diminished seventh chord. In order to keep stepwise motion in all voices, the chordal 5th of the I is usually doubled.

Example 32.10

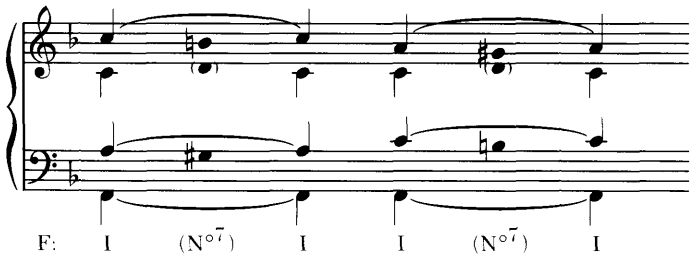


In the three excerpts which follow, the latter two incorporate enharmonic spellings (E♭ for D♯). Richard Rodgers uses a pair of diminished sevenths that neighbor tonic harmony to invoke the swaying palm trees of Polynesia in Example 32.11a. Wagner, on the other hand, employs this chord to embellish his dominant seventh in Example 32.11c; the circled D^5 appogiatura is particularly expressive. The enharmonic E♭ is necessary in the Schubert (Example 32.11c) to maintain a diatonic soprano line—C-D-E♭-G, not C-D-D♯-G.

Example 32.11

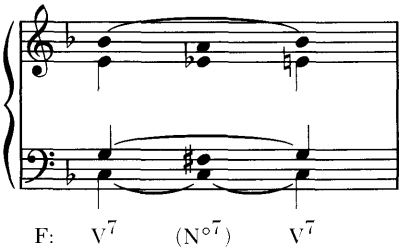
A. RICHARD RODGERS: "BALI HA'I" FROM *SOUTH PACIFIC*

B. (REDUCTION)

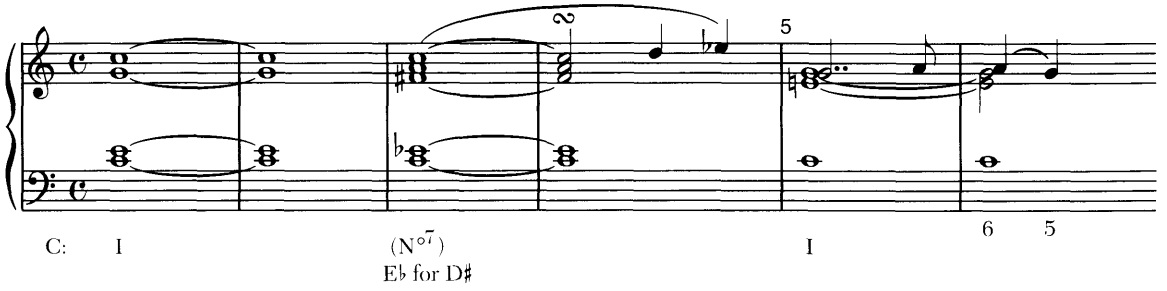


C. WAGNER: HANS SACHS'S MONOLOGUE FROM *DIE MEISTERSINGER*, ACT II

D. (REDUCTION)

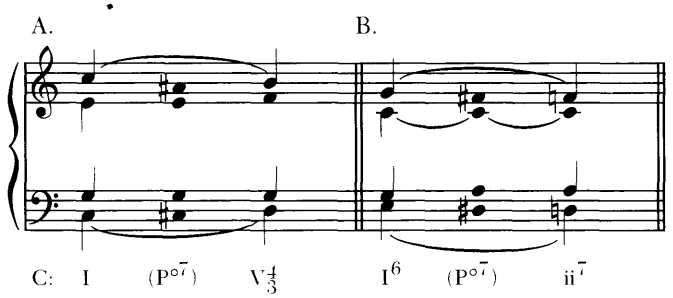


E. SCHUBERT: STRING QUINTET IN C MAJOR, I



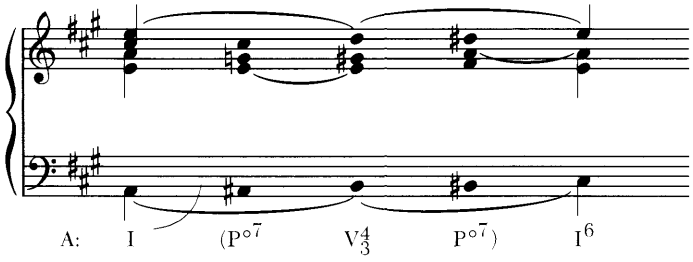
Examples 32.12a and b show the common models for embellishing diminished sevenths that use passing motion. In cases where the passing motion descends, the $P^{\circ 7}$ shares a common tone with the chord that precedes rather than follows it. The Tchaikovsky and Cole Porter passages in Examples 32.12c through f demonstrate the use of these chords in actual music. The Tchaikovsky waltz employs a passing diminished seventh between I and V (Example 32.12c); the Cole Porter tune uses it to bridge the motion between I^6 and $ii^{\circ 7}$ (Example 32.12e).

Example 32.12



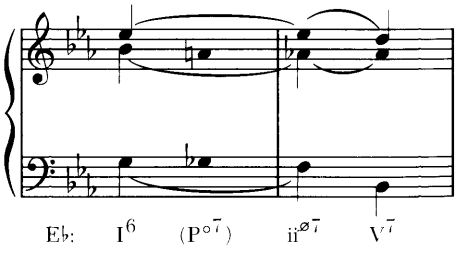
C. TCHAIKOVSKY: SYMPHONY NO. 5, III

D. (REDUCTION)



E. COLE PORTER: "EV'RY TIME WE SAY GOODBYE"

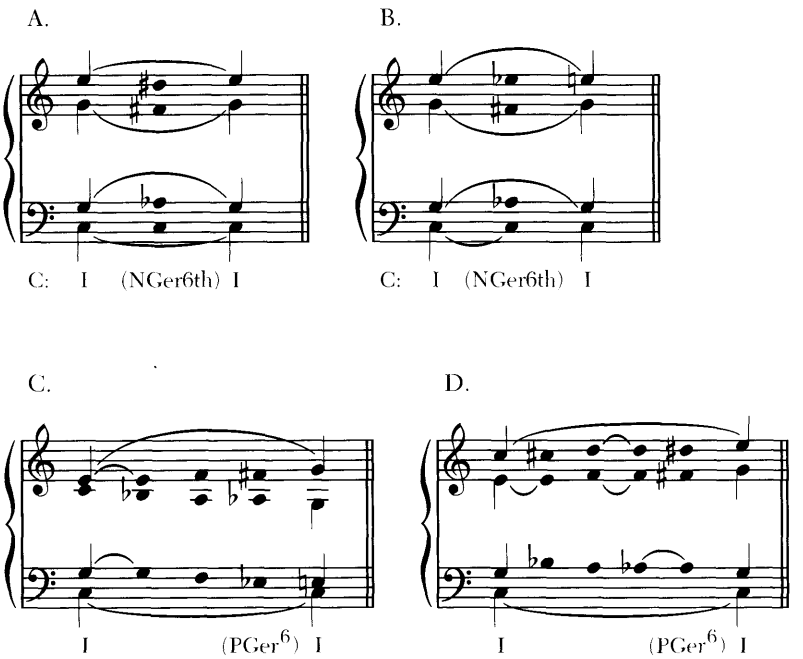
F. (REDUCTION)



COMMON-TONE AUGMENTED SIXTH CHORDS

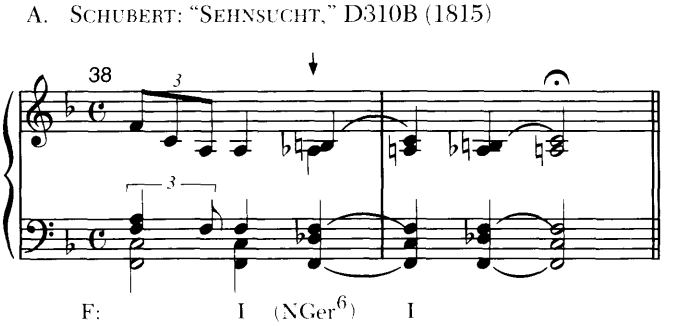
If we substitute a ♭6 for the ♮6 of an embellishing diminished seventh, we create an **embellishing German augmented sixth chord.** As in the case of the neighboring or passing diminished seventh ($N^{\circ 7}$ or $P^{\circ 7}$), this chord may function either as a neighboring (NGer6th) or passing (PGer6th) harmony. In the neighboring version, the partwriting is identical with its diminished seventh counterpart; the chordal 5th of the tonic is doubled (Example 32.13a); the voice leading of its resolution is now completely chromatic. Enharmonic spellings (♭$\hat{3}$ for ♯$\hat{2}$) are frequent (Example 32.13b).

Example 32.13

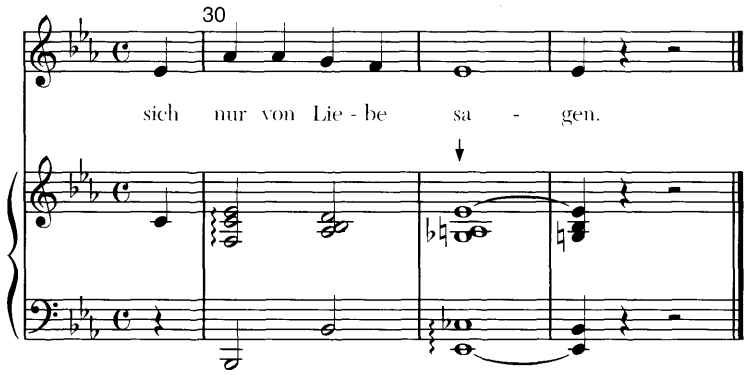


The neighboring German 6th is often found in Romantic literature as an exotic substitute cadential chord, as shown in the final progressions of the two songs in Example 32.14. The neighboring Ger6th that prolongs the final tonic harmony in the Schubert song (Example 32.14a) produces a quasi-plagal effect. Coming out of a cadential V^7, the Ger6th in Liszt's song creates a kind of Romantic retardation that eventually resolves to I (Example 32.14b).

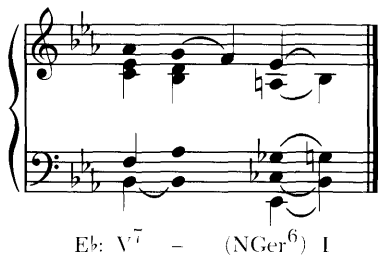
Example 32.14



B. LISZT: "ES MUSS EIN WUNDERBARES SEIN"



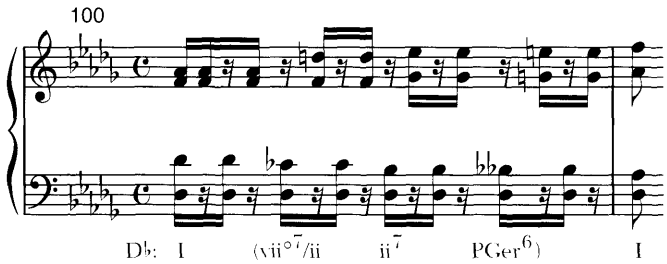
C. (REDUCTION)



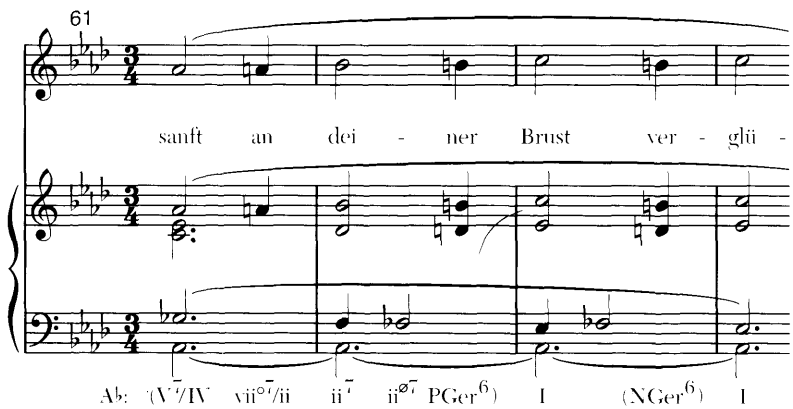
This chord may also appear as a passing linear harmony, usually coming out of a pre-dominant IV or ii$^{\varnothing 6}_{5}$ (Example 32.13c). Example 32.15 shows a similar use by two nineteenth-century opera composers. Notice in both cases that the soprano and tenor voices move by contrary chromatic motion: the passing Ger6th resolves directly to the tonic.

Example 32.15

A. VERDI: QUARTET FROM *RIGOLETTO*, ACT IV



B. WAGNER: "TRÄUME" FROM *WESENDONCK SONGS*

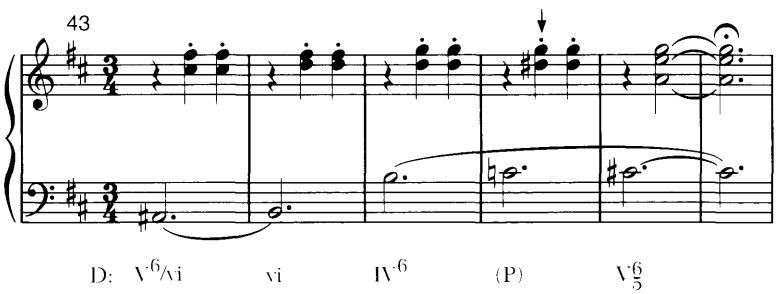


Unusual Linear Chords

We occasionally encounter passages in which the linear movement of the voices produces a chordal sonority that makes little or no analytical sense from either a vertical or a functional standpoint. In such cases you usually find that the particular notation or spelling of such chords is determined by the direction in which the melodic lines are moving and may therefore vary from passage to passage. In the Beethoven excerpt (Example 32.16a), the harmony marked with an arrow is not a misspelled C minor triad but a passing sonority that results from chromatic motion between IV^6 and V^6, as made clear in the reduction (Example 32.16b). The Tchaikovsky waltz (Example 32.16c) involves a chromatic prolongation of the dominant, as shown in the reduction (Example 32.16d). The strangely dissonant harmonies that appear in the Mozart symphony (Example 32.16e) are all chromatic neighbors to the V^7, some of which clash with each other. As you can see from the above illustrations, it is probably best to avoid labeling such voice-leading harmonies with Roman numerals and just indicate their passing or neighboring nature with a (P) or an (N).

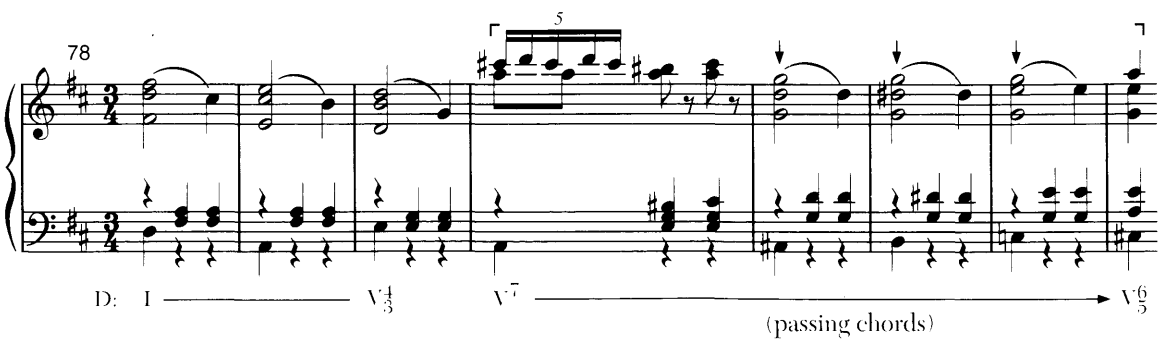
Example 32.16

A. Beethoven: Piano Sonata in D Major, Op. 28, III

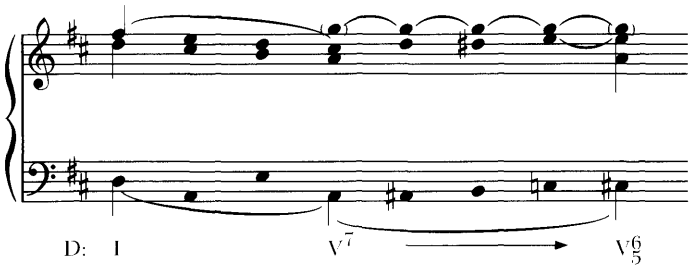


B. (reduction)

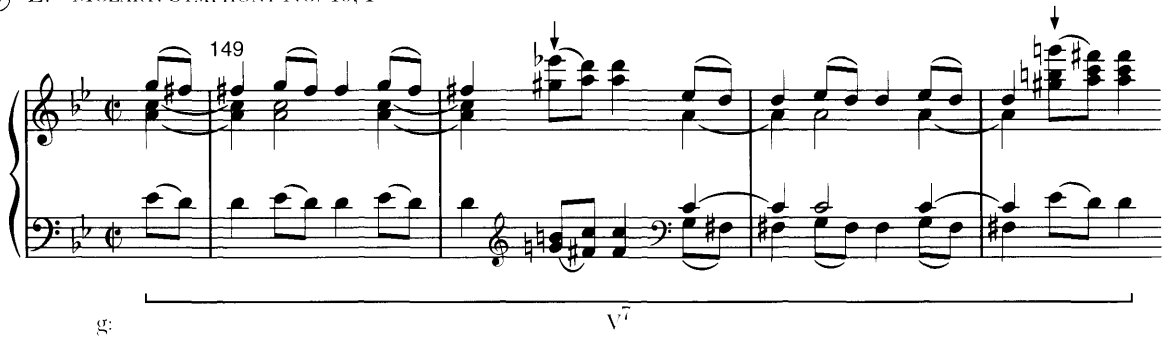
C. Tchaikovsky: "Waltz of the Flowers" from *The Nutcracker*



D. (REDUCTION)



E. MOZART: SYMPHONY NO. 40, I

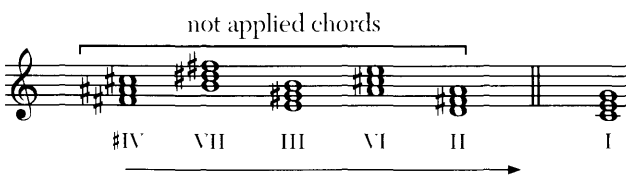


ADDITIONAL CHROMATIC CHORDS IN THE MAJOR AND MINOR MODES

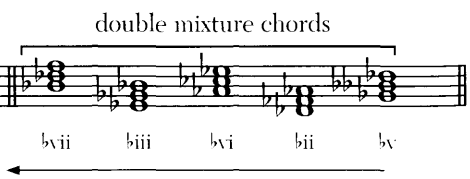
There remain a number of altered major and minor triads that appear to fall outside any clearly defined category of tonal function. These chords are spelled out in Example 32.17 in both C major and C minor. We have arranged the triads in each mode in a descending 5th progression moving toward the tonic, first on the sharp side and then on the flat side, although this grouping has little to do with their actual usage in passages of music.

Example 32.17

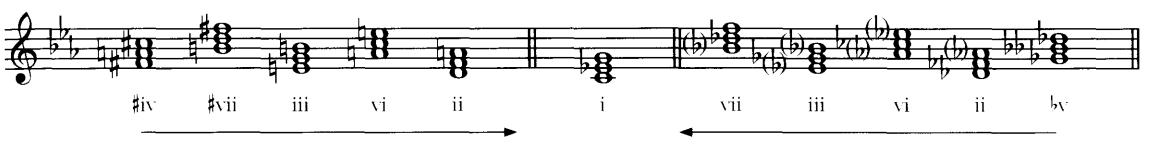
A. MAJOR



B.



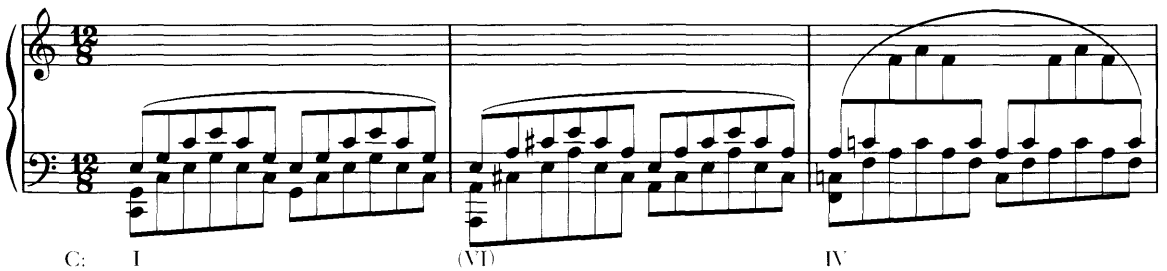
C. MINOR D.



Certain major-mode chords with sharps may resemble secondary dominants (Example 32.17a), but they do not always function that way. For instance, in Schumann's Fantasy (Example 32.18a), the composer interpolates an A major triad between I and IV. This altered chord does not act as a V^{7}/ii but rather stands in a chromatic 3rd relation to the diatonic harmonies on either side.

Example 32.18

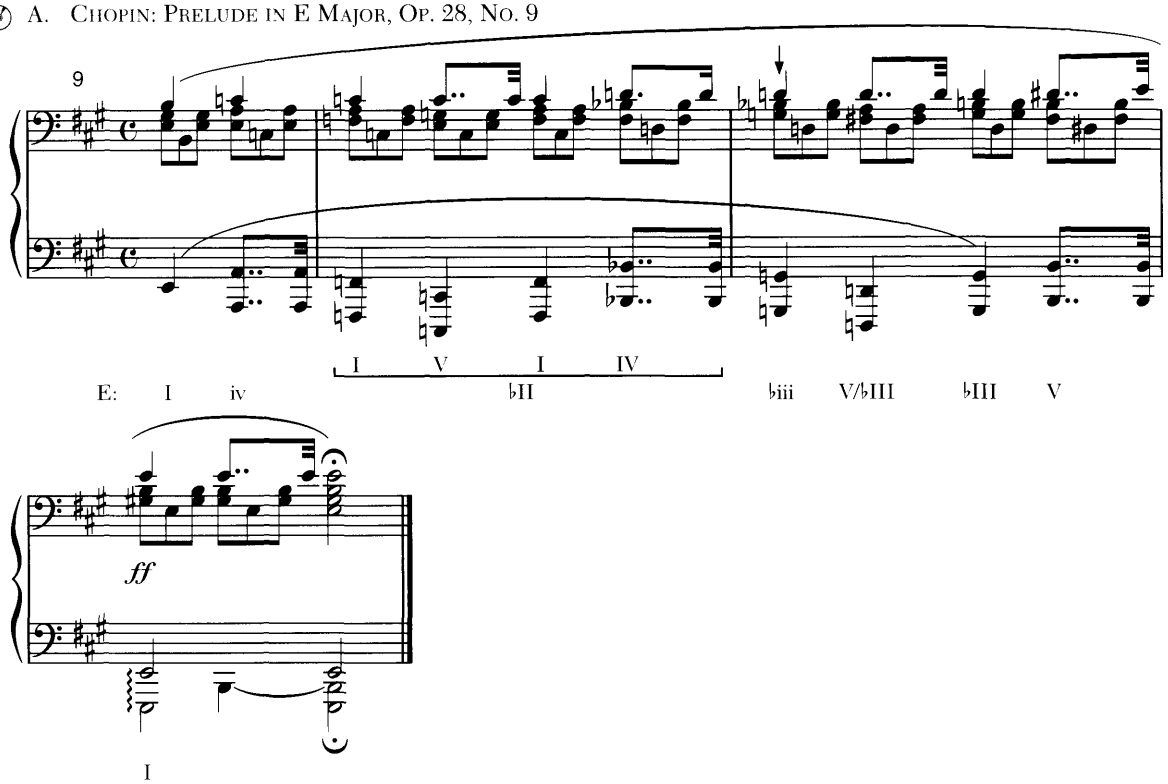
SCHUMANN: PIANO FANTASY IN C MAJOR, OP. 17, III



The chords in Example 32.17b represent mixture harmonies that are mutated into minor triads. These sonorities are sometimes called **double mixture chords**, since they represent a two-stage borrowing from the minor mode; first the chord itself is borrowed and then its minor version, so that ♭III becomes ♭iii, and ♭VI becomes ♭vi. In the Chopin Prelude (Example 32.19a), the tonicization of the Neapolitan (♭II) is followed by a sequential tonicization of ♭iii indicated by the arrow before the final cadence in E major. César Franck seemed especially fond of the ♭vi chord in major (Example 32.19b).

Example 32.19

A. CHOPIN: PRELUDE IN E MAJOR, OP. 28, NO. 9



B. FRANCK: PIANO QUINTET IN F MINOR, I

The two groups of triads in the minor mode of Example 32.17 include some mixture chords borrowed from the major mode (Example 32.17c) and diatonic chords mutated into minor triads (Example 32.17d). The triads listed in Example 32.17 are infrequent and typically occur as **vagrant chords**, a term coined by the twentieth-century composer Arnold Schoen-

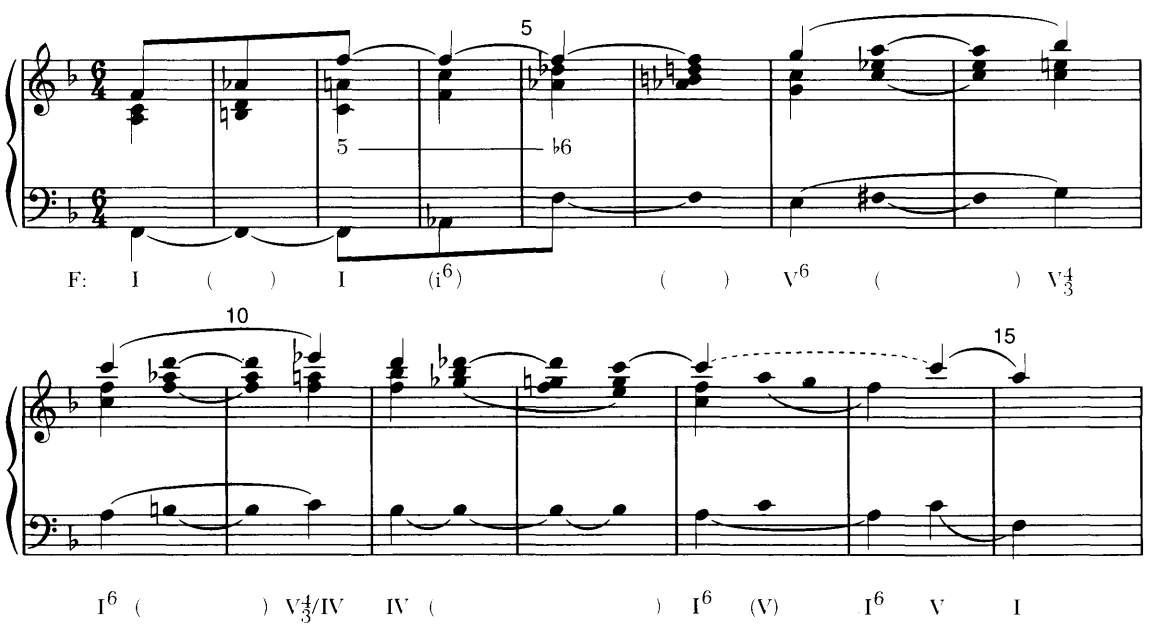
berg, that provide a momentary chromatic coloring to diatonic progressions. In some harmonic sequences they may lack any sense of tonal function and can even contribute to a temporary suspension of key feeling. For a good example of this, refer to Example 26.6.

The Use of Chromaticism to Create Modal Ambiguity

On occasion composers in the late Romantic period infused their major key compositions with so many mixture harmonies that the mode of the piece became uncertain. An excellent example of this procedure may be found in the beginning of Brahms's Symphony No. 3 in F Major. The movement's initial three-note motive contains an ambiguous $\flat\hat{3}$ (F-A♭-F). The opening modal duality is extended by other harmonies containing mixture scale degrees ($\flat\hat{2}$, $\flat\hat{3}$, $\flat\hat{6}$, and $\flat\hat{7}$). This passage provides a good review of the chromatic chords we have discussed thus far in Part III. In the voice-leading reduction (Example 32.20), the essential diatonic harmonies have been provided with Roman numerals. Supply an analysis of the remaining chords in the parentheses.

Example 32.20

Brahms: Symphony No. 3, I (reduction of mm. 1–15)



The rest of this movement continues to exploit large-scale tonicizations of mixture chords: (III in the exposition and ♭VI in the development). Parallel modes appear in the symphony's other movements as well. For instance, a change of mode, F major to F minor, occurs between the first and fourth movements, and another, C major to C minor, between the second and third movements. The symphony ends with a parting cyclical reference to its original opening motive, now safely in the tonic major.

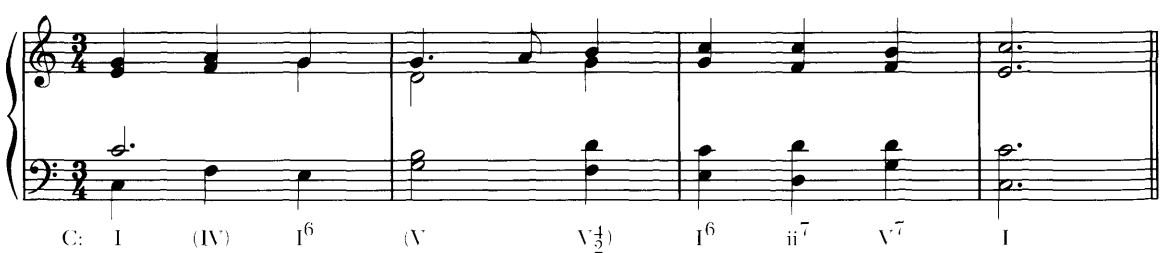
Melody Harmonization

When harmonizing a melody, look for places where embellishing chromatic chords might be effectively used. Half-step motion in the melody, such as $\hat{2}$-$\sharp\hat{2}$-$\hat{3}$ or $\hat{5}$-$\sharp\hat{4}$-$\hat{5}$, can usually be harmonized with a passing or neighboring altered chord. However, resist the temptation to indulge in excessive chromaticism.

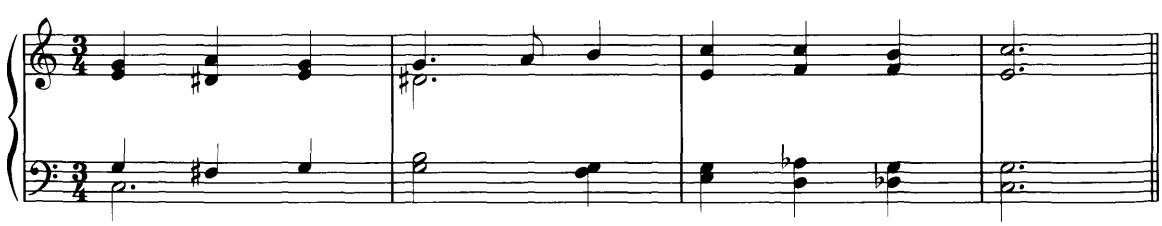
A diatonic melodic phrase and its setting are given in Example 32.21a. In the following harmonization (Example 32.21b), the tune is underlaid with an assortment of embellishing chromatic chords. Make a Roman numeral analysis of this passage and indicate each altered harmony.

Example 32.21

A.



B.



Summary of Chromatic Embellishing Chords

1. Chromatic embellishing chords normally occur as passing or neighboring motion between the same or two different harmonies. They usually involve more unstable or exotic types of vertical sonorities.
2. Typical examples include augmented triads (I^+ or V^+), altered dominant sevenths which contain augmented 6ths or diminished 3rds ($V°^7$ or $V+^7$), and common-tone diminished sevenths and/or German sixths, which function as passing or neighboring chords (such as a $P^{°7}$ or NGer6).
3. Unusual spelling of major or minor triads may also indicate the possibility of a passing or neighboring chromatic embellishment.
4. Some vagrant chords do not seem to fall into any neat categories of tonal function. They may include double mixture harmonies, which are two-stage, borrowing from the minor into the major mode (such as ♭vi).
5. These embellishing chords are difficult to work into melody harmonizations unless the tune itself already contains chromatic inflections.

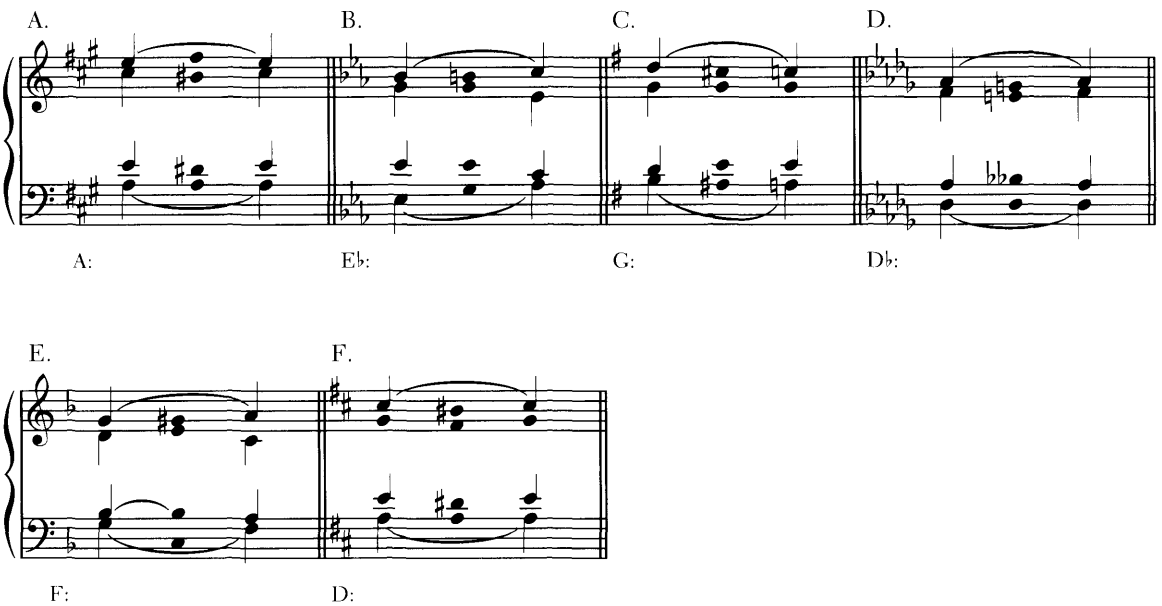
Terms and Concepts for Review

passing or neighboring embellishing chromatic chords
embellishing augmented triads
altered V^7 chords
embellishing diminished 7ths
common-tone diminished 7ths
embellishing Aug6ths
common-tone Aug6ths
linear chromatic chords
double mixture chords
vagrant harmonies
modal ambiguity

A BRIEF REVIEW SELF-QUIZ

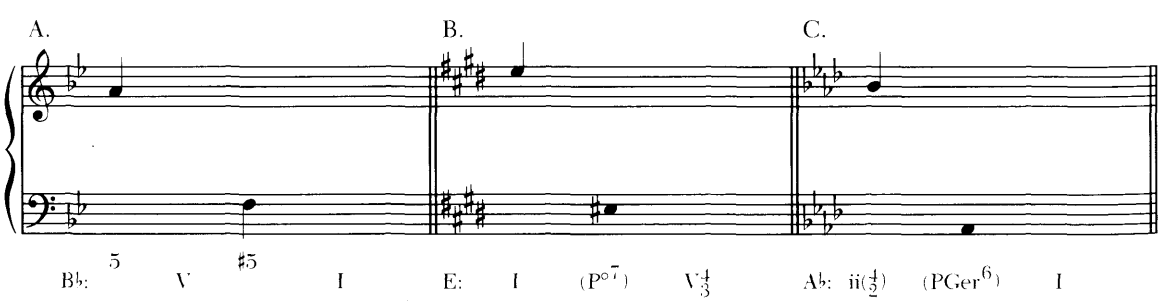
1. Analyze the short progressions in Example 32.22. Provide the proper Roman numerals or symbols for the chromatic embellishing chords.

Example 32.22



2. The Roman numerals for several short progressions are provided in Example 32.23. Write the chromatic embellishing chords, preceding and resolving them with the specified harmonies. Be sure to use the correct doubling and denote whether each chord is derived by neighboring or passing motion.

Example 32.23



D. E:

G: ii (V$_{o}^{7}$) I G♭: I (N$^{\circ 7}$) I

CHAPTER 33

Dominant Prolongation

WE ARE ALREADY FAMILIAR with various ways of prolonging tonic harmony through the use of arpeggiated tonic triads or embellishing passing and neighboring chords. We have also seen how these same techniques may be used to extend dominant or pre-dominant harmonies. Examples of short-term **dominant prolongation** using embellishing chords appear in Example 16.9 and Example 21.1 (mm. 9–12). In this chapter we will examine some examples of extended dominant prolongations, some of which play an important structural role in compositions.

The psychological effect of a protracted dominant is quite different from that of an extended tonic. Whereas the prolongation of I results in a sense of tonal stability, the prolongation of V creates a sense of tonal suspense, heightening our expectation of the eventual resolution to the tonic. These dominant prolongations, which may employ various chromatic harmonies, are usually featured in predictable parts of a composition, such as introductory passages, retransitions, extensions of $\frac{6}{4}$ cadences, and passages preceding musical climaxes.

After first examining two short passages that employ chromatic embellishment in prolonging the dominant, we will focus on the various musical situations in which dominant prolongations are typically used.

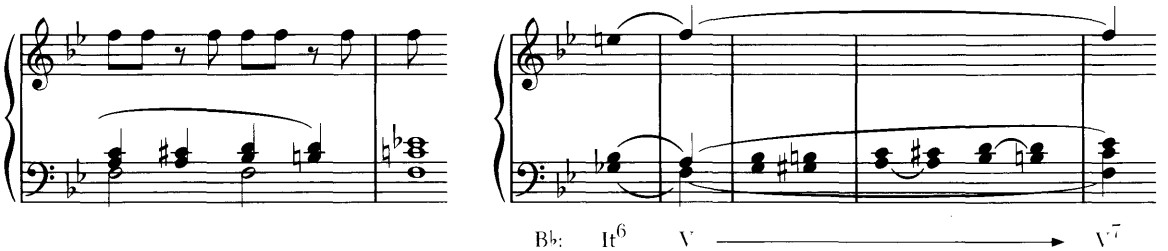
SHORT-TERM CHROMATIC PROLONGATIONS OF V(7)

The two excerpts of Example 33.1 illustrate how dominant harmony may be momentarily prolonged by chromatic passing motion. In the Mozart passage (Example 33.1a) the root of the V^7 is retained in the bass and soprano while the inner voices ascend chromatically. The Brahms excerpt (Example 33.1c) rhythmically staggers the chromatic motion between the bass and an upper part while the root and 7th of the V^7 are sustained in the two highest voices.

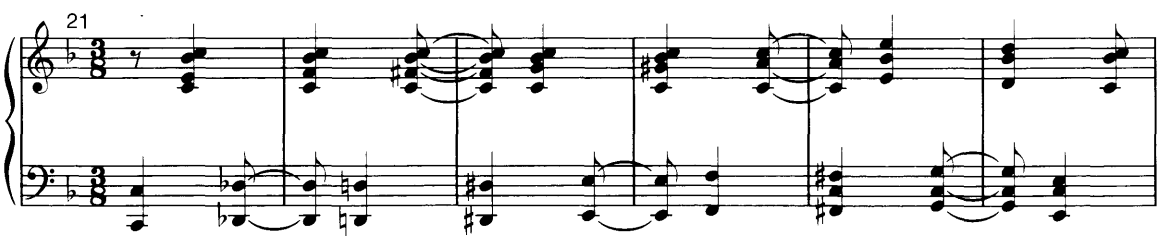
Example 33.1

A. MOZART: PIANO SONATA IN B-FLAT MAJOR, K.333, III

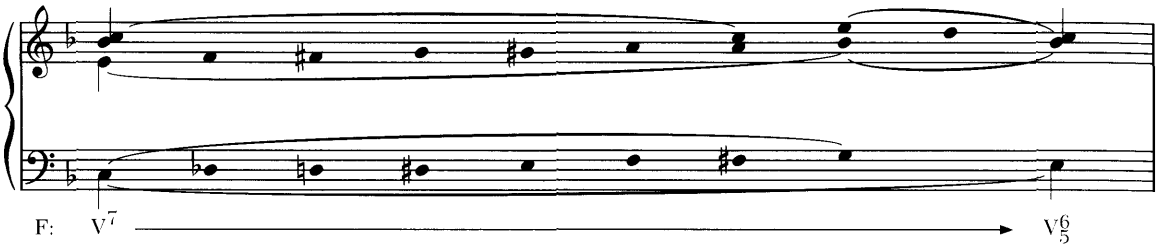
B. (REDUCTION)



C. BRAHMS: CAPRICCIO IN D MINOR, OP. 116, NO. 1



D. (REDUCTION)



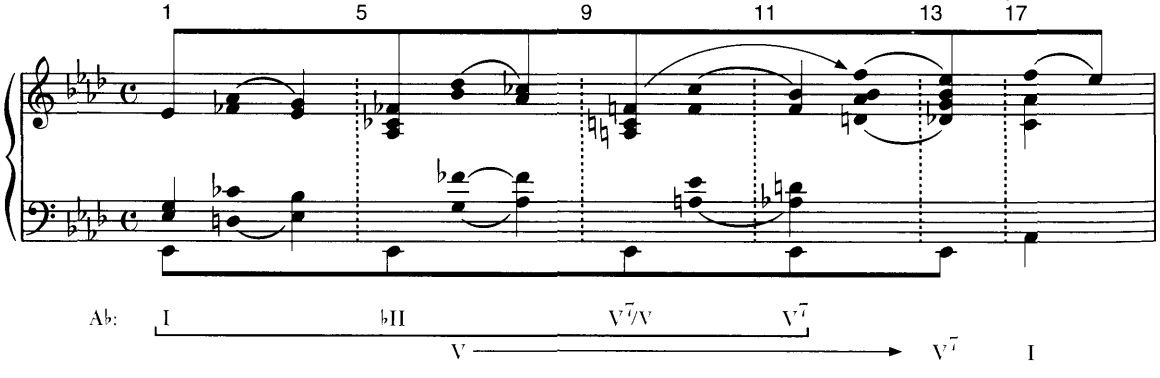
PROLONGATION OF THE DOMINANT IN INTRODUCTIONS

Some compositions open with an introductory passage based on an extended dominant harmony that acts as a preparation for the initial tonic theme. Sectionalized pieces, such as marches, rags, or polkas, frequently display an elaboration of dominant harmony in their brief introductions (see Example 13.16). The concert waltzes of Johann Strauss provide extended examples of this same technique.

An interesting example of dominant prolongation occurs in the introduction to Chopin's Polonaise in A-flat Major. Since this section is rather lengthy, Example 33.2 provides a voice-leading reduction of its first seventeen measures; listen to the passage on the CD–ROM while following this reduction.

Example 33.2

CHOPIN: POLONAISE IN A-FLAT MAJOR, OP. 53



The initial dominant triad is tonicized and prolonged through a rising chromatic progression over a $\hat{5}$ pedal—through ♭II and V7/V, each of which employs an embellishing harmony (Ger^{o3} and vii^{o7}). Once the domi-

nant harmony is finally established by its own secondary dominant seventh, it resolves to the tonic in measure 17. Observe that the soprano ascends chromatically E♭⁴-F♭-F♮. The last F (in m. 12) then acts as an upper neighbor that anticipates the $\hat{6}$-$\hat{5}$ (F-E♭) motive of the first A♭ major theme in measure 17.

Prolongation of the Dominant in Retransitions

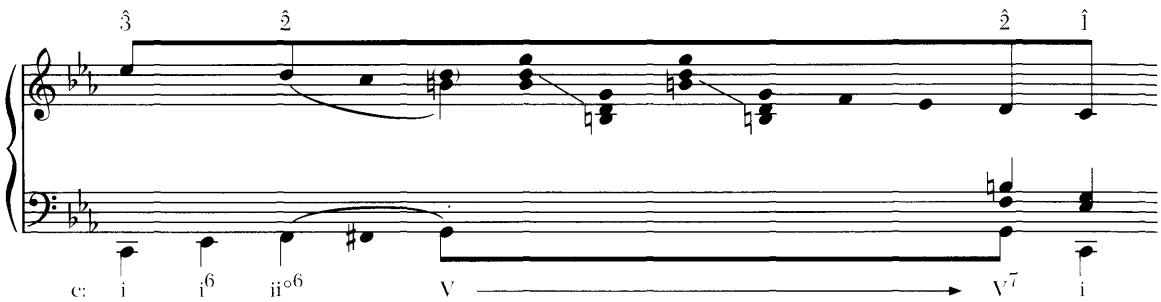
In those formal designs in which the original theme returns in the tonic key (such as two-reprise, ternary, rondo, or sonata form), the retransition leading to this return frequently includes a prolongation of dominant harmony, often supported by a pedal on $\hat{5}$. The resulting sense of anticipation psychologically prepares us for the return of the tonic and the original theme. An instance may be found in Example 31.1, where the extended V^7 in mm. 43–47 immediately precedes the return of the initial tonic theme in m. 48. Methods used to prolong retransitional dominants are quite varied and limited only by the imagination of the composer. For instance, in Example 25.3, the dominant prolongation occupies most of the initial section of the second reprise (mm. 51–64).

A typical case of dominant prolongation in sonata form may be found in the retransition of the Beethoven sonata movement in Example 33.3.

Example 33.3

A. Beethoven: Piano Sonata in C Minor, Op. 10, No. 1, I

B. (REDUCTION)



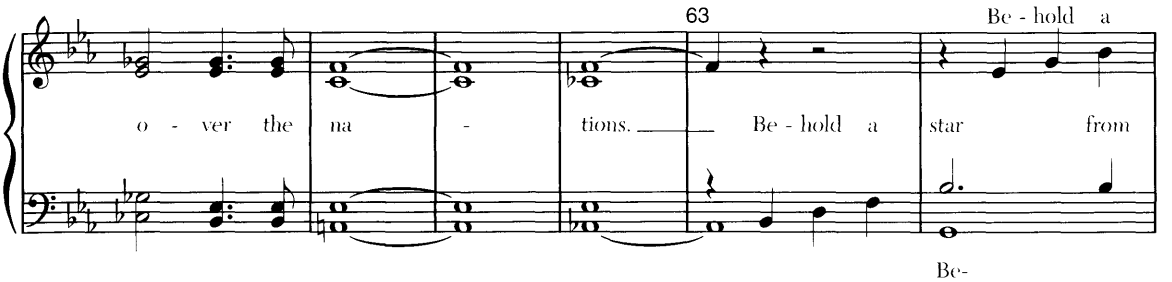
The harmonic motion into the retransition is prepared by the chromatic ascent $\hat{3}$-$\hat{4}$-$\sharp\hat{4}$-$\hat{5}$ in the bass (mm. 136–38). Once the V is established in measure 138, a series of $^6_3$ triads descends stepwise over the dominant pedal. After regaining the upper octave, a second sequence of triads descends to $\hat{2}$, which signals the final resolution to the tonic $\hat{1}$. The entire passage represents a prolongation of scale degree $\hat{2}$ over V, as the voice-leading reduction illustrates.

PROLONGATION OF THE CADENTIAL $^6_4$ FORMULA

We noted earlier in discussing Example 16.12 that the improvised cadenza of a Classical solo concerto consists of the "composing out" of a cadential $^6_4$. Similar extensions of $^6_4$ cadence formulas are often exploited by composers in written-out form. In the retransition from Mendelssohn's cantata (Example 33.4), the $^6_4$ in the parallel minor (m. 53) is prolonged by a series of mixture and applied harmonies.

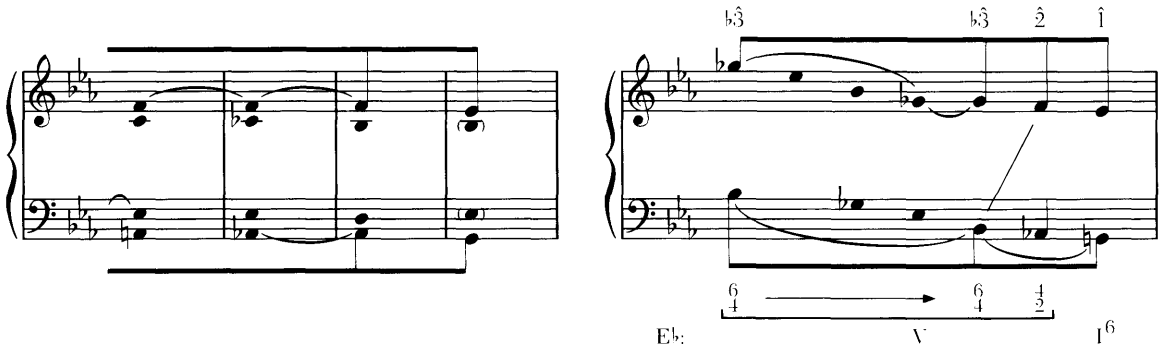
Example 33.4

A. MENDELSSOHN: "BEHOLD A STAR FROM JACOB SHINING" FROM *CHRISTUS* (ENGLISH TRANSLATION)



B. (REDUCTION 1)

C. (REDUCTION 2)



Although there are several transient resolutions to i^6 and i (see mm. 56 and 58), the consistent texture and the repeated text of this excerpt indicate a long-range arpeggiation of the $\frac{6}{4}$, spanning the octave $E\flat^5$ to $E\flat^4$ in the soprano. The dominant eventually resolves via $\hat{2}$ over a V^4_2 to the I^6 (mm. 63–64), which marks the return of the original theme in E♭ major; consult the two reductions. The harmonies that Mendelssohn uses with this change of mode provide an excellent review of the chromatic chords we have already discussed. Make a Roman numeral analysis of this passage, remembering that the tonic key is E♭ major.

A more radical handling of this procedure may be found in the first movement of Gustav Mahler's *Das Lied von der Erde* (Example 33.5). The underlying $\frac{6}{4}$ cadence that begins in measure 25 is overlaid with exotic sonorities resulting from chromatic linear motion. Note the brief chromatic

voice exchange between the vocal part and the upper orchestral voice in the approach to the final resolution, which itself is temporarily diverted by an embellishing $\frac{6}{4}$ over I.

Example 33.5

DOMINANT PROLONGATION AS PREPARATION FOR A CLIMAX

Composers in the Romantic period were fond of utilizing a lengthy dominant prolongation to build toward a musical climax. Beethoven had already realized the potential of this device; for example, see mm. 99–109 in the first movement of his Third Symphony, the "Eroica." After the first presentation of Romeo's theme in his orchestral fantasy *Romeo and Juliet*, Tchaikovsky could not resist employing an extended dominant preparation leading to the impassioned repetition of the theme (Example 33.6a). Observe the rising series of transient tonicizations over the dominant pedal, which is highlighted in the reduction (Example 33.6b).

Example 33.6

Extended dominant prolongations remained common in late Romantic music. In the mature music dramas of Richard Wagner, the role of the tonic chord diminishes to the point that any sense of a key must be inferred from its dominant seventh. As we shall see in Chapter 38, the Prelude to Act I of *Tristan und Isolde* contains a prolongation of V^7 that spans the opening sixteen measures; the first true tonic triad does not appear until measure 24.

Although the tonic and dominant are the most commonly prolonged harmonies, other chords may undergo similar treatment as well.

Terms and Concepts for Review

dominant prolongations:
- by chromatic embellishment
- in introductions
- in retransitions
- as an extension of the cadential $\frac{6}{4}$
- as preparation for a climax

A BRIEF REVIEW SELF-QUIZ

1. The Mozart passage below features a dominant prolongation. Analyze the passage for chordal function and indicate which types of dominant prolongation are employed.

Example 33.7

MOZART: ALLEGRO AND ANDANTE IN F MAJOR, K.533

f
p
f
f
tr

CHAPTER 34

Modulation to Foreign Keys I

OUR DISCUSSION OF MODULATION in the preceding chapters has focused on tonal schemes employing closely related keys—that is, keys that have signatures with only one accidental more or less than the original tonic. Baroque composers, such as Bach and Handel, were usually content to work within this limited range of keys, although fantasias, toccatas, and recitatives of the period occasionally ventured into more distant realms. By the Classical era, composers were exploring remote tonal regions as goals within the modulatory development sections of sonata-form movements and other large-scale pieces.

Play Example 34.1; this passage begins in C major (no sharps and flats) but ends in the key of A major (three sharps). Such tonal shifts are called **foreign modulations,** which move to **non-diatonic keys** whose signatures differ from the original tonic key by more than one accidental. The substitution of foreign keys for more traditional, conservative, closely related keys led the music of the Classical and Romantic periods into more diverse and complex tonal schemes.

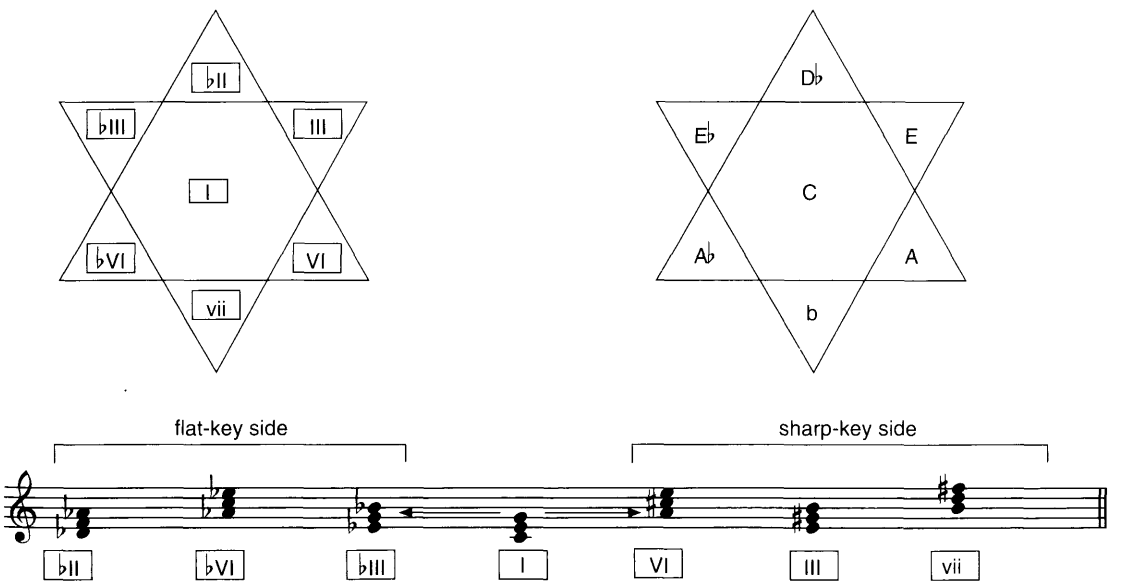
Example 34.1

In this chapter we will begin by categorizing the foreign key relationships found most frequently in the common-practice period. We will then discuss three basic procedures for effecting these modulations—(1) by change of mode, (2) by common tone, and (3) by pivot chord. Some additional ways of modulating to foreign keys will be examined in Chapter 40 of Part IV.

Modulations to Foreign Keys in the Major Mode

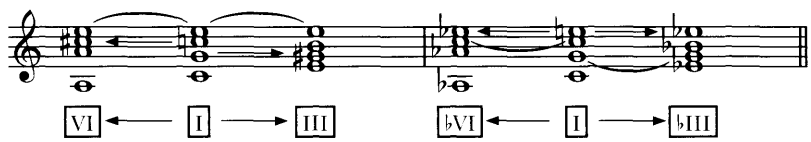
Since modulations to foreign keys tend to occur more frequently in major keys, we will focus on the more common foreign key relationships in that mode. These relationships may be divided into two groups and charted on a six-pointed star (Figure 34.1).

Figure 34.1



The first group consists of **chromatically 3rd-related keys**, which in Figure 34.1 form the sides flanking the original tonic, denoted by I (C major). The two sharp-key areas of III and VI are to the right, while the two flat-key areas of ♭III and ♭VI are to the left. Both a chromatic and a common-tone relationship connect the chord members of a 3rd-related triad and the original tonic triad, as shown in Example 34.2.

Example 34.2



The second group of foreign keys, positioned directly above and below the tonic in Figure 34.1 are related to I by half step, either ♭II or vii. Since modulations to the major supertonic (II) or subtonic keys (♭VII) are comparatively rare except in harmonic sequences, they have been omitted from the chart. We will now concentrate on how we modulate to these foreign keys.

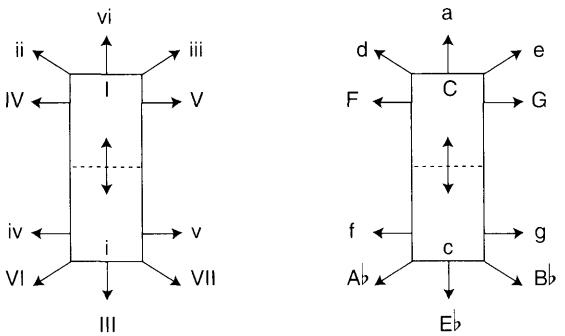
Change-of-Mode Modulation

Modal exchange, discussed previously in Chapter 28, provides an efficient means of modulating to certain foreign keys. These **change-of-mode modulations** involve changing the original key from major to minor, or vice versa. By substituting C minor for C major, for instance, we can move to any key that is closely related to the parallel mode (C minor) but foreign to the original tonic (C major). Change-of-mode modulations are especially common in the Classical period; indeed, a modal change is usually a signal that a foreign modulation is in the offing.

The possible tonal connections arising from a change-of-mode modulation are summarized in Figure 34.2. The left-hand diagram uses Roman numeral designations; the right-hand diagram shows C as a theoretical tonic. The ↕ sign denotes the original mutation between major and minor.

Change-of-mode modulations tend to occur either in a developmental section that explores a variety of different keys, or in a contrasting middle

Figure 34.2

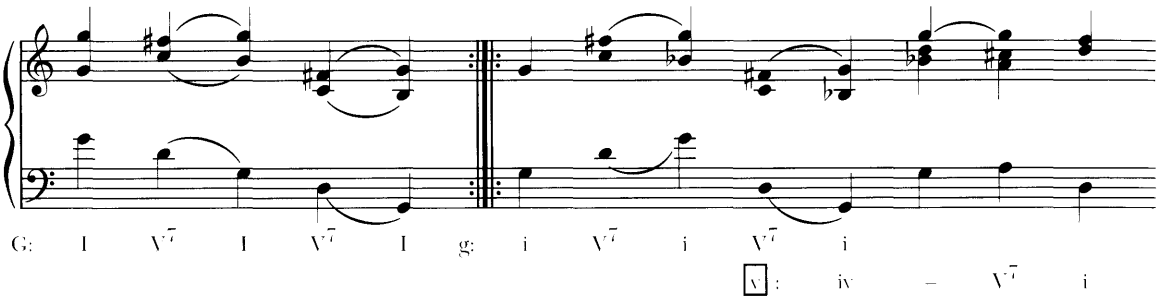


part of a sectional work, such as a ternary or rondo form. In Example 34.3, the exposition section in the first movement of Mozart's familiar sonata closes with an arpeggiated flourish in the dominant area. At the beginning of the development section denoted by the repeat sign, G major suddenly changes to G minor. A pivot chord (i-iv) then leads into D minor or v, a key area foreign to the original G major.

Example 34.3

A. MOZART: PIANO SONATA IN C MAJOR, K.545, I

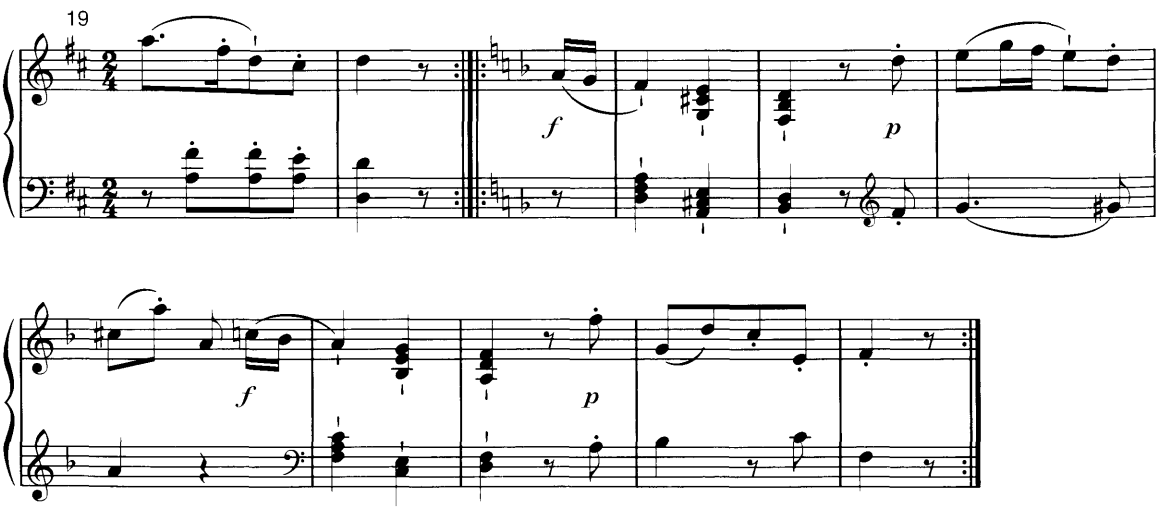
B. (REDUCTION)



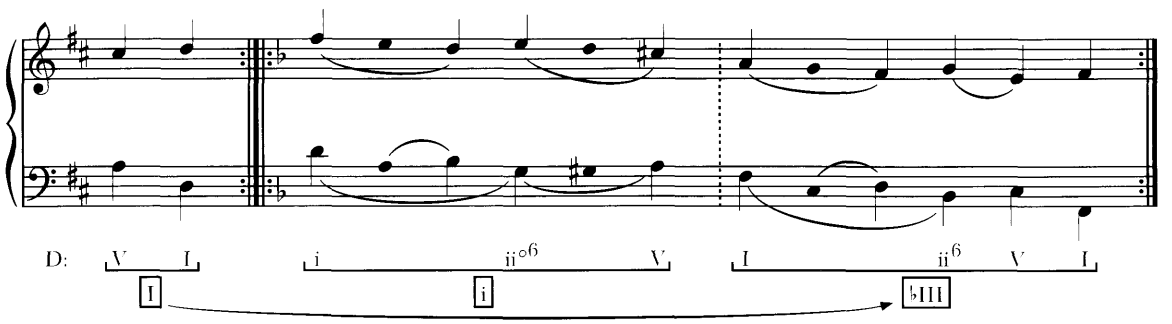
In Haydn's D major rondo (Example 34.4), the shift to the parallel minor coincides with the opening of the first episode or contrasting section. D minor then moves to its relative key of F major, resulting in a ♭III relationship with the original tonic. The music later retraces its path back to D minor, after which the opening refrain theme of the movement reappears in the original tonic of D major.

Example 34.4

A. HAYDN: PIANO SONATA IN D MAJOR, HOB. XVI:37, III



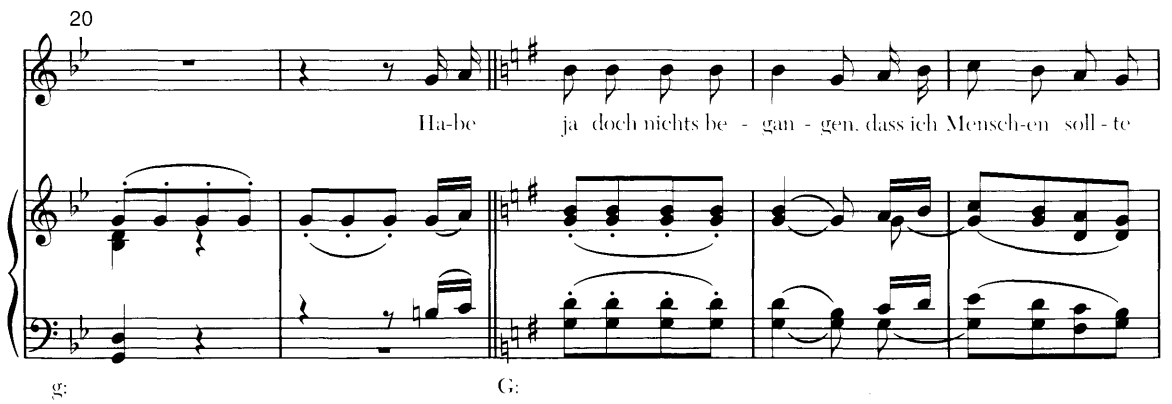
B. (REDUCTION)



In change-of-mode modulations from major to minor, the foreign goal is often ♭III of the original key, as was the case in the Haydn above. However, when the mode shifts from *minor to major*, a procedure more typical of the Romantic period, a common tonal goal is vi of the original key. In the second strophe of Schubert's "Der Wegweiser," for instance, after G major replaces the tonic G minor, the music moves to an implied vi, E minor, the relative minor of the new key, through two deceptive cadences and a half close, marked by brackets in the score of Example 34.5. Observe the remarkable and unexpected return of the original key, marked with an arrow, near the end of the excerpt. The translation of the German text reveals the close correlation between text and music.

Example 34.5

SCHUBERT: "DER WEGWEISER" FROM *WINTERREISE*



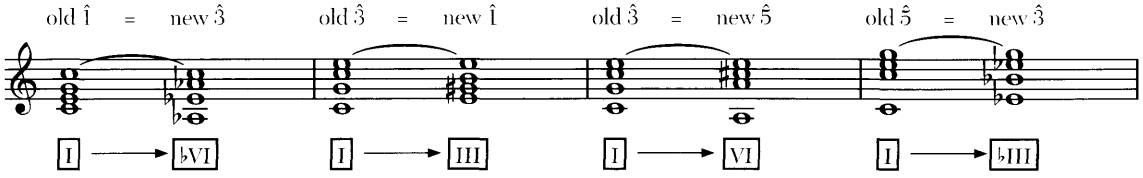
Habe ja doch nichts begangen
dass ich Menschen sollte scheun,
welch ein thörichtes Verlangen
treibt mich in die Wüsteneien?

I have yet done nothing
that I should shun men.
What foolish desire
drives me into the desert?

Third-Related Modulations by Common Tone

The one common tone between chromatically 3rd-related chords (for instance, C in C-E-G and A♭-C-E♭) may serve as a modulatory link between two foreign keys such as I and ♭VI, giving rise to what we call a **chromatic common-tone modulation**. Four such modulations are possible, depending on which scale degree serves as the link (Example 34.6).

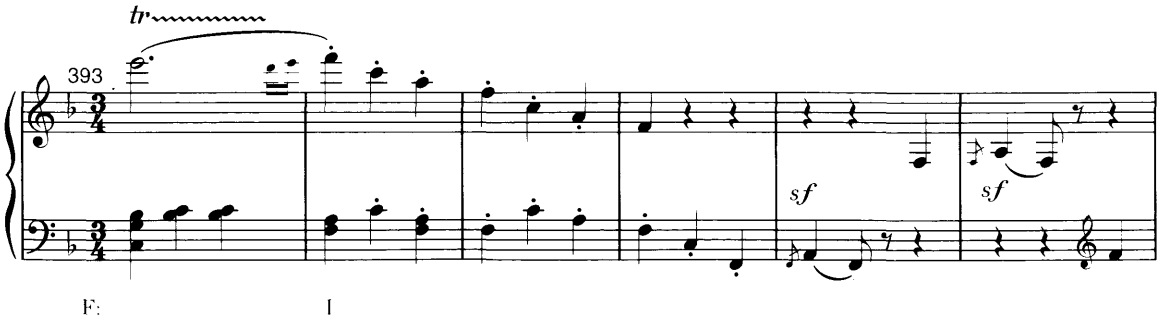
Example 34.6

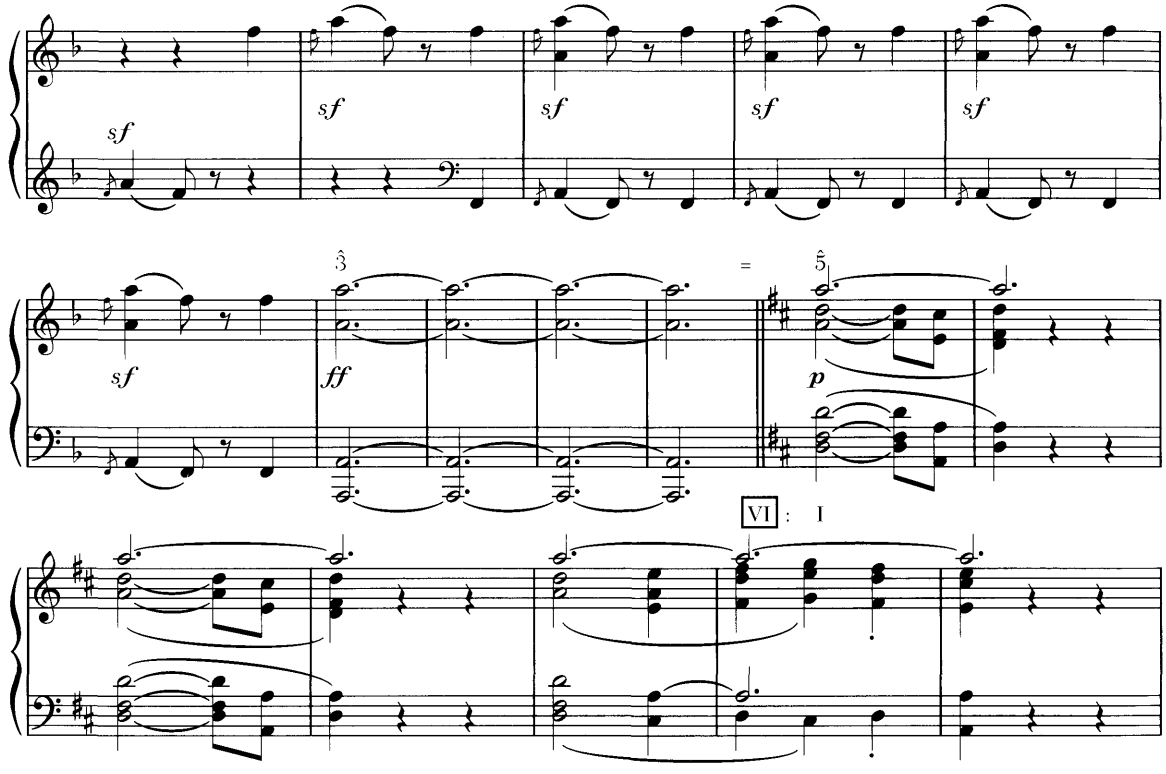


The three excerpts that follow illustrate this modulatory technique. In the Beethoven scherzo (Example 34.7a), a sustained A in the violins, held over from the previous F major section, ushers in the D major Trio, in which the old 3̂ becomes the new 5̂. This common tone then proceeds to function as an inverted dominant pedal throughout the entire new section. Something similar occurs in the Brahms scherzo (Example 34.7b). Here a tonicized dominant 5̂, E♭ in the original key of A♭ major, becomes 3̂ in the enharmonic ♭III key area of B, or C♭ major. Vincent Youmans's perennial "Tea for Two" (Example 34.7c) shifts to III by repeating the opening phrase a major 3rd higher; the common tone is 3̂, C in A♭ major, now 1̂, C in C major. Earlier we encountered an example of this type of modulation in Example 26.14, where the sudden lurch into the ♭VI pentatonic section of Chopin's B♭ major Prelude made use of a common B♭, 1̂ in the original key and 3̂ in the new key. As the excerpts illustrate, this abrupt manner of changing keys usually occurs at formal or cadential junctures in the music, such as the beginning or end of a section or phrase.

Example 34.7

A. Beethoven: Symphony No. 7, III





B. BRAHMS: SYMPHONY NO. 1, III

C. VINCENT YOUMANS: "TEA FOR TWO"

MODULATIONS TO FOREIGN KEYS BY PIVOT CHORD

We have seen that in common-chord modulations to closely related keys, the chord used as the pivot chord usually functions as a diatonic harmony in both keys; for instance, vi in [I] = ii in [V]. This same method is frequently used to modulate to a foreign key, but in such cases an altered harmony normally serves as the pivot chord in one or both keys. Some possibilities are shown in Figure 34.3, which illustrates shifts from C major to E♭ major ([I] to [♭III]).

Mixture and Neapolitan chords are frequently used as altered pivot chords. For instance, the modulation to A major in Example 34.1 makes use of a ii^6 in C major, which becomes a mixture iv^6 in A major (mm.

Figure 34.3

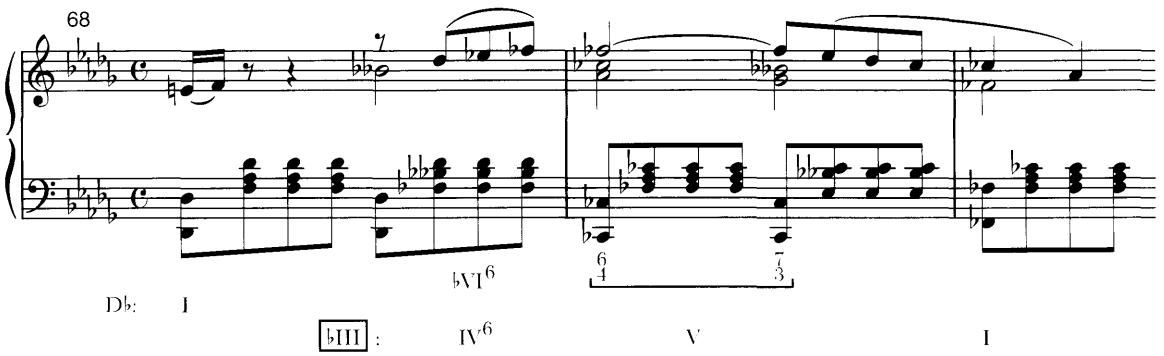
Old key (C major)		New foreign key (E♭ major)
diatonic (I)	C E G	altered (V/ii)
altered (♭VI)	A♭ C E♭	diatonic (IV)
altered (V^7/V)	D F♯ A C	altered (V^7/iii)

4–5). The dramatic shift in key in Example 34.8a occurs during the final duet in Bizet's *Carmen*, when the focus shifts from Carmen and Don José to the bullfight. The V^7 in D♭ major of Carmen's sustained cadence resolves deceptively to ♭VI, which then becomes I in the enharmonic new key of A (B𝄫) major. The mixture chord that serves as the common harmony in the modulation from $\boxed{\text{I}}$ to $\boxed{\flat\text{III}}$ (D♭ major to F♭ major) in Verdi's famous vocal ensemble (Example 34.8b) is $\flat VI^6$ in D♭ major, which now becomes a diatonic IV^6 in F♭ major. Even the original tonic can function as a ♭II when the key moves a half step lower to $\boxed{\text{VII}}$ (Example 34.8c). This progression may be heard in the practice rooms of almost any music school when singers are vocalizing major scales on successive chromatically descending steps. The ascending version of this pattern is illustrated in Example 40.4.

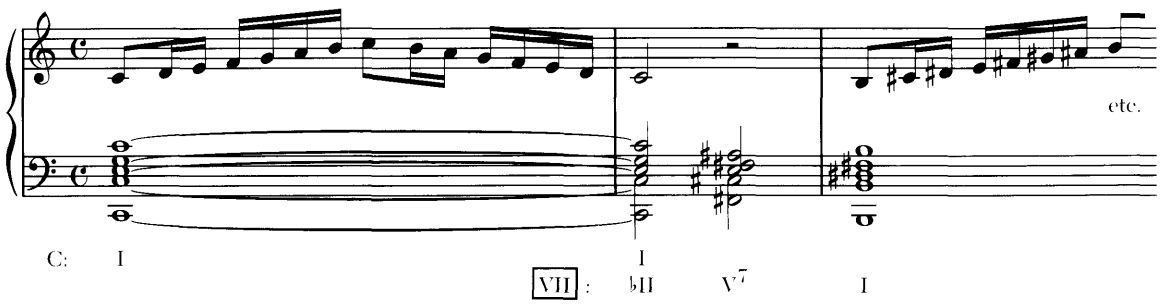
Example 34.8

A. BIZET: FINAL DUET FROM *CARMEN*, ACT IV

B. VERDI: QUARTET FROM *RIGOLETTO*, ACT IV (VOCAL PARTS OMITTED)



C.

