

Third Edition

Tonal Harmony

With an Introduction to Twentieth-Century Music

Stefan Kostka & Dorothy Payne

TONAL HARMONY

with an Introduction to Twentieth-Century Music

Third Edition

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About the Authors

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Dorothy Payne presently serves as Director of the School of Music at the University of Arizona. A graduate of the Eastman School of Music, she holds bachelor's and master's degrees in piano performance, and a Ph.D. in music theory. Before assuming her duties in Tucson, she occupied the position of Music Department Head at the University of Connecticut. Previous faculty appointments were held at the University of Texas at Austin, the Eastman School of Music, and Pacific Lutheran University. She has been the recipient of teaching excellence awards at both the Eastman School and the University of Texas. In addition to remaining active as a performer, Payne has presented lectures and workshops on theory pedagogy at meetings of professional societies. She presently serves as an elected member of the National Association of Schools of Music Accreditation Commission.

Preface

Tonal Harmony with an Introduction to Twentieth-Century Music is intended for a two-year course in music theory/harmony. It offers a clear and thorough introduction to the resources and practice of Western music from the seventeenth century to the present day. Its concise, one-volume format and flexible approach make the book usable in a broad range of theory curricula.

APPROACH

The text provides students with a comprehensive but accessible and highly practical set of tools for the understanding of music. Actual musical practice is stressed more than rules or prohibitions. Principles are explained and illustrated, and exceptions are noted.

In its presentation of harmonic procedures, the text introduces students to the most common vocal and instrumental textures encountered in tonal music. Traditional four-part chorale settings are used to introduce many concepts, but three-part instrumental and vocal textures are also presented in illustrations and drill work, along with a variety of keyboard styles. To encourage the correlation of writing and performing skills, we have included musical examples in score and reduced-score formats, as well as charts on instrumental ranges and transpositions. Some of the assignments ask the student to write for small ensembles suitable for performance in class. Instructors may modify these assignments to make them most appropriate for their particular situations.

PEDAGOGICAL FEATURES

The text employs a variety of techniques to clarify underlying voice leading, harmonic structure, and formal procedures. These include textural reductions, accompanying many of the examples, which highlight chordal motion. Our goal has been to elucidate tonal logic at the phrase and section level as well as from one chord to the next. Abundant musical illustrations,

many with commentaries, serve as a springboard for class discussion and individual understanding.

The book provides an extensive series of review material. A large portion of the text is devoted to Self-Tests, consisting of student-graded drills in chord spelling, part writing, and analysis, with suggested answers given in Appendix B. The Self-Tests can be used for in-class drill and discussion, in preparation for the Workbook exercises, or for independent study. Periodic Checkpoints enable students to gauge their understanding of the preceding material. Chapter summaries highlight the key points of each chapter.

ORGANIZATION

Part One (Chapters 1-4) begins the text with a thorough but concise overview of the fundamentals of music, divided into one chapter each on pitch and rhythm. Chapters 3 and 4 introduce the student to triads and seventh chords in various inversions and textures, but without placing them yet in their tonal contexts.

Part Two (Chapters 5-12) opens with two chapters on the principles of voice leading, with practice limited to root position triads. Chapter 7 follows with a systematic discussion of normative harmonic progressions. Subsequent chapters deal with triads in inversion (Chapters 8 and 9), basic elements of musical form (Chapter 10), and non-chord tones (Chapters 11 and 12).

Part Three (Chapters 13-15) is devoted entirely to diatonic seventh chords, moving from the dominant seventh in root position and inversion (Chapter 13) through the supertonic and leading-tone sevenths (Chapter 14) to the remaining diatonic seventh chords (Chapter 15).

Part Four begins the study of chromaticism with secondary functions (Chapters 16-17) and modulation (Chapters 18-19), concluding in Chapter 20 with a discussion of binary and ternary forms. Chromaticism continues to be the main topic in Part Five (Chapters 21-26), which covers mode mixture, the Neapolitan, augmented sixth chords, and enharmonicism. Some further elements, ninth chords and altered dominants among them, are the subject of the final chapter of this section.

Part Six, "Late Romanticism and the Twentieth Century," begins in Chapter 27 with a discussion of the developments and extensions in tonal practice that occurred in later nineteenth-century music. The concluding chapter provides an extensive introduction to major twentieth-century practices.

SUPPLEMENTARY MATERIALS

Workbook

Exercises in the *Workbook* are closely correlated with the corresponding chapters of the text. In each chapter, the *Workbook* exercises begin with problems similar to those found in the Self-Tests, but also incorporate more creative types of compositional problems for those instructors who include this type of work.

Cassettes

This third edition is accompanied by a new listening program, designed to make it easier to hear the text and *Workbook*'s numerous examples. A set of two cassettes is available for the text (text cassettes order code: 911862-3), and one cassette is available with the *Workbook* (*Workbook* cassette order code: 911864-X), offering 400 selections in all. All examples were recorded using the same instrumentations seen in text and *Workbook* examples.

Ⓐ A headset icon, as shown at left, indicates that a piece is contained on the cassettes.

Instructor's Manual

The *Instructor's Manual* follows the organization of the text and provides teaching notes, a key to "objective" exercises from the *Workbook*, sources from the literature for part writing exercises and composition assignments, and chapter quizzes.

NEW TO THIS EDITION

Chapter 2, "Elements of Rhythm," has been expanded, and two new sets of exercises have been added.

Because of its length, Chapter 5, "Principles of Voice Leading," has been divided into two chapters (5 and 6) in the present edition, with an expanded discussion of instrumental ranges and transpositions at the end of the new Chapter 6.

The chapter on triads in first inversion is now followed immediately by the chapter on triads in second inversion. These are followed by Chapter 10, "Cadences, Phrases, and Periods," which used to separate them.

The chapter entitled "Levels of Harmony," has been withdrawn from this edition. However, teachers interested in obtaining copies of this chapter from the second edition may do so by writing to McGraw-Hill.

Explanations and discussions have been improved and clarified throughout, with additional examples and Self-Tests. There have been some minor adjustments in terminology, such as the substitution of "major-minor seventh" for "dominant seventh" when referring to chord quality.

New summaries have been added to the end of each chapter to assist the student in reviewing the material.

The Workbook contains a number of new analytical exercises.

The Instructor's Manual has been expanded considerably. Each chapter now includes a chapter quiz (in some cases more than one) which the instructor may duplicate and use in class.

Most exciting, perhaps, is the availability in recorded form of many of the musical examples in the third edition. These recordings are, in most cases, of fine student musicians, and they should add considerably to the effectiveness of this text.

ACKNOWLEDGMENTS

Many colleagues and friends provided assistance and encouragement during the development of the first edition of this text, notably Professors Douglass Green, Jerry Grigadean, and Janet McGaughey. Reviewers of the manuscript contributed many helpful suggestions; our sincere thanks are extended to Judith Allen, University of Virginia; Michael Arenson, University of Delaware; B. Glenn Chandler, Central Connecticut State College; Herbert Colvin, Baylor University; Charles Fligel, Southern Illinois University; Roger Foltz, University of Nebraska, Omaha; Albert G. Huetteman, University of Massachusetts; William Hussey, University of Texas at Austin; Hanley Jackson, Kansas State University; Marvin Johnson, University of Alabama; Frank Lorince, West Virginia University; William L. Maxson, Eastern Washington University; Leonard Ott, University of Missouri; John Pozdro, University of Kansas; Jeffrey L. Prater, Iowa State University; Russell Riepe, Southwest Texas State University; Wayne Scott, University of Colorado; Richard Soule, University of Nevada; James Stewart, Ohio University; William Toutant, California State University at Northridge; and John D. White, University of Florida.

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Stefan Kostka
Dorothy Payne

To the Student

HARMONY IN WESTERN MUSIC

One thing that distinguishes Western art music from many other kinds of music is its preoccupation with harmony. In other words, just about any piece that you are apt to perform will involve more than one person playing or singing different notes at the same time—or, in the case of a keyboard player, more than one finger pushing down keys. There are exceptions, of course, such as works for unaccompanied flute, violin, and so on, but an implied harmonic background is often still apparent to the ear in such pieces.

In general, the music from cultures other than our own European-American culture is concerned less with harmony than with other aspects of music. Complexities of rhythm or subtleties of melodic variation, for example, might serve as the focal point in a particular musical culture. Even in our own music, some compositions, such as those for nonpitched percussion instruments, may be said to have little or no harmonic content, but they are the exception.

If harmony is so important in our music, it might be a good idea if we agreed on a definition of it. What does the expression *sing in harmony* mean to you? It probably conjures up impressions of something on the order of a barbershop quartet, or a chorus, or maybe just two people singing a song, one with the melody, the other one singing the harmony. Since harmony began historically with vocal music, this is a reasonable way to begin formulating a definition of harmony. In all of these examples, our conception of harmony involves more than one person singing at once, and the *harmony* is the sound that the combined voices produce.

Harmony is the sound that results when two or more pitches are performed simultaneously. It is the vertical aspect of music, produced by the combination of the components of the horizontal aspect.

While this book deals with harmony and with chords, which are little samples taken out of the harmony, it would be a good idea to keep in mind that musical lines (vocal or instrumental) produce the harmony, not the reverse.

Sing through the four parts in Example 1. The soprano and tenor lines are the most melodic. The actual melody being harmonized is in the soprano, while the tenor follows its contour for a while and then ends with an eighth-note figure of its own. The bass line is strong and independent but less melodic, while the alto part is probably the least distinctive of all. These four relatively independent lines combine to create harmony, with chords occurring at the rate of approximately one per beat.

Example 1. Bach, "Herzlich lieb hab' ich dich, o Herr"



The relationship between the vertical and horizontal aspects of music is a subtle one, however, and it has fluctuated ever since the beginnings of harmony (about the ninth century). At times the emphasis has been almost entirely on independent horizontal lines, with little attention paid to the resulting chords—a tendency easily seen in the twentieth century. At other times the independence of the lines has been weakened or is absent entirely. In Example 2 the only independent lines are the sustained bass note and the melody (highest notes). The other lines merely double the melody at various intervals, creating a very nontraditional succession of chords.

Example 2. Debussy, "La Cathédrale engloutie," from *Preludes*, Book I

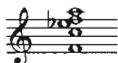
Sonore sans dureté

TONAL HARMONY DEFINED

The kind of harmony that this book deals with primarily is usually called *tonal harmony*. The term refers to the harmonic style of music composed during the period from about 1650 to about 1900. This would include such composers as Purcell, Bach, Handel, Haydn, Mozart, Beethoven, Schubert, Schumann, Wagner, Brahms, Tchaikovsky, and all of their contemporaries.

Much of today's popular music is based on tonal harmony, just as Bach's music was, which means that both types have a good deal in common. First, both make use of a *tonal center*, a pitch class* that provides a center of gravity. Second, both types of music make use almost exclusively of major and minor scales. Third, both use chords that are tertian in structure. *Tertian* means "built of thirds," so a tertian chord might be C-E-G, a nontertian one C-F-B. Fourth, and very important, is that the chords built on the various scale degrees relate to one another and to the tonal center in fairly complex ways. Because each chord tends to have more or less standard roles, or functions, within a key, this characteristic is sometimes referred to as *functional* harmony. The details of these relationships between chords will be discussed more fully in the text; but to get an idea of what it's all about, play the chord of Example 3 on the piano.†

Example 3.



Play it several times. Arpeggiate it up and down. The "function" of this chord is clear, isn't it? Somehow, you know a lot about this chord without having to read a book about it. Play it again, and listen to where the chord "wants" to go. Then play Example 4, which will seem to follow Example 3 perfectly. This is an example of what is meant by the relationships between chords in tonal harmony and why we sometimes use the term *functional harmony*.

*Pitch class: Notes an octave apart or enharmonically equivalent belong to the same pitch class (all C's, B♯'s, and D♭'s, for example). There are twelve pitch classes in all.

†If you cannot arrange to be at a piano while reading this book, try to play through the examples just before or right after reading a particular section or chapter. Reading about music without hearing it is not only dull, it's uninformative.

Example 4.



Tonal harmony is not limited to the period 1650-1900. It began evolving long before 1650, and it is still around today. Turn on your radio, go to a nightclub, listen to the canned music in the supermarket—it's almost all tonal harmony. Then why do we put the demise of tonal harmony at 1900? Because from about that time, most composers of "serious," or "legitimate," or "concert" music have been more interested in nontonal harmony than in tonal harmony. This does not mean that tonal harmony ceased to exist in the real world or in music of artistic merit. Also, it is important to realize that not all music with a tonal center makes use of functional harmony—especially a good deal of the music of the twentieth century—music by composers such as Bartók and Hindemith, for example.

From our discussion we can formulate this definition of tonal harmony:

Tonal harmony refers to music with a tonal center, based on major and/or minor scales, and using tertian chords that are related to one another and to the tonal center in various ways.

USING THIS TEXT

The information in this text is organized in the traditional chapter format, but there are several additional features of which you should be aware.

Self-Tests.

All chapters contain one or more such sections. These Self-Tests contain questions and drill material for use in independent study or classroom discussion. Suggested answers to all Self-Test problems appear in Appendix B. In many cases more than one correct answer is possible, but only one answer will be given in Appendix B. If you are in doubt about the correctness of your answer, ask your instructor.

Exercises.

After each Self-Test section, we refer to a group of Exercises to be found in the Workbook. Most of the Workbook Exercises will be similar to those in the preceding Self-Test, so refer to the Self-Test if you have questions concerning completion of the Exercises. However, the Workbook will also often contain more creative compositional problems than appeared in the Self-Test, since it would be impossible to suggest "answers" to such problems if they were used as Self-Tests.

Checkpoints.

You will occasionally encounter a Checkpoint section. These are intended to jog your memory and to help you review what you have just read. No answers are given to Checkpoint questions.

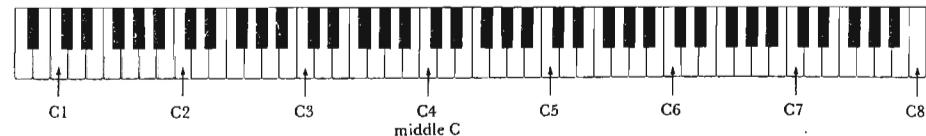
P A R T



Fundamentals

THE KEYBOARD AND OCTAVE REGISTERS

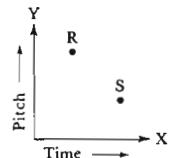
Pitch in music refers to the highness or lowness of a sound. Pitches are named by using the first seven letters of the alphabet: A, B, C, D, E, F, and G. We will approach the notation of pitch by relating this pitch alphabet to the keyboard, using C's as an example. The C nearest the middle of the keyboard is called *middle C* or C4. Higher C's (moving toward the right on the keyboard) are named C5, C6, and so on. Lower C's (moving left) are named C3, C2, and C1. All the C's on the piano are labeled in Example 1-1.

Example 1-1.

From any C up to or down to the next C is called an *octave*. All the pitches from one C up to, but not including, the next C are said to be in the same *octave register*. As Example 1-2 illustrates, the white key above C4 would be named D4, because it is in the same octave register, but the white key below C4 would be named B3.

Example 1-2.**NOTATION ON THE STAFF**

Our system of musical notation is similar to a graph in which time is indicated on the X axis and pitch is shown on the Y axis. In Example 1-3 R occurs before S in time and is higher than S in pitch.

Example 1-3.

A *staff* is used in music to indicate the precise pitch desired. A staff consists of five lines and four spaces, but it may be extended indefinitely through the use of *ledger lines* (Ex. 1-4).

Example 1-4.

A *clef* must appear at the beginning of the staff in order to indicate which pitches are to be associated with which lines and spaces. The three clefs commonly used today are shown in Example 1-5, and the position of C4 in each is illustrated. Notice that the C clef appears in either of two positions.

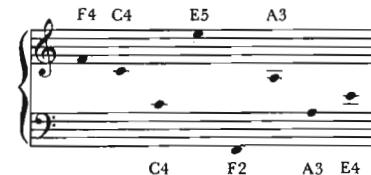
Example 1-5.

Generic name:	G clef	F clef	C clef	C clef
Specific name:	Treble clef	Bass clef	Alto clef	Tenor clef



The clefs in Example 1-5 are shown in the positions that are in common use today, but you may occasionally find them placed differently on the staff in some editions. Wherever they appear, the design of the G clef circles G4, the dots of the F clef surround F3, and the C clef is centered on C4.

The *grand staff* is a combination of two staves joined by a *brace*, with the top and bottom staves using treble and bass clefs, respectively. Various pitches are notated and labeled on the grand staff in Example 1-6. Pay special attention to the way in which the ledger lines are used on the grand staff. For instance, the notes C4 and A3 appear twice in Example 1-6, once in relation to the top staff and once in relation to the bottom staff.

Example 1-6.**SELF-TEST 1-1**

(Answers begin on page 559.)

A. Name the pitches in the blanks provided, using the correct octave register designations.

B. Notate the indicated pitches on the staff in the correct octave.

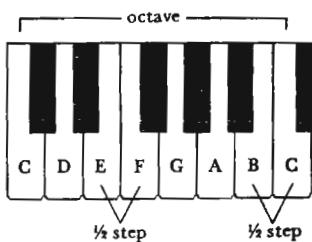
A musical staff diagram for Exercise 1-1. It consists of two staves. The top staff has a treble clef and a bass clef, and the bottom staff has a bass clef. The notes are labeled with their corresponding pitch names: F4, B5, A4, A3, G2, D4, C4, G3, B4, C4, D3, and F4. The bottom staff also includes labels E4, A2, F3, C6, B3, G4, B2, E5, D3, C4, B1, G3, D5, F2, and D4.

EXERCISE 1-1. See Workbook.

THE MAJOR SCALE

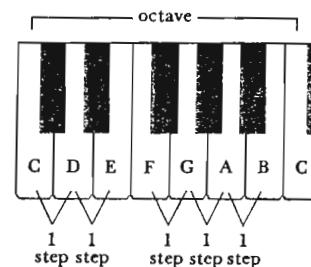
The *major scale* is a specific pattern of small steps (called half steps) and larger ones (called whole steps) encompassing an octave. A *half step* is the distance from a key on the piano to the very next key, white or black. Using only the white keys on the piano keyboard, there are two half steps in each octave (Ex. 1-7).

Example 1-7.

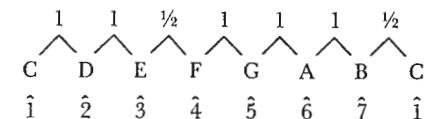


A *whole step* skips the very next key and goes instead to the following one. Using only the white keys on the piano keyboard, there are five whole steps in each octave (Ex. 1-8).

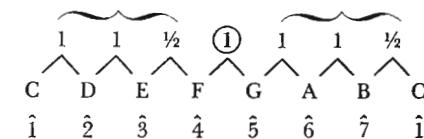
Example 1-8.



The major scale pattern of whole and half steps is the same as that found on the white keys from any C up to the next C. In the diagram below, the numbers with carats above them ($\hat{1}$, $\hat{2}$, etc.) are scale degree numbers for the C major scale.*



You can see from this diagram that half steps in the major scale occur only between scale degrees $\hat{3}$ and $\hat{4}$ and $\hat{7}$ and $\hat{1}$. Notice also that the major scale can be thought of as two identical, four-note patterns separated by a whole step.

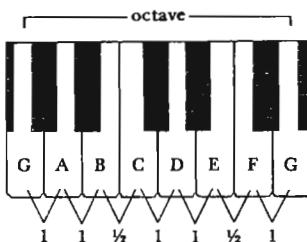


*Throughout this book we will refer to major scales with upper-case letters—for example, A major or A—and minor scales with lower-case letters—for example, a minor or a.

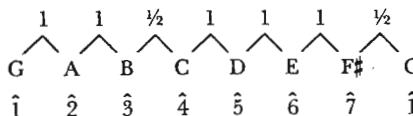
If we examine the steps on the white keys of a G-to-G octave, as in Example 1-9, we do not find the same pattern of whole and half steps that occurred in the C-to-C octave. In order to play a G major scale, we would need to skip the F key and play the black key that is between F and G. We will label that key with an *accidental*, a symbol that raises or lowers a pitch by a half or whole step. All the possible accidentals are listed in this table.

Symbol	Name	Effect
x	Double sharp	Raise a whole step
#	Sharp	Raise a half step
natural sign	Natural	Cancel a previous accidental
b	Flat	Lower a half step
bb	Double flat	Lower a whole step

Example 1-9.



We can make our G scale conform to the major scale pattern by adding one accidental, in this case a sharp.



The scale is written on the staff in Example 1-10.

Example 1-10.



Notice that when we write or say the names of notes and accidentals, we put the accidental last (as in F# or F-sharp), but in staff notation the accidental always *precedes* the note that it modifies (as in Ex. 1-10).

THE MAJOR KEY SIGNATURES

One way to learn the major scales is by means of the pattern of whole and half steps discussed in the previous section. Another is by memorizing the key signatures associated with the various scales. The term *key* is used in music to identify the first degree of a scale. For instance, the *key of G major* refers to the major scale that begins on G. A *key signature* is a pattern of sharps or flats that appears at the beginning of a staff and indicates that certain notes are to be consistently raised or lowered. There are seven key signatures using sharps. In each case, the name of the major key can be found by going up a half step from the last sharp (Ex. 1-11).

Example 1-11.

There are also seven key signatures using flats. Except for the key of F major, the name of the major key is the same as the name of the next-to-last flat (Ex. 1-12).

Example 1-12.

F major B_b major E_b major A_b major D_b major G_b major C_b major

1 flat 2 flats 3 flats 4 flats 5 flats 6 flats 7 flats

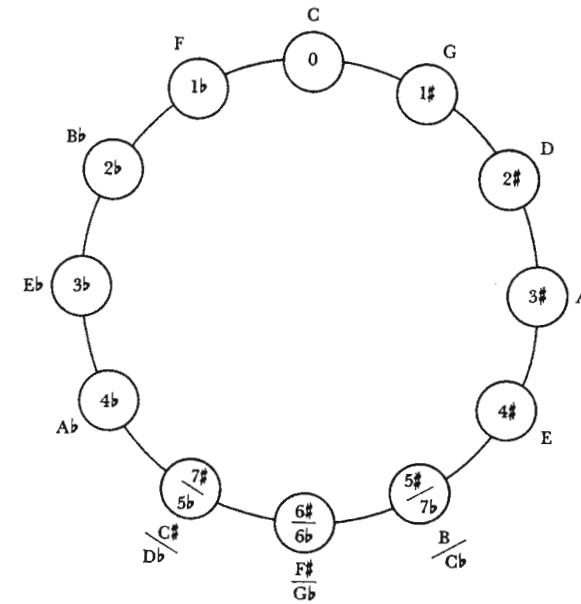
You may have noticed that there are three pairs of major keys that would sound exactly the same—that is, they would be played on the very same keys of the piano keyboard.

$$\begin{array}{ll} \text{B major} & = \text{C}\flat \text{ major} \\ \text{F}\sharp \text{ major} & = \text{G}\flat \text{ major} \\ \text{C}\sharp \text{ major} & = \text{D}\flat \text{ major} \end{array}$$

Notes that are spelled differently but sound the same are said to be *enharmonic*; so B major and C_b major, for example, are *enharmonic keys*. If two major keys are not enharmonic, then they are *transpositions* of each other. To *transpose* means to write or play music in some key other than the original.

The key signatures in Examples 1-11 and 1-12 must be memorized—not only the number of accidentals involved, but also their order and placement upon the staff. Notice that the pattern of placing the sharps on the staff changes at the fifth sharp for both the treble and the bass clefs. Try repeating the order of accidentals for sharps (FCGDAEB) and for flats (BEADGCF) until you feel confident with them.

Some people find it easier to memorize key signatures if they visualize a *circle of fifths*, which is a diagram somewhat like the face of a clock. Reading clockwise around the circle of fifths below, you will see that each new key begins on 5 (the fifth scale degree) of the previous key.



SELF-TEST 1-2

(Answers begin on page 560.)

- A. Notate the specified scales using accidentals, *not* key signatures. Show the placement of whole and half steps, as in the example.

C major

E major

D_b major

B_b major

C[#] major A major

The first staff shows a treble clef, a C sharp symbol, and a common time signature. The second staff shows a bass clef, a common time signature, and no sharps or flats.

F major F[#] major

The first staff shows a bass clef, two sharps, and a common time signature. The second staff shows a bass clef, three sharps, and a common time signature.

B. Identify these major key signatures.

Ex. C major 1 major 2 major 3 major 4 major 5 major 6 major 7 major

C. Notate the specified key signatures.

A major D_b major F[#] major B_b major B major C_b major D major C major

D. Fill in the blanks.

Key signature	Name of key	Key signature	Name of key
1. Three flats	_____ major	8. _____	B _b major
2. Seven sharps	_____ major	9. One sharp	_____ major
3. _____	D major	10. Five flats	_____ major
4. One flat	_____ major	11. _____	F [#] major
5. _____	A _b major	12. _____	C _b major
6. _____	B major	13. Four sharps	_____ major
7. Six flats	_____ major	14. _____	A major

EXERCISE 1-2. See Workbook.

MINOR SCALES

Musicians traditionally memorize and practice three minor scale formations, although they are not used with equal frequency, as we shall see in a later chapter. One of these is the *natural minor scale*. You can see from the illustration below that the natural minor scale is like a major scale with lowered 3, 6, and 7.

C major	C	D	E	F	G	A	B	C
Scale degree	1	2	3	4	5	6	7	1
c natural minor	C	D	E _b	F	G	A _b	B _b	C

Another minor scale type is the *harmonic minor scale*, which can be thought of as major with lowered 3 and 6.

C major	C	D	E	F	G	A	B	C
Scale degree	1	2	3	4	5	6	7	1
c harmonic minor	C	D	E _b	F	G	A _b	B	C

The third type of minor scale is the *melodic minor scale*, which has an ascending form and a descending form. The ascending form, shown below, is like major with a lowered 3.

C major	C	D	E	F	G	A	B	C
Scale degree	1	2	3	4	5	6	7	1
c ascending melodic minor	C	D	E _b	F	G	A	B	C

The descending form of the melodic minor scale is the same as the natural minor scale.

The three minor scale types are summarized in Example 1-13. The scale degrees that differ from the major are circled. Notice the arrows used in connection with the melodic minor scale in order to distinguish the ascending $\hat{6}$ and $\hat{7}$ from the descending $\hat{6}$ and $\hat{7}$.

Example 1-13.

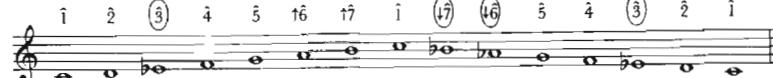
Natural minor



Harmonic minor



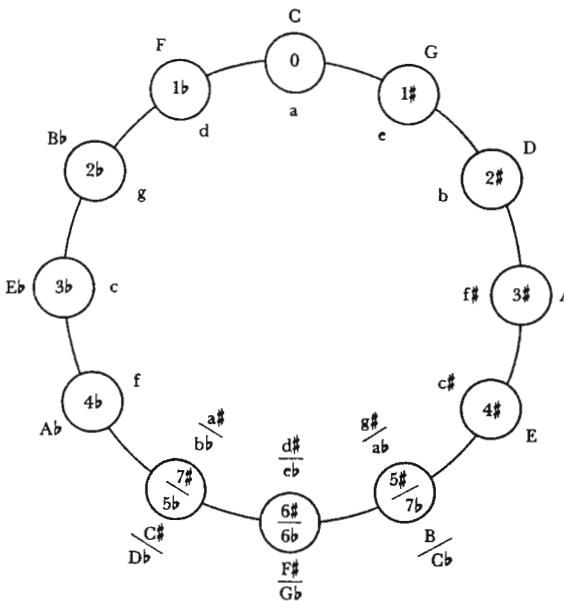
Melodic minor



MINOR KEY SIGNATURES

Minor key signatures conform to the natural minor scale, no matter which minor scale type is actually in use. Looking back at Example 1-13, you can see that the natural minor scale on C requires three accidentals: B-flat, E-flat, and A-flat. The key signature of c minor, then, is the same as the key signature of E-flat major; c minor and E-flat major are said to be *relatives*, since they share the same key signature. The $\hat{3}$ of any minor key is $\hat{1}$ of its relative major and the $\hat{6}$ of any major key is $\hat{1}$ of its relative minor. If a major scale and a minor scale share the same $\hat{1}$, as do C major and c minor, for example, they are said to be *parallels*. We would say that C major is the parallel major of c minor.

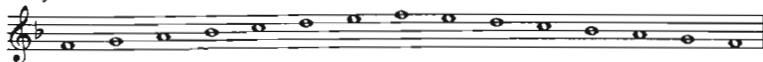
The circle of fifths is a convenient way to display the names of the minor keys and their *relative* majors, as well as their key signatures.



You may find it easier to learn the minor scales in terms of their relative majors, as in the circle-of-fifths diagram above, than in terms of their parallel majors, which is how minor scales were introduced on pages 13-14. This will be most helpful regarding the keys of g \sharp , d \sharp , and a \sharp , which have no parallel major forms. If you do use the relative major approach, remember that the key signature for any minor scale conforms to the *natural* minor scale and that accidentals must be used in order to spell the other forms. Example 1-14 illustrates the spellings for the related keys of F major and d minor.

Example 1-14.

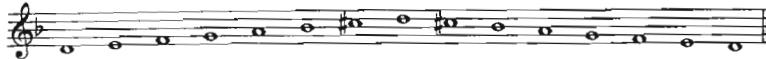
F major scale



Relative minor, natural form



Harmonic minor raises 7



Melodic minor raises 6 and 7, ascending only



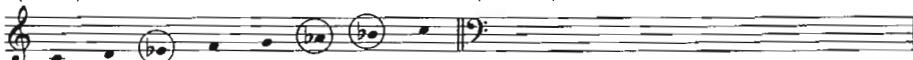
It is very important to practice faithfully all of the major and minor scales on an instrument until they become memorized patterns. An intellectual understanding of scales cannot substitute for the secure tactile and aural familiarity that will result from those hours of practice.

SELF-TEST 1-3

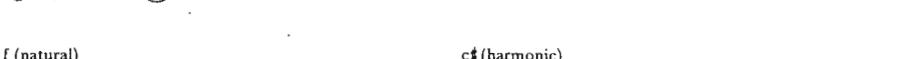
(Answers begin on page 561.)

- A. Notate the specified scales using accidentals, *not* key signatures. Circle the notes that differ from the *parallel* major scale. The melodic minor should be written both ascending and descending.

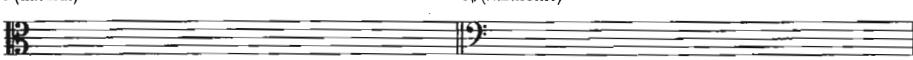
c (natural)



a (harmonic)



f (natural)



c# (harmonic)

eb (melodic)



b (natural)



g# (harmonic)



f# (melodic)



- B. Identify these minor key signatures.



- C. Notate the specified minor key signatures.



- D. Fill in the blanks.

Key signature

1. _____

d minor

2. Six flats

____ minor

3. Four sharps

____ minor

4. _____

f# minor

5. Six sharps

____ minor

6. _____

bb minor

7. _____

a# minor

Name of key

d minor

f minor

b minor

ab minor

bb minor

a# minor

Key signature

8. Two flats

____ minor

f minor

b minor

ab minor

bb minor

a# minor

Name of key

____ minor

f minor

b minor

ab minor

bb minor

a# minor

bb minor

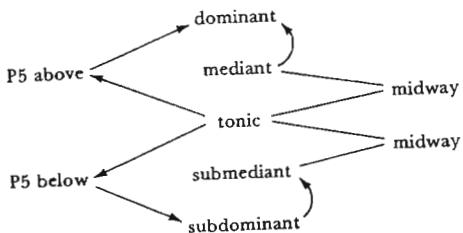
SCALE DEGREE NAMES

Musicians in conversation or in writing often refer to scale degrees by a set of traditional names rather than by numbers. The names are shown in Example 1-15. Notice that there are two names for $\hat{7}$ in minor, depending upon whether it is raised or not.

