

Stefan Kostka
Dorothy Payne
Byron Almén

TONAL Harmony

With an Introduction to Post-Tonal Music

EIGHTH EDITION

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A decorative graphic consisting of several overlapping, flowing pink lines that form a complex, abstract shape resembling a stylized flower or a musical motif. The lines are smooth and have a consistent thickness, creating a sense of movement and elegance.

Tonal Harmony

WITH AN INTRODUCTION TO POST-TONAL MUSIC

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Eighth Edition

Tonal Harmony

WITH AN INTRODUCTION TO POST-TONAL MUSIC

Stefan Kostka

THE UNIVERSITY OF TEXAS AT AUSTIN

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TONAL HARMONY WITH AN INTRODUCTION TO POST-TONAL MUSIC, EIGHTH EDITION

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Preface

Tonal Harmony with an Introduction to Post-Tonal 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 emphasized 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 appendices on instrumental ranges and transpositions and lead-sheet symbols. 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, counterpoint, and formal procedures. These include textural reductions, accompanying many of the examples, which highlight underlying voice leading. 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. Similarly, exercises in tonal counterpoint allow students to observe the workings of basic principles of melodic combination in relation to typical outer-voice textures in tonal compositions.

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 D. 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. A glossary of the bolded terms found throughout the text is also included.

Organization

Part One (Chapters 1–4) begins the text with two chapters that provide a thorough but concise overview of the fundamentals of music, divided into one chapter each on pitch and rhythm. These chapters may be assigned in reverse order, if desired, except for the review questions in Chapter 2. Chapters 3 and 4 introduce the student to triads and seventh chords in various inversions and textures and places them in their tonal contexts.

Part Two (Chapters 5–13) 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), counterpoint (Chapters 11 and 12), and nonchord tones (Chapters 12 and 13).

Part Three (Chapters 14–15) is devoted entirely to diatonic seventh chords, moving from the dominant seventh in root position and inversion (Chapter 14) through the supertonic and leading-tone sevenths 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 larger musical forms. Chromaticism continues to be the main topic in Part Five (Chapters 21–25), which covers mode mixture, the Neapolitan, augmented sixth chords, enharmonicism, and other elements. The final chapter of this section concentrates upon harmony in the late nineteenth century.

Part Six (Chapters 26–28) provides a substantial introduction to post-tonal music, beginning, in Chapter 26, with a survey of scales, chord structures, voice leading, and aspects of rhythm. Chapter 27 discusses the basics of atonal theory, including pitch-class sets, twelve-tone serialism, and total serialism. Appendix C, a list of set-classes, is a useful supplement to this chapter. More recent developments, such as indeterminacy, minimalism, and electronic and computer music, are discussed in the final chapter.

Workbook

Through Connect Music, students can practice music theory in the Tonal Harmony eBook workbook, which contains embedded music and Finale music notation software. The eBook workbook also offers self-highlighting, the ability to post sticky notes, and glossary rollovers. Each set of exercises in the Workbook is closely correlated with the corresponding chapter of the text and with a particular Self-Test within the chapter. Each set of Workbook exercises begins with problems similar to those found in the corresponding Self-Test, but the Workbook exercises also include problems that are too open-ended for the Self-Test format, as well as more creative types of compositional problems for those instructors who like to include this type of work.

RECORDINGS

Recordings of virtually all the examples from music literature found in the text and the Workbook are available with the eighth edition. A disc containing all of the mp3s for music references in the core text is available for purchase (ISBN: 1-259-95841-8). The recordings that accompany the Workbook are now available exclusively in Connect. More than 119 Workbook selections are now embedded for easy access in the eWorkbook in Connect. All examples were recorded using the same instrumentations seen in the text and Workbook examples.