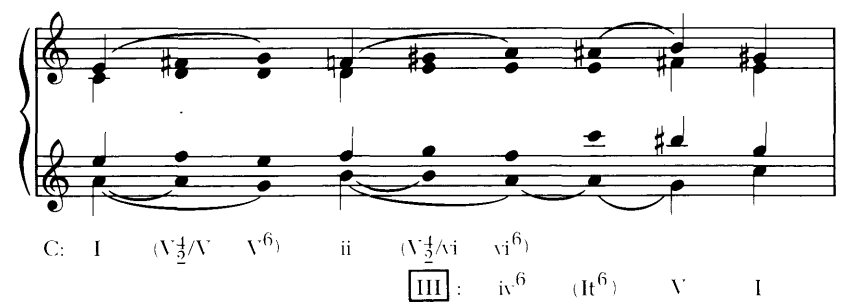


In the opening movement of his C major "Waldstein" piano sonata, Beethoven appends an It^6 to vi^6, directing the tonal motion toward the foreign key of III in his exposition, which substitutes E major for the usual dominant key of G. A similar progression is used to direct the tonic toward VI, a fifth lower than III, in the recapitulation. These can be seen in the reductions of Example 34.9. In each case, the dominant of the new key is prolonged some twelve measures to ensure that the new tonic is adequately prepared in the listener's ear.

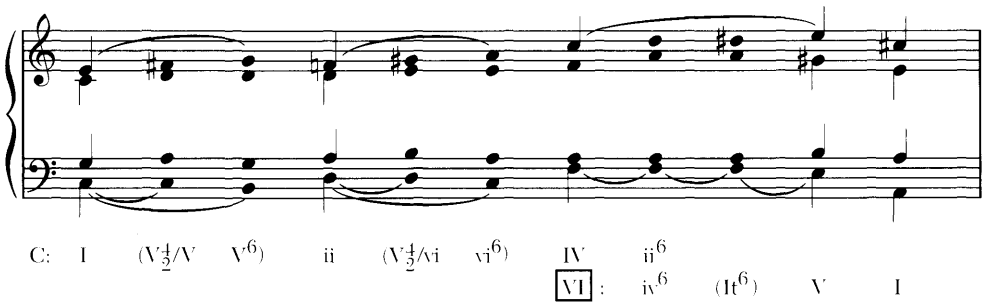
Example 34.9

BEETHOVEN: PIANO SONATA IN C MAJOR, OP. 53 ("WALDSTEIN"), I

A. EXPOSITION (REDUCTION OF MM. 1–35)



B. RECAPITULATION (REDUCTION OF MM. 174–96)

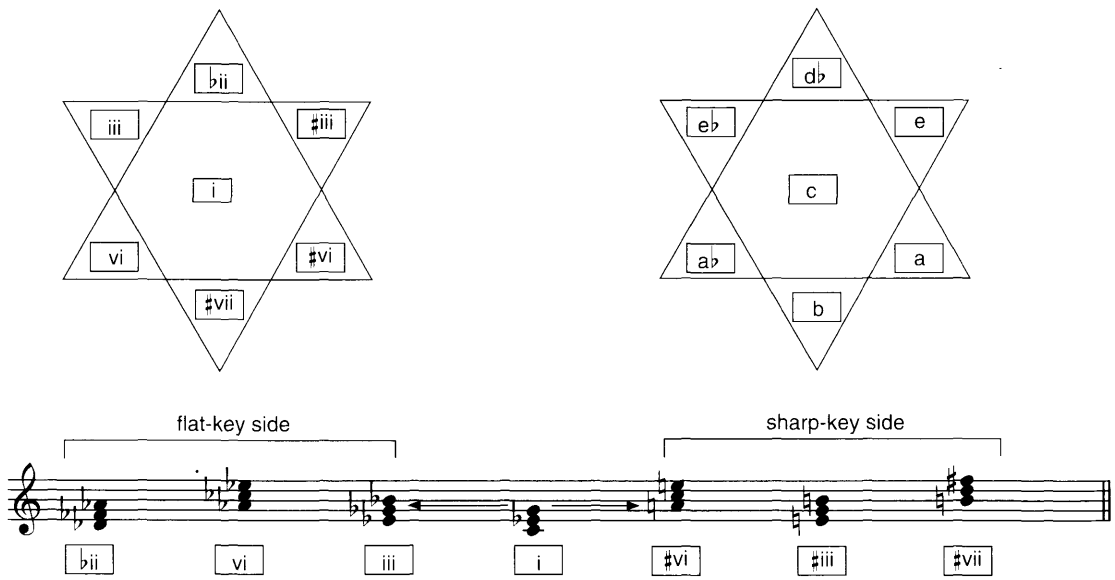


MODULATIONS TO FOREIGN KEYS IN THE MINOR MODE

The most common foreign key connections in the minor mode are illustrated in Figure 34.4. With the exception of the Neapolitan, whose tonicization we discussed in Chapter 29, these modulations normally move from the minor tonic to another minor key.

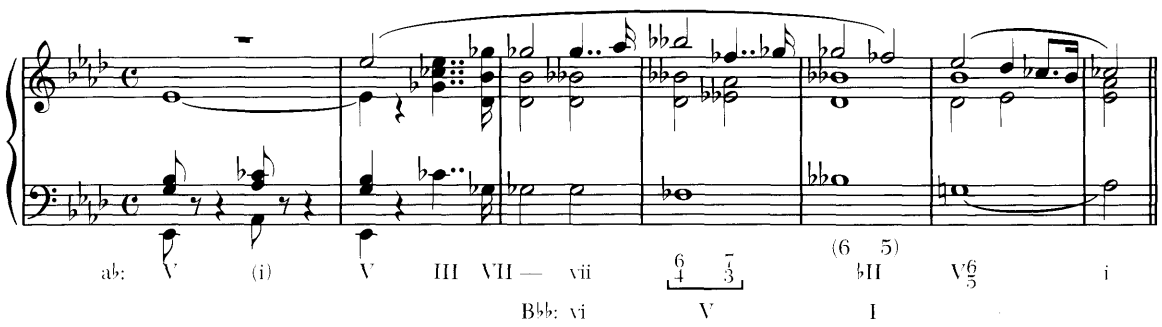
In contrast to most movements to the Neapolitan area, which typically has a darkening effect, the modulation to ♭II during Elsa's scene from Act I of Wagner's *Lohengrin* has a dreamlike, redemptive quality. This passage (Example 34.10) anticipates the later appearance of A major (B𝄫), the key of her eventual champion, the knight Lohengrin.

Figure 34.3



Example 34.10

(f) WAGNER: "ELSA'S DREAM" FROM *LOHENGRIN*, ACT I



Enharmonically spelled pivot chords normally introduce these exotic tonal goals. A particularly dramatic tonal shift from [i] to [♯iii], C minor to E minor, occurs in the sixth movement of Brahms's *German Requiem* (Example 34.11), when the text turns from a morbid contemplation of death to the exultant resurrection of the dead. In measures 4–6, the pivot chord V^7/iv serves as an enharmonically spelled Ger^6_5 in the new key.

Example 34.11

(f) BRAHMS: *EIN DEUTSCHES REQUIEM*, VI

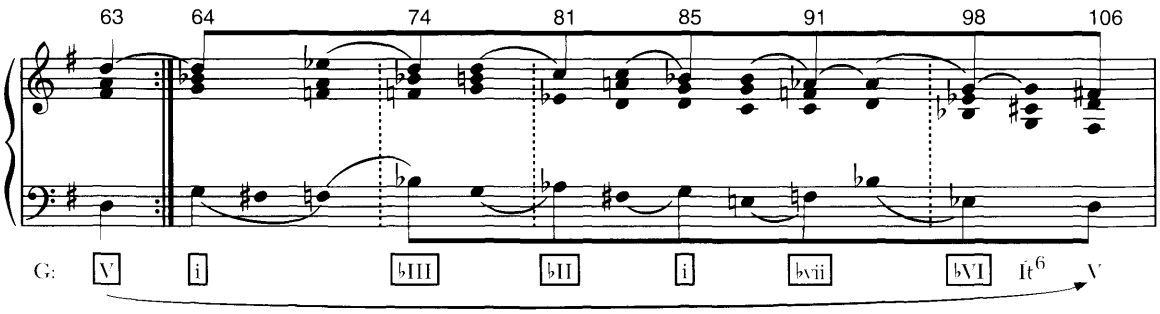
Foreign-Key Modulations in Development Sections

The development sections in sonata movements are rich sources of foreign modulations. The tonal schemes of two of Beethoven's development sections are given in Examples 34.12 and 34.13. Both make extensive use of foreign keys, demonstrating how far afield a composer may wander from his original tonic center. As noted in Chapter 33, most such developments conclude with an extensive dominant prolongation, in preparation for the return of the initial tonic key.

In Example 34.12, after the conclusion of the exposition in the usual $\boxed{\text{V}}$, the ensuing development opens with a statement of the original tonic theme in the parallel minor, G minor. This change of mode introduces a succession of keys that almost exhausts the flat keys that are distantly related to the original tonic of G major—$\boxed{\flat\text{III}}$ (B♭ major), $\boxed{\flat\text{II}}$ (A♭ major), $\boxed{\flat\text{vii}}$ (F minor), and $\boxed{\flat\text{VI}}$ (E♭ major). A lengthy dominant prolongation prepares the return of the original G major tonic.

Example 34.12

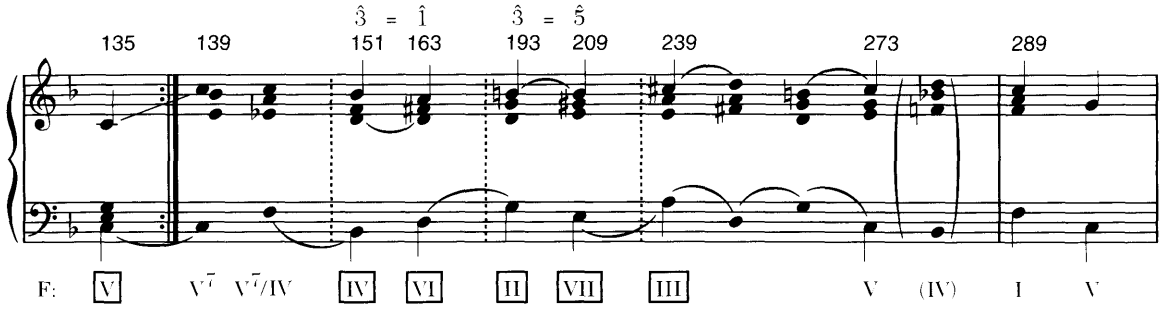
BEETHOVEN: PIANO SONATA IN G MAJOR, OP. 14, NO. 2, I



On the other hand, the development section of the opening movement of Beethoven's Symphony No. 6 in F Major ("Pastoral") focuses almost exclusively on sharp-key foreign relationships (Example 34.13). An applied dominant directs the motion from the initial $\boxed{\text{V}}$ at the end of the exposition to the tonicized $\boxed{\text{IV}}$ (B♭ major) in measure 151. The musical material used in the succession of keys that follows is based on the melodic motives listed in Example 12.24d. Notice how the composer uses common tones in these modulations. In the shift from B♭ major to D major, scale degree $\hat{3}$ (D) in B♭ major becomes $\hat{1}$ in D major; in the shift from G major to E major, scale degree $\hat{3}$ in G major (B) becomes $\hat{5}$ in E major. A progression by descending 5ths leads to a prolonged dominant that ushers in the recapitulation back in the original tonic of F major.

Example 34.13

BEETHOVEN: SYMPHONY NO. 6 ("PASTORAL"), I



Summary of Foreign Modulation Techniques

1. In the major mode, modulations to foreign-related keys usually move from an original tonic to either an upper or lower chromatic third-relation (I to ♭III, III, ♭VI, or VI), or to a key lying one half step away (♭II or vii). Foreign modulations from a minor-mode tonic are less common.
2. In change-of-mode modulations the initial tonic is mutated into the opposite mode (I to i, or i to I) before shifting to the new closely related key, which results in a foreign relation to the original key (such as I to i to ♭III). Reversing this procedure will effect a return to the original key.
3. Third-related modulations which use a common tone (where 1̂ in I will become 3̂ in ♭VI) usually occur at formal or sectional junctures.
4. In pivot-chord modulations to foreign keys, one of the common chords is normally an altered harmony in one of the two keys.
5. Foreign modulations occur more frequently in tonally unstable passages, such as recitatives, development sections, or fantasias.

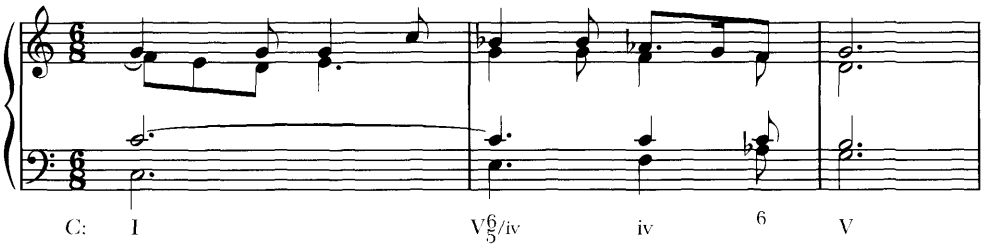
MELODY HARMONIZATION

You may find it difficult to employ modulations to foreign keys when harmonizing diatonic melodies. In tunes that contain altered notes, it is sometimes possible to create a harmonic setting that can either remain in the original key or move to a foreign key. In such cases, you should first scan the melody

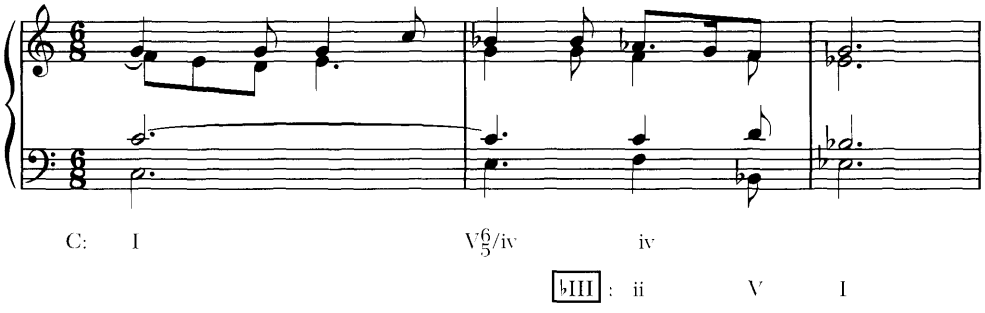
to determine which foreign-key modulation you will employ and how you will change key. The melody in Example 34.14 suggests two possible settings. The first remains in the original key using a tonicized iv; the second shifts to the key of E♭ major (♭III), using an altered pivot chord.

Example 34.14

A.



B.



Terms and Concepts for Review

foreign key
change-of-mode modulation
chromatically 3rd-related keys
modulations by common tone
modulations by altered pivot chords

A BRIEF REVIEW SELF-QUIZ

1. The phrases of Example 34.15 in block-chord harmonies contain modulations to various foreign keys. Make a Roman numeral analysis of each, indicating the new key relationship and demonstrating how the modulation was effected.

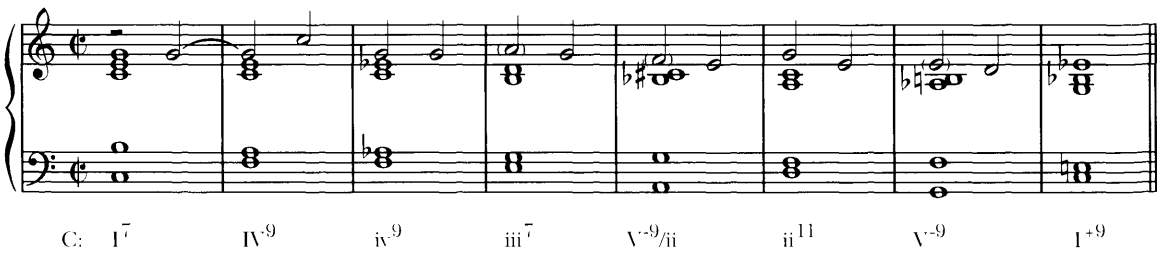
Example 34.15

CHAPTER 35

Ninth, Eleventh, Thirteenth, and Added-Note Chords

IN THEIR QUEST for more expressive musical means, composers of the Classical and Romantic periods—and in the twentieth century, jazz and rock musicians—gradually enlarged their chordal vocabulary. We are already familiar with some of the chords that make up this expanded harmonic vocabulary, such as the various types of seventh chords and altered chords, which include secondary dominants, mixture chords, the Neapolitan, augmented 6th chords, and embellishing chords. Another means of expanding the harmonic spectrum involved the superimposition of 3rds on top of seventh chords, resulting in **extended tertian harmonies.** Some of these harmonies are present in the typical jazz progression below.

Example 35.1



In all but the fourth chord, at least one additional 3rd is superimposed above each seventh chord, producing a series of **ninth chords.** Locate the interval of the 9th above the root in each sonority; several accented nonharmonic tones are enclosed in parentheses. If we add another 3rd above a ninth, we produce an **eleventh chord.**

In this chapter we will discuss the various types of extended tertian sonorities and list their commercial chord symbols and possible harmonic Roman numeral functions, using C major and C minor as our home keys. Since these sonorities are used extensively in jazz, you should become familiar with their commercial chord symbols, which are found in Appendix 5. This chapter will conclude with some triadic harmonies that contain added notes, such as added 6ths or 9ths.

General Considerations

The additional stacked 3rds in 9th or 11th chords are dissonant not only to the root but to some of the other chordal members as well. In most cases we will treat these added notes as suspension or neighboring figures, much like the chordal 7ths in seventh chords. These chords usually occur in root position, with the 9th or 11th in one of the uppermost voices. In order for a sonority to be considered a legitimate ninth chord, rather than simply a triad with a suspended or added 9th, it must contain a chordal 7th. Ninth chords normally appear in *five-voice* texture, with each chord member assigned to a different voice part. In four-voice texture, the chordal 5th is usually omitted.

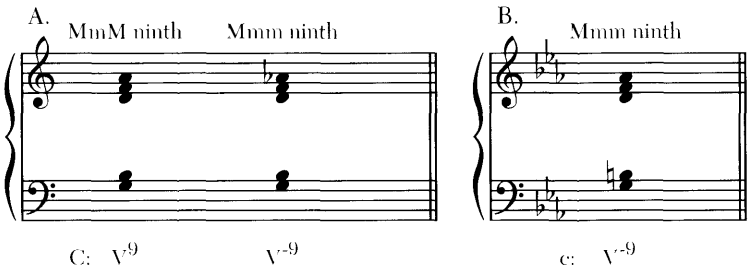
The various forms of ninth chords are classified by the type of triad, 7th, and 9th that appear above a given root. In chord labels, these indications are written in consecutive order. For instance, using C as the root, a major-minor-major (MmM) ninth chord is spelled C E G B♭ D (in commercial chord symbols, C^{9}); C E G is a major triad, C up to B♭ is a minor 7th, and C up to D is a major 9th. In similar fashion, a major-minor-minor (Mmm) ninth chord is spelled C E G B♭ D♭. In the commercial chord symbol, a small minus sign is placed directly before the 9 to denote a minor 9th (C^{-9}).

Dominant Ninth Chords

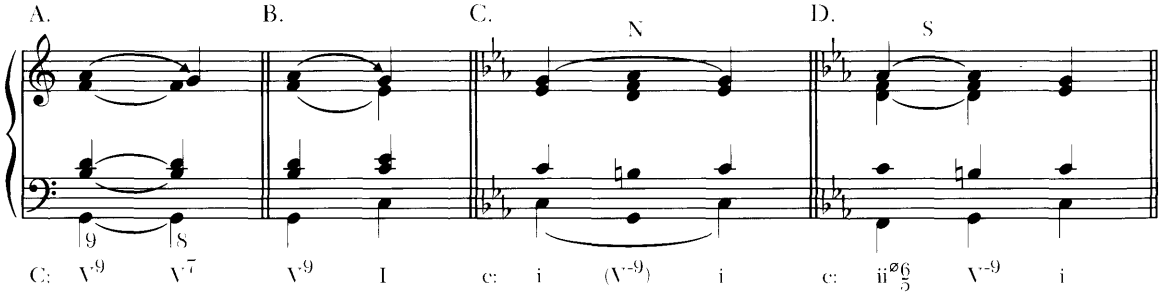
We will begin by examining **dominant ninth chords**—that is, ninth chords that are built on the dominant scale degree. The illustrations use the keys of C major or minor. If the interval of a *major* 9th appears above a V^{7}, the

result is a V^{9} (a MmM ninth chord), which usually occurs in the major mode (Example 35.2a). If the interval of a *minor* 9th appears above a V^{7}, the result is a V^{-9} (a Mmm ninth chord), which usually occurs in the minor mode (Example 35.2b). The pop symbols are G^{9} and G^{-9}.

Example 35.2



The dissonant 9th (scale degree $\hat{6}$ or $\flat\hat{6}$) usually resolves downward to scale degree $\hat{5}$, either in the same chord (Example 35.3a) or in the tonic triad (Example 35.3b). Ninth chords are typically approached and resolved by a neighboring or suspension figure, as in Examples 35.3c and d.



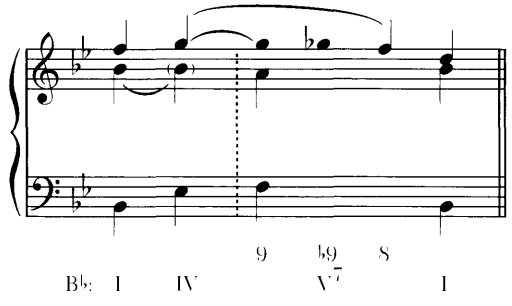
Example 35.3

In Schubert's Scherzo (Example 35.4a) two forms of the dominant ninth appear in succession in the bracketed passages. Note that both are prepared by suspension figuration and resolve to $\hat{5}$ over a V^{7}. On the other hand, the ninth of the dominant harmony in Tchaikovsky's *Nutcracker* is treated as a neighbor $\hat{5}$-$\hat{6}$-$\hat{5}$ (Example 35.4c and d).

Example 35.4

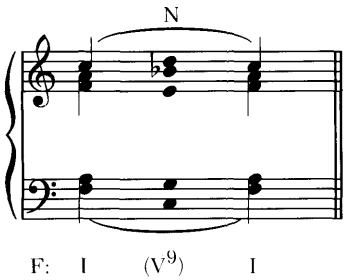
A. SCHUBERT: SCHERZO IN B-FLAT MAJOR, D. 593

B. (REDUCTION)



C. TCHAIKOVSKY: *THE NUTCRACKER*, ACT I, NO. 5

D. (REDUCTION)

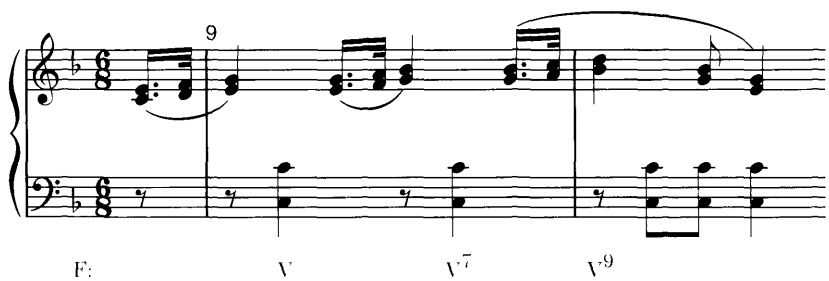


Another way of approaching the ninth involves arpeggiation up through the dominant chord, leaping to the ninth in the manner of an appoggiatura. Compare the three examples of the procedure in these passages from the Baroque, Classical, and Romantic periods.

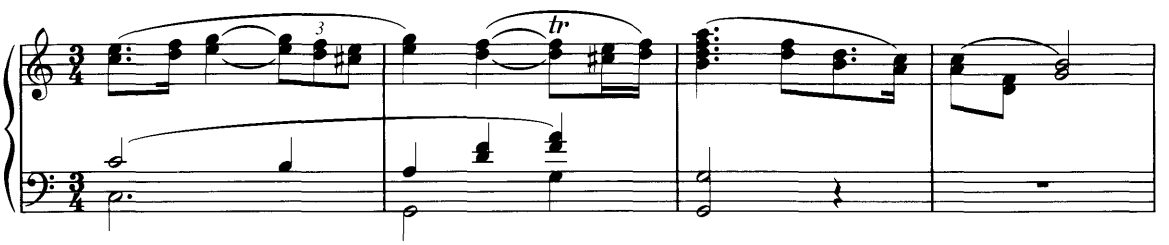
Example 35.5

A. BACH(?): MINUET IN D MINOR FROM *ANNA MAGDALENA BACH'S NOTEBOOK*, BWV ANH. II:132

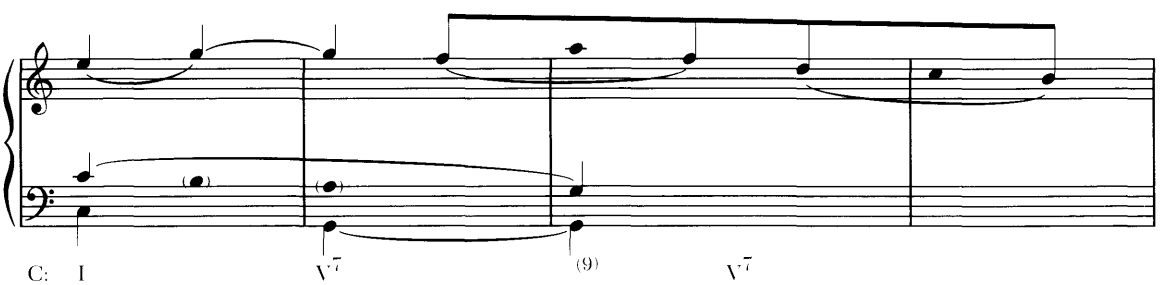
B. KUHLAU: SONATINA IN C MAJOR, OP. 20, NO. 1, II



C. WAGNER: *GÖTTERDÄMMERUNG*, ACT I



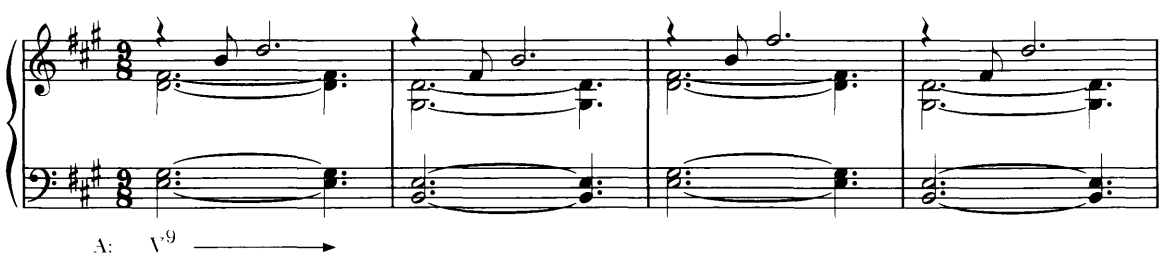
D. (REDUCTION)

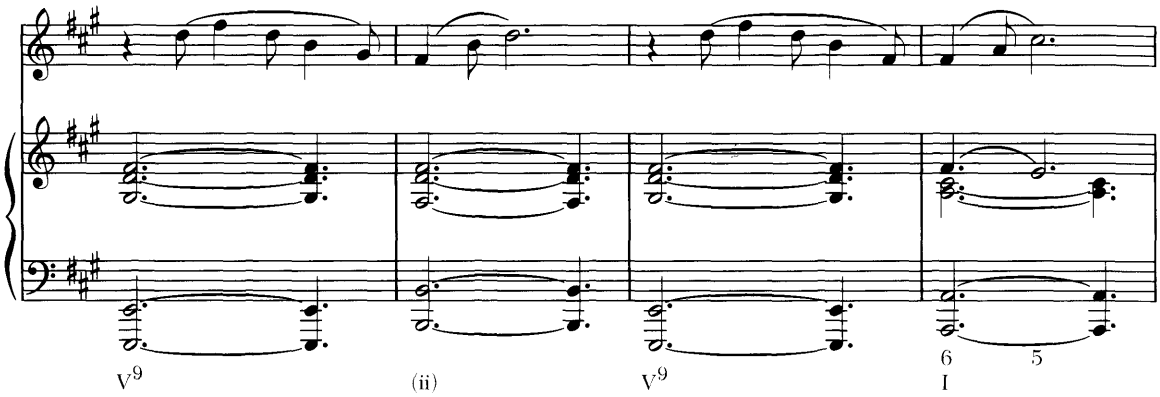


By the middle of the nineteenth century, composers used prolonged dominant ninths quite frequently. Franck's Violin Sonata daringly opens with various inversions of an extended V^9 that does not resolve to the tonic until measure 8 (Example 35.6a). Wagner often lingered on this same chord, as his initial presentation of Brünnhilde's motif illustrates (Example 35.6b).

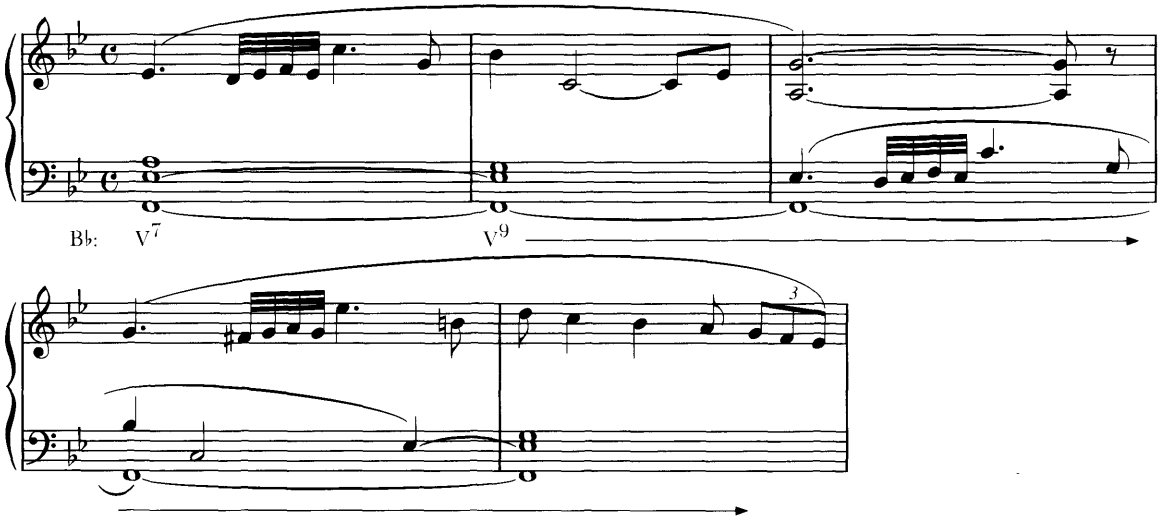
Example 35.6

A. FRANCK: VIOLIN SONATA IN A MAJOR, I





B. WAGNER: PROLOGUE TO *GÖTTERDÄMMERUNG*, ACT I (BRÜNNHILDE'S MOTIVE)

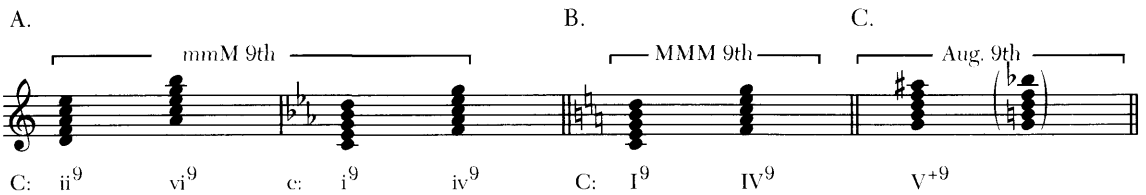


NON-DOMINANT NINTH CHORDS

Since **non-dominant ninth chords** lack a tritone in their makeup, they cannot function as dominants. Two types are encountered most frequently. Examples of the minor-minor-major (mmM) ninth chord, called Cm^9 in commercial chord symbols, may be found as the ii^9 (D F A C E) and vi^9 (A C E G B) of a major key, or the iv^9 (F A♭ C E♭ G) and i^9 (C E♭ G B♭ D) of a minor key (Example 35.7a). The major-major-major (MMM) ninth chord, expressed as $C^{9(M7)}$ in commerical chord symbols, is limited largely to the major key, occurring as I^9 (C E G B D) or $IV^{\flat 9}$ (F A C E G), as shown in Example 35.7b. The so-called "augmented 9th" chord is less

common; it is a dominant seventh with an augmented 9th (G B D F A♯ = V^{+9} or G^{+9}), but the ninth is often notated enharmonically as a minor 10th, B♭ rather than A♯. This "bluesy" sonority contains two different thirds, B♮ and B♭. A good example of this chord may be found in measure 5 of Example 42.1.

Example 35.7



Ravel was fond of using non-dominant ninths in some of his slow movements. In the middle movement of his *Sonatine* for piano, most of the ninths resolve downward by step (Example 35.8). Roman numerals are provided in this sequence of roots descending by 5ths. Identify the chord type of each ninth chord. The use of a minor dominant gives the cadence a pronounced modal flavor.

Example 35.8

Ravel: *Sonatine*, II

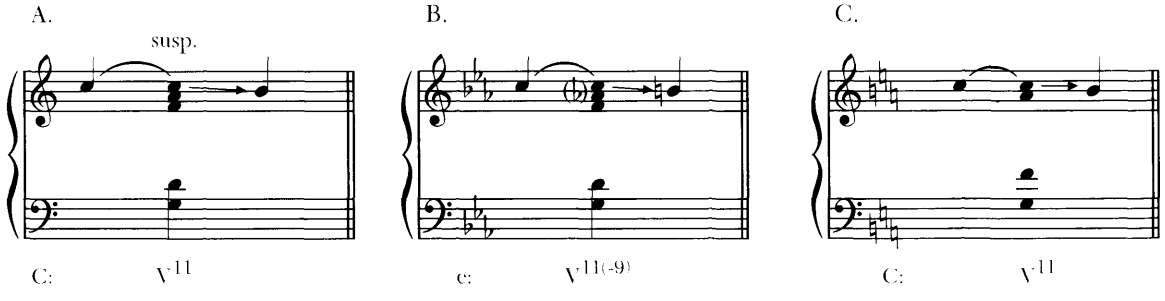
Now go back to Example 35.1 and identify the various types of ninth chords. Can you find any parallel 5ths between measures 2 and 3? Although the treatment of 7ths and 9ths is rather conservative in this example, sometimes in jazz they are used freely, with little regard for traditional approach and resolution.

Eleventh and Thirteenth Chords

Although freestanding eleventh and thirteenth chords occur frequently in 20th-century literature, in the Romantic period most of these sonorities are best explained in terms of nonharmonic activity. Like ninth chords, **eleventh chords** occur in both dominant and non-dominant functions. In the first category, a perfect 11th may be suspended over a dominant ninth in a major key, resulting in a V^{11} (G [B] D F A F or G^{11}); the 11th usually resolves to the 10th over the same harmony as 11 → 10, similar to a compound 4 → 3 (Example 35.9a). When the 11th is suspended over a minor 9th chord in a minor key (G [B] D B A♭ C), we enclose the minor 9th in parentheses in both the commercial chord symbol and the Roman numeral—$G^{11\,(-9)}$ and $V^{11(-9)}$, as shown in Example 35.9b.

In both forms of the V^{11}, you may have noticed that the chordal 3rd was enclosed in brackets. This chord member is normally omitted, since it is the resolution note of the suspended 11th and produces a harsh clash with that tone: G ( ) D F A C → (B). Since this eleventh chord almost always includes a 7th and 9th, it is difficult to find it in four-voice texture. In such cases, both the 3rd and 5th have to be omitted (Example 35.9c).

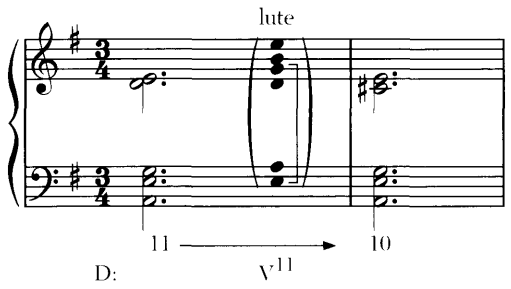
Example 35.9



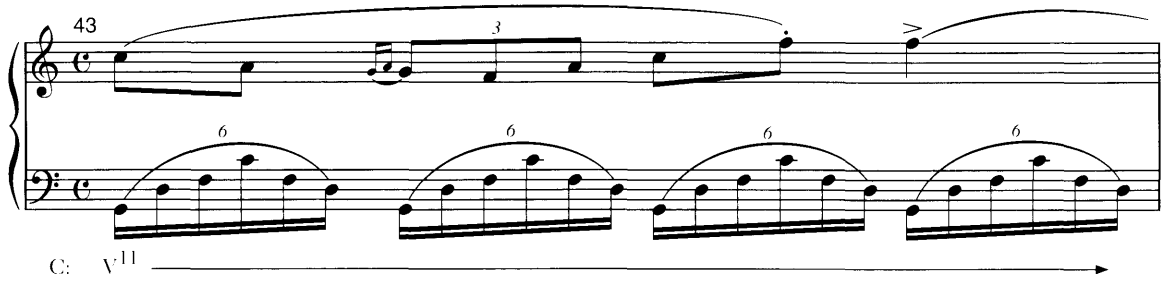
In the second act of his opera *Die Meistersinger*, Wagner superimposes the open strings of Beckmesser's lute, which has the same tuning as a guitar, over an A^2 to produce a V^{11}. Notice in Example 35.10a that the 11th resolves in the next measure (D-C♯), producing a V^7 in D major. On the other hand, the 11th (C^5) in the prolonged dominant of the Grieg excerpt (Example 35.10b) completely avoids the expected resolution to B^4.

Example 35.10

A. WAGNER: BECKMESSER'S SERENADE FROM *DIE MEISTERSINGER*, ACT II



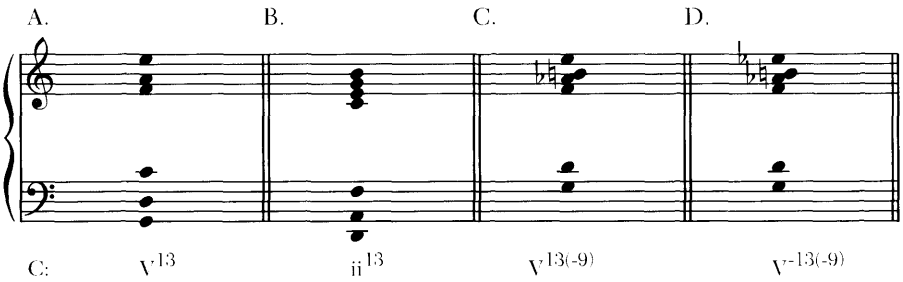
B. GRIEG: PIANO CONCERTO, I



Examples of so-called "augmented 11th" chords are less common (in C major, G B D F A C♯ = V^{+11} or G^{+11}); note that the 3rd (B) is now retained. These chords function as quasi-dominants or dominant substitutes (see measure 3 in Example 35.11b). Non-dominant elevenths are usually mmM ninth chords with a superimposed perfect 11th (in C major, D F A C E G = ii^{11} or Dm^{11}). They are generally restricted to the supertonic function and are usually complete. Examples may be found in the excerpts by Ravel and Victor Young in Example 35.11.

Examples of legitimate **thirteenth chords** are extremely rare in music before 1900. Because they contain six different pitches, multiple alterations are possible in thirteenths. We will mention four basic types with their commercial chord symbols, spelled in C major: (1) the G^{13}, G (B) D F A C E with B omitted, which usually occurs as a V^{13}; (2) the Dm^{13}, D F A C E G B, which usually occurs as ii^{13}; (3) the $G^{13(-9)}$, G (B) D F A♭ C E, normally a $V^{13(-9)}$, and its minor form $G^{-13}{}_{(-9)}$, G (B) D F A♭ C E♭, normally a $V^{-13}{}_{(-9)}$ (Example 35.11).

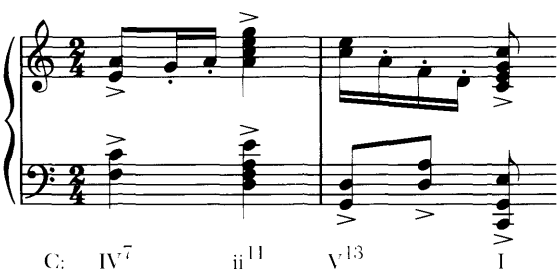
Example 35.11



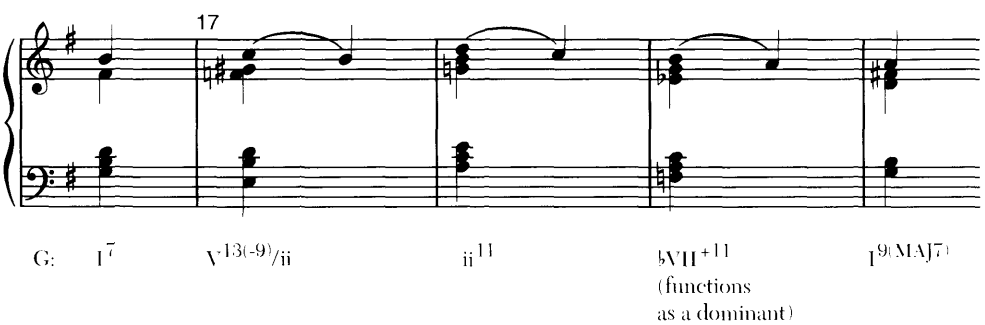
Although the Ravel passage (Example 35.12a) appears to follow twentieth-century compositional techniques, its tonal language is completely diatonic. The bridge from Victor Young's haunting ballad in the movie *The Uninvited*, shown in reduction in Example 35.12b, contains several 11th and 13th chords, all of which resolve downward by proper stepwise motion.

Example 35.12

A. RAVEL: "RIGAUDON" FROM *TOMBEAU DE COUPERIN*



B. VICTOR YOUNG: "STELLA BY STARLIGHT" (REDUCTION)

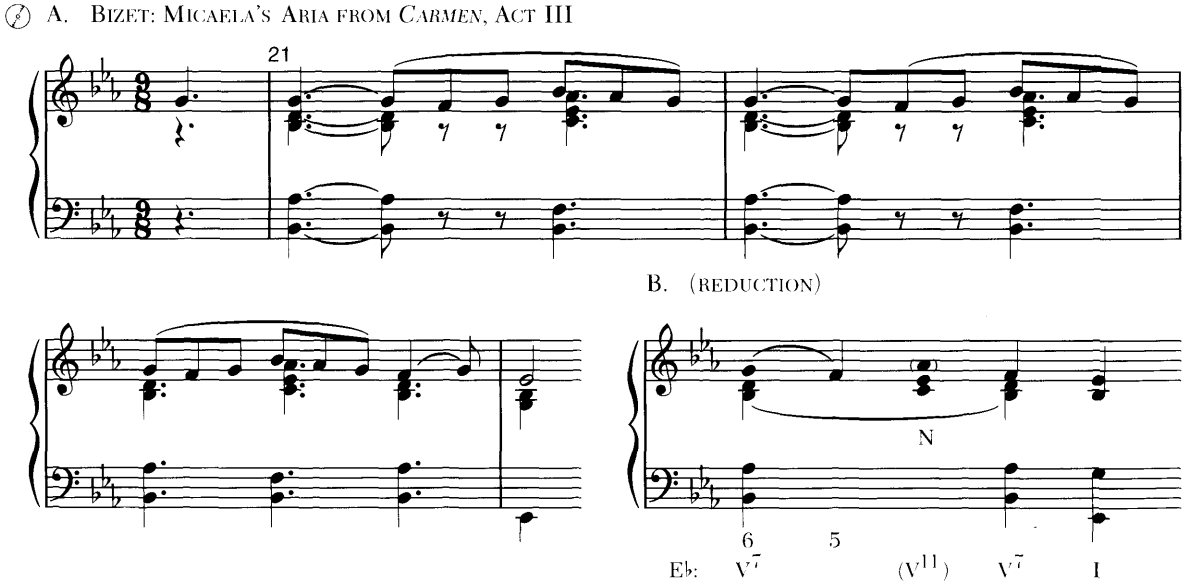


Sometimes in the common-practice period we may encounter a sonority which appears to be an incomplete dominant thirteenth chord, with its 9th and 11th missing (in C major, G B D F plus E). In reality, this chord is nothing more than a V^7 with a melodic 6–5 over the root (Example 35.13a). Occasionally the chordal 5th (scale degree $\hat{2}$) may be missing altogether (Example 35.13b), giving rise to our pseudo-13th chord. In fact, nonharmonic linear motion is probably the best explanation for most of the seemingly weird harmonies one finds in the Late Romantic period. For instance, in Cecile Chaminade's *Air de Ballet*, the final cadence contains several unusual sonorities, marked with arrows in Example 35.13c. The reduction in Example 35.13d suggests that these sonorities are the result of a $vii^{\circ 7}$/ii-ii^7-V^7-I progression over a dominant D pedal, with several of the resolutions missing, as indicated by the notes in parentheses.

Example 35.13

Although the 6-5 over the dominant also occurs in the Bizet quotation (Example 35.14a), the harmonies on the third beat of measures 21 and 22 are eleventh chords that are created by neighboring motion, as shown in the reduction (Example 35.14b). Note the distinction between stemmed and unstemmed note-heads in this and the preceding examples. In summary, remember that in most cases the chordal 9th, 11th, and 13th above the root are treated as dissonant embellishing tones.

Example 35.14

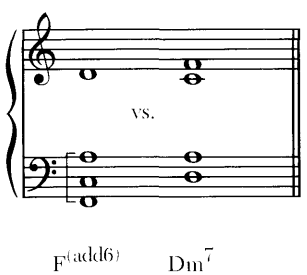


ADDED NOTES: 6THS AND 9THS

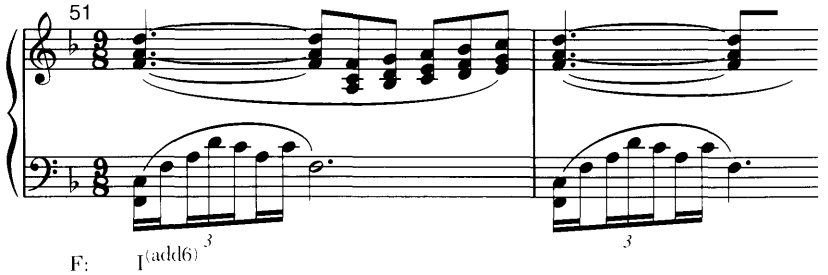
In Chapter 17 we discussed 5-6 or 6-5 linear motion above the tonic triad or tonic root. An example of the melodic motion occurs in measure 8 of the earlier Franck excerpt (Example 35.6a). It is also possible to add a major 6th to an existing major tonic triad so that the **added 6th** forms part of the essential harmony. The chordal spacing in Example 35.15a suggests an F major triad with an added 6th (F A C D, or I^{add6}), rather than a minor seventh chord over D (D F A C). Compare this model to the chord in the Wagner excerpt (Example 35.15b).

Example 35.15

A.

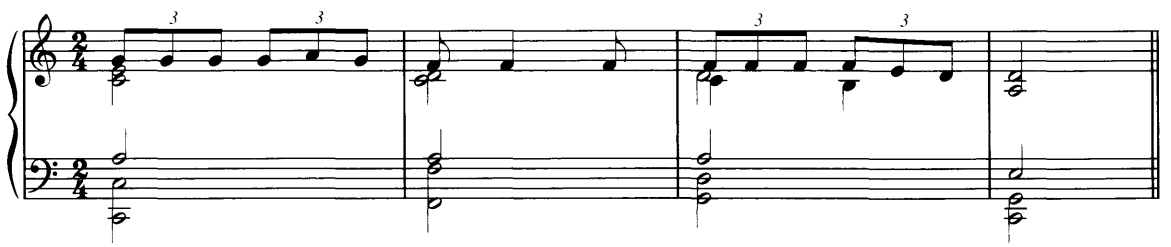


B. WAGNER: RHINEMAIDENS' SCENE FROM *GÖTTERDÄMMERUNG*, ACT III



We may also add a major 9th to a triad (C E G D, or I^{add9}). Do not confuse this **added 9th** with a ninth chord, since no chordal 7th is present. The addition of a 6th or 9th is not confined to tonic harmony alone. Analyze the cadential progression shown in Example 35.16, identifying any added-note chords.

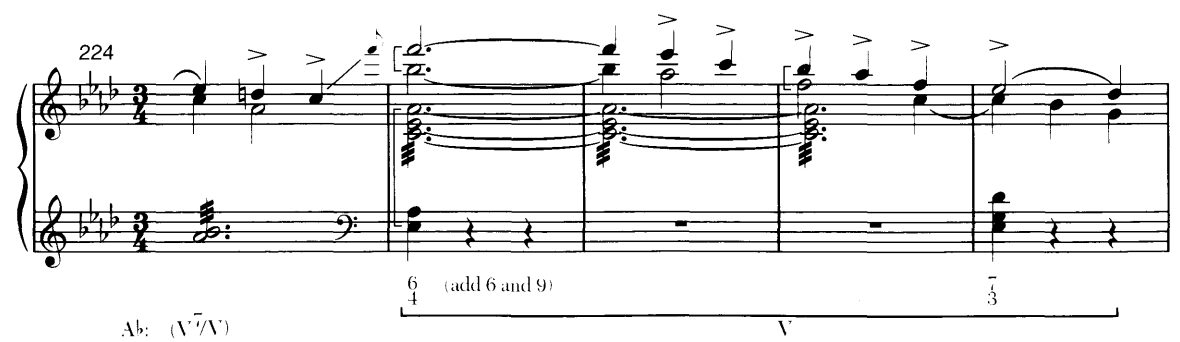
Example 35.16



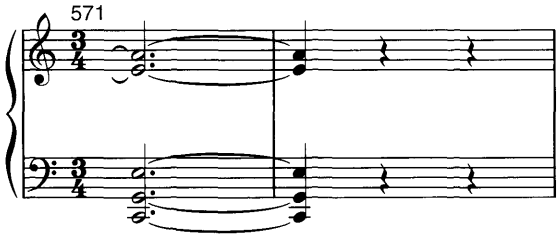
Adding both a major 6th and major 9th to a major triad (C E G A D, or $I^{add6,9}$) produces a harmony with a distinctly *pentatonic* flavor. Study the two excerpts from Mahler's *Das Lied von der Erde* in Example 35.17.

Example 35.17

A. MAHLER: *DAS LIED VON DER ERDE*, I



B. MAHLER: *DAS LIED VON DER ERDE*, V



The climactic harmony in the second measure of Example 35.17a is an $A\flat_4^6$ chord to which is added a 9th ($B\flat^5$) and a 6th (F^6) in the upper voices; both resolve stepwise to the chordal A♭ and E♭ by parallel 5ths in the following measure, only to reappear once more before the $\frac{6}{4}$ eventually moves to the V^7 in the last bar. Although both the 9th and the 6th may be explained as dissonant embellishing tones, their extended length gives them a kind of chordal status. Since this colossal five-movement work continually shifts be-

Summary of Extended Tertian Sonorities

1. Harmonic sonorities involving appendages of thirds beyond seventh chords (such as ninth, eleventh, and thirteenth chords) are typically found in five- (or more) voice texture and tend to feature root position, with the higher "partials" occurring in the upper voices.
2. The harmonic function of these chords is largely dependent on the presence or absence of a tritone in their makeup. Those containing a tritone normally function as some form of dominant (such as V^{+9}), while those lacking a tritone tend to have a tonic or pre-dominant function (such as $I^{9(M7)}$ or ii^{11}).
3. The preparation and resolution of the upper dissonances (such as the 9th or 11th) are often dependent on the historic style of the music in question.
4. In commercial chord symbols ^{9} = major 9th, $^{-9}$ = minor 9th, and $^{+9}$ = aug 9th. Thus a Dm^9 is D F A C E, where the "m" stands for the type of triad and the ^{9} for a major 9th; a m7th is always assumed unless otherwise indicated.
5. Adding a major 6th (^{add6}) or a major 9th (^{add9}) or both ($^{add6, 9}$) to a major tonic triad imparts a distinctive pentatonic flavor.

tween the key centers of A minor and C major, it is not surprising to find that the last movement's final C-major triad (Example 35.17b) contains an added 6th (A). This may be Mahler's attempt to reconcile both keys into one chord—C E G and A C E.

While some composers from the late-nineteenth to the mid-twentieth century, especially in the field of jazz, continued to exploit more complex altered versions of extended tertian sonorities, other composers abandoned the tradition of building chords by thirds altogether and substituted other intervals as their principal components.

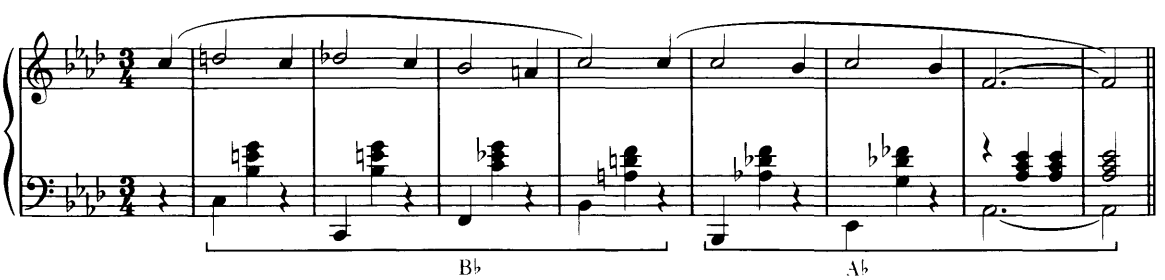
Terms and Concepts for Review

extended tertian sonorities
ninth chords
dominant ninth chords
non-dominant ninth chords
preparation and resolution of ninth chords
eleventh chords
the suspended 4th in eleventh chords
thirteenth chords
6-5 or 5-6 in V^7 chords
added 6ths and 9ths

A BRIEF REVIEW SELF-QUIZ

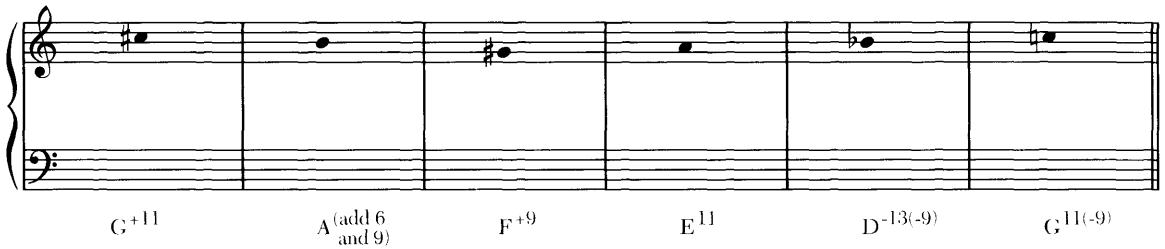
1. Analyze the harmonies in the following passage, first providing appropriate Roman numerals in the two keys that are marked.

Example 35.18



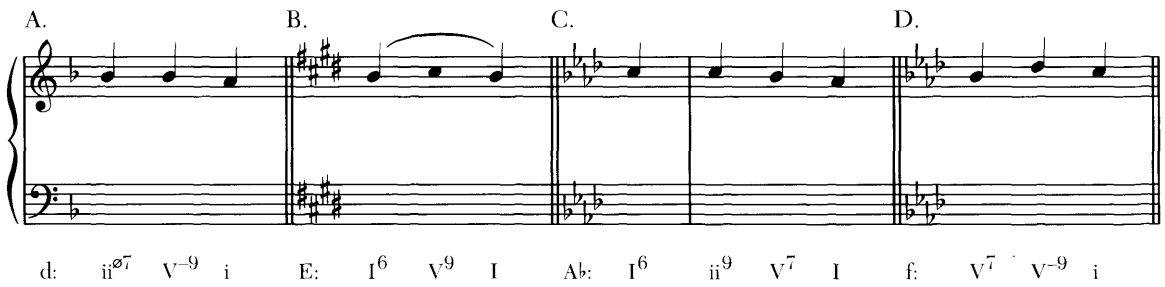
2. Write the indicated chords on the staff, using an appropriate number of voices to fill out the harmonies. Assume root position; the soprano note is given.

Example 35.19



3. A soprano line and Roman numerals are provided in Example 35.20. Complete the four-voice texture and indicate with an appropriate abbreviation how the ninth of the chord is treated.

Example 35.20



4. Provide the cycle-of-fifths progression in Example 35.21 with the appropriate commercial chord symbols (not Roman numerals); there may be some thirteenth chords.

Example 35.21

CHAPTER 36

Implication and Realization

THROUGHOUT THIS TEXT we have directed our attention to the technical aspects of music, such as harmony, voice leading, phrase grouping, and so forth. While this approach provides us with detailed information on the inner workings of compositions, in order to understand the art of music more fully we must also take into account the affective or emotional responses that it evokes. Topics such as the sense of beauty, artistic merit, and satisfaction that we derive from music fall within the realm of **music aesthetics,** which attempts to explain the meaning and significance of music in our culture.

Few people question the ability of music to induce emotional responses in the listener. However, the ways in which this affective process takes place have been the subject of speculation and debate throughout the history of Western music. Leonard Meyer has written extensively about how music may convey meaning; his ideas form the basis of the following discussion.[1]

1. Leonard Meyer, *Emotion and Meaning in Music* (Chicago: University of Chicago Press, 1956); *Music, the Arts and Ideas* (Chicago: University of Chicago Press, 1967); *Explaining Music* (Chicago: University of Chicago Press, 1973); and *Style and Music* (Philadelphia: University of Pennsylvania Press, 1989). See also Eugene Narmour, *Beyond Schenkerism* (Chicago: University of Chicago Press, 1977).

Music as Communication

Although we often hear the familiar expression "music is an international language," this statement is misleading in several ways. As we noted in Chapter 3, there are similarities between the syntax and grammar of language on the one hand, and music on the other. But the ways in which they convey meanings are different.[2] We cannot combine individual music stimuli such as an eighth note, an F♯, and a C- major triad to form musical words with specific embedded meanings in the same way that language combines letters of the alphabet to form words. Music does communicate meaning to us, but it does so in a different and less concrete manner. Nor are these communicated meanings perceived in the same way by different cultures. When we hear the familiar wedding marches by Wagner or Mendelssohn, we immediately associate them with a well-defined social function. This association is based on a learned response that is common to our culture. On the other hand, when we hear a piece of Ethiopian or Tibetan music, our lack of familiarity with the customs of these countries prevents us from making any connection between the music and its meaning in those cultures. We can only guess what purpose or general character such pieces have within their social context—the Wagner bridal chorus would be as meaningless to an Australian bushman as his hunting music would be to us. Nor can we rely on some common theoretical system that underlies all world musics, for the organization of pitch and rhythm in various musical cultures is often vastly different.

Referentialism versus Absolutism

Meaning in music originates from two basic sources. On the one hand, music may communicate **referential meanings**—that is, meanings derived from *extramusical* sources or references outside the music itself. These meanings may be of a personal nature—for instance, the romantic memories awakened by hearing "our song"—or they suggest broader cultural meanings based on commonly acquired associations, such as the wedding music referred to above. When we listen to the closing passage of William Walton's score for the film *Richard III* (1955) without any prior knowledge of the music or the film, our reactions consist largely of images or impressions that originate outside the music—"It sounds like a procession," "It sounds Eng-

2. The relation of linguistics to music is explored in Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (Cambridge: MIT Press, 1963).

lish," "It sounds like the triumphant ending to a movie," and so on. I have played that passage for several different classes over the years, and the responses are always the same.

In distinction to this referential viewpoint is the notion that meaning in music arises from relationships between forces within the music itself. For the remainder of this chapter we will focus on this latter, **absolutist** view, which holds that meaning in music must come from the music itself, not from anything outside.

The Origins of Emotion in Music

Psychologists point out that one way our emotions are aroused is when our tendency to respond to a particular stimulus or situation is inhibited. For instance, we do not ordinarily attach any emotional significance to habitual actions of our everyday life, such as removing clothes from a clothes hanger. If, however, the hangers become tangled, our customary response is delayed, and we may experience minor irritation, clearly an emotional reaction.

Meyer observes that affective experiences in music usually differ from nonmusical experiences in the amount of aesthetic consequence they cause. Daily events, such as the encounter with the clothes hangers, may be relatively accidental and therefore produce little aesthetic consequence. In the arts, however, and music in particular, delayed or inhibited responses take on a more explicit meaning. Therefore, in order to be aesthetically relevant in the arts, tendencies that are inhibited or delayed must be provided with meaningful resolutions. For instance, our enjoyment of a typical swashbuckler or horror movie is derived from the extended delay of the resolution produced by a succession of escalating crises. Nevertheless, even in the most hopeless predicament, we always sense that the hero or heroine will eventually dispatch the villain or monster.

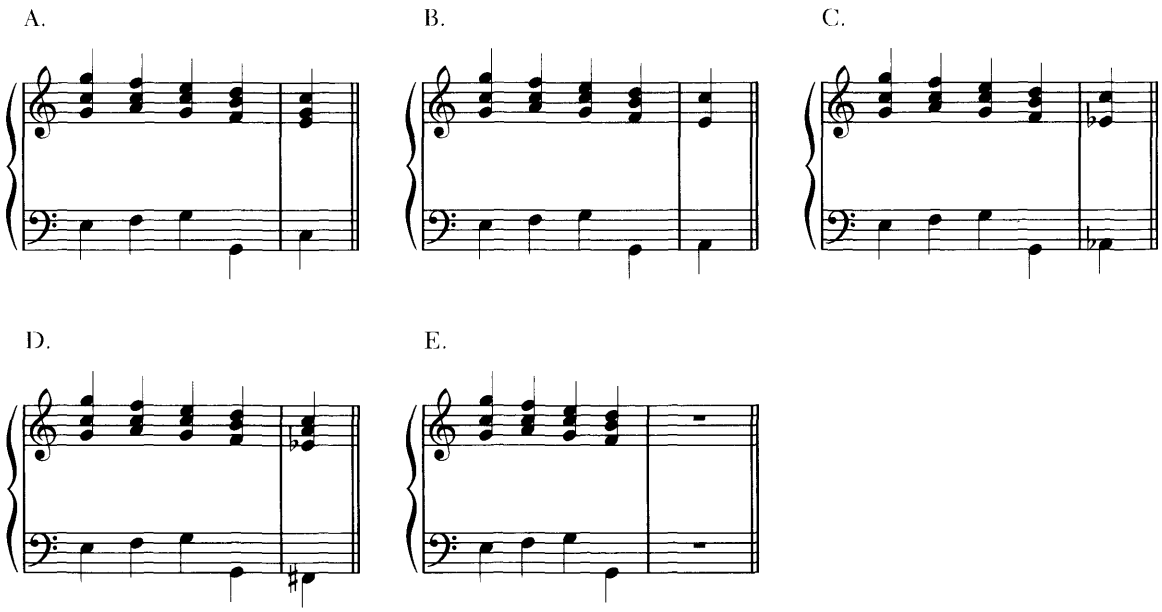
Implication and Realization

The common-practice period (roughly 1650–1900) may be considered a particular **style system**—that is, a collection of preferred tendencies within a large group of musical compositions. Each of the different style systems that have evolved throughout the history of Western music consists of standard or normative procedures that occur over and over again. The voice-leading models in this text are good examples of these recurrent tendencies within common-practice style. Each model sets up a harmonic and melodic **implication** or expectation, which is followed by its **realization** or resolution in

one or another way. Because of their frequent occurrence, these familiar models imply a predictable realization. Deviations from these norms are largely limited to irregular procedures, such as the transferred resolution of a seventh chord, or outright stylistic errors, such as parallel 5ths. Because of their relative improbability, these deviations are less predictable. If the deviations are so extreme that they cannot be rationalized in terms of the established norms of a style, we respond with amusement. The wrong notes in the horn parts of the Trio to the Minuet from Mozart's *Musical Joke* are a case in point.

Certain inhibitions momentarily block or delay the tendencies of our normative models. We can accept these deviations as musically valid, provided that they can be rationalized within the accepted style. Example 36.1a illustrates a typical harmonic model of the common-practice period. Even when heard out of context, we can identify it as an authentic $^{6}_{4}$ cadence formula. The tonic goal, or realization, is clearly implied by the pre-dominant IV and suspended dominant ($^{6}_{4}$-$^{5}_{3}$). We will now supply this familiar progression with four different resolutions that progressively deviate more and more from the established norm (Example 36.1b–e).

Example 36.1



In Example 36.1b the substitution of vi for I, a typical deceptive cadence, while not as common as the final tonic in Example 36.1a, neverthe-

less implies continuing harmonic motion toward a stable goal, such as I or V. In Example 36.1c the ♭VI is slightly more puzzling, since it raises the possibility of mixing modes and the role it may play in the ensuing music. The diminished seventh chord in Example 36.1d is stranger still, since it leaves us even more in doubt about the tonal course the progression will take. Finally, the absence of any resolution in Example 36.12e opens up a host of future possibilities. In the last four progressions, our expectation of a tonic resolution has been blocked or delayed, and we sense that the next harmonic motion is less certain or predictable. In each case these frustrated expectations have aroused our emotional curiosity. The extent to which affective inhibition and its eventual outcome play a significant role in musical meaning will become evident as we continue to listen.

Now play the harmonic progression in Example 36.2.

Example 36.2

Since the normative resolution of the $\frac{6}{4}$ cadence has been circumvented by the music within the bracket, there is some doubt about our final goal. Nevertheless, a roundabout succession of tonicized chords does eventually bring us back to the original $\frac{6}{4}$, which then resolves properly via V to I. It is as though we have taken a ramp off the expressway for a brief detour through the countryside before getting back on the highway to our destination. We do not begrudge the additional time, since our extended journey has proved rather enjoyable. In a similar way, one might hypothesize that a straight line is not necessarily the most gratifying route between two points in music. Our sense of immediate aesthetic pleasure results from "the arousal and suspension of fulfillment of expectation, which are products of many previous encounters with works of art."[3]

Procedures that block or delay a tonal goal may occur in melodic writing as well. Example 36.3 quotes the opening eight-measure phrase of a waltz from Richard Strauss's *Der Rosenkavalier.*

3. H. D. Aiken, "The Aesthetic Relevance of Belief," *Journal of Aesthetics* 9 (1950), 313.

Example 36.3

Ⓟ RICHARD STRAUSS: WALTZ FROM *DER ROSENKAVALIER*, LAST PART OF ACT II

The melody outlines a stepwise descent from $\hat{3}$ down to $\hat{4}$ against a framing harmonic background of I-V^7. Drawing on our knowledge of the style, we anticipate that the next phase will be a complementary sequence from $\hat{2}$ down to $\hat{3}$ (V^7-I) in the succeeding eight bars (Example 36.4).

Example 36.4

Ⓟ IMPLIED CONTINUATION

When we look at the composer's own version, however, we see that after beginning the consequent phrase on $\hat{4}$, the music suddenly veers off in such an unexpected manner that the eventual tonic goal seems in jeopardy (Example 36.5). At the last moment, Strauss regains his original course, leading to the anticipated final $\hat{3}$ over tonic harmony. The stepwise motion we expected in the phrase is still apparent in the composer's version, although it has been cleverly disguised in the inner voice with $\flat\hat{7}$ and $\flat\hat{6}$ scale degrees and some notes are implied. Play both versions and note your affective response to each.

Example 36.5

𝄞 STRAUSS'S CONTINUATION

Another example of this process occurs in the phrase periodicity of the Minuet from Haydn's "London" Symphony No. 104 in D Major; Example 36.6 quotes only the primary melodic line. With the exception of one six-measure extension in the second reprise, practically all of the phrases are based on a recurring 4 + 4-measure pattern. The return of the original theme in the tonic at measure 35 appears to signal the final eight-bar period of the piece. At this crucial moment, the composer veers off to the subdominant (mm. 43–48), completely disrupting our sense of regular periodic grouping; observe the effect of the two measures of silence. The final phrase then restores the previous four-measure periodicity.

Example 36.6

𝄞 HAYDN: SYMPHONY NO. 104 ("LONDON"), III

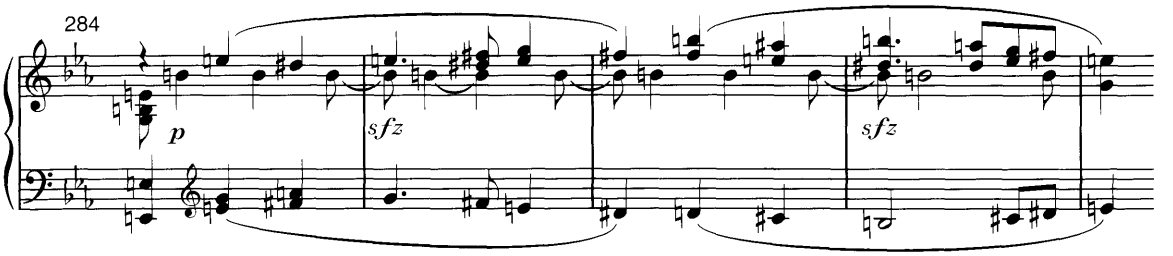
The climax of the development section of the first movement of Beethoven's "Eroica" Symphony No. 3 in E♭ Major (Example 36.7) provides an excellent opportunity to observe how simultaneous deviations in several different musical areas—harmony, rhythm, phrase grouping, and dynamics—can work together to create an overpowering emotional experience and sense of climax. The passage that opens this excerpt establishes a sequence of rising 5ths (F minor-C minor-G minor-D minor). A strict continuation of this sequential pattern would bring us through A minor to E minor, the minor enharmonic Neapolitan of the tonic E♭ major. But after the D minor passage, Beethoven breaks off the sequential motion by introducing a host of deviant elements (measure 248)—a change in the basic harmonic rhythm from four to six measures, extensive syncopation and hemiola that conflict with the established triple meter, and increasingly ambiguous chordal progressions (mm. 248–71). The passage culminates on the C $^{6}_{4}$ in measure 274 and its move to the dissonant F$^{6}_{5}$ in measure 278; note the emphasis on the minor 2nd in this last chord. Following a sudden rhythmic break with a quarter note rest, we now perceive the chord on B (measure 280) as a dominant, which finally leads us to our original goal of E minor. Notice that the bass line finally reaches the destination of E^{2} by descending stepwise motion: D^{3}-C-B-A♯-A♮-G-(F♯)-E^{2}. Concurrent with this gradual relaxation of tension, Beethoven now introduces an entirely new theme in measure 284 to complement his new tonal center. In hindsight, we may understand the

progression F^6_5-B^7-E as $\flat II^6_5$-V^7-i in E minor. But the combined tonal, metric, and periodic elements that deviate from the normal course of this piece give us a very different impression as we listen to the passage in real time.

Example 36.7

♫ BEETHOVEN: SYMPHONY NO. 3 ("EROICA"), I

248
254
260
266
272
278

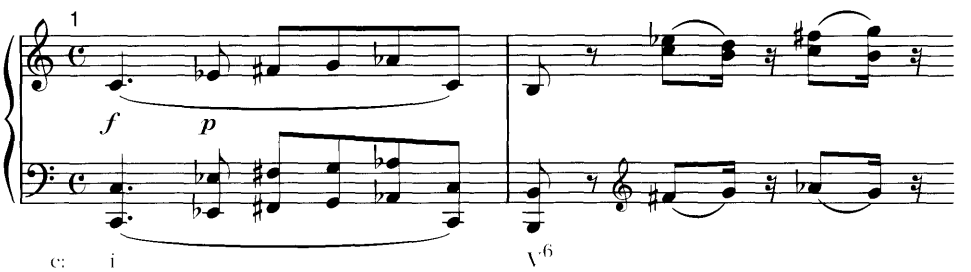


E minor (new theme)

Beethoven is not the only composer who sometimes toys with our sense of expectation. In the opening measures of his C minor Piano Fantasia, K. 475 (Example 36.8), Mozart presents a two-measure statement that moves from i to V^6.

Example 36.8

MOZART: PIANO FANTASIA IN C MINOR, K.475



Based on our familiarity with Classical style and phrase grouping, we anticipate a consequent phrase that will return to the tonic via the dominant: V^6-i (Example 36.9).

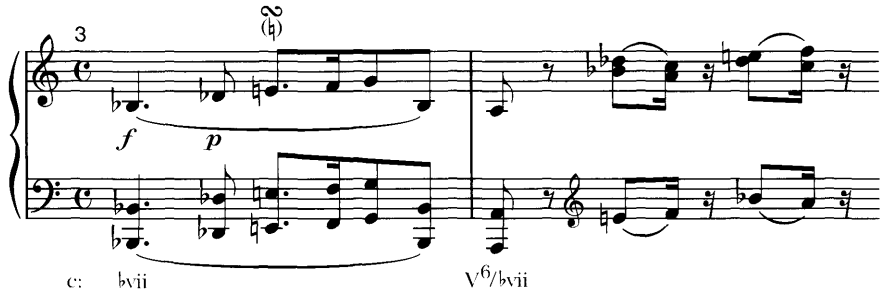
Example 36.9

IMPLIED CONTINUATION

Instead Mozart discards the expected progression in favor of a descending chromatic sequence that mimics the first phrase: C-B♮ followed by B♭-A♮ in the bass (Example 36.10).

Example 36.10

MOZART'S CONTINUATION



We now must readjust our expectations again and opt in the third phrase for a Ger^6_5, which, together with the first two phrases, outlines a typical chromatic descent from $\hat{1}$ to $\hat{5}$ in the bass: C-B♮-B♭-A♮-(A♭-G).

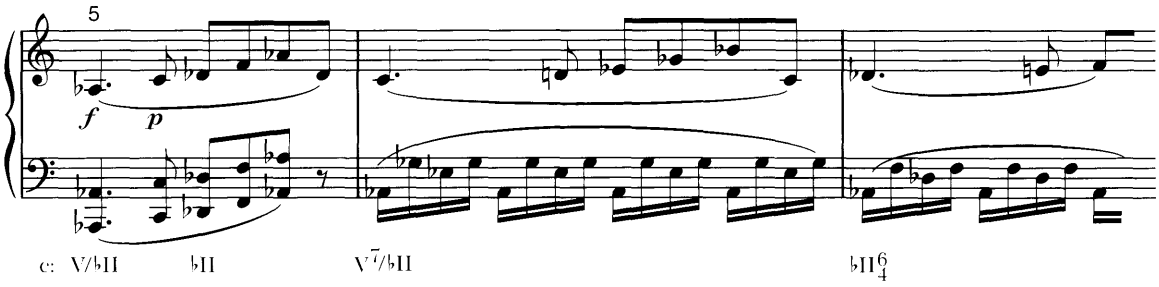
Example 36.11

IMPLIED CONTINUATION

Although the third phrase does begin with the expected A♭ in measure 5, this note fails to function as a Ger^6_5 preparation for V and instead acts as V^7 of the Neapolitan ♭II, resulting in a complete evasion of our anticipated dominant goal (Example 36.12).