Example 1-15.

A musical staff in G major (one sharp) with seven notes. Below the staff, the notes are labeled with their traditional names: tonic, supertonic, mediant, subdominant, dominant, submediant, and (subtonic) leading tone. The note before the leading tone is also labeled with a brace as (subtonic).

The origin of some of these names is not what you would probably expect from studying Example 1-15. For example, *subdominant* does not mean "below the dominant," as the chart below illustrates.



CHECKPOINT

Now is the time to start learning the scale degree names, if you do not know them already. Here are a couple of exercises that will help.

1. Translate these numbers aloud to scale degree names as fast as possible.

Repeat as often as necessary until speed is attained.

$\hat{1} \hat{2} \hat{3} \hat{4} \hat{5} \hat{6} \hat{7} \hat{1} \hat{7} \hat{6} \hat{5} \hat{4} \hat{3} \hat{2} \hat{1}$

$\hat{3} \hat{5} \hat{7} \hat{6} \hat{4} \hat{2} \hat{1} \hat{6} \hat{3} \hat{7} \hat{2} \hat{5} \hat{4} \hat{3} \hat{1}$

$\hat{5} \hat{2} \hat{7} \hat{4} \hat{6} \hat{3} \hat{1} \hat{2} \hat{7} \hat{5} \hat{6} \hat{4} \hat{1} \hat{3} \hat{2}$

2. Call out or sing the scale degree names contained in each example below.

A musical staff in C major (no sharps or flats) with seven notes. Below the staff, it is labeled "C:".

A musical staff in G major (one sharp) with seven notes. Below the staff, it is labeled "G:".

A musical staff in D major (two sharps) with seven notes. Below the staff, it is labeled "d:".

INTERVALS

An *interval* is the measurement of the distance in pitch between two notes. A *harmonic interval* results if the notes are performed at the same time, while a *melodic interval* occurs when the notes are played successively (Ex. 1-16). The method of measuring intervals is the same for both harmonic and melodic intervals.

Example 1-16.

A musical staff showing two groups of notes. The first group is labeled "Harmonic intervals" and the second group is labeled "Melodic intervals".

There are two parts to any interval name: the numerical name and the modifier that precedes the numerical name. As Example 1-17 illustrates, the numerical name is a measurement of how far apart the notes are vertically on the staff, regardless of what accidentals are involved.

Example 1-17.

1 2 3 3 3 3 4 (etc.)

In speaking about intervals, we use the terms *unison* instead of 1 and *octave* (8ve) instead of 8. We also say 2nd instead of "two," 3rd instead of "three," and so on. Intervals smaller than an 8ve are called *simple intervals*, while the larger intervals (including the 8ve) are called *compound intervals*.

It is important to notice in Example 1-17 that the harmonic interval of a 2nd is notated with the top note offset a little to the right of the bottom note. Accidentals are handled the same way for harmonic intervals of a 2nd, 3rd, or 4th, if both of the notes require an accidental.

SELF-TEST 1-4

(Answers begin on page 562.)

Provide the numerical names of the intervals by using the numbers 1 through 8.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

EXERCISE 1-4. See Workbook.**PERFECT, MAJOR, AND MINOR INTERVALS**

One way to begin learning intervals is by relating them to the intervals contained in the major scale, specifically the intervals from $\hat{1}$ up to the other scale degrees. This method can then be applied in any context, whether or not the major scale is actually being used.

The term *perfect* (abbreviated P) is a modifier used only in connection with unisons, 4ths, 5ths, 8ves, and their compounds (11ths, and so on). As Example 1-18 illustrates, a P1, P4, P5, and P8 can all be constructed by using $\hat{1}$ in the major scale as the bottom note.

Example 1-18.

If we want to spell one of these intervals above Eb, for example, we need only to think of scale steps $\hat{1}$, $\hat{4}$, and $\hat{5}$ of the Eb major scale. If the bottom note does not commonly serve as $\hat{1}$ of a major scale (such as D \sharp), remove the accidental temporarily, spell the interval, and then apply the accidental to both notes (Ex. 1-19).

Example 1-19.

P5 above
D \sharp = ?

P5 above
D \sharp = A \sharp

P5 above
D \sharp = A \sharp

Usually, 2nds, 3rds, 6ths, and 7ths are modified by the terms *major* (M) or *minor* (m). The intervals formed by $\hat{1}\text{-}\hat{2}$, $\hat{1}\text{-}\hat{3}$, $\hat{1}\text{-}\hat{6}$, and $\hat{1}\text{-}\hat{7}$ in the major scale are all major intervals, as Example 1-20 illustrates.

Example 1-20.

If a major interval is made a half step smaller without altering its numerical name, it becomes a minor interval (Ex. 1-21).

Example 1-21.

A musical staff in G clef with notes and their corresponding interval names below them: M2, m2, M3, m3, M6, m6, M7, and m7.

SELF-TEST 1-5

(Answers begin on page 562.)

- A. All the intervals below are unisons, 4ths, 5ths, or 8ves. Put "P" in the space provided *only* if the interval is a perfect interval.

A musical staff with numbered intervals below the notes: 5, 2, 4, 3, 1, 4, 5, 5, 8, 6, 4, 7, 5, 8, 4, 9, 5, 10.

- B. All of the intervals below are 2nds, 3rds, 6ths, or 7ths. Write "M" or "m" in each space, as appropriate.

A musical staff with numbered intervals below the notes: 3, 2, 6, 3, 7, 4, 2, 5, 6, 6, 2, 7, 3, 8, 7, 9, 6, 10.

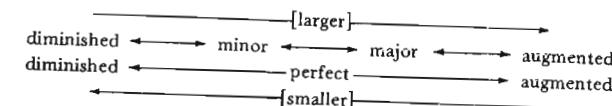
- C. Notate the specified intervals above the given notes.

A musical staff with numbered intervals above the notes: m2, P4, M6, m3, P5, m6, P8, M2, M7, P4.

A musical staff with numbered intervals above the notes: M3, P5, m7, m2, M6, P5, P8, M7, M3, m7.

EXERCISE 1-5. See Workbook.**AUGMENTED AND DIMINISHED INTERVALS**

If a perfect or a major interval is made a half step larger without changing the numerical name, the interval becomes *augmented* (abbreviated +). If a perfect or a minor interval is made a half step smaller without changing its numerical name, it becomes *diminished* (abbreviated °). These relationships are summarized below.



There is no such thing as a diminished unison. Doubly augmented and doubly diminished intervals are possible, but they seldom occur. *Tritone* is a term used for the +4 or its enharmonic equivalent, the °5.

INVERSION OF INTERVALS

Descending intervals, especially large ones, are often easier to spell and identify through the use of *interval inversion*. We invert an interval by putting the bottom pitch above the top one; for example, the interval D-A inverts to A-D. When we invert an interval, the new numerical name is always different from the old one. The new numerical name can be calculated by subtracting the old numerical name from 9.

Constant value of 9	9	9	9°	9	9	9
Minus old numeric name	-2	-3	-4	-5	-6	-7
Equals new numeric name	7	6	5	4	3	2

You can see that an inverted 2nd becomes a 7th, a 3rd becomes a 6th, and so on (Ex. 1-22).

24 Elements of Pitch

Example 1-22.



The modifier also changes when an interval is inverted, with the exception of perfect intervals.

Old modifier	m	M	P	+	o
New modifier	M	m	p	o	+

As an example of the usefulness of inversion, suppose you wanted to know what note lies a m6 below G3. Invert the m6 down to a M3 up, as in Example 1-23, transpose the B3 down an 8ve, and you find that the answer is B2.

Example 1-23.

Fluency with intervals, as with scales, is necessary for any serious musician and will provide a solid foundation for your further study. As you did with scales, you will benefit from finding out how various intervals sound and feel on a musical instrument.

One exercise you can do (you can think of others) is to write out the notes of the chromatic scale in random order. Include each black key twice—once as a sharped note and once as a flattened note. Then play some interval above and below each note. Work for speed, using your ear to correct yourself.

SUMMARY

Pitch in music refers to the highness or lowness of a sound. Particular pitches are named by using the *musical alphabet*, consisting of the letters A through G, at which point the alphabet starts over. From one letter up or down to its next occurrence is called an *octave*, while the space from any C up to the next B is called an *octave register*. Octave registers are numbered, with the lowest C on the *piano keyboard* designated as C1. The C nearest the middle of the piano keyboard is called *middle C*, or C4.

Pitches are notated on the *staff*, an arrangement of five lines and four spaces that can be extended through the use of *ledger lines*. A staff always begins with one of several *clefs*, which determine exactly what pitch is represented by each line or space. A *grand staff* consists of two staves joined by a brace, with a treble clef on the top staff and a bass clef on the bottom staff.

The *major scale* consists of a particular arrangement of *whole steps* and *half steps*. Most major scales also have a *parallel minor scale* that begins on the same note but that lowers scale degrees 3, 6, and 7 by a half step. This form of the minor is called the *natural minor scale*. The *harmonic minor scale* lowers only scale degrees 3 and 6 of its parallel major, while the *melodic minor scale* lowers scale degree 3 when ascending and scale degrees 3, 6 and 7 when descending.

Every scale has an associated *key signature*, consisting of zero to seven sharps or flats arranged in a particular way on the staff. There are 15 key signatures in all, with one major and one minor scale associated with each. Major and minor keys that share the same key signature are said to be *relative keys*. The notes of a scale are all assigned *scale degree names*, which vary only slightly between major and minor. *Enharmonic* notes or keys sound the same but are spelled differently. To *transpose* music means to play it in another key.

The difference between any two pitches is called an *interval*. A *harmonic interval* separates pitches that are sounded simultaneously, while a *melodic interval* separates pitches that are sounded in succession. Intervals are defined by means of a numerical name and a modifier that precedes it. These modifiers include the terms *perfect*, *major*, *minor*, *augmented*, and *diminished*. To *invert* an interval, put the lower note above the upper one (or the reverse). The numerical name and modifier of an inverted interval can be predicted using the method explained in this chapter.

SELF-TEST 1-6

(Answers begin on page 562.)

A. Most of the intervals below are either augmented or diminished. Label each interval.

1 2 3 4 5 6 7 8 9 10

B. Label what each interval becomes when it is inverted.

- | | |
|---------------------|-------------------------------|
| 1. P4 becomes _____ | 5. P^5 becomes _____ |
| 2. M7 becomes _____ | 6. m2 becomes _____ |
| 3. +2 becomes _____ | 7. m6 becomes _____ |
| 4. M3 becomes _____ | 8. +6 becomes _____ |

C. Notate the specified interval *below* the given note. (You may find it helpful to invert the interval first in some cases.)

P5 $\text{m}7$ $\text{m}3$ M6 +4 M7 +5 m6 M2 P7
1 2 3 4 5 6 7 8 9 10

D. Label each interval in this melody (from Wagner's *Götterdämmerung*).

1 2 3 4 5 6 7 8 9 10 11 12

EXERCISE 1-6. See Workbook.

CHAPTER 2

Elements of Rhythm**RHYTHM**

This chapter is concerned with the time aspect of music—how sounds are notated so that they will occur at a predictable moment and in a predetermined pattern. *Rhythm* is a general term used to refer to the time aspect of music, as contrasted with the pitch aspect.

DURATIONAL SYMBOLS

Durations are notated by using symbols that are organized so that each symbol is twice the duration of the next shorter symbol and half the duration of the next longer symbol. The table below lists a number of these symbols.

Value	Note	Rest
Breve		
Whole		
Half		
Quarter		
Eighth		
Sixteenth		

The same series could be continued to thirty-seconds, sixty-fourths, and so on. Durations other than these must be indicated through the use of ties, dots, or other symbols. A *tie* is a curved line that connects two notes, creating

a new duration that is equal to their sum. A *dot* always adds to the duration one-half the value of the note, rest, or dot that precedes it. For example, $\text{J} = \text{J.J}$ and $\text{J..} = \text{J.J.J}$. When notated on the staff, a dot is never placed on a staff line. If the notehead itself is on a staff line, the dot is put to the right of the note but in the space *above* it.

BEAT AND TEMPO

The *beat* is the basic pulse of a musical passage. To determine the beat of a passage you are listening to, tap your foot to the music or try to imagine the way a conductor would conduct the passage—the conductor's arm movement. The resulting steady pulse is called the *beat*, and the rate at which the beats occur is called the *tempo*.

A composer commonly specifies the tempo of a passage by one of two methods—sometimes by both. The first method uses words, often in Italian, to describe the tempo.

<i>Italian</i>	<i>English</i>	<i>German</i>	<i>French</i>
Grave	Solemn	Schwer	Lourd
Largo	Broad	Breit	Large
Lento	Slow	Langsam	Lent
Adagio	Slow	Langsam	Lent
Andante	Moderately slow	Gehend	Allant
Moderato	Moderate	Mässig	Modéré
Allegretto	Moderately fast	Etwas bewegt	Un peu animé
Allegro	Fast	Schnell	Animé
Vivace	Lively	Lebhaft	Vif
Presto	Very fast	Eilig	Vite

The second method is more exact, since it shows precisely how many beats are to occur in the space of one minute. For example, if the desired tempo would result in seventy-two quarter notes in one minute, the tempo indication would be $\text{J} = 72$ or M.M. $\text{J} = 72$. The M.M. stands for Maelzel's metronome, after Johann Maelzel, who widely promoted the device during the early nineteenth century.

METER

Beats tend to be grouped into patterns that are consistent throughout a passage; the pattern of beats is called the *meter*. Groups of two, three, and four beats are the most common, although other meters occur. Incidentally, a group of four beats could often also be interpreted as two groups of two beats each, and vice versa. In any case, the groups of beats are called *measures* (abbreviated m. or mm.), and in notation the end of a measure is always indicated by a vertical line through the staff called a *bar line*. The words *duple*, *triple*, and *quadruple* are used to refer to the number of beats in each measure, so we have *duple meter*, *triple meter*, and *quadruple meter*. These terms are summarized below, along with the pattern of stresses usually found in each meter (referred to as *metric accent*).

<i>Grouping</i>	<i>Meter type</i>	<i>Metric accent pattern</i>
Two-beat measure	Duple	Strong-weak
Three-beat measure	Triple	Strong-weak-weak
Four-beat measure	Quadruple	Strong-weak-less strong-weak

As you might imagine, most marches are in duple meter, since people have two feet, while contemporary popular music tends to be in duple or quadruple meter. Waltzes are always in triple meter, as are a number of traditional songs such as "Amazing Grace" and "Scarborough Fair."

The meter of many passages is clear and easily identified, but in other cases the meter may be ambiguous. For example, sing "Take Me Out to the Ball Game" quite slowly while you tap your foot or conduct, then decide upon the meter type. Now sing it again, but very fast. The first time you probably felt the meter was triple, but at a faster tempo you should have identified the meter as duple (or quadruple). Between those extreme tempos are more moderate tempos, which two listeners might interpret in different ways—one hearing a faster triple meter, the other a slower duple meter. Both listeners would be correct, because identifying meter is a matter of interpretation rather than of right and wrong.

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SELF-TEST 2-1

(Answers begin on page 563.)

- A. Show how many notes or rests of the shorter duration would be required to equal the longer duration.

ex. $\frac{1}{2} \times 2 = \bullet$

1. $\frac{1}{2} \times \underline{\quad} = \bullet$

2. $\frac{1}{2} \times \underline{\quad} = \bullet$

3. $\frac{1}{2} \times \underline{\quad} = \bullet$

4. $\frac{1}{2} \times \underline{\quad} = \bullet$

5. $\frac{1}{2} \times \underline{\quad} = \underline{\quad}$

6. $\frac{1}{2} \times \underline{\quad} = \gamma$

7. $\frac{1}{2} \times \underline{\quad} = \underline{\quad}$

8. $\frac{1}{2} \times \underline{\quad} = \bullet..$

9. $\frac{1}{2} \times \underline{\quad} = \bullet\bullet$

10. $\frac{1}{2} \times \underline{\quad} = \bullet$

11. $\frac{1}{2} \times \underline{\quad} = \underline{\quad}$

12. $\frac{1}{2} \times \underline{\quad} = \underline{\quad}$

13. $\frac{1}{2} \times \underline{\quad} = \gamma$

14. $\frac{1}{2} \times \underline{\quad} = \underline{\quad}$

15. $\frac{1}{2} \times \underline{\quad} = \bullet$

16. $\frac{1}{2} \times \underline{\quad} = \bullet..$

- B. Sing aloud each of the songs listed below. Then identify the meter type of each, using the terms *duple*, *triple*, and *quadruple*.

1. "Silent Night" (slow tempo) _____

2. "Jingle Bells" _____

3. "America the Beautiful" _____

4. "Seventy-Six Trombones" _____

5. "Home on the Range" _____

- C. Scale review. Given the key and the scale degree, supply the note name. Assume the *melodic minor* form for each minor key.

ex. f#: $\hat{4}$ **B**

1. D#: $\hat{6}$ _____

2. f: $\hat{3}$ _____

3. A: $\hat{5}$ _____

4. B: $\hat{3}$ _____

5. g: $\hat{1}\hat{6}$ _____

6. c#: $\hat{1}\hat{7}$ _____

7. Eb: $\hat{5}$ _____

8. Bb: $\hat{4}$ _____

9. c: $\hat{1}\hat{6}$ _____

10. e: $\hat{4}$ _____

11. Ab: $\hat{7}$ _____

12. F#: $\hat{2}$ _____

13. bb: $\hat{5}$ _____

14. E: $\hat{6}$ _____

15. d: $\hat{1}\hat{7}$ _____

EXERCISE 2-1. See Workbook.

DIVISION OF THE BEAT

In most musical passages we hear durations that are shorter than the beat. We call these shorter durations *divisions of the beat*. Beats generally divide either into two equal parts, called *simple beat*, or into three equal parts, called *compound beat*. Be careful not to confuse beat type, which refers to how the *beat* divides (simple or compound), with meter type, which refers to how the *measure* divides (duple, triple, or quadruple). The common beat and meter types can be combined with each other in six possible ways.

Beat	Meter		
	Duple	Triple	Quadruple
Simple	Simple duple	Simple triple	Simple quadruple
Compound	Compound duple	Compound triple	Compound quadruple

For example, sing "Take Me Out to the Ball Game" quickly in duple meter, as you did in the discussion of meter on page 29. You can hear that the beats divide into thirds, so this is an example of compound duple. Do the same with "I Don't Know How to Love Him" (from *Jesus Christ Superstar*) or "Around Her Neck She Wore a Yellow Ribbon," and you will find that both are simple duple (or simple quadruple).

SELF-TEST 2-2

(Answers begin on page 564.)

Sing aloud each of the songs listed below. Then identify the beat and meter types of each, using the terms simple, simple duplet, and so on.

1. "Auld Lang Syne" _____
2. "Pop Goes the Weasel" _____
3. "Silent Night" _____
4. "Jingle Bells" _____
5. "Seventy-Six Trombones" _____

SIMPLE TIME SIGNATURES

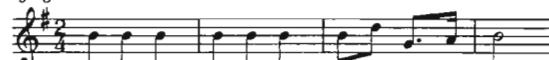
A *time signature* is a symbol that tells the performer how many beats will occur in each measure, what note value will represent the beat, and whether the beat is simple or compound. A time signature for simple beat has 2, 3, or 4 as the top number. The top number indicates the number of beats in the measure; the bottom number indicates the beat note ($2 = \text{d}$, $4 = \text{d}$, $8 = \text{h}$, and so on). Some typical simple time signatures are listed in the following table.

Time signature	Beats per measure	Beat note	Division of the beat
$\frac{2}{4}$	2	d	$\text{d} \text{ d}$
$\frac{2}{2}$ or C	2	d	$\text{d} \text{ d}$
$\frac{3}{16}$	3	h	$\text{h} \text{ h} \text{ h}$
$\frac{3}{4}$	3	d	$\text{d} \text{ d}$
$\frac{4}{8}$	4	h	$\text{h} \text{ h}$
$\frac{4}{4}$ or C	4	d	$\text{d} \text{ d}$

Example 2-1 illustrates how some of the songs we have been considering might be notated. The beat values were chosen arbitrarily; "Jingle Bells," for example, could also be notated correctly in $\frac{2}{2}$ or $\frac{3}{8}$ or any other simple duplet time signature.

Example 2-1.

"Jingle Bells"



"America the Beautiful!"



"Home on the Range"

**SELF-TEST 2-3**

(Answers begin on page 564.)

A. Fill in the blanks.

Beat and meter type	Beat note	Division of the beat	Time signature
1. Simple duplet	d		
2.			$\frac{3}{8}$
3.		$\text{d} \text{ d}$	2
4. Simple quadruple		$\text{h} \text{ h}$	
5. Simple triple	h		

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B. Renotate the excerpts from Example 2-1 using the specified time signatures.

1. $\frac{2}{8}$ "Jingle Bells"
2. $\frac{4}{2}$ "America the Beautiful"
3. $\frac{3}{4}$ "Home on the Range"

EXERCISE 2-3. See Workbook.

COMPOUND TIME SIGNATURES

If the beat divides into three equal parts, as in compound beat, the note value representing the beat will be a dotted value, as shown below.

Beat note	Division of the beat
$\text{J}.$	$\text{J} \text{ J} \text{ J}$
$\text{J}.$	$\text{J} \text{ J} \text{ J}$
$\text{J}.$	$\text{J} \text{ J} \text{ J}$
$\text{J}.$	$\text{J} \text{ J} \text{ J}$

Dotted values present a problem where time signatures are concerned. For example, if there are two beats per measure, and the beat note is $\text{J}.$, what would the time signature be? $\frac{2}{4\cdot 2}$? $\frac{2}{4+8}$? $\frac{2}{8+8+8}$? There is no easy solution, and the method that survives today is the source of much confusion concerning compound beat. Simply stated, a compound time signature informs the musician of the *number of divisions* of the beat contained in a measure and what the *division duration* is. This means that the top number of a compound time signature will be 6, 9, or 12, because two beats times three divisions equals six, three beats times three divisions equals nine, and four beats times three divisions equals twelve. Some examples are given in the table below.

Time signature	Beats per measure	Beat note	Division of the beat
$\frac{6}{8}$	2	$\text{J}.$	$\text{J} \text{ J} \text{ J}$
$\frac{6}{4}$	2	$\text{J}.$	$\text{J} \text{ J} \text{ J}$
$\frac{9}{16}$	3	$\text{J}.$	$\text{J} \text{ J} \text{ J}$
$\frac{9}{8}$	3	$\text{J}.$	$\text{J} \text{ J} \text{ J}$
$\frac{12}{8}$	4	$\text{J}.$	$\text{J} \text{ J} \text{ J}$
$\frac{12}{4}$	4	$\text{J}.$	$\text{J} \text{ J} \text{ J}$

Example 2-2 illustrates some familiar tunes that use compound beat. As before, the choice of the actual beat note is an arbitrary one.

Example 2-2.

"Take Me Out to the Ball Game"



"Down in the Valley"



"Pop Goes the Weasel"



You can see from this discussion that compound time signatures do *not* follow the rule, so often learned by the student musician, that "the top number tells how many beats are in a measure, and the bottom number tells what note gets the beat." Of course, there are some pieces in $\frac{6}{8}$, for example, that really do have six beats to the measure, but such a piece is not really in compound duple. A measure of $\frac{6}{8}$ performed in six does not sound like compound duple; instead, it sounds like two measures of simple triple, or $\frac{3}{8}$. In compound duple, the listener must hear two compound beats to the measure, not six simple beats. In the same way, a slow work notated in $\frac{4}{4}$ might be conducted in four, which would seem to the listener to be simple quadruple. In both cases, the usual division value has become the beat value.

The reverse also occurs—that is, the usual beat value sometimes becomes the actual division value. For instance, a fast waltz or scherzo is almost always notated as simple triple, usually as $\frac{3}{4}$. But the aural effect is of one beat per measure, for which we might use the term *compound single*. If you didn't know the metric convention of such pieces, you would probably assume on hearing them that they were in compound duple, because the measures tend to group in pairs.

SELF-TEST 2-4

(Answers begin on page 564.)

A. Fill in the blanks.

Beat and meter type	Beat note	Division of the beat	Time signature
1. Compound duple	$\text{J}.$		
2.			$\frac{9}{4}$
3.	$\text{J}.$		6
4. Compound quadruple		$\overline{\text{J J}}$	
5.		J J J	9

B. Renotate the excerpts from Example 2-2 using the specified time signatures.

1. $\frac{6}{4}$ "Take Me Out to the Ball Game"
2. $\frac{9}{8}$ "Down in the Valley"
3. $\frac{6}{16}$ "Pop Goes the Weasel"

EXERCISE 2-4. See Workbook.

TIME SIGNATURES SUMMARIZED

There are two types of beat, simple and compound, and three common meters, duple, triple, and quadruple, which can be combined in a total of six ways. For each of these six combinations there is a number that will always appear as the top part of the time signature.

Beat type	Meter type		
	Duple	Triple	Quadruple
Simple	2	3	4
Compound	6	9	12

A listener can usually recognize the beat and meter types of a passage without seeing the music. Therefore, you can usually say what the top number of the time signature is (except that duple and quadruple are often indistinguishable). However, to know what the bottom number of the time signature is, you have to look at the music, since any number representing a note value can be used for any meter.

Bottom number	Simple beat duration	Compound beat duration
1	•	■•
2	♩	◦•
4	♪	♩
8	♪	♩
16	♪	♩

Remember that the bottom number of a time signature (the leftmost column in the table above) stands for the *beat* value in a *simple* time signature and the *division* value in a *compound* time signature.

MORE ON DURATIONAL SYMBOLS

When rhythms are notated, it is customary to use beams, ties, and dots in such a way that the metric accent is emphasized rather than obscured. Several incorrect and correct examples are notated below.

Incorrect	Correct
$\frac{2}{4}$ ♩ ♩ ♩ ♩	$\frac{4}{4}$ ♩ ♩ ♩ ♩
$\frac{3}{8}$ ♩ ♩ ♩ ♩	$\frac{3}{8}$ ♩ ♩ ♩ ♩
$\frac{12}{16}$ ♩ ♩ ♩ ♩ ♩ ♩	$\frac{12}{16}$ ♩ ♩ ♩ ♩ ♩ ♩
$\frac{4}{2}$ ♩ ♩ ♩ ♩ ♩ ♩	$\frac{4}{2}$ ♩ ♩ ♩ ♩ ♩ ♩

Of course, it is correct to notate rhythms so as to obscure the metric accent when that is the desired result. *Syncopations* (rhythmic figures that stress normally weak beats or divisions) are frequently notated in that way, as below.



More involved figures, such as the following, are especially common in twentieth-century music.



A *grouplet* refers to the division of an undotted value into some number of equal parts other than two, four, eight, and so on, or the division of a dotted value into some number of equal parts other than three, six, twelve, and so on, as you can see below.

Original value	Grouplet
♩	♩ 3 also ♩ ♩ ♪, etc.
♩	♩ 3
♩.	♩ 2
♩.	♩ 4
♩	♩ 5

Of all the possibilities, the superimposition of triplets on a simple beat is the most common.

When a single-stem note is notated on the staff, the stem should go up if the note is below the middle line and down if the note is above the middle line. A note on the middle line may theoretically have its stem point in either direction, but most professional copyists consistently put a downward stem on notes that occur on the middle line (Ex. 2-3).

Example 2-3.



Beams are used to connect durations shorter than a quarter note when the durations occur within the same beat. The stem direction of beamed notes is decided by the note that is farthest from the middle line. That is, if the note that is farthest from the middle line is below it, then all the stems that are to be beamed together will point upward (Ex. 2-4).

Example 2-4.



SUMMARY

Rhythm refers to the time aspect of music, as contrasted with the pitch aspect. The relative duration of a musical sound is specified by a *durational symbol* such as a whole note, half note, and so forth. One or more dots may follow a durational symbol, each one adding to the duration one-half the value of the note or dot that precedes it; a tie connects two notes, creating a value equal to their sum. Most durational symbols use stems, and there are conventions of notation regarding the direction of the stems. Beams are often used to group together (but not to tie) durations shorter than a quarter-note.

The basic pulse of a musical passage is called the *beat*, and the *tempo* is the rate at which the beats occur. The general tempo may be indicated by one of many terms in English or other languages, or it may be specified more exactly by a *metronome* marking.

Beats usually group into patterns of two, three, or four beats, referred to as *duple*, *triple*, and *quadruple meters*. Associated with each meter is its own pattern of *metric accents*. Beats in any meter usually divide into two equal parts (*simple beat*) or three equal parts (*compound beat*), giving rise to such terms as "triple simple" and "duple compound." A *grouplet* is used when a beat divides in a way that is contrary to the prevailing division of the beat.

A *time signature* is a symbol that tells the performer the beat and meter types and what note value will represent the beat. A listener can identify the beat and meter types just by listening to the music, but not the note value that represents the beat. The beat values for simple time signatures are always undotted notes, while those for compound time signatures are always dotted notes.

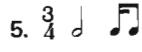
SELF-TEST 2-5

(Answers begin on page 565.)

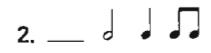
A. Fill in the blanks.

<i>Beat and meter type</i>	<i>Beat value</i>	<i>Division of the beat</i>	<i>Time signature</i>
1.			$\frac{4}{4}$
2. Compound triple	$\text{J}.$		
3.			$\frac{2}{8}$
4. Compound duplet		$\text{J} \text{ J} \text{ J}$	
5.		$\text{J} \text{ J}$	3
6.		$\overline{\text{J} \text{ J}}$	12

B. Each measure below is incomplete. Add one or more rests to the end of each to complete the measure.



C. Provide the best time signature for each exercise. In some cases more than one correct answer may be possible.



D. Each passage below is notated so that placement of the beats is obscured in some fashion. Rewrite each one to clarify the beat placement. This may involve breaking some of the long notes into tied shorter notes or rebeaming groups of notes.

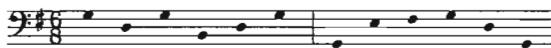
1. $\text{J} \text{ J} \text{ J} \text{ J} | \text{J} \text{J} \text{J} \text{J} \text{J} \text{J} | \text{J}$ _____
2. $\text{J} \text{J} \text{J} \text{J} \text{J} \text{J} | \text{J} \text{J} \text{J} \text{J} \text{J} \text{J} | \text{J}$ _____
3. $\text{J} \text{ J} \text{J} \text{J} | \text{J} \text{J} \text{J} \text{J} \text{J} \text{J} | \text{J}$ _____
4. $\text{J} \text{ J} \text{J} \text{J} | \text{J} \text{J} \text{J} \text{J} \text{J} \text{J} | \text{J}$ _____

E. Add stems as required.

1. Each duration is a quarter note.



2. Each duration is an eighth note. Beam them in groups of three.



F. Listen to a recording of the beginning of each of the five movements of Beethoven's Symphony No. 6, Op. 68, and identify the beat and meter types of each. Then name three time signatures that could have been used to notate the movement. (Note that movements I and V begin with slow introductions; wait until the allegro portions before making any decision.)

<i>Movement</i>	<i>Beat type</i>	<i>Meter type</i>	<i>Possible time signatures</i>
I			
II			
III			
IV			
V			

G. Scale review. Given the scale degree, the note, and whether the key is major or minor, supply the name of the key. Assume melodic minor for all minor key examples.

ex. $\hat{6}$ is C \sharp in E minor

1. $\hat{4}$ is B \flat in C minor

2. $\hat{3}$ is B in F major

3. $\hat{7}$ is B \sharp in C minor

4. $\hat{6}$ is F \sharp in A major

5. $\hat{4}$ is E \flat in B major

6. $\hat{5}$ is G in D minor

7. $\hat{6}$ is B in G major

8. $\hat{5}$ is B \flat in C major

9. $\hat{6}$ is G \sharp in E minor

10. $\hat{5}$ is C in F major

11. $\hat{3}$ is B \flat in A minor

12. $\hat{7}$ is E in C minor

13. $\hat{7}$ is D \sharp in F major

14. $\hat{2}$ is B \flat in G major

H. Interval review. Notate the specified interval above the given note.

I. Interval review. Notate the specified interval below the given note.

EXERCISE 2-5. See Workbook.