New to This Edition

The most changed chapters are Chapters 11, 12, and 15. Chapter 11, “Two-Part Tonal Counterpoint,” is entirely new and, as the title suggests, is devoted to a brief introduction to tonal counterpoint. As such, it covers roughly the same basic terrain as first-species, or one-to-one, counterpoint but also integrates this material with norms of tonal harmony (major and minor scales, modern meters, tonal cadences, and triadic harmony). The emphasis is on writing lines that conform to good tonal progressions, while keeping in mind the principles of species counterpoint. The resulting compositional examples most resemble basic soprano-bass (or outer-voice) combinations. Chapter 12, “Nonchord Tones 1,” contains material that appeared in the seventh edition as Chapter 11, but it also includes further discussion of counterpoint—in this case, a second-species-equivalent tonal counterpoint that adds passing tones and arpeggiations to the one-to-one texture. The two subsequent chapters, Chapters 13 (“Nonchord Tones 2”) and 14 (“The V7 Chord”), have been renumbered from the seventh edition, where they appeared as Chapters 12 and 13, respectively.

Chapter 15, “Other Diatonic Seventh Chords,” is a condensation and synthesis of two chapters (Chapters 14 and 15) from the seventh edition. As such, it contains coverage of all diatonic seventh chords except the V7 chords discussed in the previous chapter.

The four optional counterpoint units that were coordinated with the seventh edition, and that appeared on the McGraw-Hill website, have been replaced by the new material in Chapters 11 and 12. Students or instructors desiring a greater degree of faithfulness to species principles can still access and download these counterpoint materials from the McGraw-Hill Education Connect.

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The preparation of the eighth edition was aided by valuable suggestions from George Halsell, College of Southern Idaho, and Jeff Waters, Southwest Baptist University.

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Stefan Kostka
Dorothy Payne
Byron Almén



To the Student

Harmony in Western Music

One thing that distinguishes Western art music from many other kinds of music is its emphasis on harmony. In other words, just about any piece that you 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 even in such pieces an implied harmonic background is often still apparent to the ear.

In general, the music from cultures other than our own European-American one 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 evokes impressions of something like a barbershop quartet, or a chorus, or maybe just two people singing a song—one singing the melody, the other one singing an accompanying line. Because 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.*

Although this book deals with harmony and with chords, which are little samples taken out of the harmony, you should remember 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, whereas 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, whereas 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 some twentieth-century music. 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

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 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 harmonic function is 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.

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 club, listen to the canned music in the supermarket—it’s almost all tonal harmony. So 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 post-tonal 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 composed since 1900—music by composers such as Bartók and Hindemith, for example.

* 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 12 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.

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 Tonal Harmony

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 D. In many cases, more than one correct answer is possible, but only one answer will be given in Appendix D. 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 equivalent Self-Test, so refer to the Self-Test if you have questions about how to complete the Exercises. However, the Workbook will also often contain more creative compositional problems than appeared in the Self-Test, because it would be impossible to suggest “answers” to such problems if they were used as Self-Tests.

CHECKPOINTS

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

EBOOK RESOURCES

The McGraw-Hill ebook for Tonal Harmony offers exercises, drills, and additional reading.