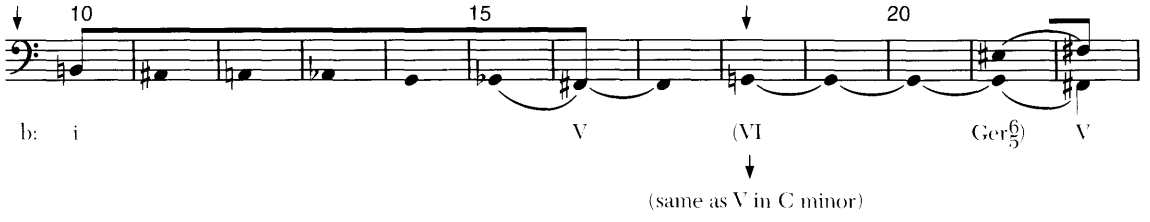
Example 36.12

♪ MOZART'S CONTINUATION



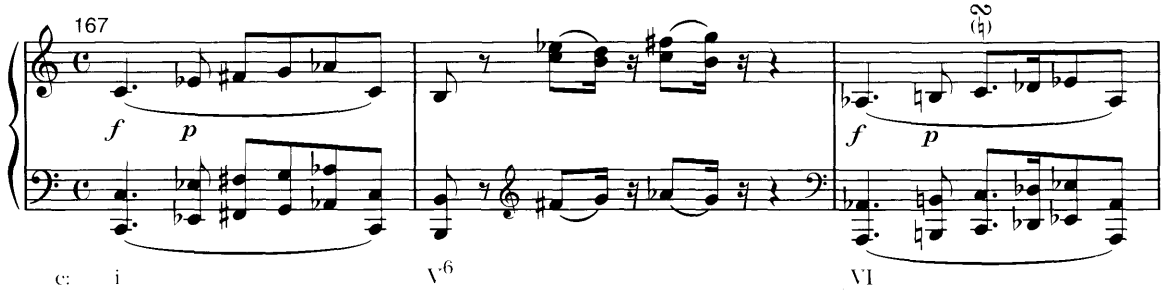
The composer has not completely forsaken the dominant G, however, for after a second chromatic descent from B to F♯ (in mm. 10–17), the G harmony reappears as an extended VI and Ger$^{6}_{5}$ in B minor, as shown in the reduction of Example 36.13.

Example 36.13



In the return of this theme near the end of the work (mm. 167–74), Mozart abandons his prior setting in favor of a more direct approach to the tonic, employing the previous D♭ triad (measure 5 of Example 36.12) as ♭II^{6}, which eventually resolves via V to i (Example 36.14).

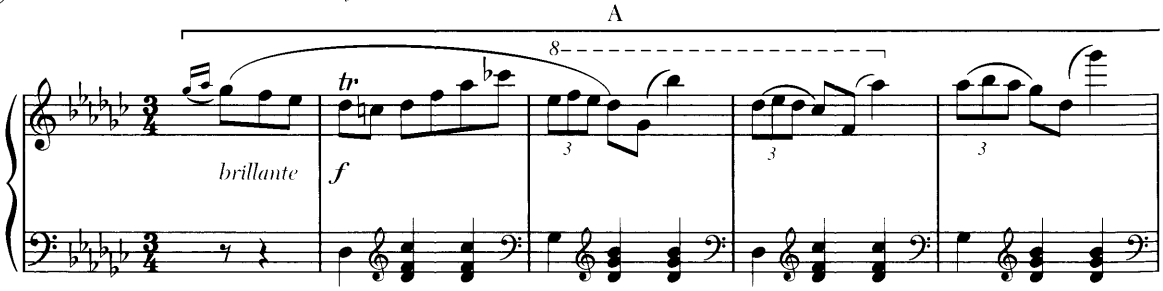
♪ **Example 36.14**



This Mozart excerpt is typical of musical situations when we are forced to reevaluate our expectations of the direction the music will actually take as it continues. This process of reevaluation can operate in the area of form and design as well. Any Chopin waltz with a stereotypical succession of repeated sections, such as his G♭ major Waltz, Op. 70, No. 1 (Example 36.15), will serve as an illustration. We have labeled the first four sections of this waltz A, B, C, and D.

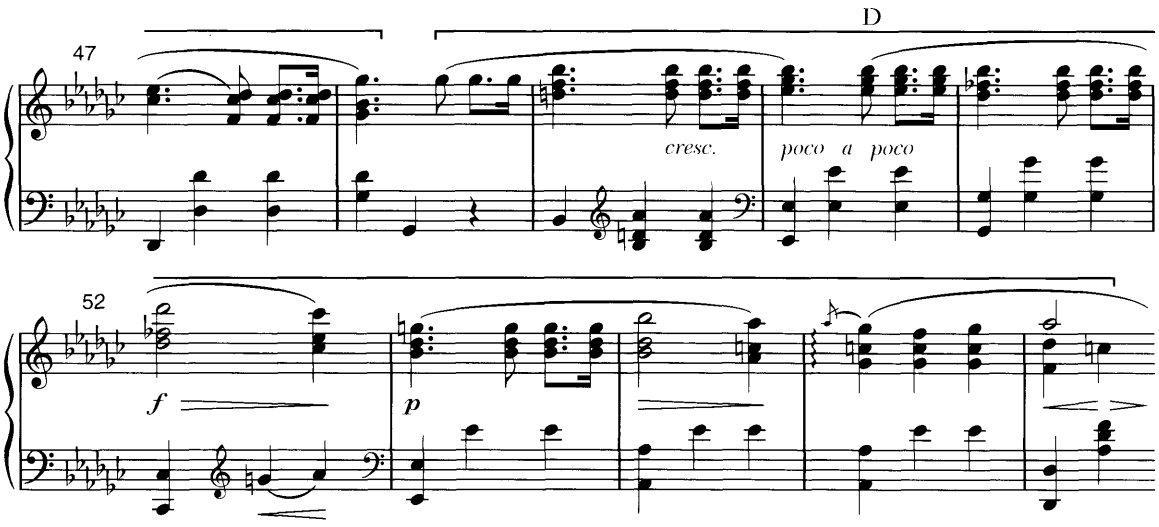
Example 36.15

(8) CHOPIN: WALTZ IN G-FLAT MAJOR, OP. 70, NO. 1



5
tr
8
3
3
A
9
tr
8
(p)
3
3
3
13
tr
8
3
3
8
f
B
18
(8)
8

B
23
tr
8
p
28
8
molto riten.
C
Meno mosso
33
cantabile
p
38
C
42



As we hear each successive section without repeats, we can continually project possible continuations of the piece by anticipating which section we will hear next. For instance, after the first period (mm. 1–8), we might hear one of three possible continuations—an exact repetition (AA), a modified repetition (AA'), or new material (AB). As we progress through the composition in this manner, the number of possible continuations increases almost geometrically. For instance, on reaching the C section, there are seven theoretical possibilities for continuation—A, A', B, B', C, C', or D. However, because we draw on previously established patterns in making our future predictions, the number of musically logical continuations actually is more limited. The information we receive and process as we listen to the composition is coupled with the prior knowledge we bring to our hearing. In this case, the more Chopin waltzes in sectionalized form that we have already heard, the more certain we will be about our ability to predict what will happen next.

Surprise and Ambiguity

An abrupt, unexpected change in dynamics, texture, register, or harmony in a passage qualifies as a musical **surprise.** When we hear these musical surprises, we must quickly reevaluate the new situation and reconcile it to the events that immediately preceded it. Although the surprise *forte* chord in the slow movement of Haydn's "Surprise" Symphony hardly raises an

eyebrow today, the unexpected *fortissimo tutti* chord that opens the development section in the first movement of Tchaikovsky's Sixth Symphony always succeeds in catching a few concertgoers off guard.

Extended **ambiguity** is another matter. The suspense created because we are unaware of a clearly defined path to a tonal goal can powerfully influence the way we perceive the achievement of that goal. The ingenious transition between the last two movements of Beethoven's Fifth Symphony in C Minor is a classic example (Example 17.8). The composer wished to build up to the triumphant C major triad that opens the symphony's Finale. But the usual *tutti* ending to a scherzo is normally followed by a pause between the movements, which would hardly prepare the listener for the dramatic entry of the last movement that Beethoven had in mind. He therefore concludes the scherzo *pianissimo* in pizzicato strings with a deceptive cadence (measure 324). The A♭ and C of the VI chord are extended for some fifteen measures, underpinned by little more than a monotonous timpani rhythm. Even the tentative entry of the violins fails to clarify our sense of the tonic goal. We are held in suspense until a belated V^7 finally propels us toward Beethoven's intended C major resolution. The ambiguity generated by this transition is what makes the sun-filled opening of this Finale so effective. Beethoven has also held his trombone section in reserve for the previous three movements in order to make their entry at the opening of the Finale even more dramatic.

C major also represents the tonal resolution and goal of similar ambiguous passages of at least two other famous works. The introduction to Haydn's *Creation*, appropriately entitled "Chaos," builds up considerable psychological suspense, which is finally dissipated during the following recitative in the magical C major setting of the words "Let there be light." Likewise, the somber and ambiguous diminished seventh harmonies at the opening of the Finale to Brahms's First Symphony give way to the famous horn solo in C major, with its strong suggestion of the Westminster chimes.

Application to Musical Analysis

We may apply the principles discussed above to the analysis of musical compositions. In addition to considering harmony, voice leading, rhythm, and form, we should also direct our attention to the ways in which stylistic norms or deviations from these norms operate within individual pieces. One such work is quoted in the Workbook with suggestions for analysis.

Terms and Concepts for Review

music aesthetics
referential music
absolute music
style system
implication and realization
tendency and expectation vs. resolution
norms and deviations in harmony, melody, phrasing grouping, and form
reevaluation of expectations
surprise
ambiguity

A BRIEF REVIEW SELF-QUIZ

1. Fill in the blanks:

A. Our emotions are aroused when our tendency to respond to a particular situation is _____.

B. Extramusical sources outside the music give rise to _____ meanings.

C. Extended unpredictability may give rise to _____.

D. A collection of preferred tendencies for a large group of music compositions is a _____ _____.

E. Musical meanings derived from relationships within the music are _____.

F. The implication set up by harmonic and/or melodic tendencies is resolved by its _____.

CHAPTER 37

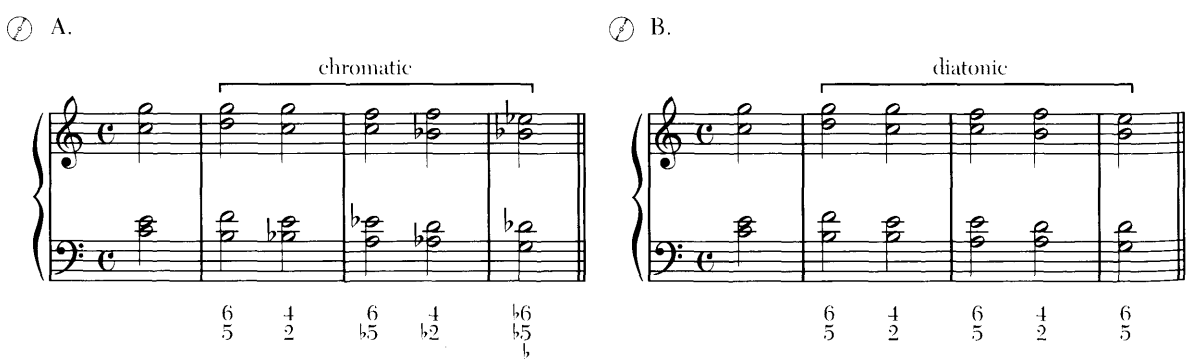
Harmonic Sequences III:

CHROMATIC ELABORATIONS OF DIATONIC SEQUENCES

NOW THAT WE HAVE COMPLETED our survey of individual altered chords, we can step back and see how chromaticism may influence the voice leading of an entire passage or composition. In this chapter we will discuss how diatonic sequential patterns, such as those presented in Chapters 20 and 23, may be elaborated chromatically. In the final chapters that make up Part Four of this text, we will examine a range of advanced chromatic techniques, both sequential and nonsequential, that do not have a diatonic basis.

In order to understand the nature of chromaticism in sequential writing, we must first extract the underlying diatonic pattern behind the chromatic elaboration. Examine the bracketed portion in Example 37.1a.

Example 37.1



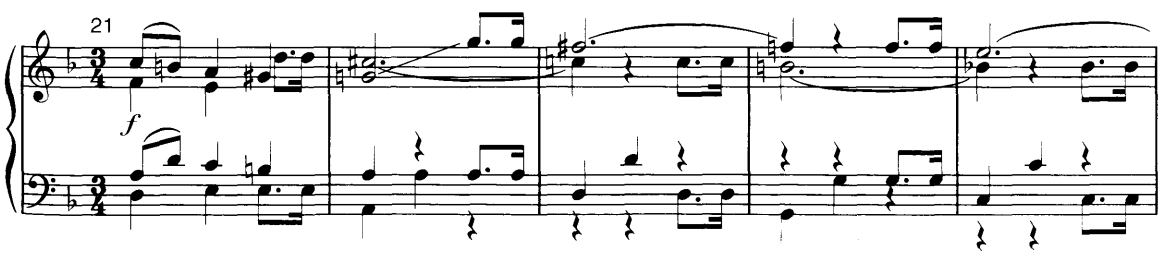
We can see that although the passage appears to begin in C major, there are numerous altered notes in the chords that follow. The figured bass shows that we are dealing with a sequence of $\frac{6}{5}$ and $\frac{4}{2}$ seventh chords, which in this case function as consecutive secondary dominant sevenths; all are major-minor seventh chords. Both the tenor and bass lines are totally chromatic since they move exclusively by half step. But if we remove the accidentals from this progression (Example 37.1b), a familiar pattern of *diatonic* sevenths descending by 5ths is revealed. This diatonic pattern forms the underlying basis for the chromatic elaboration shown in the first model. As we shall see, almost all the chromatic sequences in this chapter may be similarly reduced to a diatonic foundation.

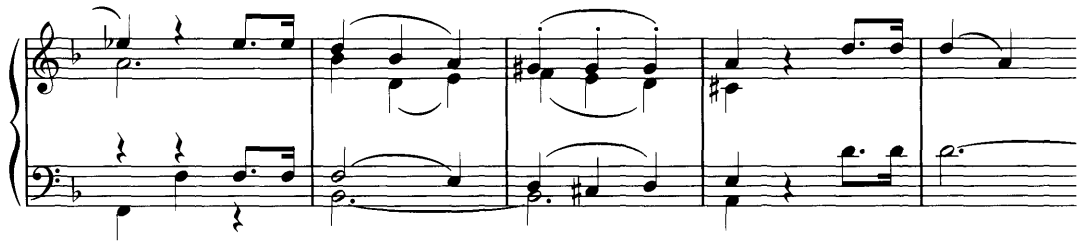
Fifth-Related Chromatic Sequences

As we observed in Chapters 20 and 23, sequences proceeding by descending 5ths sometimes consist entirely of applied dominants, such as consecutive V^7's or even vii^{o7}'s. When dominant sevenths are used, a pattern of alternating 7 and $\frac{4}{3}$ or $\frac{6}{5}$ and $\frac{4}{2}$ inversions is produced with resulting parallel tritones that move by half steps (Example 37.1a). But as we continue this pattern, we move further and further away from our original tonic, as was the case above. So the problem becomes—how can we effect a return back to I? Mozart solves this dilemma in the passage from his Minuet (Example 37.2). When the applied V^7's threaten to move too far afield, he respells the last $B\flat^7$ ($B\flat$ D F $A\flat$) as an enharmonic Ger^6_5 ($B\flat$ D F $G\sharp$), which then resolves back to the safety of a dominant cadence in the original key of D minor. For extended 5th progressions, some of which do not exhibit tonal closure, consult Examples 41.8 and 41.9.

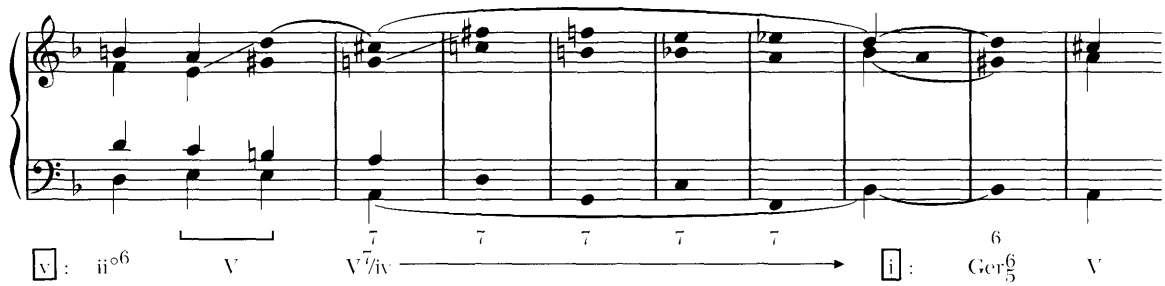
Example 37.2

A. Mozart: String Quartet in D Minor, K.410, III





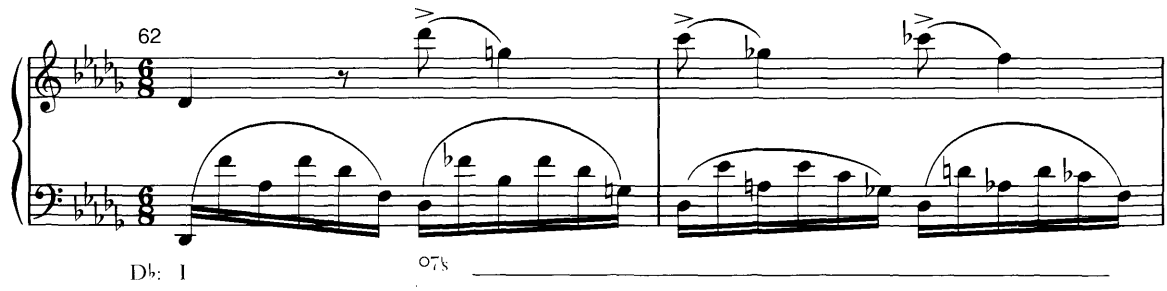
B. (REDUCTION)

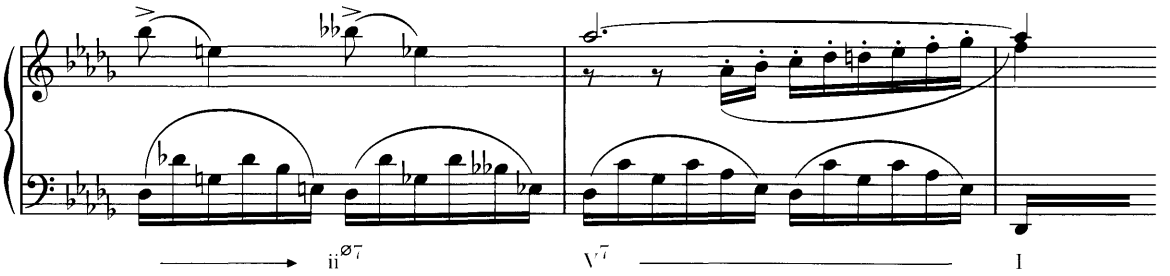


Sequences of secondary diminished sevenths (vii$^{\circ 7}$'s) can also function in a similar manner. The coda of Chopin's Nocturne in D♭ Major, Op. 27, No. 2, features a chromatically descending succession of diminished 7ths which span the opening I and the cadential ii$^{\emptyset 7}$-V^{7}-I (Example 37.3). Although some composers were meticulous in their spelling of such chords (see Mozart's pattern of $\frac{4}{2}$ and $\frac{6}{5}$ chords in Example 21.15d), Chopin simply uses the most convenient enharmonic notations in writing his consecutive diminished sevenths.

Example 37.3

(f) CHOPIN: NOCTURNE IN D-FLAT MAJOR, OP. 27, NO. 2

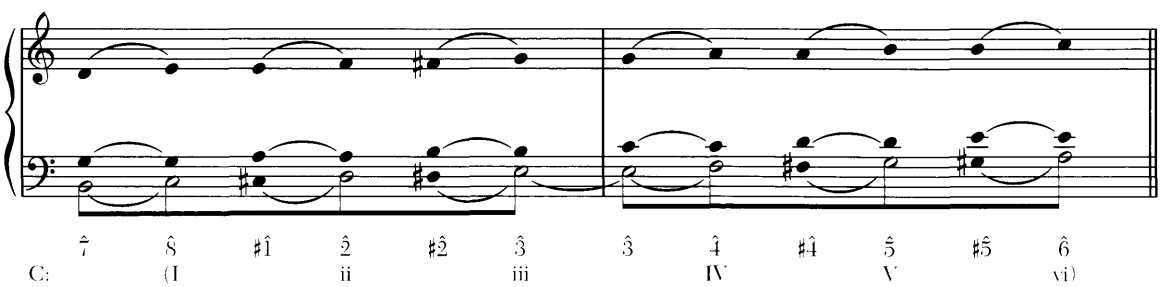




The Role of Diatonic Tetrachords in Stepwise Chromatic Sequences

In addition to 5th-related patterns, sequences featuring stepwise root movement, either up or down, are frequently subject to chromatic elaboration. In such cases, the added half-step motion within one or more voices fills in the whole steps that are generally prominent in such diatonic sequences. In the bass of the progression in Example 37.4, for instance, the diatonic notes, shown as beamed white notes, are filled in with chromatic notes, shown as stemless black notes.

Example 37.4

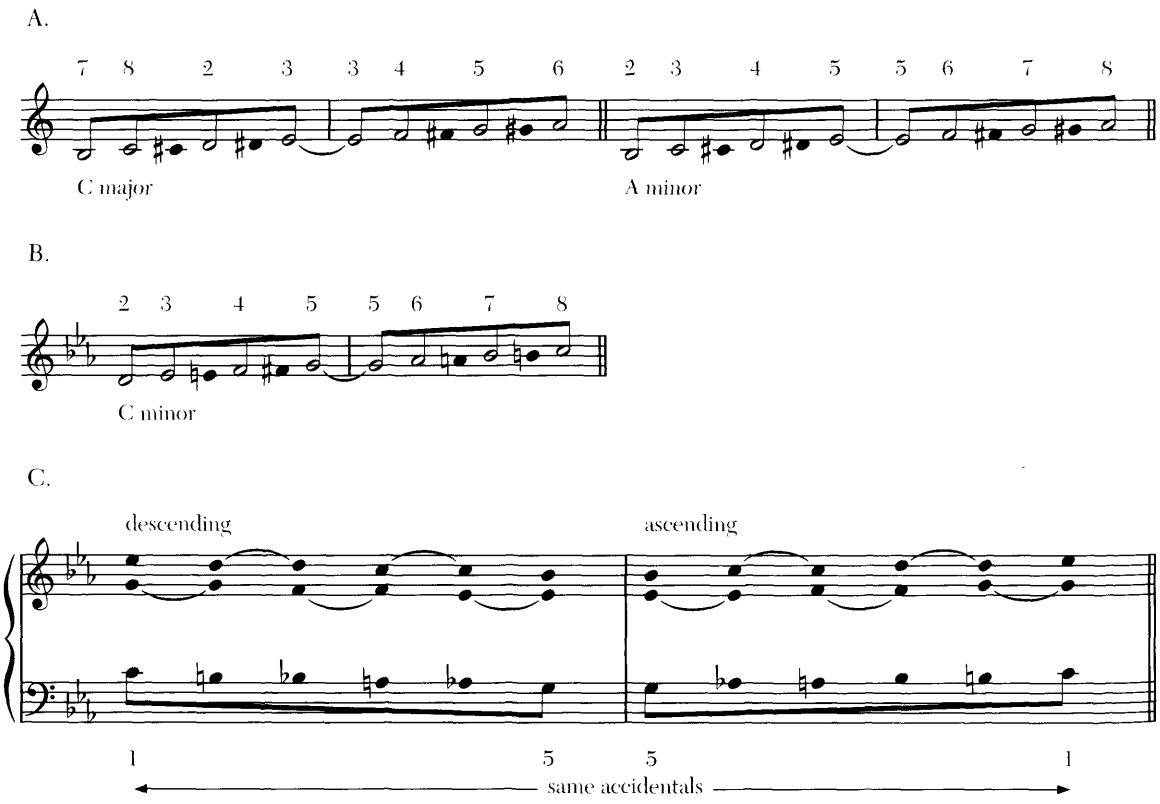


If we wish to remain within a given key center, we can extend strict chromatic patterning only so far. For instance, in Example 37.4 the strict succession of secondary dominants and tonicized root-position triads (I, ii, and iii) can continue only as far as the mediant harmony. A further extension in strict fashion (E♯-F♯, F×-G♯ in the bass) would quickly take us outside the realm of C major. The workable span we have for this short sequence (B to E) consists of a *diatonic tetrachord*—that is, a diatonic pattern of four notes that spans a perfect 4th. Here the motion is by half step, whole step, whole step (B C D E), which is then elaborated chromatically. If we wish to continue the chromaticism further within the diatonic framework of the original

key, we must begin with another diatonic tetrachord, using our last E as its first note. This new tetrachord has the same intervallic construction as the first—(E F G A), as shown in the second measure of Example 37.4. Thus, the range of the underlying diatonic tetrachord precludes any further continuation of a strict chromatic stepwise sequence.

Let us examine the nature of these tetrachords before we proceed to identify how they serve as the foundation for chromatic sequential passages. The major scale consists of two such diatonic tetrachords, which span scale steps $\hat{7}$-$\hat{3}$ and $\hat{3}$-$\hat{6}$ (Example 37.5a). These same notes occur in the natural minor between scale steps $\hat{2}$-$\hat{5}$ and $\hat{5}$-$\hat{8}$ (Example 37.5b). Each pair is connected by a common tone—$\hat{3}$ in major and $\hat{5}$ in minor.

Example 37.5



In Example 37.5c we have transposed the pitches of the minor-key tetrachords to C minor in order to compare them better to C major. Within a given harmonic context, composers tend to use the same chromatic accidentals and chromatic harmonies, regardless of whether the chromatic line ascends or descends within the tetrachords.

Chromatic Elaborations of Diatonic Stepwise Sequences

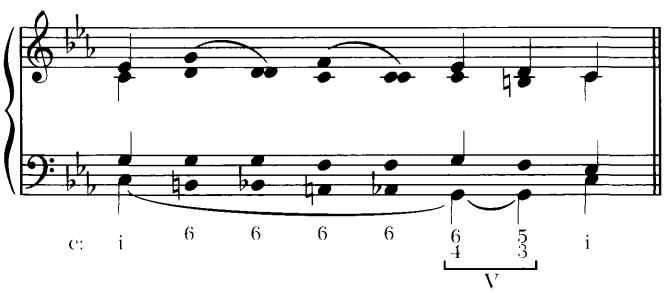
There are four basic diatonic sequences whose stepwise root movement is frequently chromaticized—two ascending versions and two descending versions. As in other harmonic sequences, the first and last chords normally serve as the tonal pillars of the progression. We will label these framing functional chords with Roman numerals and indicate the interior contrapuntal motion of the sequence with figured-bass symbols. The underlying diatonic stepwise motion will be stemmed and beamed.

Descending Chromatic $\frac{6}{3}$ Sequences

We may chromatically elaborate a succession of $\frac{6}{3}$ triads that descend from tonic to dominant ($\hat{1}$ down to $\hat{5}$). The frequency of this progression has engendered the term **the chromatic tetrachord**, in which one voice, usually the bass, moves by half step ($\hat{8}$-$\sharp\hat{7}$-$\flat\hat{7}$-$\sharp\hat{6}$-$\flat\hat{6}$-$\hat{5}$), while the remaining parts, usually the upper voices, are essentially diatonic. In the basic model of this progression (Example 37.6a), the first-inversion triads will change chord type, usually from major to minor triads. In Mozart's elaboration (Examples 37.6b and c), the second chord of measure 2 is a diminished triad.

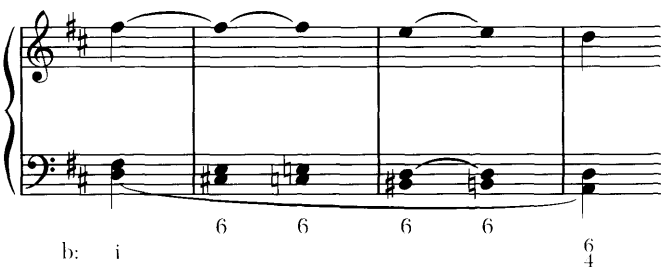
Example 37.6

A.



B. Mozart: Piano Sonata in D Major, K.311, III

C. (REDUCTION)

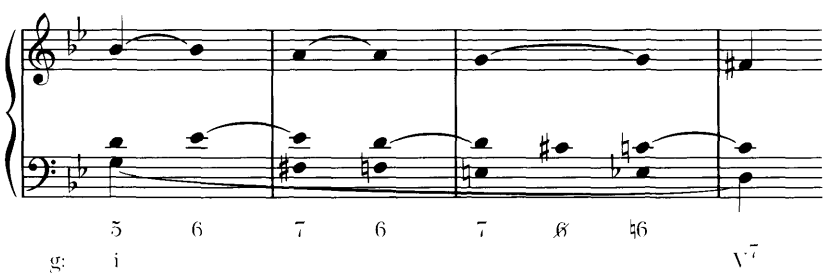


The descending chromatic $\hat{8}$-$\hat{5}$ tetrachord was often used in the Baroque period as the harmonic basis of variation sets in the minor mode, forming the melodic foundation for numerous passacaglias and chaconnes. In the Handel excerpt (Examples 37.7a and b), the consecutive 6th chords are embellished with 7-6 suspensions. The Chopin waltz is somewhat different; all the voices proceed chromatically to the $\frac{6}{4}$ cadence in the penultimate measure, which concludes the sequential movement (Examples 37.7c and d). Although parallel 5ths seem to occur between the inner voices in measures 25–28, the tenor line (C^4-B♮-B♭-A) simply consists of octave doublings of the soprano; in the reduction, we have eliminated this line.

Example 37.7

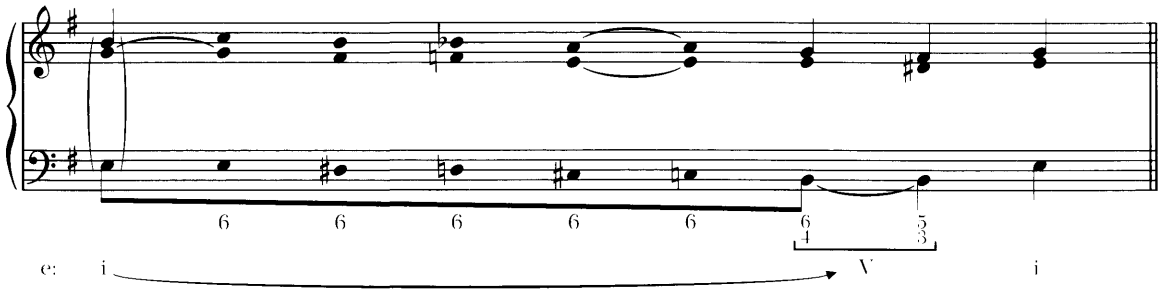
(♪) A. HANDEL: CHACONNE IN G MAJOR FROM *TROIS LEÇONS* (G. 230), VAR. 16

B. (REDUCTION)



C. CHOPIN: WALTZ IN E MINOR, OP. POST.

D. (REDUCTION)

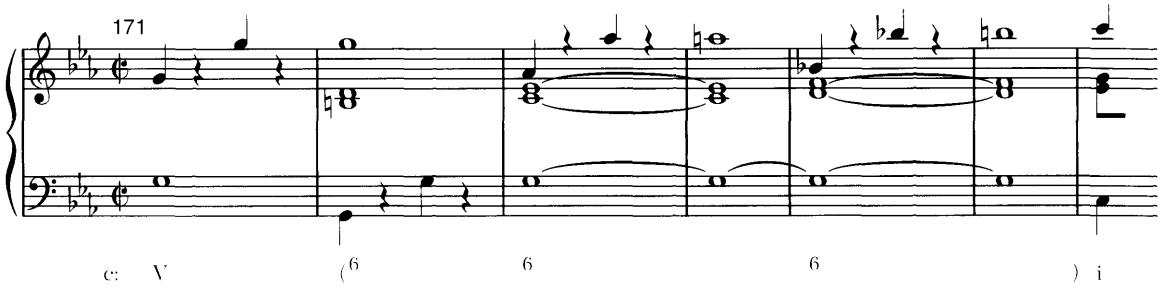


Ascending Chromatic Stepwise Sequences (1st Inversion and Root Position)

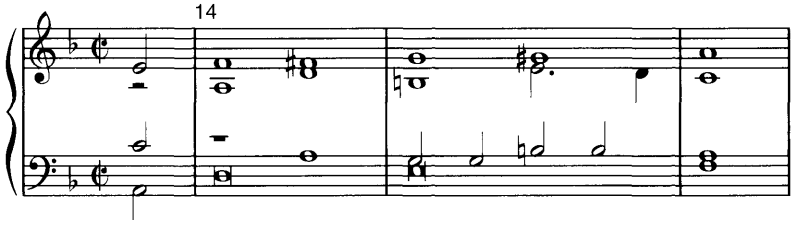
The inversion of the above sequence, in which the pattern ascends stepwise is much less common. It may continue to employ $\frac{6}{3}$ triads, as in the Mozart passage below (the extended bass G in Example 37.8a is a pedal), or sometimes even incorporate root-position triads, as in the Vicentino excerpt (Example 37.8b). As you might imagine, there is a real danger of parallel octaves and 5ths in this last progression. Examine the passage carefully and see if you can determine how the composer's partwriting has avoided this problem between measures 1–2 (D to E) and measures 2–3 (E to F).

Example 37.8

A. MOZART: WIND SERENADE IN C MINOR, K.388, I



B. NICOLA VICENTINO: "MADONNA IL POCO DOLCE," FROM *L'ANTICA MUSICA*

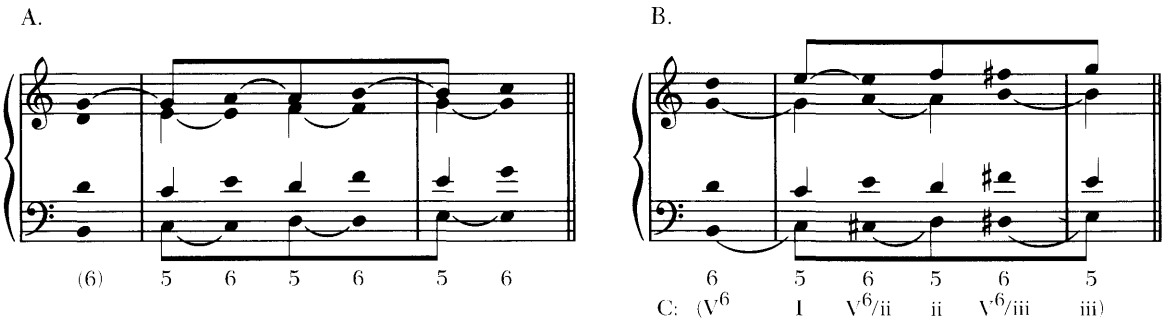


Ascending Chromatic 5-6 Stepwise Sequences

The ascending and descending diatonic 5-6 pattern is one of the most commonly chromaticized sequential progressions. In Chapter 20 we discussed this type of linear motion as a means of preventing the formation of parallel 5ths. As the underlying roots of the $\frac{5}{3}$ chords rise or fall by step, the 5-6 voice-leading motion occurs above the bass. In such patterns it makes no difference whether the first chord is a $\frac{6}{3}$ or a $\frac{5}{3}$, just as long as the two continue to alternate throughout the sequence. We will begin with a discussion of the ascending version.

The diatonic tetrachord from $\hat{7}$ up to $\hat{3}$ in a major key (Example 37.9a) is elaborated with a chromatic bass line in Example 37.9b. The resulting sequence may be viewed as successive tonicizations of I, ii, and iii by their secondary dominants.

Example 37.9



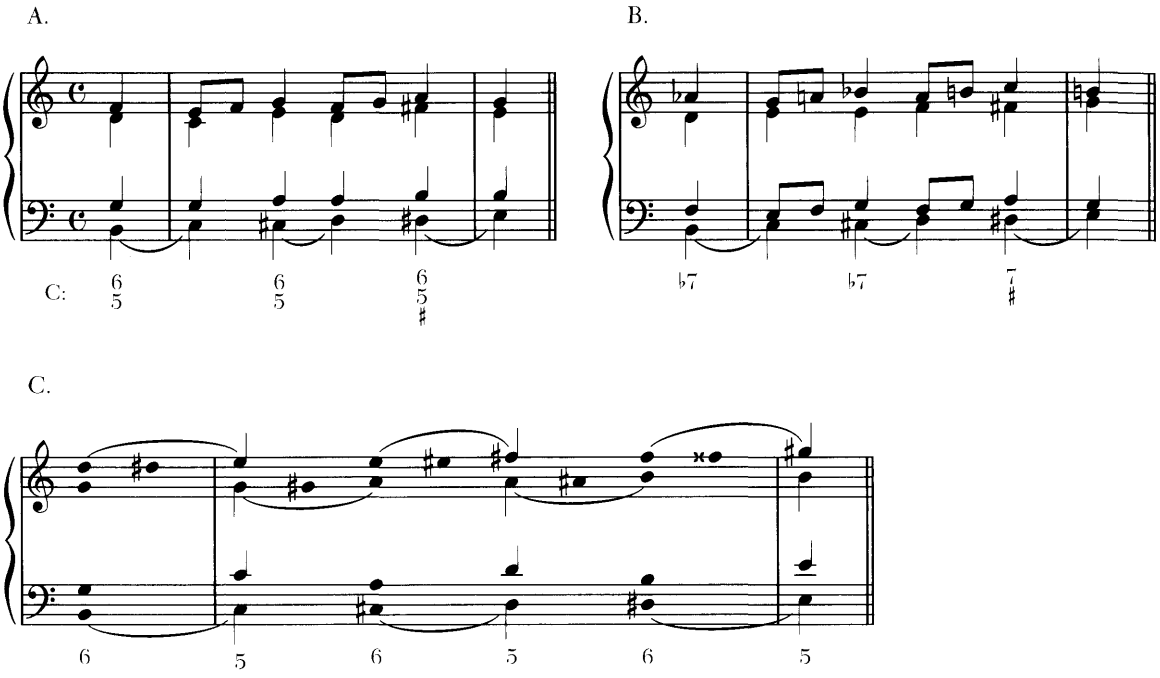
In the Handel fugue (Example 37.10), the bass moves chromatically from $\hat{1}$ all the way to $\hat{6}$ in D major. Two underlying tetrachords are utilized; the first one (C♯-D-E-F♯) is incomplete, since the C♯ is not present, and the second one (F♯-G-A-B) is complete. The common tone is F♯, scale degree $\hat{3}$.

Example 37.10

ℱ HANDEL: FUGUE IN B MINOR

Chromatic elaborations of 5-6 patterns may also feature secondary V^6_5 or vii^{o7} chords, as shown in Examples 37.11a and b. In Example 37.11c, the addition of chromatic motion in the alto and soprano voices, shown with slurs, creates passing augmented harmonies. All the underlying chords, stemmed and beamed in the model, are major triads.

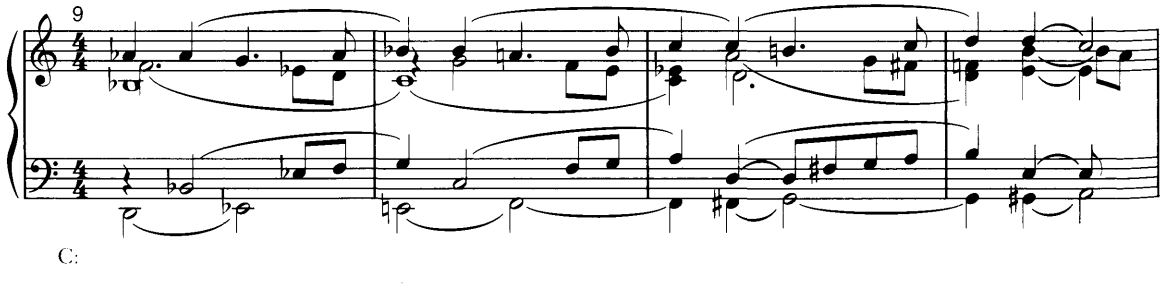
Example 37.11



The last three measures of the Humperdinck passage are based on an ascending tetrachord, $\hat{3}$ to $\hat{6}$, in C major (Example 37.12). However, the composer has extended the sequence backward by one measure. Two altered chords are employed in this extension—V^6_5/♭III and ♭III.

Example 37.12

Ⓘ HUMPERDINCK: PRELUDE TO *HANSEL AND GRETEL*



Descending Chromatic 5-6 Stepwise Sequences

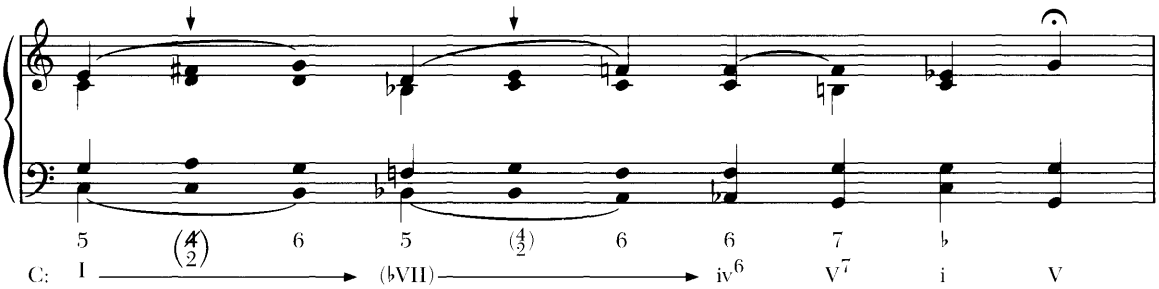
In descending 5-6 sequences, the underlying diatonic triads are followed, rather than preceded, by their dominants, as illustrated in the model (Example 37.13a). This voice leading is shown clearly in Mozart's D minor minuet, in which the opening D minor triad is followed by its V^6, and the next C triad is followed by its V^6, producing a pattern of 5-6's (Example 37.13b). The bass B♭ in measure 5 is supported by an It6, which then leads to an extension of the final authentic cadence back in the tonic. The reduction (Example 37.13c) reveals how the parallel 5ths of the essential stemmed diatonic triads are staggered by the interpolated 6 chords.

Example 37.13

Examples of the descending 5-6 chromatic sequence generally occur in the minor mode. When this pattern appears in a major key, as in the opening of Beethoven's "Waldstein" Piano Sonata shown in reduction in Example 37.14, the underlying harmonies pass through the mixture chords of ♭VII and iv^6. Beethoven has inserted two chords marked with arrows in Example 37.14 into the 5-6 progression; both are third-inversion secondary dominants—V^4_2/V-V^6 and V^4_2/IV-IV^6.

Example 37.14

BEETHOVEN: PIANO SONATA IN C MAJOR ("WALDSTEIN"), I (REDUCTION OF MM. 1–13)



A tetrachord that descends from $\hat{8}$ to $\hat{5}$ forms the basis for the Sweelinck excerpt in Example 37.15a; a D minor tonic is assumed. At first glance, the voice leading does not resemble our standard model, but as the reduction in Example 37.15b demonstrates, the upper two parts continually exchange voices, as denoted by the arrows. When these voice exchanges are normalized (Example 37.15c), the underlying 5-6 voice leading can be seen. Notice that Sweelinck does not arrive at the dominant with his bass A^2 but rather what we would consider a V^6/VI.

Summary of Chromatic Sequences

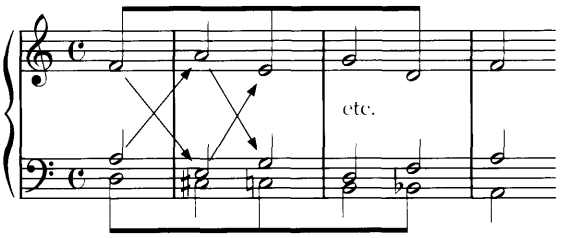
1. Most chromatic sequences are simply chromatic elaborations of underlying diatonic sequences; a common example is a fifth-related succession of secondary dominants.
2. Assuming you wish to remain in the same key, the framing scale degrees in diatonic tetrachords, such as $\hat{7}$-$\hat{8}$-$\hat{2}$-$\hat{3}$ or $\hat{3}$-$\hat{4}$-$\hat{5}$-$\hat{6}$ in major, serve as boundaries that preclude the further continuation of strict chromatic sequences.

3. Chromatic sequences are usually based on a diatonic root movement by either fifth or second; the use of 5-6 or 6-5 motion in the latter continues to avoid possible parallel fifths. The so-called descending "chromatic tetrachord," which spans the tetrachordal distance from $\hat{1}$ to $\hat{5}$ by half-step motion, is especially common.

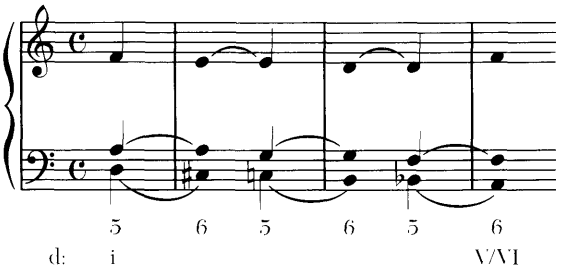
Example 37.15

A. SWEELINCK: CHROMATIC FANTASY

B. (REDUCTION 1)



C. (REDUCTION 2)



EXTENDED USE OF CHROMATIC 5-6 SEQUENCES

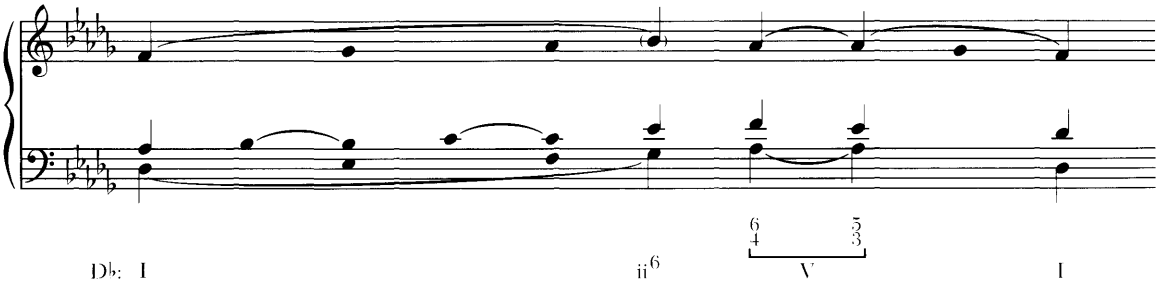
Two passages can serve to illustrate various treatments of the ascending chromaticized 5-6 sequence. The Trio (*più lento*) of Chopin's haunting C♯ minor Waltz displays an exquisite elaboration on the pattern. In order to appreciate the composer's imaginative handling of the opening section, begin by playing the middleground reduction in Example 37.16a, which represents the passage's underlying diatonic framework.

Now play the chromatic elaboration in the second reduction (Example 37.16b). The falling 3rds in the soprano artfully disguise the passage's overall stepwise ascent. Finally, perform Chopin's setting (Example 37.16c), observing how the composer first fills out the double chromatic motion of the 5-6 sequence in the tenor and bass voices, and then writes a curiously chromatic soprano line over the authentic $\frac{6}{4}$ cadence.

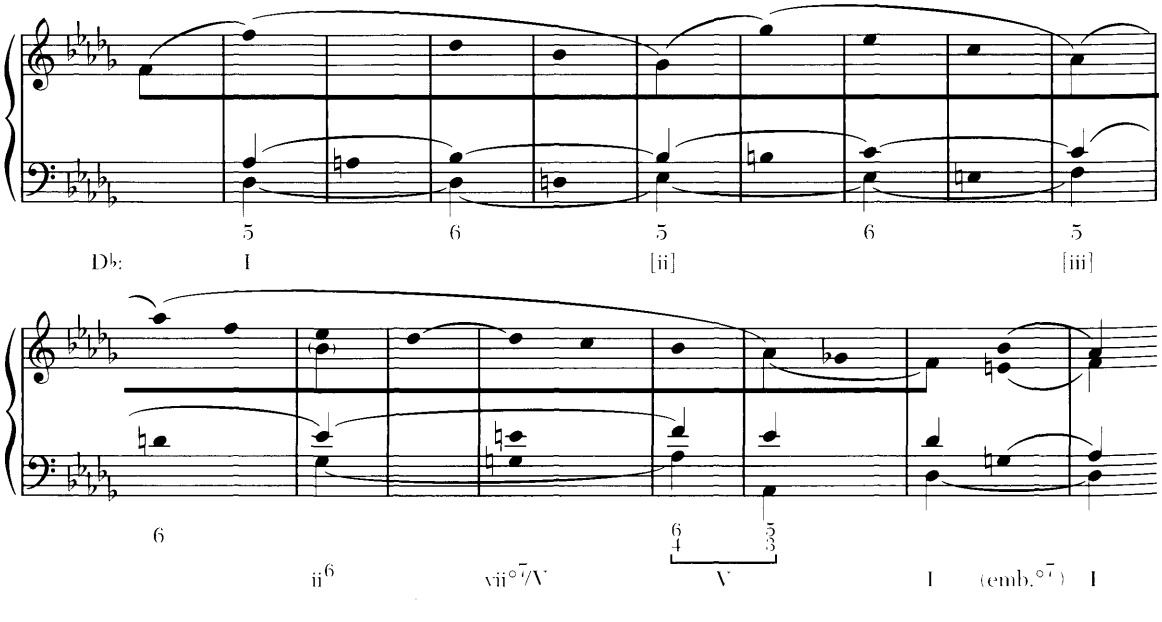
Example 37.16

CHOPIN: WALTZ IN C-SHARP MINOR, OP. 64, NO. 2, TRIO

A. (MIDDLEGROUND REDUCTION)



B. (FOREGROUND REDUCTION)

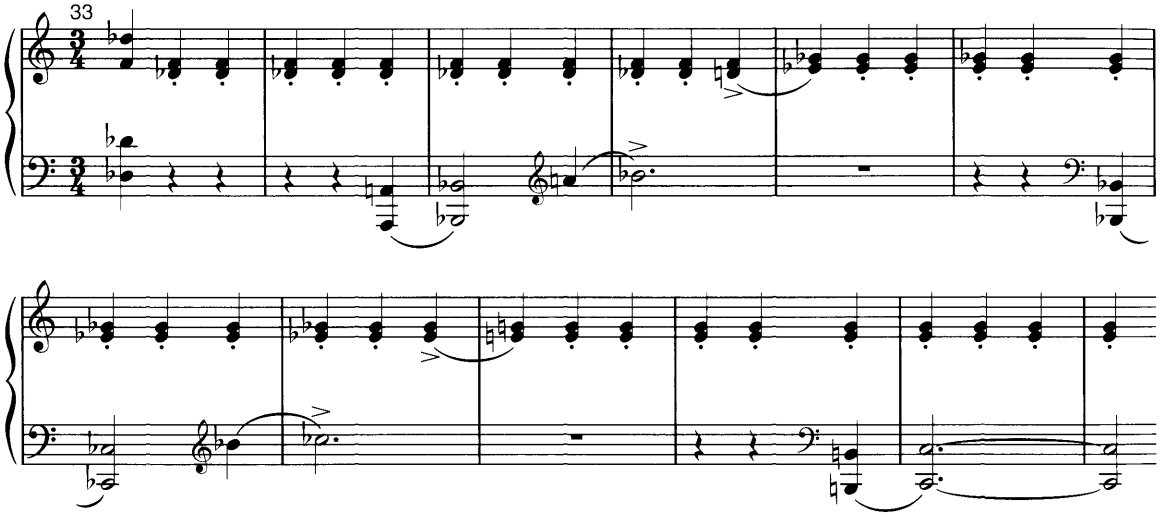


The Beethoven passage in Example 37.17a shows a more innovative approach to the ascending 5–6 chromatic sequence. In the development of the second reprise of this Minuetto, the composer has modulated from the original key of C major to the Neapolitan center of D♭ major. The tonicization of this remote key, which begins our excerpt, poses the problem of how to return to the initial C major tonic for the restatement of the opening theme. The composer first begins an ascending chromatic sequence from ♭II using a 5-6 technique that alternates between the outer voices. The reduction in Example 37.17b uses octave displacement to show the underlying voice leading and omits the redundant bass chromatic notes. On reaching a first-

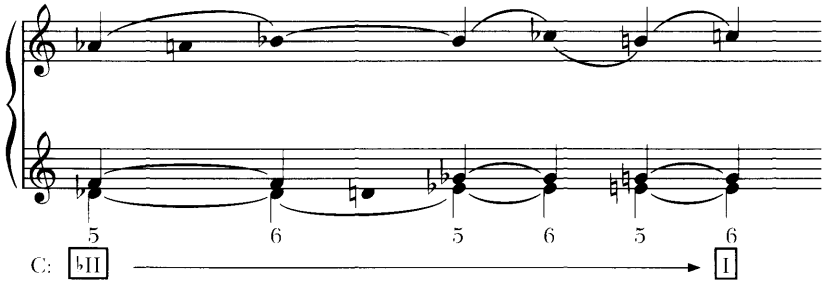
inversion C major chord, Beethoven has achieved his goal and so immediately restates his initial theme in C without recourse to the usual dominant prolongation that is typical of such retransitions.

Example 37.17

A. BEETHOVEN: SYMPHONY NO. 1, III



B. (REDUCTION)



Terms and Concepts for Review

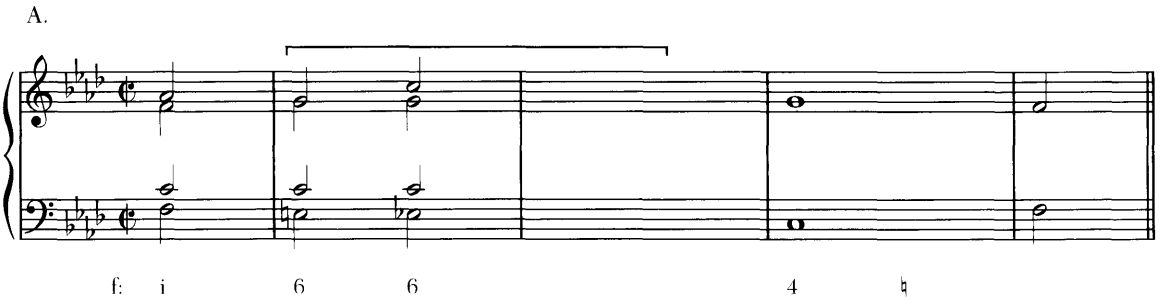
chromaticized 5th-related sequences
diatonic tetrachords as limiters in chromatic sequences
chromatic tetrachord
ascending and descending stepwise chromatic sequences
ascending and descending 5-6 stepwise chromatic sequences

A BRIEF REVIEW SELF-QUIZ

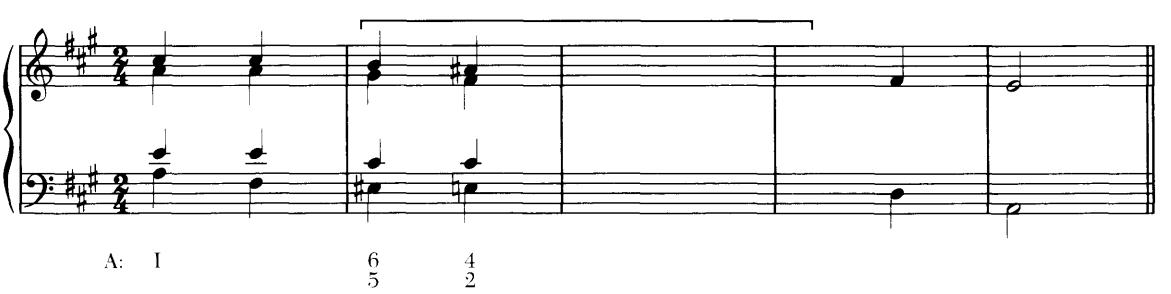
1. Complete the chromatic sequences below and then provide an appropriate harmonic analysis.

Example 37.18

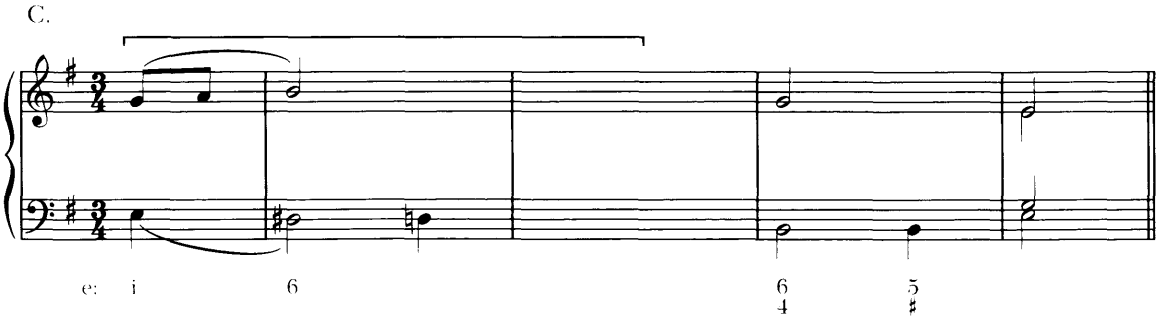
A.



B.



C.



D.

CHAPTER 38

Analytical Comments on Wagner's *Tristan* Prelude

THE ANALYSIS OF BEETHOVEN'S MINUETTO from his Piano Sonata Op. 2, No. 1 in Chapter 25 served as a summary of the diatonic techniques presented in Part Two of this text. In a similar manner we will focus on the orchestral Prelude to Richard Wagner's opera *Tristan und Isolde* to conclude our review of chromatic procedures in Part Three. The harmonic characteristics of this work present a number of interesting analytical issues, not the least of which is its lack of tonal closure.

This music drama is one of the significant watersheds in the history of Western music. In loosely basing his libretto on the medieval epic *Tristram und Yseult*, Wagner returned to a dramatic theme that continually recurs in his operas—the heroine's self-sacrifice for the hero. The libretto is filled with symbolic references, such as the longing for night that symbolizes the death wish of the lovers. Completed in 1859, Wagner's *Tristan und Isolde* represents the first major attempt by a composer to sustain a high degree of chromatic voice leading and tonal fluidity over the span of an entire opera. For years to come, its harmonic innovations continued to exert a strong influence on subsequent composers, including such diverse figures as Richard Strauss and Claude Debussy.

The Prelude or Introduction (*Einleitung*) to Act I has fascinated musicians ever since Wagner composed it in 1856, prior to beginning work on the re-

mainder of the opera. Some scholars suggest that it represents a summary of the opera's narrative, portraying the tragic plight of the star-crossed lovers in purely orchestral terms; Wagner's own program notes reinforce this hypothesis.

Several problems arise immediately in an analysis of the Prelude. The complex interaction of dissonant embellishing tones and altered seventh chords makes it difficult to extract individual chords and determine their exact spelling. In addition, the intense linear chromaticism often obscures their tonal function. The frequent use of mixture and applied chords creates an ambiguous sense of modality; it is often unclear whether a specific passage is in a major or minor key. Key signatures are particularly unreliable. For instance, the passage in measures 25–31 is written with a key signature that implies A minor (Example 38.6), but in a later exact restatement (mm. 45–49), Wagner uses a signature of three sharps, implying the parallel key of A major. Actually, as we shall see, E major is the real key underlying both passages. In addition, there is little sense of tonal stability during the tonicization of a particular key center since root-position triads are often absent. In fact, the tonic harmony of a passage may never actually appear but may simply be *implied* by its dominant seventh. Finally, the piece does not exhibit tonal closure; its opening section (mm. 1–16, Example 38.1) suggests the key of A minor through a prolongation of its V^7, while the concluding section (mm. 100–110, Example 38.8) centers around an extended half cadence in C minor, the key that opens Act I.

In this chapter we will examine several illustrative passages within the Prelude and ascertain some of the ways in which the musical material is taken up in the opera itself.[1] The initial seventeen measures of the Prelude are given in Example 38.1.

Example 38.1

WAGNER: PRELUDE TO *TRISTAN UND ISOLDE*, ACT I

1. A piano reduction of the full score may be found in various music anthologies, including Charles Burkhart's *Anthology for Music Analysis*, 5th ed. (Fort Worth: Harcourt, Brace, 1994), which also provides a list of the Prelude's important leitmotifs.

This first section consists of a threefold statement of two important themes or *leitmotifs* of the opera (themes 1A and 1B), which are linked together. With one exception, the initial minor 6th leap, characteristic of Theme 1A, turns into a major 6th leap beginning on $A\flat^3$ for the remainder of the opera. The original sketch for the Prelude, interestingly enough, shows the first tone as B^3, forming a tritone with the following F. Although many of the leitmotifs in *The Ring of the Nibelung*, which preceded this work, are directly associated with specific people, objects, or emotions, in *Tristan* these relationships are much less tangible, so that the actual naming of motifs is counterproductive. As a result, they will be given numerical designations.

The opening two chords of Theme (or motif) 1B represent one of the most famous and frequently analyzed progressions in the history of music. Although the resolution of the E^7 chord in measure 3 suggests V^7 of an implied A (minor), the soprano $G\sharp^4$ in measure 2 obscures the nature of the first chord (F B D♯ G♯). This sonority is usually referred to as the "Tristan chord," abbreviated here as TC1. Does Wagner wish us to hear the G♯ as the essential chord tone, which would create an enharmonically spelled half-diminished seventh sonority, or does he mean the following A to serve as the essential chord tone, which then produces a

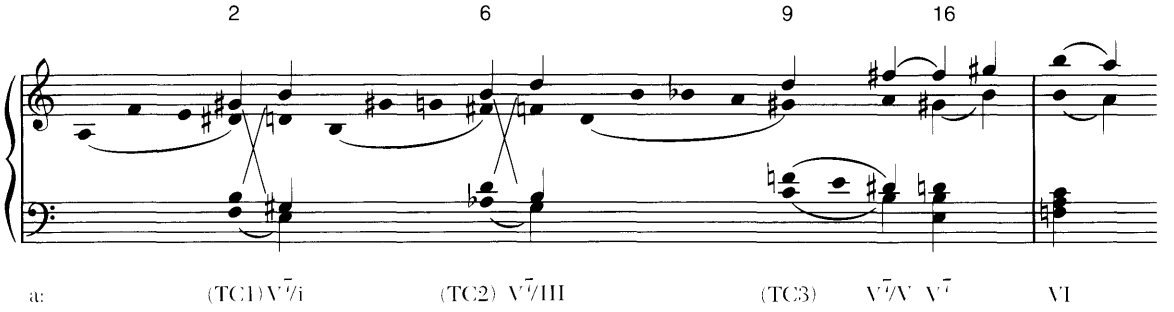
$Fr\frac{4}{3}$? This question can be resolved only by consulting other passages that contain the Tristan chord in the remainder of the Prelude and opera. Such an investigation confirms that Wagner considered the half-diminished seventh as the essential chord type. TC1 recurs throughout the opera, often in conjunction with two of its other forms that we will discuss momentarily (TC2 and TC3), and usually retains its original pitch classes, although they are often notated enharmonically (see measure 83 and the bass notes in measures 107–109 of the Prelude). For other examples in the opera, see the following excerpts in the Schirmer vocal score: measures 11–12 on page 223, measures 2–5 on page 163, and measures 16–18 on page 161, where all three Tristan chords are rearranged in succession. The presence of the vertical interval F-D♯ in this first Tristan chord indicates that it probably functions as some type of augmented 6th chord; the D♯^{4} resolves to D♮^{4}, the 7th of the E^7 chord.

Instead of moving to the anticipated tonic of A minor, this progression is immediately presented in sequence a minor 3rd higher in measures 5–7, concluding on V^7 of an implied C major tonic. The chord in measure 6 (A♭ D F♯ B) is a literal transposition of the original Tristan chord in measure 2; we will refer to it as TC2. A third statement of this basic progression (mm. 8–11) likewise suggests a half cadence in E major. Although not an exact transposition of TC1, the chord in measure 10, which we will call TC3 (C F G♯ D), retains its half-diminished chord quality by resolving to a B^7 chord another third higher. In fact, considering the restraints of the previous voice leading in the outer parts, this sonority is the only one that was available to the composer.

The reduction of this opening passage (Example 38.2) reveals an ascending 3rd sequence of half-step sighing figures in the bass, which are derived from the F^4-E^4 motion within the original 1A motif (A^3-F-E-D♯): F-E, A♭-G, and C-B. A descending half step that occurs at various pitch levels to represent sighing was well established in Baroque music and used throughout the common-practice period. Although Wagner withholds the resolution of the three dominants (E, G, and B), he nevertheless anticipates the three basic key centers of the entire Prelude—A minor (or major), C major, and E major, or, expressed in terms of A minor, i, III, and V. In a broader sense, the opening passage represents a prolongation of the V^7 of A (minor), over which the soprano ascends from $\hat{7}$ to $\hat{7}$ (G♯^{4}-G♯^{5}) by successive half steps before resolving to A^5 in measure 17. The essential notes of this chromatic ascent outline the enharmonic spelling of TC2 (G♯ B D F♯), shown by the upward stemming in the reduction.

Example 38.2

REDUCTION OF MM. 1–17



The return to E^7 in measure 16 sets up an expectation of its resolution to the A tonic chord, but instead the semitone descent in the bass reverses direction (E-F) and leads to a deceptive cadence to VI. The transient nature of these first seventeen measures masterfully portrays the frustrated love that is played out in the remainder of the opera. The intensity of the lovers' desire, depicted by the rising reiterations of the Tristan chord and their attendant dominant sevenths, is continually thwarted by each dominant seventh's lack of resolution.

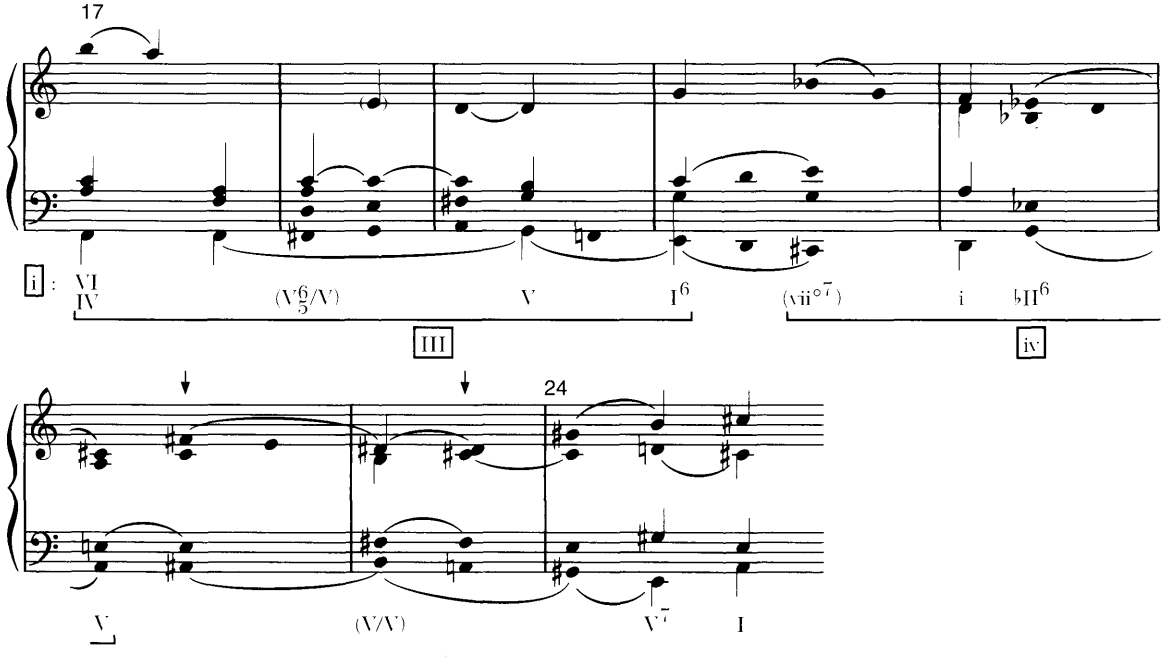
The F major chord in measure 17 introduces Theme 2 in the cellos (Example 38.3). This motive has been called the "Glance motif" by most commentators, since in the opera it appears when the eyes of the lovers first meet. (Wagner himself attached specific titles to very few of his thematic motifs.) Its diatonic melody and setting form a striking contrast to the chromaticism of the previous section.

♪ **Example 38.3**

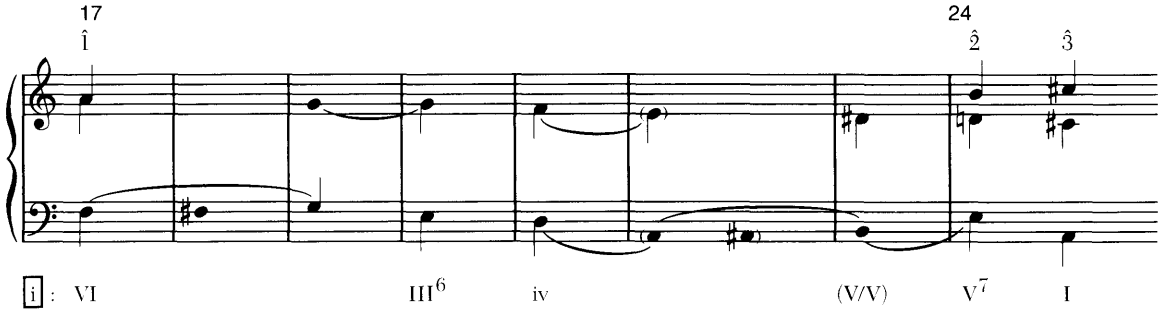
The tonal motion in these measures is now directed toward C major or III: IV-(V^6_5/V)-V-I^6. D minor, iv of the original A minor, is briefly tonicized in the following passage (mm. 20–22) before V^7/V prepares the Prelude's first and only authentic cadence in the original key of A (m. 24).

Example 38.4

A. (REDUCTION 1)



B. (REDUCTION 2)

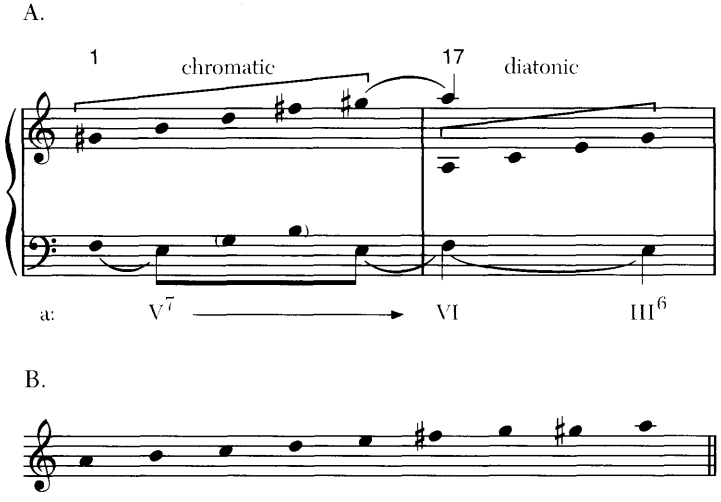


The foreground reduction in Example 38.4a extracts the basic chords in measures 17–24 and assigns them harmonic functions. The continuing melodic dissonance and linear derivation of chordal sonorities, however, make some of our chord labels less than certain. For instance, the second chord in measure 23 (the second arrow in the reduction) is especially difficult to extract. The middleground reduction in Example 38.4b suggests the large-scale progression (V^7)-VI-III^6-iv-V^7-I in terms of A (minor). The soprano ascends from A to C♯ if we assume the octave displacement of the initial A^3. Observe how the upper line splits into two separate melodic strands.[2]

In his earlier monograph *On the Overture* (1841), Wagner stated that orchestral introductions to operas should establish two basic themes or motifs of contrasting nature that will continue to interact with each other throughout the overture. The *Tristan* Prelude is a faithful example of this principle. The prevailing chromaticism of Themes 1A and B is played off against the diatonicism of Theme 2. These two motivic ideas generate the subsequent melodic material of the entire Prelude, and for that matter, much of the material in the opera itself. They are related by an underlying projection of linear thirds—G♯-D-B-F♯-(G♯) in the soprano of measures 1–16 and A-C-E-G in the Glance motif of measures 17–20. If combined, these two sets of thirds form an almost complete melodic minor scale starting on A, the implied key of the opening of the Prelude (Example 38.5).

2. These voice-leading reductions represent modified versions of the elegant graphs given by William Mitchell in his "The *Tristan* Prelude: Technique and Structure." *The Music Forum* 2 (1967): 162–203.

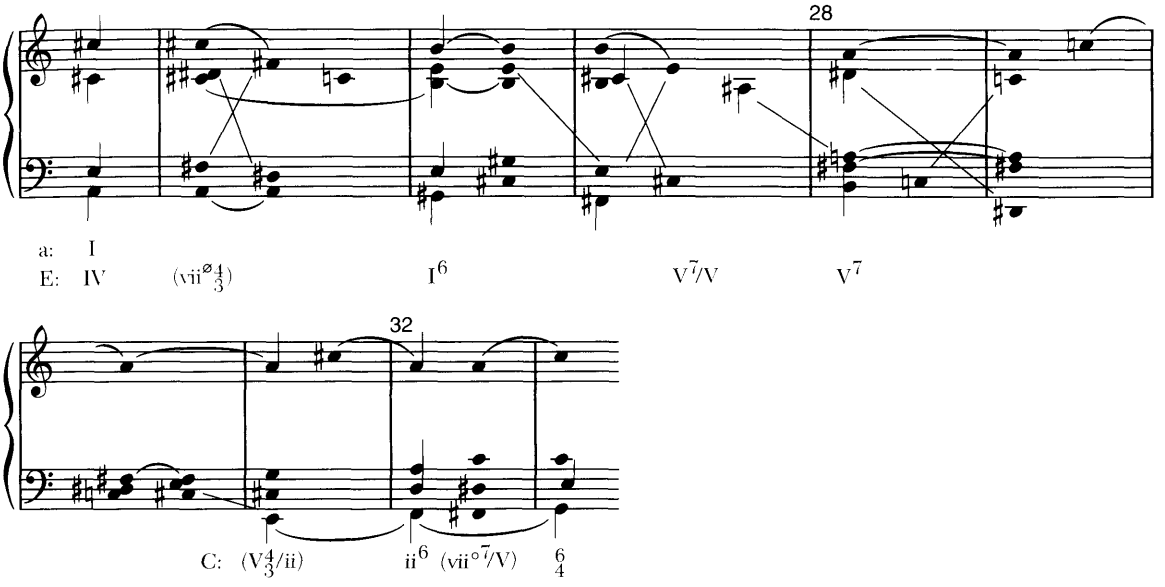
Example 38.5



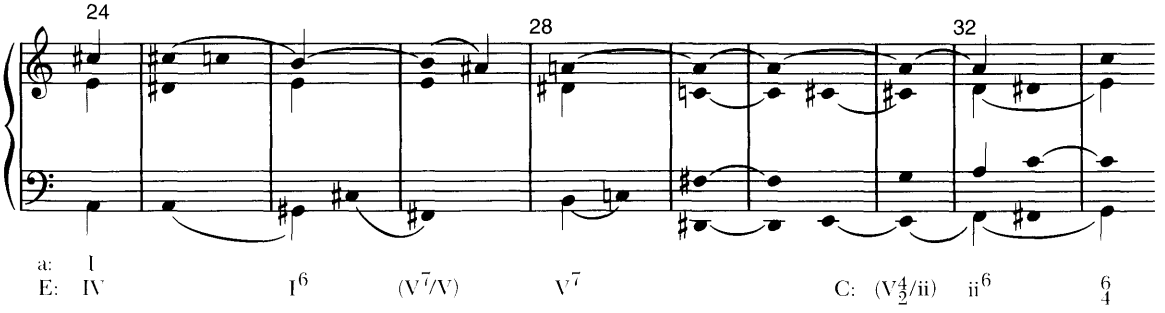
The authentic cadence on A in measure 24 serves both to conclude the first part of the Prelude and to introduce its middle section. Functioning as a IV in the dominant key of E major, this chord leads us through $vii^{o\frac{4}{3}}$ to I^6 in the new key, which is then reinforced by a succession of 5th-related seventh chords ($F\sharp^7$-B^7) (Example 38.6a). Since the voice leading is often obscured by voice exchange and shifts of register (see the foreground reduction in Example 38.6b), we have provided a middleground reduction that neutralizes these devices and normalizes the voice leading (Example 38.6c). Notice that the melodic gesture that begins this new section (mm. 25–26) represents a combination of previous motifs—Themes 2 and 1B in the soprano and the end of 1A in the alto.