CHAPTER 3

Introduction to Triads and Seventh Chords

INTRODUCTION

In this chapter we begin working with chords, the basic vocabulary of tonal harmony. We will not be concerned at this stage with how chords are used compositionally or even what kinds of chords occur in the major and minor modes, although we will get to these topics soon enough. First we have to learn how to spell the more common chord types and how to recognize them in various contexts.

TRIADS

In "To the Student" (pp. xviii-xxii), we explained that tonal harmony makes use of *tertian* (built of 3rds) chords. The fundamental tertian sonority is the triad, a three-note chord consisting of a 5th divided into two superimposed 3rds. There are four possible ways to combine major and minor 3rds to produce a tertian triad.

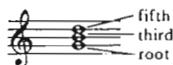


The names and abbreviations for these four triad types are given in Example 3-1.

Example 3-1.

Play these triads at the piano and compare the way they sound. You might be able to guess from listening to them that in tonal music the major and minor triads are found the most often, the augmented the least often. There are also names (in addition to note names) for the members of a triad (Ex. 3-2).

Example 3-2.



Study the preceding diagram and examples very carefully before going on.

CHECKPOINT

1. Which triad types contain a m3 as the bottom interval? As the top interval?
2. Which triad types contain a M3 as the top interval? As the bottom interval?
3. Which triad types contain a P5 between the root and the 5th? a °5? a +5?

SELF-TEST 3-1

(Answers begin on page 567.)

A. Spell the triad, given the root and type. (As with keys, upper-case letters indicate major and lower-case letters indicate minor; augmented triads are represented by upper-case letters followed by a "+," and diminished by lower-case letters followed by a "°")

1. bb _____
2. E _____
3. g° _____
4. f° _____
5. c _____
6. D+ _____

7. A _____
8. d _____
9. Gb _____
10. B _____
11. ab _____
12. c# _____

B. Notate the triad, given the root and type.

ex. 1 2 3 4 5 6 7

M m M + o M M m

8 9 10 11 12 13 14 15

+ M m m M o m +

C. Fill in the blanks.

	ex.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Fifth	F	—	—	—	D#	—	—	—	—	G#	B
Third	D	A	Gb	—	—	—	F#	C#	—	—	—
Root	Bb	—	—	B	—	Cb	—	—	F	—	—
Type	M	+	m	m	+	M	o	M	o	m	M

D. Given the chord quality and one member of the triad, notate the remainder of the triad, with the root as the lowest tone.

ex. 1 2 3 4 5 6 7

third + M third o fifth m root M fifth + root m fifth m third m

8 9 10 11 12 13 14 15

fifth M root o third m fifth + root M fifth m third M third o

EXERCISE 3-1. See Workbook.

SEVENTH CHORDS

If we extend a tertian triad by adding another 3rd on top of the 5th of the triad, the result is a four-note chord. Because the interval between this added note and the root is some kind of 7th (major, minor, or diminished), chords of this sort are called *seventh chords*.

Since it would be possible to use more than one kind of 7th with each triad type, there are many more seventh-chord types than triad types. However, tonal harmony commonly makes use of only five seventh-chord types (Ex. 3-3). Below each chord in Example 3-3 you will find the commonly used name for each chord and the symbol used as an abbreviation. Be sure to play Example 3-3 to familiarize yourself with the sound of these chords.

Example 3-3.

Figure 3-3 displays musical notation for five common seventh chords. It includes two staves of music with numbered measures from 1 to 15. Below the staff, for each measure, there is a chart with three columns:

Type of chord:	major seventh	major-minor seventh	minor seventh
Symbol:	M7	Mm7	m7
Construction:	major triad major 7th	major triad minor 7th	minor triad minor 7th

Below the chart, two additional chords are shown:

- half-diminished seventh**: $\text{M}^{\flat}7$
- diminished seventh**: $\text{m}^{\flat}7$

Below these, two more chords are shown:

- diminished triad**: $\text{m}^{\flat}\text{7}$
- diminished 7th**: $\text{m}^{\flat}\text{7}^{\flat}$

Quite soon we will begin composition exercises using triads. While seventh chords will not be used in composition exercises for some time, you will nevertheless be able to start becoming familiar with them from an analytical standpoint through examples and analysis assignments.

CHECKPOINT

- Which seventh-chord types have a diminished triad on the bottom?
- Which ones have a M3 between the 5th and the 7th of the chord?
- Which ones have a m3 between the 3rd and the 5th of the chord?
- Which ones contain at least one P5? Which contain two?

SELF-TEST 3-2

(Answers begin on page 568.)

- A. Identify the type of each seventh chord, using the abbreviations given in Example 3-3 (M7, Mm7, m7, $\text{m}^{\flat}7$, $\text{m}^{\sharp}7$).

Figure 3-4 shows musical notation for Self-Test 3-2. It consists of two staves of music with numbered measures from 1 to 15. Above the staff, for each measure, there is a chart with three columns:

ex.	1	2	3	4	5	6	7

Below the staff, for each measure, there is a chart with three columns:

8	9	10	11	12	13	14	15

The first measure is labeled "Mm7".

- B. Notate the seventh chord, given the root and type.

Figure 3-5 shows musical notation for Self-Test 3-2. It consists of two staves of music with numbered measures from 1 to 15. Above the staff, for each measure, there is a chart with three columns:

ex.	1	2	3	4	5	6	7

Below the staff, for each measure, there is a chart with three columns:

8	9	10	11	12	13	14	15

The first measure is labeled "Mm7". Subsequent measures are labeled with their respective chord types: $\text{m}^{\flat}7$, Mm7, M7, Mm7, m7, $\text{m}^{\flat}7$, $\text{m}^{\flat}7$, M7, $\text{m}^{\flat}7$, M7, $\text{m}^{\flat}7$, $\text{m}^{\flat}7$, M7, $\text{m}^{\flat}7$, $\text{m}^{\flat}7$, M7, $\text{m}^{\flat}7$.

- C. Given the seventh chord quality and one member of the chord, notate the rest of the chord.

Figure 3-6 shows musical notation for Self-Test 3-2. It consists of two staves of music with numbered measures from 1 to 15. Above the staff, for each measure, there is a chart with three columns:

ex.	1	2	3	4	5	6	7

Below the staff, for each measure, there is a chart with three columns:

8	9	10	11	12	13	14	15

The first measure is labeled "third of Mm7". Subsequent measures are labeled with their respective chord members: seventh of $\text{m}^{\flat}7$, root of Mm7, third of M7, fifth of $\text{m}^{\flat}7$, fifth of M7, seventh of $\text{m}^{\flat}7$, third of $\text{m}^{\flat}7$, seventh of Mm7, root of $\text{m}^{\flat}7$, fifth of m7, third of M7, root of $\text{m}^{\flat}7$, seventh of $\text{m}^{\flat}7$, fifth of m7, third of Mm7.

EXERCISE 3-2. See Workbook.

INVERSIONS OF CHORDS

Up to now, we have been notating all chords with the root as the lowest tone. But in a musical context, any part of a chord might appear as the lowest tone. The three possible *bass positions* of the triad are illustrated in Example 3-4.

Example 3-4.



The bass position that we have been using, with the root as the lowest tone (or “in the bass”), is called *root position*. You might assume that “third position” would be the term for a chord with the 3rd as the lowest tone, but musical terminology is fraught with inconsistencies. Instead, this position is called *first inversion*. Reasonably enough, *second inversion* is used for chords with the 5th in the bass. The term *inversion* is used here to mean the transfer of the lowest note to some higher octave.

Example 3-5.



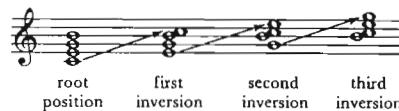
All of the chords in Example 3-6 are first inversion F major triads. Notice that the upper notes of the chord can be spaced in any way without altering the bass position. Also, any of the notes can be duplicated (or *doubled*) in different octaves.

Example 3-6.



The inversion of seventh chords works just like the inversion of triads, except that three inversions (four bass positions) are possible (Ex. 3-7).

Example 3-7.



INVERSION SYMBOLS AND FIGURED BASS

In analyzing music we often use numbers to indicate the bass positions of chords. Instead of using 1 for first inversion, 2 for second inversion, and so on, we use numbers derived from the Baroque system called *figured bass* or *thoroughbass*. During the Baroque period (approximately 1600-1750), the keyboard player in an ensemble read from a part consisting only of a bass line and some symbols indicating the chord to be played. This is strikingly similar to the lead sheet system used today in popular music, in which the musician reads a melody line and pop symbols.

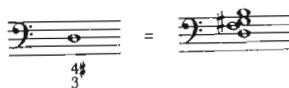
In the Baroque system, the symbols consisted basically of numbers representing *intervals above the bass* to be formed by the members of the chord, but the notes could actually be played in any octave above the bass. The system dealt only with intervals, not with roots of chords, because the theory of chord roots had not been devised when figured bass was first developed.

The table below illustrates the figured bass symbols for root position and inverted triads and seventh chords for a G major triad and a G Mm7.

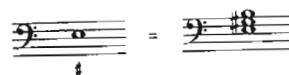
Sonority desired							
Complete figured bass symbol	5 3	6 3	6 4	7 5 3	6 3	6 4 3	6 4 2
Symbol most often used		6	6 4	7	6 5	4 3	4 2

In the figured bass system, the number 6 designates a 6th above the bass. Whether it is a M6 or a m6 depends upon the key signature. If the Baroque composer wished to direct the keyboard player to raise or lower a note, there were several methods that could be used, including the following three.

1. An accidental next to an arabic numeral in the figured bass could be used to raise or lower a note.



2. An accidental by itself always referred to the 3rd above the bass and could be used to alter that note.



3. A slash or plus sign in connection with an arabic numeral meant to raise that note.



Example 3-8 illustrates a portion of an actual figured bass part from the Baroque period, along with a possible *realization*. Some keyboard players may have added embellishments not shown in this realization. Bach included the numeral 5 at several places to remind the player to play a root position triad.

Example 3-8. Bach, *Easter Oratorio*, II

The realization of figured basses is still considered to be an effective way to learn certain aspects of tonal composition, and we will occasionally use exercises of this kind in the text.

The inversion symbols that we use today are summarized in the table below. These symbols are usually used with a roman numeral (as in I⁶ or V⁶) as part of a harmonic analysis. Notice that when a seventh chord is inverted, the 7 is replaced by the appropriate inversion symbol.

Bass position	Triad symbol	Seventh chord symbol
Root position	(none)	7
First inversion	6	6 5
Second inversion	6 4	4 3
Third inversion	(none)	4 2 or 2

SELF-TEST 3-3

(Answers begin on page 569.)

- A. Identify the root and type of each chord, and show the correct inversion symbol.

Root	F	B _b	—	—	—	—	—
Type	M	Mm7	—	—	—	—	—
Inversion symbol	5	—	—	—	—	—	—

	9	10	11	12	13	14	15	16
Root	—	—	—	—	—	—	—	—
Type	—	—	—	—	—	—	—	—
Inversion symbol	—	—	—	—	—	—	—	—

B. The bottom staff of this recitative is played on bassoon and keyboard, the keyboard player (the “continuo”) realizing the figured bass. Fill in each blank below the bass line with the root and type of the chord to be played at that point. Remember that a numeral 5 by itself is simply a reminder to use a root position triad.

○ Bach, *Easter Oratorio*, II

W^{ir} sⁱn^d - e^r f^{re}ut, —————— d^as^s uⁿ- s^er J^e- s^us wⁱe- d^er
Bassoon Continuo
DM
1
2
3
4
5
6
7
8
9

sinnt auf Freu - den - lie - der; denn un - ser Hei - land le - bet wie - der.
—
5
6
6
10
11
12
13
14

EXERCISE 3-3. See Workbook.

RECOGNIZING CHORDS IN VARIOUS TEXTURES

Some people, especially those without much keyboard experience, find it difficult at first to analyze a chord that is distributed over two or more staves, as in Example 3-9.

Example 3-9.

1
2
3
4
5
6

Example 3-10.

root

One procedure to follow with the chord is to make an inventory of all the *pitch classes** found in the chord (B \flat , G, and D) and to notate the chord with each pitch class in turn as the lowest note. The other notes should be put as close to the bottom note as possible. The version that consists only of stacked 3rds is in root position. We can see from Example 3-10 that the chord in Example 3-9 is a g minor triad in first inversion.

*The term *pitch class* is used to group together all pitches that have an identical sound or that are identical except for the octave or octaves that separate them. For example, all B \flat 's, C's, and D \flat 's belong to the same pitch class, no matter what octave they are found in.

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The chord in Example 3-11 contains the pitch classes E, A, C \sharp , and G, which allows four bass positions.

Example 3-11.



Example 3-12 tells us that the chord in Example 3-11 is an A major-minor seventh chord in second inversion.

Example 3-12.



You may already be able to carry out this process in your head, which will speed things up considerably. If not, you will learn to do so with practice.

CHECKPOINT

1. What is the symbol for the first inversion of a triad?
2. Of a seventh chord?
3. Explain $\frac{4}{2}$, $\frac{6}{4}$, and $\frac{4}{3}$.
4. Which bass position for which chord type requires no symbol?

SUMMARY

The fundamental sonority of tonal harmony is the *triad*, a three-note chord consisting of a 5th divided into two superimposed 3rds. The bottom note of the 5th is the *root*, and the top note is the *5th*. The note that divides the 5th is the *3rd*. There are four triad types: *major*, *minor*, *diminished*, and *augmented*.

A *seventh chord* may be thought of as a triad with another 3rd added above the 5th of the triad. The added note is a 7th above the root. While many seventh chord types are possible, only five occur with any frequency in tonal harmony:

major seventh chord (M7): major triad with a M7 above the root

major-minor seventh chord (Mm7): major triad with a m7 above the root

minor seventh chord (m7): minor triad with a m7 above the root

half-diminished seventh chord ($\frac{7}{2}$): diminished triad with a m7 above the root

diminished seventh chord ($\frac{7}{7}$): diminished triad with a $\frac{7}{7}$ above the root

Root position is the term for a chord with the root notated as the lowest tone. Any other arrangement is called an *inversion*. A chord with the 3rd as the lowest tone is in *first inversion*, while one with the 5th as the lowest tone is in *second inversion*. A seventh chord with the 7th as the lowest tone is in *third inversion*. There are symbols for most of the various bass positions:

Bass position	Triad symbol	Seventh chord symbol
Root position	(none)	7
First inversion	6	$\frac{6}{5}$
Second inversion	$\frac{6}{4}$	$\frac{4}{3}$
Third inversion	(none)	$\frac{4}{2}$ or 2

Inversion symbols are derived from *figured bass*, a method of abbreviated notation used in the Baroque era. Figured bass symbols will be used occasionally throughout much of this text.

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SELF-TEST 3-4

(Answers begin on page 569.)

A. Identify the root, type, and inversion symbol for each chord. All the notes in each exercise belong to the same chord. The lowest note is the bass note for the purpose of analysis.

Root	—	—	—	—	—
Type	—	—	—	—	—
Inversion symbol	—	—	—	—	—

Root	—	—	—	—	—	—
Type	—	—	—	—	—	—
Inversion symbol	—	—	—	—	—	—

B. The excerpts below are to be analyzed in a similar fashion. Each chord is numbered. Put your analysis of each chord in the numbered blanks below the excerpt.

1. Schubert, *Moment Musical*, Op. 94, No. 6

Root	—	—	—	—	—	—	—	—	—	—	—
Type	—	—	—	—	—	—	—	—	—	—	—
Inversion symbol	—	—	—	—	—	—	—	—	—	—	—

2. Byrd, *Psalm LIV*

The 8 under the treble clef on the tenor staff (third staff from the top) means that the notes are to be sung an 8ve lower than written.

Root	—	—	—	—	—
Type	—	—	—	—	—
Inversion symbol	—	—	—	—	—

3. Fischer, "Blumen-Strauss"

	1	2	3	4	5	6	7	8	9	10	11	12	13
Root	—	—	—	—	—	—	—	—	—	—	—	—	—
Type	—	—	—	—	—	—	—	—	—	—	—	—	—
Inversion symbol	—	—	—	—	—	—	—	—	—	—	—	—	—

EXERCISE 3-4. See Workbook.

CHAPTER 4

Diatonic Chords in Major and Minor Keys

INTRODUCTION

Now that we have presented the four triad types and the five common seventh-chord types, we can begin to look at how they are used in tonal music. Most chords in tonal music are made up only of notes from the scale on which the passage is based. That is, if a passage is in G major, most of the chords contain only notes found in the G major scale. Chords of this kind are called *diatonic* chords. All other chords—those using notes not in the scale—are called *altered* chords. We will get to them later. At this point we are not going to worry about how you might *compose* music using diatonic chords, although that will come up soon. For now, we are going to concentrate on spelling and recognizing diatonic chords in various keys.

THE MINOR SCALE

Before we can begin talking about diatonic chords, we have to return to the problem of the minor scale. Because instrumentalists are taught to practice natural, harmonic, and melodic minor scales, we sometimes assume that the tonal composer had three independent minor scale forms from which to choose. But this is not how the minor mode works in tonal music.

We can make the following generalization about the three minor scales: there is, in a sense, one minor scale that has two scale steps, $\hat{6}$ and $\hat{7}$, that are variable. That is, there are two versions of $\hat{6}$ and $\hat{7}$, and both versions will usually appear in a piece in the minor mode. All of the notes in Example 4-1 are diatonic to e minor. Notice the use of $\sharp\hat{6}$ and $\sharp\hat{7}$ to mean raised $\hat{6}$ and $\hat{7}$ and $\flat\hat{6}$ and $\flat\hat{7}$ to mean unaltered $\hat{6}$ and $\hat{7}$.

Example 4-1.

How do composers decide which version of $\hat{6}$ and $\hat{7}$ to use? Melodically, the most graceful thing for $\hat{6}$ and $\hat{7}$ to do is to ascend by step, while $\hat{6}$ and $\hat{7}$ tend naturally to descend by step; these tendencies conform to the melodic minor scale. Example 4-2 provides a good illustration of the use of the minor scale. If you look closely at Bach's treatment of $\hat{6}$ and $\hat{7}$ (circled notes), you will see that all of the motion is stepwise, with two exceptions. The first leap involving $\hat{6}$ or $\hat{7}$ is from the G \flat 4 in m. 2. Here the eventual goal is F, not A, so the $\hat{6}$ form is used. The other leap occurs in the bass in m. 4. Here the goal of the line is B \flat , not G \flat , so the $\hat{7}$ form is used.

Example 4-2. Bach, *Well-Tempered Clavier*, Book II, Prelude 22

If a $\hat{6}$ or $\hat{7}$ is left by leap instead of by step, there will generally be an *eventual* stepwise goal for that scale degree, and the $\hat{6}$ and $\hat{7}$ will probably be raised or left unaltered according to the direction of that goal, as in Example 4-2. In the next excerpt, Example 4-3, the A \flat 4 in m. 1 ($\hat{6}$) is left by leap to the C5. But the eventual stepwise goal of the A \flat 4 is the G4 in the next measure, so the descending form of the melodic minor is used. Still, the use of the melodic minor is just a rule of thumb, not a law. It is not difficult to find passages in minor where $\hat{6}$ and $\hat{7}$ lead downward, as in m. 3.

Example 4-3. Bach, *Well-Tempered Clavier*, Book I, Fugue 2

In some cases, $\hat{6}$ and $\hat{7}$ lead upward (Ex. 4-4).

Example 4-4. Bach, *Well-Tempered Clavier*, Book I, Prelude 10

In other instances, $\hat{7}$ and $\hat{6}$ appear next to each other, forming a harmonic minor scale (Ex. 4-5).

Example 4-5. Beethoven, Sonata Op. 2, No. 2, III, Trio

The reasons for such exceptions to the melodic minor scale are usually harmonic. As we will see later in this chapter, the underlying harmonies generally conform to the harmonic minor scale.

CHECKPOINT

- What is the term for chords that contain no notes outside of the scale? What about chords that do contain such notes?
- Individual lines in tonal music tend to conform most closely to which of the three traditional minor scales?
- Name the five common seventh-chord types.

DIATONIC TRIADS IN MAJOR

Triads may be constructed using any degree of the major scale as the root. Diatonic triads, as we have mentioned, will consist only of notes belonging to the scale. To distinguish the triads built upon the various scale degrees from the scale degrees themselves, we use roman numerals instead of arabic numerals (for example, V instead of 5). The triad type is indicated by the form of the roman numeral itself.

Triad type	Roman numeral	Example
Major	Upper case	V
Minor	Lower case	vi
Diminished	Lower case with a ^o	vii ^o
Augmented	Upper case with a ⁺	III ⁺

Taking C major as an example, we can discover the types of diatonic triads that occur on each degree of the major scale.

Example 4-6.

Scale degree of the root	1	2	3	4	5	6	7
Roman numeral	I	ii	iii	IV	V	vi	vii ^o

You should memorize the following table.

Diatonic triad types in major	
Major	I, IV, and V
Minor	ii, iii, and vi
Diminished	vii ^o
Augmented	none

DIATONIC TRIADS IN MINOR

The construction of triads is somewhat more involved in the minor mode than in major. Since 6 and 7 are variable, and because nearly all triads contain 6 or 7, more diatonic triads are possible in minor. Nonetheless, there are seven triads in minor (one for each scale degree) that occur more frequently than the others, and these are the ones we will use in our exercises for now. The roman numerals of the more common diatonic triads are circled in Example 4-7.

Example 4-7.

Scale degree of the root	1	2	3	3	4	4	5	5	6	7	7		
Roman numeral	i	ii ^o	ii	(III)	III*	iv	IV	v	(V)	VI	vii ^o	VII	vii ^o

Notice that the *roots* of the triads circled above all belong to the *harmonic* minor scale. In fact, all of the notes of the circled triads belong to the harmonic minor scale, with the exception of the 5th of the III chord. Here is the table of minor-key triads, which you should also memorize.

Common diatonic triads in minor	
Major	III, V, and VI
Minor	i and iv
Diminished	ii ^o and vii ^o
Augmented	none

CHECKPOINT

1. In a major key which triads are minor?
2. In a minor key which triads are major?
3. The triads on which two scale degrees are the same type in both major and minor?
4. Which of the four triad types occurs least often in tonal music?

SELF-TEST 4-1

(Answers begin on page 570.)

A. Given the key and the triad, supply the roman numeral. Be sure your roman numeral is of the correct type (upper case, and so on). Inversion symbols, where required, go to the upper right of the roman numeral (as in I^b).

ex. 1 2 3 4 5 6 7

d: i B: b: Ab: c: F#: a: Db:
8 9 10 11 12 13 14 15
bb: G: d#: C: A: c#: Bb: g:

B. In the exercises below you are given the name of a key and a scale degree number. Without using key signatures, notate the triad on that scale degree and provide the roman numeral. In minor keys be sure to use the triad types circled in Example 4-7.

ex. 1 2 3 4 5 6 7

g: 7 B: 3 c#: 6 Bb: 4 Eb: 5 d#: 4 E: 5 d: 3
8 9 10 11 12 13 14 15
a: 4 B: 7 A: 4 d: 7 E: 5 b: 5 Gb: 6 D: 2

C. Analysis. Write roman numerals in the spaces provided, making sure each roman numeral is of the correct type and includes an inversion symbol if needed. The tenor line sounds an octave lower than notated.

C. Brahms, "Ach lieber Herre Jesu Christ"

In anmutiger Bewegung
p molto dolce

Soprano
1. Ach lie - ber Her - re Je - su Christ, weil du ein Kind ge -

Alto
1. Ach lie - ber Her - re Je - su Christ, weil du ein Kind ge -

Tenor
1. Ach lie - ber Her - re Je - su Christ, weil du ein Kind ge -

Bass
1. Ach lie - ber Her - re Je - su Christ, weil du ein Kind ge -

D: 1 2 3 4 5 6 7 8 9 10 11 12 13

we - sen bist, so gib auch die - sem Kin - de - lein dein Gnad und auch den

we - sen bist, so gib auch die - sem Kin - de - lein dein Gnad und auch den

8 we - sen bist, so gib auch die - sem Kin - de - lein dein Gnad und auch den

we - sen bist, so gib auch die - sem Kin - de - lein dein Gnad und auch den

14 15 16 17 18 19 20 21 22 23 24 V 25 26 27 28 29

Se - gen dein; ach Je - sus, Her - re mein, be - hüt dies Kin - de - lein.
Se - gen dein; ach Je - sus, Her - re mein, be - hüt dies Kin - de - lein.
Se - gen dein; ach Je - sus, Her - re mein, be - hüt dies Kin - de - lein.
Se - gen dein; ach Je - sus, Her - re mein, be - hüt dies Kin - de - lein.

30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

EXERCISE 4-1. See Workbook.

DIATONIC SEVENTH CHORDS IN MAJOR

In the next chapter we will begin simple composition exercises using triads, but seventh chords will not be used compositionally until Chapter 13. Nevertheless, we will continue to work with seventh chords in spelling exercises and in analysis in order to build a solid foundation for those later chapters.

The chords on each scale degree in major can include a 7th above the root. The roman numeral system for seventh chords is similar to that for triads, as you will see in the following table.

Seventh chord type	Roman numeral	Example
Major seventh	Upper case with M7	I ^{M7}
Major-minor seventh	Upper case with a 7	V ⁷
Minor seventh	Lower case with a 7	vi ⁷
Half-diminished seventh	Lower case with ♫7	ii ⁷
Diminished seventh	Lower case with ♭7	vii ⁰⁷

Four of the five seventh-chord types occur as diatonic seventh chords in major keys.

Example 4-8.

C: I^{M7} ii⁷ iii⁷ IV^{M7} V⁷ vi⁷ vii⁷

You should learn the following table, which summarizes major-key seventh chords.

Diatonic seventh chords in major	
M7	I ^{M7} and IV ^{M7}
Mm7	V ⁷
m7	ii ⁷ , iii ⁷ , and vi ⁷
ø7	vii ^{ø7}
º7	none

DIATONIC SEVENTH CHORDS IN MINOR

Because of the variability of $\hat{6}$ and $\hat{7}$, there are sixteen possible diatonic seventh chords in minor. Example 4-9 shows the most commonly used seventh chords on each scale degree. The others will be discussed in later chapters. Notice that most of the notes in Example 4-9 belong to the harmonic minor scale.

Example 4-9.

C: i⁷ ii⁷ III^{M7} iv⁷ V⁷ VI^{M7} vii⁰⁷

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Here is the last chord table to learn.

Common diatonic seventh chords in minor	
M7	III ^{M7} and VI ^{M7}
Mm7	V ⁷
m7	i ⁷ and iv ⁷
ø7	ii ^{ø7}
ø7	vii ^{ø7}

Remember that the inversion symbols for seventh chords are $\frac{6}{5}$, $\frac{4}{3}$, and $\frac{2}{1}$. This means that the V⁷ in first inversion is symbolized as V $\frac{6}{5}$, *not* as V $\frac{7}{5}$.

CHECKPOINT

1. Most of the five common seventh-chord types appear diatonically in both major and minor. Which one type does not?
2. Does the m7 chord occur on more scale steps in minor than in major?
3. The seventh chords on most scale steps are different qualities in major and minor. Which chord is the exception to this?

SUMMARY

Minor scale usage in tonal music is not really based upon the natural, harmonic, and melodic minor scales, the three traditional minor scale forms presented in Chapter 1. In actual practice, scale steps 6 and 7 are variable. While ascending and descending lines usually follow the conventions of the melodic minor scale, this is by no means always true. Both melodic and harmonic considerations must be taken into account.

We analyze the triads and seventh chords used in tonal music by means of *roman numerals* indicating the scale degree that is the root of the chord and the quality, or sound, of the chord. Even though the issue of the minor scale is somewhat complicated, we can say that as a rule the following triad types are found on the various degrees of the major and minor scales:

Major	I	ii	iii	IV	V	vi	vii ^ø
Minor	i	ii ^ø	III	iv	V	VI	vii ^ø

Similarly, we can generalize about the types of seventh chords:

Major	I ^{M7}	ii ⁷	iii ⁷	IV ^{M7}	V ⁷	vi ⁷	vii ^{ø7}
Minor	i ⁷	ii ^{ø7}	III ^{M7}	iv ⁷	V ⁷	VI ^{M7}	vii ^{ø7}

The roots of the triads and seventh chords in these tables all conform to the harmonic minor scale, but this is not necessarily true of the other notes in each chord.

SELF-TEST 4-2

(Answers begin on page 571.)

A. Given the key and the seventh chord, supply the roman numeral. Be sure your roman numeral is the correct type and includes inversion if applicable.

ex. 1 2 3 4 5 6 7

C: **IV^{M7}** g: — E: — A♭: — f: — c: — A: — E♭: —

8 9 10 11 12 13 14 15

f♯: — d: — G: — F: — a: — b: — D: — B♭: —

B. In the exercises below you are given the name of a key and a scale degree number.

Without using key signatures, notate the seventh chord on that scale degree and provide the roman numeral. In minor keys be sure to use the chord types shown in Example 4-9.

ex. 1 2 3 4 5 6 7

E: **IV^{M7}** b: — E♭: — f♯: — A: — f: — D: — G: —

(4) (1) (3) (4) (5) (7) (1) (7)

8 9 10 11 12 13 14 15

a: — f: — d: — B♭: — c♯: — A♭: — g: — E: —

(6) (3) (1) (2) (3) (4) (2) (6)

C. Analysis. Put roman numerals in the spaces provided, making sure each roman numeral is of the correct type and includes an inversion symbol if needed.

1. Bach, "Nun lob', mein' Seel', den Herren"

A: 1 2 3 4 5 6 7 8 9 10

2. Schumann, *Chorale*, Op. 68, No. 4

G: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

EXERCISE 4-2. See Workbook.

P A R T



Diatonic Triads

INTRODUCTION

The compositional process, being a creative one, is not entirely understood. It is reasonable to assume that a composer thinks of several aspects more or less simultaneously—melody, harmony, rhythm, and so forth. Naturally, a complete analysis of a composition must take all of these factors into account. For the most part, however, this text concentrates upon questions relating to the harmonic aspect of tonal music, since it is this aspect that most clearly delineates tonal music from other types.

We could say that the basic vocabulary of tonal harmony consists of triads and seventh chords and that its grammar involves the ways in which these chords are selected (harmonic progression) and connected (voice leading). In this chapter and the next we will concentrate upon some of the basics of the voice-leading aspect: how does a composer write out a given succession of chords for some combination of performers? How can he or she decide in which direction each vocal or instrumental line should go?

Voice leading (or *part writing*) may be defined as the ways in which chords are produced by the motions of individual musical lines. A closely related term is *counterpoint*, which refers to the combining of relatively independent musical lines. Naturally, the style of voice leading will depend upon the composer, the musical effect desired, and the performing medium (for example, it is easier to play a large melodic interval on the piano than it is to sing it). But there are certain voice-leading norms that most composers follow most of the time, and our study will concentrate upon these norms.

For various reasons, many theory texts have based their approach to voice leading upon the style of the four-voice choral harmonizations by J.S. Bach. While the Bach chorales epitomize the late Baroque approach to choral writing, most musicians today feel the need to study other textures and styles as well. To answer this need, our study of voice leading will deal with a variety of textures in both vocal and instrumental styles.

THE MELODIC LINE

Our beginning exercises will make use of short and simple melodies in vocal style, in order to avoid for now the complications involved with more ornate vocal and instrumental melodies. The following procedures should be followed for Chapters 5 through 9.