Contents

About the Authors v

Preface ix

To the Student xiii

Part One

Fundamentals 1

Chapter One 1

Elements of Pitch 1

The Keyboard and Octave Registers 1

Notation on the Staff 2

The Major Scale 4

The Major Key Signatures 6

Minor Scales 10

Minor Key Signatures 11

Scale Degree Names 15

Intervals 16

Perfect, Major, and Minor Intervals 17

Augmented and Diminished Intervals 19

Inversion of Intervals 20

Consonant and Dissonant Harmonic Intervals 21

Summary 23

Chapter Two 24

Elements of Rhythm 24

Rhythm 24

Durational Symbols 24

Beat and Tempo 24

Meter 25

Division of the Beat 27

Simple Time Signatures 28

Compound Time Signatures 29

Time Signatures Summarized 32

More on Durational Symbols 33

Summary 37

Chapter Three 38

Introduction to Triads and Seventh Chords 38

Introduction 38

Triads 38

Seventh Chords 40

Inversions of Chords 42

Inversion Symbols and Figured Bass 44

Lead-Sheet Symbols 45

Recognizing Chords in Various
Textures 49

Summary 53

Chapter Four 54

Diatonic Chords in Major and Minor Keys 54

Introduction 54

Diatonic Triads in Major 54

The Minor Scale 55

Diatonic Triads in Minor 57

Diatonic Seventh Chords in Major 61

Diatonic Seventh Chords in Minor 62

Summary 65

Part Two

Diatonic Triads 66

Chapter Five 66

Principles of Voice Leading 66

Introduction 66

The Melodic Line 66

Notating Chords 69

Voicing a Single Triad 70

Parallel Motion 73

Summary 80

Chapter Six 81

Root-Position Part Writing 81

Introduction 81

Root-Position Part Writing with Repeated Roots 82

Root-Position Part Writing with Roots a 4th
(5th) Apart 83

Root-Position Part Writing with Roots a 3rd
(6th) Apart 86

Root-Position Part Writing with Roots a 2nd
(7th) Apart 87

Instrumental Ranges and Transpositions 91

Summary 94

Chapter Seven 95

Harmonic Progression and the Sequence 95

Introduction 95

Sequences and the Circle of Fifths 96

The I and V Chords 98

The II Chord 99

The VI Chord 100

The III Chord 101

The VII Chord 102

The IV Chord 103

Common Exceptions 105

Differences in the Minor Mode 105

Progressions Involving Seventh Chords 106

More about Harmonic Sequences 106

Harmonizing a Simple Melody 108

Conclusion 109

Summary 113

Chapter Eight 114

Triads in First Inversion 114

Introduction 114

Bass Arpeggiation 115

Substituted First-Inversion Triads 116

Inversions in Lead Sheets 118

Parallel Sixth Chords 118

Part Writing First-Inversion Triads 120

Soprano-Bass Counterpoint 122

Summary 131

Chapter Nine 133

Triads in Second Inversion 133

Introduction 133

Bass Arpeggiation and the Melodic Bass 134

The Cadential Six-Four 135

The Passing Six-Four 137

The Pedal Six-Four 139

Part Writing for Second-Inversion Triads 141

Summary 143

Chapter Ten 145

Cadences, Phrases, Periods,
and Sentences 145

Musical Form 145

Cadences 145

Cadences and Harmonic Rhythm 149

Motives and Phrases 150

Mozart: *An die Freude* 152

Period Forms 154

The Sentence 160

Summary 170

Chapter Eleven 171

Two-Part Tonal Counterpoint 171

Introduction 171

Composing an Unembellished Bass Line 172

Composing a Counterpoint to the Bass Line 176

Composing the Contrapuntal Voice 182

Writing Your Own Harmonic Progressions 183

Summary 184

Chapter Twelve 185**Nonchord Tones 1 185**

- Introduction 185
- Classification of Nonchord Tones 186
- Passing Tones 187
- Tonal Counterpoint Revisited: Adding Motion on the Weak Beats 188
- Contrapuntal Considerations 191
- Embellished Cadences 192
- Embellishing versus Composing 192
- Composing the Contrapuntal Voice 193
- Neighboring Tones 195
- Suspensions and Retardations 195
- Embellishing a Simple Texture 200
- Figured-Bass and Lead-Sheet Symbols 201
- Summary 204

Chapter Thirteen 205**Nonchord Tones 2 205**

- Appoggiaturas 205
- Escape Tones 207
- The Neighbor Group 207
- Anticipations 208
- The Pedal Point 210
- Special Problems in the Analysis of Nonchord Tones 211
- Summary 216

Part Three**Diatonic Seventh Chords 218****Chapter Fourteen 218****The V⁷ Chord 218**

- Introduction 218
- General Voice-Leading Considerations 219
- The Approach to the 7th 220
- The V⁷ in Root Position 221
- The V⁷ in Three Parts 224
- Other Resolutions of the V⁷ 226
- The Inverted V⁷ Chord 230
- The V₅⁶ Chord 230
- The V₃⁴ Chord 231

The V₂⁴ Chord 232

Summary 235

Chapter Fifteen 237**Other Diatonic Seventh Chords 237**

- Introduction 237
- The II⁷ Chord 238
- The VII⁷ Chord in Major 240
- The VII⁷ Chord in Minor 242
- The IV⁷ Chord 244
- The VI⁷ Chord 246
- The I⁷ Chord 247
- The III⁷ Chord 248
- Seventh Chords and the Circle-of-Fifths Sequence 249
- Summary 254

Part Four**Chromaticism 1 255****Chapter Sixteen 255****Secondary Functions 1 255**

- Chromaticism and Altered Chords 255
- Secondary Functions and Tonicization 256
- Secondary Dominant Chords 256
- Spelling Secondary Dominants 258
- Recognizing Secondary Dominants 258
- Secondary Dominants in Context 260
- Summary 272