Example 38.6

B. (REDUCTION 1)



C. (REDUCTION 2)

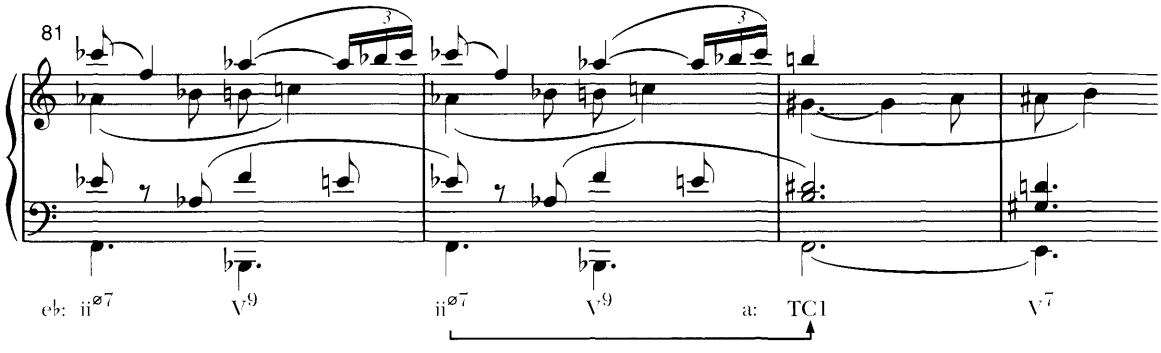


Thus, the three tonal centers that were implied earlier in the opening statements of the Prelude (mm. 2–3, 6–7, and 10–11) are now tonicized in succession—A minor/major (mm. 1–16), C major (mm. 17–20), and E major (mm. 25–28), with particular emphasis given to their V^7 harmonies.

The chromatic motion under the sustained soprano A^4 (mm. 28–32) prepares the return of the C major Glance motif via (V^4_3/ii)-ii^6-(vii$^{\circ 6}_{5}$/V)-V (mm. 31–33). Similar successions of transient tonicizations are typical of the Prelude and the opera as a whole. Although some of *Tristan*'s individual scenes operate within the loose framework of one central tonal center, the harmonies at the surface level of the music never establish a definite key for any extended length of time.

During the Prelude's climactic section (mm. 74–84), Wagner intentionally emphasizes the tonal ambiguity of the TC1 by exploiting its dual enharmonic function. In Example 38.7 it is respelled as a ii$^{\varnothing 7}$ in E♭ (minor), moving to that key's V^{7}, but not its tonic.

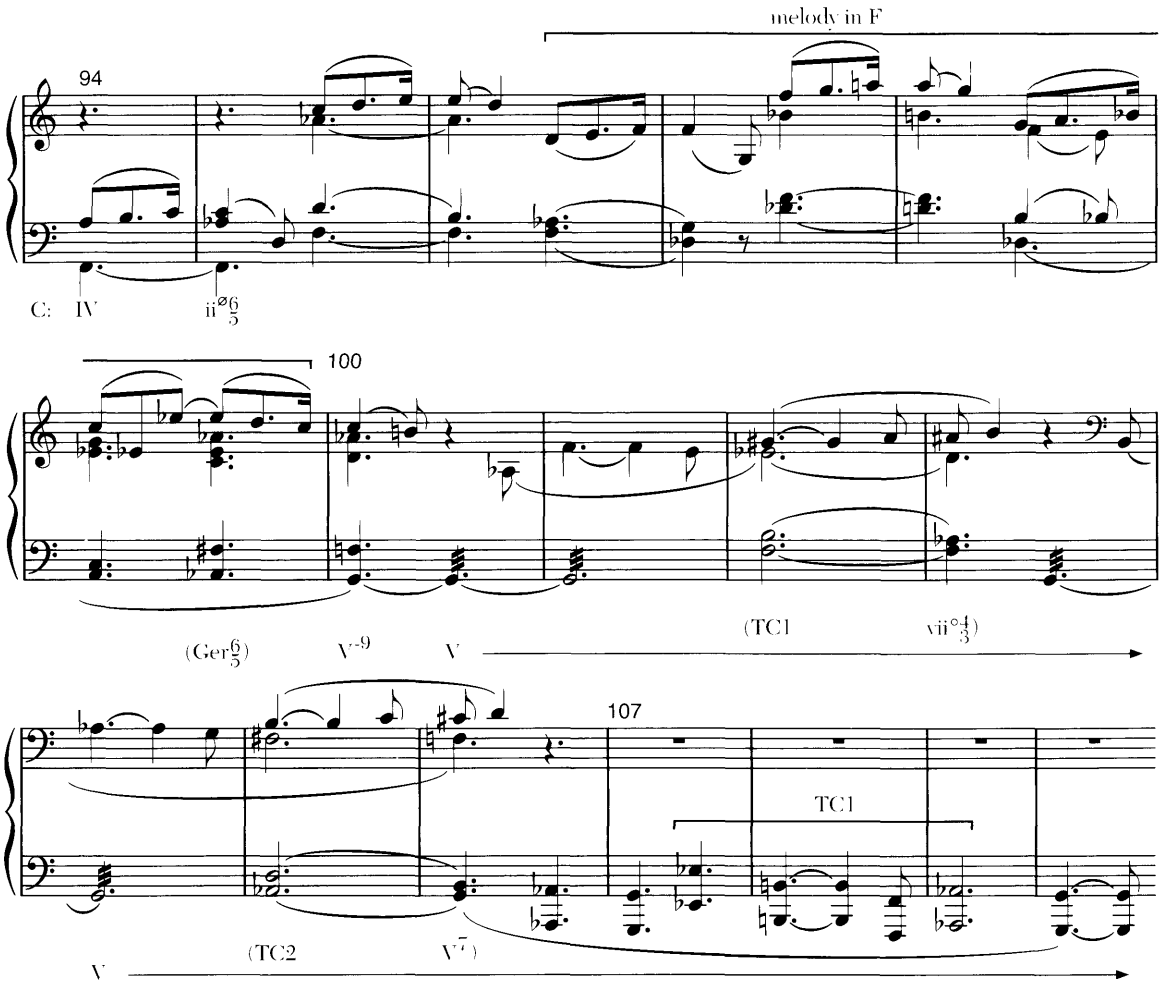
Example 38.7



Not only are the principal motifs (Themes 1A, 1B, and 2) contrapuntally combined (Example 38.7), but the repetitive root movement by falling perfect 5ths provides a diatonic setting for the tonally ambiguous 1B progression that opened the Prelude. The clearest reference to this passage in the opera occurs in Act III, where the falling 5th motion imparts a sense of renewed hope and deliverance when Tristan's faithful companion discovers that the knight is still alive. See measures 21ff. on page 259 of the Schirmer vocal score. At this crucial moment in the Prelude, Wagner respells the ii$^{\varnothing 7}$ as TC1 (in m. 83), so that its half-step resolution to the E^{7} reintroduces the despondent mood of the work's beginning. This ingenious enharmonic change, occurring at the climax of the gradual buildup begun in measure 63, must qualify as one of the most moving and psychologically adroit instances of enharmonic interplay in Western music literature.

The passage discussed above, which forms the climax of the return of the Prelude's first section, in turn leads to another restatement and extension of the three motifs that began the work (mm. 83–94). The deceptive cadence on F (VI) in measure 94 now prepares the final tonal area of C and its subsequent dominant prolongation (Example 37.8).

Example 38.8



The setting of the ensuing Glance motif is now fragmented and underlaid by darker pre-dominant mixture chords in measures 94–97; compare this treatment with the original setting in measures 17–21 (Example 38.3). Theme 3 is transposed to F or IV of C (mm. 96–100), using the same prominent ii⌀4/3 in measure 97. The climactic half cadence in measure 100 introduces a prolonged pedal on G^2, over which a final allusion to the opening two statements of 1A and 1B is presented. The earlier E^7 sonority is now transformed into a vii°4/3 of C. An enharmonic melodic reference in the bass to TC1 in measures 107–109 (E♭ B F A♭) resolves instead to the dominant of the implied C (minor).

The fact that the Prelude opens with a dominant prolongation in A and concludes with a dominant prolongation in C raises an interesting theoretical question: How are we to rationalize this obvious exception to the axiom we have stated earlier that movements in the common-practice period tend to begin and end in the same key? The fact is that the purely practical device of modulating at the end of an operatic overture to the key of the first act had been exploited for dramatic reasons by previous composers; the shift from D to F major at the conclusion of Mozart's Overture to *Don Giovanni* is a case in point. Examples of instrumental movements that lack tonal closure, however, are extremely rare in the common-practice period. Chopin's Scherzo Op. 31 and Ballad Op. 38, which conclude in D♭ major and A minor, respectively, both open in their submediant keys. The absence of tonal closure is more typical of vocal music, such as certain songs of Schubert and Hugo Wolf, in which the dramatic nature of the text may explain the directed motion between different framing keys. Even a surprising number of American popular ballads that begin in the minor mode conclude in the relative major key; Richard Rodgers's "My Funny Valentine" is a typical example.

Nevertheless, some theorists have brushed over this anomaly by basing their analyses of the *Tristan* Prelude on the version ending in A major that Wagner composed in 1860 for symphonic concerts in Paris, although this version is rarely performed today. Other scholars have viewed the primary tonic of the Prelude as C, the key that concludes both the Prelude and Act I.[3] Still others have proposed a more radical solution—a *double-tonic axis* in which the continuous vacillation between A and C sets up a dual tonal system.[4]

Lacking a prolonged tonic, both centers are relatively weak. The case for A lies in its two dominant extensions (mm. 1–17 and mm. 63–73), the authentic cadence in measure 24, and the use of its dominant key of E major for the middle section. The center of C, on the other hand, gains importance from its associations with the Glance motif originally heard in measures 17–20 and the final prolongation of its dominant in measures 100ff. The periodic recurrences of Theme 2 suggest a kind of C major ritornello that is gradually intensified through higher registers, expanded orchestration, louder dynamics, increased harmonic dissonance and chromaticism, addition of counterthemes, and phrase overlap (see mm. 32–35, 55–57, 59–62, and 74–76).

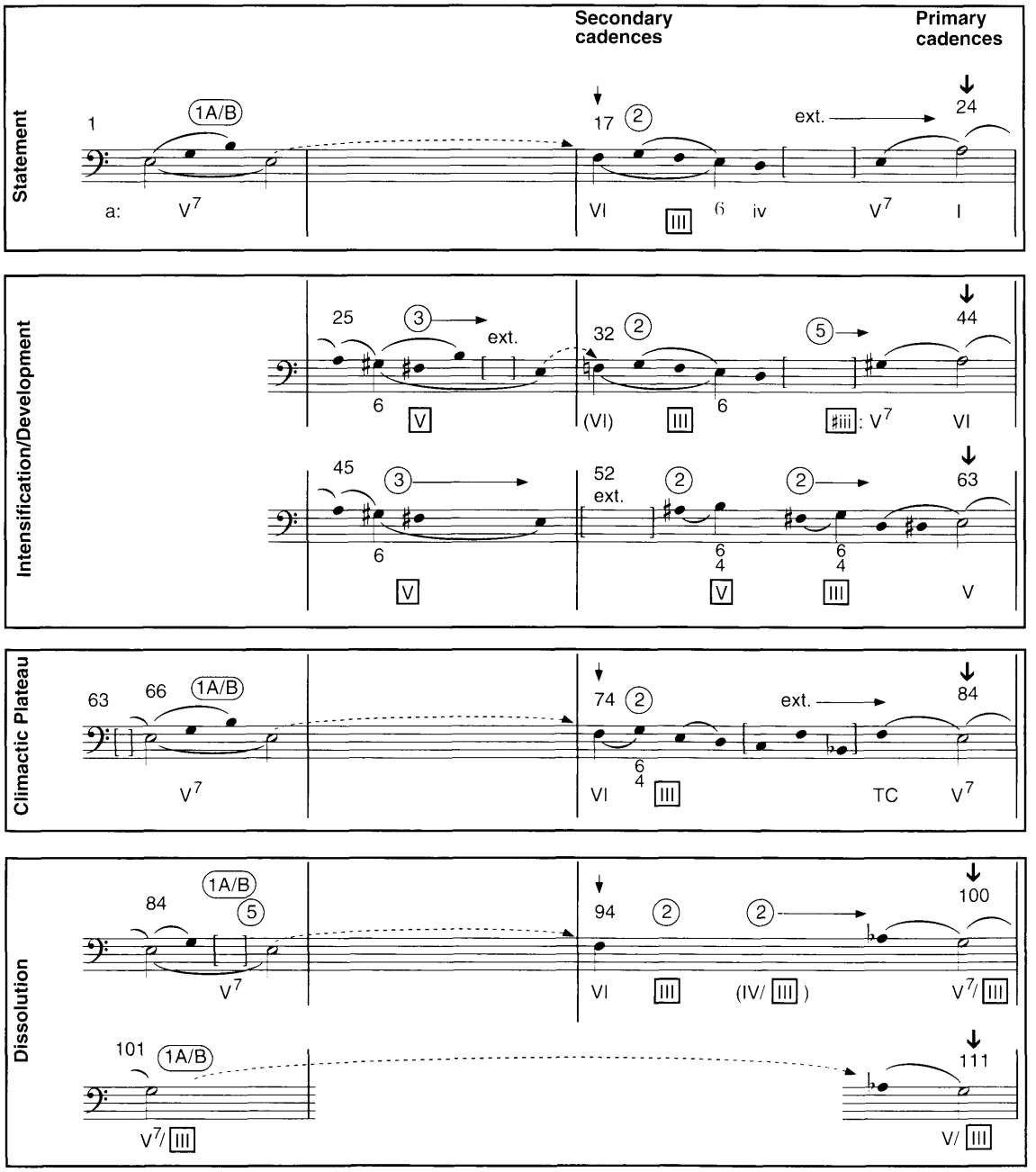
Figure 38.1 outlines the main thematic ideas of the entire Prelude marked with circled numbers as well as surface tonicizations and important cadential

3. Poundie Burstein, "A New View of *Tristan*: Tonal Unity in the Prelude and Conclusion of Act I," *Theory and Practice* 8/1 (September 1983), 15–41.

4. Robert Bailey, *Richard Wagner's Prelude and Transfiguration from Tristan and Isolde*, Norton Critical Score Series (New York: W. W. Norton, 1985), 113ff. In addition to the draft of the Prelude, this great Wagnerian scholar also includes a number of analyses by other authors.

Figure 38.1

STRUCTURAL DIAGRAM OF THE *TRISTAN* PRELUDE



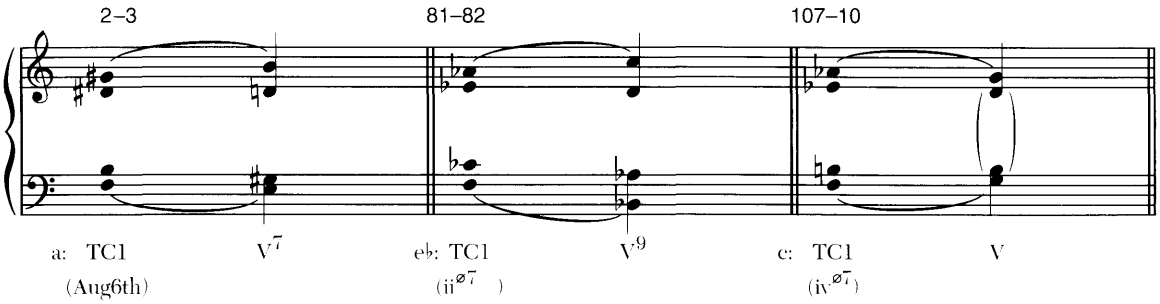
points. The vertical alignment reveals the remarkable similarity of motivic material, tonal centers, and cadences. Partly because the thematic material of the entire Prelude grows out of the ideas presented in its initial measures, the piece appears to generate itself. Nevertheless, one can make a case for a rather loose ternary design: Statement (A, mm. 1–12), Intensification and Development (B, mm. 24–65), and a double return of the Statement in the "Climactic Plateau" and "Dissolution" sections (A A', mm. 66–83 and 83–111).[5]

The melodic material and tonal relationships established in the Prelude exert a significant influence on the remainder of the opera. In particular, Themes 1A and 1B are constantly transformed to create new motifs with related extramusical associations. In the Prelude, TC1 functions enharmonically as a pre-dominant chord in three different implied key areas—A (minor/major), E♭ (minor), and C (major/minor); consult Example 38.9. These implied key centers serve as the basis for Act I, sometimes occurring in a consecutive chain of minor 3rd relationships (A-C-E♭). Beginning with the series of Love Duets in Act II, a new 3rd chain emerges that continues to the end of the opera—in Act II, A♭-B-D (minor), and in Act III, F (minor)-A♭-B. The combination of these three minor 3rd projections produces an almost complete octatonic scale of alternating half and whole steps—G♯-A-B-C-D-E♭-F—which itself is saturated with minor 3rds; see Appendix 2 for more information on this scalar formation.

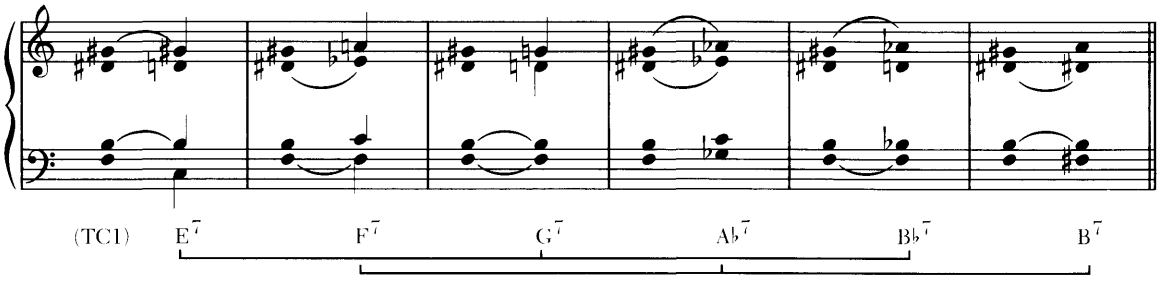
There is a deeper theoretical link between the surface harmonies of *Tristan* and its overall key scheme. We noticed that the original TC1, a half-diminished seventh, resolves to three different major-minor sevenths built on E, G, and B♭ (Example 38.9). These progressions are related through their unique voice leading, since they retain two common tones, while the remaining pair of pitches move by half step (Examples 38.10a through c). In addition, there are three other possibilities; it can resolve to major-minor sevenths on F, A♭, and B. In each case, notice the chain of minor 3rds. Since the half-diminished seventh and major-minor seventh are inversionally related—that is, they invert into each other and therefore have the same intervallic content—a given half-diminished seventh can move to six other major-minor sevenths by using the same voice leading. Wagner began to exploit this particular voice leading between these two sonorities early in his *Ring* cycle, continuing through *Tristan* to *Parsifal*, his final work. He used five of the possible six resolutions, with the half-diminished seventh always appearing first. In almost every case, the extramusical or dramatic association of the progression pertains to fate, magic, evil, or the supernatural. In *Tristan*, the first occurrence of TC1 in Act I (mm. 16–18 on page 8 of the Schirmer vocal score) appears in conjunction with the mention of Isolde's mother, who is a sorceress.

5. The terms in quotation marks were coined by Robert Morgan and describe the fragmentation of the A themes toward the end of the Prelude.

Example 38.9



Example 38.10

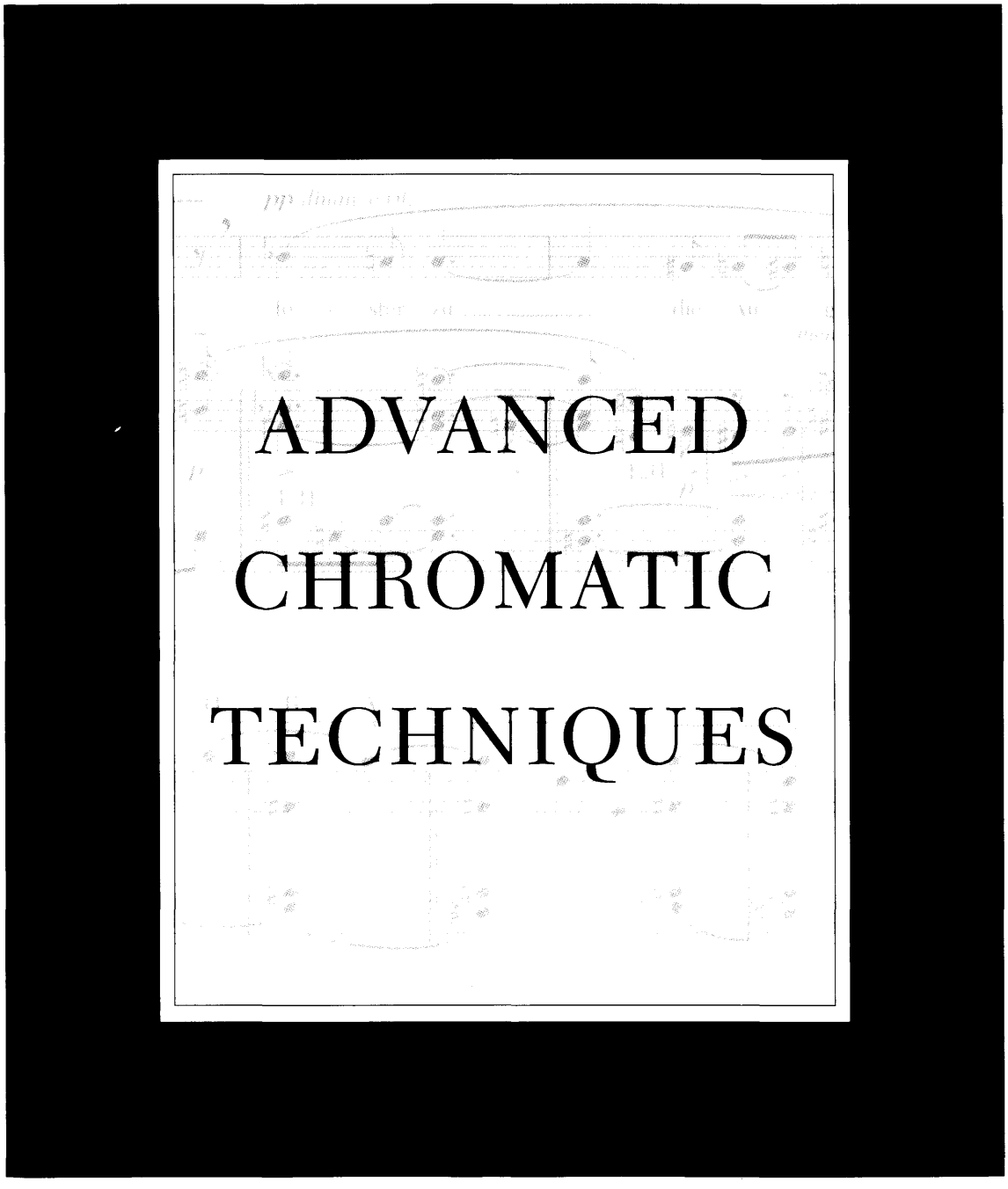


We have touched on a number of significant features of this remarkable work, but you may wish to examine some additional aspects, using a complete condensed score. The following questions might form the basis for class discussion.

1. How is the melodic material in measures 25–26, 36–37, and 63–64 derived from the original motifs? (Recall the melodic chains of 3rds.)
2. Can you trace the recurrences of the C major Glance motif and indicate how Wagner gradually intensifies each succeeding restatement?
3. Why do you think there is a cadence on a deceptive A major chord in the temporary center of C♯ minor in measures 42–44? (Refer to mm. 23–25.)

With this chapter we conclude our basic survey of chromatic harmony in the common-practice period. In Part Four we will discuss some advanced chromatic techniques that led to the dissolution of functional tonal harmony, a tendency that began to occur around the beginning of the twentieth century.

PART FOUR



ADVANCED CHROMATIC TECHNIQUES

CHAPTER 39

Chromatic Voice Leading

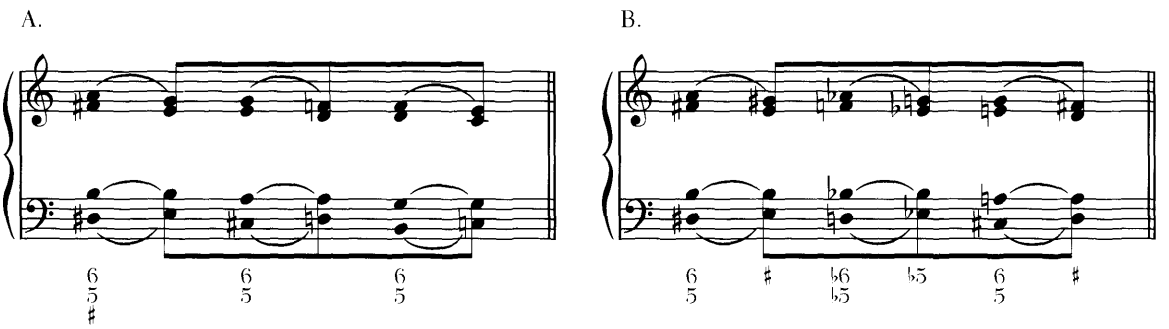
In Part Three of this text we introduced the characteristics and procedures of chromatic harmony. We examined the commonly used altered chords, chord progressions, and chromatic sequences, and discussed the nature of modulation and the means of modulating to foreign tonal areas. In this chapter and the next two, we will discuss techniques that are more exclusively chromatic in nature. These include the use of strict sequential patterning, chromatic voice leading, enharmonic spellings to effect modulations to distant key centers, and progressions involving symmetrical divisions of the octave. Some of these devices may weaken the underlying major and minor tonal system to such an extent that our sense of harmonic function or tonic harmony is diminished or even missing altogether.

In this chapter we will begin by focusing on sequences that employ half-step root movement and examples of parallel, contrary, and non-sequential chromatic voice leading. Finally, we will examine the first section of Chopin's Prelude in E Minor, Op. 28, No. 4, a work whose underlying diatonic harmonies are overlaid with extensive linear chromaticism.

Sequences Based on Half-Step Movement

The harmonic sequences we discussed in Chapter 37 involved chromatic elaborations of diatonic patterns whose underlying root movement proceeds by diatonic 5ths, 2nds, or 3rds. However, it is also possible for sequences to progress by successive half steps, resulting in **chromatic root movement.** Compare the two models in Example 39.1.

Example 39.1



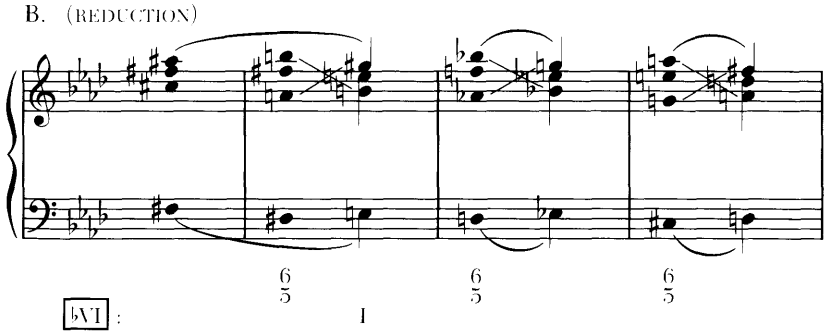
The first sequence represents a typical cycle of descending 5ths, in which the beamed notes denote the stepwise voice leading in the outer parts (Example 39.1a). Although each stemmed note is preceded by its secondary dominant, the voice leading in the upper voices is basically diatonic. In Example 39.1b, the basic voice leading is similar, but now the motion between the stemmed notes moves chromatically by successive half steps.

A similar procedure appears in Chopin's A♭ major Prelude (Example 39.2a); assume that this passage is in the key of E major, the enharmonic ♭VI to the A♭ tonic. The reduction (Example 39.2b) demonstrates that the essential stepwise notes, which are stemmed, move chromatically downward from E to E♭ to D, each preceded by its secondary dominant. The Beethoven quotation (Example 39.2c), on the other hand, makes an ascending series of half-step transient modulations, from C minor through C♯ minor to D minor, using a 5-6 chromatic sequence. Beethoven modulates by means of pivot chords; the VI of each key becomes the dominant (V) of the new key.

Example 39.2

A. CHOPIN: PRELUDE IN A-FLAT MAJOR, OP. 28, NO. 17

B. (REDUCTION)



C. BEETHOVEN: SYMPHONY NO. 3 ("EROICA"), I

(d:)

Strict Chromatic Parallelism

We have seen how the functional chords that frame sequential patterns are connected by the contrapuntal motion within the sequence. These two functional pillars may also be spanned by an ascending or descending succession of identical chord types. When all chord members within these chords move in the same direction in strict half-step motion, they engender what we call **chromatic parallelism** or **planing**. In passages that exhibit this device, the first and last chords continue to operate as the framing diatonic functions, designated with Roman numerals. The most common chord types used in passages featuring chromatic parallelism are major triads and those seventh chords that contain a tritone, such as major-minor, half-diminished, or fully diminished seventh chords.

Several illustrations of this procedure are shown in Examples 39.3 and 39.4. In the short Duke Ellington excerpt (Example 39.3a), the sliding chromatic motion of parallel major-minor 7th chords connects the functional $ii^{\overline{7}}$ with the $V^{\overline{7}}$. The diminished-seventh chords in parallel chromatic motion during the opening of the "Storm" section from Liszt's tone poem *Les Préludes* graphically suggests the swirling winds of the deluge to follow (Example 39.3c). The *Rheingold* excerpt (Example 39.3d) is an interesting example of **double chromatic parallelism**—the first-inversion triads that descend chromatically, each enclosed within a box, are countered by the harmonic root movement that ascends by half step every two measures (C-D♭-D), all of which occurs over a pedal on G. The reduction of this passage in Example 39.3e reveals the presence of parallel perfect 5ths between the upper two voices, the two strands within the upper line.

Example 39.3

A. DUKE ELLINGTON: "SOPHISTICATED LADY", BEGINNING OF CHORUS (SIMPLIFIED)

B. (REDUCTION)

C. LISZT: *LES PRÉLUDES*

D. WAGNER: ASCENT INTO NIBELHEIM FROM *DAS RHEINGOLD*, SCENE 4

E. (REDUCTION)

The quotation from Puccini's *La Bohème* in Example 39.4, on the other hand, is different in one respect from the previous passages. Although strict parallelism is still maintained between the separate chords so that all the chords are the same chord type, half-diminished 7ths, the harmonies do not move exclusively by half step but rather leap freely about. The interval of a perfect fifth remains constant between the bass and soprano.

Example 39.4

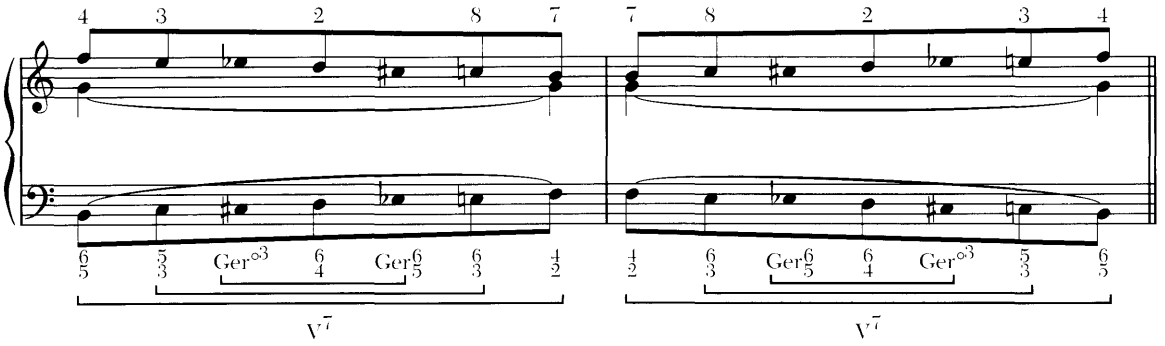
PUCCINI: *LA BOHÈME*, ACT II

CHROMATICISM BY CONTRARY MOTION

Sometimes two voice parts move chromatically in opposite directions—that is, in **contrary chromatic motion.** In the diatonic scales of tonal music there are only two short melodic segments that display strict intervallic mirroring or inversion by contrary motion—from $\hat{7}$ up to $\hat{4}$ in the major scale, and from $\hat{2}$ up to $\hat{6}$ in the minor scale, both of which span a

melodic tritone. Examine the C major model in Example 39.5, which moves from $\hat{7}$ to $\hat{4}$.

Example 39.5



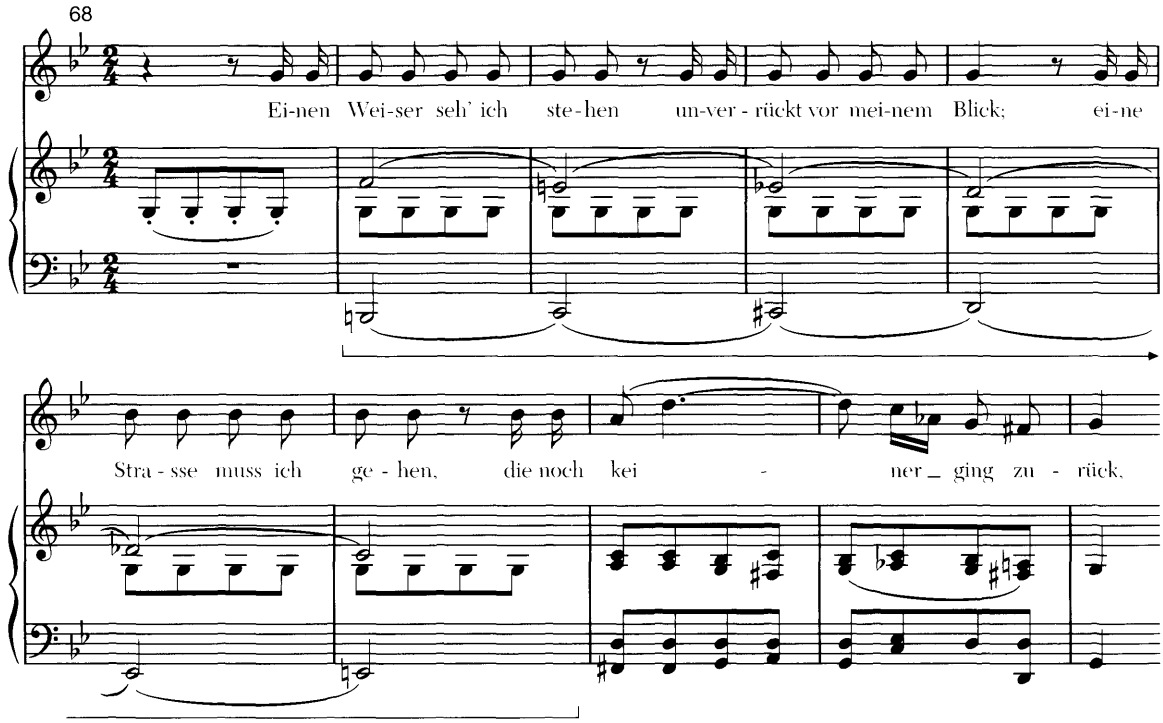
Voice exchange between B and F prolongs a dominant seventh chord on G by linking its $\frac{6}{5}$ and $\frac{4}{2}$ inversions. The outer voices of this diatonic progression, denoted by stemmed notes, are symmetrically arranged around the central axis note of D ($\hat{2}$). If we now fill in this diatonic span with half steps, denoted by unstemmed notes, the third and fourth harmonic sonorities may be explained as enharmonic German augmented 6th chords (in °3 and $\frac{6}{5}$ positions), while the interior D functions as an implied $\frac{6}{4}$ between the two augmented 6ths. Since all the chord tones are not present in this model, figured-bass symbols indicate the implied chords. Starting with Example 39.7, additional inner voices will be introduced to fill out the implied harmonies.

When a secondary dominant is being prolonged, this tritone exchange can be transposed to other scale degrees. For instance, if the harmony is V^7/V in C major, the contrary chromatic motion would span F♯ up to C, with A as the axis note.

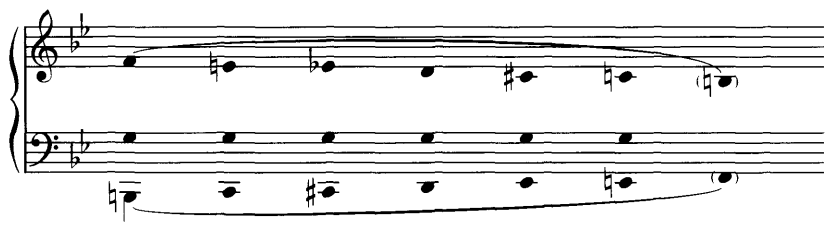
Schubert uses a contrary chromatic progression in the final strophe of his "Der Wegweiser" to depict the endless "road from which no traveler returns," in which the "road" symbolically refers to death. Here the tritone exchange (B to F), which serves to prolong the V^7 of C major, is not completed but instead breaks off at the bass E^2, which then leads back to a cadence in the original tonic of G minor. If the pattern had continued in strict order, it would eventually have cycled back on itself in an endless manner. The gloomy Neapolitan chord is an appropriate cadential touch; consult the translation in Example 39.6.

Example 39.6

A. SCHUBERT: "DER WEGWEISER" FROM *WINTERREISE*



B. (REDUCTION)



Einen Weiser seh' ich stehen
unverrückt vor meinen Blick;
eine Strasse muss ich gehen,
die noch keiner ging züruck.

One sign I see standing
fixed before my gaze;
down one road I must go,
from which no one has returned.

Some compositions may employ only a portion or segment of this harmonic succession. In the familiar progression of Example 39.7b based on the model in Example 39.7a, the contrary chromatic motion in the outer voices spans only a major 3rd, producing a voice exchange between $\hat{5}$ and $\hat{7}$ in F major. This partic-

ular pattern has become almost a cliché, frequently serving as a short lead-in or introduction to polkas, rags, or marches. Although the style of the music is quite different, the voice leading in the bracketed portion of Tchaikovsky's lovely "Pas d'action" (Example 39.7c) is essentially the same, spanning V^6 to V^7 in the key of E♭ major; note the circled notes in the outer parts.

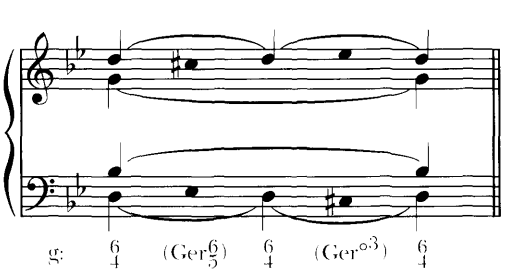
Example 39.7

Another fragment of this chromatic pattern displays voice exchange in contrary motion between ♯$\hat{4}$ and ♭$\hat{6}$ revolving around $\hat{5}$, thus filling in the interval of a diminished 3rd; see the G minor model in Example 39.8a, with its pair of

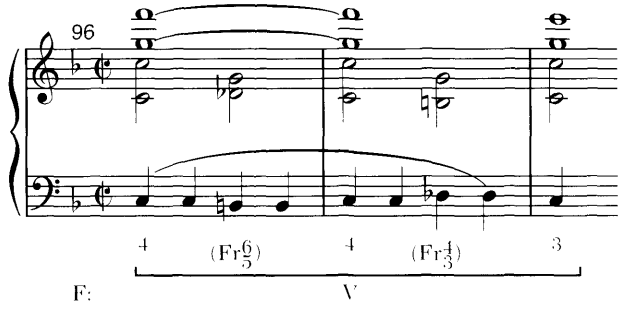
neighboring Ger $\frac{6}{5}$'s and Ger$^{\circ 3}$'s. This same pattern is present in the following Brahms excerpt (Example 39.8b), although the individual chord types are different. The 4-3 suspension over the C in the bass resolves in the upper voice (F-E) only in the last measure. The neighboring chords here include French augmented 6ths in rather peculiar $\frac{6}{5}$ and $\frac{4}{3}$ inversions. In Chapter 41 we will see how this idiom may be extended by linking together a series of these fragmented chromatic sequences, each one starting a minor 3rd from the last one.

Example 39.8

A.



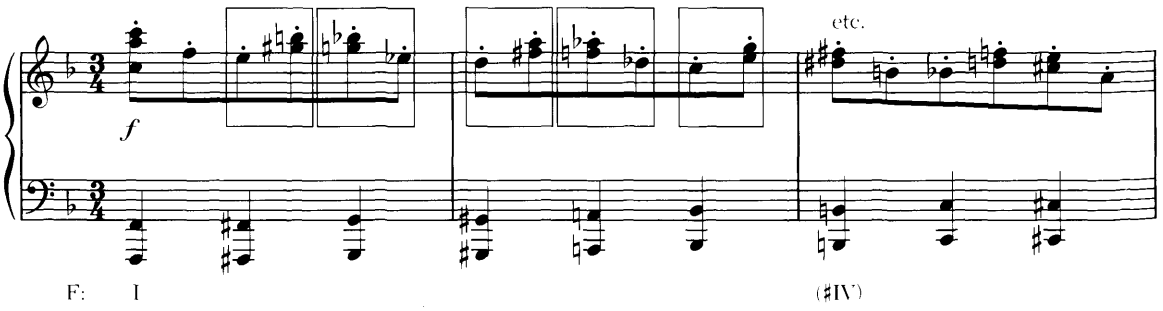
B. BRAHMS: TRAGIC OVERTURE, OP. 81



Although passages using contrary chromatic motion occasionally produce some inexplicable harmonic clashes, our ear tends to accept them as the momentary by-product of the overall linear movement. In Example 39.9, Wagner daringly juxtaposes parallel major triads in a chromatic descent, shown in boxes, over an ascending chromatic bass. Very few of the resulting vertical sonorities form tertian triads. Notice how this passage is bisected by the central B major chord, which is related by tritone to the opening and closing F major triads. The key centers of B minor and F major/minor play an important associative role in the first act of this musical drama.

Example 39.9

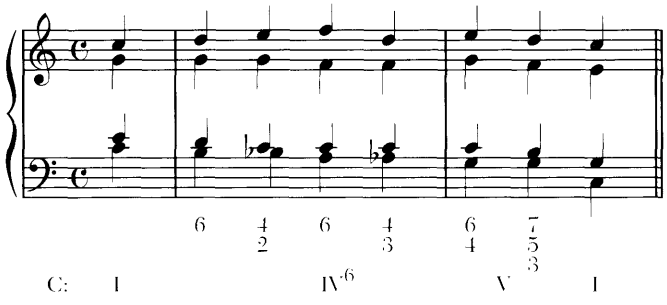
WAGNER: SIEGFRIED'S RHINE JOURNEY FROM *GÖTTERDÄMMERUNG*, END OF PROLOGUE



Non-sequential Chromatic Passages

Chromaticism need not always be associated with the devices of sequence, parallelism, or contrary motion. In music literature we encounter numerous non-sequential chromatic passages that are not based on these techniques. In such instances of **non-sequential chromatic voice leading**, the half-step motion results from the use of incidental applied, mixture, or embellishing chords, as shown in Example 39.10.

Example 39.10

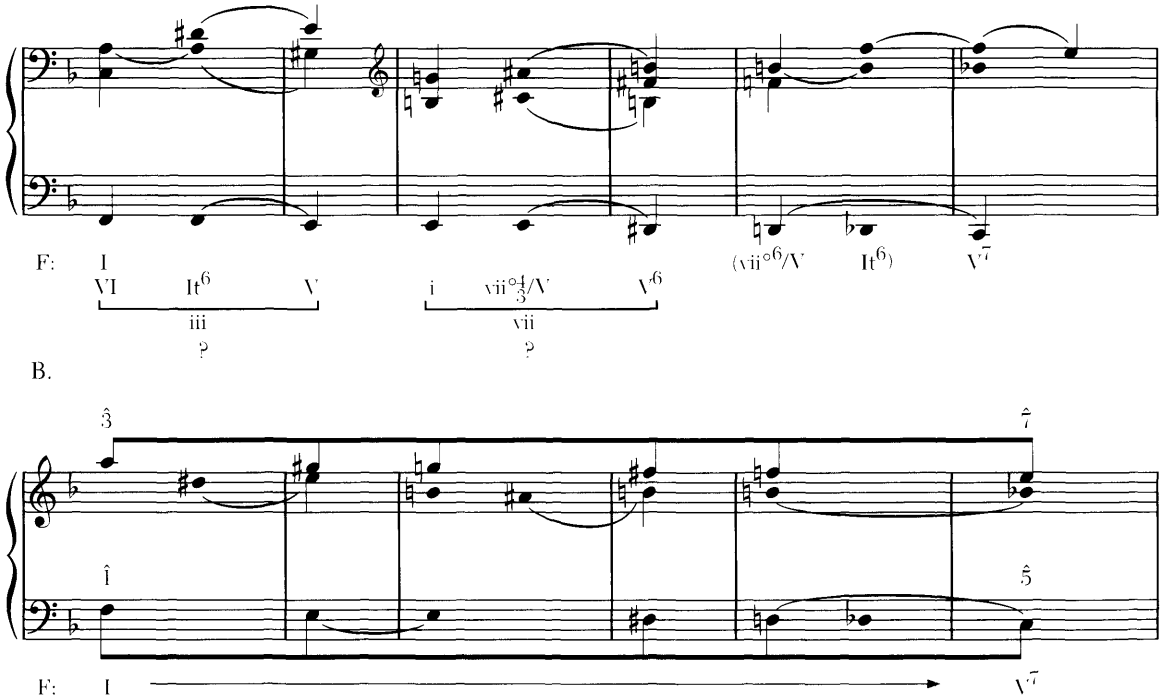


Example 30.8a presents an additional illustration: its underlying chordal succession (i-V^{6}-V$^{4}_{2}$/IV-IV^{-6}-It^{6}-V) is supported by a descending chromatic tetrachord in the bass, but the harmonic progression is not sequential.

In some instances of extreme chromaticism, the half-step motion of the individual parts may become the sole basis for the voice leading, negating any sense of standard harmonic function. The Introduzione from Beethoven's "Waldstein" Piano Sonata provides a case in point. In the simplification of the first six measures, shown in Example 39.11a, notice how the ascent of the upper voices contrasts with the descending chromatic bass.

Example 39.11

A. BEETHOVEN: PIANO SONATA IN C MAJOR ("WALDSTEIN"), OP. 53, II (REDUCTION OF MM. 1–6)



The functional Roman numeral analysis provided in Example 39.11a raises more questions than it answers. As an alternative, Example 39.11b, a voice-leading reduction suggested by David Beach, treats the upper parts in linear fashion; several octave displacements are necessary. This framework suggests a chromatic descent in 10ths, outlining a descending chromatic tetrachord from $\hat{8}$ down to $\hat{5}$ in the bass and from $\hat{3}$ down to $\hat{7}$ in the soprano.

EXTENDED USE OF NON-SEQUENTIAL CHROMATICISM

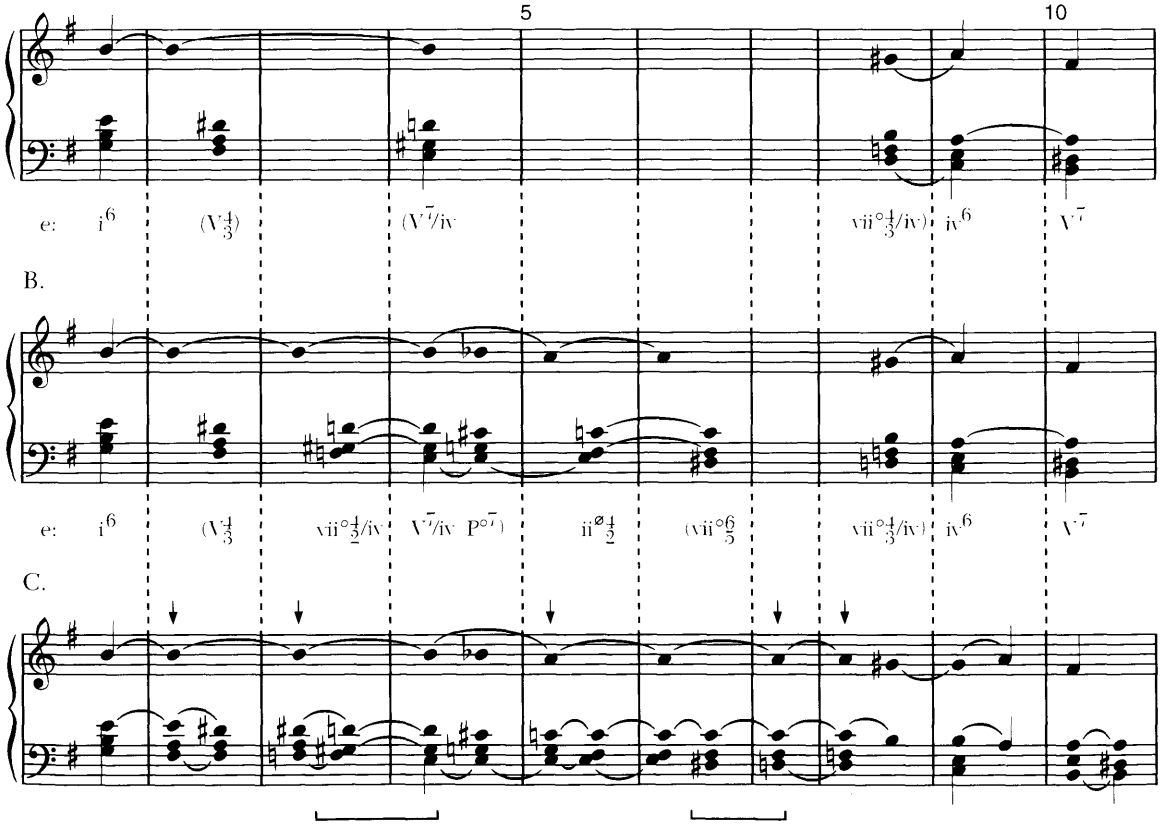
Chopin's Prelude in E Minor, Op. 28, No. 4, is frequently cited as an example of extended non-sequential chromaticism. This short piece divides into two sections. The first (mm. 1–10) outlines a tonal motion from i^6 to V^7, which extends through measure 12. The second section repeats this basic progression between reaching an extended dominant, which eventually resolves to the tonic. I view this Prelude as an example of an *interrupted* tonal scheme—measures 1–12 (i to V^7) followed by measures 13–25 (i to V^7 to i).[1] We will consider only the first section.

1. For a different view of this piece's voice leading, see Carl Schachter, "The Triad as Place and Action," in *Music Theory Spectrum* 17/2 (Fall, 1995), pp. 149–69.

To acquaint ourselves with this piece, we will reverse our normal analytical procedure of beginning with the score and a voice-leading reduction and instead examine the diatonic framework that underlies this passage (Example 39.12a). The fundamental progression i^6-iv^6-V^7 and the bass line ($\hat{3}$ to $\flat\hat{6}$ to $\hat{5}$) are overlaid with the drawn-out soprano line that emphasizes three basic pitches—B-A-F♯, which are stemmed notes. The soprano descent $\hat{5}$-$\hat{4}$-$\hat{2}$ omits the crucial $\hat{3}$. These three existing scale degrees are derived from the pitch motive B-A-F♯, which is found several times, often in disguised form, in the early preludes of Op. 28 (see Nos. 2, 3, 4, 5, 6, and 8); the notes of the motive are sometimes reordered, but their pitch classes remain constant. The origin of the motive is unknown. We now fill in the bass line from $\hat{3}$ to $\flat\hat{6}$ (G down to C) with diatonic passing motion, employing the dominant and applied chords of iv.

Example 39.12

A. CHOPIN: PRELUDE IN E MINOR, OP. 28, NO. 4 (THREE REDUCTIONS)



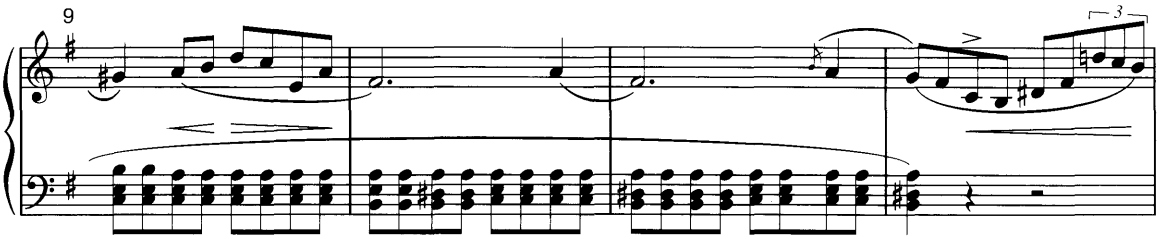
In the second reduction (Example 39.12b), this diatonic stepwise movement is chromaticized with embellishing diminished and half-diminished seventh chords. In measure 5, the pre-dominant ii$^{\varnothing 4}_{2}$ with A^4 in the soprano is prolonged until the iv^6 of measure 9 (from E to C in the bass). A surface analysis (Example 39.12c) introduces additional chromatic chords and suspensions. A small-scale sequence by descending step in the bass is bracketed; enharmonic notation is used in measures 2–3. It is inappropriate to assign additional functional Roman numerals to the harmonies that appear in this reduction, since they arise out of linear motion. Finally, Chopin's score appears in Example 39.13.

Summary of Chromatic Voice Leading

1. Some passages may feature a foundation of almost exclusively chromatic voice leading that is not reducible back to a diatonic basis.
2. Some examples of techniques employed in such passages include:
   A. sequences whose root movement proceeds by half-step motion
   B. strict chromatic parallelism (either by triads or seventh chords)
   C. chromaticism by contrary motion (usually spanning scale steps $\hat{7}$ to $\hat{4}$ in opposite directions)
   D. the extended use of non-sequential chromatic sections.

Example 39.13

CHOPIN: PRELUDE IN E MINOR, OP. 28, NO. 4



Students frequently encounter difficulty in the analysis of such pieces when they try to account for every chord with a functional label. In passages of intense chromaticism, we should generally reserve functional Roman numerals for the more conspicuous essential harmonies that we stem and take a more linear approach to the chromatic harmonies left unstemmed, which usually arise out of embellishing passing or neighboring motion.

Terms and Concepts for Review

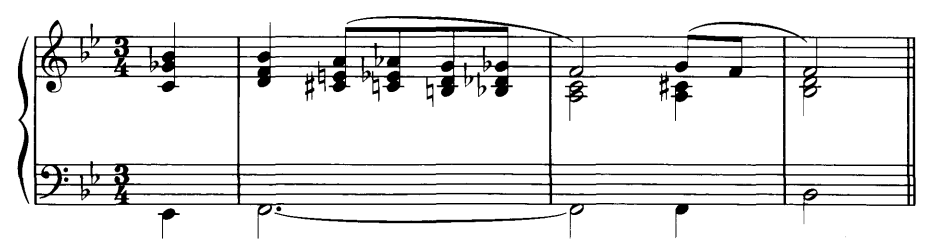
chromatic root movement
chromatic parallelism
double chromatic parallelism
contrary chromatic motion
non-sequential chromatic voice leading

A BRIEF REVIEW SELF-QUIZ

1. Examine the short passages in Example 39.14 and determine the underlying chromatic technique used in each. Then provide an analysis of each example, using appropriate means. Remember, only the essential harmonies, which are usually diatonic, should be assigned Roman numeral functions.

Example 39.14

A.



B.

C.

D.

CHAPTER 40

Modulation to Foreign Keys II

In our previous discussion of modulation in Chapter 34, we saw that the possibility of moving beyond the small group of closely related keys into remote non-diatonic or foreign realms greatly expanded the harmonic vistas of Classical and Romantic composers. Just as the number of new tonal goals dramatically increased, so did the means by which composers could modulate to these keys. We discussed four of these modulatory techniques—by change of mode, by common tone, by altered pivot chords, or by direct chromatic motion. In this chapter we will explore additional ways by which these key shifts can be achieved, including enharmonic pivot chords, chromatic alterations of diminished seventh chords, strict sequences, and chromatic voice leading.

Enharmonic Modulation

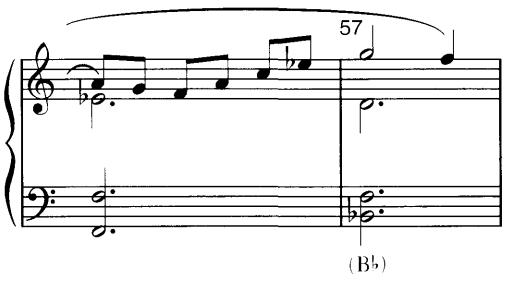
In some foreign modulations that employ a pivot chord, the function of that common chord may not permit the same spelling or notation in both keys. Since composers cannot employ both spellings, they must choose one that reflects either the old key or the new one. As a result we must notate one or

more of its tones enharmonically to show its function within the new key. We call the process **enharmonic modulation.** In some cases only one chord member of the pivot harmony needs enharmonic respelling. For instance, when modulating from I to VI, the vii^{o7}/V in C major (F♯ A D E♭) must be respelled as *D*♯ F♯ A C to clarify its new function as vii^{o7}/V in A major. In other cases the entire chord may have to be renotated. Thus, in modulating from I to ♯I, the ♭VI in C major (A♭ C E♭) must be respelled as *G*♯ *B*♯ *D*♯ to clarify its new function as V; see Example 39.2b. In our analyses we will continue to denote the pivot chord with two sets of Roman numerals to show its function in both keys.

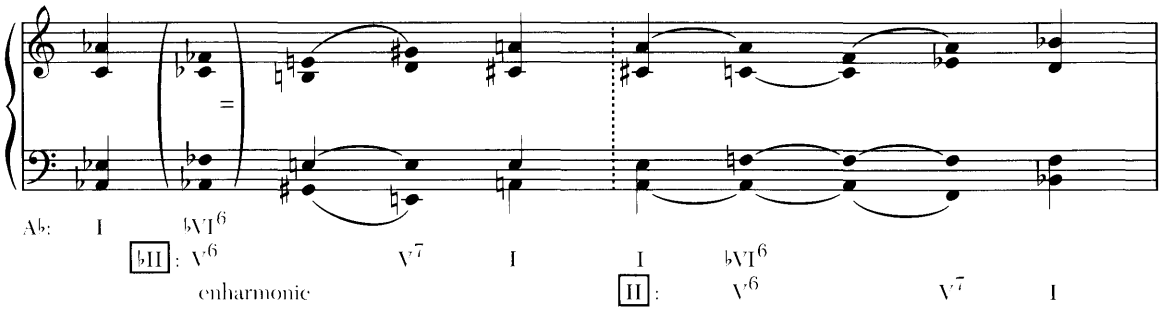
Enharmonic spellings are sometimes used to notate the keys of a foreign modulation in order to avoid writing awkward double sharps or double flats or to avoid keys with multiple accidentals. In the Act II Love Duet in *Tristan und Isolde*, for example, Wagner intends to move from A♭ major to its Neapolitan a half step higher. But since this key is B𝄫, he spells the pivot chord and the new key in A major, its enharmonic equivalent (Example 40.1a). Here ♭VI^6 (F♭ A♭ C♭) in the old key becomes V^6 (E G♯ B) in the new, as shown in the reduction. Notice that no enharmonic notation is required in the succeeding modulation from A to its Neapolitan, B♭ major.

Example 40.1

A. WAGNER: LOVE DUET FROM *TRISTAN UND ISOLDE*, ACT II (SIMPLIFIED)



B. (REDUCTION)

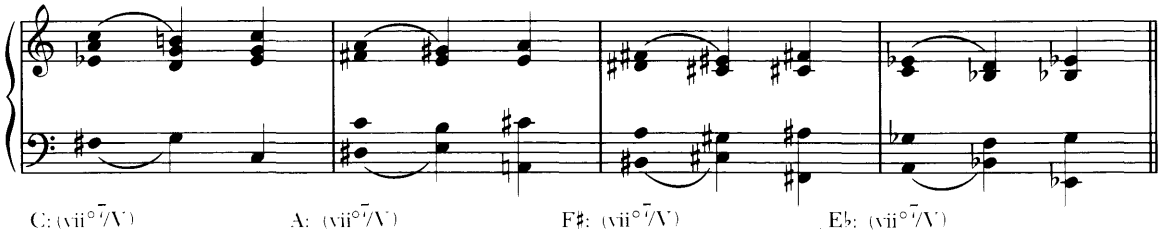


The Diminished Seventh as an Enharmonic Pivot Chord

The diminished seventh chord is a favorite enharmonic pivot, since it can serve as a vii^{o7} or, more commonly, a vii^{o7}/V in any of four different keys. This sonority's four tones, each a minor 3rd apart, divide the octave into equal segments, which allows each tone to function as a potential root. Thus, if we start in C major/minor, the keys that we can modulate to through different spellings of vii^{o7}/V are A major/minor, F♯ major/minor, and E♭ major/minor, as illustrated in Example 40.2a.

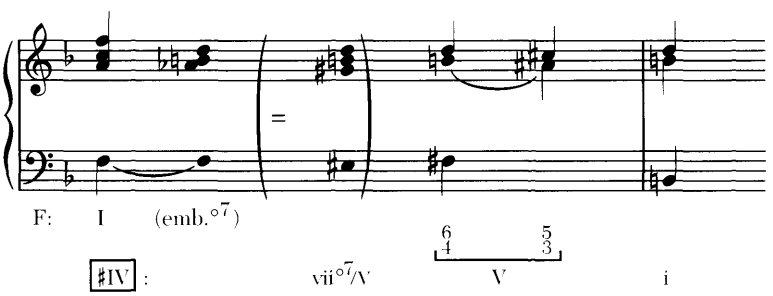
Example 40.2

A.



B. SCHUBERT: "TOTENGRÄBERS HEIMWEHE," D. 842

C. (REDUCTION)



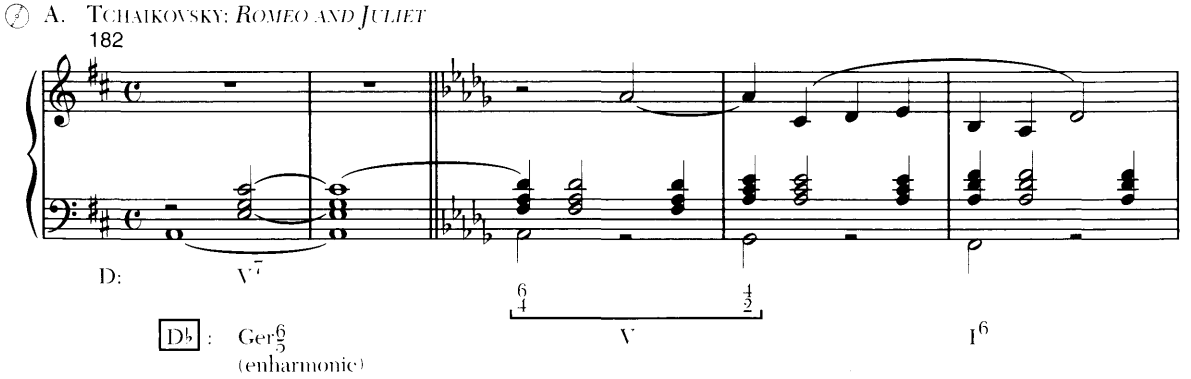
In the excerpt from Schubert's "gravedigger" song (Example 40.2b), the transient tonicization of ♯iv, a tritone removed from the original tonic of F, is achieved through an enharmonically spelled diminished seventh chord marked with an arrow. Note the F-B in the vocal line (mm. 2–3), which serves as a link between the old and new keys while reinforcing the morbidity of the song's text. Schubert's symbolic and intentional use of F and B re-

calls the *diabolus in musica* ("the devil in music"), a medieval term used to describe the interval between these two pitches. In this passage, the enharmonic diminished-seventh chord in F major functions as vii$^{o\overline{7}}$/V in the new key of B minor.

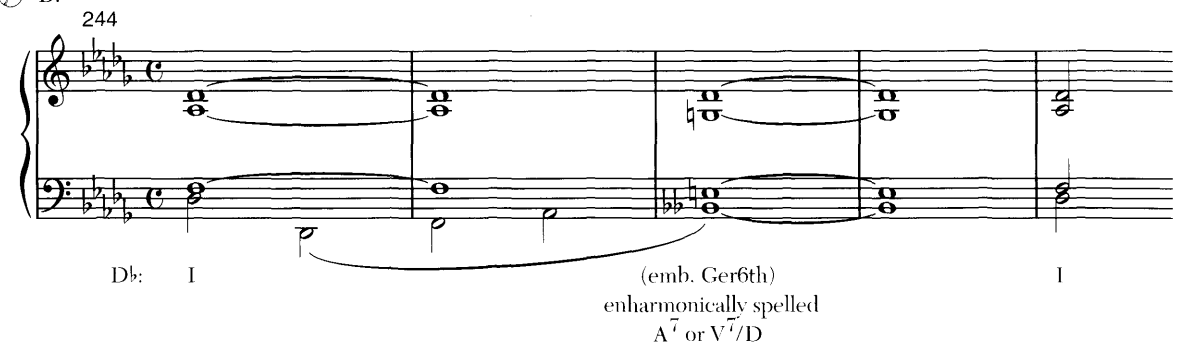
The Augmented 6th as an Enharmonic Pivot Chord

As we saw previously in Chapter 30, the Ger$^6_5$ chord and the V$^{\overline{7}}$, while notated differently, share the same sound of a major-minor seventh chord. Composers took advantage of this enharmonic relation in modulating to foreign keys. Thus, a V$^{\overline{7}}$ might also function as a Ger6th, or a Ger6th might also function as a V$^{\overline{7}}$. A striking example of the former occurs in Tchaikovsky's *Romeo and Juliet* Fantasy, whose tonic is B minor. In the transition of his exposition, the composer leads us to anticipate that the next key will be the customary relative major, D major. But after an extended dominant prolongation in that key, the music suddenly effects an enharmonic change; the A$^{\overline{7}}$ (V$^{\overline{7}}$ of III or D) instead functions as a Ger$^6_5$, whose resolution to D♭ major unexpectedly introduces Romeo's famous theme (Example 40.3a). When he wrote this work, the young Tchaikovsky was under the influence of Mily Balakirev, a famous Russian composer and pedagogue, who showed a decided preference for pieces written in two sharps or five flats—hence the juxtaposition of B minor and D♭ major within *Romeo and Juliet*. At the conclusion of the D♭ section, Tchaikovsky repeatedly refers to the previous A$^{\overline{7}}$, but now it operates as an embellishing common-tone Ger$^6_5$ in the context of D♭ major (Example 40.3b).

Example 40.3



B.



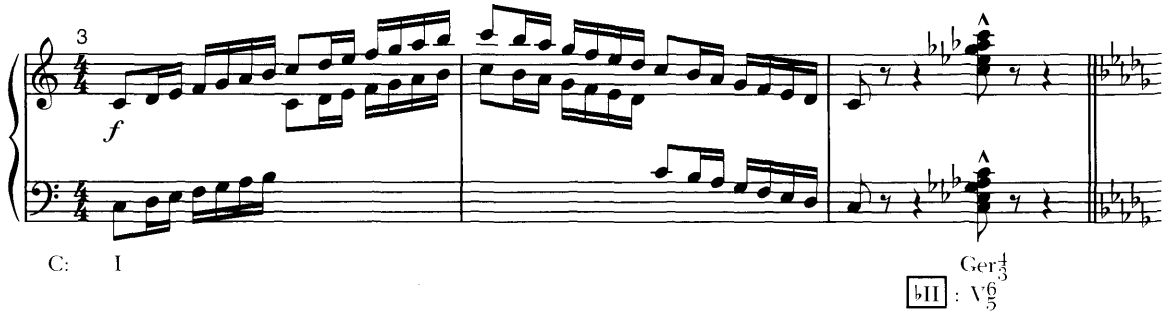
This process may also be reversed, so that the Ger^6_5 becomes an enharmonic V^7 in the new key. We are all familiar with the sound of singers vocalizing major scales in ascending half steps, as shown in Example 40.4. This model modulates to the Neapolitan or ♭II.

Example 40.4

Saint-Säens satirized this procedure in his *Carnival of the Animals*, in which his "pianists" practice their scales in ascending chromatic order (Example 40.5).

Example 40.5

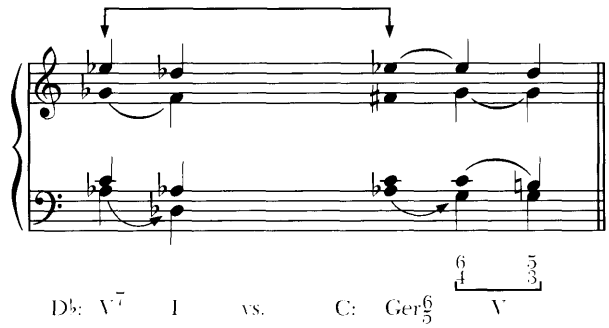
SAINT-SAËNS: "PIANISTS" (NO. 11) FROM *THE CARNIVAL OF THE ANIMALS*



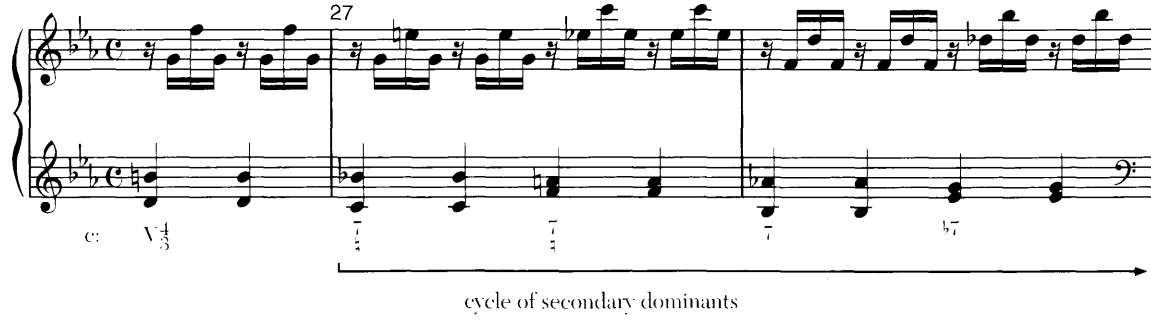
The enharmonic relationship between the Ger^{6}_{5} and V^{7} can also be used to reroute a series of fifth-related secondary dominants. For instance, if a seventh chord that normally resolves by descending 5th root movement is changed into a Ger^{6}_{5}, the sonority can then resolve by half step (as shown in Example 40.6a). This technique is similar to the tritone substitution discussed in Chapter 30, since the roots of the two resolutions are a tritone apart.

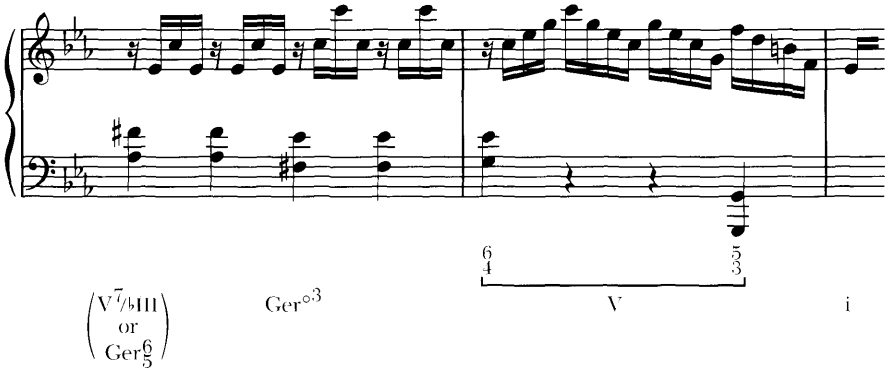
Example 40.6

A.



B. C. P. E. BACH: *SOLFEGGIO*, W. 117/2





In the popular *Solfeggio* of C. P. E. Bach (Example 40.6b), a descending succession of secondary dominant seventh chords is in danger of moving outside the key area of C minor by measure 29. To prevent this, Bach spells the chord that begins measure 29 not as an A♭7 (V7/♭II), which would continue the cycle on to a D♭7, but as a Ger6/5, which resolves downward by half step to the C minor 6/4 in measure 30. The Ger°3 that precedes the 6/4 is merely a revoicing of the Ger6/5. This passage is similar to Mozart's D-minor minuet (Example 37.2).

Chromatic Alterations of Diminished Seventh Chords

A diminished seventh chord, such as vii°7, may be changed into a V7 by lowering one of its notes a half step and, if necessary, respelling some of its other chord members enharmonically. For instance, we can lower the E♭ of an F♯ A C E♭ chord to D, changing it into a major-minor seventh, a potential V7. We can lower the other chord members by a half step and form several other potential dominant 7ths: we can lower the F♯ to F♮ (F A C E♭, V7 of B♭), the A to A♭ (A♭ C E♭ G♭, the enharmonic V7 of D♭), or the C to B (B D♯ F♯ A, the enharmonic V7 of E). Examples 40.7a and b exploit this technique as a means of modulating to the 3rd-related keys of ♭III and VI. In the tempestuous F minor "Storm" movement from his "Pastoral" Symphony No. 6 (Example 40.7c), Beethoven uses this procedure to modulate from C minor to B♭ minor, or v to iv in F minor.

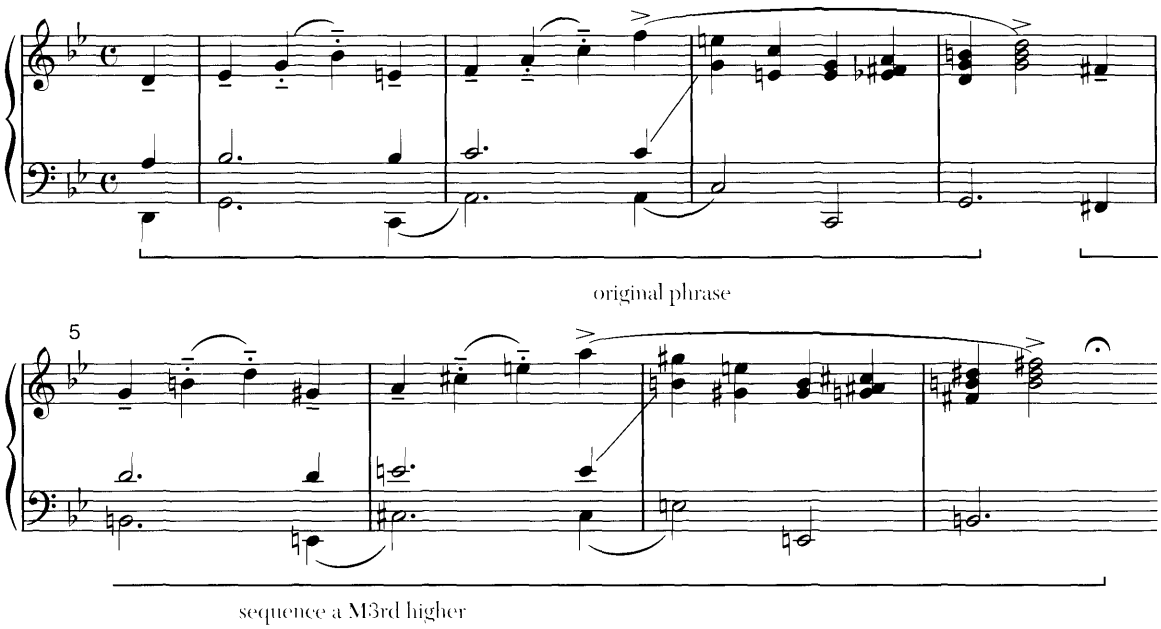
Example 40.7

MODULATION BY STRICT HARMONIC SEQUENCE

One obvious way to introduce a foreign key is to state a phrase in the tonic and then transpose it verbatim into a new key. This modulation by *exact sequence* is especially effective when the new key is a major or minor 3rd away. Such passages display what we call **sequential modulation** and are akin to sectional modulations, in which the key change occurs between phrases, periods, or sections. In the opening of Brahms's G minor Rhapsody, given in simplified form in Example 40.8a, the initial phrase begins with an implied V and ends with a G major triad (V-I). This passage is then literally restated a major 3rd higher, cadencing in B major, ♯III.