1. *Rhythm.* Keep the rhythm simple, with most durations being equal to or longer than the duration of the beat. The final note should occur on a strong beat.
2. *Harmony.* Every melody note should belong to the chord that is to harmonize it.
3. *Contour.* The melody should be primarily *conjunct* (stepwise). The shape of the melody should be interesting but clear and simple, with a single *focal point*, the highest note of the melody.

Example 5-1a is a good example of the points discussed so far. Example 5-1b is not as good because it has an uninteresting contour. Example 5-1c, while more interesting, lacks a single focal point and contains one incorrectly harmonized tone (E5).

Example 5-1.

a
G: I V I - IV V I
b
G: I V I IV I V I
c
G: I IV V I IV V I

4. Leaps

- Avoid augmented intervals, 7ths, and intervals larger than a P8. Diminished intervals may be used if the melody changes direction by step immediately after the interval.

- A melodic interval larger than a P4 is usually best approached and left in the direction *opposite* to the leap.
- When smaller leaps are used consecutively in the same direction, they should outline a triad.
- Tendency tones.* In tonal music $\hat{7}$ has a strong tendency to move up to $\hat{1}$. An exception to this is the scalewise line descending from $\hat{1}$: $\hat{1}-\hat{7}-\hat{6}-\hat{5}$. The only other tendency tone that needs to be considered is $\hat{4}$, which often moves down to $\hat{3}$, but not with the regularity with which $\hat{7}$ goes to $\hat{1}$.

Example 5-2a illustrates a good melody in the restricted style with which we are beginning. Example 5-2b, on the other hand, breaks all of rule 4 as well as rule 5.

Example 5-2.

a
G: i V i V i V i V i V i
b
G: i - V i V i V i iv i

SELF-TEST 5-1

(Answers begin on page 572.)

- A. Criticize each melody in terms of the rules for simple melodies discussed under "The Melodic Line" on pages 78-79.

1
G: I V I IV V I IV V I

2

Bb: I - V I IV V I V I

d: i iv V i iv V i iv V i

B. Compose simple melodies that will conform to the given progressions. Slashes represent bar lines, and every chord except the last takes one beat.

1. D: I V I / IV I I / vi ii V / I /
2. e: i iv i i / V V i i / iv V i /
3. F: I V vi IV / I IV ii V / I /

EXERCISE 5-1. See Workbook.

NOTATING CHORDS

A *musical score* is a tool used by a composer, conductor, or analyst. A score shows all of the parts of an ensemble arranged one above the other, enabling the experienced reader to "hear" what the composition will sound like. In a *full score* all or most of the parts are notated on their own individual staves. Any musician should be able both to read and to prepare a full score, and some of your theory exercises should be done in full score. But a *reduced score*, notated at concert pitch upon as few staves as possible, may be more practical for daily theory exercises. Your choice of full or reduced score will depend partly upon the sort of musical texture that the exercise will use. That is, if you are composing for four parts in chorale style, two staves will probably suffice. On the other hand, four active and independent instrumental lines might require four staves.

When you are notating more than one part upon a single staff, be sure that the stems of the top part always point up and those of the bottom point down, even if the parts have crossed. Example 5-3 illustrates some common notational errors. The score in this case is the familiar SATB (Soprano, Alto, Tenor, Bass) reduced score.

Example 5-3.

VOICING A SINGLE TRIAD

Once you have settled upon the combination of instruments and voices for which you are writing and have selected the opening chord, the next consideration is *voicing*: how the chord is to be distributed or spaced. The way in which a chord is spaced has a great deal of influence upon its aural effect. To convince yourself of this, play Example 5-4 at the piano. Each chord in the example contains five parts and covers the same range, but the aural effects are quite different. An even wider variety of effects could be obtained by playing Example 5-4 on various combinations of instruments. While each of these spacings might be appropriate under certain circumstances, the spacing in Example 5-4e is the least commonly used because of its "muddy" effect.

Example 5-4.

Because so much attention has been paid to four-part textures by authors of theory texts, a terminology concerning the voicing of chords in four-part textures has been developed.

Close structure: less than an octave between soprano and tenor

Open structure: an octave or more between soprano and tenor

Example 5-5 illustrates these spacings in traditional hymn style.

Example 5-5. "Old One Hundredth" (Protestant hymn)

In your beginning part-writing exercises, it would be advisable for you to follow two simple conventions concerning spacing.

1. Do not allow any part to cross above the soprano or below the bass, because the essential soprano/bass counterpoint may become unclear.
2. When writing for three or more parts, avoid muddy sonorities by keeping *adjacent upper parts* (excluding the bass) within an octave of each other. For example, in a four-part texture there should not be more than an octave between soprano and alto or between alto and tenor, although there might be more than an octave between tenor and bass.

After you have gained some experience in composing, you may begin to experiment with exceptions to these conventions.

When you are composing for vocal ensembles, use the ranges given in Example 5-6.

Example 5-6.



SELF-TEST 5-2

(Answers begin on page 573.)

- A. Analyze the excerpt from a Bach chorale below, using roman numerals. Then show beneath each roman numeral the structure of the chord by writing "O" or "C" for open or close structure. The note in parentheses in m. 3 is not part of the chord and should be ignored for the purpose of harmonic analysis.

Bach, "Wo soll ich fliehen hin"

- B. Review the two conventions concerning spacing on page 82. Then point out in the example below any places where those conventions are not followed.

- C. Fill in the circled missing inner voice(s) to complete each root position triad, being sure that each note of the triad is represented. Follow the spacing conventions and stay within the range of each vocal part.

EXERCISE 5-2. See Workbook.

PARALLELS

One of the basic goals of voice leading in tonal music is to maintain the relative independence of the individual parts. Because of this, voices moving together in parallel motion must be given special attention. Look at Example 5-7, and you will see that it consists of three versions of the i-V-i progression in the key of b. Each version uses the same chords, and each version contains parallel voice leading (indicated by the diagonal lines in the example). But only one version, Example 5-7c, would be considered acceptable by a composer of tonal music.

Example 5-7.

b: i V i i V i i V i

The reason Examples 5-7a and 5-7b are unacceptable in the tonal style is that they contain parallel 5ths and 8ves. Composers of tonal music generally followed the convention, dating from around 1450, of avoiding parallel 5ths and 8ves, as well as their octave equivalents, such as 12ths and unisons. Note that this does *not* rule out the *duplication* of a line at the 8ve, which was common in orchestral writing, for example (see Ex. 7-8 on p. 111, in which the bass line is doubled at the 8ve, because the double basses sound a P8 lower than written). The reason for avoiding parallel 5ths and 8ves has to do with the nature of counterpoint. The P8 and P5 are the most stable of intervals, and to link two voices through parallel motion at such intervals interferes with their independence much more than would parallel motion at 3rds or 6ths. We can deduce a rule of parallel motion:

Objectionable parallels result when two parts that are separated by a P5 or a P8 or by their octave equivalents move to new pitch classes that are separated by the same interval.

If you apply this rule to the three parts of Example 5-8, you will find that all of them are acceptable. In Example 5-8a the soprano and tenor do not move to new pitch classes, while in Example 5-8b the parallels do not occur between the same pair of parts. Finally, the parallel 4ths in Example 5-8c are allowed, even though a P4 is the inversion of a P5.

Example 5-8.

c: (8) (8) (4)

Consecutive perfect 5ths and 8ves by contrary motion were also generally avoided, at least in vocal music. This means that the composer usually did not "correct" parallels (Ex. 5-9a) by moving one of the parts up or down an octave (Ex. 5-9b).

Example 5-9.

D: V I V I

Octaves by contrary motion are occasionally found at cadences in instrumental music and in some vocal writing, when both melody and bass outline 5-1. You will see that this occurs in Example 5-10, below the arrow, but the listener probably understands that A4 and G4 are the basic notes of the melody in m. 7-8, while the D4 is only a quick arpeggiation. Notice also in

Example 5-10 that some of the notes are in parentheses. In many of the examples in this book, notes that do not belong to the chord are put in parentheses. Non-chord tones will be discussed in more detail in Chapters 10 and 12.

Example 5-10. Haydn, Quartet Op. 64, No. 4, II

G: V⁷ I

The term *unequal 5ths* refers to a P5 followed by a P^5 , or the reverse. Apparently, some tonal composers avoided unequal 5ths involving the bass, and others used P5- P^5 but not $\text{P}^5\text{-P}5$, yet neither of these restrictions holds true for tonal music in general. For the purposes of our part-writing exercises, we will consider unequal 5ths acceptable *unless* they involve a $\text{P}^5\text{-P}5$ between the bass and another voice. Several sets of unequal 5ths are illustrated in Example 5-11, with all but the last being acceptable.

Example 5-11.

An objectionable *direct* (or *hidden*) 5th or 8ve occurs when the *outer* voices move in the same direction into a P5 or P8, with a leap in the soprano part. The aural result is similar to parallel 5ths and 8ves. In Examples 5-12a and 5-12b the interval of a P5 or P8 between the outer voices is approached from the same direction with a leap in the soprano. In Example 5-12c the 5th involves the bass and alto, not the bass and soprano, while in Example 5-12d the soprano moves by step, not by leap. Both Examples 5-12c and 5-12d are correct.

Example 5-12.

The avoidance of parallels of all types was somewhat less strictly maintained in instrumental than in vocal music. In piano writing, for instance, accompaniment figures have frequently outlined 5ths or 8ves, as in Example 5-13.

Example 5-13. Mozart, Sonata K. 284, III

Tema
p

D: I vi ii⁶ V⁷

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In most cases, such instances of parallels are confined to those textures and instrumental lines in which they are not obvious to the ear. When you attempt to compose tonal music, you should use parallel 5ths and 8ves very sparingly, if at all, and in such a way that the listener's attention will not be drawn to them. Parallels involving both of the outer parts are especially rare and should be avoided. The few instances of such parallels, such as in Example 5-14, do not contradict the general validity of the rule. Possibly Beethoven was trying to evoke a rustic, unsophisticated atmosphere through the use of the parallels—the example is, after all, from the beginning of the *Pastoral Symphony*.

Example 5-14. Beethoven, Symphony No. 6, Op. 68, I

F: I 6 vii^{⁹⁶} I IV I V

SUMMARY

Chords in tonal music are produced by the motions of individual musical lines, and the manipulation of these lines is called *voice leading* or *part writing*. A closely related term is *counterpoint*, which refers to the combining of relatively independent musical lines.

In your first exercises you will use melodies that are relatively short and simple and that conform to the suggestions given on pp. 78-79, and you will usually notate your exercises in *reduced score*, rather than in *full score*. When two parts are notated on a staff, the stems of the top part always point up and those of the bottom point down.

Spacing is an important consideration in voicing chords. In four-part textures, the space between the soprano and tenor parts categorizes a chord to be in *close structure* or *open structure*. Other suggestions regarding spacing are given on p. 82.

Parallel 5ths and 8ves are avoided in most contexts in tonal music because they undermine the relative independence of the individual parts. Also generally avoided are *consecutive 5ths and 8ves by contrary motion* and, in certain circumstances, *unequal 5ths and direct 5ths and 8ves*. See pp. 84-88 for details.

SELF-TEST 5-3

(Answers begin on page 574.)

- A. Label the chords in the excerpt below with roman numerals. Then label any examples of parallelism (objectionable or otherwise) that you can find.

Bach, "Ermuntre dich, mein schwacher Geist"

B. Find and label the following errors in this example:

1. Parallel 8ves
2. Parallel 5ths
3. Direct 5th
4. 5ths by contrary motion
5. Spacing error (review p. 82)

C. Find and label the following errors in this example:

1. Parallel 8ves
2. Parallel 5ths
3. Direct 8ve
4. 8ves by contrary motion
5. Unacceptable unequal 5ths
6. Spacing error

EXERCISE 5-3. See Workbook.

CHAPTER 6

Root Position Part Writing

INTRODUCTION

We will begin our first efforts at tonal composition by exploring the relatively restricted environment of root position triads. Inverted triads, introduced in Chapters 8 and 9, will allow us to write more melodic bass lines, but for now we will have to accept the somewhat rigid contour of a root position bass. The inner voices, however, should be treated as melodies, even if they are seldom as interesting as the soprano line. It is especially important to observe even in the inner voices the rules concerning leaps that you learned in the previous chapter (see rule 4, pp. 78-79).

We can reduce to four the number of different intervals that can separate the roots of any two chords. This is because a 2nd and a 7th, for example, are the same in this context, since the part writing of the upper voices is the same whether the bass moves by a 2nd or by a 7th. The four combinations, then, are:

- 2nd apart (same as a 7th apart)
- 3rd apart (same as a 6th apart)
- 4th apart (same as a 5th apart)
- same roots—a repeated chord

As we deal with these four combinations (which will be taken up in reverse order from the way they are listed above), the conventions followed in writing for three and four parts are presented. In each section, the traditional four-part texture will be discussed first.

A major issue in part writing in the tonal style concerns which notes of a chord are doubled or even tripled. When we refer to a note being doubled or tripled, we mean that two or three of the parts are given that pitch class, although not necessarily in the same octave. For example, look at the Bach excerpt in Part A of Self-Test 5-3 (p. 89). The root of the first chord, G, is tripled in the alto, tenor, and bass. The root of the second chord, C, is doubled in the soprano and bass.

ROOT POSITION PART WRITING WITH REPEATED ROOTS

Four-part textures

1. All members of the triad are usually present. The final I chord is sometimes incomplete, consisting of a 3rd and a tripled root.
2. The root is usually doubled. The leading tone ($\hat{7}$) is almost never doubled.

Three-part textures

1. The 5th of the triad is often omitted. The final I chord may consist only of a tripled root.
2. An incomplete triad will usually have the root doubled. The leading tone ($\hat{7}$) is almost never doubled.

When a root position triad is repeated, the upper voices may be arpeggiated freely, as long as the spacing conventions are followed (review discussion of voicing a single triad, pp. 81-82). The bass may arpeggiate an octave. Example 6-1 illustrates appropriate part writing for repeated roots.

Example 6-1.

SELF-TEST 6-1 Using repeated roots.

(Answers begin on page 575.)

Test your understanding of the preceding section by filling in the inner voice or voices in the second chord of each pair. The key is C major throughout.

four parts

three parts

EXERCISE 6-1. See Workbook.

ROOT POSITION PART WRITING WITH ROOTS A 4TH (5TH) APART

As you will learn in the next chapter, one of the most fundamental root movements in tonal music is that of the descending P5 (or ascending P4). The part-writing principles involved in this root movement are identical to those concerned with the ascending P5 (or descending P4). Other principles that must always be kept in mind are those concerning spacing, parallelism, and the resolution of $\hat{7}$ to $\hat{1}$ when $\hat{7}$ occurs in the melody.

Four-part textures

1. One method for writing this root relationship in four parts is to keep in the same voice the tone that is common to both chords, while the remaining two upper parts move by step. The stepwise motion will be ascending for a root movement of a P5 down (Ex. 6-2a) and descending for a root movement of a P5 up (Ex. 6-2b).

Example 6-2.

C: V I IV I

2. A second method moves all three upper parts in the same direction, with no leaps larger than a 3rd. The motion will be descending for a root movement of a P5 down (or P4 up) and ascending for a root movement of a P5 up (or P4 down). See Example 6-3.

Example 6-3.

C: I IV I V

3. A third method, while not as smooth as the first two, is useful for changing between close and open structures. Here we again keep in the same voice the tone that is common to both chords, while the voice that has the 3rd in the first chord leaps to provide the 3rd of the second chord. The remaining voice moves by step. See Example 6-4.

Example 6-4.

C: I IV I V

Three-part textures

The more flexible nature of three-part writing makes it impossible to distill a few conventional methods, as was done for four-part textures. Remember that each chord must contain at least a root and 3rd, and observe conventions concerning spacing and parallelism (Ex. 6-5).

Example 6-5.

Bb: I IV I IV I IV I IV

SELF-TEST 6-2 Using roots a 4th (5th) apart.
(Answers begin on page 576.)

A. Add alto and tenor parts to each exercise below. Each progression involves roots a P5 (P4) apart. Use one of the three methods outlined on pages 93-94 in each case, and state which you have used.

1 — 2 — 3 —
d: i iv A: vi ii V I Bb: ii V I IV
4 — 5 — 6 —
e: V i iv i F: I IV I V Bb: I V I IV I

B. Add an alto part to each example. Be careful to observe conventions concerning spacing, parallels, and doubling. Each triad should include at least a root and a 3rd.

The musical score consists of three measures of music for three voices: Soprano (top), Alto (middle), and Bass (bottom). Measure 1: G: I V I IV I. Measure 2: Eb: vi ii V I. Measure 3: d: i iv i. The vocal parts are written in a four-line staff system with a clef, key signature, and time signature.

EXERCISE 6-2. See Workbook.

ROOT POSITION PART WRITING WITH ROOTS A 3RD (6TH) APART

The voice leading that involves root position triads a 3rd or 6th apart is often quite smooth, because the two triads will always have two tones in common.

Four-part textures

Assuming that the first of the two root position triads has a doubled root, only one of the upper voices will need to move. The two upper voices that have tones in common with the second chord remain stationary, while the remaining voice moves by step. The stepwise motion will be upward for roots a descending 3rd apart (Ex. 6-6a), and downward for roots an ascending 3rd apart (Ex. 6-6b).

Example 6-6.

The musical score consists of two measures of music for four voices: Soprano (top), Alto (second from top), Tenor (third from top), and Bass (bottom). Measure 1: Bb: vi IV ii V f: i VI iv i. Measure 2: G: I iii vi ii V - I. The vocal parts are written in a four-line staff system with a clef, key signature, and time signature.

Three-part textures

Commonly encountered part-writing situations are more diverse in three-part textures. Some possibilities are illustrated in Example 6-7. Especially tricky is the ascending root movement. In that case, you should not omit the 5th of the second chord, for the listener may assume that the music has progressed only from a root position triad to an inverted form of the same triad (Exx. 6-7c and 6-7d).

Example 6-7.

The musical score consists of four examples labeled a, b, c, and d. Each example shows a three-part texture (two upper voices moving together) over a bass line. The examples illustrate different root movements: a (descending 3rd), b (descending 3rd), c (ascending 3rd), and d (ascending 3rd).

SELF-TEST 6-3 Using roots a P4th (P5th) and 3rd (6th) apart. (Answers begin on page 577.)

A. Add alto and tenor parts to each exercise. Use the smoothest voice leading in each case.

The musical score consists of three measures of music for three voices: Soprano (top), Alto (middle), and Bass (bottom). The vocal parts are written in a four-line staff system with a clef, key signature, and time signature.

Bb: vi IV ii V f: i VI iv i G: I iii vi ii V - I

B. Add an alto part to each exercise. Be careful to observe the conventions concerning parallels, spacing, and doubling.

A: I iii vi IV d: i III VI iv i Bb: I vi IV I V I

EXERCISE 6-3. See Workbook.

ROOT POSITION PART WRITING WITH ROOTS A 2ND (7TH) APART

Two triads with roots a 2nd (or 7th) apart have *no* tones in common, so every part must move from the first chord to the second. In this discussion we will assume that the bass moves by 2nd rather than by 7th, but voice leading is the same for a 7th down, for example, as it is for a 2nd up.

Four-part textures

If the root is doubled in the first chord, as is usually the case, then the voice leading is usually quite simple: if the bass moves up by step, the upper voices move down to the next chord tone (Ex. 6-8a), while if the bass moves down by step, the upper voices move up to the next chord tone (Ex. 6-8b).

Example 6-8.

a b

The progression V-vi (or V-VI) presents some special problems. In most cases the 3rd is doubled in the vi chord in this progression. This results when only two of the three upper voices (the voices containing $\hat{2}$ and $\hat{5}$) move down, while $\hat{7}$ follows its usual tendency to resolve up to $\hat{1}$. Example 6-9 illustrates the V-vi progression with the 3rd doubled in the vi chord.

Example 6-9. Bach, "O Ewigkeit, du Donnerwort"

F: I⁶ IV V vi I V I

On the other hand, if $\hat{7}$ is in an inner voice in the V chord, its need to resolve is not so apparent to the ear, and it may move *down* by step to $\hat{6}$ in the V-vi progression. This is not practicable in minor, however, because of the awkward +2 that results. The V-vi (V-VI) progression is summarized in Example 6-10. The voice leading away from a triad with a doubled 3rd must be handled carefully, since the conventions discussed in this chapter all assume doubled roots.

Example 6-10.

good good poor

G: V vi g: V VI g: V VI

+2

Three-part textures

The smoothest voice leading will find a complete triad followed by a triad with two roots and a 3rd (Exx. 6-11a and 6-11b) or a triad consisting of two roots and a 3rd followed by a complete triad (Exx. 6-11c and 6-11d). In other words, with roots a 2nd apart, the sequence will usually be complete to incomplete or incomplete to complete. Remember to resolve $\hat{7}$ to $\hat{1}$ in the V-vi progression—with the possible exception of cases in which $\hat{7}$ is in the inner voice in a major key.

Example 6-11.

SELF-TEST 6-4 Using all root relationships.

(Answers begin on page 577.)

A. Complete each progression. Make two versions of each, one for three parts and one for four parts.

B. Fill in alto and tenor parts in these two exercises.

1

E_b: I vi V I IV I IV V - I

2

b: V i VI iv V VI iv V - i

C. Analyze the chords specified by these figured basses. Then compose a good melody line for each. Finally, fill in alto and tenor parts to make a four-part texture.

1

2

EXERCISE 6-4. See Workbook.

* The given soprano here and elsewhere may make it impossible to follow the conventions. Watch out for parallels and spacing, and double the root in most cases.

INSTRUMENTAL RANGES AND TRANSPOSITIONS

Appendix A provides suggested ranges for many of the instruments for which you may wish to write. A “written range” is given next to the “sounding range” for each instrument in Appendix A. This is necessary because, strange as it might seem at first, players of certain instruments of the band and orchestra do not read music at concert pitch. This means that the notes that they read in their parts produce pitches that are higher or lower than the notes that have the same names on the piano.

The reasons why we have transposing instruments are somewhat complicated, but we will try to explain two of them here as examples. The French horn was originally a valveless instrument that could play only the notes of the harmonic series. A harmonic series with C2 as a fundamental is illustrated in Example 6-12. The filled-in noteheads represent pitches that are quite out of tune in comparison to the modern equal-tempered system.

Example 6-12.



In order to play in different keys, the horn player had to insert the proper *crook*, a piece of tubing of a precisely calculated length. A longer crook lowered the instrument’s *fundamental* and, correspondingly, its harmonic series, while a shorter crook did the reverse. No matter what crook was used, it was the custom to write for the horn as if it were in the key of C so that the C fundamental and its familiar harmonic series would remain unchanged. This practice was retained even after valves were introduced and the horn settled into its modern F fundamental.

Perhaps an easier example to understand is the saxophone family, which consists of eight different instruments, each of which has a different sounding range (only two of the saxophones are included in Appendix A). In order to make it easier for players to “double”—to switch from one saxophone to the other—saxophone music is written as if all saxophones had the same range, with the result that a G4, for example, is fingered the same way on every saxophone.

Naturally, a musician has to understand transpositions thoroughly in order to compose, arrange, or read instrumental music. To write music that you have composed or arranged from concert pitch for a transposing instrument, follow the instructions under “written range” in Appendix A. To write music from a transposing instrument into concert pitch, you have to reverse the process. Example 6-13 illustrates this. Notice that key signatures are transposed as well.

Example 6-13.



If you don’t have Appendix A or a similar guide handy, remember that a transposing instrument “sees a C but sounds its key.” This means that a horn player who sees a C will sound an F, because the French horn is pitched in F. To go from concert pitch to the transposed part, remember that “to hear its key, you must write a C.”

One procedure to use when writing for an ensemble is this:

1. Notate the sounding ranges of the performers at the top of your page of manuscript paper.
2. Compose the exercise in the form of a reduced score upon as few staves as practicable. Keep an eye on the ranges.
3. Provide enough copies for the ensemble so that players will not have to huddle around a single stand. Instrumental parts should be copied onto separate sheets using correct transpositions.

SUMMARY

The possible relationships between the roots of any two triads may be reduced to four. Part-writing conventions involving all four relationships are discussed in terms of both three- and four-part textures on the pages indicated below.

Repeated roots, p. 92.

Roots a 4th (or 5th) apart, pp. 93-95.

Roots a 3rd (or 6th) apart, pp. 96-97.

Roots a 2nd (or 7th) apart, pp. 98-100.

While the 5th of the triad is frequently omitted in three-part textures, this is seldom found in four-part textures, with the exception of the final I chord. In most cases, when a member of the chord is *doubled*, the doubled tone is the root. However, in the V-vi (or V-VI) progression, the 3rd of the vi chord is usually doubled.

You will need to understand instrumental transpositions if you want to write instrumental music or read instrumental scores. For various reasons, many musical instruments do not sound where written; instead, the music must be transposed, either *from* concert pitch so that you can notate the part, or *to* concert pitch so that you can understand the score. Appendix A provides ranges and transpositions for a number of different instruments.

SELF-TEST 6-5

(Answers begin on page 579.)

A. Notate the chords below for the specified instruments. Each chord is written at concert pitch, so transpose as needed for the performers. Note that the instruments are listed in *score order*, the order used in Appendix A, which is not always the same as order by pitch. **Use the correct clef for each instrument.**

FL.	OB.	A. SAX.	HN. IN F	HN. IN F
CLAR. IN B _B	A. SAX.	TPT. IN B _B	TPT. IN B _B	V.C.
BSN.	T. SAX.	TRB.	TUBA	D.B.

B. Here is a short chord progression to use in these exercises:

F: I vi ii V I

1. Make an arrangement for two alto saxophones and one tenor saxophone. Copy out the parts, using correct transpositions.
2. Make a four-part arrangement for SATB chorus.

C. Write a version of the excerpt below on a grand staff by transposing the parts to concert pitch. Play your version on the piano, and analyze the harmonies if you can (there are some non-chord tones, so be sure to listen carefully).

E♭ Alto Sax B♭ Tenor Sax B♭ Trumpet Trombone

EXERCISE 6-5. See Workbook.

CHAPTER

7

Harmonic Progression

INTRODUCTION

Before you can begin to compose convincing tonal music or to learn anything from harmonic analyses, you must learn which chord successions are typical of tonal harmony and which ones are not. Why is it that some chord successions seem to “progress,” to move forward toward a goal, while others tend to wander, to leave our expectations unfulfilled? Compare the two progressions in Example 7-1. The first was composed following the principles that will be discussed in this chapter, but the chords for the second were selected through rolling a die. While the random example has a certain freshness to it, there is no doubt that the first one sounds more typical of tonal harmony. This chapter will explore this phenomenon, but first we must turn to a topic that concerns melody as well as harmony.

Example 7-1.

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SEQUENCES AND THE CIRCLE OF FIFTHS

One of the important means of achieving unity in tonal music is through the use of a *sequence*, a pattern that is repeated immediately in the same voice but begins on a different pitch class. A *diatonic sequence* will keep the pattern in a single key, which means that modifiers of the intervals (major, minor, and so forth) will probably change, as in Example 7-2a. A *modulating sequence*, as in Example 7-2b, transposes the pattern to a new key. Modulating sequences will be discussed in more detail in a later chapter.

Example 7-2.

Four sequences occur in $7\frac{1}{4}$ measures in Example 7-3. Sequences A, B, and D are modified sequences, because the pattern is not identical in each “leg” of the sequence. Sequence C is a true sequence, because the pattern is maintained exactly.

Example 7-3. Bach, Partita No. 2, Gigue

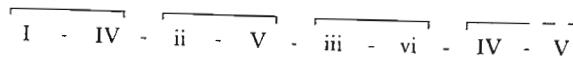
The image shows two staves of musical notation. The top staff has a treble clef, a key signature of one sharp, and common time. The bottom staff has a bass clef, a key signature of one sharp, and common time. Above the staves, two sequences are labeled: sequence C covers measures 1 through 3 of the top staff, and sequence D covers measures 1 through 3 of the bottom staff.

All of the sequences in Example 7-3 are descending—that is, the pattern is lower in pitch with each occurrence. Ascending sequences certainly do occur, as in Example 7-4.

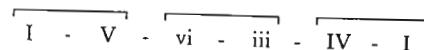
Example 7-4. Handel, *Messiah*, “For Unto Us a Child Is Born”

The image shows a soprano vocal line with lyrics from Handel's *Messiah*. The vocal line starts with a dynamic of p^{7} . The lyrics are: "For un - to us a Child is born, un - to us a Son is given, un - to us a Son is given, un - to us a Son is given." Above the vocal line, four sequences are labeled: sequence 1 covers measures 1-2 of the vocal line, sequence 2 covers measures 3-4, sequence 3 covers measures 5-6, and sequence 4 covers measures 7-8.

The sequence in the Handel excerpt involves not just the melody, but the harmony as well. The harmonic sequence is:



A sequence may be melodic or harmonic or both. One common sequential harmonic pattern is:



This forms the basis of the famous Pachelbel “Canon.”

Example 7-5. Pachelbel, Canon in D

The image shows two staves of musical notation in D major. The top staff has a treble clef and common time. The bottom staff has a bass clef and common time. Below the staves, a harmonic sequence is labeled: D: I V vi iii IV I IV V.

But a sequential harmonic pattern that is far more significant to this chapter is the *circle-of-fifths progression*, which consists of roots related by descending 5ths (and ascending 4ths). While most of the 5ths (and 4ths) will be perfect, if a diatonic circle-of-fifths progression goes on long enough, a ^5 (or $+4$) will appear (Ex. 7-6).

Example 7-6.

The image shows a single staff of musical notation for bass. It features a bass clef and common time. The notes form a circle-of-fifths progression: D, G, C, F, B, E, A, D. Above the staff, a circled "5" indicates a double-sharp note, representing the enharmonic equivalent of the note A.

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Progressions of this sort often appear in connection with melodic sequences, as in Example 7-7.

Example 7-7. Vivaldi, Concerto Grosso Op. 3, No. 11, I (soloists only)

While the chords in Example 7-7 are all in root position, if some or all of them were inverted, the progression would still contain a circle-of-fifths harmonic sequence.

Because the root progression of a 5th down (or 4th up) is so basic to tonal harmony, we will use the circle-of-fifths progression to show how diatonic chords are used in tonal music. We begin with the strongest of all such progressions, the V-I progression.

THE I AND V CHORDS

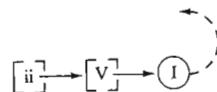
The ultimate harmonic goal of any tonal piece is the tonic triad, and this triad is often also the goal of many of the formal subdivisions of a composition. The tonic triad is most often preceded by a V (or V⁷) chord, and it would be safe to say that V⁽⁷⁾ and I together are the most essential elements of a tonal work. It is not difficult to find examples in which the harmony for several measures consists only of I and V chords, as in Example 7-8, which Mozart composed at the age of fifteen.

Example 7-8. Mozart, Symphony K. 114, III

It would be difficult to overstate the importance of the I-V-I progression at all levels of musical structure, from the phrase on up. In fact, a complex theory developed in the first third of this century by Heinrich Schenker takes the position that any tonal composition can be understood as an elaborated I-V-I progression. As the harmonic progression diagrams are developed in the course of this chapter, remember that chords other than I and V serve important but supporting roles.

THE II CHORD

If we extend our circle-of-fifths progression backward one step from the V chord, we have the following progression:



This diagram illustrates the normal function of ii to progress to V and of V to progress to I. The dotted line after the I indicates that if the piece continues, the I chord might be followed by anything.

Many phrases contain only a I-ii-V-I progression. Example 7-9 shows a typical soprano/bass framework for such a progression.

Example 7-9.

Eb: I ii⁶ V⁷ I

Play Example 7-9 and then compare it with Beethoven's version of this progression in Example 7-10. Here Beethoven uses a ii⁶ instead of a ii⁶.

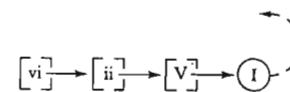
Example 7-10. Beethoven, Minuet

Moderato

Eb: I ii⁶ V⁷ I

THE VI CHORD

One more step in the circle of fifths brings us to the vi chord.