Chapter Seventeen 273**Secondary Functions 2 273**

- Secondary Leading-Tone Chords 273
- Spelling Secondary Leading-Tone Chords 274
- Recognizing Secondary Leading-Tone Chords 275
- Secondary Leading-Tone Chords in Context 276
- Sequences Involving Secondary Functions 282
- Deceptive Resolutions of Secondary Functions 286
- Other Secondary Functions 288
- Summary 297

Chapter Eighteen 298**Modulations Using Diatonic Common Chords 298**

- Modulation and Change of Key 298
- Modulation and Tonicization 298
- Key Relationships 300
- Common-Chord Modulation 302
- Analyzing Common-Chord Modulation 304
- Summary 312

Chapter Nineteen 313**Some Other Modulatory Techniques 313**

- Altered Chords as Common Chords 313
- Sequential Modulation 314
- Modulation by Common Tone 317
- Monophonic Modulation 322
- Direct Modulation 322
- Summary 328

Chapter Twenty 329**Larger Forms 329**

- Formal Terminology 329
- Binary Forms 329
- Ternary Forms 332
- Rounded Binary Forms 335
- The 12-Bar Blues 337
- Other Forms with Ternary Design 338
- Sonata Form 338
- Rondo Form 348
- Summary 355

Part Five**Chromaticism 2 357****Chapter Twenty-One 357****Mode Mixture and the Neapolitan 357**

- Introduction 357
- Borrowed Chords in Minor 357

Borrowed Chords in Major: The Use of $\flat\hat{6}$ 358

Other Borrowed Chords in Major 361

The Neapolitan Chord 364

Modulations Involving Mode Mixture and the Neapolitan 370

Summary 381

Chapter Twenty-Two 382**Augmented Sixth Chords 382**

The Interval of the Augmented Sixth 382

The Italian Augmented Sixth Chord 383

The French Augmented Sixth Chord 384

The German Augmented Sixth Chord 386

Other Uses of Conventional Augmented Sixth Chords 389

Other Bass Positions 391

Resolutions to Other Scale Degrees 392

Summary 401

Chapter Twenty-Three 402**Enharmonic Spellings and Enharmonic Modulations 402**

Enharmonic Spellings 402

Enharmonic Reinterpretation 404

Enharmonic Modulations Using the Major-Minor Seventh Sonority 406

Enharmonic Modulations Using the Diminished Seventh Chord 407

Other Examples of Enharmonicism 410

Summary 417

Chapter Twenty-Four 419**Further Elements of the Harmonic Vocabulary 419**

Introduction 419

The Dominant with a Substituted 6th 419

The Dominant with a Raised 5th 422

Ninth, Eleventh, and Thirteenth Chords 425

The Common-Tone Diminished Seventh Chord 428

Summary 440

Chapter Twenty-Five 441

Tonal Harmony in the Late Nineteenth Century 441

Introduction 441

More About Mediants 443

Mediant Chains and Other Combinations 445

Counterpoint and Voice Leading 449

Sequences and Other Systematic

Procedures 453

Summary 462

Part Six

An Introduction to Post-Tonal Music 463

Chapter Twenty-Six 463

Materials and Techniques 463

Introduction 463

Impressionism 463

Scale Materials 464

Chord Structures 475

Other Concepts 482

Rhythm and Meter 492

Summary 504

Chapter Twenty-Seven 505

Post-Tonal Theory 505

Introduction 505

Basic Atonal Theory 505

Twelve-Tone Serialism 516

Integral Serialism 528

Summary 532

Chapter Twenty-Eight 533

New Directions 533

Introduction 533

Explorations of Texture, Timbre, and Tuning 533

Indeterminacy 539

Minimalism 540

Electronic and Computer Music 545

Summary and a Forward Look 554

Appendix A *Instrumental Ranges and Transpositions* 555

Appendix B *Lead-Sheet Symbols* 557

Appendix C *Set Class List* 559

Appendix D *Answers to Self-Tests* 563

Glossary 654

Index of Music Examples 667

Subject Index 671

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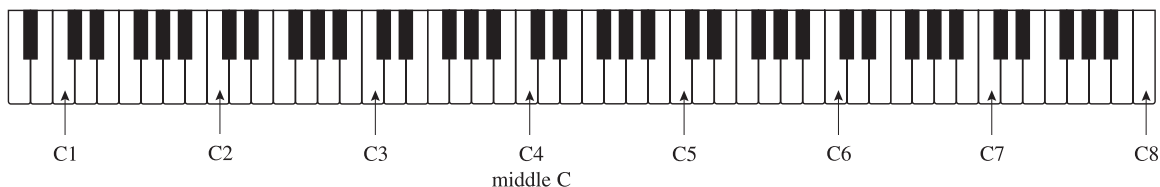
Chapter One