Example 40.8

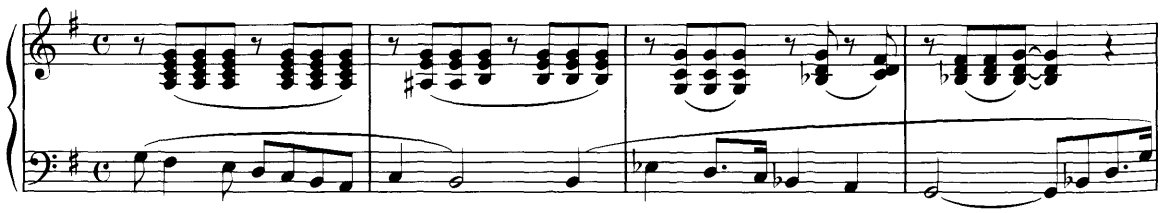
BRAHMS: RHAPSODY IN G MINOR, OP. 79, NO. 2 (SIMPLIFIED)



Liszt was especially fond of such sequential modulations. In the excerpt from his "Obermann" piece (Example 40.9), note that the second phrase (mm. 5–8) is an exact transposition of the first phrase (mm. 1–4) a minor third higher. The first phrase begins in E minor and moves to G minor in measure 3; the second phrase begins in G minor and moves to B♭ minor in measure 7. The two phrases form a modulating sequence.

Example 40.9

LISZT: "VALÉE D'OBERMANN" (SECOND VERSION) FROM *ANNÉES DE PÉLERINAGE*

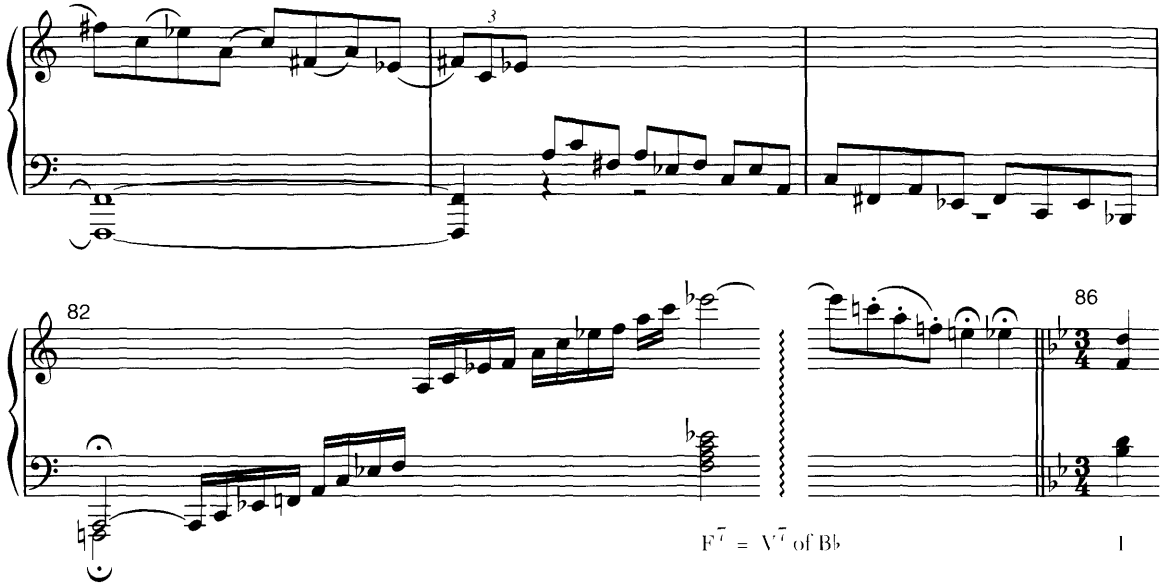


Modulation by Chromatic Linear Progression

Some passages modulate to a foreign key through a series of chromatic sequences or some other type of linear progression, often moving through several transient tonal areas in rapid succession. For instance, the beginning of the Mozart excerpt in Example 40.10 first uses a sequence by descending major 2nds (mm. 73–75) followed by descending minor 3rds (mm. 76–78) in linking B minor to the anticipated key of C minor through its vii^{o7}/V (mm. 78–81). However, the F♯ of the F♯ A C E♭ chord is lowered to F♮, thus changing its function into V^7 (F A C E♭) in the new key of B♭ major, to which it eventually resolves (m. 86).

Example 40.10

Mozart: Piano Fantasia in C Minor, K.475



The fantasia of the Baroque and Classical periods is an especially fruitful source of examples of frequent and unusual modulatory techniques to foreign keys. Measures 20–25 of Bach's "Great" G minor Fantasia for Organ, BWV 542 (Example 40.11), is one such passage. In consulting the first reduction in Example 40.11b, we can see that the ascending gesture on the dominant of G minor (D^7) culminates in a diminished seventh, which functions as an enharmonic vii^{o7}/V in the remote key of E♭ minor. The ensuing B♭ pedal gives way to a series of rising whole-step tonicizations preceded by their applied harmonies: C♭ to D♭ to E♭ to F. A final D^7 propels us one step further back to the original tonic. The final reduction in Example 40.11c suggests that this passage may be thought of as an extended interpolation that links the first dominant chord to the last.

Summary of Additional Ways to Modulate to Foreign Keys

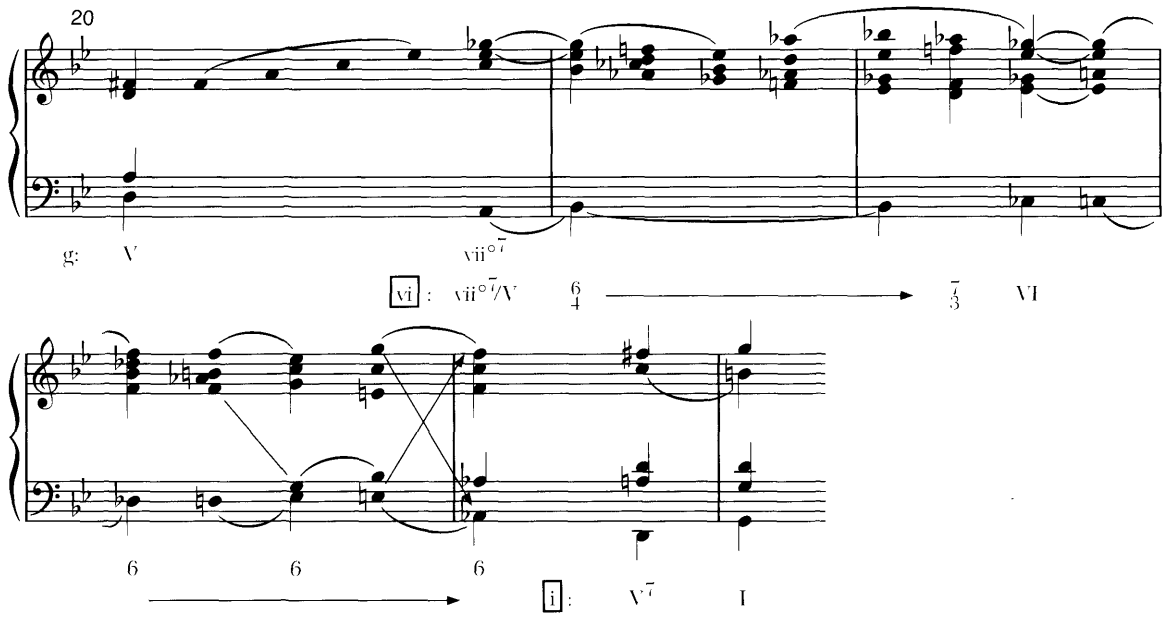
1. Other ways of modulating to foreign keys include the following:
   A. In enharmonic modulations, one of the pivot chords involved in the change of key is respelled enharmonically. Diminished sevenths and Ger6ths are especially suited for these roles; thus a V^7/IV in C major (C E G B♭) may become a Ger^6_5 in E major of III (C E G A♯).

B. By lowering each chordal member of a diminished seventh, four potential dominant sevenths in four different keys are possible.
C. In sectional modulations, an entire phrase or section is literally repeated in a new foreign key, usually a major or minor third away. Half-step motion is also common.
D. Some passages may spiral through a series of foreign key relations, based solely on a protracted succession of chromatic linear progressions.

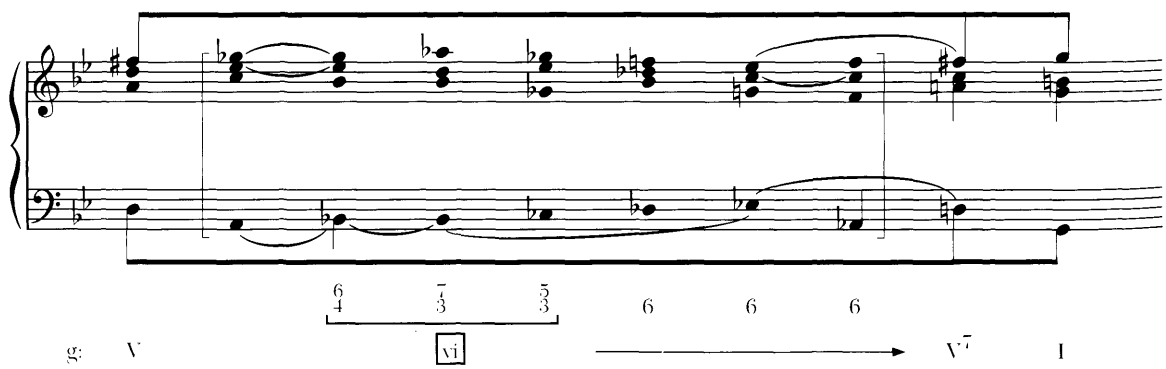
Example 40.11

(f) A. BACH: FANTASIA AND FUGUE IN G MINOR, BWV 542 ("THE GREAT")

B. (REDUCTION 1)



C. (REDUCTION 2)



Terms and Concepts for Review

enharmonic modulation
  using a diminished seventh
  using $\text{Ger}^{6}_{5}/\text{V}^{7}$
sequential modulation
modulation by chromatic voice leading

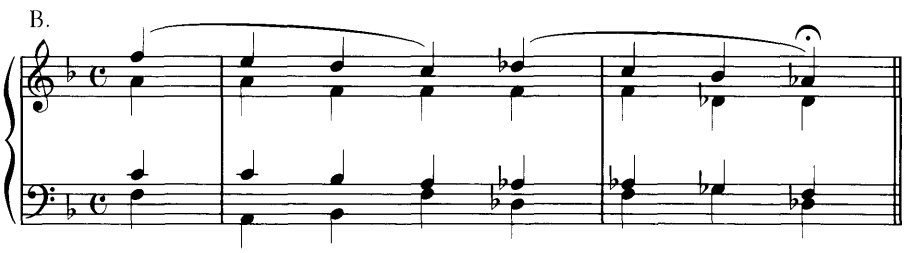
A BRIEF REVIEW SELF-QUIZ

1. Analyze the four short passages below, indicating the original and new key and the technique used to bring about the foreign modulation.

Example 40.12

A.

B.



C.

D.

CHAPTER 41

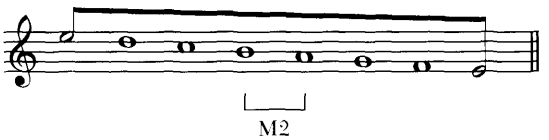
Symmetrical Divisions of the Octave

OUR DISCUSSION OF DIATONIC SEQUENCES in Chapters 20 and 23 established three basic categories of root movement, by 5ths, 2nds, or 3rds, and Chapters 37 and 39 outlined how these three types of root movement could be chromatically elaborated. As we have seen from these four chapters, a strict intervallic pattern incorporating any of these three root movements will eventually lead us beyond the bounds of our original diatonic key area. Try playing an ascending or descending sequence of alternating major and minor 2nds, or alternating major and minor 3rds, or even an extended chain of perfect 5ths, and see what happens to the sense of your original key.

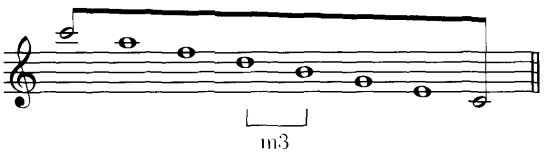
In most tonal music these strict patterns are broken somewhere within the sequence by one or more *correcting intervals*, so that the music remains in the beginning key. Each of the diatonic interval projections shown in Example 41.1 contains at least one such disruption, which we have bracketed. In the stepwise diatonic motion of Example 41.1a, the succession of two major 2nds and a minor 2nd, a typical diatonic tetrachord, is broken by the linking whole step B-A. In Example 41.1b, the minor 3rd D-B breaks up the pattern of alternating major 3rds and minor 3rds. And finally, a single diminished 5th interrupts the descending perfect 5th progression (Example 41.1c).

Example 41.1

A. By M2/M2/m2's



B. By alternating m3/M3's



C. By P5's

Because of the presence of these correcting intervals within the diatonic system, we may consider the diatonic collection as basically asymmetrical in nature. The dominant scale degree ($\hat{5}$) divides the tonic octave into two unequal segments—a lower 5th and an upper 4th. The scale steps that mark this division ($\hat{1}$, $\hat{5}$, or $\hat{8}$) define the octave range ($\hat{1}$ to $\hat{8}$, or $\hat{5}$ to $\hat{5}$) of many diatonic melodies. The division point at the dominant serves to strengthen our sense of gravitational pull toward the tonic, since $\hat{5}$ has a marked tendency to return or resolve to the stable $\hat{1}$, partly because the root note of a perfect 5th is its lower tone.

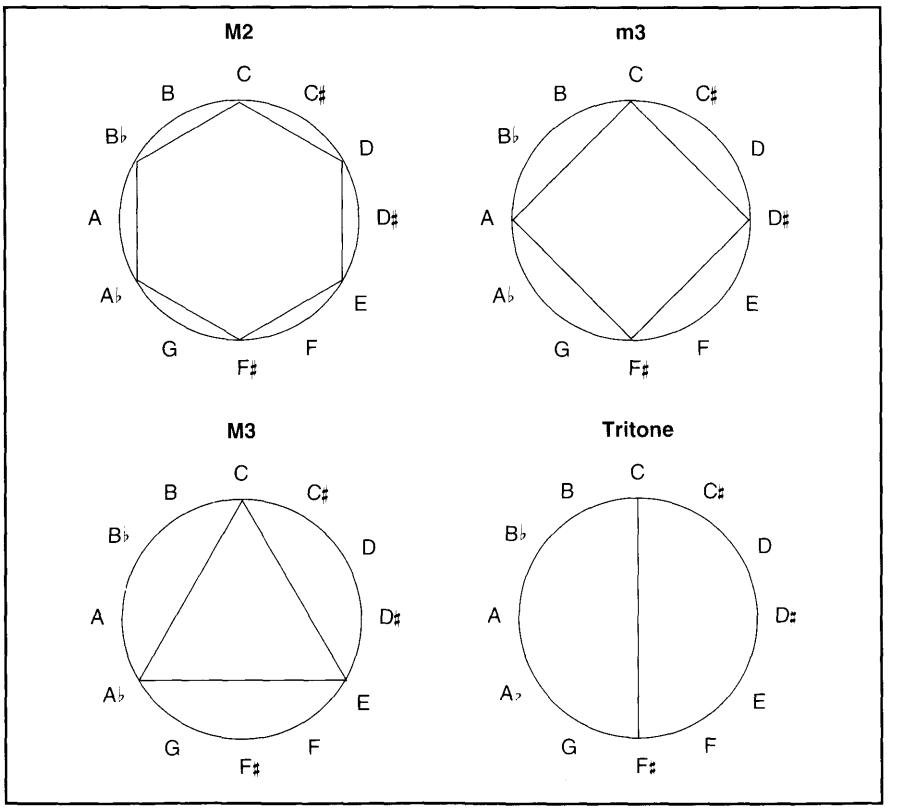
In order to loosen the ties to the diatonic tonal system, composers of the common-practice period began to experiment with partitioning the octave into equal-sized interval segments by using altered or chromatic notes. The **symmetrical divisions of the octave** that result may occur at various harmonic or structural levels of the music—in a surface harmonic sequence, in a temporary tonicization, in a transient modulation, or even as the underlying key scheme of a complete movement. These symmetrical root movements may or may not complete the entire interval cycle through the octave. When they do, they often prolong a single basic harmony that frames the progression; when they don't, they usually serve as a transition to a foreign key. In all cases, normal harmonic function is momentarily suspended to a greater degree than in most diatonic root movements, resulting in a more pronounced sense of tonal ambiguity. In the continuing quest for harmonic innovation during the nineteenth century, the increasing practice of basing harmonic schemes on symmetrical divisions of the octave contributed to the gradual breakdown of the existing tonal system.

Symmetrical Root Movements

The octave may be equally or symmetrically divided by successions of four intervals: major 2nds (two half steps or interval class 2), minor 3rds (three half steps or interval class 3), major 3rds (four half steps or interval class 4), and tritones (six half steps or interval class 6). These divisions may be seen on the clock faces in Figure 41.1, on which consecutive half steps are marked off. The same patterns will obviously result when these root movements are transposed to other pitch levels.

Note the connections between these symmetrical octave divisions that serve to relate the different interval patterns: the major 2nd cycle overlaps with the major 3rd cycle; the minor 3rd cycle overlaps with the tritone division; and the major 2nd and minor 3rd cycles contain a common tritone. In this chapter we will examine each of these symmetrical divisions of the octave, or possible symmetrical root movements. In many of the examples cited below we have dispensed with Roman numeral analysis except for framing chords and simply indicated the roots and in some cases the chord types of the successive chords.

Figure 41.1

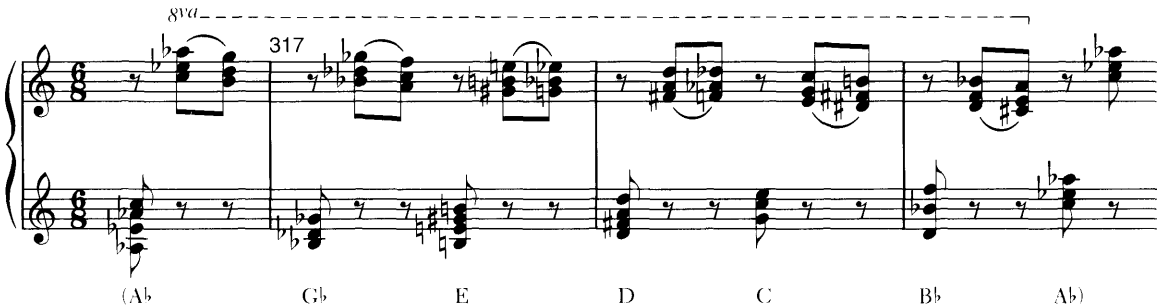


Root Movement by Major 2nd

We rarely encounter complete cycles of major 2nds, which would result in an extended sequence based on the whole-tone scale (see Appendix 2). One such progression does occur in the "Witches' Sabbath" movement of Berlioz's *Symphonie fantastique*, in which the roots of the triads on each beat descend by major 2nd.

Example 41.2

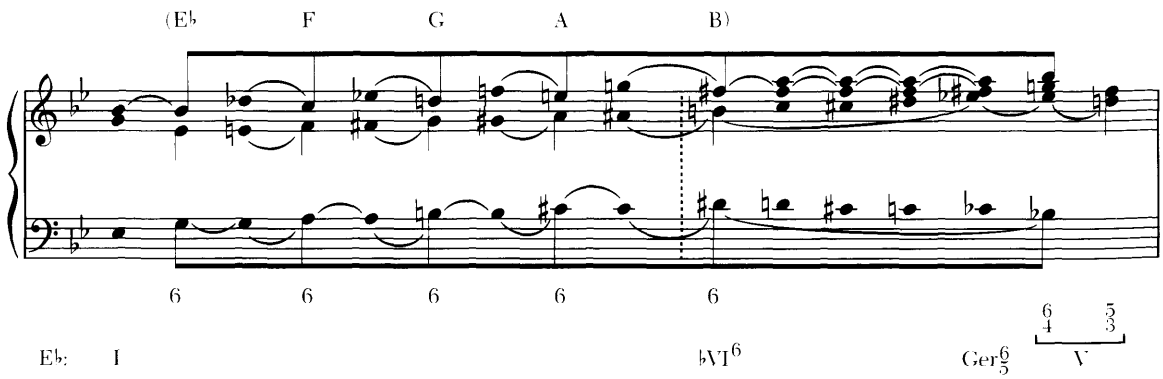
BERLIOZ: *SYMPHONIE FANTASTIQUE*, V



Such patterns, which normally break off after the fourth or fifth whole step, tend to employ applied chords, such as secondary dominants, diminished sevenths, or even augmented 6ths, that tonicize each successive degree. In Chopin's G minor Ballade, Op. 23, one such sequential passage forms the climax to the middle section in E♭ major; a reduction appears in Example 41.3.

Example 41.3

CHOPIN: BALLADE IN G MINOR, OP. 23 (REDUCTION OF MM. 150–159)



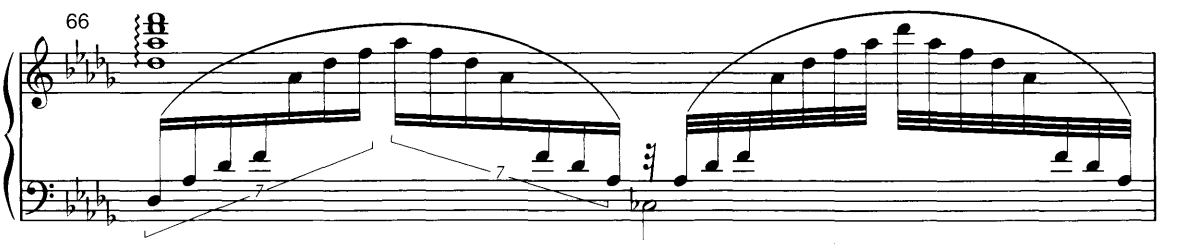
The consecutive $\frac{6}{3}$ triads, starting from G^3, that form the underlying ascending root movement by major 2nd (marked with stemmed notes and beams in the reduction) are preceded by secondary vii^{o7} chords. They ascend from I^6 to an enharmonic $\flat VI^6$ ($C\flat^6 = B\natural^6$) before descending chromatically to a Ger^6_5 that ushers in the concluding $\frac{6}{4}$ cadence back in E♭. Another example of a sequence descending by whole tones may be found in measures 229–33 of the third movement of Chopin's Piano Concerto in F Minor, Op. 21. Not only does this passage traverse the entire octave, but each member of the sequence is preceded by its secondary dominant seventh.

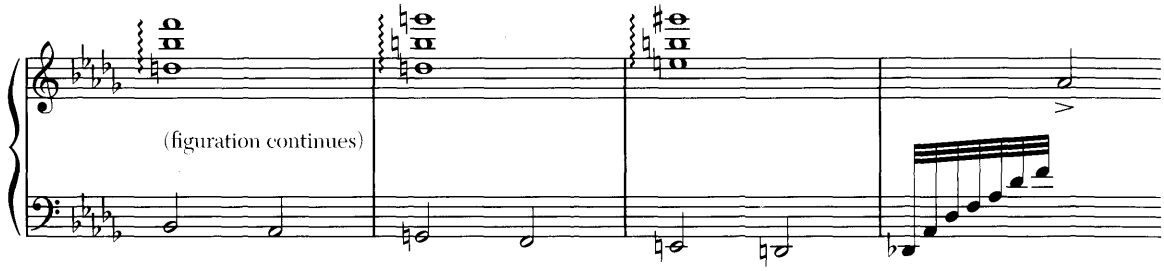
Root Movement by Minor 3rd

Root movement by minor 3rds is probably the most common symmetrical progression. The four resulting transpositions outline a diminished seventh chord, such as C♯-E-G-B♭-(C♯). Such progressions are strongly octatonic in nature, since minor 3rd projections of major triads, minor triads, major-minor sevenths, half-diminished sevenths, or fully diminished sevenths will produce the eight tones of this alternating half-step/whole-step collection or scale. For example, a succession of major triads based on C, E♭, F♯, and A will produce the following octatonic scale: C-C♯-E♭-E-F♯-G-B♭-C. For further information on this scale, see Appendix 2. Examples of both sequential and non-sequential motion occur. Study the excerpts in Example 41.4 with their accompanying reductions. In the brief passage from Liszt's famous "Un sospiro" (Example 41.4a), a series of major triads forms a descending progression of chords related by consecutive minor 3rds (B♭-G-E-D♭). The triads are linked by passing tones in the bass. The *Lohengrin* excerpt (Example 41.4c), on the other hand, features a series of momentarily tonicized keys (A♭-C♭-D-F), or [I]-[♭III]-[♯IV]-[VI], whose roots ascend by minor 3rds. This passage, however, is not strictly sequential.

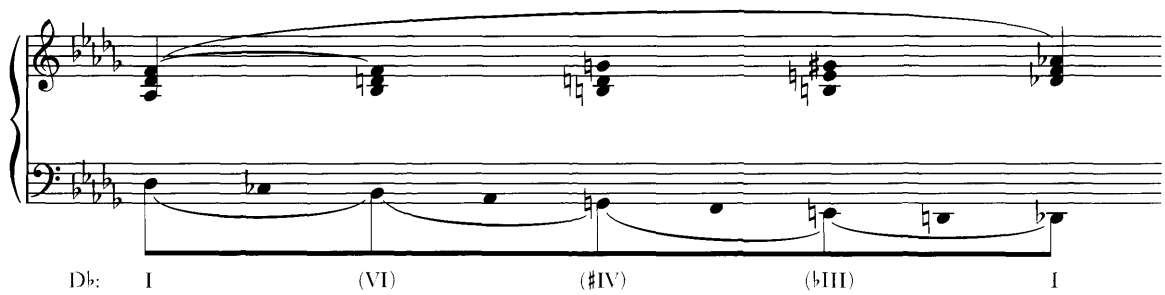
Example 41.4

A. LISZT: "UN SOSPIRO" FROM *TROIS CAPRICES POÉTIQUES*

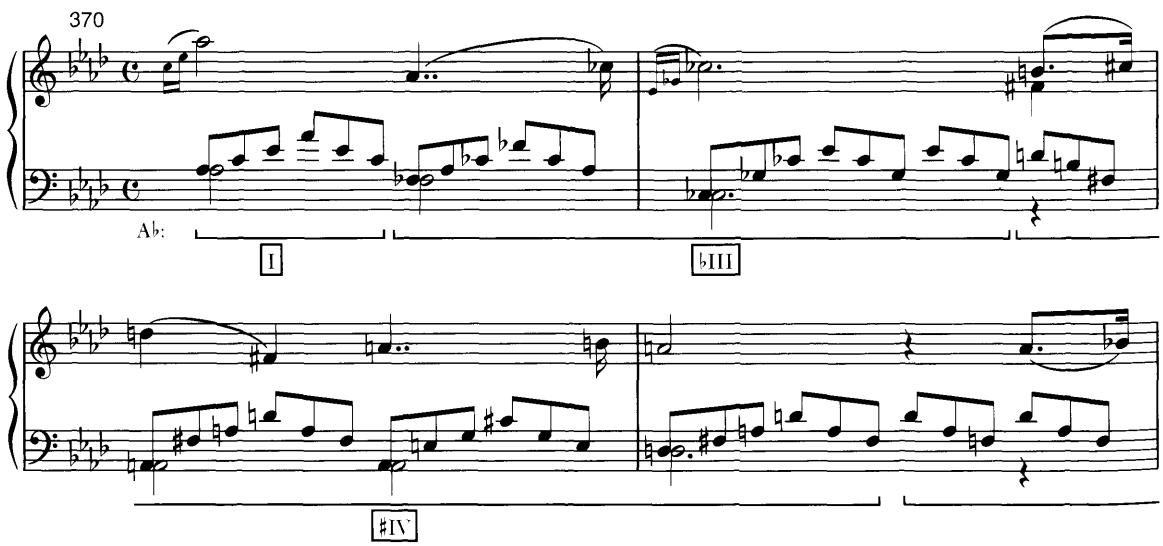


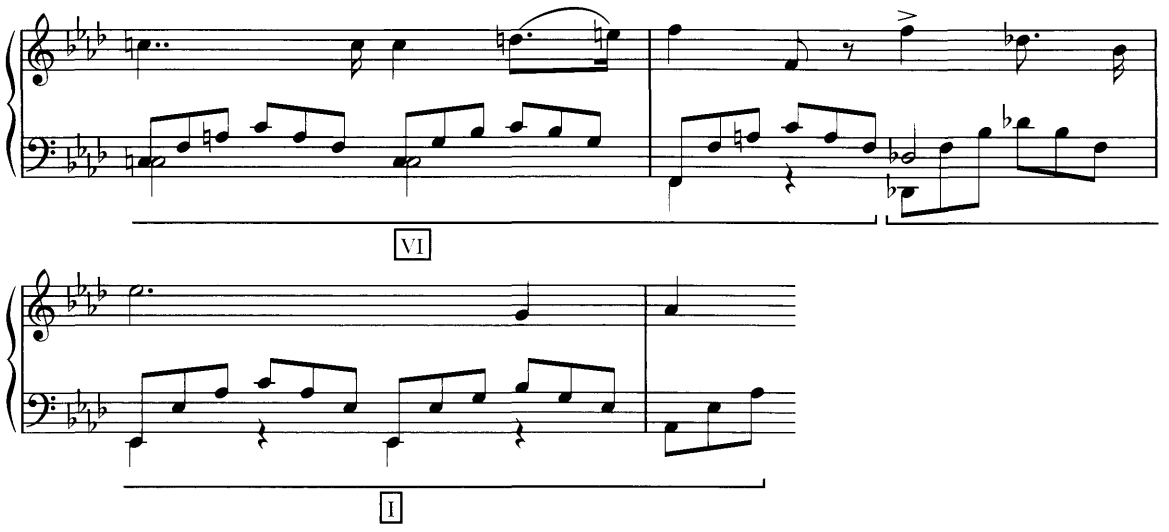


B. (REDUCTION)

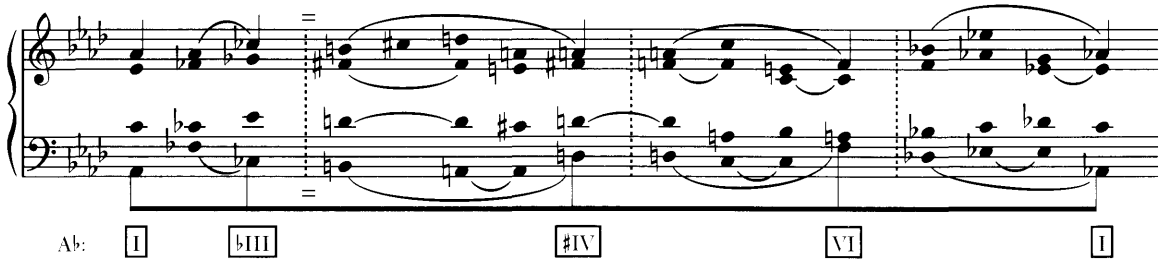


C. WAGNER: *LOHENGRIN*, ACT I, SCENE 2





D. (REDUCTION)

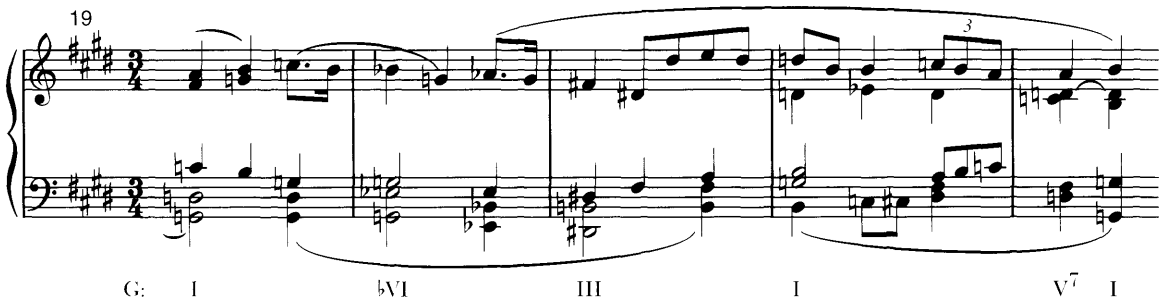


Root Movement by Major 3rd

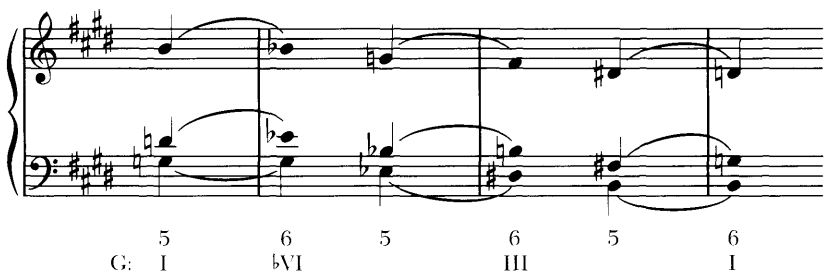
If we turn back to Figure 41.1, we can see that strict sequencing by major 3rds permits only three transpositions, at which point we are back in the original chord or key: C-E-G♯-C (ascending), or C-A♭-E-C (descending). In the Franck excerpt (Example 41.5), the descending major 3rds within the brief but complete sequence are linked by 5-♭6 motion.

Example 41.5

A. FRANCK: *CHORAL NO. 1 POUR GRAND ORGUE*



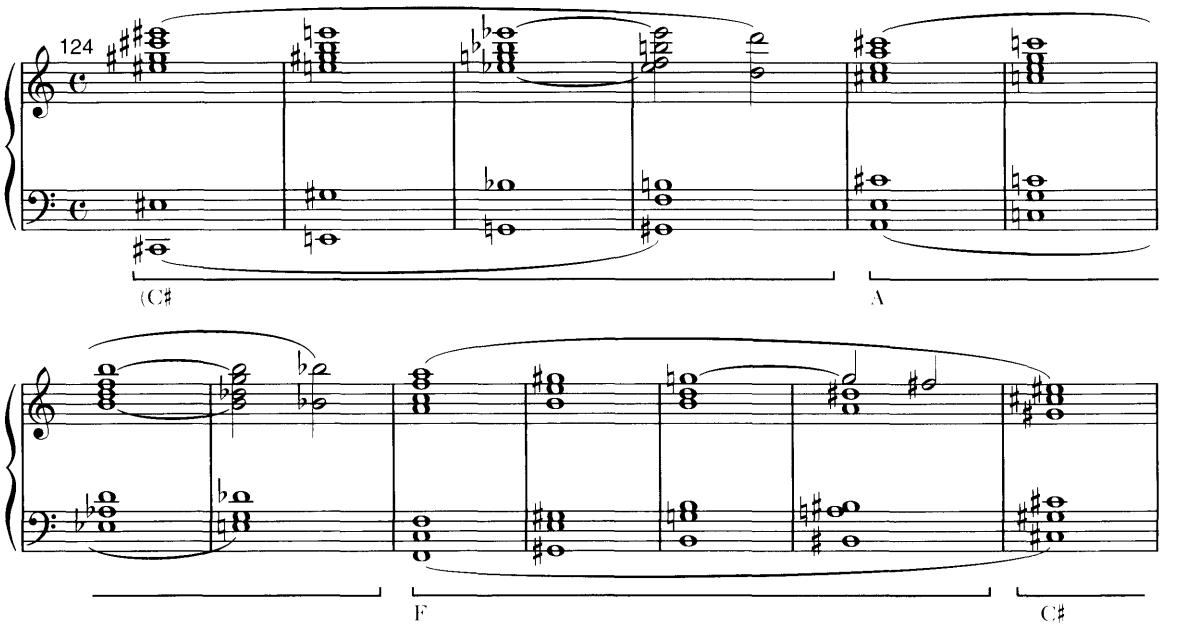
B. (REDUCTION)



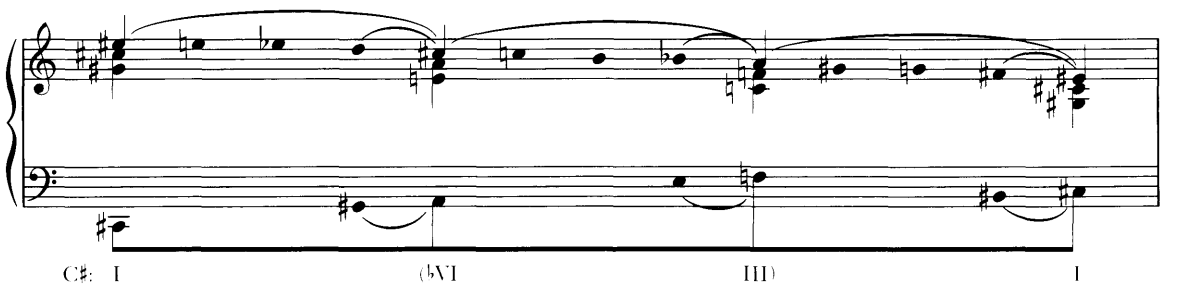
Wagner's "Magic Sleep" motif in Example 41.6 prolongs a C♯ major harmony. The upper voice of this theme exhibits a complete descending chromatic scale, partitioned into three equal segments. This chromatic descent is supported by major triads on every fifth chord; the bass notes form a series of falling major 3rds (C♯-A-F) that outline an augmented triad, as denoted by the brackets. The harmonies within each bracket are successively transposed a major 3rd lower. There is one exception to this exact transposition—the chord in measure 7 does not adhere to the sequential pattern. If this progression were extended, it would continue the same pattern endlessly, thus portraying the "eternal sleep" of the earth goddess Erda in this scene. Earlier in the *Ring* cycle, this same motif is used to accompany Brünnhilde as she is put to sleep by her father the god Wotan.

Example 41.6

A. WAGNER: "MAGIC SLEEP" MOTIVE FROM *SIEGFRIED*, ACT III



B. (REDUCTION)



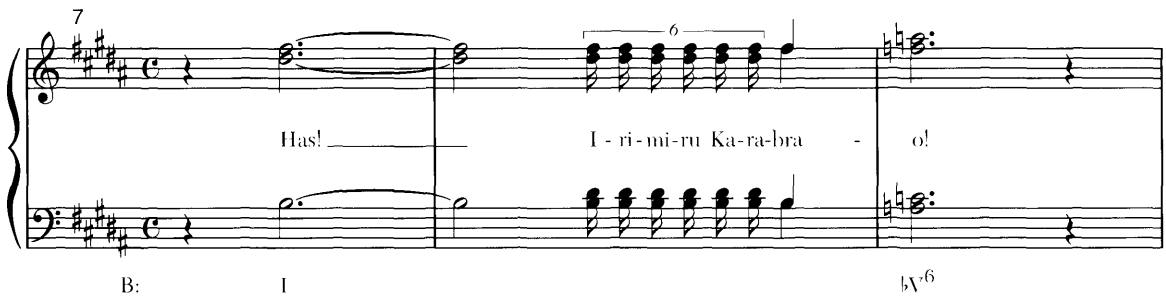
Root Movement by Tritone

The tritone splits the octave equally in half. In the common-practice period, root movement by tritone is usually reserved for dramatic or special effects in isolated chord progressions. In Example 41.7, for instance, Berlioz depicts Faust's arrival in Hell with a demons' chorus that alternates between B major and F major triads (I-♭V), evoking the *diabolus in musica*. The open-

ing of the Coronation Scene from Musorgsky's opera *Boris Godunov* is largely built around an alternating pair of major-minor seventh chords a tritone apart (D^{7} to $A\flat^{7}$).

Example 41.7

(♪) BERLIOZ: "HELL" SCENE FROM *THE DAMNATION OF FAUST*, ACT IV (VOCAL PARTS ONLY)



EXTENDED ROOT MOVEMENT BY PERFECT 5TH

A continuing series of half steps (the chromatic scale) will eventually cycle through all twelve pitch classes. Likewise, a continuous projection of perfect 5ths, either ascending or descending, will also cycle through all twelve pitch classes. The descending root movement in measures 57–60 of Ravel's *Valses nobles et sentimentales* traverses all twelve perfect fifths from D to D; some of the chords are extremely complex. Although common-practice composers rarely traversed the complete chromatic collection, in some instances they progressed far enough to seriously weaken our sense of the original tonic. One such case in the Bach passage quoted in Example 41.8. After beginning in G minor, the piece cycles downward through seven consecutive perfect 5ths (D-G-C-F-B♭-E♭-A♭-D♭) before abandoning the pattern by introducing several diminished seventh chords that eventually lead us to the foreign key of E minor, or ♯vi. By this time, of course, our original G minor tonic has been completely obscured.

Example 41.8

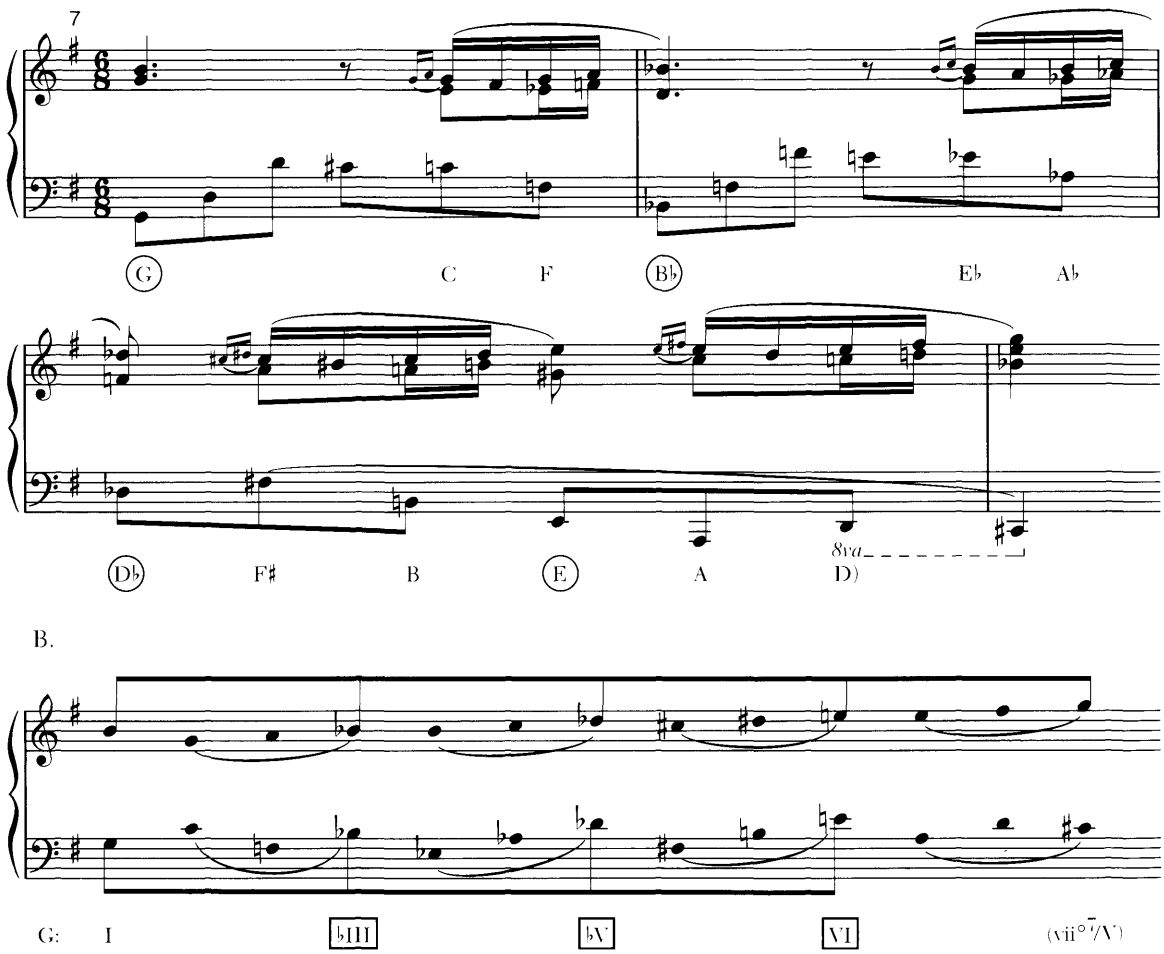
BACH: FANTASIA AND FUGUE IN G MINOR, BWV 542 ("THE GREAT")

A somewhat similar example occurs during a transitional passage in the Scherzo of Beethoven's Ninth Symphony in D minor. Here Beethoven initiates a series of descending triads that alternates both chord types (major and minor) and root movement (minor and major 3rds). Since two of these 3rds form a perfect 5th, the result is an extended cycle of perfect 5ths. The passage uses the sequence to modulate from D minor to E minor; see Exercise 41.2 in the accompanying Workbook.

Occasionally we find two symmetrical root movements, one nested within the other. The Chopin sequence in Example 41.9 illustrates an almost complete cycle of descending perfect 5ths. The downbeat cadence (ii-V^7-I) that occurs on every fourth chord produces a series of tonicizations that divide the progression by 5ths into segments marked by descending minor 3rds (G-B♭-D♭-E). The penultimate D in the bass does not complete the cycle back to G, resolving instead to a vii^{o7}/V.

Example 41.9

A. CHOPIN: NOCTURNE IN G MAJOR, OP. 37, NO. 2



THE OMNIBUS SEQUENCE

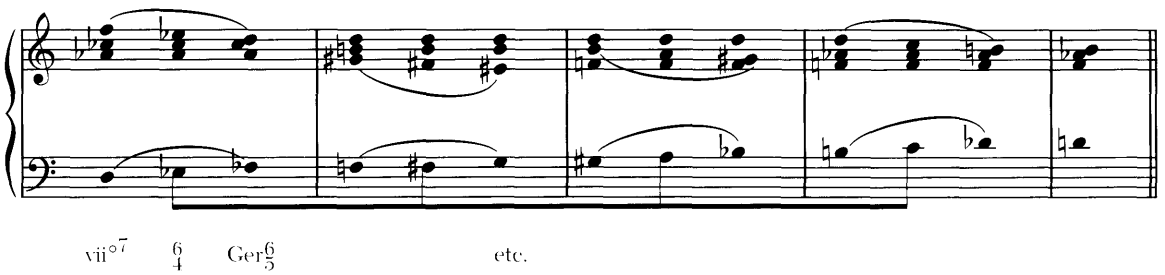
The **omnibus sequence,** a term coined by the theorist Victor Yellin, is a symmetrical mirrored sequence that employs chromatic voice leading by contrary motion.[1] This type of sequence involves a three-chord pattern that progresses by contrary chromatic motion, a concept we introduced in Chapter 39; see the discussion associated with Example 39.8. The occurrences of

1. Paula Telesco, "Enharmonicism and the Omnibus Progression in Classical-Era Music," *Music Theory Spectrum* 20/2 (Fall, 1998), pp. 242–79.

this pattern are bracketed in Example 41.10. The first chord of each segment may consist of either a diminished-seventh chord (Example 41.10a, ascending) or a German augmented 6th (Example 41.10b, descending). The second chord serves as a miniature axis for the neighboring motion (e.g., A♭-G-F♯), and the last chord is usually an augmented 6th. When successive statements of this three-note pattern occur a minor 3rd apart, a complete chromatic scale is formed in one of the voices, usually the bass. The remaining voices retain common tones between each pair of sequential segments (separated by bar lines in Example 41.10).

Example 41.10

A.



B.

Two pieces that contain this specialized type of minor-3rd sequence appear in Examples 41.11 and 41.12. The extended Beethoven passage, which is rather surprising for its time period, prolongs the secondary dominant seventh chord that frames the sequence—V^{7}/IV in D major. Within the sequence, the diminished seventh harmony that begins each sequential segment remains constant, merely changing its spelling enharmonically in measure 336 in relation to the $^{6}_{4}$ that follows. The Ger$^{6}_{5}$ that ends each sequential segment continues the chromatic bass motion into the following segment. This form of omnibus sequence usually ascends chromaticially in the bass.

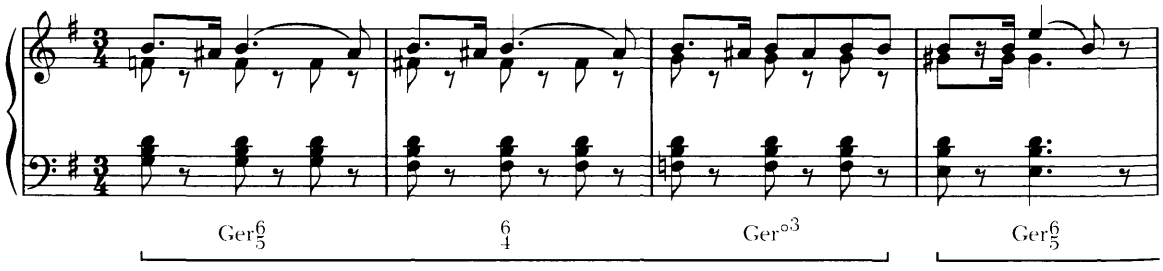
Example 41.11

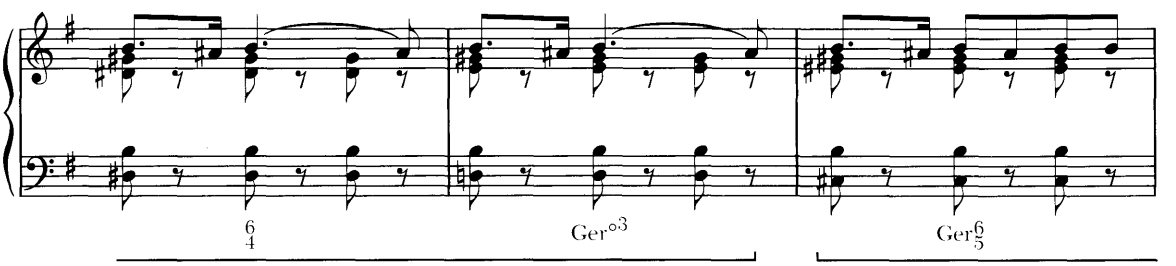
Beethoven: Symphony No. 2, I (simplification)

The descending omnibus sequence in Example 41.12 is based exclusively on both forms of the German augmented 6th ($^{6}_{5}$ and $^{\circ}3$).

Example 41.12

Musorgsky: *Boris Godunov*, Act III





Composers may use an incomplete or partial cycle of an omnibus sequence before returning to the original harmony or some other chord. In the preceding Musorgsky excerpt, there are two complete segments of the sequence and the beginning of a third. The four-measure phrasing conflicts with the three-measure sequential segments. Since the upper voice retains a single tone through most of the passage, the chromatic contrary motion is found between the bass and an inner voice.

Summary of Symmetrical Root Movements

1. Harmonic progressions based on equidistant root motion (by m2, M2, m3, M3, P5ths, and the tritone) will eventually cycle through the entire octave. The resulting symmetrical root movements may quickly take us outside the bounds of the diatonic key, thereby imparting a sense of tonal instability to the passage. As a result, they are especially useful in transitions or to underscore the text in dramatic music or lieder.
2. The omnibus is a common symmetrical sequence based on chromatic voice leading by contrary motion; it ascends or descends by patterns of successive minor 3rds.

Tonal Schemes Using Symmetrical Divisions of the Octave

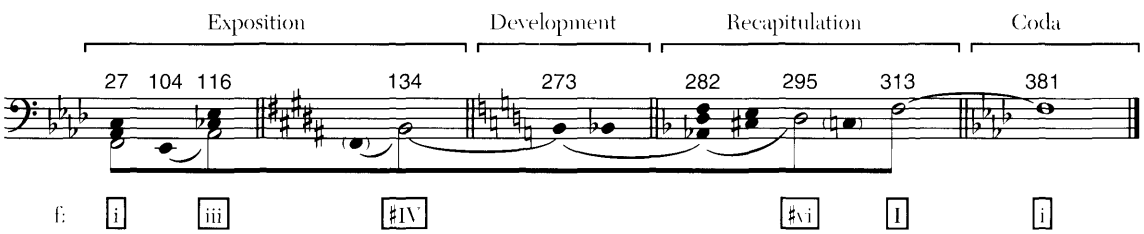
Composers were generally reluctant to base the tonal structure of an entire movement on one of the symmetrical patterns discussed in this chapter. This reluctance was probably due to the fact that such tonal schemes tend to omit the dominant key area, the single most important harmony after the

tonic. Nevertheless, isolated examples of this technique do occasionally appear in late nineteenth-century music, including two in Tchaikovsky's Symphony No. 4 in F Minor.

The opening movement of this work is based on a progression of key centers by ascending minor 3rds (F minor, A♭ major, B major, D major, and F major/minor), as shown in the key scheme of Example 41.13. Although each tonal area is preceded by a secondary dominant, the dominant key center (V) plays a decidedly subsidiary role in this movement. In the second movement, a harmonic progression by rising minor 3rds in measures 110–116 recalls the tonal scheme of the previous movement—A♭-B-D-F.

Example 41.13

TCHAIKOVSKY: SYMPHONY NO. 4, I



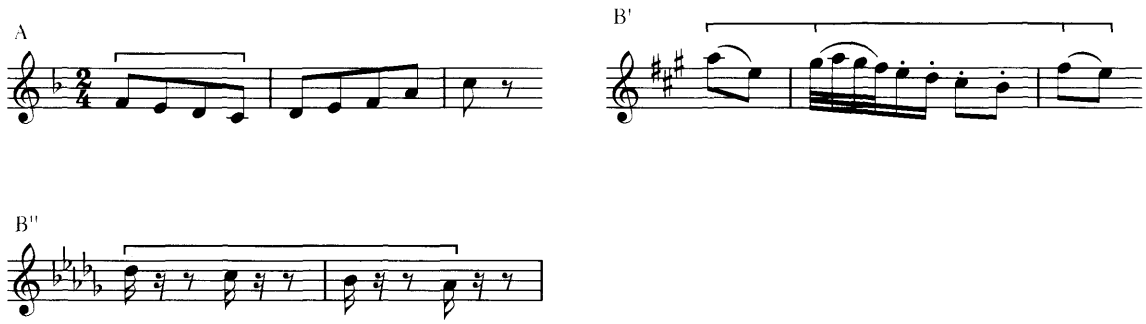
The harmonic scheme of the Scherzo (Example 41.14) is organized around a series of roots related by major 3rd (F major, A major, D♭ major, F major), producing a long-range arpeggiation of the augmented triad. This movement is cast in a large ternary form (ABA), with the central keys of A and D♭ functioning as a kind of double Trio around the framing F major pillars of the Scherzo proper. A different orchestral force is deployed for each key—*pizzicato* strings for the F major Scherzo, woodwinds for the first Trio in A major, and brass for the second Trio in D♭ major. In the opening F major section, the later tonal centers are already anticipated—A in measure 33 and D♭ in measure 65. Observe how Tchaikovsky handles the modulatory links between the tonal centers of the movement. In the coda, a series of chromatic 3rd-related triads recalls the principal key areas of the piece. This chordal succession is followed by the only structural dominant in the entire movement, which precedes the final tonic harmony.

Example 41.14

TCHAIKOVSKY: SYMPHONY NO. 4, III

Although each section appears to feature different melodic material, the same basic motive of a descending diatonic tetrachord ($\hat{8}$-$\hat{7}$-$\hat{6}$-$\hat{5}$) underlies each of their principal themes (Example 41.15). The opening of the Finale also employs the same tetrachord that occurred ion the F major Scherzo: F-E-D-C.

Example 41.15



Constant use of symmetrical harmonic progressions and tonal schemes tends to undermine the diatonic tonal system. As certain composers of the late nineteenth century, such as Liszt and Wagner, intensified their use of chromatic voice leading and symmetrical divisions of the octave, traditional tonal function began to recede in their music. This tendency is especially prevalent in the last brief and enigmatic pieces that Liszt wrote for the piano. Tonality became increasingly vague and unstable, so that by the turn of the century it was only a small step into the uncharted realms of atonality.

In Chapter 42 we will close our survey of tonal harmonic procedures by investigating a composition written during the early 1900s. This brief song cycle skirts the very fringes of tonality, combining remnants of traditional practice with new procedures arising out of purely linear motion that would define the new language of atonality.

Terms and Concepts for Review

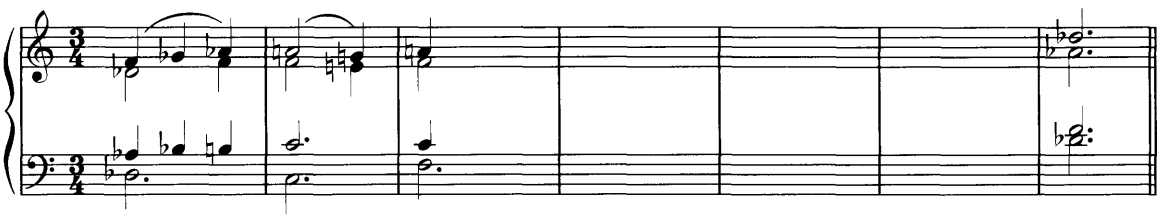
symmetrical divisions of the octave
symmetrical root movement by major 2nd, minor 3rd, major 3rd, and tritone
omnibus sequence
tonal scheme using symmetrical relations

A BRIEF REVIEW SELF-QUIZ

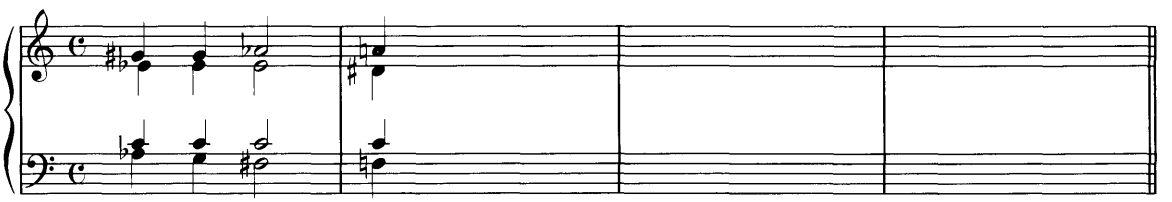
1. Complete the following symmetrical sequences in strict fashion. Then attach an appropriate harmonic analysis.

Example 41.16

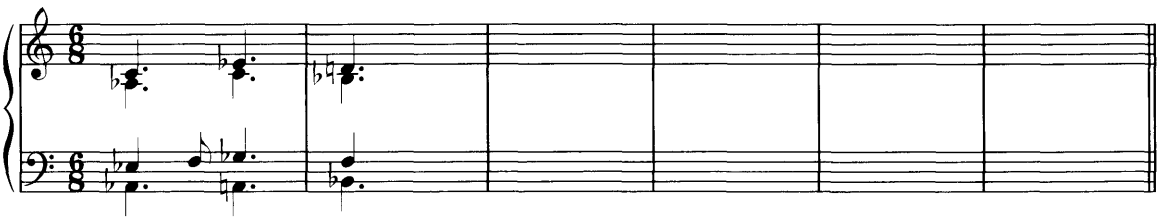
A.



B.



C.



CHAPTER 42

At the Limits of Tonality:

ALBAN BERG'S *FOUR SONGS*, OP. 2

IN THE LAST FEW CHAPTERS of this text, we have observed that the intensive use of chromatic techniques began to break down the tonic-oriented tonal language of music in the common-practice period. Although a number of early twentieth-century composers, such as Richard Strauss, Giacomo Puccini, Jan Sibelius, Gustav Mahler, and Sergei Rachmaninoff, continued to cultivate the tonal heritage of the 1800s, many others, such as Claude Debussy, Alexander Scriabin, Igor Stravinsky, Béla Bartók, and the composers of the Second Viennese School purposefully moved outside the confines of traditional harmonic practice. Stravinsky and Bartók continued to employ diatonic, folk-like melodies in their works, but often set them within layers of complex dissonant harmonies that frequently blurred or undermined their tonality. This technique is especially apparent in Stravinsky's early ballets, such as *The Rite of Spring* (1913). The three main figures of the Second Viennese School—Arnold Schoenberg, Alban Berg, and Anton Webern—consciously employed melodic and harmonic materials that were largely devoid of any tonal basis, in a quest for what Schoenberg called the "emancipation of the dissonance."

The transition from tonality to what is generally termed **atonality**—that is, the absence or negation of any tonic or functional tertian harmony—was a

gradual process. Many compositions written during the early 1900s retain vestiges of traditional tonal techniques interspersed with atonal procedures. As the linear and harmonic practices of the preceding era were abandoned, they were replaced with new compositional techniques.

In traditional tonal music, chordal progressions were controlled by tendencies of harmonic function and the careful regulation of consonance and dissonance. As Schoenberg, Berg, and Webern explored new pitch resources, harmonies became freely dissonant sonorities which were the product of the linear motion of the individual voices. These emancipated pitch elements were often placed within complex textural and rhythmic settings and developed in a process that Schoenberg called "continuous variation."

For the Second Viennese School, these atonal procedures exploited a different and novel approach to the treatment of motives and their possible development. In tonal music, a motive is a recognizable melodic fragment that can be heard in a variety of contexts. In early atonal music, a small collection of pitches, whether melodic or harmonic, may be employed in the manner of a traditional motive. In addition to being subjected to such artificial techniques as mirror inversion or retrograde, they can serve as the pitches for vertical chords as well. Thus, the distinction between what formerly was melodic and what was harmonic tended to become blurred in this music.

In this chapter we will investigate the juxtaposition of lingering tonal procedures and radical atonal tendencies in Alban Berg's *Four Songs*, Op. 2 (1908–10, revised 1920). These pieces were written during the period that Berg was courting Helene Nahowsky, whom he would later marry in 1911. The original dedication reads: "To Helene. Alban Berg."

Although Berg had drawn his texts for the *Four Songs* from two different poetic sources, all the poems share the common theme of sleep and death. The text for the first song is taken from Friedrich Hebbel's "Dem Schmerz sein Recht" (1842). The remaining songs find their source in Aldred Mombert's *Der Glühende* (1889). In its focus on a single poetic motif, Berg's Op. 2 set resembles the true song cycles of the Romantic period rather than the collections of textually unrelated songs often gathered under one opus number. It has been suggested that Berg, in this "psychological exploration of, and journey to a distant world of 'sleep-death' as an escape from reality," looked to Wagner's *Tristan und Isolde* as its musical inspiration.[1]

1. Stephen Kett, "A Conservative Revolution: The Music of the Four Songs Op. 2," in *The Berg Companion*, ed. Douglas Jarman (Boston: Northeastern University Press, 1990), 67–87.

Although the second and third songs were probably composed first, we will begin our discussion with the initial piece, "Schlafen, Schlafen, nichts als Schlafen!" ("Sleeping, Sleeping, Nothing but Sleeping!"), a typical example of this merging of tonal and atonal procedures. For instance, the D-A perfect 5th in the lower register (Example 42.1a), with the F♮ in measure 2, suggests a D minor tonality at the beginning of the song, as it does when this interval recurs in later songs. The choice of this key is not surprising, since Berg continually associated the key of D minor with his fiancée Helene. In several of his letters to her during this period, Berg referred to the "most glorious D-minor chords of your soul" and called her "my most glorious symphony in D minor." This key continued to recur as an important tonal center in his later works—the Op. 6 Orchestral Pieces, *Der Wein*, and the final interlude from his opera *Wozzeck*.

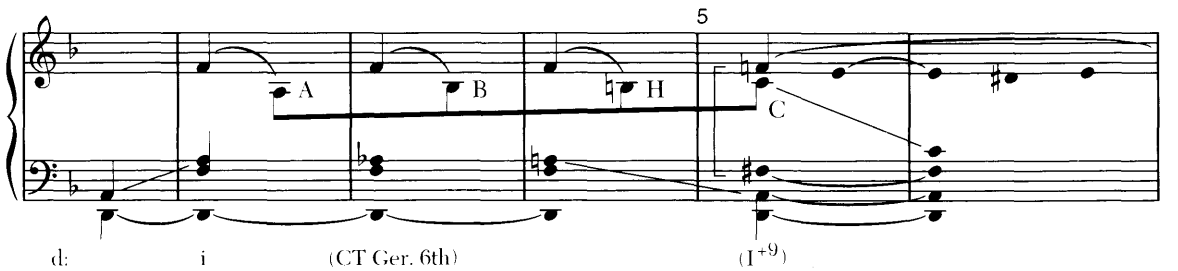
Example 42.1

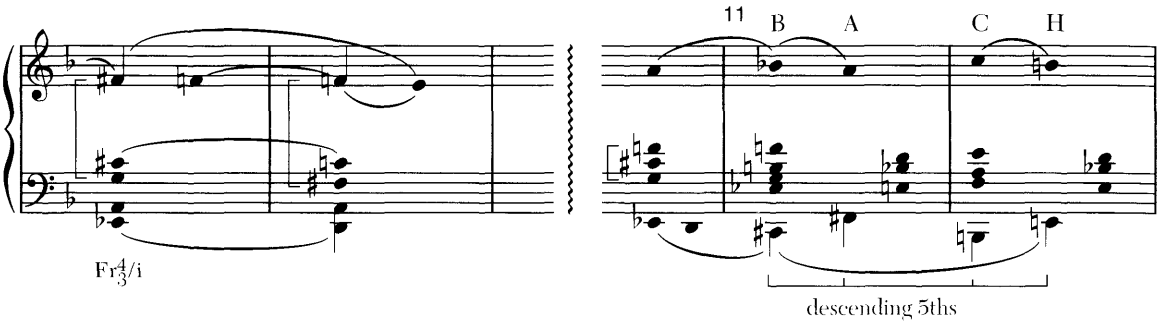
(♪) BERG: "SCHLAFEN, SCHLAFEN"

A. MM. 1–12

Bewegter
11
mf
Je - ner
We
hen,
die mich
poco
poco accel.
R.H.
L.H.
p
tra
fen,
pp

B. (REDUCTION)


5
A
B
H
C
d:
i
(CT Ger. 6th)
(I+9)



Schlafen, Schlafen, nichts als Schlafen!
Kein Erwachen, keinen Traum!
Jener Wehen, die mich trafen,
Leisestes Erinnern kaum,
das ich, wenn des Lebens Fülle
nieder klingt in meiner Ruh',
nur noch tiefer mich verhülle,
fester zu die Augen tu!

Sleeping, sleeping, nothing but sleeping!
No awakening, no dream!
Of those griefs that afflicted me,
Hardly the faintest memory,
So that, when the abundance of life
Rings deep into my slumber,
I cover myself still more deeply,
Shut my eyes more soundly.

While the bass continues its D pedal in measures 1–4, the melodic line heard in the voice part ascends chromatically: A^3-B♭-B♮; see the circled notes in Example 42.1a. Berg may have been inspired by a passage in the first act of Wagner's *Parsifal*, where Kundry sings in the same low register "Schlafen, schlafen, ich muss!" See measures 3–5 on page 63 of the Schirmer vocal score, noting the similar harmonies and the rising A-B♭-B♮ in measure 5 in the bass. These pitches form a musical acronym based on the initial letters of the names of the composer (Alban *B*erg) and *H*elene; in German, B♭ is called "B" and B♮ is called "H." The practice of basing compositions on motives derived from a person's name was a time-honored procedure; several fugues of J. S. Bach use subjects based on his own name (B♭, A, C, B or H). In fact, the rising half-step vocal line in these opening measures employs all but one of the B-A-C-H pitches in rearranged order; the piano supplies the remaining pitch (C^4) in measure 5. This practice of employing names or initials continued in Berg's compositions. The motto theme that opens his *Chamber Concerto* is based on the names of Schoenberg, Webern, and Berg. Later, in his *Lyric Suite* for string quartet, Berg derived a four-note motive from his own initials (A B) and those of his secret mistress, *H*annah *F*uchs, A B♭ B♮ F.

A D^{+9} (an augmented ninth chord on D with an added F♮ in the upper voice) appears in measure 5. This chord will continue to function as a kind of referential "tonic" throughout this song and the rest of the cycle. The

pitches F♯ C F♮ that lie within it, bracketed in the right-hand piano part in Example 42.1a, form a three-note non-tertian pitch collection or set called a *trichord.* Since this pitch set does not form a tertian triad, we will assume its bottom tone and refer to it as a (TT/P4)—that is, its intervallic structure, spelled from the bottom note upward, consists of a tritone plus a perfect 4th.[2] Even though the augmented 9th chord's F♮ resolves to E in the measure 5, forming a major ninth chord, the F♮ is continually stressed throughout the song by its metric placement on strong beats. The augmented 9th chord first heard in measure 5 now alternates with another sonority of the same type transposed a half step higher to E♭ (E♭ G C♯ [D♭] F♯); this second chord acts as a kind of neighboring harmony and implies a French augmented 6th (E♭ G A C♯), whose A appears in one of the lower voices, with an added F♯. This latter chord also contains a (TT/P4) trichord—G C♯ F♯. If we relate both of these chords to the referential D sonority, the first may be considered a kind of altered thirteenth chord based on the dominant A, while the chord on E♭ lies a half step above the D. These two alternating augmented 9th chords curiously anticipate similar harmonic sonorities and relationships that appear in jazz pieces of the 1940s. In fact, such tritone substitutions (A-E♭) are a common occurrence in the jazz of this period.

In measures 11–12, the bass moves through a series of perfect 5ths (C♯-F♯-B-E); see the circled notes in Example 42.1a. Although the harmonies they support do not have a clear tonal function, the passage creates an overall impression of a series of descending 5ths. Notice that the upper notes of the vocal line at this point rearrange the previous A-B♭-B-C to form the name B-A-C-H, which is immediately restated in sequence a step higher in the first two notes of the vocal line in measures 13–14: C-B-D-C♯ (Example 42.2). This reference may represent Berg's way of implying that the earlier A-B-H motive is indeed linked to his name and that of Helene.

2. Theorists classify this trichord sonority as a (0, 1, 6) set class. The system of classifying and manipulating such recurring pitch collections in twentieth-century music, called *set theory*, arranges the pitch classes so that they appear in their normal order—that is, so that the distance between the outer tones is as small as possible, and the smallest of the internal intervals occurs at the bottom of the set. These notes are then assigned numbers, which refer to the intervals within the set, measured in half steps. In order to arrive at the normal order of our particular trichord, we must first displace the F♯ an octave higher, forming C F F♯, and then invert the set around C (F♯ G C), so that the half step occurs at the bottom. Thus, the numbers 0, 1, and 6 represent the first pitch (always denoted as 0), the pitch one semitone above it (1), and the pitch six semitones above the first (6). The (0, 1, 6) set class can easily be transposed to any other pitch level and therefore take on many musical forms.

Example 42.2

"SCHLAFEN, SCHLAFEN" MM. 13–16

The music abandons any sense of tonal reference or function in measures 13–20 (Example 42.2), where it consists largely of complex dissonant harmonies derived by linear motion. The prevailing linear chromaticism in the various voice parts contrasts with the sporadic 5th motion of the bass in measures 13–14 (E♭-G♯-C♯) and 18–20 (A-D-G).

In measures 20–21 Berg resumes his original A-B-H motive in reverse order and begins to weave it within the concluding section, which recapitulates much of the opening material while freely reversing the musical presentation of its elements (Example 42.3). Two references to the

A-B-H motive, now heard as H-B-A, precede the return of the augmented 9th chord on D in measure 24, now with F♯ in the bass. The original D-A 5th melodically works its way downward through the texture; see the circled notes in measures 24–26 and the bracketed notes in the reduction. In the last four measures the A-B-H motive recurs, but again in reverse order (F-*B*♮, E-*B*♭, and F-*A*), enabling the song to conclude in its original D minor.

Example 42.3

BERG: "SCHLAFEN, SCHLAFEN"

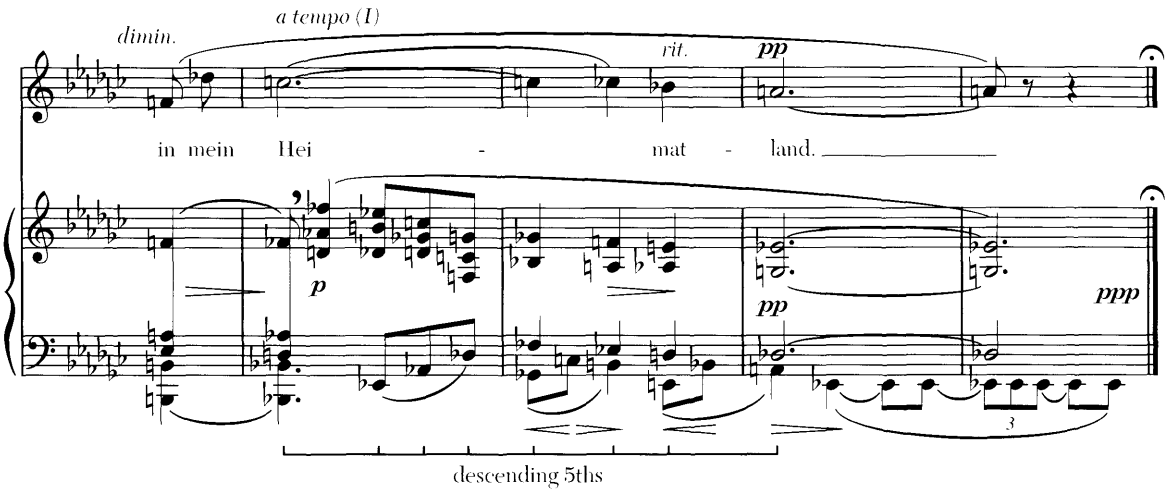
A. MM. 21–30

The second song, "Schlafend trägt man mich in mein Heimatland" ("Sleeping I Am Borne to My Homeland"), carries a key signature of six flats, suggesting the key of E♭ minor, a half-step or Neapolitan relationship to the first song. This piece opens with a $\overline{\text{Vo}}^7$ and concludes with an altered tonic harmony ($\overline{\text{Vo}}^7$/iv), which leads into the A♭ minor of the following song (Examples 42.4a to c). The consistent use of the $\overline{\text{Vo}}^7$, the French augmented 6th sonority, gives a decided whole-tone character to the song.

Example 42.4

BERG: "SCHLAFEND TRÄGT MAN MICH"

C. MM. 15–18



Schlafend trägt man mich in mein Heimatland.
Ferne komm' ich her,
über Gipfel, über Schlünde,
über ein dunkles Meer
in mein Heimatland.

Sleeping, I am borne to my homeland.
I come from far away.
Over peaks, over abysses,
Over a dark sea,
To my homeland.