Put in root position, this progression illustrates an ostinato (repeated) bass pattern often found in popular tunes. Play Example 7-11 and see whether it sounds familiar.

Example 7-11.

Bb: I vi ii V

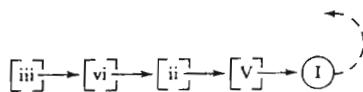
The same progression, but in minor, is seen in Example 7-12. As we will demonstrate in a later section, chord functions in minor are almost identical to those in major.

Example 7-12. Verdi, *La forza del destino*, Act II (piano-vocal score)

f: V⁷ i VI ii⁶ V i⁶

THE III CHORD

Another 5th backward brings us to the iii chord, far removed from the tonic triad.



Beginning theory students often assume that the iii chord is frequently encountered and that they should be sure to include at least one iii chord in each exercise they write. This is not at all the case, at least not in the major mode. When $\hat{3}$ is found in a bass line, the chord above it is almost always a I 6 rather than a iii. The iii chord does occur occasionally, of course. When it follows the natural descending 5ths progression, it will go to vi, as in Example 7-13. The use of the III chord in minor will be discussed on page 118.

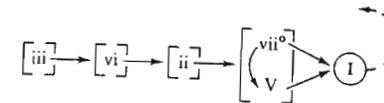
Example 7-13. Bach, "O Ewigkeit, du Donnerwort"

Also, the iii chord is useful for harmonizing a $\hat{1}-\hat{7}-\hat{6}$ soprano line, as in Example 7-14, although $\hat{7}$ is usually harmonized by V or vii 0 in other contexts.

Example 7-14.

THE VII CHORD

Continuing the circle of fifths backward from iii brings us to vii 0 . While the vii 0 -iii progression does occur in sequential passages, the vii 0 usually acts instead as a substitute for V. Therefore, the customary goal of vii 0 outside of circle-of-fifths sequences is not iii, but the I chord.



If vii 0 and V are used next to each other, V will usually follow the vii 0 , since the V is the stronger sound.

The most common use of vii 0 is in first inversion between two positions of the tonic triad: I-vii96-I 6 or I 6 -vii96-I (Ex. 7-15).

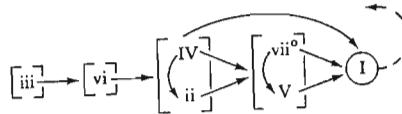
Example 7-15. Handel, *Messiah*

The vii96 is also useful in harmonizing a $\hat{6}-\hat{7}-\hat{1}$ soprano line. Compare Examples 7-14 and 7-16.

Example 7-16.

THE IV CHORD

Still missing from our diagram is the IV chord, which lies a P5 *below* the tonic. The IV is an interesting chord because it has three common functions. In some cases, IV proceeds to a I chord, sometimes called a *plagal* progression. More frequently, IV is linked with ii; IV can substitute for ii (going directly to V or vii⁰), or IV can be followed by ii (as in IV-ii-V). These three common uses of the IV are summarized in the chord diagram.



In Example 7-17 the IV appears in a plagal progression. The I⁶ in the last measure indicates that the notes of the tonic triad are present at that point. However, the bracket with the V under it means that everything within the bracket functions as V. The I⁶ is actually a kind of embellishment called a *cadential six-four*, which will be explained further in Chapter 9.

Example 7-17. Haydn, Sonata No. 35, II

Adagio

F: I V⁷ ⁶ I IV I⁶ ii⁶ I⁶/V

Later on in the same sonata in which Example 7-17 appears, IV is used in its pre-dominant function (Ex. 7-18).

Example 7-18. Haydn, Sonata No. 35, III

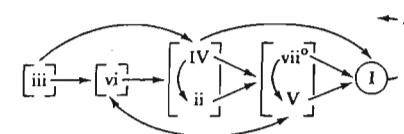
G: I V¹/₂ I⁶ IV V⁷ I

COMMON EXCEPTIONS

The chord diagram on page 116 includes all of the diatonic triads and gives a reasonably accurate picture of the chord progressions most often found in tonal music. But to make our chart of chord functions more complete, we must include three commonly encountered exceptions to the norms discussed so far.

1. V-vi (the deceptive progression)
2. vi-V (skipping over IV or ii)
3. iii-IV (see Ex. 7-14)

These additions are included in the diagram below, which may be considered complete for major keys. Remember that the dotted line after the I chord means that any chord may follow it.



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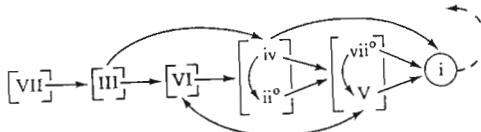
DIFFERENCES IN THE MINOR MODE

Most chords function the same way in minor as in major. However, the mediant triad, so seldom found in the major mode, is a common feature of the minor mode: it represents the relative major key, and minor-key music has a decided tendency to drift in that direction.

In addition, the variability of $\hat{6}$ and $\hat{7}$ will occasionally produce chords of different quality and function. The most important of these are the following:

1. The subtonic VII, sounding like the V in the key of the relative major—that is, a V of III.
2. The minor v, usually v^6 , after which the $\hat{7}$ will move to $\hat{1}\hat{6}$, usually as part of a iv^6 chord.

The first of these possibilities is included in the chord diagram below.



The second possibility, v^6 - iv^6 , is illustrated in Example 7-19.

Example 7-19. Bach, "Als vierzig Tag' nach Ostern"

CONCLUSION

The last two chord diagrams on pages 117-118 are somewhat complex, but both are based on the circle-of-fifths progression. Keep this in mind while you are learning them. At the same time, be aware that Bach and Beethoven did *not* make use of diagrams such as these. They lived and breathed the tonal harmonic style and had no need for the information the diagrams contain. Instead, the diagrams represent norms of harmonic practice observed by theorists over the years in the works of a large number of tonal composers. They do not represent rules; they are just guidelines for your use in analyzing and composing tonal music.

SUMMARY

A *sequence* is a pattern that is repeated immediately in the same voice but beginning on a different pitch class. A *diatonic sequence* keeps the pattern within a single key, while a *modulating sequence* transposes the pattern to a different key.

A sequential pattern may be melodic, harmonic, or both. A harmonic sequence that is very important in tonal music is the *circle-of-fifths sequence*, which consists of a series of root movements down a 5th (and/or up a 4th). The most important circle-of-fifths progression is the V-I (or V-i) progression, but the circle-of-fifths progression also forms the basis of the diagrams given on pp. 117-118 illustrating normative harmonic progressions in major and minor modes.

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SELF-TEST 7-1

(Answers begin on page 580.)

- A. Complete each progression to conform with the last two chord diagrams presented (pp. 117-118). The chord in the blank should be different from those on either side of it. In most cases there is more than one correct answer.

1. I ? vi (or)
2. IV ? V (or)
3. V ? IV (or)
4. I ? IV (or)
5. vi ? V (or)
6. vii^o ? V ()

- B. Bracket any portions of these progressions that do not conform to the complete major and minor chord diagrams (pp. 117-118).

1. I V ii vii^o I
2. i iv i VII i V i
3. I IV iii vi ii V I
4. I IV ii V vi ii V I

- C. Analysis. Label all chords with roman numerals, and bracket any successions of chords that do not agree with the complete major and minor chord diagrams.

1. Bach, "O Herre Gott, dein göttlich Wort"

2. Vivaldi, Cello Sonata in G Minor, Sarabande*

In addition to labeling the chords, bracket any melodic sequences in the cello part. Non-chord tones in the solo part have not been put in parentheses, but the harmonic analysis can be done by concentrating upon the accompaniment. The key is g minor, in spite of what appears to be an incorrect key signature. Key signatures had not yet become standardized when this work was composed.

*Unfigured bass realization by S. Kostka.

- D. Analyze the chords specified by these figured basses and add inner voices to make a four-part texture. Bracket all circle-of-fifths progressions, even those that contain only two chords.

- E. Analyze this figured bass, then add a good soprano line and inner voices. Bracket all circle-of-fifths progressions.

- F. Harmonize the melodies below by using root position major or minor (not diminished) triads in an acceptable progression. Try to give the bass a good contour while avoiding parallel and direct 5ths and 8ves with the melody. Be sure to include analysis. Finally, fill in one or two inner parts, as specified.

1. SAB

F:

2. SATB

c:

3. SATB

E-flat:

4. SATB

d:

5. SAB

A:

- G. Add an alto part (only) to mm. 1-2. Then compose a good soprano line for mm. 3-4 and fill in an alto part.

H. Review. Label the chords with roman numerals and inversion symbols (where needed).

ex. 1 2 3 4 5 6 7

F: vii⁶ e: — A: — g: — Ab: — b: — G: — f: —

8 9 10 11 12 13 14 15

c: — D: — Eb: — f: — E: — d: — Bb: — c: —

EXERCISE 7-1. See Workbook.

CHAPTER

8

Triads in First Inversion

INTRODUCTION

Listen to the short phrase below, paying special attention to the bass line.

Example 8-1.

D: I V⁷ I ii V⁷ I

It's not bad, but it could be improved. The melody line is fine, having both shape and direction, but the bass seems too repetitive and too rigid. Compare Example 8-1 with Example 8-2.

Example 8-2. Haydn, Sonata No. 33, III

D: I 6 § V § I ii⁶ V⁷ I

Now the bass line is improved through the use of inverted chords (indicated by circled bass notes in the example). Although the harmony is the same, the inverted chords have created a bass line with a more interesting contour and with more variety.

Most phrases of tonal music contain at least one inverted chord, and the inversions usually serve the purposes that we have just demonstrated. We are not saying that a phrase without inverted chords is poorly composed—it just depends upon what effect the composer is after. For example, minuets from the Classical period often contain phrases with chords that are all in root position.

BASS ARPEGGIATION

One way in which first inversion triads often originate is simply through bass arpeggiation. If you look back at the first measure of Example 8-2, you will see that D4 is the primary bass note in the measure. The F#4 serves the dual purpose of providing the 3rd of the chord and of giving the bass some variety. A similar situation is found in the first two beats of the second measure. When you analyze a bass arpeggiation such as these, you should identify the arpeggiations only with arabic numerals (as in Ex. 8-2) or omit symbols altogether (as in Ex. 8-3).

Accompaniment figures in keyboard music often involve faster arpeggiations. Two examples by Haydn are shown below (Exx. 8-3 and 8-4). In both, the fundamental bass line is the one shown in the textural reduction. The other pitches played by the left hand should be considered as inner voices that are simply filling in the chords. They are not part of the bass line, so we would not consider these notes to be creating inversions at all.

Example 8-3. Haydn, Sonata No. 43, I

A_b: I V⁶ I

Textural reduction

Example 8-4. Haydn, Sonata No. 45, I

B_b: I V⁶ I

Textural reduction

Textural reductions such as those of Example 8-3 and 8-4 appear throughout this text. Their purpose is to simplify the texture and make the voice leading easier to understand. Notice that in the reduction of Example 8-4 the E_b5 has been transposed up one octave from the original. The octave transposition helps clarify the essentially conjunct (stepwise) nature of the melodic line.

SUBSTITUTED FIRST INVERSION TRIADS

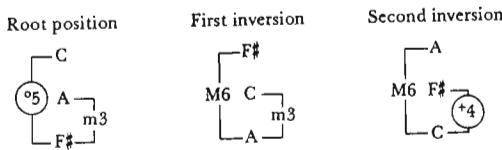
First inversion triads are often used as *substitutes* for root position triads, instead of coming about through bass arpeggiation. One reason for using such inversions is to improve the contour of the bass line. Another is to provide a greater variety of pitches in the bass line. A third reason is to lessen the importance of V and I chords that do not serve as goals of harmonic motion. Instances of this third type can be seen in Examples 8-3 and 8-4, where dominant chords are inverted. Example 8-5 contains a substituted inverted triad in the V⁶, which allows the ascending stepwise motion of the bass to continue. The I⁶ is an example of an arpeggiation following a structurally more important root position chord. The use of the I⁶ provides variety and allows the bass to imitate the soprano figure from the previous beat.

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Example 8-5. Bach, "Schmücke dich, o liebe Seele"

F: I V vi (V⁶) I (6) V⁷ I

The diminished triad was used almost exclusively in first inversion throughout much of the tonal era. Earlier composers had considered a sonority to be acceptable only if all of the intervals above the bass were consonant, and, as the diagram illustrates, a dissonant $\text{°}5$ or $+4$ occurs above the bass of a diminished triad unless it is in first inversion.



Tonal composers, while perhaps being unaware of the historical background, accepted for a time the tradition of using the diminished triad only in first inversion.

One first inversion triad that should *not* be freely substituted for the root position is vi^6 (or VI^6). A good rule to remember is that V in root position should not be followed by vi^6 . The reason for this can best be understood by playing Example 8-6 and comparing the effect of the V-vi and V-vi^6 progressions. The V-vi sounds fine—a good example of a deceptive progression—but the vi^6 sounds like a mistake.

Example 8-6.

C: I IV V vi ii V vi⁶

One common context for the vi^6 chord is between a root position I and a root position ii , as in Example 8-7a. The vi^6 will also occur occasionally as part of a sequential pattern, as in Example 8-7b.

Example 8-7.

a
Bb: I vi⁶ ii V I
b
Bb: I 1⁶ V vi⁶ iii IV⁶ I

PARALLEL SIXTH CHORDS

Most passages use a reasonable balance of root position and first inversion triads, but there are many passages in which this is not true. Some styles call for a preponderance of root position chords. On the other hand, a whole series of parallel first inversion triads (or *sixth chords*, from figured bass symbols) is often found, especially in sequences. Chords used in parallel motion in this way generally do not function in the usual fashion. Instead, they serve as passing chords, connecting some chord at the beginning of the passage to some chord at the end of it. In Example 8-8 the parallel motion connects the root position I chord in m. 4 with another root position I chord in m. 7. The roman numerals in the sixth chord passage are in parentheses to show that the chords are not functioning in their usual manner.

Example 8-8. Haydn, Symphony No. 104, I

Allegro

Bsn.
Vl.
Vla.
Vc.
D.B.

D: I (IV vii⁰ I) V⁶ I (V⁶ IV⁶ iii⁶ ii⁶ I⁶ vii⁹⁶) I I⁹ V

Textural reduction

In the textural reduction of Example 8-8 the line in mm. 2-3 connecting D3 to C[#]4 shows that a simplified version of the bass line would have stepwise motion here (m2 down) instead of the leap. Notice also the parallel 5ths in mm. 5-7. Haydn disguised the 5ths in the original through the use of non-chord tones. The usual technique used to avoid parallel 5ths in a sixth-chord passage is to put the root of each chord in the melody, thus producing acceptable parallel 4ths instead of objectionable parallel 5ths (Ex. 8-9).

Example 8-9.

D: (IV⁶ iii⁶ ii⁶ I⁶ vii⁹⁶)

PART WRITING FIRST INVERSION TRIADS

Composition exercises using triads in first inversion as well as in root position are much more satisfying musically than are exercises restricted to root position only. Previous suggestions concerning spacing and voice leading still apply, of course, and should be considered together with those that follow.

Four-part textures

Inverted triads are nearly always complete in four-part textures. Since there are four voices and only three chord members, one of the members obviously will have to be doubled. The following suggestions should prove helpful.

1. In a contrapuntal texture—that is, in a texture consisting of relatively independent melodic lines—the doubling to use is the one that results from the best voice leading.
2. In a homophonic texture—that is, one that is primarily chordal or consists of a melody with chordal accompaniment—the doubling selected should be the one that provides the desired sonority.
3. In any texture, it is usually best not to double the leading tone.

The first of these suggestions probably needs no further explanation. Concerning the second suggestion, you should play Example 8-10, listening carefully to the different sonorities produced. If possible, you should also hear the example sung and performed by several combinations of instruments. The four parts of the example are presented in what is generally considered the order of preference on the part of composers of tonal music. However, this ordering is not to be interpreted as a rule. The quality of the sonority is affected as much by spacing as it is by doubling, as you will discover by comparing the last two chords in Example 8-10.

Example 8-10.

a Inner voice
doubles soprano b Inner voice
doubles bass c Soprano and
bass doubled d Inner voices
doubled

or or or or

← preferred ←

A doubled leading tone usually results in or implies parallel 8ves because of the strong tendency of $\hat{7}$ to resolve to $\hat{1}$. If you play Examples 8-11a through 8-11c, you will probably agree that Example 8-11c produces the most pleasing effect. Example 8-11a is obviously incorrect because of the parallel 8ves. But Example 8-11b, which avoids the parallels, still produces an unpleasant effect, probably because the parallels are still implied by the doubled leading tone.

Example 8-11.

F: I V⁶ I I V⁶ I I V⁶ I

Three-part textures

Inverted triads are usually complete in three-part writing. While incomplete inverted triads do occur, they are not used with the same frequency as incomplete root position triads. If a member of the triad is omitted, it will almost always be the 5th. The omitted member obviously cannot be the 3rd, since that is the bass note. If the root is omitted, the resulting sonority may be heard *not* as an inverted triad, but as root position triad, as in Example 8-12.

Example 8-12.

Bb: I⁶ ii^{6?} V
IV?

Example 8-13 is from a composition for TTB (Tenor, Tenor, Bass) chorus. The tenor parts sound an octave lower than written. There are two incomplete I⁶ chords in this excerpt. In the first of these the 5th is omitted, as we would expect. In the second incomplete I⁶, however, the root is omitted, but the listener recognizes the sonority as representing a I⁶ because it follows a V chord. Notice also that the IV at the beginning of m. 46 could also be analyzed as a ii⁶, as in Example 8-12 above. All of the other inverted triads in the excerpt are complete.

Example 8-13. Schubert, "Bardengesang"

Bb: V I V (I⁶) V (I⁶) IV vii⁶ I⁶ ii⁶ I⁶ V I

SUMMARY

Triads in inversion are not at all unusual in tonal music. In fact, most phrases include at least one. First inversions come about either as arpeggiations of triads by the bass or as substitutions for root position triads. First inversion triads are also called sixth chords, so *parallel sixth chords* is a term used for a passage that features first inversion triads in parallel motion.

Triads in first inversion are used for variety, to improve the bass line, and to lessen the weight of some I and V chords, as well as for other reasons. First inversion also allows the use of diminished triads (and sometimes augmented ones), since these are not commonly used in root position.

Inverted triads in four-part textures are usually complete, with no tones omitted. In three-part textures, if a tone is omitted, it is usually the 5th of the chord. If a tone is to be doubled, any tone but the leading tone will do. In four parts, the preferred doublings are soprano or bass with alto or tenor.

SELF-TEST 8-1

(Answers begin on page 583.)

A. Analysis.

1. Bracket the longest series of complete parallel sixth chords you can find in this excerpt. Do not attempt a roman numeral analysis. Does the voice leading in the sixth-chord passage resemble more closely Example 8-8 or Example 8-9?

Mozart, Sonata K. 279, III

2. Label all chords with roman numerals. Then classify the doubling in each inverted triad according to the methods shown in Example 8-10.

Bach, "Herzliebster Jesu, was hast du"

3. Label all chords with roman numerals. Write out the contour of the bass line in quarter-note heads (without rhythm). Can you find part or all of the bass line hidden in the melody?

Beethoven, Sonata Op. 2, No. 1, I

- B. The following excerpt is from Mozart's *Eine kleine Nachtmusik*. Supply the missing tenor line (viola part in the original), and then compare your result with Mozart's (in Appendix B).

G: V⁷ vi ii⁶ V⁷ V I⁶ V I

- C. Supply alto and tenor lines for the following excerpts.

1 2 3

B♭: I 6 V e: i V⁶ § i D: vi ii⁶ V vi

4 5 6

E♭: IV V I⁶ IV⁶ ♫: i V⁶ i iv d: i⁶ iv⁶ V i

E: I⁶ IV vii⁹⁶ I g: ii⁹⁶ V VI I⁶ F: I vi ii⁶ V

10 11 12

G: V⁶ § vi ii⁶ b: i⁶ ii⁹⁶ V VI A: V I⁶ IV V

- D. Using the first six problems from Part C, add an alto line to each to create a three-part texture.

- E. Analyze the chords specified by these figured basses, then add alto and tenor parts.

6 6 6 6

6 6 6 8 §

F. The excerpt below is from the Gavotte from Bach's French Suite No. 5. Supply the missing alto line (only), and then compare your result with Bach's original three-part version (Appendix B). Since this is written for a keyboard instrument, you do not need to worry about the range of the alto part.

G: I V⁶ vi iii⁶ IV ii⁶ V (§ 6 7) I

G. Analyze the chords implied by the soprano and bass lines below, remembering to use only triads in root position and first inversion. Then add alto and tenor parts to make a four-part texture.

H. The following example is reduced from Beethoven's Sonata Op. 79, III. Analyze the implied harmonies (more than one good solution is possible) and add two inner parts, one on each staff.

I. Continue your solution to Part E with a second four-measure segment, similar to the first.

EXERCISE 8-1. See Workbook.

Triads in Second Inversion

INTRODUCTION

It would be logical to assume that second inversion triads are used in tonal music in the same ways as first inversion triads: as bass arpeggiations and as substitutes for the root position. However, this is only partly true. For while both first and second inversion triads are created through bass arpeggiations, second inversion triads are *not* used as substitutes for the root position. The reason is that the second inversion of a triad is considered to be a much less stable sonority than either of the other two bass positions. For centuries before the development of tonal harmony, the interval of a P4 had been considered a dissonance if the *lowest voice* in the texture was sounding the bottom pitch of the P4. While each of the sonorities in Example 9-1 contains a P4 (or a P4 plus a P8), the first two are considered to be consonant because the interval of a P4 does not involve the lowest voice (review the discussion of the diminished triad in first inversion on p. 128). The other two sonorities are dissonant in the tonal style, although our twentieth-century ears may not readily hear the dissonance.

Example 9-1.

consonant consonant dissonant dissonant

5 5 6 6

Notice that diminished and augmented $\frac{5}{4}$ chords would also contain dissonant intervals above the bass—an +4 and a ${}^{\circ}4$, respectively.

Because the composers of the tonal era recognized the instability of the $\frac{5}{4}$ (six-four) chord (the only position in which there is a 4th above the bass), the chord is not used as a substitute for the more stable root position or first inversion sonorities. It is used in bass arpeggiations, as well as in several other contexts to be described below.

BASS ARPEGGIATION AND THE MELODIC BASS

The six-four chord may come about through a bass arpeggiation involving a root position triad, a first inversion triad, or both (Ex. 9-2).

Example 9-2. Mendelssohn, Symphony No. 4, Op. 90, I

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E: 1 (5) (6) (6) (3)

Your analysis of the “real” bass note will depend upon the context, taking into account such factors as metric placement, duration, and register. The figures in parentheses in Example 9-2 are often omitted when analyzing a passage employing an arpeggiated bass.

Another somewhat incidental way in which six-four chords may be formed is through a melodic bass. If the bass part has an important melodic line instead of fulfilling its usual supporting role, then any number of inverted chords may result. Since a melodic bass is no longer the harmonic foundation of the texture, inversions should not be indicated in such a passage. For instance, the bass melody in Example 9-3 is accompanied only by repeated A's and C's, implying the tonic harmony in F major. It would not be correct to analyze the excerpt as beginning with a I_4^6 .

Example 9-3. Beethoven, String Quartet Op. 59, No. 1, I

Allegro

F: $\text{F}^{\#}$

THE CADENTIAL SIX-FOUR

Besides its appearance in a bass arpeggiation or a melodic bass, the six-four chord tends to be used in three stereotyped contexts. If you compare the two halves of Example 9-4 below, you can see that they have much in common. Both begin with a tonic triad and end with a V-I progression. In Example 9-4b, however, the movement from ii^6 to V is momentarily delayed by a I_4^6 in a *metrically stronger position*. This is a very typical illustration of the cadential six-four, the most familiar of all six-four uses. Notice that the I_4^6 resolves to a *root position* V chord. Other resolutions of the cadential six-four will be introduced in Chapters 13 and 17.

Example 9-4.

E: I ii^6 V I I ii^6 I_4^6 V I

Examples from the literature of the cadential six-four may be seen in Example 7-17 (p. 116) and Example 8-13 (p. 133), as well as in later examples in this chapter.

Theorists have long debated whether it is better to analyze the cadential six-four as I_4^6 -V or simply as V, treating 1 and 3 as non-chord tones. On the one hand, all the notes of the tonic triad are present, but on the other hand, the function of the cadential I_4^6 is clearly decorative: it does not substitute for the root position tonic. The analytical symbols used in Example 9-4 and throughout this text are a compromise and reflect the validity of both schools of thought.

The voice leading in the upper parts into and away from the cadential I_4^6 is usually smooth, as in Example 9-4. The most dramatic demonstration of the delaying character of the cadential I_4^6 is found at the cadenza of many solo concertos. In such cases, the orchestra usually stops on a I_4^6 , after which the soloist performs the cadenza. No matter what the length of the cadenza, it eventually reaches V and, simultaneously with the return of the orchestra, resolves to I. In a cadenza played by a single-line instrument, the V chord will often be represented by a single tone or a trill, as in Example 9-5.

Example 9-5. Mozart, Violin Concerto K. 271a, III

496

cadenza

Ob.

Hn. in D

Solo VI.

Vla.

Vc.

D.B.

D: IV I⁶ IV⁶ I_4^6 V I

One special use of the III⁺⁶ in minor is so similar to the cadential six-four that it will be discussed here. If you play the progressions in Example 9-6 and compare them, it will be obvious to you that the same principle—the momentary delay of the dominant—is operating in each case. The cadential III⁺⁶, which is not often used, is clearly a *linear event* and not part of a III^{+V} progression. A cadential iii⁶ in the major mode is also a possibility, but it is not often found.

Example 9-6.

g: iv ii⁶ V i iv ii⁶ V i iv III⁺⁶ V i

THE PASSING SIX-FOUR

Second inversion triads are frequently encountered harmonizing the middle note of a three-note scalar figure in the bass, a usage that is called a *passing six-four chord*. The figure may be ascending or descending. While any triad may be used as a passing six-four chord, those in Example 9-7 are the most common and are found in both major and minor modes. The passing six-four usually falls on a weak beat and typically features smooth voice leading, as in Example 9-7. As with the cadential six-four, some theorists prefer not to assign a roman numeral to passing six-fours because of their weak harmonic function. In this text we will indicate this weak function by putting such roman numerals in parentheses.

Example 9-7.

A: I (V⁶) I⁶ IV⁶ (I⁶) ii⁶

Example 9-8 contains both a passing I⁶₄ (m. 25) and a cadential I⁶₄ (m. 27) in a three-part texture. The first inversion chords in mm. 24-26 are all substituted first inversions. Notice that the melody in mm. 24-27 is an embellished stepwise descent from A5 to B4.

Example 9-8. Mozart, Sonata K. 309, III

C: I⁶ IV I⁶ IV⁶ (I⁶) ii⁶ I⁶ V

Textural reduction

Longer stepwise motions in the bass often use passing six-four chords, as in Example 9-9. The textural reduction shows that the melody is also essentially stepwise and moves for several measures in parallel 6ths with the bass.

Example 9-9. Mozart, Symphony No. 40, K. 550, IV (piano score)

Piano score (Measures 71-75):
 Bb: I V⁶ IV⁶ (I₄⁶) ii⁶ I₄⁶ V

Textural reduction:
 Bass line: I V⁶ IV⁶ (I₄⁶) ii⁶ I₄⁶ V

THE PEDAL SIX-FOUR

One way of elaborating a static root position triad is to move the 3rd and 5th of the triad up by step then back down by step to their original positions. The sonority that results is a six-four chord (Ex. 9-10).

Example 9-10.

elaborated: I₄⁶

The next example shows the same elaboration in a more interesting musical context. Compare Example 9-10 with Example 9-11.

Example 9-11. Corelli, Concerto Grosso Op. 6, No. 8, Pastorale

Largo
 G: I (IV₄⁶) I IV V I

Because this elaboration is similar to a pedal point (Chapter 12), it is called a *pedal six-four* (some theorists call it an embellishing or stationary six-four). The roman numeral beneath a pedal six-four is put in parentheses to indicate its weak harmonic function.

The pedal six-four typically falls on a weak beat and employs stepwise voice leading. While any chord might be embellished by a pedal six-four, the most common progressions are V-(I₄⁶)-V and I-(IV₄⁶)-I, as in Example 9-12.

Example 9-12.

a: i V (i₄⁶) V i (iv₄⁶) i

The bass usually remains stationary after the pedal six-four chord, awaiting the return of the root position triad. However, this does not always happen. In Example 9-13 the IV₄⁶ moves on to V⁶ instead of back to I.

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Example 9-13. Mozart, Quartet K. 465, I

VI. I
VI. II
Vla.

G: I (IV⁶₄) V⁶ (ii⁶₄) V I⁶

PART WRITING FOR SECOND INVERSION TRIADS

In a four-part texture, the bass (5th of the chord) should be doubled. Exceptions to this are rarely encountered in tonal music. The other voices generally move as smoothly as possible—often by step—both into and out of the six-four chord. In a three-part texture, it is generally best to have all members of the triad present (Ex. 9-14a). But sometimes the root or 3rd is omitted, in which case the 5th is doubled (Exx. 9-14b and 9-14c).

Example 9-14.

a b c

c: V (i⁶) V ⁶ ii⁶ i⁶ V⁷ i ii⁶ i⁶ V i

SUMMARY

Six-four chords may come about incidentally through bass arpeggiation, or they may occur if the melody is in the bass. But in other contexts, triads in second inversion are treated in special ways in tonal music, because the six-four chord is considered dissonant in this style.

The *cadential six-four chord* is a tonic six-four that delays the arrival of the V chord that follows it. It totally depends upon the V chord for its meaning, and it should not be thought of as a substitute for a tonic triad in root position or first inversion. The cadential six-four occurs in a metrically stronger position than the V chord that it delays.

A *passing six-four chord* harmonizes the middle note of a three-note scalar figure in the bass. The most common passing six-four chords are the V⁶₄ and the I⁶₄ chords, and they usually fall on a weak beat.

A *pedal six-four chord* elaborates the root position chord that precedes it and usually follows it as well. Most pedal six-four chords are I⁶₄ or IV⁶₄ chords.

The voice leading into and out of a six-four chord is usually as smooth as possible, with stepwise motion prevailing. In a four-voice texture, the bass (5th of the chord) is almost always doubled.

SELF-TEST 9-1

(Answers begin on page 588.)

A. Analysis. In addition to the specific instructions for each example, label each six-four chord by type.

1. Label the chords with roman numerals. Be sure to include the F#5 at the beginning of m. 69 and m. 70 as a chord member.

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Mozart, Piano Sonata K. 333, III

Musical score for Mozart's Piano Sonata K. 333, III, showing two staves of music with dynamic markings (f) and measure numbers 65 and 70.

2. Label the chords with roman numerals.

Schumann, "Little Morning Wanderer," Op. 68, No. 17

Musical score for Schumann's "Little Morning Wanderer," Op. 68, No. 17, showing two staves of music with dynamic marking (f) and measure number 5.

3. Label the chords with roman numerals.

Bach, "Wenn mein Stündlein vorhanden ist"

Musical score for Bach's "Wenn mein Stündlein vorhanden ist," showing two staves of music.

B. Fill in one or two inner parts, as specified. Identify any six-four chords by type.

Musical staff with three voices (A, T, A) and harmonic analysis below it:

F: I⁶ ii⁶ I⁶ V I b: i iv⁶ (i⁶) iv V G: I (IV⁶) I V⁶ IV⁶ V⁶ I

C. Realize these figured basses for three or four voices, as specified. Notice the frequent use of $\frac{5}{3}$ (or the equivalent, such as $\frac{6}{4}$) to indicate a root position triad following an inverted chord. Analyze with roman numerals and label six-four types.