Elements of Pitch

The Keyboard and Octave Registers

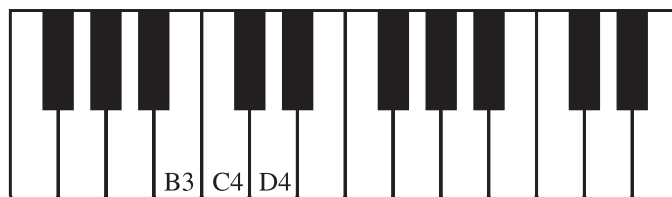
Pitch in music refers to the highness or lowness of a sound. Pitches are named by using the first seven letters of the alphabet: A, B, C, D, E, F, and G. We will approach the notation of pitch by relating this pitch alphabet to the piano keyboard, using Cs as an example. The C nearest the middle of the keyboard is called middle C, or C4. Higher Cs (moving toward the right on the keyboard) are named C5, C6, and so on. Lower Cs (moving toward the left) are named C3, C2, and C1. Notes below C1 are followed by a 0, as in B0. All the Cs 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 is named D4 because it is in the same octave register, while the white key below C4 is named B3.

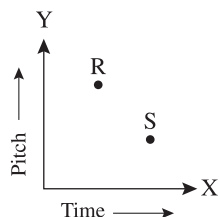
Example 1-2



Notation on the Staff

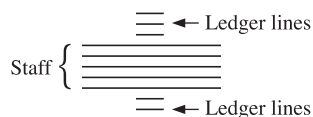
Our system of musical notation is similar to a graph in which time is indicated on the X axis and pitch is shown on the Y axis. In Example 1-3, R occurs before S in time and is higher than S in pitch.

Example 1-3



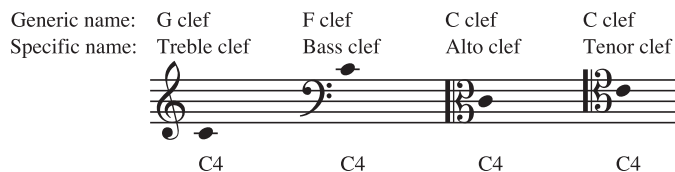
A **staff** is used in music to indicate the precise pitch desired. A staff consists of five lines and four spaces, but it may be extended indefinitely through the use of **ledger lines** (Ex. 1-4).

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



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

A grand staff consisting of two staves. The top staff (treble clef) contains four notes: F4 (first space), C4 (first line), E5 (second space), and A3 (second space). The bottom staff (bass clef) contains four notes: C4 (first space), F2 (second space), A3 (second space), and E4 (first space).

Self-Test 1-1

(Answers are in Appendix D.) (p. 563)

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

A piano keyboard diagram with arrows pointing to the following keys from left to right: 1 (C4), 2 (D4), 3 (E4), 4 (C4 ex.), 5 (F4), 6 (G4), and 7 (A4).

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

A musical staff with treble and bass clefs and a grand staff. The notes are labeled as follows: F4 (treble clef, first space), B5 (treble clef, fifth space), A4 (treble clef, fourth space), A3 (bass clef, second space), G2 (bass clef, second space), D4 (bass clef, first space), C4 (bass clef, first space), G3 (bass clef, first space), B4 (bass clef, first space), C4 (bass clef, first space), D3 (bass clef, first space), and F4 (bass clef, first space).

A musical staff with treble and bass clefs and a grand staff. The notes are labeled as follows: E4 (treble clef, first space), A2 (bass clef, second space), F3 (bass clef, first space), C6 (treble clef, sixth space), B3 (bass clef, first space), G4 (treble clef, first space), B2 (bass clef, first space), E5 (treble clef, second space), D3 (bass clef, first space), C4 (bass clef, first space), B1 (bass clef, first space), G3 (bass clef, first space), D5 (treble clef, fifth space), F2 (bass clef, second space), and D4 (bass clef, first space).