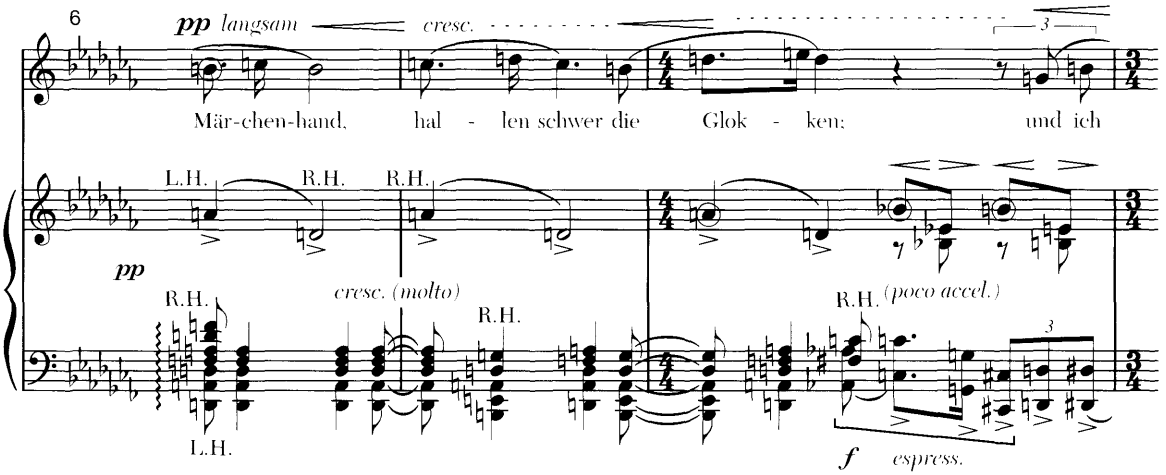
The opening progression (Example 42.4a) employs an extended succession of rising perfect 4ths or falling 5ths in the bass, labeled "descending 5ths" in the music, similar to those heard in the previous song—B♭-E♭-A♭-D♭-C♭-E♮. The chords above the bass constitute a series of French augmented 6th sonorities (or Vo7's) that continue into the middle of the song in partial chromatic descent. Berg may have been thinking of the "Eternal Sleep" motif in the final act of Wagner's *Die Walküre*, when Wotan puts his daughter Brünnhilde to sleep on the rock. In this passage the upper voice descends chromatically using major triads, while the bass outlines a sequence by major 3rds. See measure 18, page 297, to measure 5, page 298, of the Schirmer vocal score. The first and last sonorities of Example 42.4a contain the same pitch classes, suggesting a return to the opening chord on the word "homeland"; we may consider this progression as a prolongation of the opening French augmented 6th, with voice exchange occurring between the B♭ and F♭ (E♮) in the outer voices. In this song, Berg seems to allude frequently to the opening melodic motif of the *Tristan* Prelude (minor 6th up, half step down), found in Example 38.1; these are bracketed in the piano part in Example 42.4b. In measures 15–17 (Example 42.4c) the bass succes-

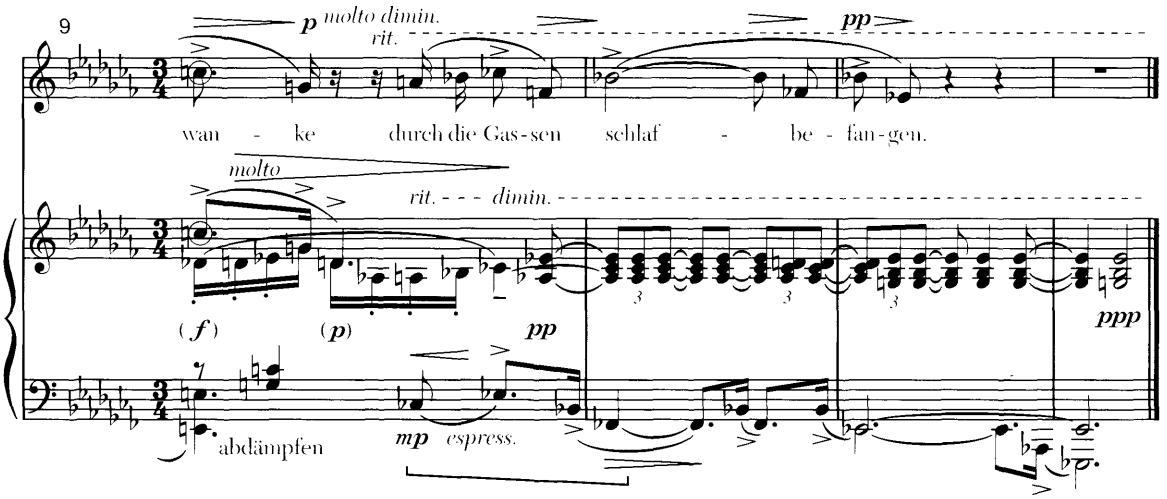
sion of descending 5ths is repeated and extended before cadencing on the final E♭ dominant sonority (E♭o^7).

The third song, "Nun ich der Riesen Stärksten überwand" ("Now I Have Overcome the Mightiest of Giants"), is quoted in its entirety in Example 42.5a. Its A♭ minor tonality (notice the key signature) is heard most clearly during the opening four measures of the vocal line, which is built on arpeggiations of that tonic triad. We will discuss the intrusion of the F♮ in measure 2 later (see the reduction in Example 42.5b).

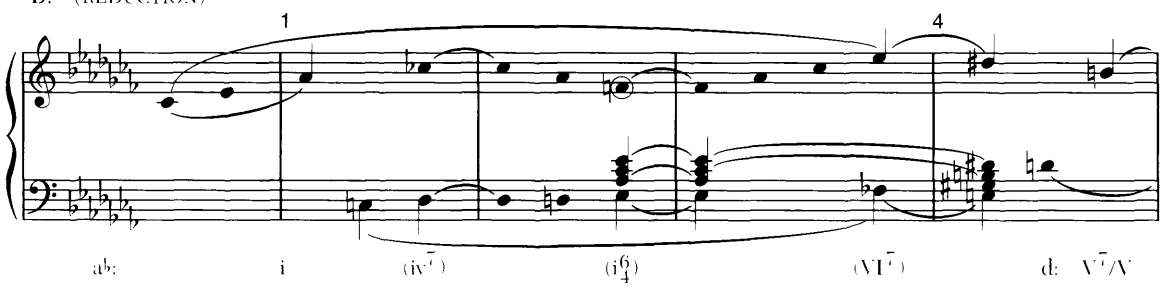
Example 42.5

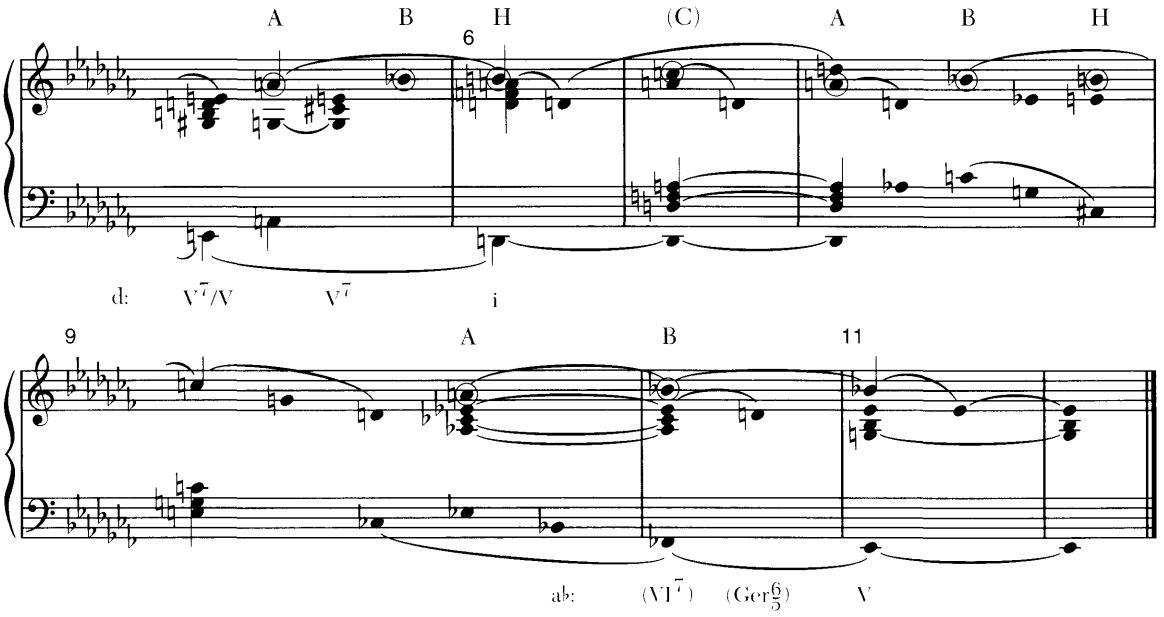
A. "NUN ICH DER REISEN STÄRKSTEN ÜBERVAND" FROM *FOUR SONGS*, OP. 2


6
pp langsam
cresc.
Mär-chen-hand, hal - len schwer die Glok - ken; und ich
L.H.
R.H.
R.H.
pp
R.H.
cresc. (molto)
R.H.
R.H. (poco accel.)
L.H.
f espress.


9
p molto dimin.
rit.
pp
wan - ke durch die Gas-sen schlaf - be - fan-gen.
molto
rit. - - - dimin.
(f)
(p)
pp
ppp
abdämpfen
mp espress.

B. (REDUCTION)


1
4
ab: i (iv$^{\overline{6}}$) (i$^{6}_{4}$) (VI$^{\overline{7}}$) d: V$^{\overline{7}}$/V



Nun ich der Riesen Stärksten
überwand,
mich aus dem dunkelsten Land
heimfand
an einer weißen Märchenhand,
hallen schwer die Glocken;
und ich wanke durch die Gassen
schlafbefangen.

Now I have overcome the
mightiest of the giants,
Found my way home out of the
darkest land,
Guided by a white fairy hand;
The bells resound heavily,
And I stumble through the
streets, overcome with sleep.

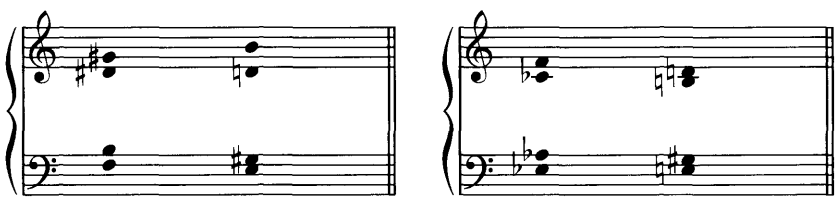
This song recapitulates some of the elements heard in the opening piece of the set. The (TT/P4) trichord is especially prominent. It first occurs as the last three notes of the four-note motive in the piano part of measure 1 (the bracketed A♭-C-G-D♭), which probably alludes to the "giants" in the text by its loud dynamics and octave doublings. Transposed versions of this motive recur in measures 2, 3, 4, 8, and 9 again; see the bracketed passages in Example 42.5a. In measures 1–3 the bass ascends chromatically (D♭-D-E♭-E), the last pitch acting as an enharmonic pivot (F♭/E in mm. 3–4) that moves to V7/V in D minor (m. 4), the original key of the opening song, but a tritone removed from the present tonic of A♭ minor. As the vocal part introduces the syllable "-heim" ("homeward") in measure 4, a descending 5th progression moves to D minor (V7/V-V7-i) just as the upper voice reiterates our original A-B-H motive. Notice that Helene's B♮ (H) occurs at the same moment as her D minor harmony on the words "a white fairy hand." The return of

the repeating A-D melodic 5th (mm. 6–8) found in the first song indeed brings us "home," although here it may also depict the resounding bells ("hallen . . . die Glocken"). Another reiteration of the A-B-H motive in the piano part (m. 8) leads to the C^5 positioned over and emphasized by a first-inversion C major chord in measure 9. The motion toward the final half cadence on E♭, the dominant of A♭ minor, repeats the progression found from the end of measure 2 ($A♭^6$) through the end of measure 3 ($F♭^7$). But rather than moving to D minor, this second F♭ sonority now resolves by half step via a German augmented 6th to the final E♭ cadence chord.

The harmonies on the last half of measure 3 (A♭ C♭ E♭ F) and the last beat of measure 5 (E G♯ B D) employ the same pitch classes found in the opening progression of the *Tristan* Prelude, although the first sonority now occurs in a different inversion and some enharmonic notation occurs (Example 42.6). This reference to the "Tristan" chord is probably not coincidental, as Berg had already inserted a similar allusion in the Piano Sonata, Op. 1 (mm. 90–101), and would later quote the entire *Tristan* passage in the last movement of his *Lyric Suite*.

Example 42.6

A. WAGNER, *TRISTAN UND ISOLDE* B. BERG, "NUN ICH"



The three sonorities in this third song that evoke a sense of tonality are stressed by their placement within the piece—the A♭ minor $^6_4$ at the beginning (mm. 2–3), the D minor chord in the middle (m. 6), and the motion to the E♭ chord in the final half cadence. The first two sonorities contain an added 6th (F^4 and B^4). Berg's long-range tonal organization is demonstrated by the fact that the roots of these three harmonies (A♭ D E♭) form a rearrangement and transposition of the F♯ C F♮ (TT/P4) motive in the initial song. In addition, the basic keys of the first three songs outline a (TT/P4) trichord with the same pitch classes—D E♭ A♭.

The final song of the set, "Warm die Lüfte" ("Warm Are the Breezes"), is frankly atonal and contains few references to musical material heard in the preceding pieces. As such, it represents the completion of Berg's transition

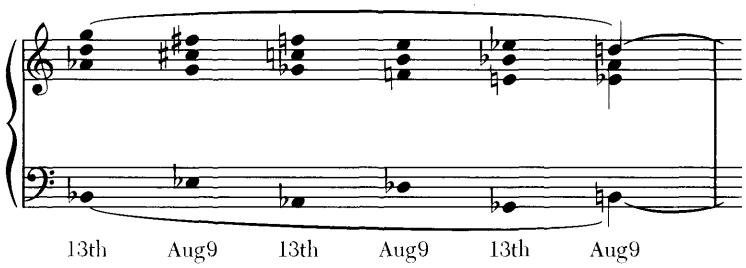
to purely atonal writing. In measures 18–19, the first two pitches (B♭ and A) of the original A-B-H motive recur, coinciding with the word "Stirb!" ("Die!"). The curious harmonic progression that follows summarizes the semitone motion and root movement by 5ths found at the opening of the second song with the (TT/P4) motive used now as a vertical chord (Example 42.7a).

Example 42.7

BERG: "WARM DIE LÜFTE"

A. MM. 19–25

B. (REDUCTION)



Warm die Lüfte, es sprießt Gras
auf sonnigen Wiesen,
Horch! Horch, es flötet die Nachtigall.
Ich will singen:
Droben hoch im düstern Bergforst,
es schmilzt und glitzert kalter Schnee,
ein Mädchen in grauem Kleide
lehnt an feuchtem Eichstamm,
krank sind ihre zarten Wangen
die grauen Augen fiebern durch
Düsterriesenstämme.
"Er kommt noch nicht. Er lässt
mich warten . . ."
Stirb! Der Eine stirbt, daneben der
Andre lebt:
Das macht die Welt so teifschön.

Warm are the breezes, grass
flourishes on sunny meadows.
Hark! Hark! the nightingale is warbling.
I want to sing:
High up in the gloomy mountain forest,
Cold snow melts and glitters,
A girl dressed in gray
leans on a damp oak trunk
Sickly are her tender cheeks;
Her gray eyes burn from between
the great dark trunks.
"He still hasn't come. He leaves
me waiting . . ."
Die! The one dies while the
other lives:
That is what makes the world so
deeply beautiful.

As the bass moves upward by perfect 4ths (mm. 20–22), the (TT/P4)'s progress downward by half steps. This passage sounds remarkably contemporary, the resulting harmonies representing an alternation of two standard chords in modern jazz—an augmented 9th chord and an altered thirteenth chord (see the reduction in Example 42.7b). The final sonority of the progression, an augmented 9th built on B♮, is prolonged to the end of the song. This allusion to a kind of B major tonality may well refer to the concluding "Liebestod" ("Love-death") or Transfiguration from Wagner's *Tristan und Isolde*, which ends in the same key. It is probably not coincidental that the two notes added to the B major triad, A♮ and D♮, relate directly to Helene's key, D minor.

There is, of course, much more to be discussed in these pieces. In this brief analysis we have focused on the waning of traditional tonality within an

increasingly atonal environment. Indeed, the tonal relationships within Berg's *Four Songs* are often obscured by the surrounding linear texture and complex dissonant sonorities. In his next work, the String Quartet, Op. 3, Berg would finally abandon any remnants of tonality and begin writing in a purely atonal idiom, a procedure being adopted simultaneously by his compatriots Arnold Schoenberg and Anton Webern. We can only muse over the prophetic words that Schoenberg set in the soprano line added to the finale of his Second String Quartet (1908): "I sense the air of other planets."

Terms and Concepts for Review

atonality
trichord
(TT/P4) trichord

APPENDIX 1

Some Fundamentals of Acoustics

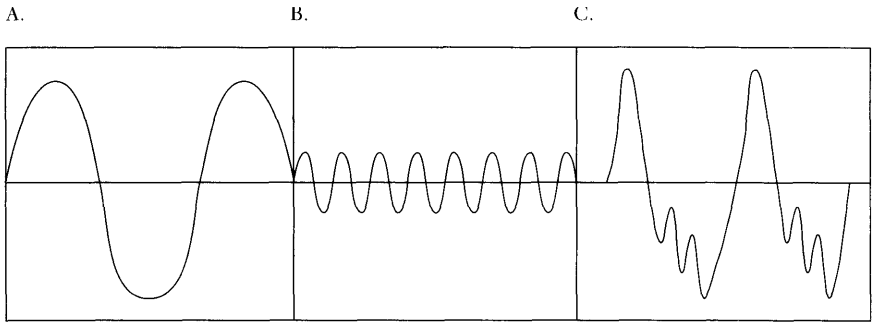
The field of music acoustics embraces a variety of subjects, including such diverse topics as tuning systems, room acoustics, sound reproduction, psychoacoustics, acoustical properties of musical instruments, and so forth. In this appendix we will limit our discussion to an examination of the four basic properties of a musical tone: (1) its frequency or pitch, (2) its intensity or loudness, (3) its vibration form or timbre, and (4) its duration or length. In each case we will distinguish between a musical tone's *physical* properties, listed first, and the *subjective* manner in which we perceive it, listed second.[1]

Frequency and Pitch

Sound originates in the vibration of elastic or flexible objects. Included in this family of vibrating objects are stretched strings, blown reeds, vibrating lips, drumheads, and even the molecules of air in a wind instrument. Regular or periodic vibrations produce a musical tone. You can see the graphic

1. For material on other acoustical topics, refer to John Backus, *The Acoustical Foundations of Music*, 2nd ed. (New York: W. W. Norton, 1977) and D. W. Campbell and Clive Greated, *The Musician's Guide to Acoustics* (New York: Schirmer Books, 1987). Neither requires an extensive background in mathematics.

Figure A1.1



representation of such a tone on the screen of an oscilloscope, an electronic instrument used to view and evaluate waveform patterns. Three of these patterns are illustrated in Figure A1.1.

One complete to-and-fro motion, or vibration, of an elastic body is called a *cycle.* The *frequency* of a tone is determined by the speed of its vibrations, which is measured by the number of complete cycles per second (cps) or simply *Hertz* (Hz). For instance, A^4, which vibrates 440 times per second, has a frequency of 440 Hz. We perceive frequency as *pitch*—that is, the "highness" or "lowness" of a tone. The greater the frequency or the faster the rate of vibration, the higher the pitch; the lower the frequency or the slower the rate of vibration, the lower the pitch. Frequency or pitch is indicated on the horizontal axis of an oscilloscope screen. The frequency of the tone in the second pattern of Figure A1.1 is greater and its pitch is higher than that in the first, since the distance between the successive vibrations peaks is less. Doubling the frequency of a given pitch produces a pitch an octave higher; conversely, halving the frequency of a given pitch produces a pitch an octave lower. Therefore the *interval ratio* between successive octaves is 1:2; 1 represents the original note and 2 the higher octave. Thus frequencies of 220, 440, and 880 represent the pitches A^3, A^4, and A^5, respectively. Since each additional octave doubles or halves this ratio, we perceive pitch according to a *logarithmic scale,* or by powers of 2—2^1, 2^2, 2^3, 2^4, etc.[2]

2. The logarithm of a number is the power to which 10 must be raised to obtain that number. Thus, if $10^2 = 100$, then $\log 100 = 2$; if $10^1 = 10$, then $\log 10 = 1$, and so on. As a number doubles or increases by a power of 2, its logarithm also doubles. For instance, $\log 2 = .301$ and $\log 4 = .602$. A logarithmic scale consists of the logarithms of each number in a given series: for instance, the logarithmic scale from 1 (10^0) to 10 (10^1) would consist of a series of numbers from 0 to 1.

The frequency distribution of fixed pitches within an octave on a keyboard instrument, for example, is called a *tuning* or *temperament system. Equal temperament* has been employed as the basic tuning system in Western music since about 1800. In this system, each of the twelve half steps in the octave are of equal size. This equality permits the use of enharmonic notation—F♯ and G♭ represent the same pitch. An equal-tempered half step may be expressed mathematically as $12\sqrt{2}$, or 1.0595, and occurs on a continuum, in which 1 is the lower note and 2 is the note an octave higher. Therefore, if we increase the length of tubing in a woodwind or brass instrument, or the length of a string on a stringed instrument, by 5.95 percent, or from 1 to 1.0595, we lower the pitch by one tempered half step.

Intensity and Loudness

The energy or *amplitude* created by the displacement of vibrating objects carries through air to reach our ears. Amplitude is expressed as a measurement of *intensity* compared to absolute silence and is represented on the vertical axis of an oscilloscope screen. The intensity of the first pattern in Figure A1.1 is greater than the second, since the extremities of its vibrations are higher and lower on the vertical axis. In order to avoid extremely large or small ratios, intensity is measured on a logarithmic scale of *decibels* (dB). Intensity may range from the background noise of a quiet room, about 30 dB, to the threshold of pain, about 120 dB. Since each additional increment of 10 dB represents a tenfold rise in intensity, this decibel range involves an increase of about 10^8, or one billion times.

Our ear is more sensitive to the frequencies of the top notes of the piano, about 4000 Hz, than to those of its lowest octaves, below 100 Hz. Therefore, in softer passages the bass must be boosted either electronically or acoustically to achieve a better balance.

Another unit acousticians use to measure relative loudness is the *sone.* Each sone is equivalent to an increase of 10 dB at the frequency of 1000 Hz. Based on an average of numerous individual responses, two sones sound twice as loud as one sone, and four sones sound twice as loud as two sones, and so on. Assuming that each violinist played the note B^5, approximately 1000 Hz, with the same intensity, it would take ten violins to sound twice as loud as one instrument, because in order to be twice as loud to double the sones, there must be an increase of 10 dB. In order to have an increase of 10 dB, the intensity must increase ten times, which means that ten violins are necessary.

Because musical dynamics are so subjective, we employ the approximate Italian terms *piano* and *forte* and the prefix *mezzo-* and suffix *-issimo* to distinguish relative loudness in music. Thus *mezzo-piano* indicates "moderately

soft," while *pianissimo* indicates "very soft." *Crescendo* and *diminuendo* denote a gradual rise and fall in loudness.

Vibrations Form and Timbre

The tone quality or *timbre* of a musical tone is dependent on its physical *vibration form* or characteristic waveshape. A pure or *sine tone*, the simplest waveform, sounds quite uninteresting to our ears. The sound used by doctors to check a patient's hearing is a sine tone. Its characteristic wave pattern is shown in the first two diagrams of Figure A1.1. Pure tones are rare in most musical situations; we sometimes hear them in the tones of a tuning fork, the low register of a flute, or the highest notes sung by a soprano. Most instruments produce what we call *complex tones*, whose waveforms are more complicated. A typical example is given in the final diagram of Figure A1.1. The diverse pattern produced by a complex tone results from the interaction of a series of simultaneously sounding pitches, of which we actually perceive only the lowest. This pitch, called the *fundamental* or *first partial*, is overlaid with a series of *overtones* or *harmonics*. Although we do not hear these overtones as distinct or separate tones, they are physically present and serve to color the sound of the fundamental. The relative strengths or intensities of the various harmonics add a distinctive sound or timbre to the fundamental tone. For instance, the particular combination of differing harmonic strengths in a tone such as A^4 produced on an oboe, violin, or trumpet allows us to distinguish one instrument from other. If we turn the treble knob on a stereo amplifier to the left, the upper harmonics of each tone in the music being played are gradually attenuated and finally eliminated by means of a filtering system, changing their timbres by causing them to lose their "brightness."

This blending of natural overtones on acoustical instruments (except for some percussion instruments) is caused by the predictability of a series of numbers that form numerical ratios between the various harmonics, numbers that theoretically extend to infinity. The successive interval ratios of these numbers are arithmetic—1:2:3:4:5:6:7:8, and so forth. That is, the interval ratio between the first two harmonics (the first harmonic is the fundamental) is 1:2, and that between the next two harmonics is 2:3. The interval ratio may be calculated by dividing the frequency of a higher tone by the frequency of a lower tone. For instance, $A^4 = 440$ divided by $A^3 = 220$ equals the interval ratio 1:2 or an octave. If we take C^2 as the fundamental or first harmonic, this *harmonic series* produces the pitches shown in Example A1.1. Only the first sixteen harmonics are given. Thus the ratio of a perfect 5th (C^3-G^3) is 2:3, and that of a major 6th (G^3-E^4) is 3:5.

Example A1.1

The harmonic series not only affects the timbre of each musical tone but also lies at the basis of our Western theoretical and tuning systems. For instance, if we consider the ratio of each harmonic to the fundamental, or the ratio of one harmonic to another, we can identify most of the diatonic intervals that are familiar to us—1:2 = an octave, 2:3 = a perfect 5th, 3:4 = a perfect 4th, 4:5 = a major 3rd, 5:6 = a minor 3rd, and so on. Each of these ratios represents a pure harmonic interval, expressed in its simplest possible relation. Music theorists of the medieval and Renaissance periods based their distinction between the so-called "perfect and imperfect" consonances on these numeric ratios. The ratios for the perfect octave and perfect 5th are based on the indivisible and therefore simpler numbers 1:2:3. The ratios for the imperfect intervals incorporate the more complex, mostly divisible numbers 4:5:6:8. We can produce the harmonic series as separate tones on certain musical instruments—on a flute or trombone by overblowing, on a violin by natural harmonics, and on an organ by mixture stops. On a piano, press a key which would be a harmonic down silently and strike a fundamental note loudly below it; you will hear the harmonic ringing. Or lightly touch a piano string at a point that divides it either into halves, thirds, fourths, etc. and then strike the key of that string; the harmonic will sound.

Attempts to produce a workable musical scale and tuning system using the natural tones of the harmonic series have proven unsuccessful, since its intervals produce two different sizes of melodic major 2nds—8:9 (C-D) and 9:10 (D-E). In addition, in this so-called *just* tuning system the perfect 5th D up to A is not a pure 2:3 ratio. As a result, Western musicians eventually devised the system of equal temperament, in which the distances or ratios between major 2nds and all other intervals remain constant. The tones of the harmonic series are indicated with black note-heads in Example 1.1 seem severely out of tune in relation to our equal-tempered scale. Now have

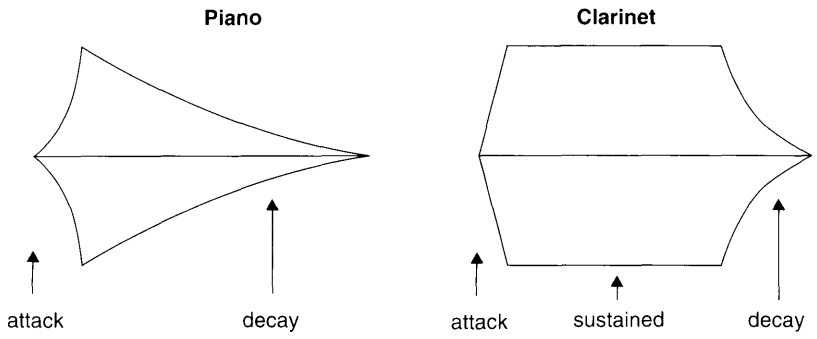
some of your fellow students demonstrate the harmonic series on their instruments. Which tones sound in tune and which ones out of tune?

Duration and Length

The duration of tones used in music is fairly short. Even a whole note in slow tempo will rarely last longer than four seconds. There is, however, an aural limit to a tone's brevity. If tones occur at a rate faster than twenty per second, the human ear can no longer keep them distinct one from the other. The notes will then fuse together, giving us the sensation of a single sustained tone or a sliding glissando between two tones.

On an oscilloscope, most musical tones exhibit a characteristic shape consisting of intensity or loudness and duration that is called an *envelope.* An envelope normally consists of an initial *attack* followed by a *steady state* or sustained sound, and concludes with its eventual *decay* or release. The envelopes of a typical piano tone and a clarinet tone, given in Figure A1.2, show that a sound sharply expands in intensity just after the initial attack and usually takes much longer to decay. The difference between these two envelopes results from the fact that a piano tone cannot sustain itself once the key has been struck, while it is possible to sustain a clarinet tone.

Figure A1.2



APPENDIX 2

The Diatonic Church Modes and Other Scales

In this appendix we will briefly examine some scalar formations other than the usual major and minor collections that occasionally appear in the music of common-practice period. These include the seven church modes as well as the five-toned pentatonic, Gypsy minor, whole-tone, and octatonic scales.

The Ecclesiastical or Church Modes

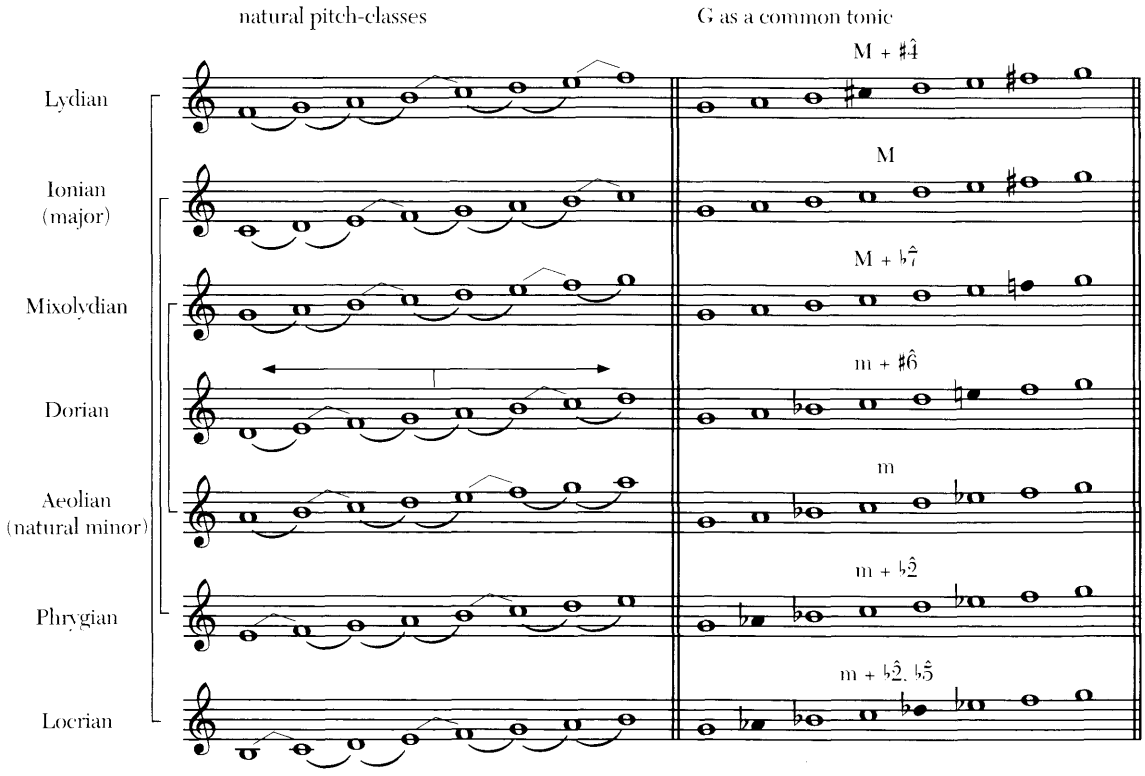
Within each octave span of a diatonic white-key scale, there are five whole steps and two half steps. These intervals are indicated in Example A2.1, using the symbols ⌒ for whole steps (major 2nds) and ∧ for half steps (minor 2nds). Any *stepwise* seven-tone scale, whether diatonic or otherwise, will exhibit the same number of whole and half steps, although their arrangement within the octave may vary: in the scale C-D-E-F-G-A-B-C or C major scale, the whole steps are grouped 2 + 3, while in the scale C D E♭ F G A B C or C melodic minor scale, the whole steps are grouped 1 + 4. You may wish to confirm this by experimenting at the keyboard.

Example A2.1

In the white-key diatonic scale notice that the whole steps are always grouped into patterns of 3 + 2 (F-G-A-B and C-D-E), which are separated by half steps (E-F and B-C). Within this white-key diatonic collection we may assign the role of tonic to each of the seven different tones, and then build a white-key diatonic scale above each one. The resulting seven scales or *modes* are related by their common 3 + 2 whole-step construction, as shown by the numbers below the staff in Example A2.1. These scales form the basis of the *diatonic Church modes.* Modal scales were known and employed by musicians of great antiquity. The early Babylonians and Greeks derived some of the names for the modes from geographical areas in the ancient world—Lydia, Phrygia, Ionia, and so forth. Despite some confusion in terminology, these modes formed the pitch basis of early Western monophony, such as liturgical chant and secular monody, and went on to provide the foundation of polyphonic music well into the Renaissance period.

Example A2.2 illustrates the seven *authentic modes,* each of which begins and ends with its *finalis,* the note that functions as a tonic.

Example A2.2



The first column in Example A2.2 shows the scale of each mode, beginning and ending with its *finalis*. The brackets on the left indicate that these seven modes may be grouped into three pairs of inversionally related modes—that is, the succession of whole and half steps between the Lydian and Locrian, the Ionian and Phrygian, and the Mixolydian and Aeolian modes is exactly mirrored or reversed. These pairings form a symmetrical grouping around the central Dorian mode, which you may notice is an exact mirror of itself. Since the presence of a tritone as its 5th scale degree made it difficult to establish a sense of tonic, the Locrian was never accorded equal status with the other modes.

Although these modes normally employ an empty key signature of no sharps or flats, akin to C major or C Ionian, they may be transposed to other pitch levels. To transpose any mode up a perfect 4th, simply write the key signature of that major key (one flat for F major, up from C) and build the modal scales on the same successive scale degrees—Dorian on $\hat{2}$ (G), Phrygian on $\hat{3}$ (A), Lydian on $\hat{4}$ (B♭), Mixolydian on $\hat{5}$ (C), and Aeolian on $\hat{6}$ (D).

Another method of viewing the modes is shown in the second column of Example A2.2. Here each mode is compared to an already familiar major or natural minor scale. A common tonic of G is retained throughout. The first three modes are basically major modes since they contain a major 3rd above their tonic or *finalis*. While the Ionian corresponds to our G major, two of the major modes differ from major by one characteristic tone or altered scale degree: for Lydian it is $\sharp\hat{4}$ (C♯) and for Mixolydian it is $\flat\hat{7}$ (F♮). The remaining modes have a minor 3rd above their tonic or *finalis*. While the Aeolian corresponds to our G natural minor, again two of them differ by one tone; the Dorian's characteristic tone is $\sharp\hat{6}$ (E♮) and the Phrygian's characteristic tone is $\flat\hat{2}$ (A♭). The Locrian has two altered tones: $\flat\hat{2}$ (A♭) and $\flat\hat{5}$ (D♭). Recognizing the characteristic tones of each mode is especially helpful in identifying modal melodies.

The best examples of modal melodies that exhibit a strong sense of tonic are found in the folk music of certain countries—particularly England and the Balkan and Slavic nations. Liturgical chant, by contrast, may sound odd to the modern ear. Because of the construction of chant melodies, the last tone or *finalis* does not always convey the impression of a real tonic. One must remember that the theory of modal classification was imposed on an already existing literature of chant.

Interest in the modes has occasionally resurfaced in various periods of music history—during the Impressionistic era in the music of Debussy and Ravel, for example, and even today in many jazz and rock pieces. Some examples of pure modal melodic writing appear in Example A2.3.

Example A2.3

A. MUSORGSKY: *A NIGHT ON BALD MOUNTAIN* — PHRYGIAN ON A

B. "ORIENTIS PARTIBUS" (MEDIEVAL CONDUCTUS) — MIXOLYDIAN ON G

C. "SCARBOROUGH FAIR" (ENGLISH FOLK SONG) — DORIAN ON D

OTHER SCALES

The Pentatonic Scale

Another scale sometimes found in common-practice music is the familiar *pentatonic* or five-tone scale, shown in Example A2.4 using the notes A-C-D-E-G. Pentatonic scales that employ only the natural pitch classes may also be constructed with the notes D-F-G-A-C and E-G-A-B-D. This scale may be considered a five-note subset of the diatonic seven-tone scale. Perhaps humanity's primal tonal collection, it can be found in various civilizations throughout the world. Its absence of tonal tension is not surprising, since it lacks both a tritone and a minor 2nd, two intervals that usually require resolution. The pentatonic scale has five possible modes, which are labeled in

Example A2.4 with the numeric designations used by most authorities on folk music.

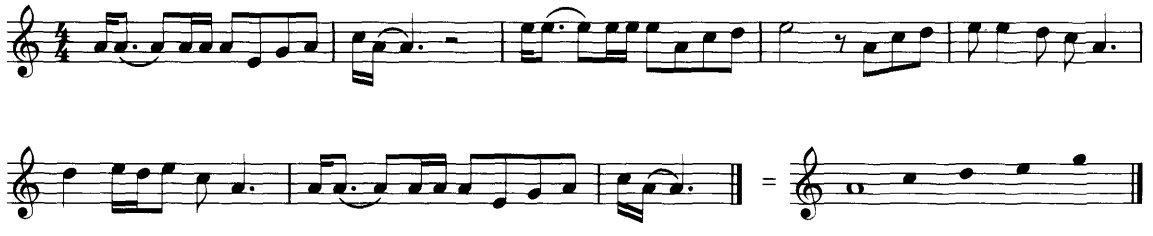
Example A2.4

This ancient scalar form recurs throughout the entire span of music history. Two excerpts employing different pentatonic modes are shown in Example A2.5.

Example A2.5

A. "AULD LANG SYNE" (TRADITIONAL SCOTTISH TUNE)

B. "SATAN GONNA TEAR YOUR KINGDOM DOWN" (AFRICAN-AMERICAN CHURCH SONG)



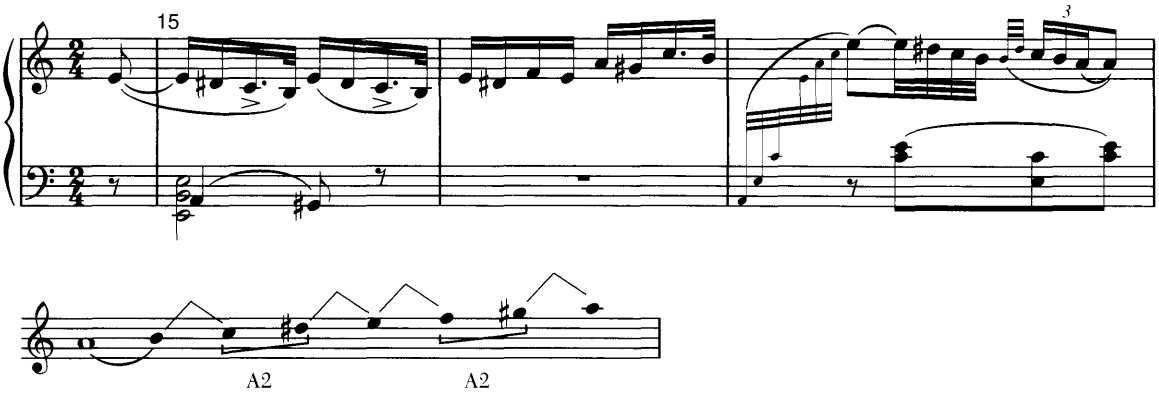
The Gypsy Minor Scale

Several scales appear sporadically within tonal music rather than providing the basis for entire compositions. The so-called *Gypsy minor scale* is one such instance. It is characterized by the substitution of $\sharp\hat{4}$ for $\flat\hat{4}$ in the harmonic minor scale, and thus contains a conspicuous pair of melodic augmented 2nds ($\flat\hat{3}$-$\sharp\hat{4}$ and $\flat\hat{6}$-$\sharp\hat{7}$). It most commonly occurs in the folk music of Israel, Moorish Spain, and the Balkan countries. Liszt and Brahms em-

ployed this scale in several of their Hungarian Rhapsodies and Dances, probably intending to imitate Gypsy music rather than authentic Hungarian folk songs (Example A2.6).

Example A2.6

Liszt: Hungarian Rhapsody No. 13 in A Minor



The Whole-Tone Scale

The two extracted scales shown in Examples A2.7 and A2.9 occur commonly in twentieth-century music and may be encountered occasionally in the music of the late Romantic period. Both are symmetrical collections that divide the octave into a specific number of *equal segments.* The first, known as the *whole-tone scale,* consists exclusively of whole steps, thereby partitioning the octave into six major 2nds. Since it lacks both a perfect 4th and 5th, music based on this collection is tonally ambiguous; in fact, since everything is equal, any one of the six tones can serve as the tonic.

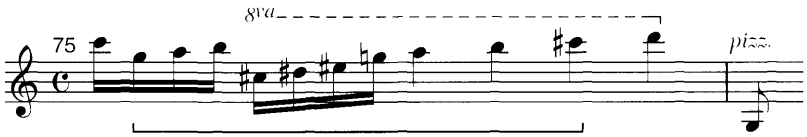
Example A2.7

There are two whole-tone scales, one based on C (Example A2.7) and the other based on D♭ or C♯ (Example A2.8b). Whole-tone scales based on any other notes will consist of notes identical to those of the C or D♭ scale. Mozart amusingly employs this scale in his satirical *Musical Joke* to parody a violinist who has lost his way in the higher positions during a cadenza

(Example A2.8a). The Debussy passage in Example A2.8b centers around an altered dominant seventh chord (Vo^{7}), which eventually resolves to F♯ minor. A similar prolongation of an altered dominant seventh occurs in the introduction to Ray Charles's "You Are the Sunshine of My Life," where harmonic major thirds traverse a complete whole-tone scale over a supporting $V+^{7}$.

Example A2.8

A. MOZART: *A MUSICAL JOKE,* K.522, III

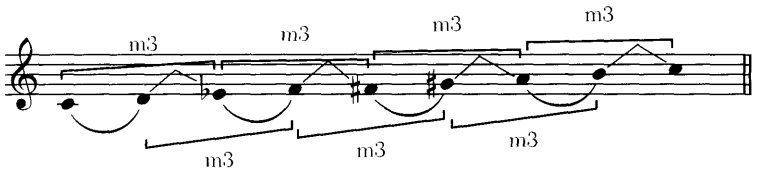


B. DEBUSSY: "EVENING IN GRANADA," FROM *ESTAMPES*

The Octatonic Scale

The *octatonic scale* alternates half steps with whole steps. This synthetic collection results from the division of the octave into two different successions of minor 3rds or diminished seventh chords, one starting on C and the other starting on D (Example A2.9).

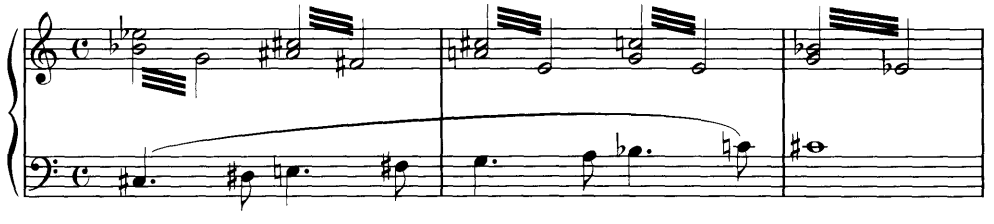
Example A2.9



This scale can be transposed only a half step or a whole step higher, since any other transposition, such as a minor 3rd, will map back into one of the three original forms, duplicating their pitch classes. The succession of major-minor sevenths which rise by successive minor 3rds is accompanied by the ascending octatonic scale in the Rimsky-Korsakov excerpt (Example A2.10).

Example A2.10

RIMSKY-KORSAKOV: *SADKO*, ACT II



APPENDIX 3

An Introduction to Species Counterpoint

Whereas the study of harmony focuses on the vertical or chordal aspects of music, the study of counterpoint directs our attention to the combination and interaction of different independent melodic lines. The contrapuntal duet between the soprano and bass in the voice-leading reductions and melody harmonizations of this text are two examples of counterpoint. Although contrapuntal writing was an optional texture in the basically homophonic music of the Classical and Romantic periods, it was the prevailing texture in other eras of music history, such as the Renaissance (the fifteen and sixteenth centuries) and the middle and late Baroque (the late seventeenth and early eighteenth centuries).

Certain methods of teaching counterpoint, such as starting with two-voice examples in first species or note-against-note style, may appear very abstract at first, and you may well ask, "What does all this have to do with *real* music?" Throughout this text we have emphasized the importance of good melodic writing in the soprano and bass voices and how their lines interact. The surface elaborations of these outer parts often tend to disguise their underlying voice leading, which we can uncover through successive reductive analyses. As the layers of elaboration are stripped away from these parts, the passage's underlying contrapuntal foundation is revealed, which in many instances consists of nothing more than a simple note-against-note relationship. We will see that these underlying frameworks follow many of the principles of species counterpoint.

In this brief appendix, we begin with the note-against-note framework of the soprano and bass and successively elaborate this duet, ultimately producing a texture that resembles the actual surface of a real piece of music. We will achieve this goal by means of the so-called *species technique*, a didactic method advocated by the eighteenth-century composer and theorist Johann Joseph Fux, whose treatise *Gradus ad Parnassum* (1725) attempted to systematize the teaching of counterpoint.[1] Although based on the musical practice of Palestrina, a Renaissance composer who had lived nearly 150 years earlier, Fux's treatise formed the foundation for contrapuntal instruction during the Classical period and continues to be used today.[2]

Fux began his *Gradus* by adding a melodic line or what is called a *counterpoint* to a pre-existing melody that consisted of pitches of equal duration, called the *cantus firmus,* abbreviated CF in the following musical examples. He devised five *species,* each of which represents a different rhythmic model and handling of consonance and dissonance for the counterpointing voice or voices. Since Fux's method simulated the modally oriented musical practices of the late Renaissance, we will incorporate the following adjustments in order to bring it more into line with our study of tonal music in the common-practice period.

1. In place of the Church modes of the Renaissance, we will use the standard major and minor modes.
2. All examples will begin and end in the same key, either C major or C minor, and conclude with an authentic cadence. Other cadences, such as the half, deceptive, and Phrygian cadences, though theoretically possible, are seldom encountered in species writing.
3. In place of the traditional whole-note notation of the cantus firmus, which may be traced back to Renaissance practice, we will use the familiar meter signature of $\frac{2}{4}$ and occasionally $\frac{6}{8}$ and notate the cantus firmus in quarter notes, each of which receives one beat.
4. We will regard the harmonic intervals between the two voices as implying or representing incomplete triads in root position or first inversion. In many instances the succession of intervals will suggest functional chord progressions. The handling of rhythm and consonance and dissonance will continue to adhere to Fux's original principles.

You will find some cantus firmi near the end of the Workbook to use as the basis for composing counterpointing lines in various two-voice species.

1. Although a similar system was already in use, Fux is given the credit for perfecting it. A translation of the two-voice portion of *Gradus* may be found in *The Study of Counterpoint,* revised edition, trans. Alfred Mann (New York: W. W. Norton, 1965), 27–67.
2. For instance, see Knud Jeppesen's *Counterpoint* (New York: Prentice-Hall, 1939; repr., New York: Dover, 1992).

Melodic Characteristics

Before beginning our study of two-part contrapuntal writing, we will first examine some characteristics of good melodic writing, as exemplified in the counterpointing voice.

1. The counterpoint should exhibit a definite sense of melodic direction, a feeling of going somewhere, rather than appearing static or leaping about aimlessly with no apparent destination. The range of this voice should lie approximately within the span of an octave.
2. Stepwise motion should prevail. Melodic leaps of 3rds, perfect 4ths and 5ths, and ascending 6ths are common, but descending 6ths, 7ths of any kind, and augmented and diminished melodic intervals, including the tritone, are prohibited. Passages in which the counterpoint highlights an augmented 4th within its melodic contour (for instance, G-F-G-A-B-A) are also avoided. Melodic lines usually employ only the diatonic tones of C major or C minor; chromatic motion is nonexistent.
3. After a leap of a 4th or more, the melody usually changes its direction. However, two consecutive leaps that outline a major or minor triad may appear.

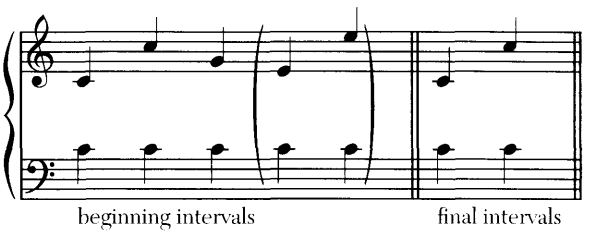
First Species

First species employs a 1 : 1 rhythmic ratio between the cantus firmus and its accompanying counterpoint. It is also referred to as *note-against-note style.* In fact, the term "counterpoint" derives from the Latin expression *punctum contra punctum,* the "punctum" being a type of note in the medieval period.

The following comments characterize the use of harmonic intervals in first species.

1. Only consonant intervals are allowed; these include unisons, octaves, perfect 5ths, and diatonic 3rds and 6ths, plus their compound equivalents. Consequently, all dissonant intervals are forbidden—2nds, 7ths, perfect 4ths, and all augmented or diminished intervals, including the tritone.
2. Each phrase must begin with a unison, octave, perfect 5th, or a 3rd or 10th, any of which imply a tonic triad. The final interval of the cadence must be either an octave or unison on the tonic note. These opening and closing intervals are shown in Example A3.1.

Example A3.1

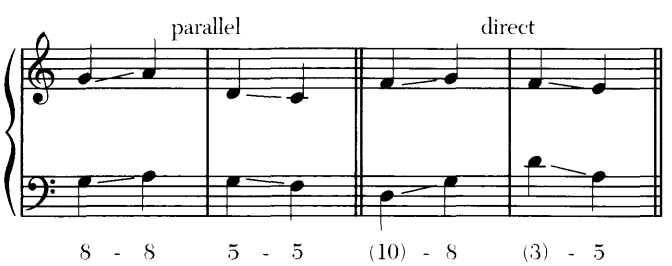


3. Perfect intervals, especially unisons and octaves, are generally reserved for the opening or closing cadence of the phrase. Imperfect consonances (3rds and 6ths) are characteristically employed within the phrase.
4. The distance between the two voices, which may be said to represent the soprano and bass, rarely exceeds a 12th. On occasion the parts may momentarily cross each other.

The last set of observations pertains to the intervallic motion between the voices.

1. A good mixture of *contrary motion*, in which the voices move in opposite directions, *oblique motion*, in which one part holds while the other moves, and *similar motion*, in which both move in the same direction, ensures a sense of melodic independence between the parts. Similar stepwise motion should not exceed three consecutive pitches.
2. Parallel motion between perfect consonances—the unison, octave, and perfect 5th—is avoided, as is similar or direct motion into a perfect consonance; see Example A3.2. However, direct motion from a 5th to an octave is allowed at the cadence.

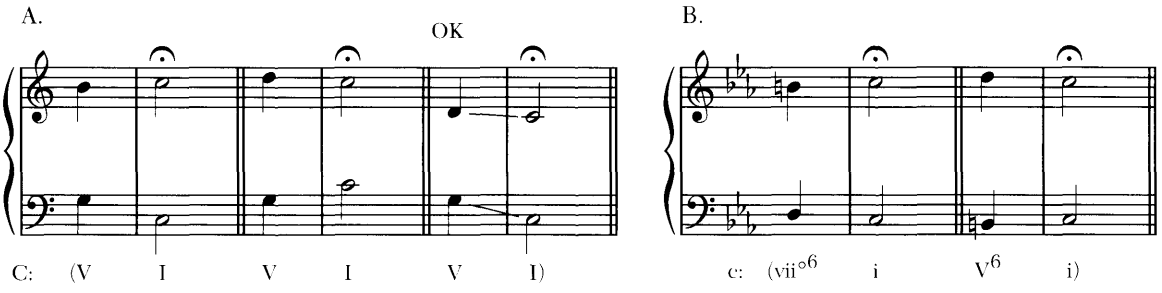
Example A3.2



3. While all types of motion between 3rds and 6ths are permissible, both voices normally do not leap in the same direction to one of these intervals.

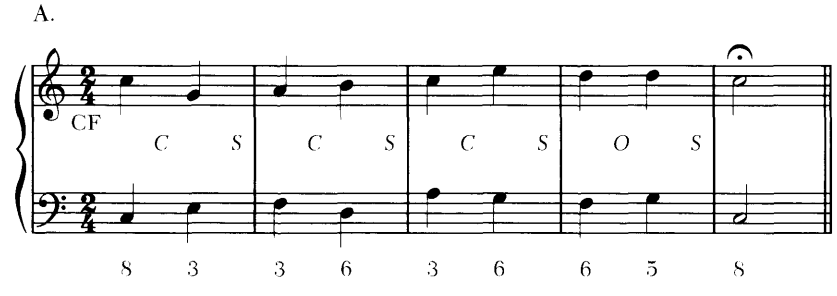
All the cadences in this appendix conclude on the tonic note, with either an octave or a unison. If the cantus firmus is in the *upper voice*, usually proceeding $\hat{2}$-$\hat{1}$ or $\hat{7}$-$\hat{8}$, the bass normally leaps from $\hat{5}$ to $\hat{1}$, implying a perfect authentic cadence (V-I), as shown in Example A3.3a. If the cantus firmus is in the *lower voice* ($\hat{2}$-$\hat{1}$ or $\hat{7}$-$\hat{8}$), the soprano must move stepwise to the tonic also, as shown in Example A3.3b. This stepwise motion in the bass implies an imperfect cadence, either vii^{o6}-I or V^6-I.

Example A3.3

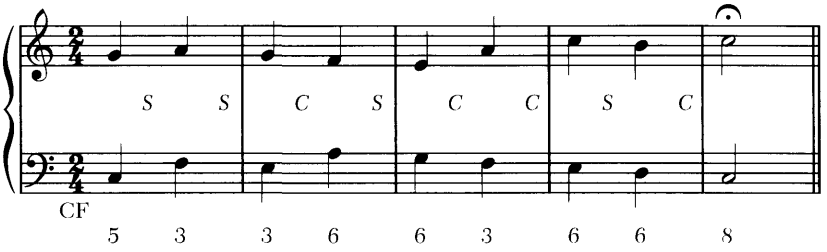


Three passages of first-species counterpoint appear in Example A3.4. Examine the consonant harmonic intervals, the positioning of perfect and imperfect consonances in the phrase, the individual melodic characteristics of each part, and the intervallic motion between the voices. An interval analysis is provided below each example, and abbreviations are used for contrary (C), oblique (O), and similar (S) motion. The interval of the octave in the second measure of Example 3.4c represents passing motion in a voice exchange; it is approached and left by contrary motion and occurs on a weak beat.

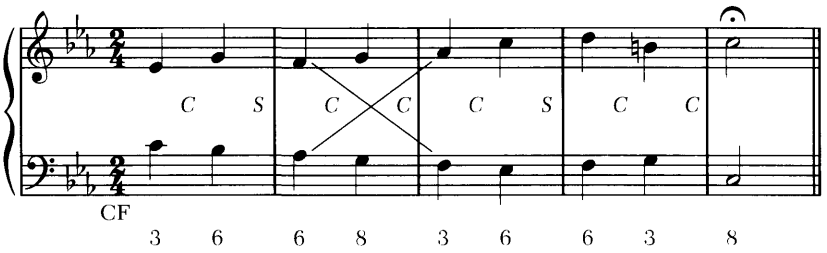
Example A3.4



B.



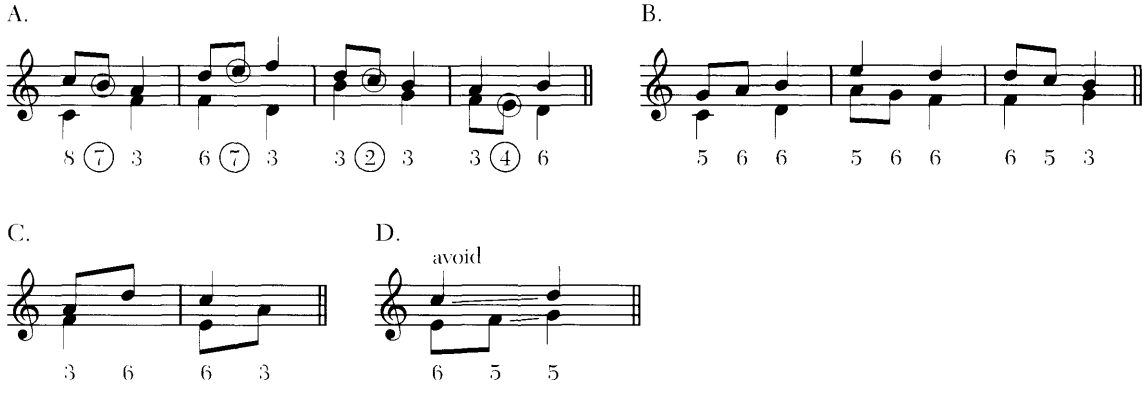
C.



Second Species

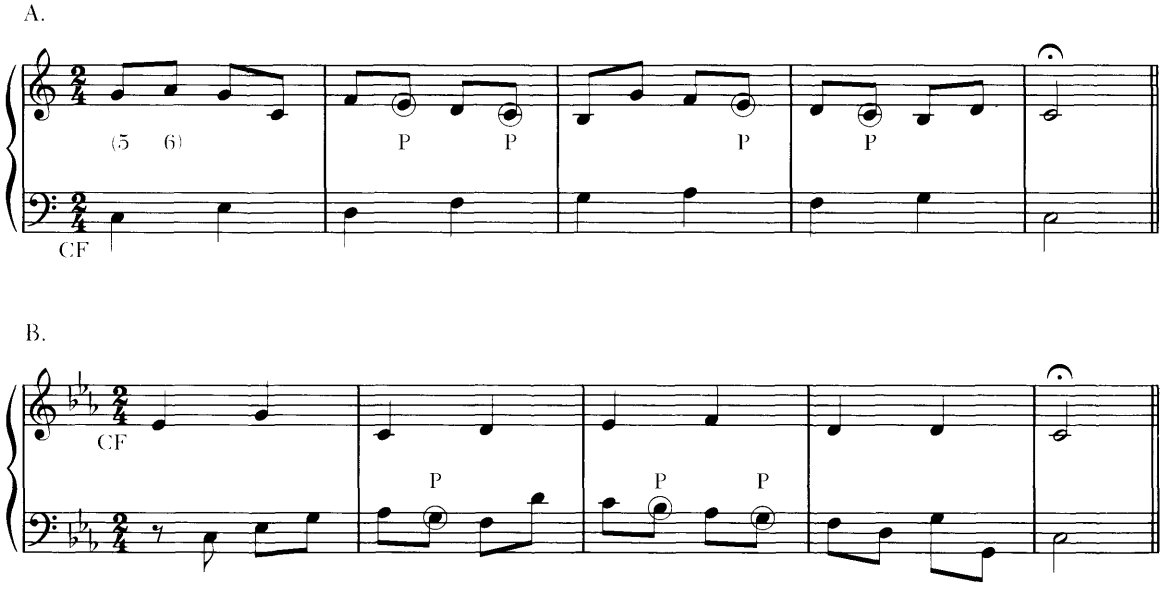
The four remaining species may be considered melodic and rhythmic elaborations or diminutions of the underlying note-against-note style. *Second species* employs rhythmic motion of two equal eighth notes in the counterpoint for each quarter note in the cantus firmus, resulting in a 2:1 ratio. The rules for first species remain in effect but with the following exception: Dissonant passing notes are now permissible on offbeat eighth notes (Example A3.5a). It is not always possible to incorporate continuous passing motion, consonant or dissonant, in the counterpointing voice. In such cases, 5-6 or 6-5 motion (Example A3.5b) or a leap to a consonant tone (Example A3.5c) may be used to maintain the flow of eighth notes; no accented passing tones on the beat are permitted. The added eighth notes in the counterpoint should not produce parallel perfect 5ths or octaves with the cantus firmus (Example A3.5d).

Example A3.5



Study the two passages of second-species writing in Example A3.6, in which the passing tones are circled. In each phrase the soprano and bass notes on the first half of each beat provide an underlying first-species basis.

Example A3.6

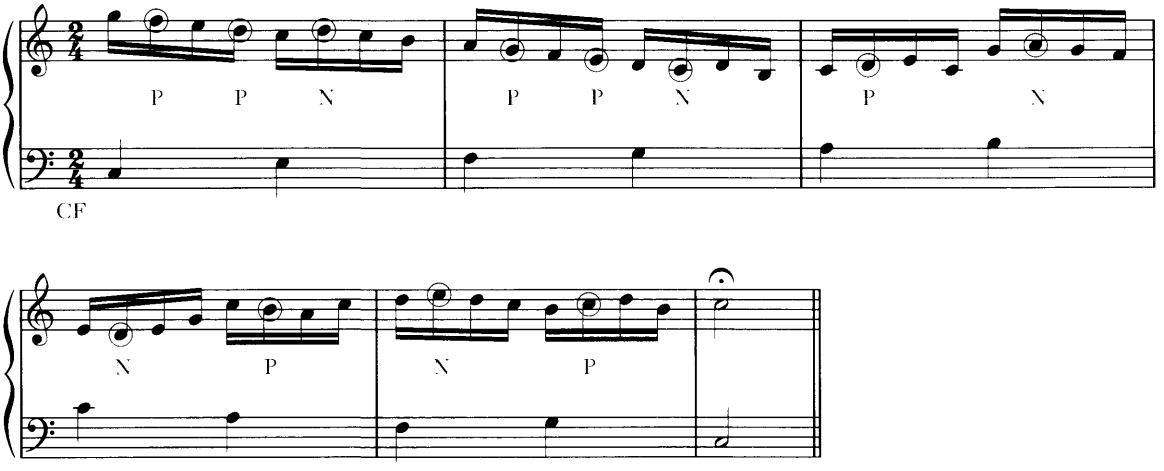


Third Species

In *third species* the counterpoint employs either a 4:1 rhythmic ratio to the cantus, in which four sixteenth notes are set against each quarter note, as in $\frac{2}{4}$ meter, or a 3:1 ratio, in which three eighth notes are set against each dotted quarter note, as in $\frac{6}{8}$ meter. In addition to unaccented passing tones, dissonant neighboring tones are now allowed. In 4:1 settings, these unaccented dissonances appear on the second or fourth sixteenth notes of each beat; in 3:1 settings they may occur on the second or third eighth note. In all cases, however, the note on the beat must be consonant. Leaps to consonant tones are found in third species, just as in second species. Examine the passages of third-species writing in Example A3.7; these may be considered further elaborations of second species.

Example A3.7

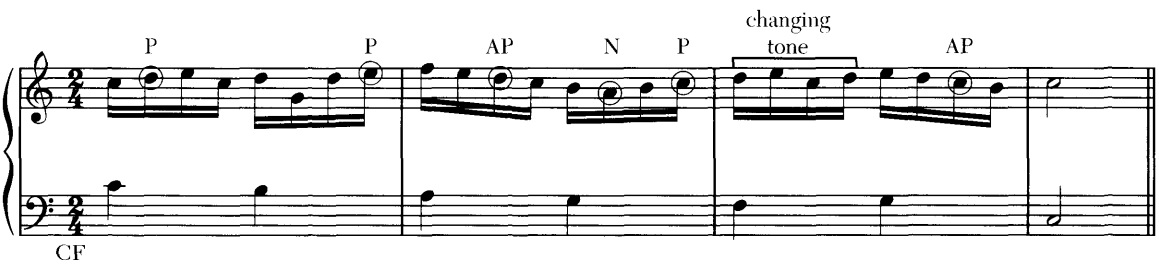
A.



B.

Other dissonant embellishing figures may occur in third species. These idioms include the accented passing tone (Ap) in descending form only, which may occur on the third sixteenth note of each beat, and the changing tone or double incomplete neighbor; the latter contains four notes (Example A3.8).

Example A3.8

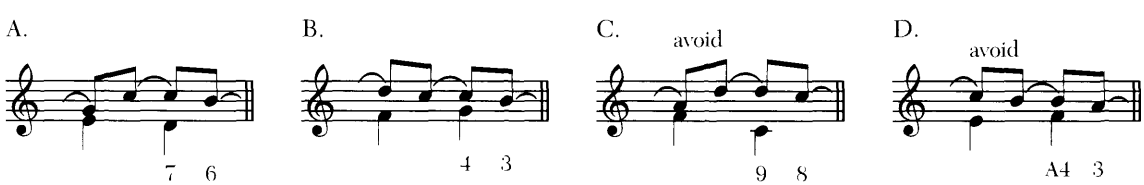


Fourth Species

In *fourth species,* eighth notes are tied over from the offbeat to the beat, producing a continuous stream of rhythmic syncopations. The featured dissonance here is the suspension, which is always prepared with a consonant interval. The suspension occurs on the beat and resolves downward by step on the following offbeat, delaying the consonance of a 3rd, 6th, or 10th. The rhythm in the counterpointing voice is . When it is not possible to continue these tied-over figures throughout the entire phrase, one usually resorts momentarily to second species.

When the counterpointing voice is above the cantus firmus, both 7-6 and 4-3 suspensions are employed (Examples A3.9a and b). The 9-8 suspension is avoided, since in two-voice writing it resolves to an empty octave (Example A3.9c). In the 4-3 suspension, the perfect 4th is usually preferred to an augmented 4th (Example A3.9d).

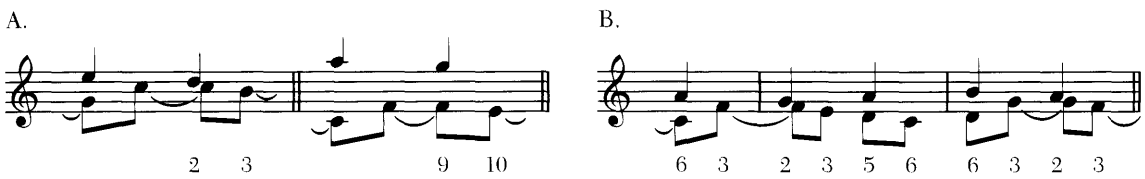
Example A3.9



If the counterpointing voice is below the cantus firmus, it can utilize only one suspension, the 2-3 or 9-10 (Example A3.10a). As a result, some second-

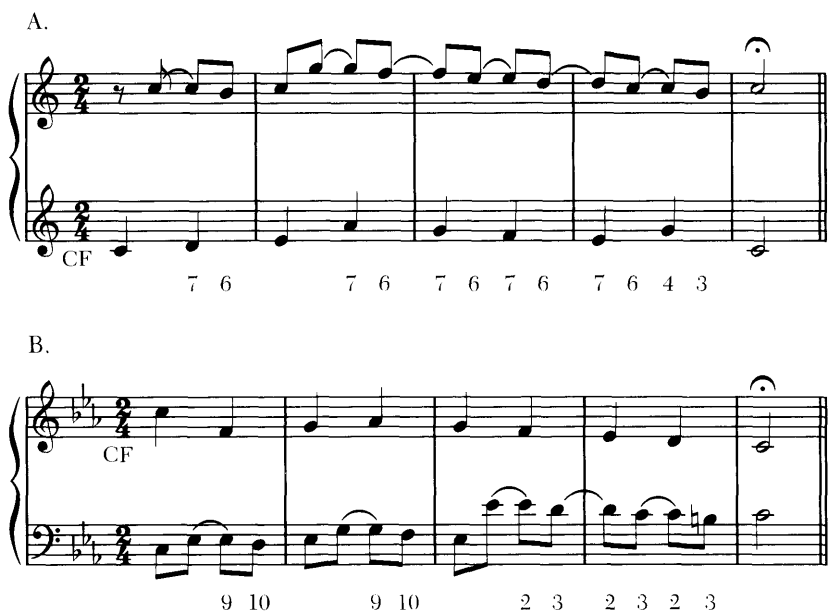
species writing is usually necessary to link the suspensions. Tied figures with 6-5 or 5-6 are also possible (Example A3.10b).

Example A3.10



Additional examples of fourth-species writing may be found in Example A3.11.

Example A3.11



Fifth Species

The rhythmic restrictions of the first four species are now removed in *fifth species;* the counterpointing voice may employ all the melodic and rhythmic figurations of the previous species in various combinations. In addition, ornamented suspensions, using pairs of thirty-second notes, or consonant anticipations in sixteenth notes can occur, as shown in Example A3.12.

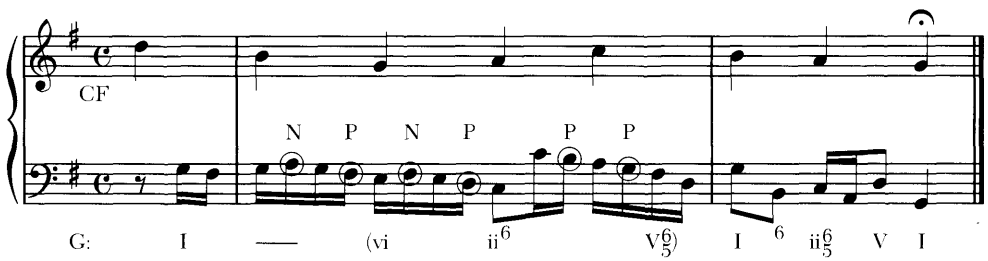
Example A3.12

Phrases from two well-known hymn tunes serve as the cantus firmi in Example A3.13. At the end of the first measure of Example A3.13b, the F♯ in the bass produces a harmonic tritone with the C in the soprano. This can be rationalized as an implied V^6_5.

Example A3.13

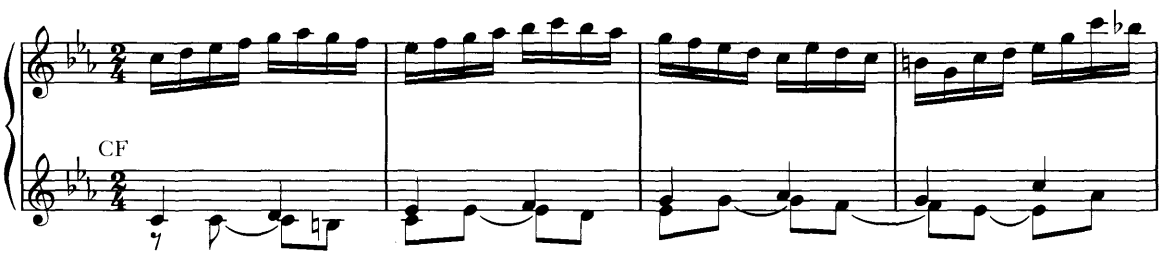
A. "EIN' FESTE BURG," LAST PHRASE

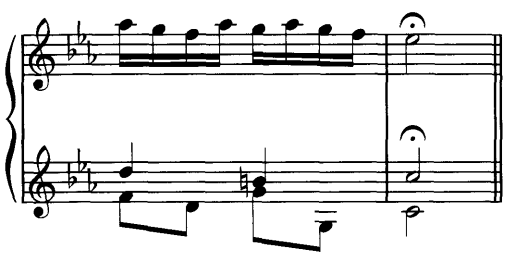
B. LOUIS BOURGEOIS: "OLD ONE HUNDRED," LAST PHRASE



Species technique can involve more than two voices, in which case the counterpointing voices may employ either a single species or a combination of different species. Example A3.14 illustrates a three-voice passage that combines third and fourth species; the cantus is in the middle voice.

Example A3.14





UNDERLYING SPECIES TECHNIQUE IN TWO-VOICE PASSAGES

Reducing the surface elaborations in most two-voice passages from the common-practice period reveals underlying voice leading that can be related directly back to species counterpoint. The reduction on the bottom staves of Example A3.15 resembles a mixture of first and second species.

Example A3.15

♪ BEETHOVEN: PIANO SONATA IN F MINOR, OP. 2, NO. 1, TRIO

Examples of cantus firmus technique, in which a preexisting melody serves as the foundational voice, occur frequently in cantus firmus Masses of the Renaissance and chorale preludes of the Baroque period.

APPENDIX 4

Chord Symbols for Jazz and Commercial Music

Jazz and commercial music is often notated on a score called a *leadsheet*, which simply gives the melody and a shorthand notation that symbolizes the accompanying chordal harmony. These chord symbols, usually written directly above the melody notes, provide a quick and convenient way of identifying the roots and chord types of the harmonies to be played.[1] However, they do not indicate the chords' harmonic function and often omit the inversions of the chords.

The commercial symbols for triads, seventh chords, extended tertian chords, such as ninths and elevenths, and added-note chords are given below. For the sake of comparison, all the chords use a common root of E. The reason for using E rather than C as the root is that the spelling of some complex chords is simpler and does not employ double accidentals.

TRIADS

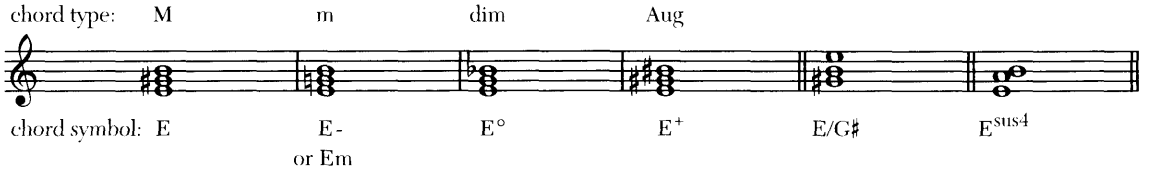
1. A major triad uses only a capital letter for the root; the major-chord quality is assumed (E = E major, or E G♯ B).

1. These chord symbols should not be confused with guitar tablature, which may also appear above the melody. This tablature shows you where to place your fingers on the strings to produce the desired chord.

2. A minor triad uses the capital letter for the root and is followed by a minus sign to denote that it is minor (E− = E minor, or E G B). The older system of indicating minor triads with a capital letter for the root and a lowercase "m" (Em) is still in use today.
3. A diminished triad uses a capital letter for the root, followed by the superscript ° (E° = E diminished, or E G B♭).
4. An augmented triad uses a capital letter for the root, followed by the superscript $^{+}$ (E^{+} = E augmented, or E G♯ B♯).

Root position is always assumed. If a first or second inversion is required, the note to be played in the bass is indicated after a slash: thus G/B indicates the first inversion of a G major triad, and F−/C indicates the second inversion of an F minor triad. A 4-3 suspension is often written in the form D^{sus4}. These symbols are summarized in Example A4.1.

Example A4.1



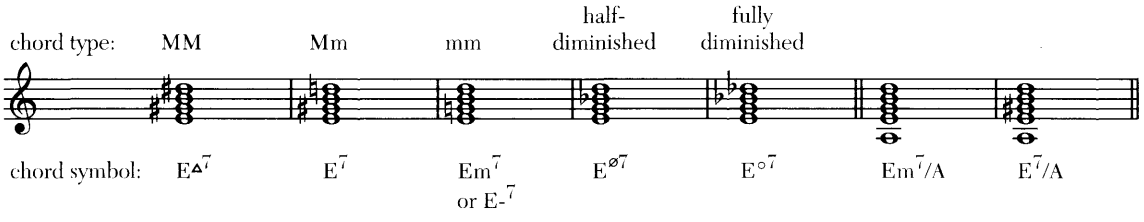
SEVENTH CHORDS

The following are the standard symbols for the five basic types of seventh chords.

1. Major-major seventh chord or M7th = $E^{\Delta 7}$ (E G♯ B D♯). One also finds E^{M7}.
2. Major-minor seventh chord or Mm7th = E^{7} (E G♯ B D). These chords normally function as dominant sevenths.
3. Minor seventh chord or m7th = Em^{7} (E G B D). Here it is probably better to use the lowercase "m" for minor to avoid any confusion as to whether the minus sign (−) modifies the triad or the seventh, although one may still see $E-^{7}$.
4. Half-diminished seventh chord or ø7th = $E^{ø7}$ (E G B♭ D). One may occasionally find this chord notated as a minor triad with an added 6th (Em^{add6}).
5. Fully diminished seventh chord or °7th = $E^{°7}$ (E G B♭ D♭).

Inversions of seventh chords are also symbolized by a slash followed by the note to be played in the bass—Em^7/G, E^7/B, $E^{\varnothing 7}$/D, and so on. In some cases, the seventh chord may occur over a bass note that does not belong to that harmony, such as Em^7/A or $E^{\circ 7}$/A. Example A4.2 summarizes the above discussion.

Example A4.2



Extended Tertian Chords

Ninth Chords

There are only four common types of ninth chords. The tritones in the first two chords listed below give them a particularly dominant sound. Chords 3 and 4 contain no tritones and tend to function as either tonic or pre-dominant harmonies. The full chord terminology is given first (M = major and m = minor); the first letter denotes the triad, the second the type of seventh, and the third the type of ninth. Notice that if the symbol "9" appears by itself, it is a major ninth; if it is preceded by a minor sign, it is a minor ninth.