Figured bass realization for a three-voice setting:

S A S A T

$\frac{6}{4}$ $\frac{6}{4}$ $\frac{6}{4}$ $\frac{5}{3}$ $\frac{6}{4}$ $\frac{6}{4}$ $\frac{5}{3}$

Figured bass realization for a four-voice setting:

S A T S A T

$\frac{6}{4}$ $\frac{5}{3}$ $\frac{6}{4}$ $\frac{5}{3}$ $\frac{5}{3}$ $\frac{6}{4}$ $\frac{5}{3}$

EXERCISE 9-1. See Workbook.

CHAPTER 10

*Cadences, Phrases,
and Periods*

MUSICAL FORM

Understanding tonal harmony requires more than the knowledge of how each chord tends to function harmonically and how the voice leading might bring the chord into being. We must also give some consideration to musical *form*, the ways in which a composition is shaped to create a meaningful musical experience for the listener.

A study of the forms of lengthy compositions is beyond the scope of this text. However, it will be helpful for you to learn something of the harmonic basis of the smaller building blocks that combine to produce those larger forms.

CADENCES

While the ultimate harmonic goal of a tonal composition is the final tonic triad, there will also be many interior harmonic goals found within the piece, some of them tonic triads and some of them not. These interior goals may be reached at a fairly regular rate (often every four measures); or sometimes their appearances may not form a pattern at all. We use the term *cadence* to mean a harmonic goal, specifically the chords used at the goal. There are several types of cadences commonly found in tonal music. Some cadences sound more or less conclusive, or final, while others leave us off balance, feeling a need for the music to continue.

Locating the cadences in a composition is easier to do than it is to explain. Remember that what you are listening for is a goal, so there will often be a slowing down through the use of longer note values, but even a piece that never slows down (a “perpetuum mobile”) will contain cadences. As you listen to the examples in this chapter, you will realize that you are already aurally familiar with tonal cadences and that finding them is not a complicated process.

There is a standard terminology used for classifying the various kinds of cadences, and the terms apply to both major and minor keys. One very important type of cadence consists of a tonic triad preceded by some form of

V or vii^o. This kind of cadence is called an *authentic cadence* (which is an unfortunate term, since it implies that all of the others are less than authentic). The *perfect authentic cadence* (abbreviated PAC) consists of a V-I (or V⁷-I) progression, with both the V and the I in root position and 1 in the melody over the I chord (Ex. 10-1). The PAC is the most final sounding of all cadences. Most tonal compositions end with a PAC, but such cadences may also be found elsewhere in a piece.

Example 10-1. Bach, *Well-Tempered Clavier*, Book II, Prelude 10

An *imperfect authentic cadence* (IAC) is usually defined simply as any authentic cadence that is not a PAC. However, it is useful to identify several sub-categories, as follows.

1. *Root position IAC*: Like a PAC, but 3 or 5 is in the melody over the I chord (Ex. 10-2).

Example 10-2. Bach, *Well-Tempered Clavier*, Book II, Prelude 12

2. *Inverted IAC*: V⁽⁷⁾-I, but with either or both of the chords inverted (Ex. 10-3).

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Example 10-3. Schumann, "Nachtlied," Op. 96, No. 1

3. *Leading-tone IAC*: Some form of vii^o-I, the vii^o substituting for a V chord (Ex. 10-4).

Example 10-4. Bach, "Befiehl du deine Wege"

The root position IAC is certainly the most final sounding of the three IAC types, and you may find some compositions that end with such a cadence. The other types are limited almost exclusively to less important interior cadences.

Remember that not every V-I progression constitutes an authentic cadence. Only when the I chord seems to serve as the goal of a longer passage—usually at least a few measures—would we term a V-I progression a cadence. This same distinction also applies to the other cadence types.

A *deceptive cadence* (DC) results when the ear expects a V-I authentic cadence but hears V-? instead. The ? is usually a submediant triad, as in Example 10-5, but others are possible. A DC produces a very unstable feeling and would never be used to end a tonal work. Remember that V-vi involves special part-writing problems. Review Example 6-10.

Example 10-5. Haydn, Sonata No. 4, II

The *half cadence* (HC) is a very common type of unstable or "progressive" cadence. The HC ends with a V chord, which can be preceded by any other chord (Ex. 10-6).

Example 10-6. Haydn, Sonata No. 44, II

The *Phrygian half cadence* (Ex. 10-7) is a special name given to the iv⁶-V HC in minor. The name refers to a cadence found in the period of modal polyphony (before 1600), but it does not imply that the music is actually in the

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Phrygian mode.* Notice, incidentally, that Example 10-7 contains a deceptive progression (V⁷-VI), but not a deceptive *cadence*, since the goal of the passage is the V in m. 4, not the VI in m.3.

Example 10-7. Schumann, "Folk Song," Op. 68, No. 9

d:

A *plagal cadence* (PC) typically involves a IV-I progression. While plagal cadences are usually final sounding, they are not as important in tonal music as the authentic cadence. In fact, a plagal cadence is usually added on as a kind of tag following a PAC. A familiar example of this is the "Amen" sung at the end of hymns, as in Example 10-8.

Example 10-8. Dykes, "Holy, Holy, Holy!"

*Modal polyphony used a number of scalar patterns seldom employed by tonal composers. One of these was the Phrygian mode, which used a scale pattern the same as E to E with no accidentals.

The definitions of cadence types given above are standard, for the most part, and they will apply to most cadences found in tonal music. Exceptions will be found, however, in which case the more general definition listed in the table below should be applied. For example, the Chapter 9 Self-Test included a phrase from a Bach chorale which concluded with a I⁶-IV cadence, but you can deduce from the table that this is a kind of half cadence.

Cadence type	First chord	Second chord
Authentic	Contains leading tone	Tonic
Plagal	Does not contain leading tone	Tonic
Deceptive	Contains leading tone	Not tonic
Half	Does not contain leading tone	Not tonic

A still more general but useful method of classifying cadences puts them into two groups: *conclusive* (authentic and plagal) and *progressive* (deceptive and half).

CHECKPOINT

Match the cadence-type abbreviations with the definitions and examples.

Conclusive cadences

1. PAC _____

2. Root position IAC _____

3. Inverted IAC _____

4. Leading-tone IAC _____

5. PC _____

Progressive cadences

6. HC _____

7. Phrygian HC _____

8. DC _____

Definitions and examples

a. V-I, both in root position, with 3 or 5 in the melody over the I chord

b. IV-I

c. ?-V

d. V-vi

e. vii⁰⁶-1

f. V-I⁶

g. V-I, both in root position, with 1 in the melody over the I chord

h. iv⁶-V in minor

MOTIVES AND PHRASES

A *motive* is the smallest identifiable musical idea. A motive can consist of a pitch pattern or a rhythmic pattern, or both, as you can see below.



Of the two aspects of a pitch/rhythm motive, rhythm is probably the stronger and more easily identified when it reappears later in a composition. It is best to use *motive* only to refer to those musical ideas that are "developed" (worked out or used in different ways) in a composition.

A *phrase* is a relatively independent musical idea terminated by a cadence. A *phrase segment* is a distinct portion of a phrase, but it is not a phrase either because it is not terminated by a cadence or because it seems too short to be relatively independent. Phrases are usually labeled with lower-case letters (a, b, c, and so on), as in Example 10-9.

Example 10-9. Beethoven, Symphony No. 6, Op. 68, I

As you might guess from the definition of "phrase," there is a good deal of subjectivity involved in identifying phrases. What sounds like a phrase to one listener may be a phrase segment to another listener. The issue cannot be decided by finding cadences, because phrase segments frequently end with cadences. Also, phrases are often extended by means of a deceptive cadence followed by an authentic cadence, or they may be extended by repetition of the cadence, as in the "a" phrase of Example 10-10 (mm. 1-6). The final phrase of this minuet, marked "a," returns the "a" phrase with an added repetition of the first phrase segment, creating an eight-measure phrase. The "b" and "c" phrases also contain repetitions of their opening phrase segments, but with some variation in each case.

Example 10-10. Haydn, Sonata No. 15, II

The last note of one phrase sometimes serves as the first note of the next one, a process referred to as *elision*. An even more extreme overlap can be seen by looking back at Example 10-3, where the fourth measure of the first phrase in the accompaniment serves also as the first measure of the first phrase of the song.

MOZART: "AN DIE FREUDE"

The concepts we have presented so far in this chapter are all well illustrated in Example 10-11. This deceptively simple song was composed by Mozart when he was eleven years old. The singer doubles the right hand of the piano part throughout, and a nice effect is obtained in performance if the left hand of the piano part is doubled by a cello or a bassoon.

Example 10-11. Mozart, "An die Freude," K. 53

Mässig

Freu - de, Kö - ni - gin der Wei - sen, die, mit - Blu - men. 5

F: V vi (DC)

um ihr_ Haupt, dich auf_ güld - ner Lei - er prei - sen, ru - hig. 10

V7 I (IAC) V (HC) C:

wenn die_ Bos - heit schnaubt, ru - hig, wenn die_ Bos - heit schnaubt: 15 20

V vi (DC) V I (PAC)

Hö - re mich von - dei - nem Thro - ne, Kind der - Weis - heit, 25

G: V§ i (IAC) F:

de - ren - Hand im - mer - selbst in - dei - ne Kro - ne ih - re. 30

I V (HC) vii⁷ I (IAC)

schön - sten - Ro - sen - band, ih - re - schön - sten - Ro - sen - band. 35 40

V vi (DC) V I (PAC)

Cadences occur regularly every four measures in this song, each cadence marking the end of a phrase. Since the texture contains only two lines, the chords are necessarily incomplete, but the implied harmonies at the cadences are clear enough and have been labeled for you. The cadences illustrate all of the types discussed in this chapter, with the exception of the PC. Notice that two cadences occur in the key of the dominant (C), and one occurs in the key of F as we listen to the song. Since we do not lose track aurally of the key of F as we listen to the song, it would be appropriate to refer to mm. 13-24 as embellishments of V and ii, rather than as a true change of tonal center. All the cadences are listed in the following table.

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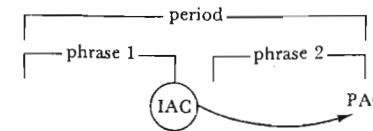
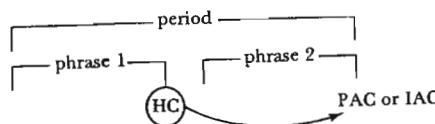
Measure	Cadence type	Key
4	DC	F
8	Root Position IAC	F
12	HC	F
16	DC	C
20	PAC	C
24	Inverted IAC	g
28	HC	F
32	Leading-tone IAC	F
36	DC	F
40	PAC	F

Many of the phrases in this song can be heard as consisting of two phrase segments. For instance, mm. 1-2 and mm. 3-4 are two segments that combine to make the first phrase. While most people would agree that the mm. 1-2 segment is too short to be a phrase, the distinction is not always clear, and it is perfectly possible for two informed musicians to disagree about this and other examples.

"An die Freude" also contains motives, of course. Two of the most important are primarily rhythmic:  and . The grace note in m. 22 is performed as an eighth note on beat 1, so m. 22 is an instance of the second motive.

PERIOD FORMS

Phrases are often combined to form a larger structural unit called a *period*. A period typically consists of two phrases in an antecedent-consequent (or question-answer) relationship, that relationship being established by means of a stronger cadence at the end of the second phrase. The most commonly encountered patterns are the following:



Notice that by definition the phrase endings in a period must be different. If both phrases are identical, the result is not a period but a *repeated phrase*. Repetition is important in tonal music, but it does not contribute to the growth of a musical form.

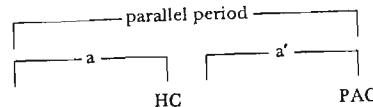
We use the term *parallel period* if both phrases begin with similar or identical material. Example 10-12 illustrates a parallel period.

Example 10-12. Schubert, "Am Meer"

The musical score consists of two staves. The top staff begins with a treble clef, a key signature of one sharp (F#), and a common time signature. The lyrics are: Das Meer er-glänz - te weit hin-aus im letz - ten A - bend schei - ne, wir. The dynamic is pp (pianissimo) and the performance instruction is molto legato. The measure ends with a half cadence (HC) indicated by a circled 'V' above the staff. The bottom staff begins with a bass clef, a key signature of one sharp (F#), and a common time signature. The lyrics are: sa - ssen am ein - sa - men Fi - scher-haus, wir sa - ssen stumm und al - lei - ne. The measure ends with a perfect authentic cadence (PAC) indicated by a circled 'I' below the staff.

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A formal diagram of Example 10-12 would show the parallel relationship between the phrases by labeling them a and a' (pronounced "a prime").



Sometimes the parallel relationship between phrases is not so obvious. In Example 10-13 the melody of the second phrase begins like the first, but it is a step higher. Still the phrase beginnings are probably similar enough to call this a parallel period.

10 Example 10-13. Mozart, Violin Sonata K. 377, III

F:
V (HC)

A period in which the phrase beginnings are not similar is called a *contrasting period*. Example 10-14 illustrates a contrasting period.

10 Example 10-14. Beethoven, Violin Sonata Op. 12, No. 1, III

D:
V (HC)

A common way of expanding a two-phrase period is by repeating the antecedent phrase (as in *aab*) or the consequent phrase (*abb*). It would also be possible to repeat both (*aabb*), which is not the same as a repeated period (*abab*).

A genuine *three-phrase period*,* however, has three different phrases—two antecedents and a consequent or one antecedent and two consequents, as determined by the cadences. In Example 10-15 there are two antecedents, since the first two phrases end with half cadences.

*Some writers use the term "phrase group" for what we call a three-phrase period.

Example 10-15. Mozart, The Marriage of Figaro, K. 492, "Voi, che sapete."

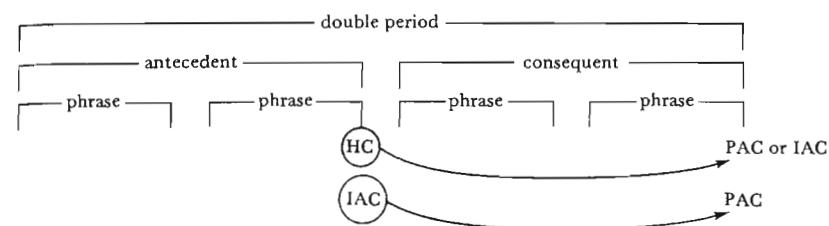
CHERUBINO

Voi, che sa - pe - te che co - sa è a - mor,
V (HC)

Don - ne, ve - de - te, s'io l'ho nel cor,
3
V (HC)

Don - ne, ve - de - te, s'io l'ho nel cor.
V7 I (PAC)

A double period consists typically of four phrases in two pairs, the cadence at the end of the second pair being stronger than the cadence at the end of the first pair.



There are several things that should be pointed out about this diagram. First, notice that this structure is much like a period, with the only difference being that each half consists here of a pair of phrases instead of one phrase. Also notice that the first two phrases will probably not form a period according to our original definition. Finally, notice that a *repeated period* is not the same as a double period because a double period requires contrasting cadences.

Double periods are called *parallel* or *contrasting* according to whether or not the melodic material that begins the two halves of the double period is similar. Example 10-16 illustrates a parallel double period, and its structure is outlined in the following diagram.

Example 10-16. Beethoven, Sonata Op. 26, I

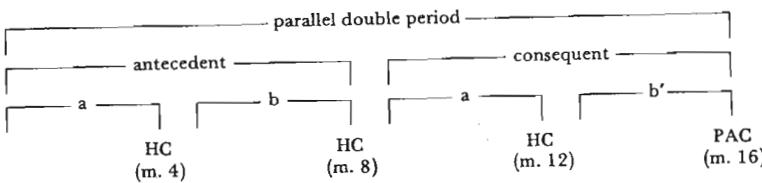
Andante con Variazioni

p
cresc.
sf p
V (HC)

Ab:

V (HC)

V (HC) 15 V⁷ I (PAC)



Because the first and third phrases have the same cadence, the third phrase in the diagram is labeled a, not a', even though the original a is somewhat ornamented when it returns as the third phrase.

Often, several phrases will seem to constitute a formal unit other than a period or double period. The term *phrase group* is used for such situations. Before assigning this term, however, study the music (especially the cadences) closely to see whether a passage might be analyzed as a variant of some period form.

SUMMARY

Musical form concerns the ways in which a composition is shaped to create a meaningful experience for the listener.

The term *cadence* can refer to a harmonic goal or the chords that are used at a harmonic goal. Cadence types in tonal music include:

authentic: some form of V or vii^o followed by I or I⁶

perfect authentic (PAC): root position V or V⁷ followed by a root position I with I in the soprano over the I chord

imperfect authentic (IAC): any authentic cadence that is not a PAC

deceptive (DC): V followed by some chord other than I, usually vi

half (HC): a cadence that ends on V

Phrygian half (HC): iv⁶-V in minor

plagal (PC): IV-I

A *motive* is the smallest identifiable musical idea. A *phrase* is a relatively independent musical idea terminated by a cadence. A phrase is usually constructed of two or more distinct portions called *phrase segments*.

Two phrases can be combined to form a *period* if they seem to go together as a musical unit and if the second phrase ends with a more conclusive cadence than the first. *Double periods* are just like periods, except that each half of the structure consists of two phrases rather than just one. Both periods and double periods may be either parallel or contrasting, according to whether or not the two halves begin with similar melodic material. A *repeated phrase* or *repeated period* does not produce a new kind of formal unit and should not be confused with a period or double period. A *phrase group* is a group of phrases that seem to belong together without forming a period or double period.

SELF-TEST 10-1

(Answers begin on page 589.)

A. Analysis. The cadence chords have been analyzed for you in each example.

1. Make a diagram of this excerpt similar to the diagrams used in the text. Include phrase labels (a, b, and so on), cadence types and measure numbers, and the form of the excerpt. In addition, label the first seven chords in the first phrase.

Beethoven, Sonata Op. 10, No. 3, III

Allegro

p dolce

2. Diagram the form of this excerpt. In addition, point out any *sequences* (review Chapter 7), either exact or modified, that occur in the melody.

Mozart, Sonata K. 284, II

Andante

3. There is certainly more than one way to interpret this famous theme. Most writers seem to prefer the three-phrase analysis shown here, the third phrase being an unusually long one (mm. 9-17). What would the form of the theme have been if it had ended in m. 8? Is there any way to hear the entire theme as an expansion of that form?

Beethoven, Sonata Op. 13, III

Allegro

p

4. Diagram this excerpt. See if you can find an example of 8ves by contrary motion (review pp. 85-86) between the melody and bass.

Chopin, Mazurka Op. 33, No. 2

B. Aural analysis. Sing through the following tunes and try to imagine aurally the cadence chords, or play the tunes on the piano and try to play the cadence chords. Then make a formal diagram of each song.

1. "Daisy"

2. "Take Me Out to the Ball Game" (four phrases)

C. Review. Notate the chords in the keys and bass positions indicated.

1	2	3	4	5	6	7	8	9	10
D:	IV ⁶	e: i ⁶ g: V ⁵	A: iii ⁶	b: ii ^{*4} ₃	F: vii ⁹⁶	E _b : I ⁶ ₄	c [#] : iv ⁶	d: vii ⁹⁴ ₂	B _b : V ⁵

EXERCISE 10-1. See Workbook.

CHAPTER

11

Non-Chord Tones 1

INTRODUCTION

Many of the examples in the preceding chapters contain notes that do not belong to the chord as analyzed. In many of those examples these notes have been put in parentheses to emphasize the embellishing quality of such non-chord tones, as opposed to chord tones, which are structurally more important. But in order to understand tonal music we have to understand non-chord tones, since the vast majority of passages of tonal music contain at least a few of them.

A *non-chord tone* (abbreviated NCT) is a tone, either diatonic or chromatic, that is not a member of the chord. The tone might be an NCT throughout its duration, or, if the harmony changes before the tone does, the tone might be an NCT for only a portion of its duration.

Obviously, you have to analyze the chords before you can begin labeling NCTs, but the process is nearly simultaneous. In multipart music, recognizing the chords and the NCTs is often quite simple, as in Example 11-1.

Example 11-1. Schubert, "Frühlingstraum," Op. 89, No. 11

Other textures and compositional techniques may make the separation of chords from NCTs more problematic. This will be discussed in greater detail at the conclusion of Chapter 12.

CLASSIFICATION OF NON-CHORD TONES

One way of classifying NCTs is according to the ways in which they are approached and left.* The table below presents the basic definitions of the various types, along with abbreviations. Those in the top half of the table will be discussed in detail in this chapter. The others are discussed in Chapter 12.

NCT name (and abbreviation)	Approached by	Left by
Passing tone (p)	Step	Step in same direction
Neighboring tone (n)	Step	Step in opposite direction
Suspension (s)	Same tone	Step down
Retardation (r)	Same tone	Step up
Appoggiatura (app)	Leap	Step
Escape tone (e)	Step	Leap in opposite direction
Neighbor group (n.gr)	(see pp. 192-193)	
Anticipation (ant)	Step or leap	Same tone (or leap)
Pedal point (ped)	(see pp. 195-196)	

Example 11-2 provides illustrations of each of the NCT types in a three-part texture.

Example 11-2.

*NCT terminology is not standardized. However, the definitions given here are widely used.

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In addition to the basic definitions given above, NCTs can be further classified as to their *duration* and relative degree of *accent*.

1. *Submetrical*: a fraction of a beat in duration and occurring on either *accented* or *unaccented portions* of the beat (Ex. 11-3a).
2. *Metrical*: one beat in duration and occurring on either *accented* or *unaccented beats* (Ex. 11-3b).
3. *Supermetrical*: more than one beat in duration (Ex. 11-3c).

Example 11-3.

This terminology is admittedly cumbersome, but such considerations have much to do with the style and general effect of a passage. Remember that the beat in the definitions above is not always indicated by the bottom number of the meter signature.

Other terms used in the description of NCTs include *diatonic*, *chromatic*, *ascending*, *descending*, *upper*, and *lower*. These terms will be brought up in connection with the appropriate NCTs. The remainder of this chapter is devoted to a more detailed discussion of the NCT types that involve only stepwise motion: passing tones, neighboring tones, suspensions, and retardations.

PASSING TONES

The *passing tone* is used to fill in the space between two other tones. The two other tones may belong either to the same or to different chords, or they might be NCTs themselves. Usually the space between them is a 3rd, either up or down, and the passing tone is given whatever scale degree lies in between. In Example 11-1 the B4 in m. 6 is used to fill in the space between C#5 and A4. The B4, then, is an *accented, submetrical, diatonic, descending passing tone*. You might think that this terminology is too detailed to be really useful, and you would be right. Most of the time we would refer to the B4

in Example 11-1 as a passing tone and let it go at that. But a good musician, while perhaps not consciously using all of the modifiers employed above, will still be aware of the possibilities and their influence upon the musical effect.

Occasionally a passing tone fills the space between two notes that are only a M2 apart. Look at Example 11-4, from the *Jupiter* Symphony. The G#5 in m. 56 is a passing tone, but the two tones that it connects, G5 and A5, are only a M2 apart. The G#5, then, is an *unaccented, metrical, chromatic, ascending passing tone*, as is the A#3 in the bass line in m. 58.

Still referring to Example 11-4, look at the first violin part in m. 59. The tones G5 and D5, which are a P4 apart, are connected by two passing tones, F#5 and E5. In m. 61 several passing tones appear in the first violin part. Technically, the A4, the D5, and the F#5 are chord tones and the others are passing tones. In a functional sense, however, *all* of the tones after the A4 serve as passing tones filling in the m7 between A4 and G5, connecting the half cadence in m. 61 to the beginning of the next phrase.

Finally, notice that the A#3 in the second violin part in m. 58 is a passing tone, as analyzed. Two lines are being played simultaneously by the second violins.

Example 11-4. Mozart, Symphony No. 41 (*Jupiter*), K. 551, I

Textural reduction

NEIGHBORING TONES

The *neighboring tone* is used to embellish a single tone. It may appear above the main tone (upper neighbor) or below it (lower neighbor), and it may be diatonic or chromatic. Example 11-1 contains neighboring tones in the voice line; all of them are *unaccented, submetrical, diatonic, upper neighboring tones*. The neighbors in Example 11-5 are all *accented and submetrical*. The upper neighbors (the A's and the D) are *diatonic*, while the *lower neighbors* (the F#'s and the B) are *chromatic*.

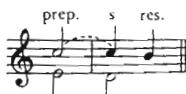
Example 11-5. Schumann, Scherzo Op. 32

We can only guess about Schumann's reason for using the chromatic form of the lower neighboring tone here, since diatonic neighbors would have been possible. A chromatic neighbor lends more tonal color to a passage, and it tends to draw more attention to the pitch that it is embellishing. A chromatic lower neighbor, like those above, acts as a leading tone to the tone it ornaments. As an experiment, try playing Example 11-5 four ways: (1) all diatonic neighbors, (2) chromatic upper neighbors, (3) chromatic lower neighbors, and (4) all chromatic neighbors. Compare the results.

SUSPENSIONS AND RETARDATIONS

The *suspension* holds on to or suspends a chord tone after the other parts have moved on to the next chord. While the suspension may not seem more important than any other type of NCT, considerably more study has been devoted to it. Part of the reason for this is that the suspension is the primary source of dissonance on the *accented* beat in much tonal and pretonal music. Suspensions may be submetrical, metrical, or supermetrical, but in any case, they almost always fall upon accented beats or accented portions of beats.

A special terminology has developed concerning the suspension. The *preparation* is the tone preceding the suspension. The *suspension* itself may or may not be tied to its preparation. The *resolution* is the tone following the suspension and lying a 2nd below it. The preparation and resolution are usually chord tones (Ex. 11-6).

Example 11-6.

Suspension terminology also provides a means of categorizing suspensions according to the vertical intervals created by the suspended tone and the resolution. For instance, in Example 11-6, the vertical interval created by the suspension is a 7th and that created by the resolution is a 6th, so the entire figure is referred to as a 7-6 suspension.

Example 11-7 summarizes the common suspensions. Notice that the second number is larger than the first only in the 2-3 suspension, a type sometimes referred to as a *bass suspension*. In textures involving more than two parts, the vertical intervals are calculated between the bass and the suspended part. If the bass itself is suspended, the interval is calculated between the bass and the part with which it is most dissonant (generally a 2nd or 9th above in a 2-3 suspension). With the exception of the 9-8 suspension, the note of resolution should not be present anywhere in the texture when a suspension occurs.

Example 11-7.

The names of most suspensions remain constant, even if compound intervals are involved. For instance, even if the 4-3 is actually an 11-10, as in Example 11-7, it is still referred to as a 4-3. The exception to this is the 9-8. It is always called a 9-8 suspension unless it does *not* involve a compound interval, in which case it is labeled as a 2-1 suspension. The reason for this inconsistency is that the 2-1 suspension is found much less frequently than the 9-8, so it is appropriate that they have different labels.

When a suspension occurs in one of the upper voices, the bass will sometimes move on to another chord tone at the same time as the suspension resolves. This device is referred to as a *suspension with change of bass*. In such a case a 7-6 suspension, for example, might become a 7-3 suspension because of the movement of the bass. It is also possible to move the upper part of the dissonance as the bass resolves in a 2-3 suspension, creating a 2-6 suspension (Ex. 11-8).

Example 11-8.

While most suspensions are dissonant, consonant suspensions do occur. Example 11-9 contains a suspension in the second measure, even though no dissonance is present.

Example 11-9.

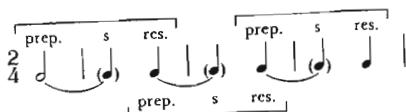
Susensions are very often embellished. That is, other tones, some of them chord tones and some not, may appear after the suspended tone but before the true resolution. In Example 11-10 there is an embellished 7-6 suspension at the beginning of the second measure. In other words, the G5 is a suspension that resolves to F5, but ornamenting tones are heard before the F5 is reached. A similar figure appears at the beginning of the next measure, but here the 7th is a chord tone, part of the G7 chord. In this case, the F5 is a chord tone that is treated as a suspension. Such *suspension figures*, in which the suspension is actually a chord tone, are quite common. Notice also in this example the use of the minor v⁶ as a passing chord between i and iv⁶.

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Example 11-10. Bach, French Suite No. 2, Sarabande

Textural reduction

When the resolution of one suspension serves as the preparation for another, the resulting figure is called a *chain of suspensions*.



Example 11-10 above contains a chain suspension: the G5 is suspended, resolving to F5, which in turn is suspended (although not as an NCT), resolving to E \flat 5. A chain of 7-6 suspensions can be seen in Example 8-8 (p. 130).

Much of what has been said about the suspension applies also to the *retardation*, which is simply a suspension with an upward resolution. Retardations may occur anywhere in a passage, but they are especially common at cadences in Classical style, where they appear in combination with suspensions. As in Example 11-11, the retardation usually involves $\hat{7}$ resolving up to $\hat{1}$.

Example 11-11.

Notice in this example that the I chord begins as soon as the tonic note is reached in the bass. It would be incorrect to consider the Ab to be an anticipation on the first beat underneath continuing dominant harmony.

As if to help us summarize the suspension, Bach has provided us with a chorale phrase containing all of the common suspensions as well as a less common one. In order to help you get the most out of Example 11-12, chord roots are provided along with the functional harmonic analysis. This is because the phrase *modulates* (changes key) from a to C and back again, and we have not yet presented the ways in which modulations are analyzed. After you understand the chords, follow each voice part through, looking at the NCTs and following the discussion below the example. Finally, play through Example 11-12 and listen to the effect of the suspensions.

Example 11-12. Bach, "Danket dem Herren, denn er ist sehr freundlich"

roots:	A	A	E	A	G	C	C	G	A	E
a:	i		V6	i	V6	I	6	V7	[a: i]	V
			[C: vi]					[vi]		

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Soprano

No NCTs

Alto

- m. 1 The B4 is a submetrical 9-8 suspension. Its resolution, A4, becomes a submetrical 7-6 suspension on the next beat. Therefore, this is a chain of suspensions.

Tenor

- m. 2 The D4 eighth note actually represents a metrical 9-8 suspension. The suspension is ornamented by the two sixteenth notes that follow it, one of them being a chord tone that anticipates the resolution, the other being a lower neighbor. Notice that by the time the “real” resolution arrives (beat 2), the bass has moved to another chord tone, so this is a 9-6 change of bass suspension.

The B3 on beat 4 is an example of a relatively unusual suspension, the 2-1.

- m. 3 The quarter note A3 represents a half note A3, which is a supermetrical 4-3 suspension. The suspension is ornamented with an augmentation of the figure used to ornament the suspended D4 in m. 2.

Bass

- m. 1 The empty parentheses on beat 2 remind us that the A3 is still sounding but is no longer part of the chord. This is an example of a submetrical 2-3 suspension.

- m. 3 The NCTs in this measure are unaccented, submetrical, ascending passing tones.

FIGURED BASS SYMBOLS

With the exception of suspensions, NCTs are generally not indicated in a figured bass. Suspensions are shown by the use of symbols identical or similar to the numbers we use to name suspension types. For example, a 7-6 suspension might appear as “7 6” or “ $\frac{7}{6}$,” while a 4-3 suspension might be “4 3” or “4 #.” Change of bass suspensions can be recognized by such combinations as “7 3” or “9 6” appearing over a moving bass.

EMBELLISHING A SIMPLE TEXTURE

One way to compose in the tonal style is to begin with a simple texture that has an interesting soprano/bass counterpoint and then embellish it. Two common types of NCT embellishments are the neighbor and the passing tone. Another type of embellishment, although it is not an NCT, is arpeggiation. We have seen bass arpeggiations in connection with inverted triads, but arpeggiations can be used in any part to create motion or a more interesting line.

Adding neighbors, passing tones, and arpeggiations to the texture is not difficult, but you must be careful not to create objectionable parallels in the process. Example 11-13a illustrates a simple texture without parallels. Example 11-13b shows the same music embellished, but each embellishment has created objectionable parallels. While parallels created by passing and neighboring tones may occasionally be found in tonal music, you should try to avoid them for now.

Example 11-13.

Adding suspensions to the texture does not usually create parallels, but it is still somewhat tricky at first. You may find the following suggestions helpful.

- Find a step down in the bass. Is the harmonic interval between the bass and some upper voice over the second bass note a 3rd (or 10th)? If so, the 2-3 suspension will work.
- Find in one of the upper voices a step down. Is the harmonic interval between the second note and the bass a 3rd, 6th, or 8ve? If so, the 4-3, 7-6, or 9-8 suspension, respectively, will work. Exception: do not use the 4-3 or 7-6 if the resolution of the suspension would already be present in another voice. The aural result is very disappointing.

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Below is a simple two-voice example (Ex. 11-14). Possible locations for suspensions are shown with an X. The second part of Example 11-14 is an embellished version containing all of the embellishments discussed so far.

Example 11-14.

SUMMARY

A *non-chord tone* (NCT) is a tone, either diatonic or chromatic, that is not a member of the chord. In addition to the usual nomenclature for NCTs, a number of adjectives may be used to describe the context of a particular NCT. These include:

submetrical	diatonic	ascending	upper
metrical	chromatic	descending	lower
supermetrical			

A *passing tone* is a NCT that fills in the space between two other tones by moving stepwise between them. A *neighboring tone* is a NCT that embellishes a single tone by moving stepwise away from and then back to the tone.

A *suspension* is a NCT that delays a stepwise descent in a line. A suspension involves three phases: preparation, suspension, and resolution. Suspensions that occur in a voice other than the bass are classified by the intervals between the bass and the suspension and between the bass and the resolution. Most suspensions above the bass are 9-8, 7-6, or 4-3 suspensions. The only common bass suspension is the 2-3 suspension, in which the bass at the point of suspension forms the interval of a 2nd (or 9th) with some upper voice.

A *retardation* is similar to a suspension, but it delays a stepwise ascent and resolves upward.

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SELF-TEST 11-1

(Answers begin on page 591.)

A. Analysis.

1. Go back to Example 7-10 (p. 112) which shows NCTs in parentheses, and identify the type of each NCT in the blanks below. Always show the interval classification (7-6, and so on) when analyzing suspensions.

Measure	Treble	Bass
1	—	
2	—	—
3	—	
5	—	
6	—	—
7	—	

2. Do the same with Example 10-4 (p. 154).

soprano: —

alto: — —

tenor: — — —

3. Analyze chords and NCTs in this excerpt. Then make a reduction similar to those seen in this text by (1) removing all NCTs, (2) using longer note values or ties for repeated notes, and (3) transposing parts by a P8 when necessary to make the lines smoother. Study the simplified texture. Do any voice-leading problems appear to have been covered up by the embellishments?

Bach, "Schmücke dich, o liebe Seele"

- B. After reviewing the discussion of embellishment (pp. 185-186), decide what one suspension would be best in each excerpt below. Then renotate with the suspension and at least one other embellishment. Remember to put parentheses around NCTs and to label NCTs and arpeggiations.

- C. The example below is a simplified excerpt from a Bach chorale harmonization. Analyze the chords with roman numerals and activate the texture with embellishments of various kinds. While many correct solutions are possible, it will be interesting to compare yours with Bach's, which may be found in Appendix B.

EXERCISE 11-1. See Workbook.

CHAPTER 12

Non-Chord Tones 2

APPOGGIATURAS

All of the NCTs discussed so far are approached and left by step or by common tone. In most tonal music the majority of NCTs will be of the types already discussed. NCTs involving leaps (appoggiaturas, escape tones, neighbor groups, and some anticipations) are not rare, however, and they tend to be more obvious to the listener.

As a very general rule, *appoggiaturas* are accented, approached by ascending leap, and left by descending step. The Tchaikovsky theme in Example 12-1 (notice the transposition) contains two appoggiaturas that fit this description. The first, A4, might also be heard as a suspension from the previous measure.

Example 12-1. Tchaikovsky, Symphony No. 5, II

Hn. in F
VI. II
Vla.
Vc.
D. B.

dolce
p
pp
pp
pp

9
p
app

D: I V $\frac{1}{2}$ $\frac{2}{2}$ I $\frac{6}{2}$

All appoggiaturas are approached by leap and left by step, but the sequence is not always ascending leap followed by descending step. In fact, Example 11-10 (p. 182) has already provided us with an example of an unaccented appoggiatura approached from above (the E \sharp). Notice that it is also chromatic. Probably the only other generalization that could be made concerning the appoggiatura is that the appoggiatura, especially the supermetrical variety, is more typical of the nineteenth century than the eighteenth. As an illustration, consider Example 12-2. Four of the five NCTs in the phrase (not counting the A3s in m. 5, left hand, because they double the melody) are appoggiaturas, and two of the four are supermetrical. It is largely this aspect—though in combination with others (slow harmonic rhythm, disjunct melody, homophonic texture, wide range, and so on)—that gives this phrase its Romantic flavor.

Example 12-2. Chopin, Nocturne Op. 27, No. 2

Lento sostenuto

dolce

2a
I
app

ii $\frac{1}{2}$
*2a

Textural reduction

n
p

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The reduction of Example 12-3 shows that when we move from the surface of the piece to the background voice leading, our interpretation of the supermetrical appoggiaturas changes considerably.

ESCAPE TONES

The contour of the *escape tone* is the reverse of that of the appoggiatura, because the escape tone is approached by step and left by leap in the opposite direction. Escape tones are usually submetrical, unaccented, and diatonic. They are often used in sequence to ornament a scalar line, as in mm. 59-60 of Example 11-4 (p. 177). Notice in Example 11-4 that while *escape tone figures* ornament the line D5-C5-B4, actual escape tones occur only two times.

The escape tone is also frequently used at cadences to ornament the scale degree progression $\hat{2}-\hat{1}$. An instance of this can be seen in Example 12-3.

Example 12-3. Haydn, Sonata No. 35, I

A musical score for Haydn's Sonata No. 35, I. The score consists of two staves: treble and bass. The treble staff has a key signature of C major (one sharp) and the bass staff has a key signature of A major (no sharps or flats). Measure 167 starts with a forte dynamic. The treble staff has a note labeled 'f' followed by a measure with a note labeled '3'. The bass staff has a measure with a note labeled 'V' followed by a measure with a note labeled 'I'. The treble staff continues with a measure labeled 'V' followed by a measure labeled 'I'. The bass staff ends with a measure labeled 'I'. There are various dynamics and articulations throughout the measures.

All of the escape tones cited in this section have been *submetrical, unaccented*, and *diatonic*; these are all usually characteristic of the escape tone in tonal music.

THE NEIGHBOR GROUP

A common method of embellishing a single tone involves a combination of two NCTs in succession, the first being an escape tone, the second an appoggiatura. The figure is referred to as a *neighbor group*. As Example 12-4 illustrates, the neighbor group bears a resemblance to a neighboring tone figure.

Example 12-4.



ANTICIPATIONS

An *anticipation*, as the name implies, anticipates a chord that has not yet been reached. This NCT moves, by step or by leap, to some pitch that is contained in the anticipated chord but is not present in the chord that precedes it. For example if the triad F/A/C were to proceed to the triad B \flat /D/F, you could use either the note B \flat or the note D to anticipate the B \flat /D/F chord while the F/A/C chord is still sounding. The note F could not be used as an NCT, because it is common to both chords. Of the two notes B \flat and D, the B \flat is probably the better choice. In Example 12-5a the anticipated B \flat 4 forms a satisfying dissonance with the other pitches and is clearly an NCT, but in Example 12-5b the D5 forms no true dissonance with any other pitch.

Example 12-5.

A musical example showing two ways to play an anticipation. It consists of two measures on a single staff. Measure a is labeled 'good' and shows a note labeled 'ant' with a grace note preceding it. Measure b is labeled 'possible' and shows a note labeled 'ant' with a grace note preceding it. The staff has a bass clef and a common time signature. Below the staff, the key signature changes from B \flat major to A major. The first measure is labeled 'V' and the second is labeled 'I'.

An anticipation very much like the one in Example 12-5a appears in Example 12-6.

Example 12-6. Bach, *Well-Tempered Clavier*, Book II, Fugue 22

Most anticipations are approached by step, but the approach by leap is not rare. In Example 12-7 there are three *anticipation figures*, each approached by leap and left by common tone, but only one figure, that in the bass, is an NCT.

Example 12-7. Schumann, "Little Morning Wanderer," Op. 68, No. 17

The least commonly encountered variety of NCT is the anticipation approached and *left* by leap. This is sometimes referred to as a *free anticipation*. Below is an example from Mozart, in which the bass anticipates the tonic triad before the dominant chord has resolved, allowing the bass in mm. 7-9 to imitate the soprano in mm. 5-7.

Example 12-8. Mozart, Sonata K. 332, I

THE PEDAL POINT

The pedal point has been saved for last in the discussion of NCTs because it is really in a class by itself. The *pedal point* is a compositional device that begins as a chord tone, then becomes a NCT as the harmonies around it change, and finally ends up as a chord tone when the harmony is once more in agreement with it. The other NCTs are clearly decorative and are always dependent upon the harmony for their meaning. But the pedal point often has such tonal strength that the harmonies seem to be embellishing the pedal point, rather than the other way around. This sounds more complicated than it is. Look at Example 12-9, which shows the ending of a fugue by Bach.

Example 12-9. Bach, "Allein Gott in der Höh' sei Ehr"

In one sense, the piece ends on beat 1 of m. 88 with the IAC. What follows that cadence is a short codetta, with the tonic note sustained in the bass beneath a IV-vii⁹-I progression in the upper voices. The chords above the tonic pedal are analyzed, but in a very real sense the pedal overpowers the upper parts and represents the tonic harmony. Incidentally, the relatively weak inverted IAC is used to end this work because the bass line is presenting the melody on which the piece is based.

You may have noticed that inversions above the pedal point are not indicated in Example 12-9. This is generally a good practice to follow in the analysis of such passages. The aural effect of inversion is altered by the pedal, and there are no conventional symbols to represent this alteration.

The term *pedal point* comes from the frequent use of the device in organ compositions. At any point in the composition, but most frequently at the end of the work, the organist will be called upon to sustain a single pitch with a pedal while continuing to play moving lines with the manuals (keyboards). Most frequently the sustained pitch is the tonic or the dominant, and the passage often includes the triad whose root is a P4 above the pedal point (hence the term *pedal six-four chord*). Therefore if the tonic pitch is the pedal, the IV chord will often be used above it (as in Ex. 12-9, and if the dominant pitch is the pedal, the I chord will often be used above it).

Pedal points occasionally occur in parts other than the bass, in which case they are referred to as *inverted pedal points*. Another possibility is for the pedal point to contain more than one pitch class (*double pedal point*, and so on), as in Example 12-10. While most pedal points are sustained, rearticulated pedal points, as in Example 12-10, are not uncommon.

Example 12-10. Schumann, "Reaper's Song," Op. 68, No. 18

Allegro moderato

C: I

SPECIAL PROBLEMS IN THE ANALYSIS OF NON-CHORD TONES

In this section we will discuss three excerpts that demonstrate special problems that you may encounter from time to time in analyzing tonal music. First, the actual label that you assign to a tone may change as you reduce the passage. Such possibilities were mentioned in connection with Examples 12-1 and 12-2. For variety, we will do a reverse textural reduction of a similar passage. Example 12-11 shows two versions of a portion of a melody in Eb, the first melody being diatonic, the second incorporating chromatic and diatonic passing tones.

Example 12-11.

Eb: I V⁷ I Eb-I V⁷ I

If we embellish each tone of Example 12-11b, we create the melody found in Example 12-12.

Example 12-12. Schubert, Impromptu Op. 90, No. 2

3 legato

p

Eb: I⁶ V⁶ I

The labeling of the NCTs in Example 12-12 is problematical. For instance, the first E[#]4 in m. 3 is, on the surface, a neighboring tone (Eb4-E[#]4-D[#]4). But Example 12-11b showed that the E[#]4 is not a neighbor but a passing tone (Eb4-E4-F4). Probably the best solution is to label tones according to the level on which you are analyzing, remembering that other interpretations may be necessary at different levels.

Example 12-13 is our second problematical excerpt. It is very unlikely that you would be able to determine the harmonic background of this excerpt just from looking at it, and actually it involves too many advanced harmonic concepts to allow detailed discussion of the harmonies at this time. But if you play it slowly, you will discover that the right hand lags further and further behind the left. The cadence on f[#] in the right hand comes three eighth notes later than the cadence on f[#] in the left, and the cadences on A are four eighth notes apart. Both cadences are identified in the example.

 **Example 12-13.** Brahms, *Variations on a Theme by Schumann*, Op. 9, Var. 2

Once the two staves are “correctly” aligned, it becomes apparent that the texture contains no NCTs at all (except, perhaps, for the B \sharp 4). Example 12-14 brings the right hand into alignment with the left. Play through both examples slowly and compare them.

 **Example 12-14.**

Conventional NCT terminology is inadequate to explain a passage such as this. Instead, it is better to use an approach such as the one we have demonstrated.

Finally, we consider the problem of implied harmonies and the analysis of unaccompanied melodies. As a general rule, NCT analyses based upon melodies alone are arbitrary and uninformative. Nevertheless, the experienced musician can sometimes recognize the NCTs in an unaccompanied melodic line solely on the basis of implied harmonies. Example 12-15 shows one interpretation (others are possible) of the harmonies implied by a Bach fugue subject. The textural reduction shows that the melody is an elaboration of a simple stepwise line.

 **Example 12-15.** Bach, *Well-Tempered Clavier*, Book II, Fugue 14

SUMMARY

An *appoggiatura* is a NCT that is approached by leap and resolved by step. In most cases, appoggiaturas are accented, approached by ascending leap, and resolved by descending step.

An *escape tone* is approached by step and resolved by leap in the opposite direction. Escape tones are usually submetrical, unaccented, and diatonic.

A *neighbor group* embellishes a single pitch by sounding its upper and lower neighbors in succession (in either order). The first neighbor is approached by step and left by leap, while the second one is approached by leap and resolved by step.

An *anticipation* anticipates a tone that belongs to the next chord. It may be approached by step or by leap. An anticipation almost always resolves to the tone it anticipated. An anticipation that resolves by leap is called a *free anticipation*.

A *pedal point* is a stationary pitch that begins as a chord tone, then becomes a NCT as the harmonies change, and finally ends up as a chord tone again. Pedal points usually occur in the bass, but they occasionally occur in other parts as well.

The analysis of chords and NCTs must always be carried out simultaneously. While most NCTs are clearly recognizable as embellishments of the basic harmony, ambiguous cases will be encountered occasionally.

200 Non-Chord Tones 2

SELF-TEST 12-1

(Answers begin on page 592.)

A. Analysis.

1. Go back to Self-Test 8-1, Part F (p. 138), which shows NCTs in parentheses, and identify the type of each NCT in the blanks below. Always show the interval classification (7-6, and so on) when you analyze suspensions.

m. 1 _____

m. 3 _____

m. 4 _____

2. Analyze the NCTs in Example 9-8 (p. 145).

m. 24 _____

m. 25 _____

m. 26 _____

3. Analyze the NCTs in Example 9-9 (p. 146).

m. 72 _____

m. 76 _____

m. 74 _____

m. 77 (melody) _____

m. 75 _____

(alto) _____

4. Label the chords and NCTs in this excerpt. Then make a simplified version without NCTs. Comment upon the simplified version. Analyze two chords in m. 11, beat 3.

Bach, "Ermuntre dich, mein schwacher Geist"

5. The two excerpts below are from a theme and variations by Mozart. The first excerpt is from the end of the theme, while the second excerpt is from the end of the first variation. Analyze the harmonies (they are identical in the theme and the variation), and label all NCTs.

Mozart, Piano Sonata, K. 284, III, Theme and Variation I.

Theme

Var. 1

B. The example below is for three-part chorus. Analyze the chords with roman numerals. Then add the specified NCTs at the points indicated. Show the interval classification of each suspension.

C. The excerpt below is a reduction of Mozart's Sonata K. 330, III, mm. 1-8. Use it as a framework for elaboration, employing arpeggiations and NCTs as you see fit. It is also possible to thicken the texture occasionally, if you wish.

C: I 6 V I V I 6 V I V IV⁶ (I⁶) IV I⁶ V⁶ I V

EXERCISE 12-1. See Workbook.

P A R T



Diatonic Seventh Chords

INTRODUCTION

Diatonic seventh chords were introduced quite early in this text, in Chapter 4. Subsequent examples and exercises have included the analysis of many seventh chords, but we have not dealt with the details of how composers have used seventh chords in tonal music. The use of seventh chords is the subject of the next several chapters.

Before reading further, review the material on seventh chords on pages 68-70. In those sections you learned, among other things, that the five most common seventh-chord qualities are the major seventh, major-minor seventh, minor seventh, half-diminished seventh, and diminished seventh chords. Of these types, the major-minor seventh is by far the most frequently encountered. It is generally built on $\hat{5}$, with the result that the terms *dominant seventh* and major-minor seventh are used more or less interchangeably.

Dominant seventh chords are almost always major-minor sevenths—that is, when spelled in root position, they contain a major triad plus the pitch a m⁷ above the root. In major keys a seventh chord built on $\hat{5}$ will be automatically a major-minor seventh chord. But in minor keys *it is necessary to raise* $\hat{7}$ (the leading tone, not the seventh of the chord) in order to obtain the major-minor seventh quality. The seventh chord built on $\hat{5}$ without the raised $\hat{7}$ (v^7 instead of V^7) is not as common. It serves only as a passing chord, not as a true dominant, because it lacks the tonic-defining leading tone essential for a chord with a dominant function.

Example 13-1.

G: good good rare
 V⁷ g: V⁷ v⁷

GENERAL VOICE-LEADING CONSIDERATIONS

The essential concept in the handling of *any* seventh chord involves the treatment of the 7th of the chord: *the 7th almost always resolves down by step*. We are naturally suspicious of generalizations, as we should be, but the downward resolution of the 7th as a general principle is extremely important. The 7th originated in music as a downward-resolving suspension or descending passing tone, and the downward resolution came to be the only one acceptable to the musical ear. To compare a 7th resolving down with one resolving up, listen to Example 13-2. The difference may or may not seem startling to you, but tonal music contains very few instances of the second resolution.

Example 13-2.

a: iv⁶ [i⁶] V⁷ i b: iv⁶ [i⁶] V⁷ i

When you are working with the V⁷, you must also consider the leading tone: *when it is in an outer part, the leading tone almost always resolves up by step*. To convince yourself of the reason for this, play Example 13-3, and notice the disappointing effect of the cadence.

Example 13-3.

a: i VI ii⁶ V i

When you apply these two principles, remember not to confuse the 7th of the chord with the seventh scale degree. We will summarize what we have presented so far in this chapter.

1. The V⁷ chord is a major-minor seventh chord.
2. The 7th of the chord (4) resolves down to 3.
3. The 3rd of the chord (7) resolves up to 1, especially when it is in an outer part.

THE V⁷ IN ROOT POSITION

The resolution of the dominant seventh in root position to the tonic in root position is more difficult than that of any other combination. To master this technique, however, you need only to remember the principles we discussed earlier in this chapter.

1. The 7th must resolve *down* to 3.
2. The leading tone, when in the *top* part, must resolve *up* to 1.

Another way of looking at these principles is in terms of the resolution of the tritone: the +4 tends to resolve outward to a 6th (Ex. 13-4a), the -5 inward to a 3rd (Ex. 13-4b). If we follow these principles, we find that the tonic triad is incomplete—it has no 5th.

Example 13-4.

a: V⁷ i b: V⁷ i

three roots
one third
(common)

two roots
two thirds
(unusual)

The resolution of V⁷ to an incomplete triad is not an “error” to be avoided and is, in fact, a very common occurrence, especially at final cadences. In

Example 13-5 the leading tone, even though it is not in the top voice, resolves up by step, resulting in an incomplete tonic triad.

Example 13-5. Schubert, Quartet (*Death and the Maiden*), Op. post., I

If you want to resolve the root position V⁷ in four parts to a complete tonic triad, either of these methods will work.

1. Use an incomplete V⁷, omitting the 5th (or, less commonly, the 3rd) and doubling the root.
2. Use a complete V⁷, but put the leading tone (3rd of the V⁷) in an *inner* part, and "frustrate" its natural resolution by taking it down a M3 to the 5th of the tonic triad.

The first solution works because the incomplete V⁷ is a perfectly usable sonority. The second method, which is the more common, succeeds by tucking away the leading tone in an inner voice, where its lack of resolution is not so apparent to the listener. Both options are summarized in Example 13-6.

Example 13-6.

Illustrations of these two procedures from the literature are seen in the next two examples. In the first (Ex. 13-7) an incomplete V⁷ (5th omitted) is used.

Example 13-7. Bach, "Nun ruhen alle Wälder"

In the second (Ex. 13-8) Beethoven uses a complete V⁷ but frustrates the leading tone.

Example 13-8. Beethoven, Quartet Op. 18, No. 1, IV

You may have discovered by now that there is a way to resolve a complete V⁷ in four parts to a complete tonic triad while still resolving both the leading tone and the 7th of the chord: if the 5th of the V⁷ leaps to the 5th of the tonic triad, the complete tonic triad is obtained, but at the expense of parallel 5ths. This resolution is illustrated in Example 13-9.

Example 13-9.

A musical score for two voices. The top voice has a soprano clef, and the bottom voice has an alto clef. The key signature is A major (two sharps). The vocal parts are mostly silent, with a few notes. The piano accompaniment has a bass line and a treble line. The piano part shows a V⁷ chord followed by an I chord. A bracket labeled '(5)' indicates a leap from the 5th of the V⁷ to the 5th of the I chord. The word 'poor' is written above the piano part.

In instrumental music this solution is occasionally found when the 5ths are taken by contrary motion, as in Example 13-10. Notice how the rests in the lower parts and the continued activity in the first violin distract the listener's attention from the 5ths.

Example 13-10. Haydn, Quartet Op. 76, No. 1, III (piano score)

A musical score for a string quartet. The top voice is the first violin, and the bottom voice is the cello. The key signature is G major. The score shows a progression from I to ii⁶, then V⁷, and finally I. The piano accompaniment is present. A bracket labeled '(5)' indicates a leap from the 5th of the V⁷ to the 5th of the I chord. The dynamic 'p' is indicated.

But the use of contrary 5ths or an upward resolution of the 7th (see the last sixteen measures of Beethoven's Quartet Op. 59, No. 2) in order to achieve a complete tonic triad is certainly the exception, and these devices should be avoided in beginning exercises.

THE V⁷ IN THREE PARTS

The V⁷ in a three-part texture will have to appear with one of the chord tones missing, unless one part articulates two pitches. Obviously, neither root nor 7th can be omitted without losing the flavor of the seventh chord. Of the two remaining members, the 5th is more commonly omitted, but examples with the 3rd omitted are not rare (Ex. 13-11).

Example 13-11.

A musical score for three voices. The top voice has a soprano clef, the middle voice has an alto clef, and the bottom voice has a bass clef. The key signature is C major. The vocal parts show a V⁷ chord followed by an I chord. The piano accompaniment is present. Brackets indicate 'fifth omitted' and 'third omitted'.

Example 13-12 illustrates the V⁷ with omitted 5th.

Example 13-12. Bach, Sinfonia No. 9

A musical score for a string quartet. The top voice is the first violin, and the bottom voice is the cello. The key signature is E♭ major. The score shows a progression from I⁶ to IV, then I⁶ again, followed by a V⁷ chord (with an arrow pointing to the 7th), and finally I. The piano accompaniment is present. The measure number 14 is indicated above the first violin part.

A V⁷ with the 3rd omitted can be seen in Example 13-13.

Example 13-13. Mozart, Sonata K. 570, III

B♭: I⁶ ii⁶ I⁶ V⁷ I
V

OTHER RESOLUTIONS OF THE V⁷

The V⁷ in root position often moves deceptively to the submediant triad. When the leading tone is present in the V⁷ (which it generally is), it usually resolves up to 1, even when it is in an inner voice, although 7-6 in an inner voice is acceptable in *major* keys. In four parts the resolution to 1 will result in a doubled 3rd in the vi (or VI) chord. Some sample V⁷-VI progressions are given in Example 13-14. The voice leading would be the same in major. Notice that in every case it is only the bass that "deceives." That is, all of the other voices resolve as they normally would in an authentic cadence.

Example 13-14.

b: V⁷ VI V⁷ VI V⁷ VI V⁷ VI

The only diatonic triads that commonly follow the V⁷ chord are the root position tonic and submediant triads. There are some altered chords that can embellish the deceptive progression, and we will come upon these in later chapters, but for now you should probably restrict your exercises to V⁷-I(i) and V⁷-vi(VI). The V⁷-I⁶(i⁶) resolution, seen in Example 13-15, is *not* a good choice, because of the sound of the implied parallel 8ves.

Example 13-15.

avoids implies
F: V⁷ I⁶ V⁷ I⁶

CHECKPOINT

1. In the resolution of any seventh chord, the 7th of the chord almost always moves (up/down) by (step/leap).
2. In the resolution of a V⁷ chord, the 3rd of the chord (7) usually moves (up/down) by (step/leap). This principle is sometimes not followed when the 3rd of the chord is in an (inner/outer) part, in which case it may leap down to 5.
3. If a member of the V⁷ is to be omitted, it is usually the (3rd/5th).
4. If a member of the V⁷ is to be doubled, it is usually the _____.
5. If the principles listed in questions 1 and 2 are followed in a four-part texture, the V⁷-I progression will lead to (a complete/an incomplete) I chord.
6. Describe two good methods for attaining a complete I chord in a V⁷-I progression in four parts.
7. Two good resolutions of the V⁷ chord are V⁷-_____ and V⁷-_____.

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SELF-TEST 13-1

(Answers begin on page 594.)

- A. The note given in each case is the root, 3rd, 5th, or 7th of a V⁷ chord. Notate the chord in root position and name the major key in which it would be the V⁷.

- B. Go back to Self-Test 11-1, A.3 on page 188. Study carefully the V⁷ chords in mm. 1, 2, and 5, and comment on the voice leading. (Note: You may have analyzed the Ab3 in m. 1 as a passing tone, but it could also be considered as a 7th.)

- C. Resolve each chord below to a root position I. (Note: *c* means complete chord, *i* means incomplete chord.)

- D. Notate the key signature and the V⁷ chord, then resolve it.

- E. Analyze the harmonies implied by these soprano/bass frameworks. Then make four-part versions with embellishments and at least one root position V⁷.

F. Analyze the chords specified by this figured bass. Then make two harmonizations, one for SAB chorus and one for SATB chorus.



EXERCISE 13-1. See Workbook.

THE INVERTED V⁷ CHORD

The inversions of the V⁷ chord are actually easier to handle than the root position V⁷. However, no inversion of the V⁷ should be considered to be a possible substitution for the root position V⁷ at an important cadence. The voice-leading principles followed by composers in the resolution of inverted dominant sevenths are the following.

1. The 3rd ($\hat{7}$) resolves up by step to $\hat{1}$.
2. The 7th ($\hat{4}$) resolves down by step to $\hat{3}$.

The other members of the V⁷ have greater freedom, but they generally move by step ($\hat{2}-\hat{1}$) or are retained ($\hat{5}-\hat{5}$).

You will recall that the symbols used to indicate inverted seventh chords are these.

$\frac{6}{5}$	3rd in the bass
$\frac{4}{3}$	5th in the bass
$\frac{4}{2}$ (or 2)	7th in the bass

THE V $\frac{6}{5}$ CHORD

Example 13-16 illustrates the basic voice leading in the resolution of the V $\frac{6}{5}$.

Example 13-16.

Two staves of music. The top staff is labeled "four parts" and the bottom staff is labeled "three parts". Both staves show a resolution from a V $\frac{6}{5}$ chord to a I chord. The bass line moves from a low note to a higher note, while the other voices resolve to a tonic chord.

C: V $\frac{6}{5}$ I V $\frac{6}{5}$ I

In practice, the V $\frac{6}{5}$ is often used in a relatively weak position in the phrase. The example below is typical, with the V $\frac{6}{5}$ harmonizing an F5 that is essentially a harmonized passing tone in the melody. The root position V that ends the passage has a much stronger effect than the V $\frac{6}{5}$.

Example 13-17. Mozart, Sonata K. 309, III

A musical excerpt from Mozart's Sonata K. 309, III. The top staff shows the melody line with dynamic markings "mf" and "f". The bottom staff shows the harmonic progression: I, V $\frac{6}{5}$, I, 6, vii $\frac{6}{5}$, I, V. The V $\frac{6}{5}$ chord is shown as a harmonic support for the melody note F.

Textural reduction

A simplified harmonic reduction of the previous musical example, showing only the bass line and harmonic progression: I, V $\frac{6}{5}$, I, 6, vii $\frac{6}{5}$, I, V.

THE V₃⁴ CHORD

The V₃⁴ is often used in a fashion similar to that of the passing V₄⁶: to harmonize 2 in a 1-2-3 or 3-2-1 bass line. The V₃⁴ is seldom used in three-part textures, the V₄⁶ or vii⁰⁶ being used instead. Example 13-18 summarizes the treatment of the V₃⁴ in four parts.

Example 13-18.

In the last progression above, the 7th of the V₃⁴ moves *up* to 5, one of the few situations in which composers frustrated the normal resolution of the 7th. The unequal 5ths seen between the soprano and alto in Example 13-18c are acceptable. Example 13-19 gives an example from Mozart of the I-V₃⁴-I⁶ progression with an unresolved 7th (in the horn and violin I).

Example 13-19. Mozart, Horn Concerto No. 3, K. 447, II

THE V₂⁴ CHORD

Because of the downward resolution of the 7th, the V₂⁴ is almost always followed by a I⁶. The V₂⁴ is often preceded by a I⁶ (Ex. 13-20a) or by some form of IV or ii chord (Ex. 13-20b), but it may also be preceded by a passing I₄⁶ or a cadential I₄⁶ chord (Ex. 13-20c).

Example 13-20.

A less conventional but certainly effective treatment of the upper voices is seen in Example 13-21, in which the 5th of the V₂⁴ leaps to the 5th of the I⁶ chord.

Example 13-21. Beethoven, Sonata Op. 13, II

THE APPROACH TO THE 7TH

We have seen that the resolution of the 7th of the V⁷ (or of any seventh chord) is usually down by step. The way in which the 7th is approached should also be considered in any detailed analysis, because different approaches have different musical effects. One way of doing this is to classify the contour of the voice that has the chord 7th. If the chord tone preceding the 7th is:

1. the same pitch class as the 7th, we use the term *suspension figure* (Ex. 13-22a);
2. a step above the 7th, we use the term *passing tone figure* (Ex. 13-22b);
3. a step below the 7th, we use the term *neighbor tone figure* (Ex. 13-22c);
4. none of the above, we use the term *appoggiatura figure* (Ex. 13-22d).

This is historically the least common approach to the 7th. When used, the leap is almost always an ascending one.

Example 13-22.

The contours defined above are put into context in Example 13-23.

Example 13-23.

In the example, the 7th of the V⁷ is given to the soprano for purposes of illustration. In practice, of course, the 7th may occur in any voice.

To be sure that you understand this section, look at the approach to the 7th in the examples listed below.

Example 13-7 (p. 209)	Suspension figure (true of both the ii ⁷ and the V ⁷).
Example 13-8 (p. 209)	Neighbor tone figure.
Example 13-17 (p. 217)	Passing tone figure. The line is G5-F5-E5.
Example 13-19 (p. 218)	Ascending passing tone figure. The passing tone figure usually descends, the I-V ⁴ -I ⁶ progression being the only common exception.
Example 13-21 (p. 219)	Appoggiatura figure in the V ⁴ , passing tone figure in the V ⁶ .

SUMMARY

The V⁷ is a major-minor 7th chord in both major and minor modes. This means that the leading tone must be raised in the V⁷ chord in the minor mode.