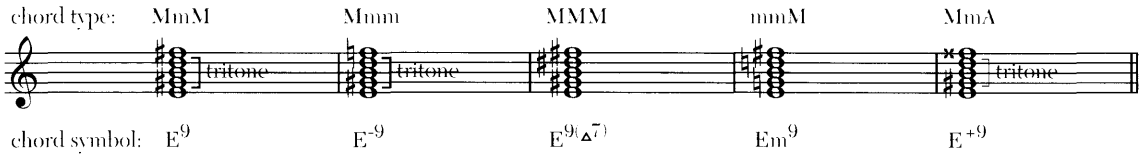
1. MmM9th chord = E^9 (E G♯ B D F♯)
2. Mmm9th chord = E^{-9} (E G♯ B D F♮)
3. MMM9th chord = $E^{9(M7)}$ (E G♯ B D♯ F♯)
4. mmM9th chord = Em^9 (E G B D F♯)

The so-called augmented ninth chord actually contains a "split third"—that is, both a major and minor 3rd appear above the root. It is less common than the preceding four.

5. MmA9th chord = E^{+9} (E G♯ B D F𝄪 or G♮)

These chords normally occur in root position. If an inversion is required, the slash method is employed. Example A4.3 provides a summary of the preceding discussion.

Example A4.3



Eleventh Chords

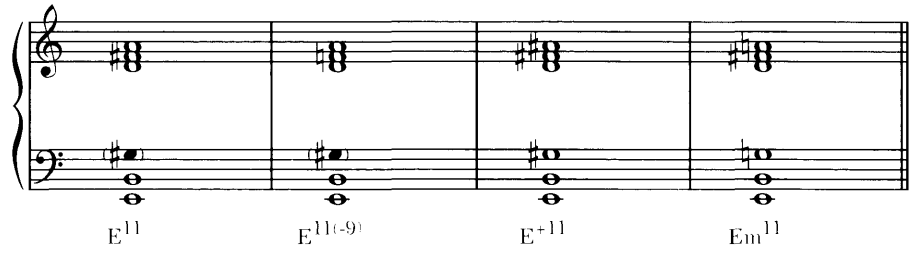
The 11th of extended tertian chords may be either perfect or augmented. In the first two chords listed below and in Example A4.4, the underlying sonority is some form of a dominant ninth chord, either a V^{9}, usually with the 3rd omitted, or a V^{-9} chord. The augmented 11th is normally added to the V^{9} chord.

1. MmMm 11th chord = E^{11} (E [G♯]B D F♯ A); the 3rd is omitted.
2. MmmM 11th chord = $E^{11(-9)}$ (E [G♯]B D F♮ A); the 3rd is omitted.
3. MmMM 11th chord = E^{+11} (E G♯ B D F♯ A♯); here the 3rd is usually retained.

A non-dominant eleventh chord is usually built on a mmM9th chord.

4. MmMP 11th chord = Em^{11} (E G B D F♯ A); again the 3rd is retained.

Example A4.4



Thirteenth Chords

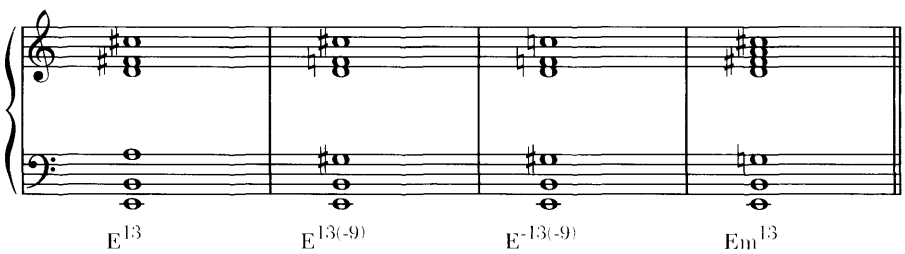
As noted in the text, thirteenth chords are rarely complete; they generally omit one or more chord members. They may be thought of as incomplete ninths or elevenths with an added 6th (Example A4.5). There are four main types.

1. A MmmMm 11th chord with a major 13th = E^{13} (E B D F♯ A C♯ with G♯ omitted)

2. A Mmm 9th chord with a major 13th = $E^{13(-9)}$ (E G♯ B D F C♯)
3. A Mmm 9th chord with a minor 13th = $E^{-13(-9)}$ (E G♯ B D F C♮)
4. A mmMm 11th chord with a major 13th = Em^{13} (E G B D F♯ A C♯)

The first three usually function as some sort of dominant harmony; the last is normally restricted to a pre-dominant function, built on the supertonic root (ii^{13}).

Example A4.5



Added-Note Chords

Notes that are added to tertian chords, usually triads, in commercial music and jazz are indicated in the following way:

1. Adding a major 6th to a major triad = E^{add6} (E G♯ B C♯)
2. Adding a major 6th and a major 9th to a major triad = $E^{add6,9}$ (E G♯ B C♯ F♯)

Example A4.6

APPENDIX 5

Conducting Patterns

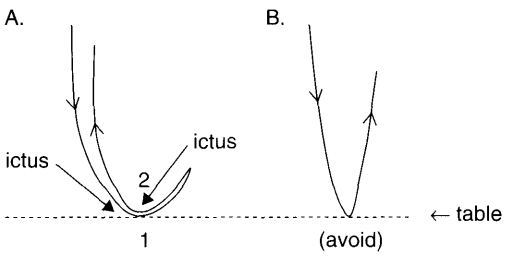
Most conductors keep the beat by tracing certain standardized patterns with their right hands. These patterns indicate the number of beats in a measure as well as exactly when each beat must be played. The conducting pattern used for a particular piece is dependent on the interpretation of its meter signature, a topic discussed in Chapters 2 and 18. Music students should become so familiar with these various conducting patterns that using them becomes an unconscious reflex. One way of achieving this facility is to practice patterns while doing other things, such as reading a book and unconsciously conducting a pattern with your right hand. You have not achieved success until you no longer have to think about where your hand has to go.

A downward motion indicates the *downbeat* or first beat of a measure, while an upward motion indicates the *upbeat* or last beat. The *ictus*, or exact point where each beat occurs, must be apparent in each pattern. One way of marking each ictus is to think of an invisible surface, such as a table, from which each beat motion rebounds. Thus the point of the beat always occurs along an imaginary horizontal line at the bottom of the pattern, as shown by the dotted lines in the first three meter patterns that are illustrated below.

DUPLE METER: MODERATE TEMPO SIMPLE METERS SUCH AS $\frac{2}{4}$, $\frac{2}{2}$, OR COMPOUND METERS SUCH AS $\frac{6}{8}$, $\frac{6}{4}$, OR $\frac{6}{16}$

Each measure of duple meter consists of a basic downward and upward motion, corresponding to the two beats of the measure. Notice that each larger motion contains two smaller curved movements, each of which rebounds off our hypothetical surface to mark the ictus of each beat. Contrast the correct duple-meter pattern in Figure A5.1a with a simple mechanical down-up motion in Figure A5.1b.

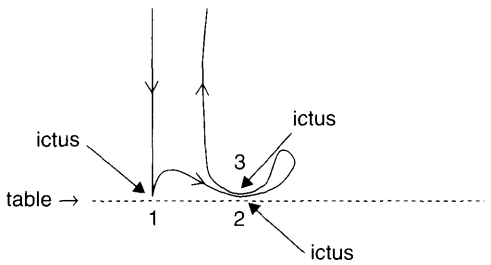
Figure A5.1



TRIPLE METER: MODERATE TEMPO SIMPLE METERS SUCH AS $\frac{3}{8}$, $\frac{3}{4}$, $\frac{3}{2}$ OR COMPOUND METERS SUCH AS $\frac{9}{8}$ AND $\frac{9}{16}$

In triple meter, after the downbeat motion the second beat is indicated by a sideways motion to the right, while the third beat, the upbeat, is still an upward motion. Notice that the ictus of each beat remains at the bottom of the pattern (Figure A5.2).

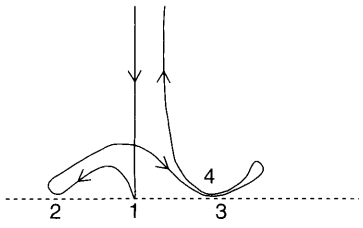
Figure A5.2



QUADRUPLE METER: MODERATE TEMPO SIMPLE METERS SUCH AS $\frac{4}{8}$, $\frac{4}{4}$ OR COMPOUND METERS SUCH AS $\frac{12}{8}$ AND $\frac{12}{16}$

In quadruple meter, the second beat is marked on the *left*, and the third beat by a corresponding motion to the *right* (Figure A5.3).

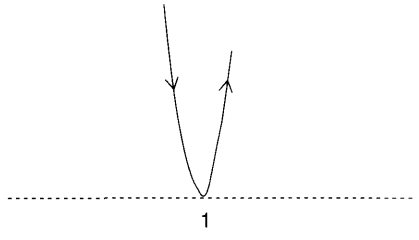
Figure A5.3



SINGLE METER: VERY FAST TEMPO COMPOUND METERS SUCH AS $\frac{3}{8}$ OR $\frac{3}{4}$

Since there is only one beat to a measure of single meter, the conducting pattern consists of a single quick downward motion with a very rapid rebound (Figure A5.4). In some waltzes or scherzi, the conductor indicates the phrase groupings by tracing a quadruple pattern, in which each beat corresponds to one full measure, and there are four beat measures in each phrase group.

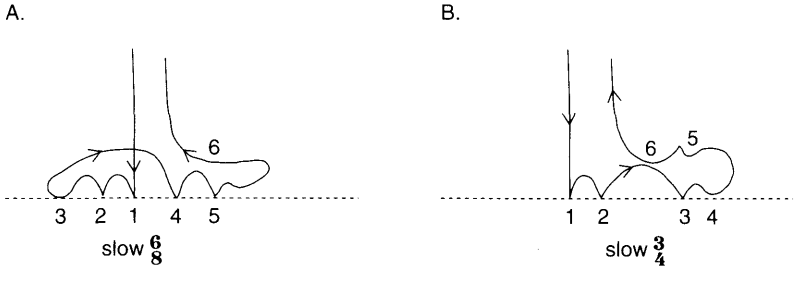
Figure A5.4



QUINTUPLE METER: MODERATE TEMPO SIMPLE METERS SUCH AS $\frac{5}{4}$

Each measure of five beats may be divided into groupings of 2 + 3 or 3 + 2, depending on the music. An additional motion on the left or right side will indicate the extra fifth beat (Figure A5.5).

Figure A5.5

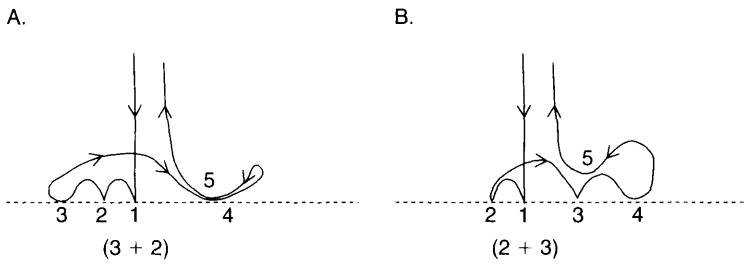


SEXTUPLE METER OR DIVIDED BEAT: VERY SLOW TEMPO METERS SUCH AS $\frac{6}{8}$ OR $\frac{3}{4}$

In a very slow $\frac{6}{8}$ the beat is divided. The conducting pattern begins with three beats at the center and left, and is followed by three beats on the right, producing a 3 + 3 grouping (Figure A5.6a). In a very slow $\frac{3}{4}$, when the beat is divided, each of the three main beats of triple meter is in turn divided into two smaller motions, producing a 2 + 2 + 2 grouping (Figure A5.6b).

This principle is extended to other divided-beat meters such as very slow $\frac{4}{4}$ (2 + 2 + 2 + 2), $\frac{9}{8}$ (3 + 3 + 3), or $\frac{12}{8}$ (3 + 3 + 3 + 3).

Figure A5.6

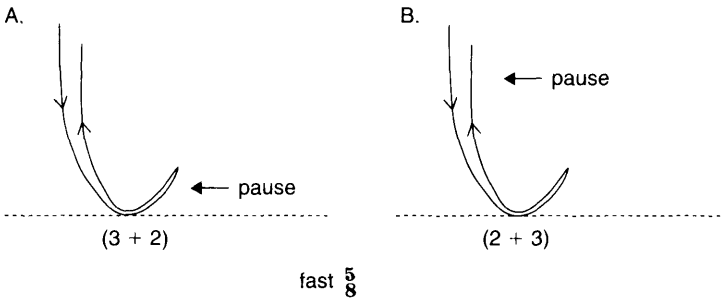


COMPLEX METERS SUCH AS A FAST TEMPO $\frac{5}{8}$ OR $\frac{7}{8}$

In a fast $\frac{5}{8}$, the conducting pattern indicates two basic beats as in duple meter, but one of the beats must be prolonged slightly. If the basic beat-division grouping is 3 + 2, long-short, the first beat is prolonged (Figure A5.7a); if it is 2 + 3, short-long, then the second beat is prolonged (Figure A5.7b).

Other complex meters employ this same principle; for instance, a fast $\frac{7}{8}$ is conducted in three basic beats, depending on the beat-division grouping—3 + 2 + 2, 2 + 3 + 2, or 2 + 2 + 3.

Figure A5.7



APPENDIX 6

Transposing Instruments

There are two kinds of instruments—*concert* instruments, which produce the same pitch as the note written in a concert musical score or individual part, and *transposing* instruments, which produce a pitch different from the note written in a concert score or individual part. We will list the former group first, indicating their practical range in concert pitch in parentheses. Then we will categorize the latter group according to the interval of their transposition, and discuss the relationship between their written note and concert pitch. The practical range of most orchestral instruments is also included; these are written in concert pitch.

Concert Instruments

Excluding the obvious keyboard instruments, the following concert instruments use the *treble* clef: **violin** (G^3 to G^6), **oboe** ($B\flat^3$ to F^6), and **flute** (C^4 to A^6). The **viola** (C^3 to A^5) is written in the *alto* clef, although its upper register occasionally uses the treble clef.

The following concert instruments use the *bass* clef: **cello** (C^2 to A^4), **bassoon** ($B\flat^1$ to A^4), **trombone** (E^3 to G^4, although the F or E attachment on many horns today lowers this range), and **tuba** (C^1 to C^4). The first three may occasionally use the *tenor* clef in their upper registers.

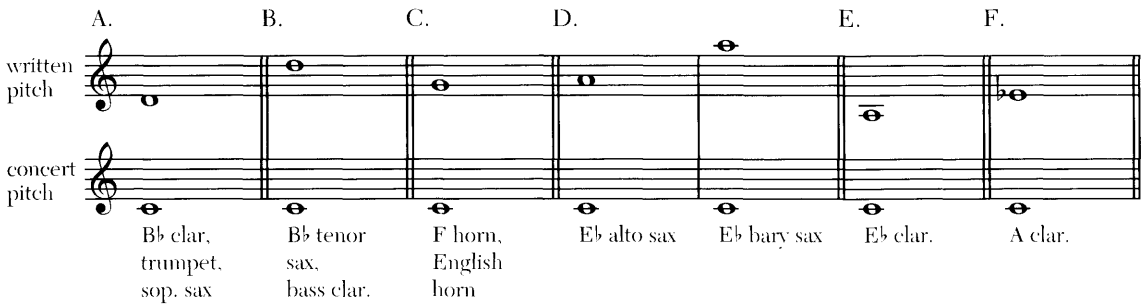
Although the **piccolo** (D^5 to A^7) and **double bass** (E^1 to G^3) are concert instruments, they sound an octave higher or lower than their written pitch. The piccolo plays a written D^4, but it sounds an octave higher or D^5. The double bass does the reverse—when it plays an E^2, it sounds an octave lower or E^1; this also holds true for the **contrabassoon** ($B\flat^0$ to C^3).

TRANSPOSING INSTRUMENTS

Transposing instruments are classified according to the pitch they sound or produce when they play a written C. If they sound a B♭, then they are "B♭ instruments," if E♭, then "E♭ instruments," and so on. Most transposing instruments sound *lower* than their written pitch. These remarks are summarized in Example A6.1.

1. Soprano B♭ instruments: When these instruments play a written C^4, the actual sound is a $B\flat^3$ a whole tone lower; therefore, their parts must be written a whole tone higher than concert pitch. Included are the **B♭ clarinet** (D^3 to F^6), **B♭ trumpet** (E^3 to $B\flat^5$), and **B♭ soprano saxophone** ($A\flat^3$ to D^6); refer to Example A6.1a. Bass B♭ instruments, such as the **B♭ bass clarinet** (D^2 to C^5) and **B♭ tenor saxophone** ($A\flat^2$ to D^5) transpose in a similar manner, except they sound a whole tone and an octave lower than their written pitch. Therefore, their parts must be written a major 9th higher (Example A6.1b).
2. F instruments: When these instruments play a written C^4, the actual sound is an F^3, a perfect 5th lower; therefore, their parts must be written a perfect 5th higher than concert pitch. Examples of such instruments include the **French horn** (F^2 to D^5) and the **English horn** (E^3 to F^5); see Example A6.1c.
3. E♭ instruments: When these instruments play a written C^4, the actual sound is an $E\flat^3$ a major sixth lower; therefore, their parts must be written a major sixth higher than concert pitch. The most common examples are the **E♭ alto saxophone** ($D\flat^3$ to F^5) and the **E♭ baritone saxophone** ($D\flat^2$ to F^4); refer to Example A6.1d. The small **E♭ clarinet** (G^3 to F^6) is an exception, since it sounds a minor 3rd higher than its written pitch. Therefore, its part must be written a minor 3rd lower than concert pitch (Example A6.1e).
4. The **A clarinet** ($C\sharp^3$ to E^6) sounds an A^3 when it plays C^4, so that its part must be written a minor 3rd higher than concert pitch (Example A6.1f).

Example A6.1



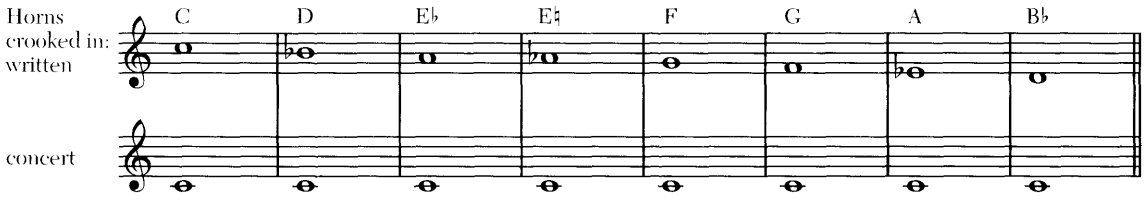
One reason for instrumental transposition is the convenience of the player. For instance, if a saxophonist had to switch between an alto and a tenor sax, and both parts were written in concert pitch, then he or she would have to use a different fingering for each instrument. As it is, the player uses the same fingering and lets the transposition take care of the difference in pitch. Thus a clarinetist can use the same fingering on any size clarinet, even though the various clarinets sound at different pitch levels.

Classical Brass Instruments, Crooks, and Transpositions

During the Baroque and Classical eras, horns and trumpets were limited to the notes of the harmonic series[1] that they could produce with their lips alone, since valves or pistons were not invented until the early-nineteenth century. These instruments were fitted with crooks or tubing of different lengths that allowed the player to change their fundamental and the resulting overtone series. For instance, if a trumpet player was playing Mozart's "Prague" Symphony in D Major, he would use a D crook. In a minor mode composition, horns were usually crooked in the relative major key, as it afforded more usable notes in the key scheme. Horns with crooks always sounded lower than the written pitch; for example, in Haydn's "Surprise" Symphony in G Major, the G crook would sound a perfect 4th lower, so that the part would be written a perfect 4th higher. The most common crooks were pitched in C, D, E♭, E, F, G, A, and B♭, as shown in Example A6.2. Haydn called for an unusual F♯ crook in the Minuet of his "Farewell" Symphony No. 45 in F♯ Minor.

1. See Appendix I.

Example A6.2



ANSWERS TO REVIEW SELF-QUIZZES

Chapter 1

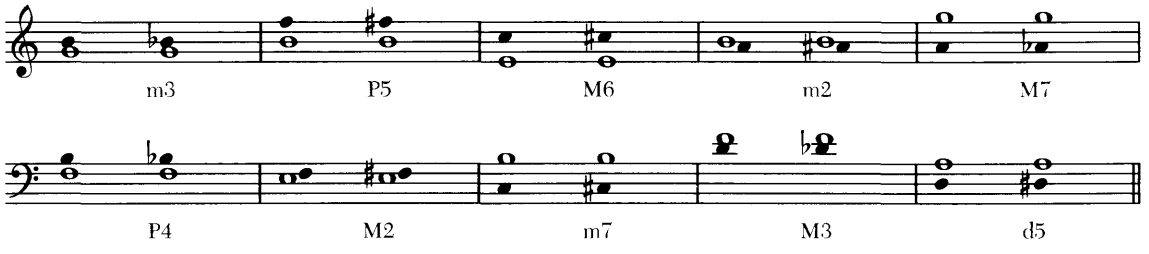
1. (Matching letter to number)

1. Dissonance — e. Unstable, wants to resolve
2. Diatonic intervals — f. Perfect, major, minor
3. Interval inversion — b. Involves octave displacement
4. Enharmonic — c. Notated several different ways
5. Compound interval — a. Greater than an octave
6. Tritone — d. Six half steps

2. A. B. C. D. E. F. G.

1.	(M3)	M6	P5	M7	(m10)	M2	A4
2.	3	8	7	(10)	16	2	(5)
3.	M6	m3	(P5)	m2	doesn't invert	m7	d5
4.	C	(D)	C	D	C	(C)	D

3.



Chapter 2

1. (Matching letter to number)

1. Quadruple meter — c. Four beats to a measure
2. Beat division — d. Simple or compound
3. 9/8 — h. Compound triple meter
4. *Accelerando* — a. Gradually speed up the beat
5. Dotted note — g. Gets the beat in compound meter
6. Tempo — b. The rate of speed of the beat
7. *Allegro* — i. Fast tempo
8. Meter — e. Groupings of beats into regular units
9. ¢ — j. *alla breve*
10. Downbeat — f. First stressed beat of the measure

2.

		simple/ compound	beat value	no. of beats in bar
Allegro	$\frac{6}{8}$	C	♩.	2
Moderato	$\frac{3}{2}$	S	𝅗𝅥	3
Allegretto	$\frac{9}{4}$	C	𝅗𝅥.	3
Andante	$\frac{12}{16}$	C	♪.	4
Adagietto	$\frac{3}{4}$	S	♩	3
Moderato	$\mathbf{C}$	S	♩	4

3.

Chapter 3

1.

2.

3. (2 × 4 = 8) (8 ÷ 4 = 2) (2 + 7 = 9) (9 − 5 = 4)

4.

A. "MARTYRDOM" (HYMN TUNE)

B. HUNGARIAN FOLK TUNE

A. G major; B. 1st phrase = 7 bars/2nd phrase = 7 bars; C. and D. (see score)

B. A minor; B. phrases are 4, 4, + 6 bars in length; C. and D. (see score)

Chapter 4

1.

2.

3.

A.

B.

Chapter 5

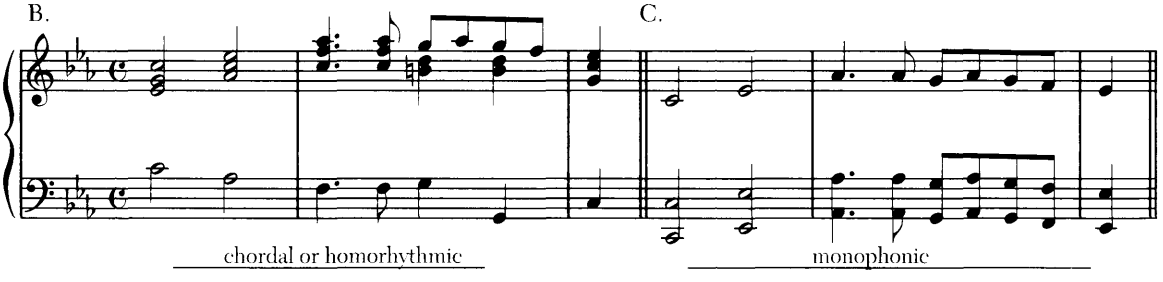
1. (Match letter to number)

1. Imitation — b. A type of contrapuntal texture
2. Close structure — a. Less than an octave between soprano and tenor
3. Homophonic texture — f. Chordal/melody-accompaniment
4. Usual doubling in root position — e. The bass voice
5. Diminished fifth — d. Implies 6/5 of Mm7th chord
6. Usual doubling in first inversion — c. The soprano voice

2.

A.

B.



D.

contrapuntal

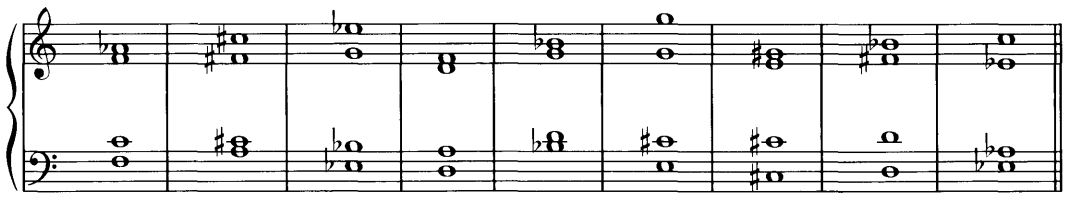
E.

melody and accompaniment

F.

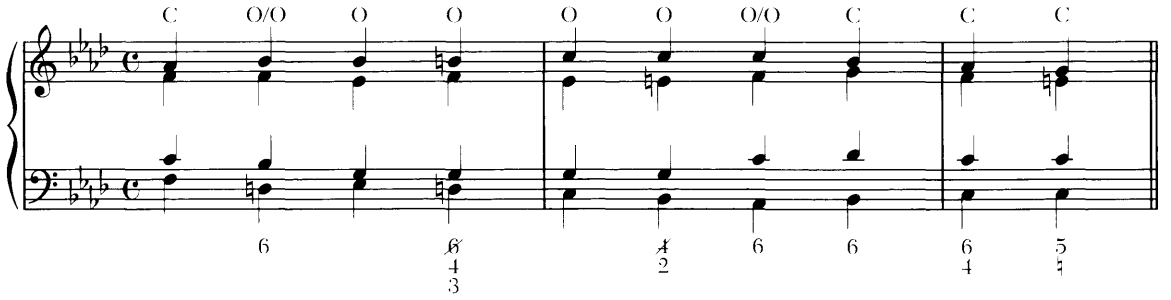
imitation (contrapuntal)

3.



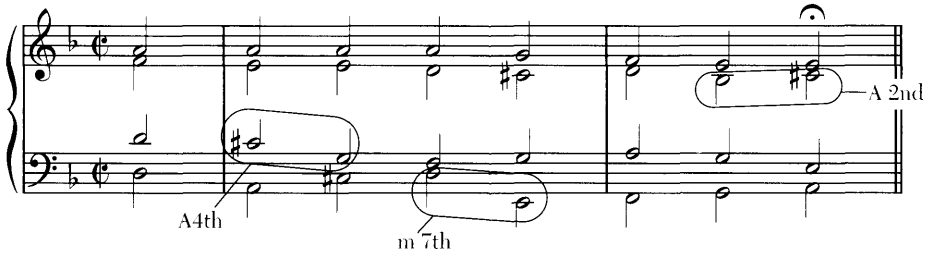
chord/inv.	F-	F♯-/A	E♭	D-	G-/B♭	C♯°/E	C♯-	B♭+/D	A♭/E♭
structure	C	O/O	O	C	C	O	C	C	O
doubling	bass	sop.	bass	bass	bass	sop.	bass	bass	bass

4.



Chapter 6

1.



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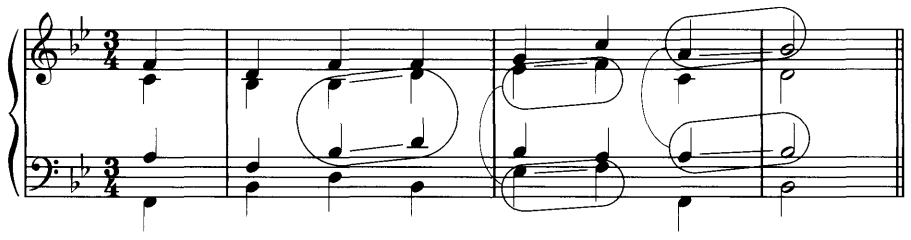

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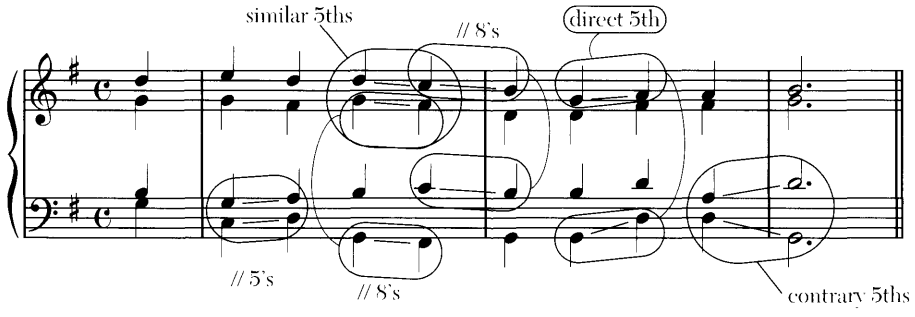

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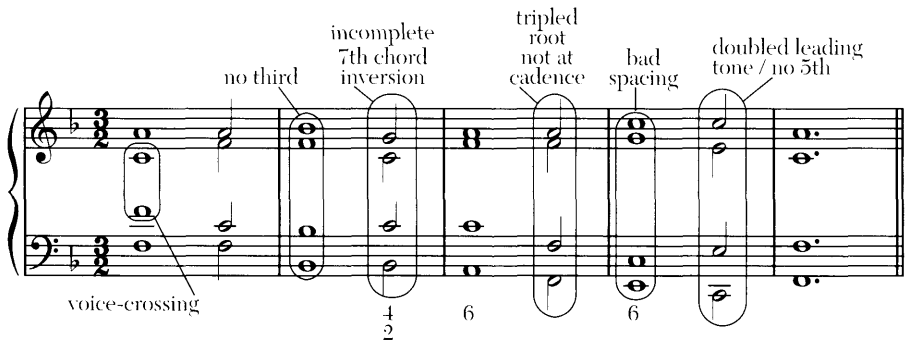


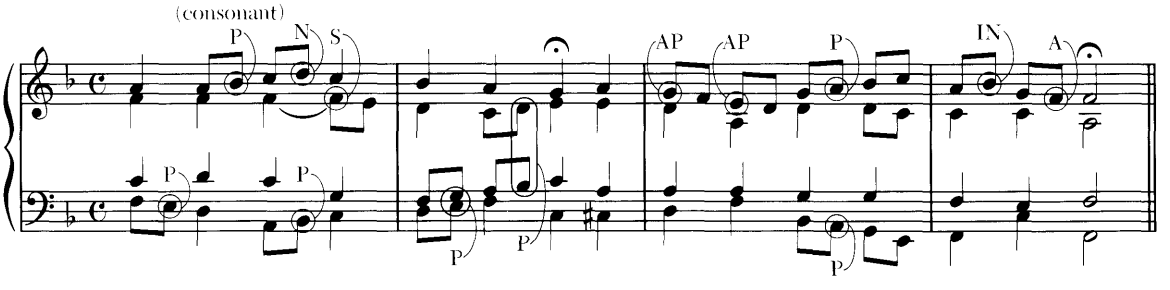
Chapter 7

1. (Match letter to number)
   1. Escape tone
   2. Suspension

   d. Approached by step, resolved by leap
   g. Is prepared by the same note of origin

3. Appoggiatura — a. An accented dissonance that resolves stepwise
4. Neighbor — f. Returns to the first pitch
5. Passing tone — b. Usually fills the span of a 3rd
6. Anticipation — c. Premature entry of next note
7. Compound melody — e. A single melody that implies two lines

2.



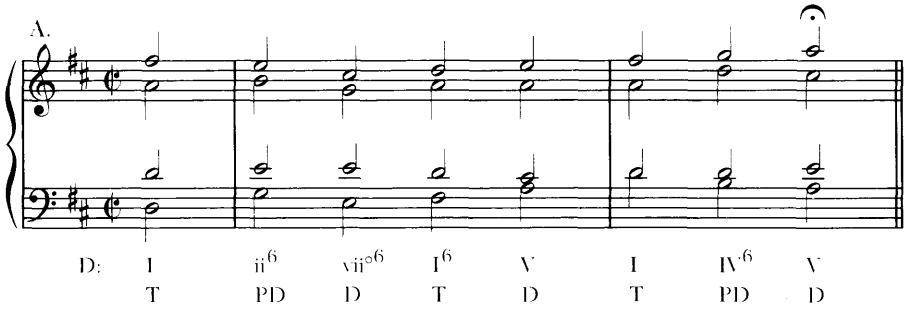
3.

Chapter 8

1. Match the number to the letter:

A. dominant — 5. tends to progress to tonic
B. sequence — 3. restatement on different scale degree
C. scale degree on which chordal root is built — 6. Roman numeral
D. vii° — 2. diminished triad
E. vi-ii-V-I — 1. 5th cycle
F. pre-dominant triads — 7. IV and ii
G. root movement — 4. interval between chordal roots

2.

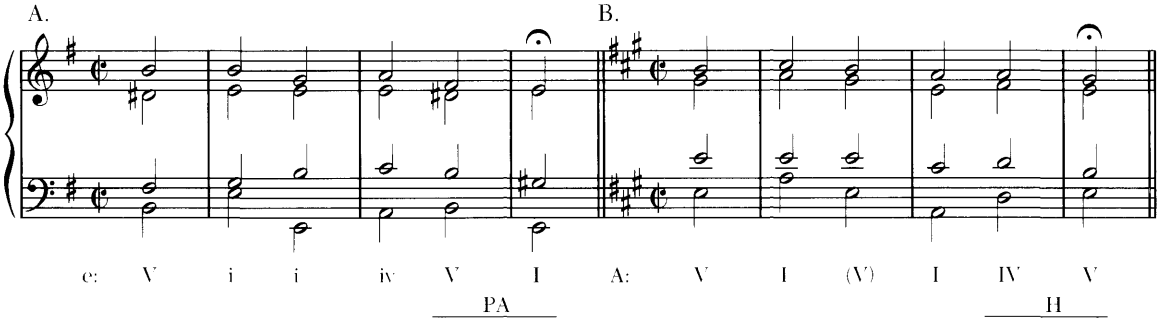


B.

Chapter 9

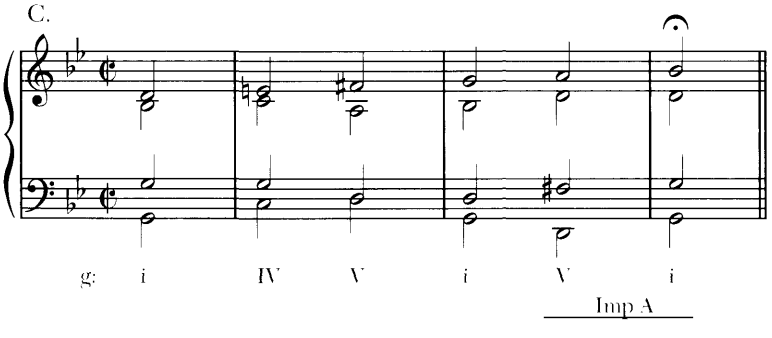
1.

A.



B.

C.



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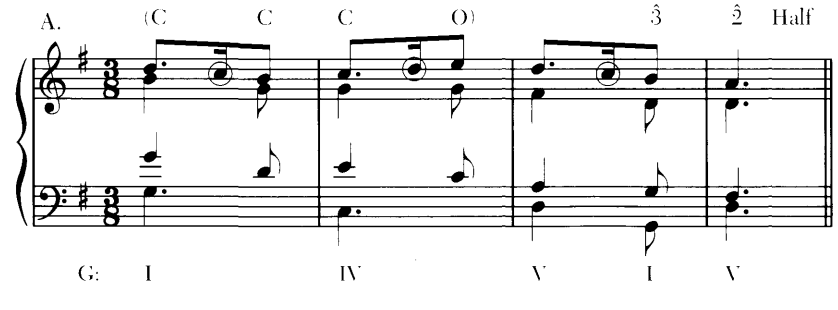
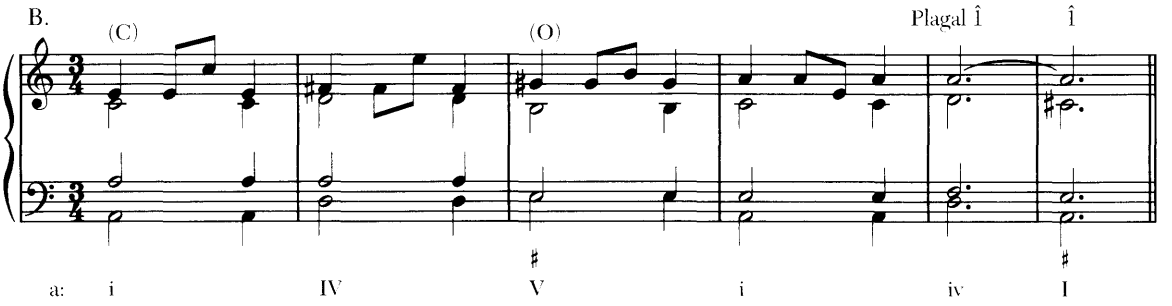
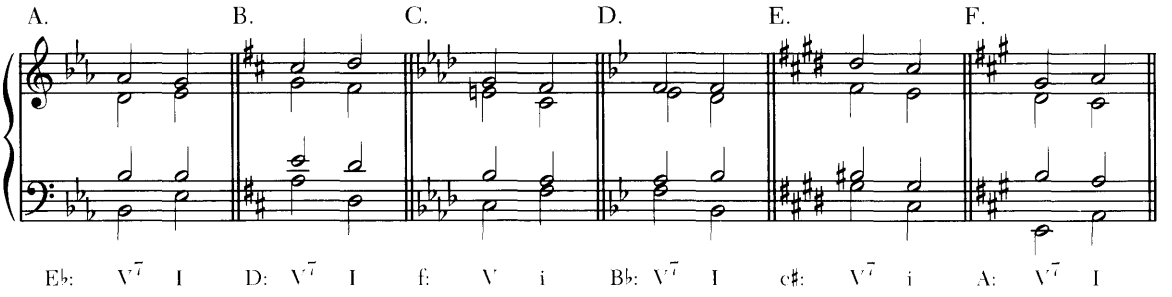
A.





Chapter 10

1.



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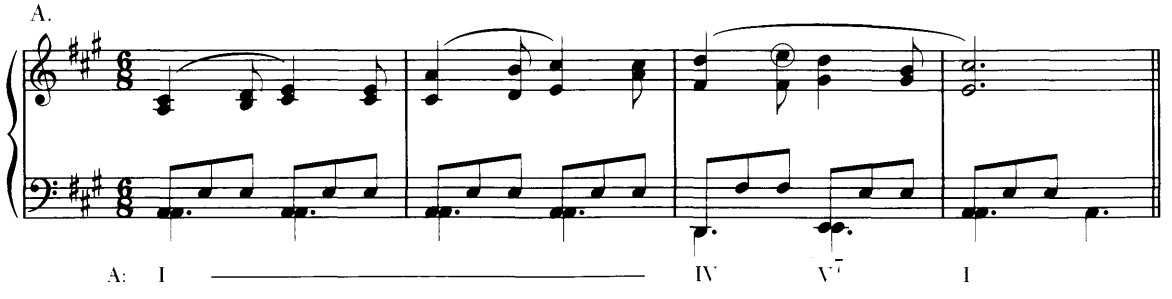
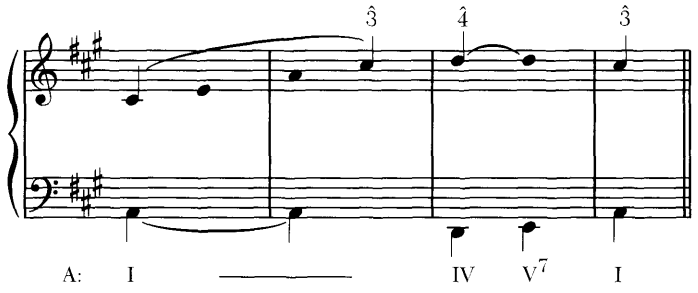
3.





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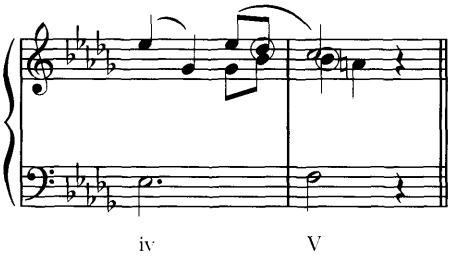
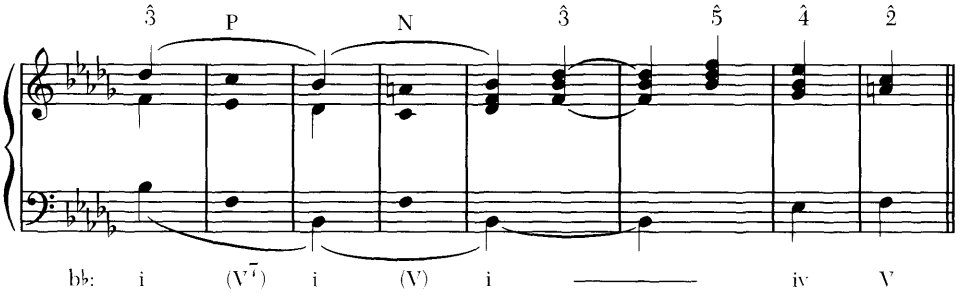
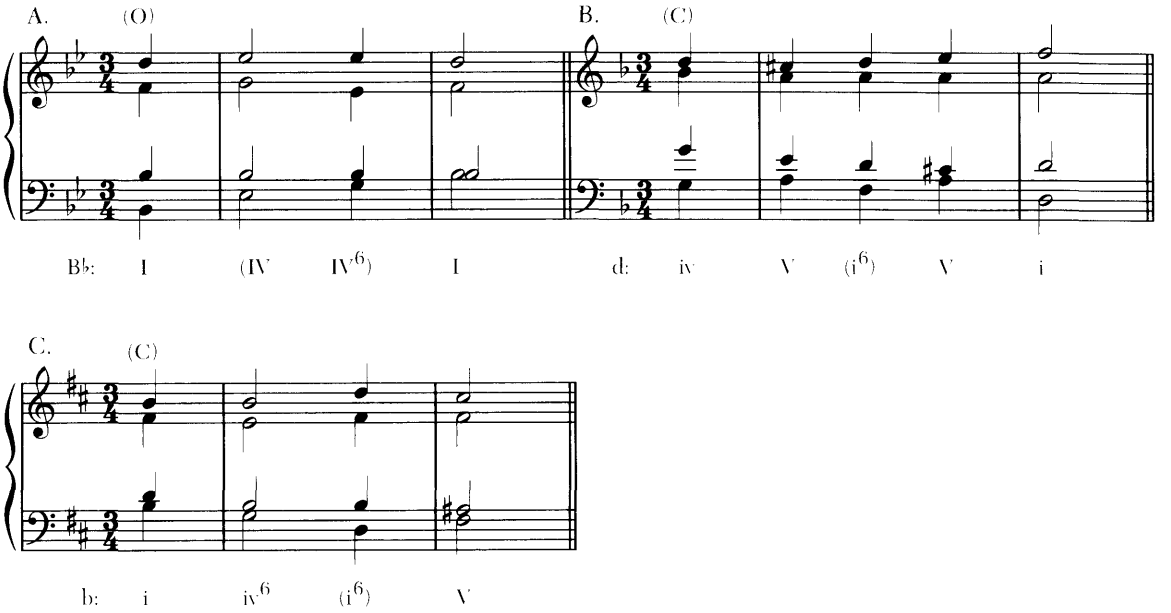




Chapter 11

1.



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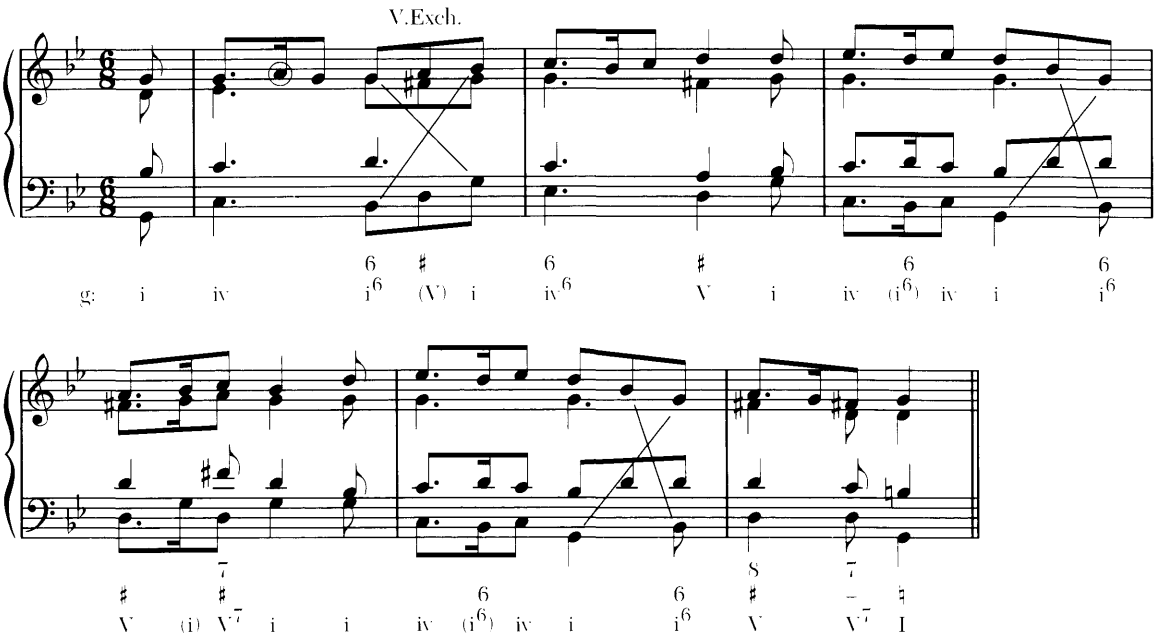


Chapter 12

1. (Match letter to number)

1. Overlap of cadence/beginning	g. Elision
2. Parallel period	d. A A'
3. Consequent phrase follows.....	i. Antecedent phrase
4. A A' → Cadence	b. Sentence form
5. Melodic inversion	h. Upside down
6. Deleting material	e. Truncated phrase
7. Strophic form	c. Different words/same music
8. A B	j. Binary form
9. Thematic transformation	a. Pitch motive
10. Repetition on a different scale degree	f. Sequence

2.

A.

B.

cadential extension

C.

contraction (or truncation)

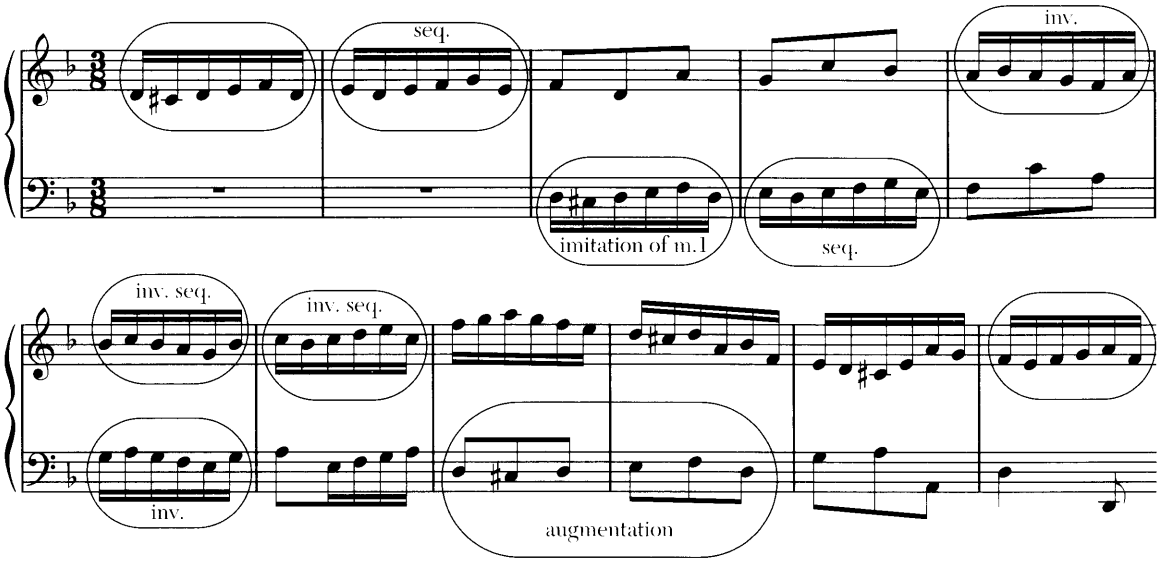
D.

(interior) extension

E.

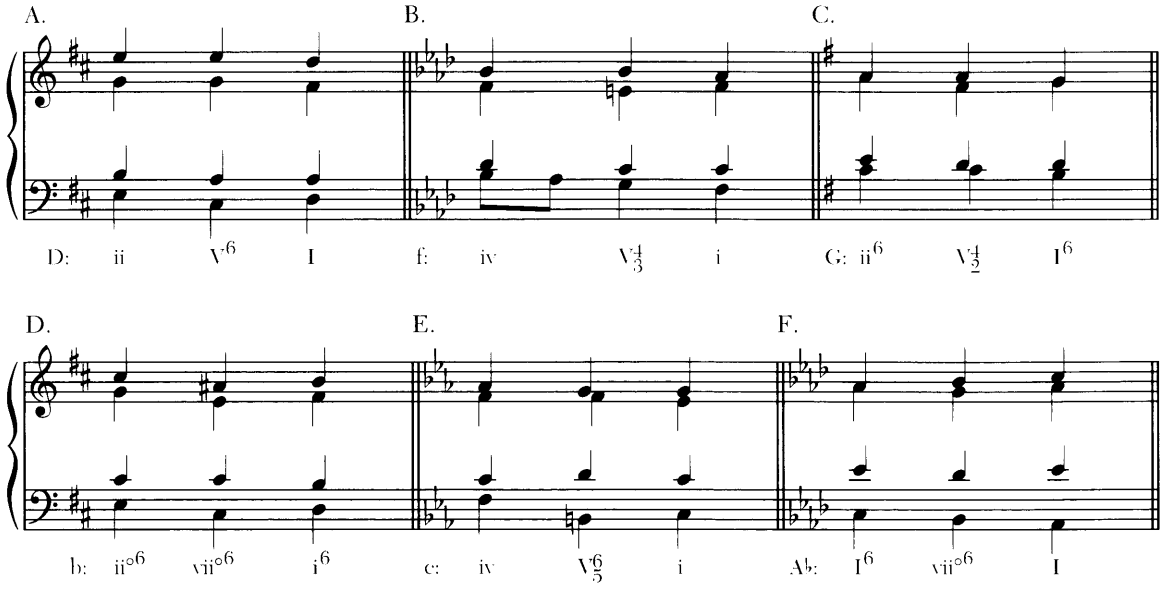
two phrases with elided cadence

3.



Chapter 13

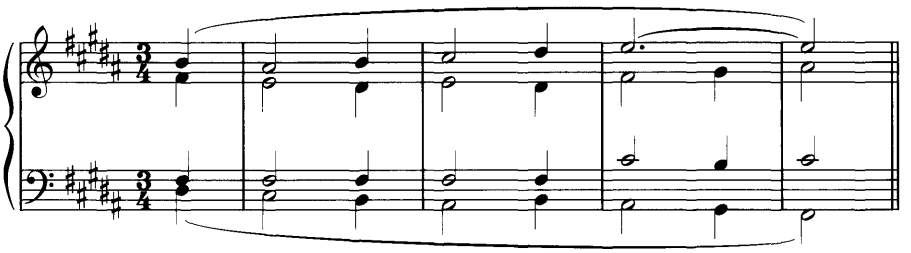
1.

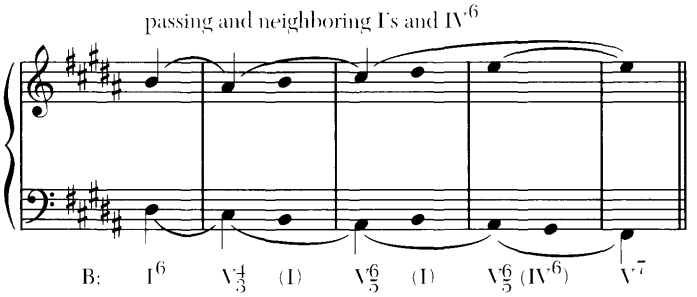


2.

d: i (IV V4/2) i6(vii°6) i (V6/5) i 6 i V (V4/2) i6 (V4/3) i (iv V6) i V7 I

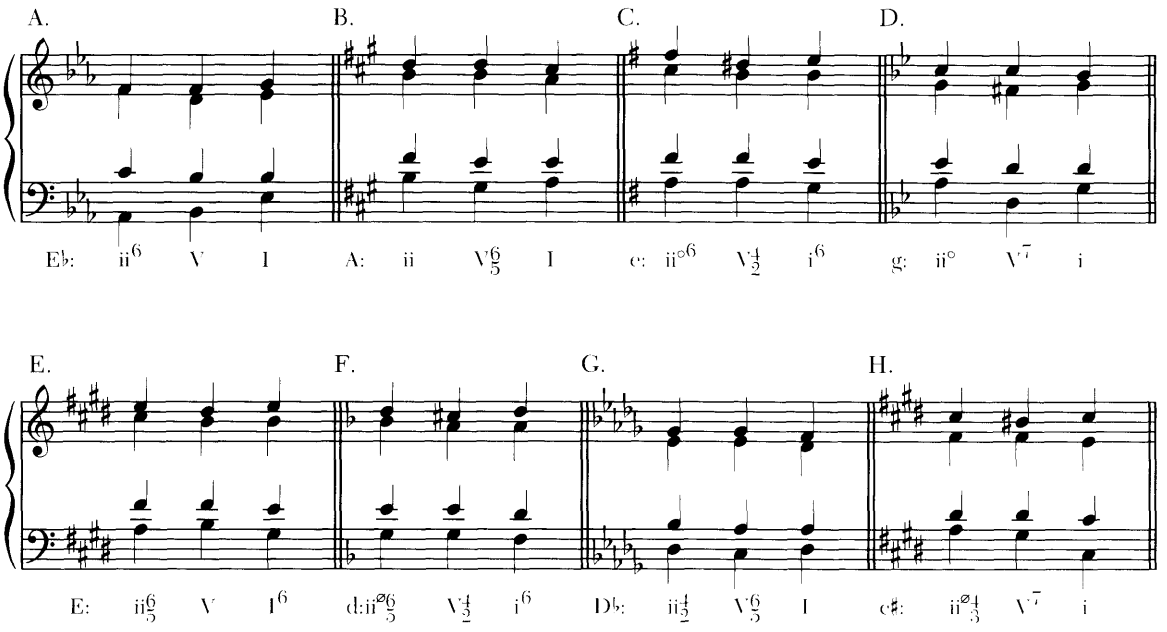
3.




passing and neighboring I's and IV6
B: I6 V4/3 (I) V6/5 (I) V6/5 (IV6) V7

Chapter 14

1.



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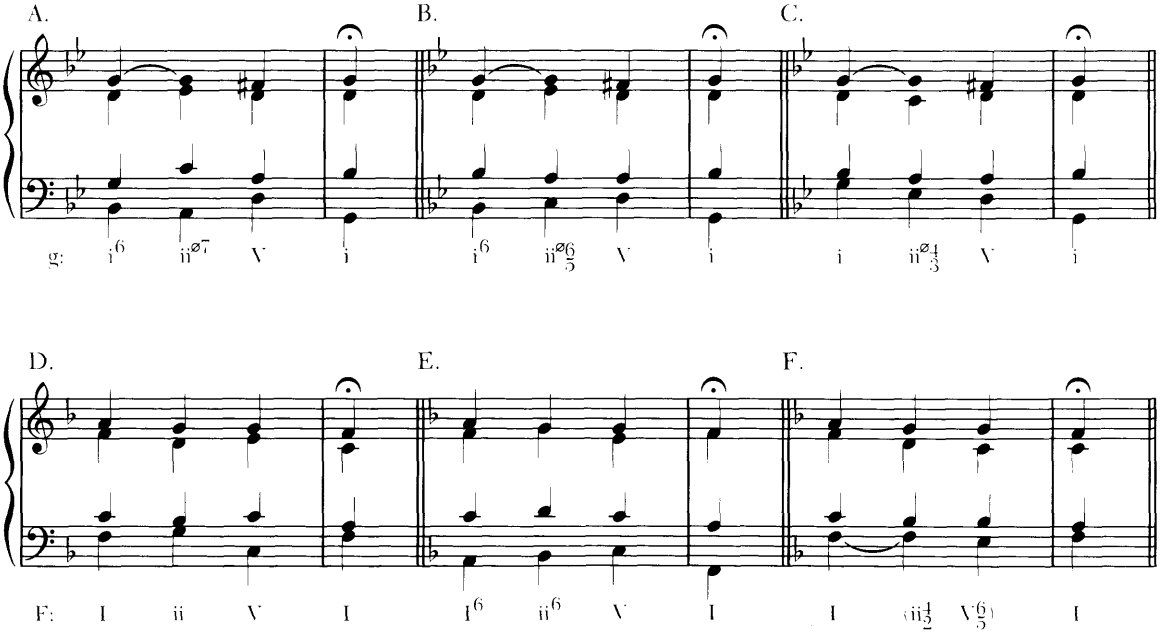
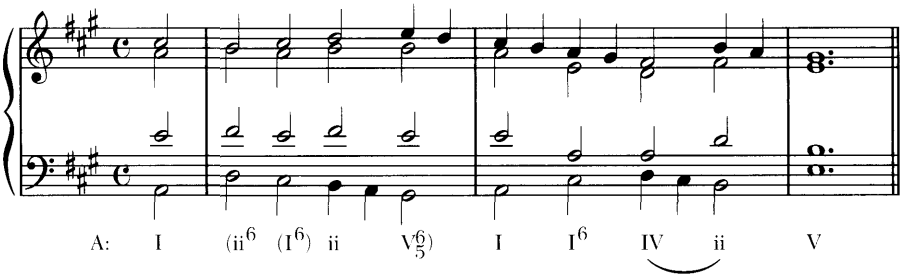
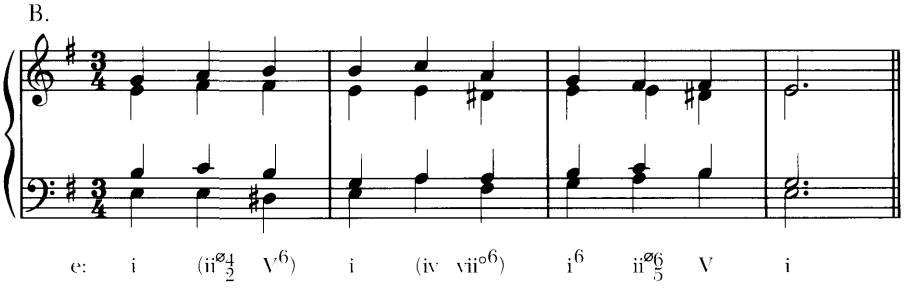


3.

A.



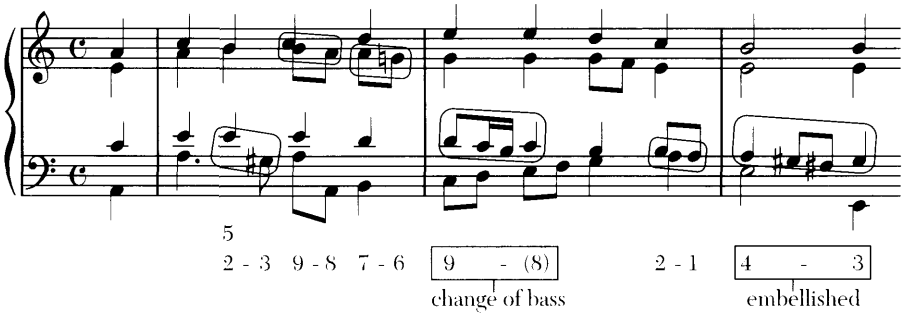
B.



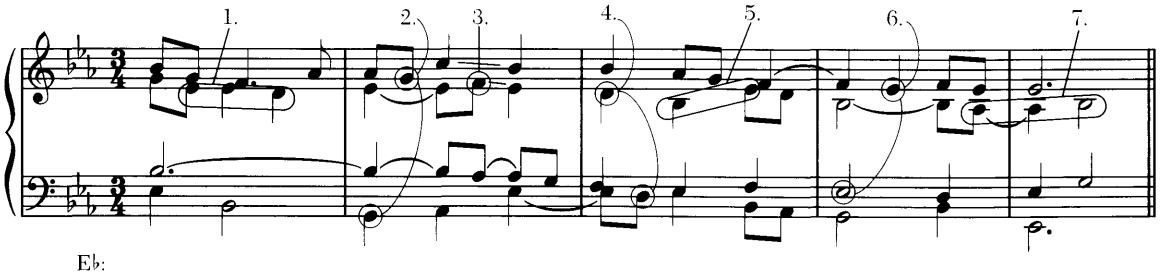
Chapter 15

1.

"DANKET DEM HERREN" (BACH CHORALE HARMONIZATION)

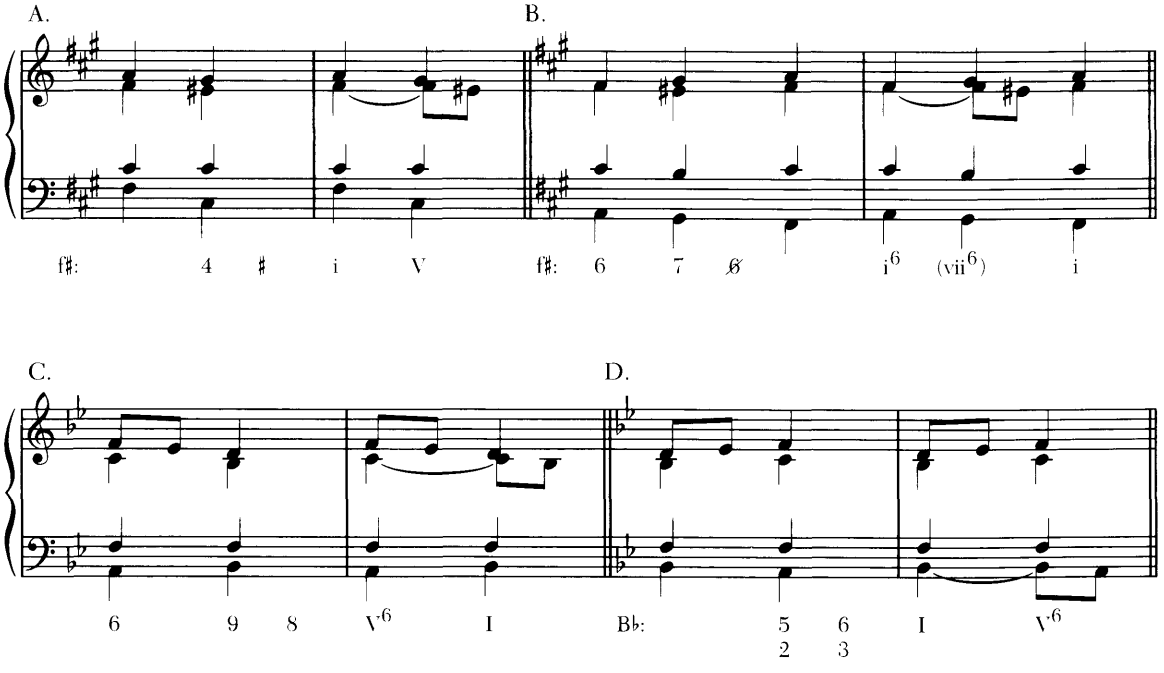


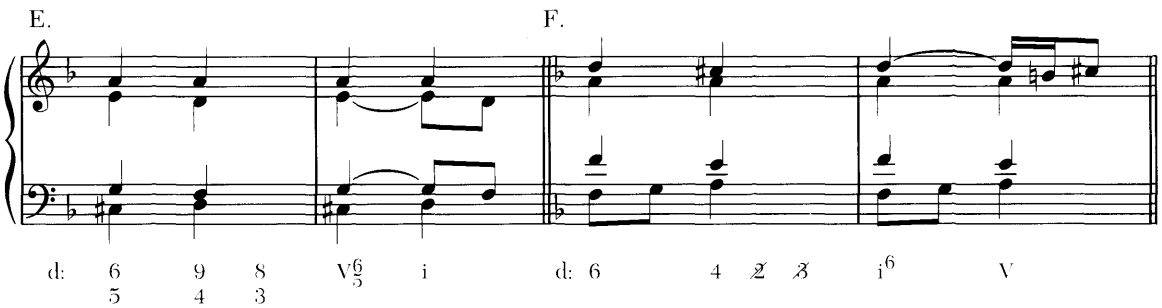
2.



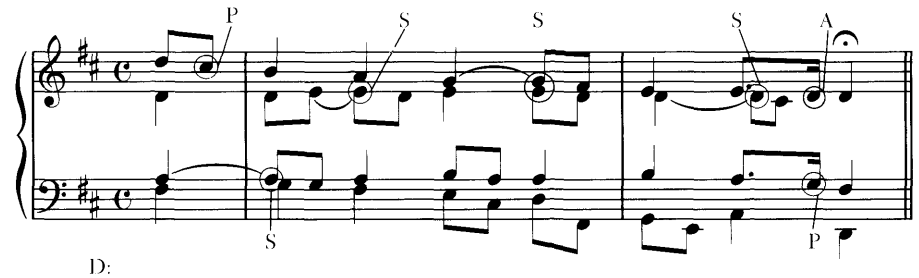
1. preparation too short
2. resolution doubled
3. NT produces // 5ths
4. doubled resolution creates doubled leading tone
5. suspension not prepared
6. resolution doubled
7. preparation too short, and suspension resolves upward

3.



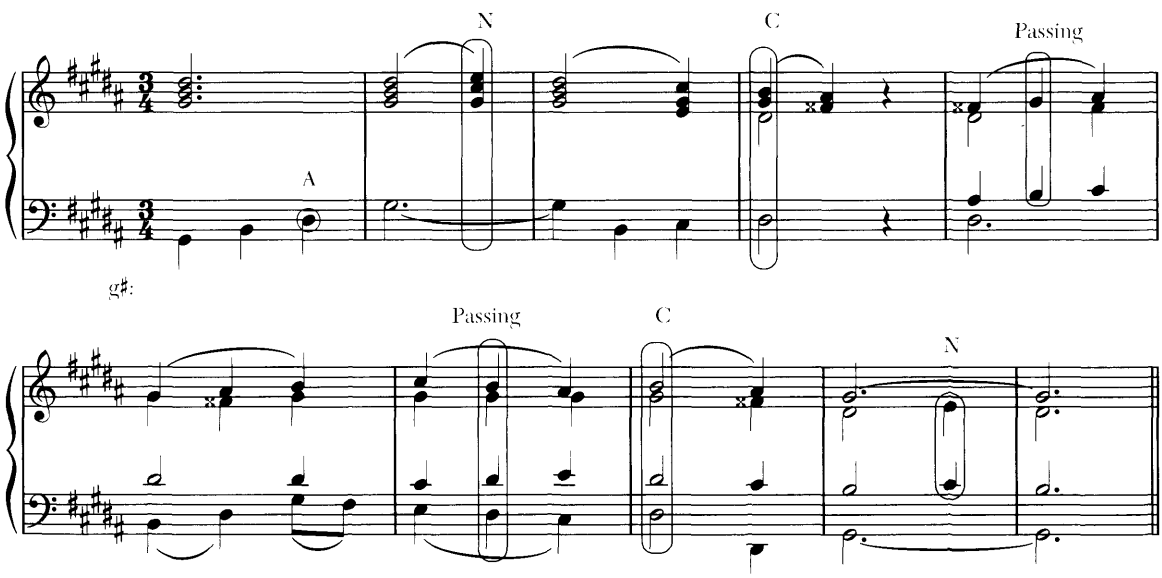


4.



Chapter 16

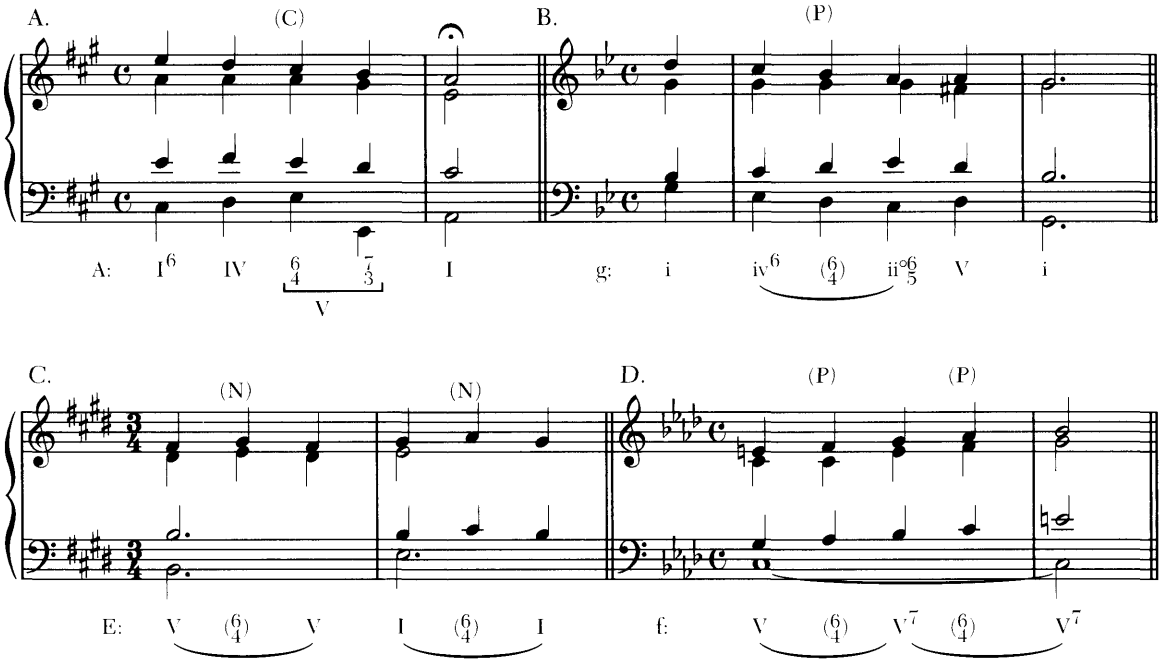
1.



2.

A.
B.
A♭: 6 8 6 4 7 5 3
cadential
b: 6 6 4 6 5 4 2 6
passing
C.
D.
f♯: 6 4 4 ♯
neighboring
E: 6 6 4 5 3 6
cadential or accented
E.
F.
a: 6 4 6
passing
D♭: 6 5 6 4 6
passing

3.



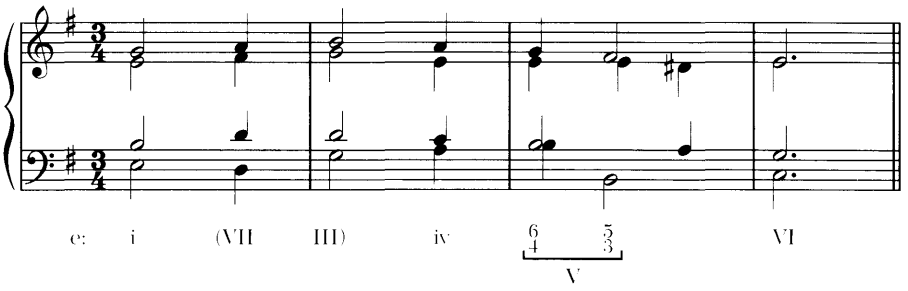
Chapter 17

1.

vi in major	G B♭ D = B♭ major	B D F♯ = D major	E G B = G major	D F A = F major
VI in minor	G♭ B♭ D♭ = B♭ minor	A♭ C E♭ = C minor	D F♯ A = F♯ minor	F A C = A minor
iii in major	E G B = C major	B D F♯ = G major	G B♭ D = E♭ major	D F A = B♭ major
III in minor	A♭ C E♭ = F minor	D F♯ A = B minor	F A C = D minor	G♭ B♭ D♭ = E♭ minor

2.

A.


e: i (VII III) iv 6 5 4 3 VI
V

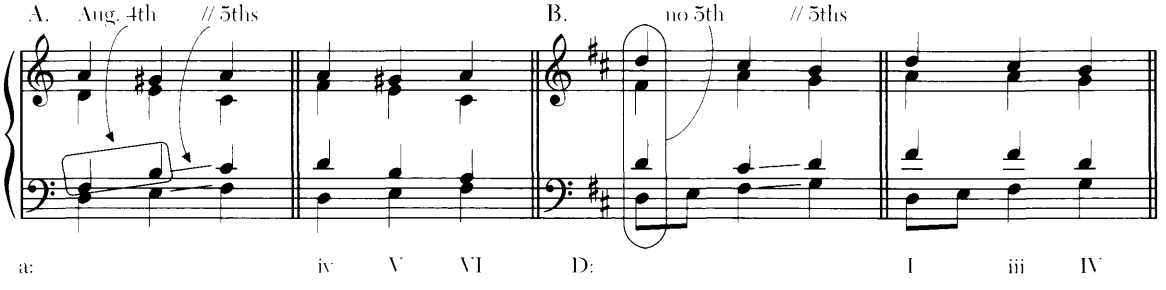
B.

f: i (v6 iv6) V VI iv 6 5 V I

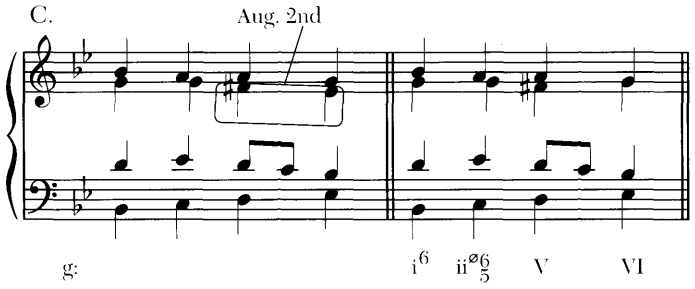
C.

d: i (III iv) i6 6 5 (V VI) i6 ii ø6 5 V 7 I

3.


A. Aug. 4th // 5ths
B. no 5th // 5ths
a: iv V VI
D: I iii IV

C.

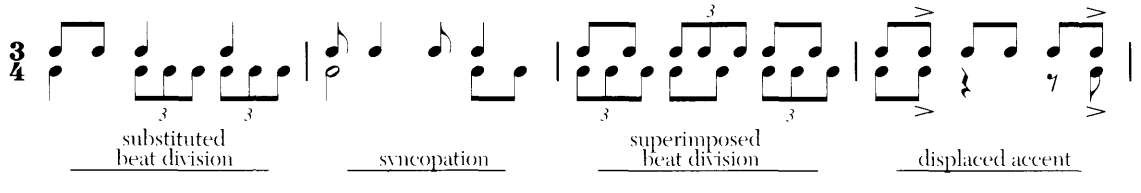


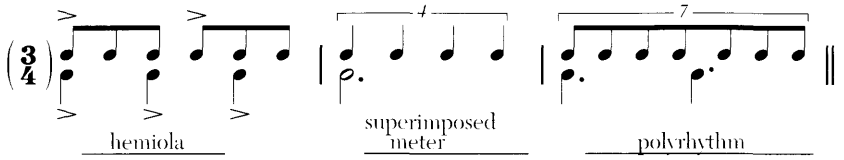
Chapter 18

1. (Match number to letter)

1. Syncopation	C. $\frac{2}{4}$
2. Complex duple meter	H. $\frac{5}{8}$
3. Compound single meter	J. Vivace $\frac{3}{8}$
4. Hemiola	B. $\frac{3}{4}$
5. Substituted beat division	E. $\frac{6}{8}$
6. Superimposed meter	I. $\frac{2}{4}$
7. Quintuple meter	D. Moderato $\frac{5}{4}$
8. Displaced accent	F. $\frac{4}{4}$
9. Divided beat	A. Lento $\frac{9}{8}$
10. Change of meter	G. $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

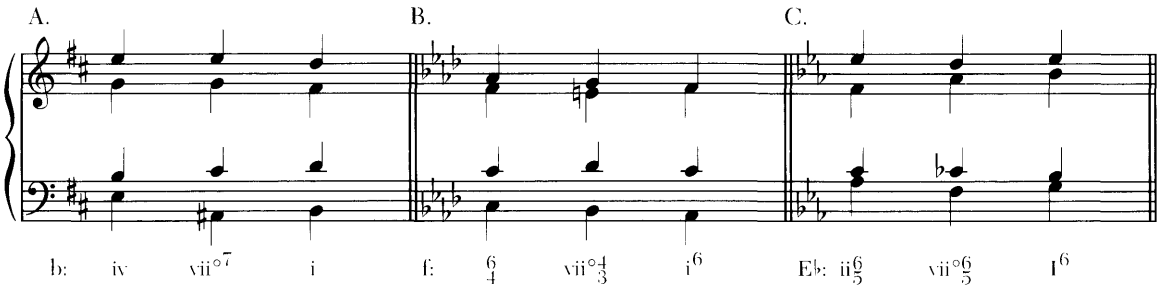
2.