Two fundamental voice-leading should be followed when the V⁷ chord is used. First, the 7th of the chord (not $\hat{7}$, the leading tone) should resolve down by step in the next chord (usually I or vi). The only common exception to this is the V $\frac{4}{3}$ -I 6 progression, where the 7th may move up by step to the 5th of the I 6 chord. Second, when it is in an outer part, the leading tone almost always resolves up by step.

The root position V⁷ usually moves to I or vi. When a V⁷ in a four-voice texture resolves to I, the I chord is frequently incomplete, with a tripled root and a 3rd. In order to arrive at a complete I chord, the V⁷ must either be incomplete itself (no 5th, with the root doubled) or the leading tone of the V⁷ must be in an inner voice so that it may leap down to the 5th of the I chord. When a V⁷ in a four-voice texture resolves to vi, the leading tone must resolve to tonic if it is in the soprano voice or if the music is in the minor mode. In either case, the 3rd of the vi chord will be doubled.

The inverted V⁷ is easy to use if you remember the basic principles outlined above concerning the leading tone and the 7th of the V⁷. In general, the V $\frac{6}{5}$ resolves to I, the V $\frac{4}{3}$ resolves to I or I 6 , and the V $\frac{2}{1}$ resolves to I 6 .

The 7th of a V⁷ chord in root position or inversion may be approached by means of a suspension figure, a passing tone figure, a neighbor tone figure, or an appoggiatura figure. Avoid approaching the 7th by a descending leap.

SELF-TEST 13-2

(Answers begin on page 597.)

A. Notate the specified chords. Use accidentals instead of key signatures.

B. Comment on the resolution of the leading tone and both the approach to and the resolution of the 7th in the examples referred to below.

1. Self-Test 4-2, C. 1, p. 73 (V $\frac{4}{3}$).
2. Self-Test 4-2, C. 2, p. 73 (V $\frac{4}{3}$).
3. Example 7-18, p. 117 (V $\frac{4}{3}$).

C. Resolve each chord to a tonic triad (except as indicated). Analyze both chords.

D: (c) (i) F: G: C: (c) (f)

D. Supply the key signature. Then notate and resolve the specified chord. Finally, begin the exercise with a chord that will allow good voice leading and provide the indicated approach to the 7th. Notate as quarter notes. Label all unlabeled chords.

A: V⁶ d: V³ F: V² e: V⁷

E. Review. Identify the following keys. If the chord occurs diatonically in both major and minor, name both keys.

ex. 1 2 3 4 5 6 7
C : V⁶ : I⁶ : ii⁶ : IV⁶ : V² : vi : iv⁷ : vii⁴
or G : iii⁶ : V⁶ : ii⁴ : I⁴ : i⁷ : iii : iv² : vii⁹

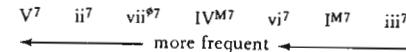
EXERCISE 13-2. See Workbook.

CHAPTER 14

The II⁷ and VII⁷ Chords

INTRODUCTION

Any diatonic triad may appear with a 7th added, but the various diatonic seventh chords do not occur with equal frequency in tonal music. In fact, the majority of seventh chords used are dominant sevenths, appearing either as the V⁷ or as a secondary V⁷ (to be discussed in Chapter 16). In the major mode, by far the most common diatonic seventh chord other than the V⁷ is the ii⁷. A ranking by frequency of the seventh chords in major would be approximately that shown below.



Because of the larger number of possible seventh chords in the minor (see pp. 69-70) a corresponding diagram for minor would be difficult to produce. The leading-tone seventh is more frequently found in minor than in major, but the supertonic seventh is still the more common of the two in minor. At any rate, a diagram showing the order of frequency of seventh chords in minor would not differ radically from that shown for major. In this chapter and the next each of the diatonic seventh chords is illustrated and discussed briefly. This chapter covers only the supertonic and leading-tone seventh chords, the remainder being discussed in Chapter 15.

You will not find the voice-leading principles to be difficult. Actually, Chapter 13 presented the most formidable part-writing problems to be found in tonal harmony. Since the principles are not difficult, there are not separate sections dealing with the handling of each chord in three and four voices. Instead, the following principles apply throughout.

1. Incomplete chords must contain at least the root and the 7th.
2. Doubled tones would generally not be the chord 7th or the leading tone of the scale.
3. The 7th of the chord almost always resolves down by step.

4. The 7th of the chord may be approached in various ways (review p. 220). Especially common is the suspension figure, although the passing tone figure also works well. Neighbor and appoggiatura figures are less common.

THE II⁷ CHORD

By far the most common of nondominant diatonic seventh chords, supertonic sevenths may be found in most compositions of the tonal era. In major the ii⁷ is a minor seventh chord (Ex. 14-1a), while in minor keys the ii^{ø7} is almost always used (Ex. 14-1b). Another possibility in minor is the ii⁷ chord created by a raised 6 (Ex. 14-1c); this chord is used rarely, since the linear tendencies of both the 16 and the chord 7th would usually resolve to a doubled leading tone in the V chord.

Example 14-1.

a b c rare

G: ii⁷ g: ii^{ø7} ii⁷

Like the supertonic triad, the supertonic seventh typically moves to V. The root position V may be delayed by the appearance of a cadential I₄⁶ chord, or the V may be represented by a vii^{ø6} (see Ex. 14-2 for some typical resolutions).

Example 14-2.

F(f): ii⁷ I₄⁶ V ii⁶ vii^{ø6} ii⁶ V₂ ii³ V⁷ ii² V⁶

V

Examples of all the cases above, as well as of others, are not difficult to find, but the first inversion of the ii⁷ is the most common bass position. A ii⁶₅-V⁷ progression in a three-part texture is illustrated in Example 14-3. Notice the suspension figure that prepares the 7th of the ii⁶₅.

Example 14-3. Mozart, Symphony No. 41, K. 551, IV

Molto allegro

VI. I VI. II

C: I⁶ ii⁶ V⁷ vi

Textural reduction

A very familiar example of the ii⁶-V⁶ progression in a five-part texture occurs at the beginning of Book I of the *Well-Tempered Clavier*. Again the 7th is approached by means of a suspension figure.

Example 14-4. Bach, *Well-Tempered Clavier*, Book I, Prelude I

C: I ii²

V⁶ I

Textural reduction

C: I ii² V⁶ I

A much less typical use of the supertonic seventh chord is as a substitute for a IV chord in a plagal cadence. In such cases, the ii⁷ is usually in first inversion, where its close resemblance to the IV is most obvious. In Example 14-5, which may be somewhat difficult to follow because of the clefs, Dvořák closes the phrase with a ii⁶-I plagal cadence. The textural reduction makes the voice leading clearer and points out that most of the phrase is sequential.

Example 14-5. Dvořák, Symphony No. 9, Op. 95 (*From the New World*), I

Adagio
Vla.
Vc.
D.B.

e: i v⁶ VI III⁶ iv i ii⁶ i

Textural reduction

sequence

Perhaps a better explanation of the ii⁶ in the example above is that it is a iv chord with an added 6th (the F#3). This is especially convincing in that it accounts for the E3, which is otherwise an unresolved 7th in the ii⁷ chord.

THE VII⁷ CHORD IN MAJOR

The leading-tone seventh in major is a half-diminished seventh chord,* possessing, as does the vii¹⁰ triad, a dominant-like function. It normally resolves directly to the tonic, but it may first move to the V⁷ by simply taking

*The fully diminished vii⁷ in major is discussed in Chapter 21.

6 (the 7th of the chord) down one step. Typical resolutions to tonic in four parts are demonstrated in Example 14-6. The third inversion, which is quite rare, is not shown, nor is vii⁶-I, which would contain parallel 5ths.

Example 14-6.

a poor (5)
b better
c
d
e poor (5)
f better

Bb: vii⁷ I vii⁷ I vii⁷ I vii⁶ 16 vii⁶ 16 vii⁶ 16

Notice that both the vii⁷ and the vii⁶ resolutions must be handled carefully to avoid parallel 5ths (see Ex. 14-6a and 14-6e). This can be done by doubling the 3rd of the I chord or by revoicing the leading-tone chord so that parallel 4ths replace the parallel 5ths, as shown. The rare example from the literature of such parallels, as in Example 14-7, does not invalidate the principle.

Example 14-7. Haydn, Symphony No. 94, IV

VI. I
VI. II
Vla.
Vc., C.B.

G: V⁶ I V vii⁶ I⁶ ii⁶ I⁶ V⁷ I

A less common resolution of the vii⁰⁴₃ is to a root position I chord, seen in Example 14-8 (from a composition for two four-part choruses). The vii⁰⁴₃ is typically brought about, as it is here, by a IV chord that is left by parallel 3rds or 6ths outlining 1-2-3 in one voice and 6-7-1 in another (the two alto lines). The result is an interesting combination of both plagal and authentic cadences.

Example 14-8. Brahms, "Unsere Vater hofften auf dich," Op. 109, No. 1

Otherwise the vii⁰⁷ poses no new problems. It should be remembered, however, that the vii⁰⁷ is much less common than the other chords with dominant functions—V, V⁷, and vii⁰⁽⁶⁾.

THE VII⁷ CHORD IN MINOR

In the minor mode, the leading-tone seventh (Ex. 14-9a) appears as a fully diminished seventh chord (vii⁰⁷). The subtonic seventh chord (Ex. 14-9b) generally is used in sequences, to be discussed in Chapter 15, or as a secondary dominant seventh (V⁷ of III), a usage that is explained in Chapter 16. The vii⁰⁷ is found more frequently and is discussed in the following paragraphs.

Example 14-9.

The vii⁰⁷, whether in root position or inverted, tends to resolve to tonic. As with the vii⁰⁷, the vii⁰⁷ may move first to the V⁷ simply by moving the 7th of the chord down to 5. The resolution of vii⁰⁷ to i, however, requires more discussion.

The vii⁰⁷ contains two tritones. The tendency of the tritone is to resolve inward by step when spelled as a ⁰⁵, outward by step when spelled as a ⁺⁴. If these tendencies are followed in four parts, as in Example 14-10, the tonic triad will have a doubled 3rd.

Example 14-10.

Composers have not always cared to follow these tendencies, often taking ² down to ¹ instead of moving it up to ³ (compare Ex. 14-11a and b). In certain voicings, this can result in unequal 5ths (Ex. 14-11c).

Example 14-11.

The 5ths, though acceptable, are often disguised through the use of NCTs, as in Example 14-12.

Example 14-12. Bach, Passacaglia in C Minor

c: vii^{⁹⁶} 5 i^⁶ vii^{⁹⁷} i iv^⁷ v^⁷ i

Textural reduction

c: vii^{⁹⁶} 5 i^⁶ vii^{⁹⁷} i iv^⁷ v^⁷ i

The members of the vii^{⁹⁷} usually move in the same ways when the chord is inverted as they do when it is in root position, and our discussion of the optionally doubled 3rd still applies (for example, see the first chord in Ex. 14-12 above). The vii⁹⁵ (Ex. 14-13a) usually is followed by i⁶, because resolution to the root position tonic creates unequal 5ths involving the bass (review p. 86). The vii⁹₃ (Ex. 14-13b) moves smoothly to the i⁶; occasionally found is vii⁹₃-i, which is similar to the vii⁹₄-I cadence discussed in connection with Example 14-8. The vii⁹₂ (Ex. 14-13c) is generally followed by V⁷ or by a cadential or passing i⁴^⁶.

Example 14-13.

a: vii^{⁹₃} 5 i^⁶ vii^{⁹₃} i vii^{⁹₃} 5 i^⁶ vii^{⁹₃} i vii^{⁹₃} 2 V^⁷ vii^{⁹₃} 2 i^⁶ V^⁷

b: vii^{⁹₃} 5 i^⁶ vii^{⁹₃} i vii^{⁹₃} 5 i^⁶ vii^{⁹₃} i vii^{⁹₃} 2 V^⁷ vii^{⁹₃} 2 i^⁶ V^⁷

c: vii^{⁹₃} 5 i^⁶ vii^{⁹₃} i vii^{⁹₃} 5 i^⁶ vii^{⁹₃} i vii^{⁹₃} 2 V^⁷ vii^{⁹₃} 2 i^⁶ V^⁷

A vii^{⁹₃} in chorale texture is seen in Example 14-14, where it resolves to a i^⁶ with a doubled 3rd. An alternate analysis would eliminate two of the chords that occur in the same measure with the vii^{⁹₃}—the ii⁹₅ and the ii^{⁹⁷}—by regarding the A4s as suspensions. It would not be equally good to analyze the G#4s as lower neighbors, thereby eliminating the vii^{⁹₃} and the vii^{⁹₆}, because that analysis turns up an unconvincing progression: ii⁹₅-i^⁶-ii^{⁹⁷}-i.

Example 14-14. Bach, "Als Jesus Christus in der Nacht"

a: VI ii^{⁹₅} vii^{⁹₃} 5 i^⁶ ii^{⁹₇} vii^{⁹₆} i ii^{⁹₅} V (7) I

You may have noticed that Example 14-14 ends with a major tonic triad. In the Baroque period it was not at all uncommon to end a phrase or a composition in the minor mode in this way. This device, known as the *Picardy third*, is discussed further in Chapter 21.

CHECKPOINT

- The most frequently used diatonic seventh chord is the V⁷. Which one ranks second in frequency?
- What tones of a seventh chord should not be omitted?
- The 7th of a diatonic seventh chord resolves (up/down) by (step/leap).
- Which types of seventh chords are found on $\hat{2}$ and $\hat{7}$ in major and minor? Which forms in minor are the most common?
- The ii⁷ tends to be followed by ___, the vii^{ø7} by ___.
- Which chord discussed in this chapter contains two tritones?
- The natural tendency of the $\hat{+}4$ is to resolve (inward/outward) by step, while the $\hat{\circ}5$ resolves (inward/outward) by step.
- Try to recall the implications of the preceding question in connection with the vii^{ø7} chord.

SUMMARY

The supertonic seventh chord is a minor seventh chord in the major mode (ii⁷) and a half-diminished seventh chord in the minor mode (ii^{ø7}). Like the supertonic triad, it is usually followed by a V chord (or by a V delayed by a I⁶). A less common usage finds the supertonic seventh, usually in first inversion, substituting for IV (or iv) in a plagal cadence.

The leading-tone seventh chord is a half-diminished seventh chord in the major mode (vii^{ø7}) and a fully diminished seventh chord in the minor mode (vii^{ø7}). Like the leading-tone triad, it is usually followed by a I chord, but it may move first to a V⁷ in root position or inversion simply by resolving the 7th down by step. The voice leading is usually stepwise in all voices as the leading-tone seventh chord resolves, although one occasionally encounters a vii^{ø4} (or vii^{ø3}) resolving to a root position tonic triad, which involves a leap of a 4th or 5th in the bass.

The most crucial aspect of part-writing supertonic and leading-tone seventh chords is the resolution of the 7th of the chord down by step in the following chord. In addition, incomplete seventh chords must contain at least the root and the 7th, and $\hat{7}$ should not be doubled in the leading-tone seventh chord.

SELF-TEST 14-1

(Answers begin on page 599.)

- A. Notate the following chords. Use accidentals, not key signatures.

- B. Analyze the following chords. Be sure your symbols indicate chord quality and inversion.

- C. Analyze the chords and NCTs in the following excerpts. Whenever you encounter a ii⁷ (ii^{ø7}) or vii^{ø7} (vii^{ø7}) chord, discuss the voice leading into and out of the chord.

- Each numbered blank indicates where a chord is to be analyzed. In many cases it would be equally valid to analyze the "chords" as NCTs.

Bach, "Gib dich zufrieden und sei stille"

1 2 3 4 5 6 7 8 9 10 11 12 13

2. Again, the chords are numbered. Also, the "real" bass notes of chords 1-3 are circled.

○ Mozart, Piano Sonata K. 284, III, Var. 5

14 f p
15 f
16 f
17 f
18 f
19 f
20 f
21 f

1 2 3 4 5 6 7 8

3. Trace the predominant rhythmic idea in this excerpt.

○ Schubert, *Aufenthalt*

111
Rau - schen - der Strom, brau - sen - der Wald,
p

112
star - ren - der Fels mein Auf - ent - halt,

4. The melody notes on beat 2 of each odd-numbered measure are NCTs. Try to make a reduction that would show the simple model of which this excerpt is an elaboration. What is the meaning of the asterisks in mm. 9 and 15?

○ Chopin, Mazurka Op. 33, No. 3

9 d
10 d
11 d
12 d
13 d
14 d
15 Fine
d *
d *

D. Notate, introduce, and resolve the specified chords. Each chord 7th is to be approached as a suspension, as a neighbor, or as a passing tone, as specified. Include key signatures and roman numerals.

1 s	2 n	3 s	4 s
b: — ii ⁶ ₅ —	c: — vii ⁰⁷ —	A: — ii ⁷ —	d: — ii ⁴ ₂ —

5 s	6 s	7 p	8 s
a: — vii ⁹ ₂ —	Ab: — vii ⁹ ₃ —	Bb: — iii ⁴ —	G: — vii ⁴ ₃ —

9 s 10 s 11 n 12 s

E: — vii^{⁹⁷} — I^⁹ — ii^⁹₃ — g; — vii^⁹₅ — D: — ii^⁹₅ —

E. Analyze the chords called for by this figured bass, analyzing in D major throughout. Then add two upper treble-clef parts conforming to those chords. Note: This trio would actually be performed by four musicians: two violinists, someone playing the bass line (probably a cellist), and a keyboard player realizing the figured bass. (The numerals 3 and 5 call for root position triads.)

Corelli, *Trio Sonata Op. 3, No. 2, II*

5 3 9 8 9 8 7 5 6 5 6 4 5 3

F. Harmonize these chorale phrases for four-part chorus.

1. Include a vii^{⁹⁷} and a ii^⁹₅

2. Include a ii⁷ (on the first half of beat 3 in m.1).

EXERCISE 14-1. See Workbook.

CHAPTER 15

Other Diatonic Seventh Chords

THE IV⁷ CHORD

The diatonic subdominant seventh chord is found in the forms shown in Example 15-1.

Example 15-1.

a b c infrequent

D: IV^{M7} d: iv⁷ IV⁷

Like the subdominant triad, the subdominant seventh moves to V (or vii^{⁹⁶}), often passing through some form of the ii chord on the way. The resolution to ii⁷ (possibly inverted) is especially easy to handle, because only the 7th needs to move. This is illustrated in Example 15-2.

Example 15-2.

e: iv⁷ ii^⁹₃ iv⁶₅ ii^⁹₃

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When iv⁷ moves directly to V, parallel 5ths may result if the 7th of the chord is placed above the 3rd (Ex. 15-3a). This can be corrected through the use of a cadential six-four (Ex. 15-3b) or by doubling the 5th of the V chord (Ex. 15-3c). The solutions illustrated in Examples 15-3d and 15-3e, while less commonly used, are also acceptable. Bach's solution in Example 14-12 (p. 232) is especially elaborate. His voice leading combines elements of Examples 15-3a and 15-3b and ornaments the result with a number of NCTs.

Example 15-3.

The musical examples show five different harmonic progressions:

- a:** A major, IV^{M7} - V. The V chord has a 7th (G) above the 3rd (D), creating a parallel 5th.
- b:** A major, IV^{M7} - $\text{V}^{\frac{5}{4}}$. The V chord is a cadential six-four chord (B, D, G, D).
- c:** A major, IV^{M7} - V. The V chord has a double 5th (G and D).
- d:** A major, IV^{M7} - V. The V chord has a 7th (G) above the 3rd (D), similar to example a.
- e:** A major, IV^{M7} - V⁷. The V⁷ chord has a 7th (G) above the 3rd (D).

Otherwise, the voice leading to or from the root position or inverted subdominant seventh is smooth and offers no new problems. An interesting example is quoted on the next page. While the treatment of the IV^{M7} in Example 15-4 is conventional, the rest of the progression is not. Approximately half of the chord successions are exceptional. Especially unusual are the chords setting the words "Gebete, darinnen," ending with the chord labeled $\flat\text{VII}$. This is a "borrowed" chord, the subject of Chapter 21. The textural reduction, which shows only the soprano and the bass, explains the $\flat\text{VII}$ as coming about through the sequential treatment of five-note motives in the outer voices.

Example 15-4. Brahms, "Der englische Gruss," Op. 22, No. 1

Harmonic progression (measures 15-16):

- V (A major)
- IV (A major)
- V (A major)
- vi (A major)
- ii (A major)
- iii (A major)
- IV (A major)
- $\flat\text{VII}$ (E minor)
- V ($\frac{5}{2}$) (E major)
- I^6 (E major)
- IV^{M7} (E major)
- V (E major)
- 1 (E major)

Text: in ih - rem Ge - be - te, dar - in - nen, dar - in - nen sie rang.

Textural reduction

This reduction highlights the soprano and bass voices, showing how the complex harmonic progression is constructed from simpler melodic motives.

The subdominant seventh in minor with a raised $\hat{6}$ (see Ex. 15-1) has the same sound as that of a dominant seventh chord, but it does not have a dominant function. Instead, it results from ascending motion toward the leading tone ($\hat{6}-\hat{7}-\hat{1}$), as in the Bach example below (Ex. 15-5). This phrase is especially interesting in that it contains subdominant chords using both $\hat{6}$ and $\hat{6}$ and dominant chords using both $\hat{7}$ and $\hat{7}$.

Example 15-5. Bach, "Als vierzig Tag' nach Ostern"

Harmonic progression (measures e-1):

- i (E major)
- 6 (E major)
- $\frac{5}{3}$ (E major)
- V⁶ (E major)
- $\frac{5}{3}$ (E major)
- i (E major)
- IV⁶ (E major)
- V⁶ (E major)
- i (E major)
- v⁶ (E major)
- iv^6 (E major)
- V (E major)

THE VI⁷ CHORD

The submediant seventh is found in three forms (Ex. 15-6).

Example 15-6.

a b c

B♭: vi⁷ B♭: VIM⁷ #vi⁹⁷

Like their parent triads, the vi⁷ and the VIM⁷ typically move toward V, usually passing through subdominant or supertonic chords, or both, on the way. The resolutions to IV and ii are not difficult, and some of the possibilities are illustrated in Example 15-7.

Example 15-7.

a b c d ?

C(c): vi⁷ ii⁷ vi⁷ ii⁶ vi⁷ IV⁶ vi⁷ ii⁶

If a root position vi⁷ or VIM⁷ moves to a root position V, parallel 5ths are apt to result, as in Example 15-8a. In major this problem can be avoided by moving to V⁶ or V⁶₅, as in Example 15-8c.

Example 15-8.

a poor b possible c better

G: vi⁷ V⁷ vi⁷ V⁷ vi⁷ V⁶₅

Of course, in a freer texture, voice leading is a less critical problem. In Example 15-9 parallel 5ths are seen in the vi⁷-ii⁷ progression. Notice also the unresolved 7th in the cadence.

Example 15-9. Chopin, Ballade Op. 38

82

pp

F: I V⁷ I IV I⁶ iii⁶ vi⁷ ii⁷ V⁷ I

In minor, when the root of the submediant seventh moves up by step to $\hat{7}$, the $\hat{6}$ must be raised in order to avoid the interval of a +2. The chord that results when $\hat{6}$ is raised is a half-diminished seventh: #vi⁹⁷. The origin of this chord is illustrated in Example 15-10.

Example 15-10.

a poor b better

+2

f: VIM⁷ V⁶ #vi⁹⁷ V⁶

The #vi⁹⁷ usually serves as a passing chord between two chords of dominant function (V or vii⁹). It moves most smoothly to the otherwise unusual root position vii⁹, as in Example 15-11, but it can move to V⁶ if $\hat{1}$ leaps to $\hat{5}$ (as in Ex. 15-10b).

Example 15-11. Bach, "Warum betrübst du dich, mein Herz"

a: i V (2) i⁶ V ♫vi⁷ vii⁰ i V

THE I⁷ CHORD

The tonic seventh chord in its diatonic form is a M⁷ chord in a major key (Ex. 15-12a) and a m⁷ chord in a minor key (Ex. 15-12b). The minor-major seventh chord in minor (Ex. 15-12c), while possible, is quite rare in the tonal tradition, although it is used freely in jazz.

Example 15-12.

a b c rare

G: I M⁷ g: i⁷ iM⁷

Adding a 7th to the tonic triad obviously deprives it of tonal stability. Rather than being a harmonic goal or resting place, the tonic seventh is an active chord that demands resolution. It tends to move to a IV, or sometimes to a ii or vi, any of which might also contain a 7th. The chord of resolution must be one that contains 6 so that the chord 7th (7) can resolve down to it. Some possibilities are illustrated in Example 15-13.

Example 15-13.

D(d): I M⁷ I V M⁷ I M⁷ ii² I M⁶ IV I M⁴ I V M⁷ I M² iii²

While the tonic seventh is by no means a frequently encountered sonority, it can be very effective when handled well. Two examples from Schumann's *Album for the Young* appear below, with the 7th approached as a passing tone in each case. In both cases the chord 7th could be analyzed as a NCT, as is frequently the case with seventh chords. The decision to analyze a tone as a 7th will be influenced by such factors as its relative duration (Ex. 15-14) or its suspension into the next chord (Ex. 15-15). The textural reduction of Example 15-14 shows that the chord 7ths resolve down by step, even in this fairly free texture (see the bracketed notes). In the roman numeral analysis "V¹/²/V" represents a secondary dominant, which will be discussed in Chapter 16.

Example 15-14. Schumann, "Mignon," Op. 68, No. 35

Lento, con tenerezza

p

Eb: I PM² vi⁷ V¹/V V

Textural reduction

Example 15-15. Schumann, "Spring Song," Op. 68, No. 15

Con anima

mf

E: I 6 V 7 I PM⁶ IV

THE III⁷ CHORD

The diatonic mediant seventh chord takes the forms illustrated in Example 15-16. The first two chords in Example 15-16 (the other is rarely used) occur most often in sequences of seventh chords.

Example 15-16.

a b c rare
F: iii⁷ f: III^{M7} III^{+M7}

A typical instance of such a sequence is seen in Example 15-17. The music shown is played by the string orchestra, while the soloists have a somewhat embellished version. The iii⁷ usually progresses to vi⁽⁷⁾, as here, but it may also be followed by a IV chord.

Example 15-17. Corelli, Concerto Grosso Op. 6, No. 3, V

c: V/IV IV V VIIM⁷ IV⁶ V I IV⁷ VII⁷ IIIM⁷ VIIM⁷ II⁴⁷ V⁷ I
sequence

SEVENTH CHORDS AND THE CIRCLE-OF-FIFTHS SEQUENCE

As we explained in Chapter 7, the usual harmonic functions of most diatonic chords are closely related to the circle-of-fifths sequence. It is not surprising, then, that this is one of the most commonly used sequential patterns (it can still be heard occasionally in popular music). If the chords used in a circle-of-fifths sequence are seventh chords, certain voice-leading conventions are almost always followed.

If the seventh chords are in root position in a four-part texture, complete chords will alternate with incomplete chords (5th omitted). If you look back at the iv⁷ in Example 15-17, you will see that all notes of the chord are present, while the VII⁷ that follows omits the 5th (F). This alternation between complete and incomplete chords continues through the V⁷ chord. There is no other satisfactory way to handle the voice leading in this situation, as you can prove to yourself easily enough.

If the seventh chords are inverted in a four-part texture, either $\frac{6}{5}$ chords will alternate with $\frac{4}{3}$ chords, or $\frac{4}{3}$ chords will alternate with 7 (root position) chords. All chords will be complete. These two situations are illustrated in Example 15-18.

Example 15-18.

c: IV⁶ VII² IIIIM⁶ VIIM⁴ II⁴⁹ V⁴
c: IV³ VII⁷ IIIM³ VIIM⁷ II⁴⁷ V⁷

In three-part textures, a circle-of-fifths sequence will usually be in root position. A root position circle-of-fifths sequence in a three-part texture was illustrated in Example 7-7 (p. 110), although a fourth part is actually contributed by the accompaniment. The relevant part of that example is shown in reduction below, every chord omitting the 5th.

Example 15-19.

VI. II
VI. I
Vc.

The general principle followed in all of the circle-of-fifths examples that we have been discussing is that, with the exception of the bass in a root position sequence, *each voice either stays the same from one chord to the next or it moves down by step*. Look back over Examples 15-17 through 15-19 to verify this for yourself.

SUMMARY

The subdominant seventh chord is a major seventh chord in the major mode (IV^M7). It is usually a minor seventh chord in the minor mode (iv^7), although a major-minor subdominant seventh (IV^7) occasionally results from the ascending form of the melodic minor scale. Subdominant seventh chords tend to proceed to V, often passing through some form of the ii chord on the way.

The submediant seventh chord is a minor seventh chord in the major mode (vi^7). It is usually a major seventh chord in the minor mode ($VIM7$), although a half-diminished submediant seventh, with $\sharp 6$ as the root ($\sharp vi^7$), occasionally results from the ascending form of the melodic minor scale. The submediant seventh chord typically moves toward V, usually passing through some form of IV or ii on the way.

The tonic seventh chord is a major seventh chord in the major mode ($IM7$) and a minor seventh chord in the minor mode (i^7). Unlike the tonic triad, the tonic seventh chord cannot serve as a harmonic goal or resting place. Instead, the 7th of the chord must resolve down to $\hat{6}$, and the chord of resolution is usually some form of ii, IV, or vi.

The mediant seventh chord is a minor seventh chord in the major mode (iii^7) and a major seventh chord in the minor mode ($IIIM7$). Both typically progress to some form of submediant chord, although a subdominant chord is another possibility.

The circle-of-fifths sequence provides a common context for seventh chords, and certain voice-leading conventions should be observed in such sequences (see pp. 246-248). Whether in sequences or not, the 7th of any seventh chord will almost never be approached by a descending leap and will almost always resolve by descending step.

SELF-TEST 15-1

(Answers begin on page 604.)

A. Notate the following chords. Use accidentals, not key signatures.

B. Analyze the following chords. Be sure your symbols indicate chord quality and inversion.

C. Analyze chords and NCTs in the excerpts below. Comment on the voice leading involving any of the chords discussed in this chapter.

1. What spacing "rules" are broken in this excerpt? Why do you suppose this was done?

Bach, "Nun ruhen alle Wälder"

2. Analyze two chords on beat 3 of the first measure.

Bach, "Warum sollt' ich mich denn grämen"

G:

3. A _____ progression occupies most of this excerpt. The seventh chords in this three-part texture each lack a _____. If you were to add a fourth voice beginning on F4, how would it proceed? (Do not label NCTs in this exercise.)

Mozart, Sonata K. 533, III

- D. Notate, introduce, and resolve the specified chords. Each chord 7th is to be approached as a suspension, as a neighbor, or as a passing tone, as indicated. Include key signatures and roman numerals.

1 s 2 p 3 s 4 s

Ab: _____ IVM $\frac{4}{2}$ _____ G: _____ IM $\frac{5}{2}$ _____ e: _____ VIM $\frac{4}{2}$ _____ c: _____ iv 7 _____

5 p 6 p 7 n 8 n

A: _____ vi $\frac{4}{2}$ _____ d: _____ i 7 _____ f \sharp : _____ IV $\frac{5}{2}$ _____ Bb: _____ iii $\frac{5}{2}$ _____

9 s 10 s 11 s 12 s

F: $\frac{4}{2}$ I $M\frac{5}{2}$ $\frac{4}{2}$ (circle of fifths) c \sharp : $\frac{7}{3}$ IIIM 7 $\frac{7}{3}$ (circle of fifths) E: $\frac{4}{3}$ vi 7 $\frac{4}{3}$ (circle of fifths) g: _____ vii $\frac{9}{3}$ _____

E. Add a top voice to create a three-part texture.

d: i iv 7 VII IIIM 7 VI vii $\frac{9}{3}$ i 6 V i

F. Analyze the chords specified by each figured bass, and make a harmonization for four-part chorus.

1

2

7 4/3 7 3/2 6 4/2 7

EXERCISE 15-1. See Workbook.

P A R T

IV

Chromaticism 1