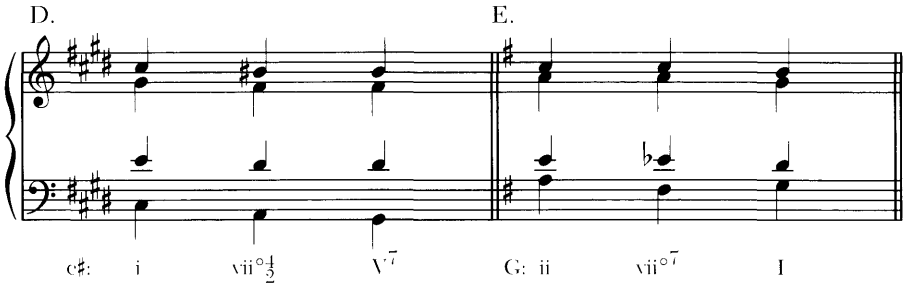




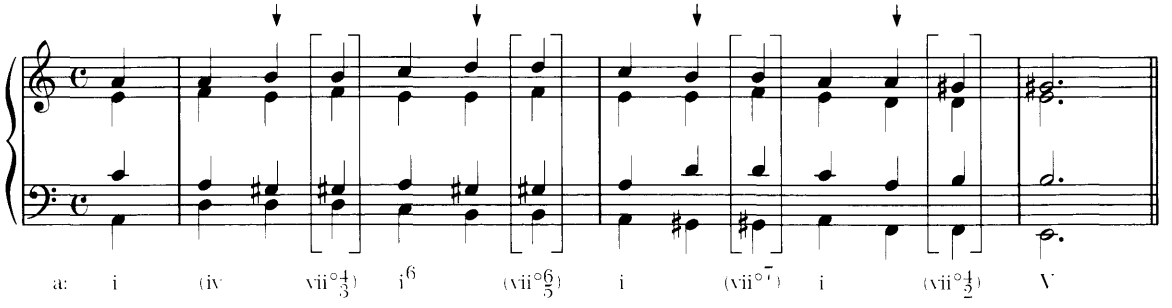
Chapter 19

1.



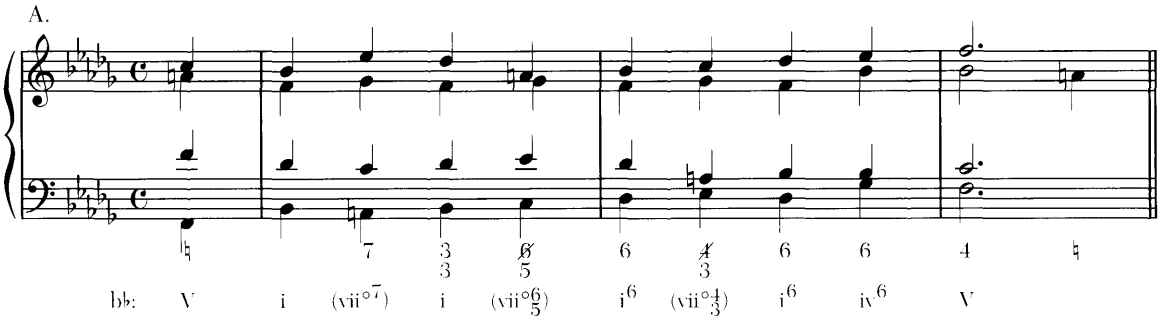


2.

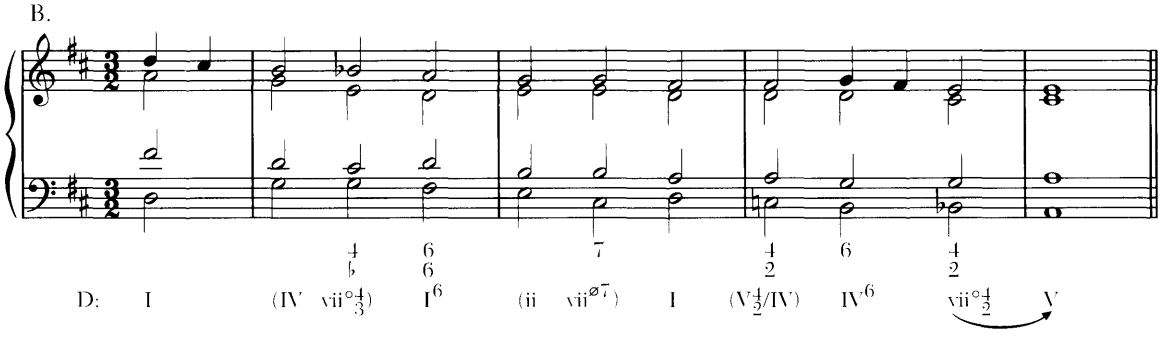


3.

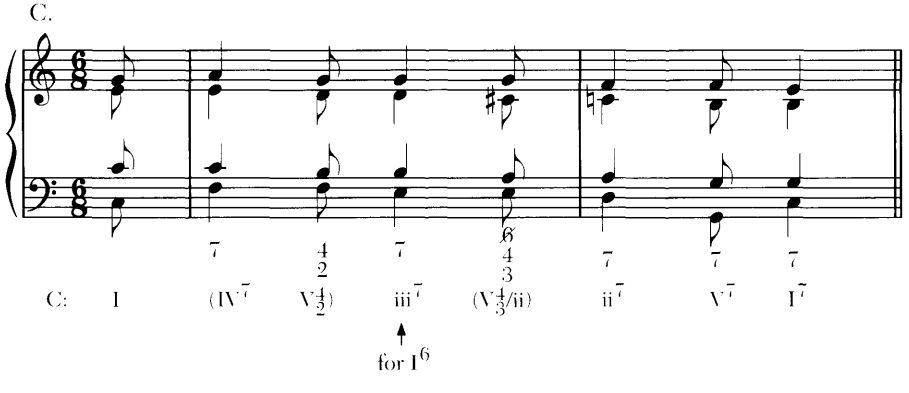
A.


♮ 7 3 3 6 5 6 4 3 6 6 4 ♮
♭♭: V i (vii°7) i (vii°6 5) i6 (vii°4 3) i6 iv6 V

B.


4 ♭ 6 6 7 4 2 6 4 2
D: I (IV vii°4 3) I6 (ii vii°7) I (V4 2/IV) IV6 vii°4 2 V

C.


7 4 2 7 6 4 3 7 7 7
C: I (IV7 V4 2) iii7 (V4 3/ii) ii7 V7 I7
for I6

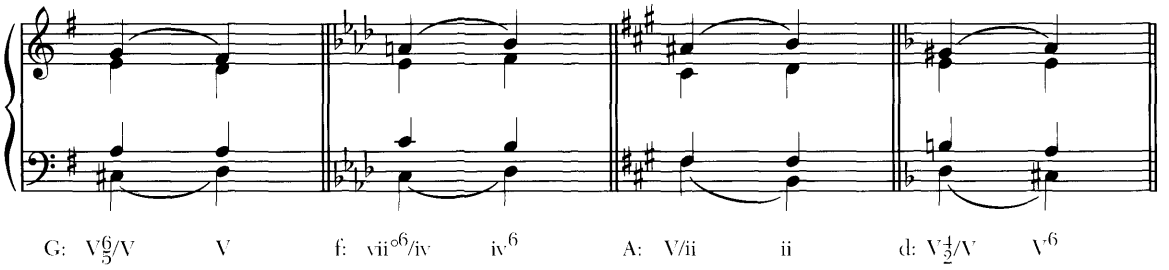
Chapter 20

1.

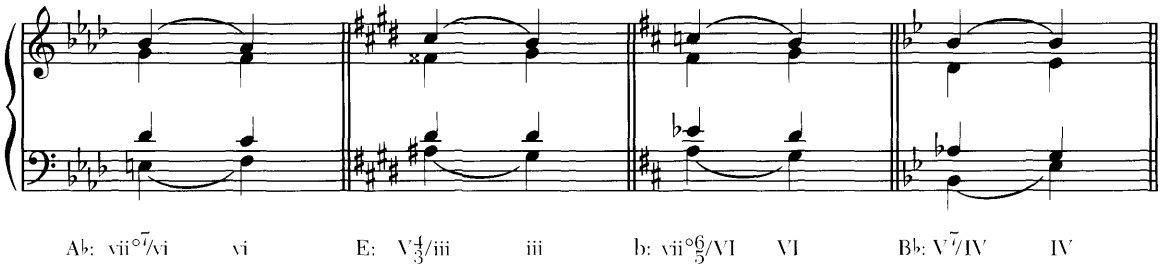
A.
or
etc.
E♭: (V6) I IV V I (V6) I
6
B.
or in 3-voice texture; omit alto.
5 6 5 6 5 6
D: I IV V
C.
or
etc.
6/5 4/2 6/5 4/2 6/5 ♮ 4/3 7 4/3
f: i ii°6/5 V i i
D.
6 6 6 ♯
e: i ii°6 V i

Chapter 21

1.



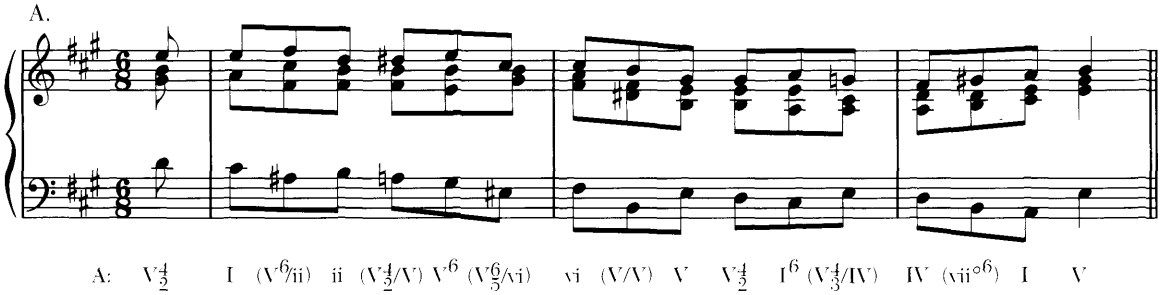
G: $V\frac{6}{5}/V$ V f: vii^{o6}/iv iv^{6} A: V/ii ii d: $V\frac{4}{2}/V$ V^{6}



A♭: vii^{o7}/vi vi E: $V\frac{4}{3}/iii$ iii b: $vii^{o}\frac{6}{5}/VI$ VI B♭: V^{7}/IV IV

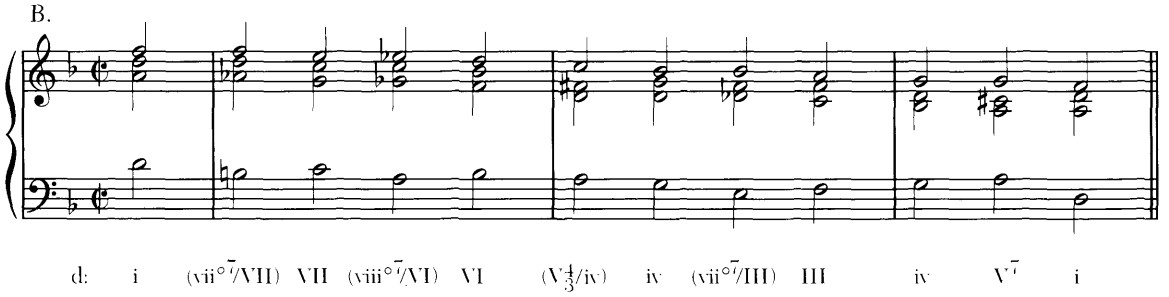
2.

A.



A: $V\frac{4}{2}$ I (V^{6}/ii) ii $(V\frac{4}{2}/V)$ V^{6} $(V\frac{6}{5}/vi)$ vi (V/V) V $V\frac{4}{2}$ I^{6} $(V\frac{4}{3}/IV)$ IV (vii^{o6}) I V

B.



d: i (vii^{o7}/VII) VII $(viii^{o7}/VI)$ VI $(V\frac{4}{3}/iv)$ iv (vii^{o7}/III) III iv V^{7} i

3.

Chapter 22

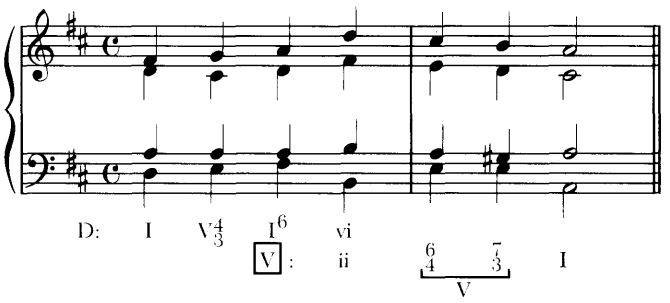
1. A.

V	in E major = I in B major	(B D♯ F♯)
vi	in A♭ major = ii in E♭ major	(F A♭ C)
I	in D major = IV in A major	(D F♯ A)

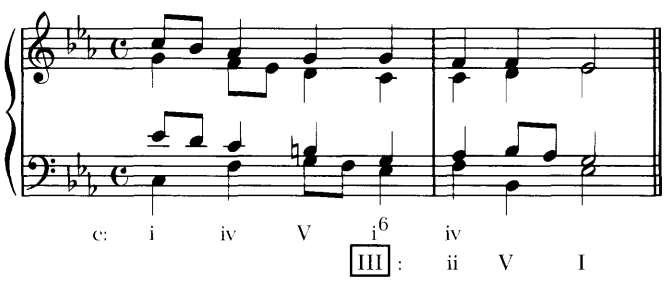
B.

iv	in F minor = ii in A♭ major	(B♭ D♭ F)
i	in B minor = vi in D major	(B D F♯)
VI	in G minor = IV in B♭ major	(E♭ G B♭)

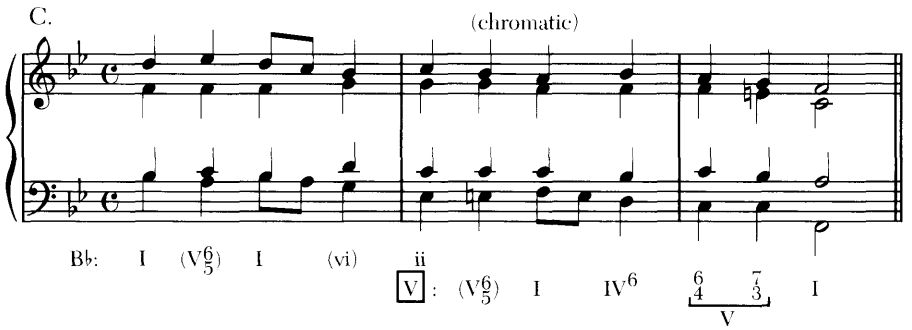
2. A.


D: I V4/3 I6 vi
V: ii 6/4 7/3 I
V

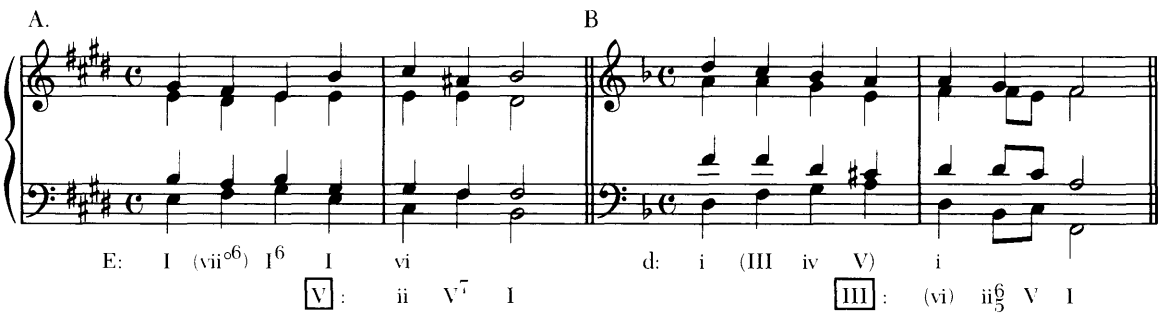
B.


c: i iv V i6 iv
III: ii V I

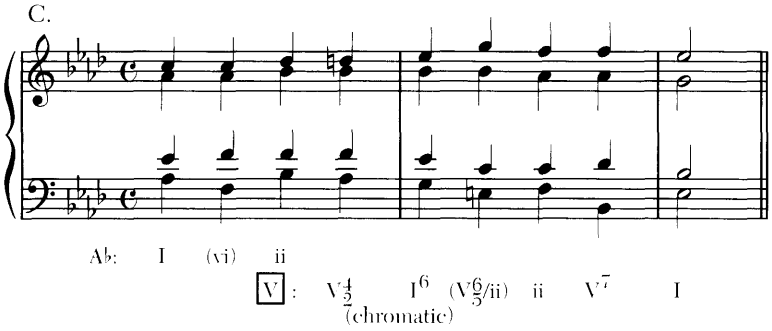
C.


(chromatic)
B♭: I (V6/5) I (vi) ii
V: (V6/5) I IV6 6/4 7/3 I
V

3.


A.
B
E: I (vii°6) I6 I vi
V: ii V7 I
d: i (III iv V) i
III: (vi) ii6/5 V I

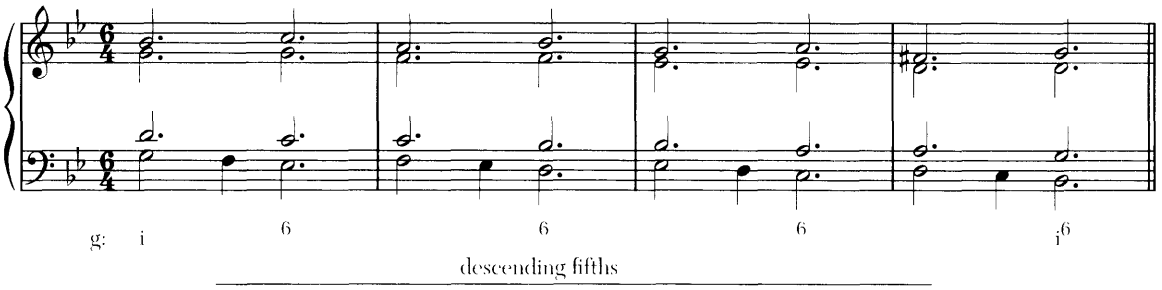
C.



Chapter 23

1.

A.

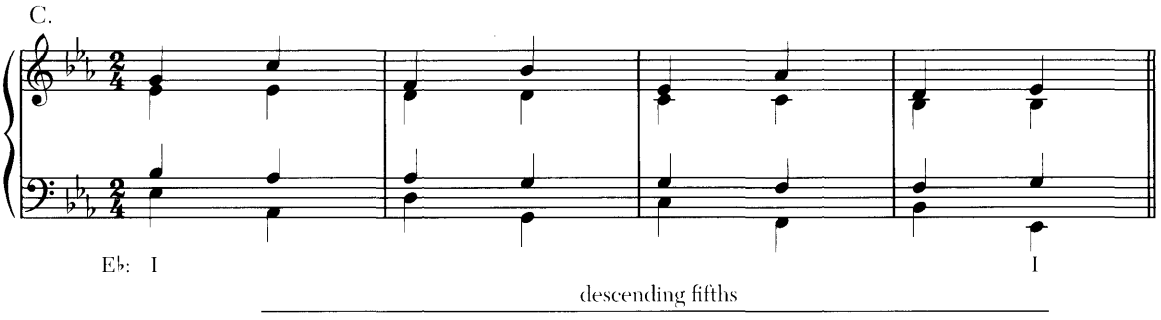


descending fifths

B.

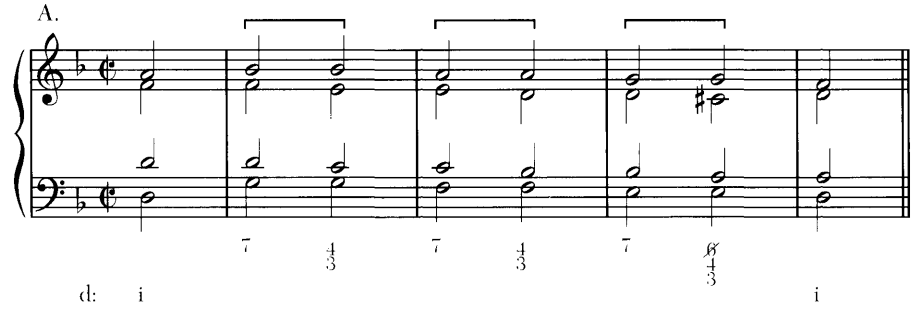
descending stepwise

C.

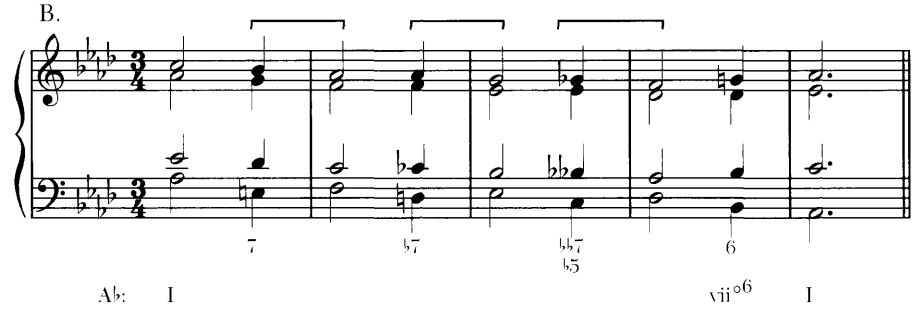


2.

A.

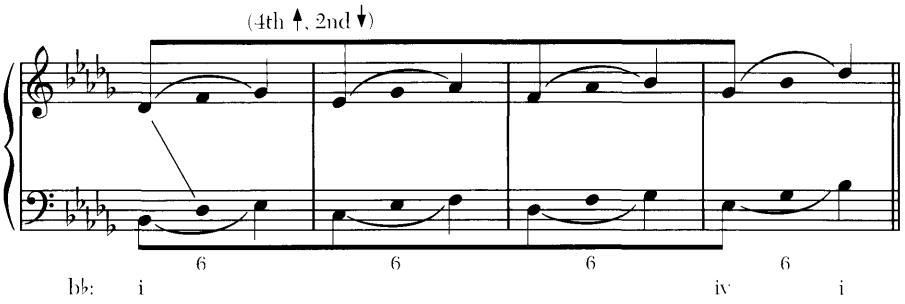


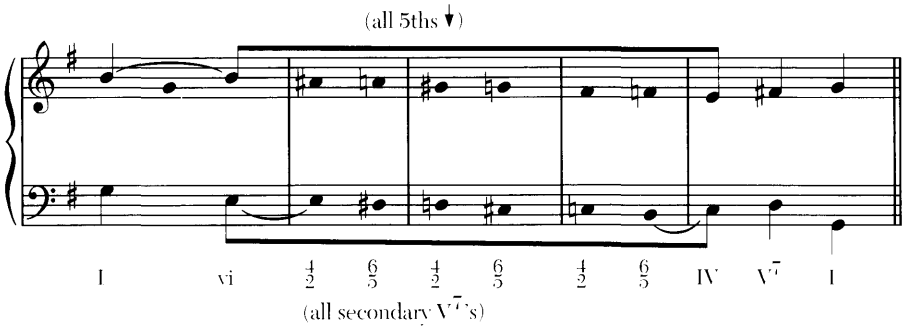
B.



3.

A.





Chapter 24

1. (Match letter to number)

1. Incipient ternary form — D. Rounded two-reprise form
2. Refrain — G. Always set in tonic
3. Preceding the return of original material — I. Retransition
4. Passacaglia — C. Chaconne
5. Tonic cadence at end of first reprise — J. Sectional two-reprise form
6. "B" episode is transposed back to tonic — A. Seven-part rondo
7. Pavan — B. Galliard
8. A succession of dance movements — F. Suite
9. A A' B A' — E. Quatrain form
10. Form — H. Organization of musical content

Chapter 26

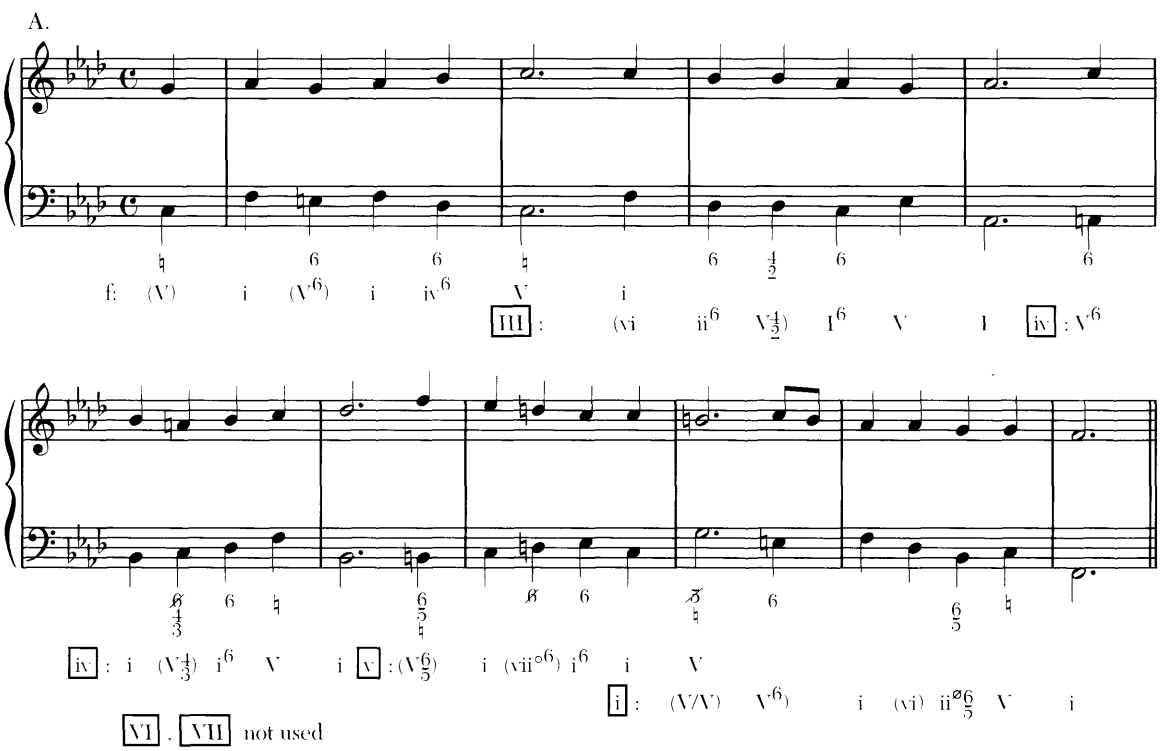
1. (Match letter to number)

1. Enharmonic duality	e. $\hat{\sharp 5}/\hat{\flat 6}$
2. Chromatic melodic motion	h. augmented prime
3. Lowered altered notes	d. tend to resolve downward by half step
4. V^+	a. augmented triad
5. Musica ficta	j. accidentals inserted by performers
6. Structural chromaticism	b. chromatic key relations
7. "Chroma"	i. color
8. iv in C major	g. denotes chord quality is changed
9. Decorative chromaticism	f. elaboration of basic diatonic framework
10. ♭III in C major	c. denotes root is altered

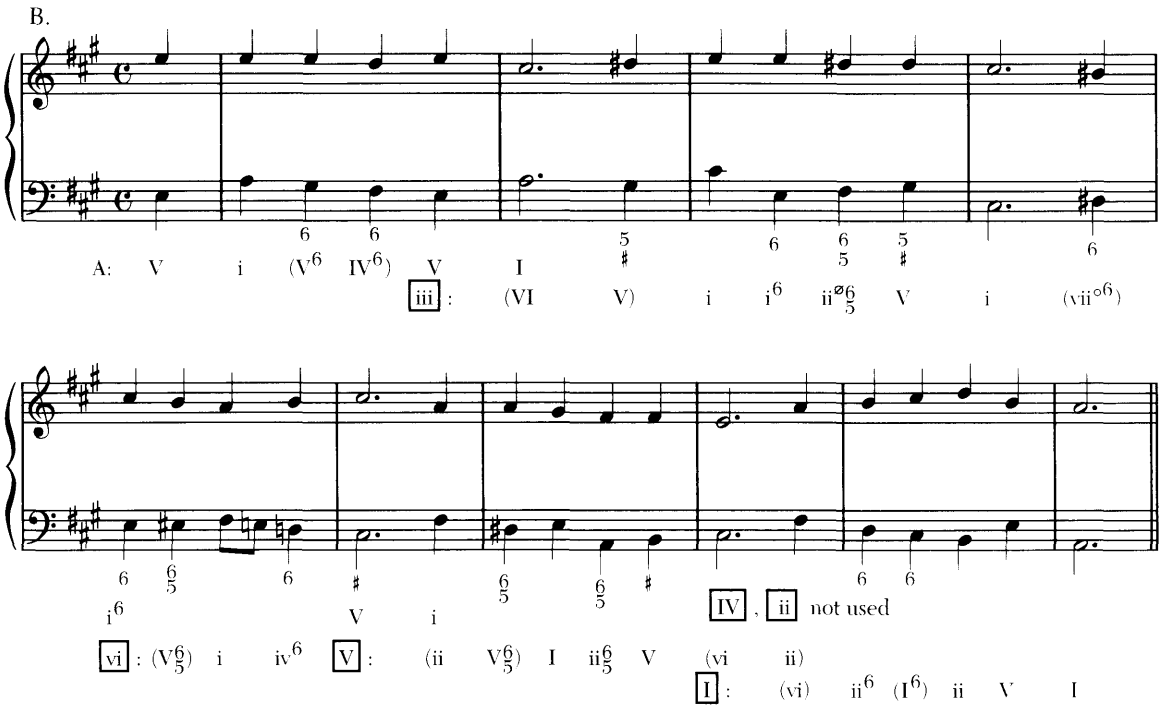
Chapter 27

1.

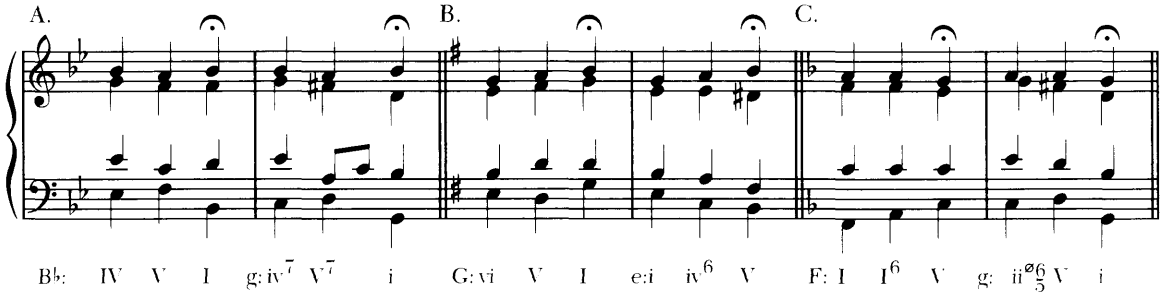
A.



B.


A: V i (V6 IV6) V I
iii: (VI V) i i6 ii⌀65 V i (vii°6)
i6 V i
vi: (V65) i iv6 V: (ii V65) I ii65 V (vi ii)
IV, ii not used
I: (vi) ii6 (I6) ii V I

2.


A.
B.
C.
B♭: IV V I g: iv7 V7 i G: vi V I e: i iv6 V F: I I6 V g: ii⌀65 V i

Chapter 28

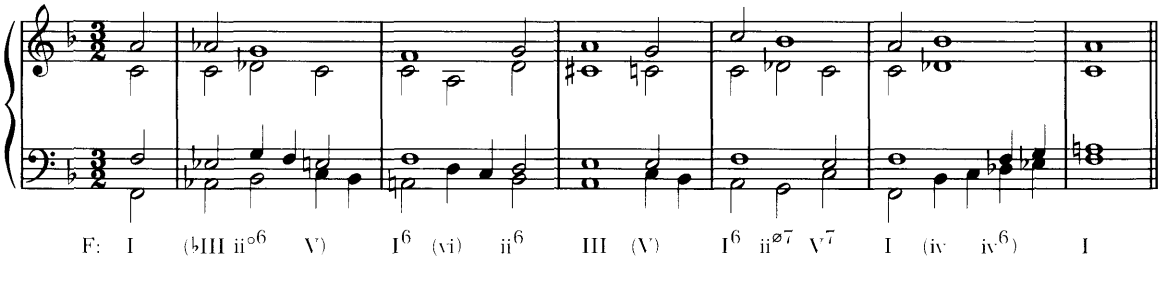
1.

RN	D major	A♭ major	F major	B major
iv	G B♭ D	D♭ F♭ A♭	B♭ D♭ F	E G B
♭III	F A C	C♭ E♭ G♭	A♭ C E♭	D F♯ A
♭VI	B♭ D F	F♭ A♭ C♭	D♭ F A♭	G B D
ii$^{\varnothing 7}$	E G B♭ D	B♭ D♭ F♭ A♭	G B♭ D♭ F	C♯ E G B
♯III	F♯ A♯ C♯	C E♮ G	A C♯ E	D♯ F𝄪 A♯

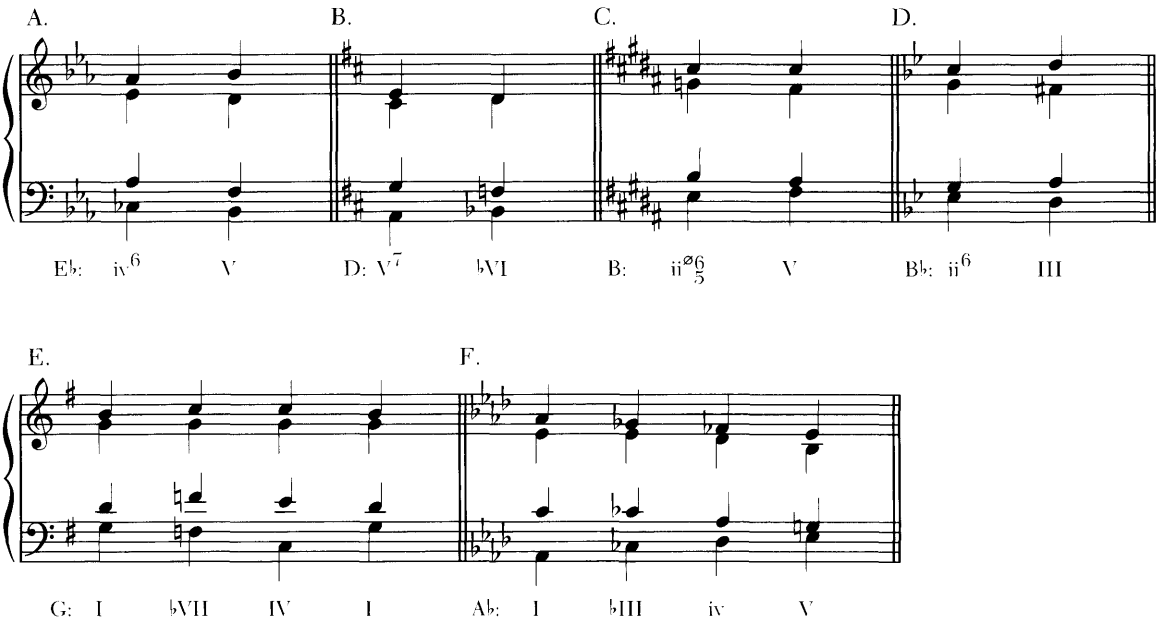
2.

A.

B.

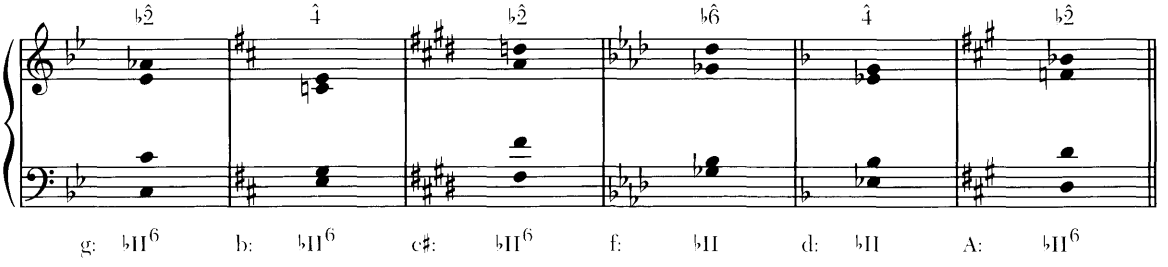


3.



Chapter 29

1.



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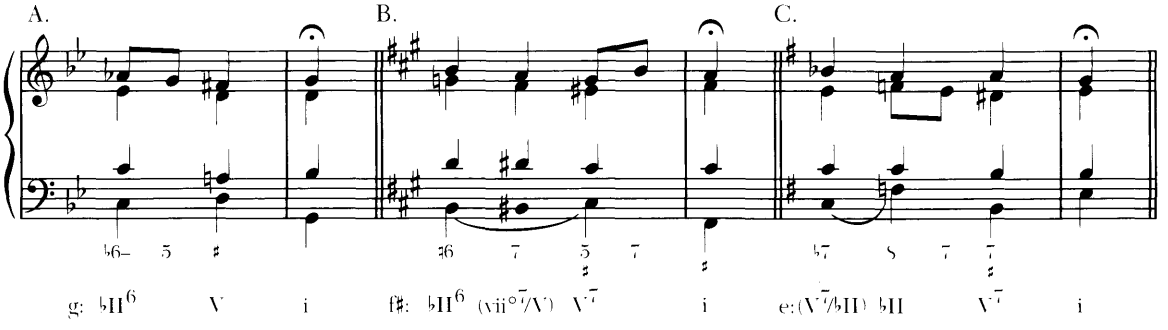
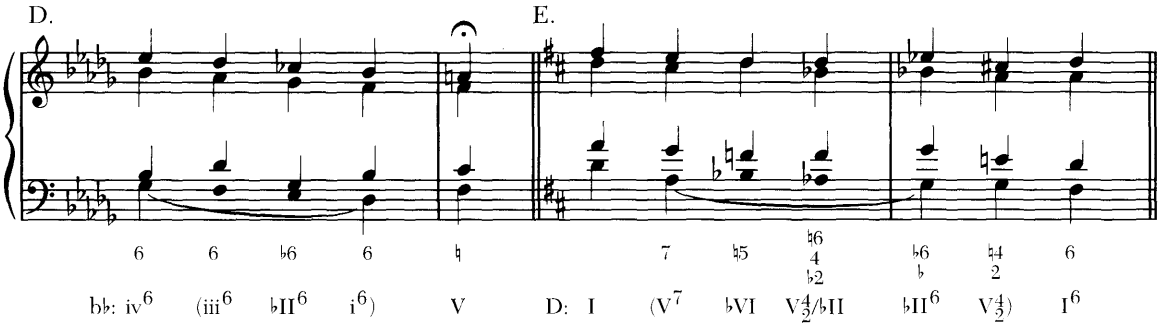
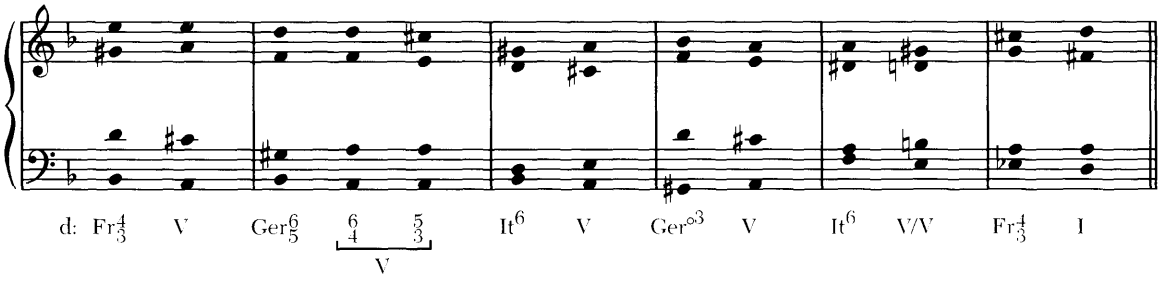




Chapter 30

1.



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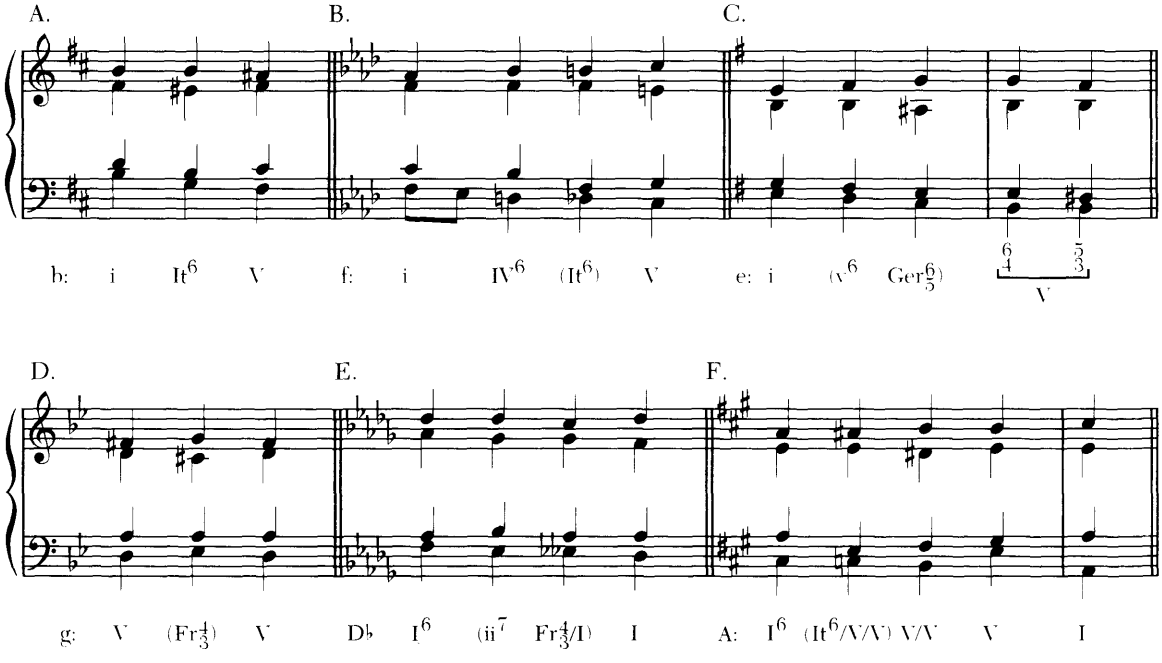

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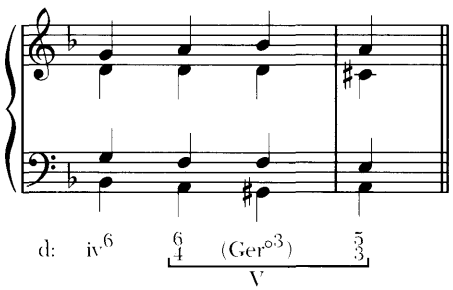


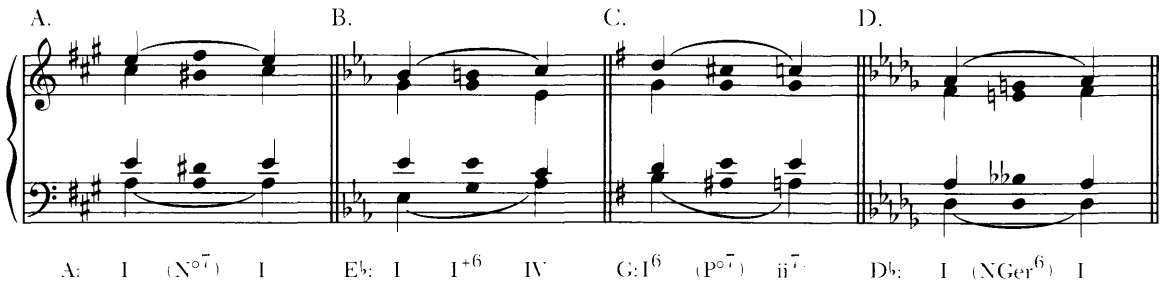
Chapter 31

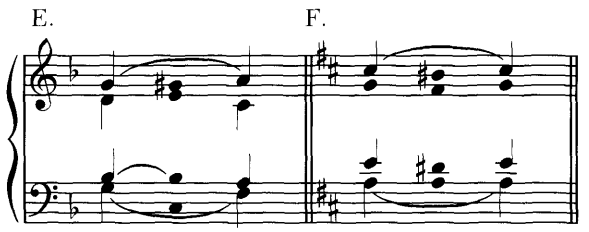
1. (Match letter to number)

1. Six ways of rearranging the voices	b. triple counterpoint
2. Stretto	e. temporal distance shortened
3. Monothematic sonata form	k. second theme group uses first theme
4. Opens with imitation on the hymn tune	h. Vorimitation chorale prelude
5. Often lacks a true development	g. sonatina form
6. Transition	d. modulatory passage connecting sections
7. Alternations of tutti and solo	i. concerto form
8. Double fugue	f. based on two subjects
9. Beethoven often used as a second development	a. coda
10. Exact imitation throughout	c. canon
11. Sonata-rondo form	j. development substituted for middle section

Chapter 32

1.

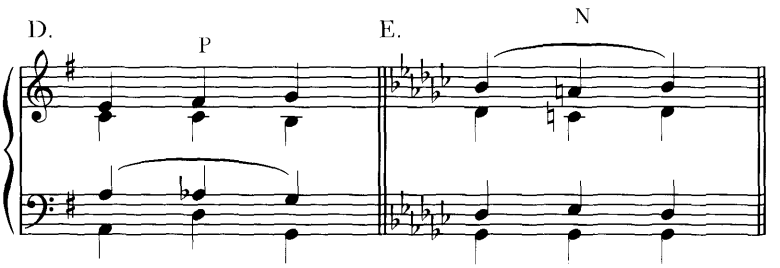




F: ii $V+^{7}$ I D: V^{7} $(N^{\circ 7})$ V^{7}

2.

B♭: V I E: I $(P^{\circ 7})$ $V\frac{4}{3}$ A♭: ii$(\frac{4}{2})$ $(PGer^{6})$ I



G: ii $(V_{\circ}^{7})$ I G♭: I $(N^{\circ 7})$ I

Chapter 33

1.

MOZART: ALLEGRO IN F MAJOR, K. 533

f
p
(vii°6/V)
6/4
f
p
(vii°7/V)
6/4
f
Ger6/5
6/4
V
tr
5/3
I

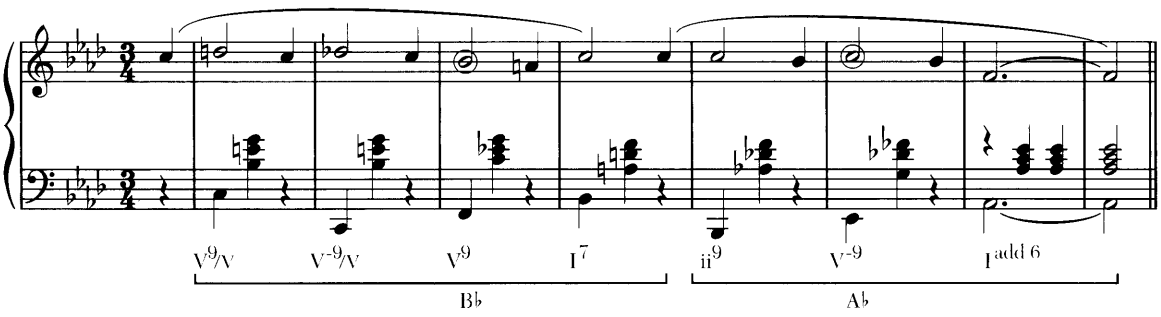
Chapter 34

1.

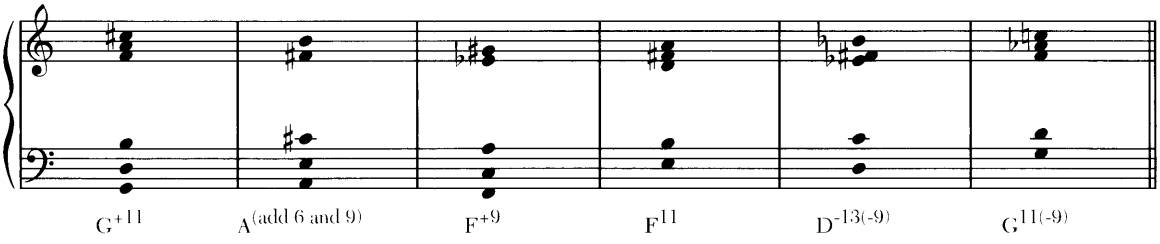
A.
change of mode
F: I ii6/5 V I i
♭III: vi ii6/5 V I
B.
altered pivot chord
G: I vii°7/V V 7 (♭VI)
♭II: (V) I6 ii V I
C.
E♭: I6 ii6 V7 I VI: I (N°7) I (ii⌀4/3) I
common tone
3̂ = 5̂
D.
altered pivot chord (°7)
D: I ii⌀6/5 V4/3 I (vii°6/5)
♭VI: (vii°7/V) 6/4 7/3 I
V
E.
chromatic
c: i (V4/3/IV) IV6
iii: (vii°7/V) 6/4 5/3 i
V

Chapter 35

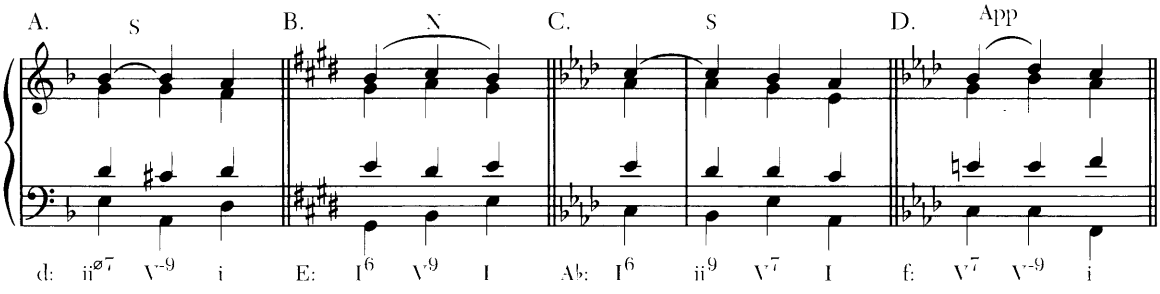
1.



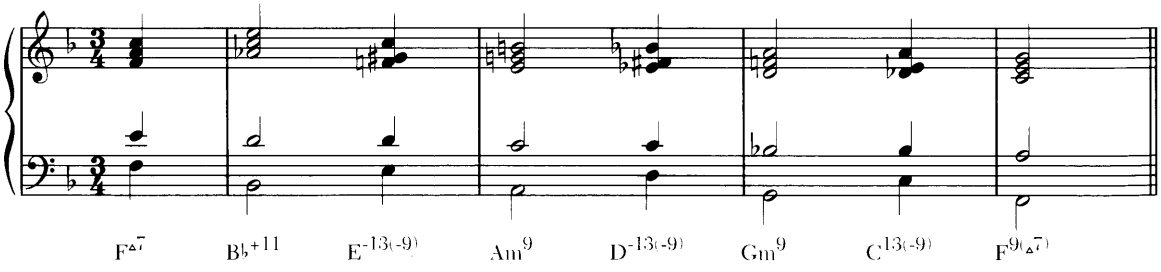
2.



3.



4.



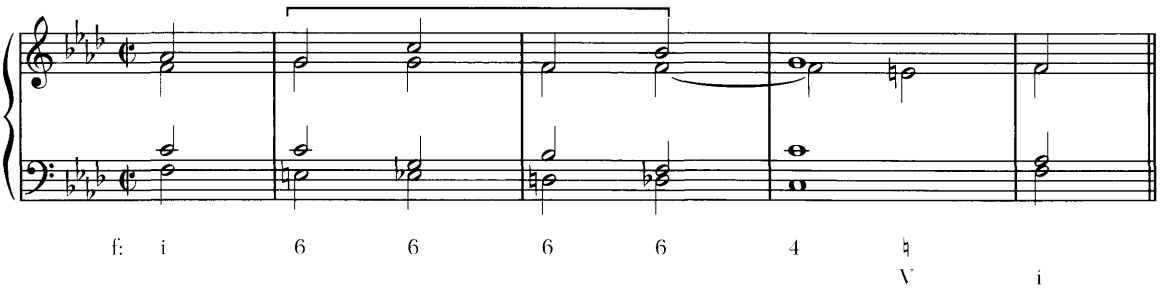
Chapter 36

1. A. Our emotions are aroused when our tendency to respond to a particular situation is aroused or frustrated.
B. Extramusical sources outside the music give rise to referential meanings.
C. Extended unpredictability may give rise to ambiguity.
D. A collection of preferred tendencies for a large group of music compositions is a style system.
E. Musical meanings derived from relationships within the music are absolutist.
F. The implication set up by harmonic and/or melodic tendencies is resolved by its realization.

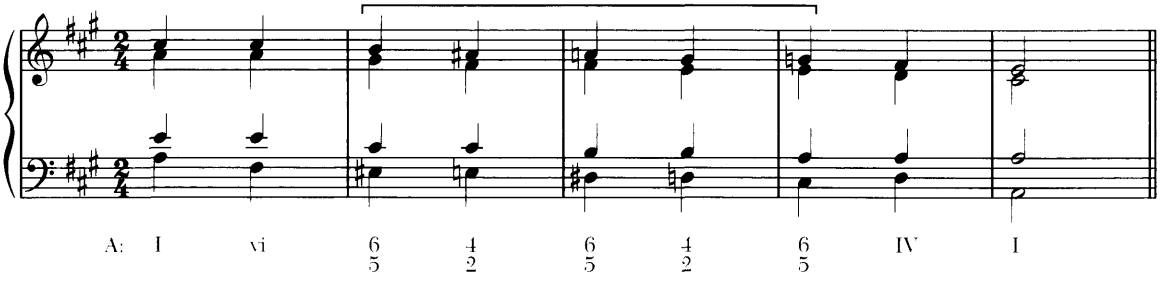
Chapter 37

1.

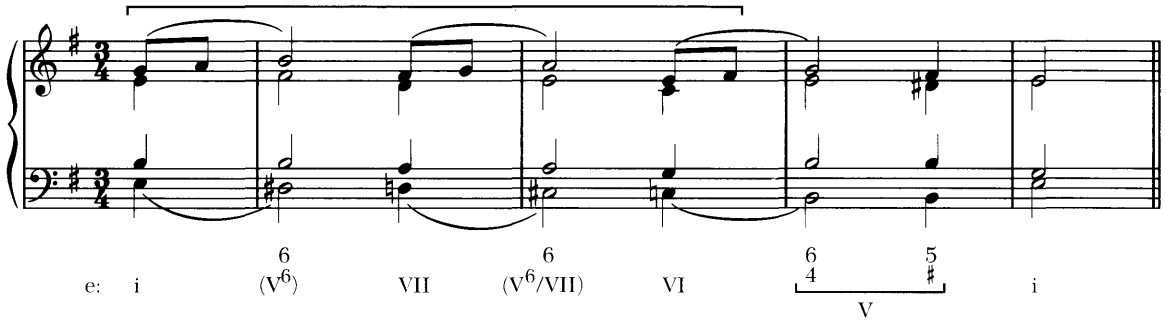
A.



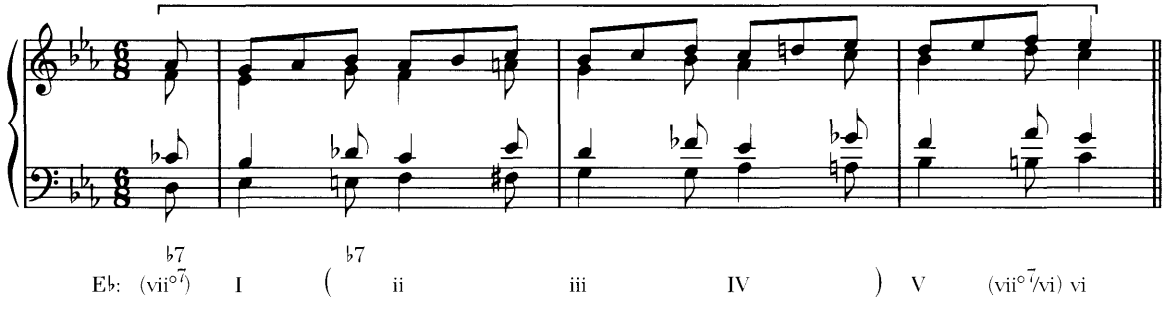
B.



C.



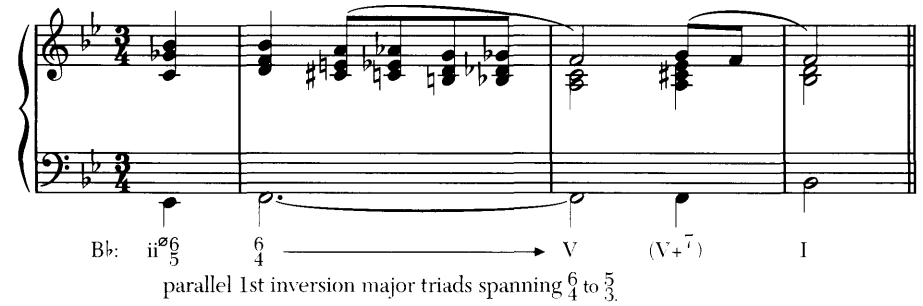
D.



Chapter 39

1.

A.

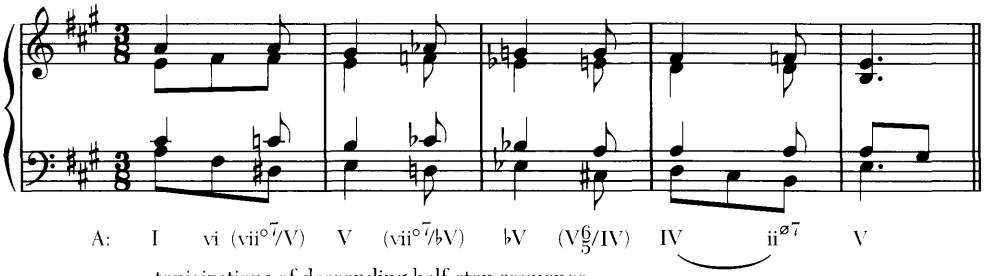


parallel 1st inversion major triads spanning $\frac{6}{4}$ to $\frac{5}{3}$.

B.

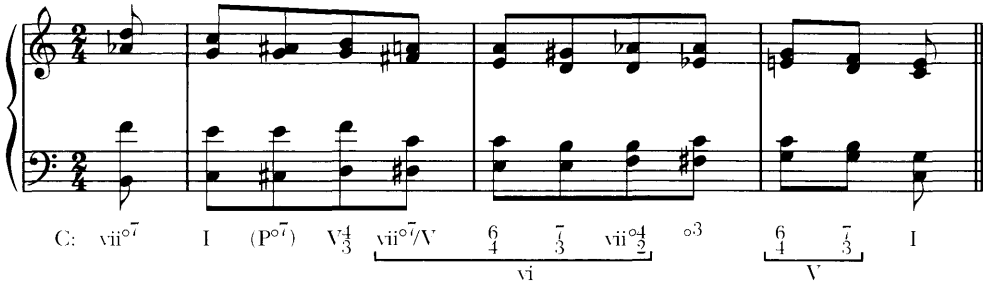
contrary chromaticism prolonging dominant seventh.

C.



tonicizations of descending half-step sequence.

D.

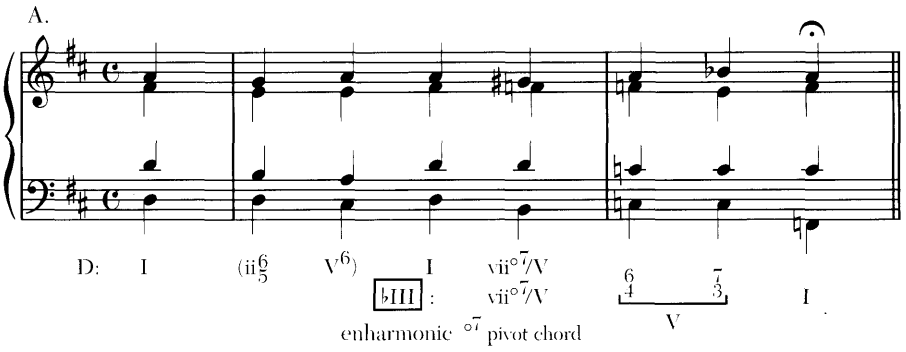


non-sequential setting of chromatic bass line.

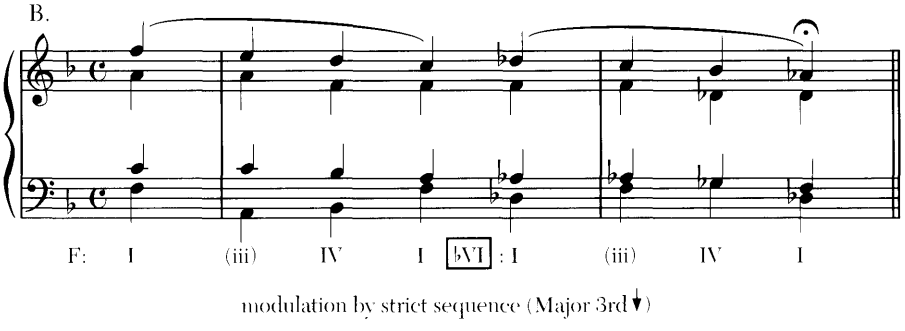
Chapter 40

1.

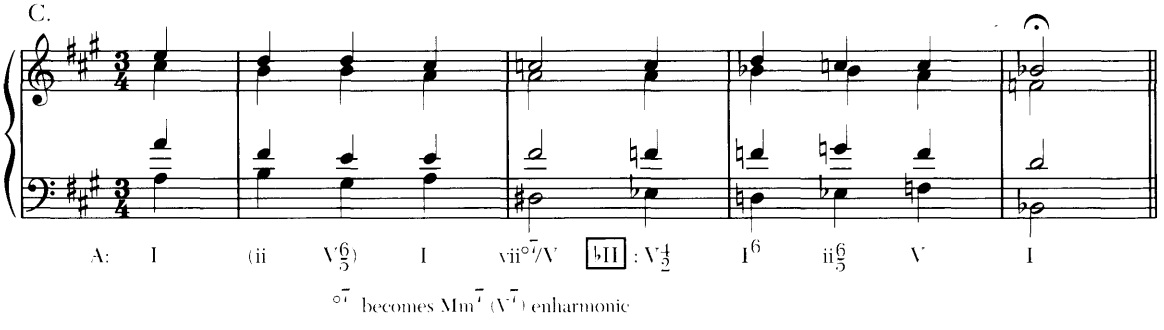
A.



B.



C.



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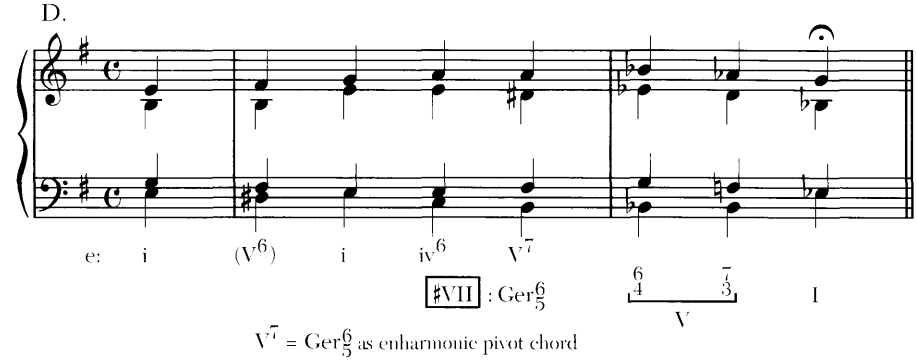
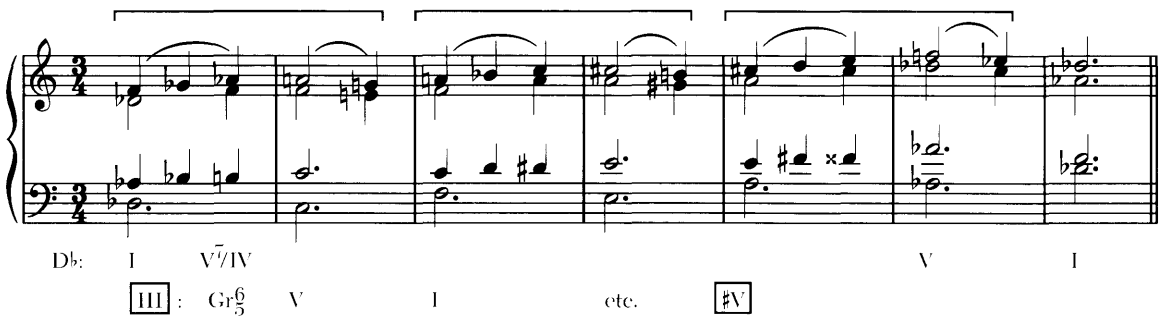


Chapter 41

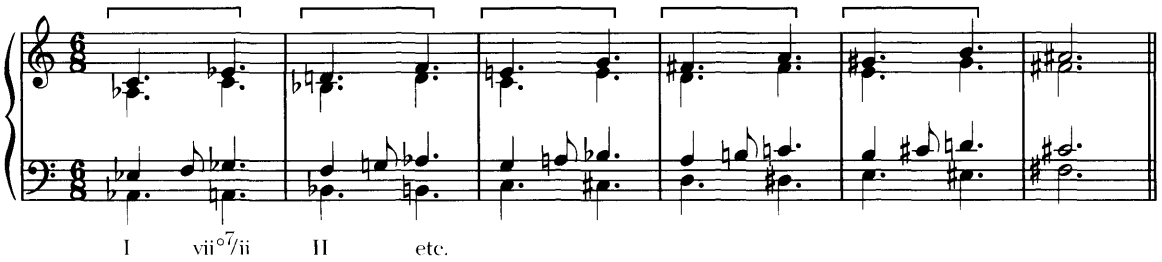
1.

A. sequence by M3rds ↑



B. omnibus progression by m3rds ↓

C. sequence by M2nd ↑ using secondary °7ths



G L O S S A R Y

The terms in this glossary appear in tempo, dynamic, and expression markings and directions that are commonly given in Italian, French, and German in music scores. Terms in italic within a definition are cross-referenced in this glossary.

accelerando (accel.) (*It.*) Gradually quickening the tempo.

accent Emphasis on a specific tone, beat, or chord; usually through dynamic (accent mark >) or quantitative stress (agogic or durational accent).

adagio (*It.*) Slow; faster than *lento* but slower than *andante.*

affettuoso (*It.*) With affection.

agitato (*It.*) In an agitated manner.

agréments (*Fr.*) Ornaments, embellishments.

allargando (*It.*) Becoming gradually slower.

allegretto (*It.*) Slightly slower than *allegro.*

allegro (*It.*) Fast, but slower than *presto.*

allmählich (*Ger.*) Gradually.

andante (*It.*) Moderately slow (literally, "walking").

andantino (*It.*) Slightly faster than *andante.*

Anfang (*Ger.*) The beginning.

animato (*It.*) In an animated style.

acro (*It.*) Using the bow (on a stringed instrument).

arpeggio (*It.*) The playing of a chord in broken fashion, usually from the bottom note up.

attacca (*It.*) Begin ("attack") immediately.

battuta (*It.*) Beat (as in **a battuta,** "beat in strict tempo").

breve A double whole note.

calma (*It.*) Calm.

cantabile (*It.*) In a singing or lyrical manner.

cédez (*Fr.*) Slightly decreasing the tempo.

coda (*It.*) An additional appendage (or "tailpiece") to a composition following the main tonic cadence.

con brio (*It.*) With spirit.
corda (*It.*) String (on a stringed instrument).
crescendo (cresc.) (*It.*) Gradually increasing in loudness.

da capo (D.C.) (*It.*) Return to the beginning (literally, "from the head").
Da capo al segno (*It.*) Return to the beginning and play until the sign (literally, "from the head to the sign").
decrescendo (*It.*) Decreasing in loudness.
détaché (*Fr.*) With long separate bow-strokes, not slurred.
deux (*Fr.*) Two.
diminuendo (dim.) (*It.*) Gradually decreasing in loudness.
divisi (*It.*) Divided (indicates the temporary division of an orchestral string section into two or more parts).
dolore (*It.*) In a sorrowful style.
doppel (*Ger.*) Double.
drängend (*Ger.*) Slig htly hurrying.
drei (*Ger.*) Three.
due (*It.*) Two (as in **a due,** "both instruments play the same part").
dur (*Ger.*) Major.

également (*Fr.*) Play equally or evenly.
ein (*Ger.*) One.
etwas (*Ger.*) Some, somewhat.
expressif (*Fr.*) Expressively.

facile (*Fr.*) In a light or "easy" style.
fermata (*It.*) Hold; "bird's eye" symbol (𝄐) over a note signifying that it should be held indefinitely.
fine (*It.*) End.
flüchtig (*Ger.*) In a fleeting manner.
fois (*Fr.*) Time (as in **première fois,** "the first time").
forte (f) (*It.*) Loud.
fortissimo (ff) (*It.*) Very loud.
forzando (fz) (*It.*) Sharply marked or emphasized.
frei (*Ger.*) Freely, with license.
für (*Ger.*) For.

ganz (*Ger.*) The whole, all.
gegen (*Ger.*) Against, contrasted with.
giocoso (*It.*) Playfully, merrily.
giusto (*It.*) Strict, exact (as in **tempo giusto,** "strict time").
gleich (*Ger.*) Equal to, alike.
gran (*It.*) Great.
grave (*It.*) As slow as possible.
gross (*Ger.*) Large, great.

halb (*Ger.*) Half.
Haupt (*Ger.*) Head, principal (as in **Hauptstimme,** "principal voice or part").
haut (*Fr.*) High, shrill.

jouer de (*Fr.*) To play on (an instrument).

Klang (*Ger.*) Sound; ringing.
Klavier (*Ger.*) Keyboard (instrument).
klein (*Ger.*) Little, small.

langsam (*Ger.*) Slowly.
largando (*It.*) Broadening.
larghetto (*It.*) A little faster than *largo.*
largo (*It.*) Slow; usually slower than *lento.*
legato (*It.*) In a smooth, connected style.
leicht (*Ger.*) Light, easy.
lent (*Fr.*) Slow.
lento (*It.*) Slow; usually between *andante* and *largo.*
librement (*Fr.*) Freely.
loco (*It.*) Return to normal octave or position (literally, "place").
lontano (*It.*) Distant.
louré (*Fr.*) In a smooth, legato style.
lustig (*Ger.*) Merry, cheerful.

mano (*It.*) Hand.
mässig (*Ger.*) Moderate.
mehr (*Ger.*) More.
meno (*It.*) Less (as in **meno mosso,** "slightly slower").
mezzo (*It.*) Medium (as in *messo forte* **(mf),** "medium loud").
moderato (*It.*) Moderate in tempo.
moll (*Ger.*) Minor.
molto (*It.*) Much, very.
mosso (*It.*) In a rapid manner (literally, "moved").
moto (*It.*) Motion (as in **con moto,** "with motion").

nach (*Ger.*) After.
neu (*Ger.*) New.
noch (*Ger.*) Still; yet.
non (*It.*) No, not (as in **non legato,** "not smooth").

obbligato (*It.*) An optional part; a countermelody.

peu (*Fr.*) A little (as in **peu à peu,** "little by little").
pianissimo (pp) (*It.*) Very softly.
piano (p) (*It.*) Softly.
poco (*It.*) A little (as in **poco a poco,** "little by little").
portando (*It.*) Sliding from one note to the next (literally, "carrying").
pour (*Fr.*) For, in order to.
premier, première (*Fr.*) First (as in **à première vue,** to sight-read).
pressez (*Fr.*) Accelerate.
prestissimo (*It.*) As fast as possible.
presto (*It.*) Very fast.
primo tempo (*It.*) Play the first tempo indicated.

quasi (*It.*) Like or similar to (as in **quasi recitativo,** "like a recitative").

reprise (*It.*) To repeat or recur.
ritard, ritardando (rit.) (*It.*) Get slower gradually.
rubato (*It.*) A gradual fluctuation of the tempo, usually in slow movements (literally, "robbed").
ruhig (*Ger.*) Calm, restful.

sans (*Fr.*) Without (as in **sans sordine,** "without mute").
Satz (*Ger.*) Theme; section; movement.
schnell (*Ger.*) Quick.
sec (*Fr.*) Dry, short.
segno (*It.*) Sign (as in **dal segno,** "repeat from the sign").
segue (*It.*) "Now follows"; continue in the same manner.
sehr (*Ger.*) Very.
semplice (*It.*) Simply.
sempre (*It.*) Always; throughout.
senza (*It.*) Without (as in **senza vibrato,** "without vibrato").
sforzando (sf, sfz) (*It.*) Accented (literally, "forcing").
sordino (*It.*) A mute.
sotto (*It.*) Below, under (as in **sotto voce,** "in an undertone, very softly").
spielen (*Ger.*) To play.
spirito (*It.*) Spirit.
staccato (*Ir.*) Detached, short.
Stimme (*Ger.*) Voice, part.
stringendo (*It.*) Accelerating.
subito (*It.*) Suddenly (as in **volta subito,** "turn the page quickly").
sul (*It.*) On or near (as in **sul tasto,** "on the fingerboard").
süss (*Ger.*) Sweetly.

tacet (*Lat.*) Omit, do not play.
tactus (*Lat.*) The beat or single motion of the hand in a conducting pattern.
Takt (*Ger.*) Time; beat; measure.

tasto (*It.*) Touch; keyboard; fingerboard.
tempo (*It.*) Rate of speed.
tout (*Fr.*) All.
très (*Fr.*) Very.
trois (*Fr.*) Three.
troppo (*It.*) Too much (as in **ma non troppo,** "but not too much").
tutti (*It.*) The entire ensemble (literally, "all").

über (*Ger.*) Above, over.
unter (*Ger.*) Below, under.

valeur (*Fr.*) Value or duration (of a note).
vibrato (*It.*) Varying the pitch slightly and rapidly (literally, "shaken").
vif (*Fr.*) Quick, lively.
vivace (*It.*) Fast (literally, "lively"), usually faster than *allegro.*
voce (*It.*) Voice (as in **mezzo voce,** "in a medium voice").
voll (*Ger.*) Full.
volta (*It.*) Time (as in **prima volta,** "the first time").

wieder (*Ger.*) Again.

Zeitmass (*Ger.*) tempo.
zwei (*Ger.*) Two.
zwischen (*Ger.*) Between.

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I N D E X

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