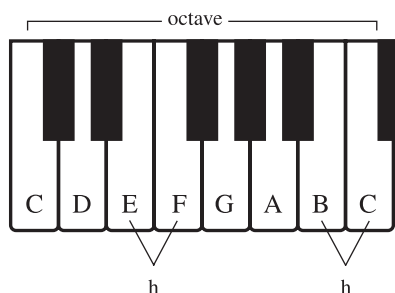
Exercise 1-1 See Workbook.

The Major Scale

In this chapter, you will learn about major and minor scales, the scales that form the basis of tonal music. However, there are many other kinds of scales, some of which are covered in Chapter 26. (p. 463)

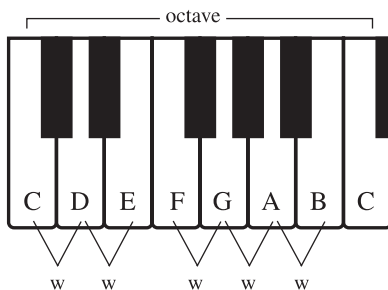
The **major scale** is a specific pattern of small steps (called half steps) and larger ones (called whole steps) encompassing an octave. A **half step** is the distance from a key on the piano to the very next key, white or black. Using only the white keys on the piano keyboard, there are two half steps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

Example 1-7



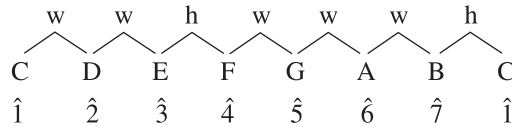
A **whole step** skips the very next key and goes instead to the following one. Using only the white keys on the piano keyboard, there are five whole steps in each octave, indicated by the letter “w” in Example 1-8.

Example 1-8

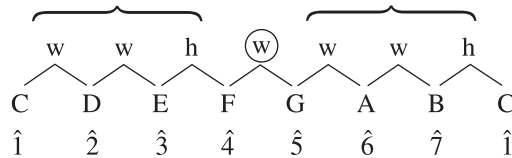


The major-scale pattern of whole and half steps is the same as that found on the white keys from any C up to the next C. In the next diagram, the numbers with carets above them (1̂, 2̂, etc.) are scale degree numbers for the C major scale.*

* Throughout this book we will refer to major scales with uppercase letters—for example, A major or A—and minor scales with lowercase letters—for example, a minor or a.



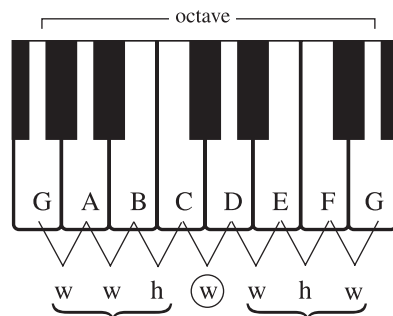
You can see from this diagram that half steps in the major scale occur only between scale degrees $\hat{3}$ and $\hat{4}$ and $\hat{7}$ and $\hat{1}$. Notice also that the major scale can be thought of as two identical, four-note patterns separated by a whole step. These four-note patterns are called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



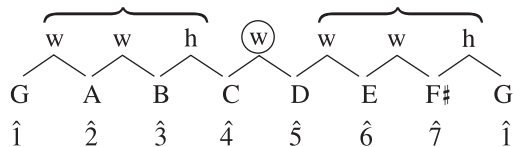
If we examine the steps on the white keys of a G-to-G octave, as in Example 1-9, we do not find the same pattern of whole and half steps that occurred in the C-to-C octave. To play a G major scale, we would need to skip the F key and play the black key that is between F and G. We will label that key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

Symbol	Name	Effect
×	Double sharp	Raise a whole step
#	Sharp	Raise a half step
♮	Natural	Cancel a previous accidental
♭	Flat	Lower a half step
♭♭	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.



It is important to understand that major and minor scales always use all the letter names of the musical alphabet. It would not be correct to substitute a G \flat for the F \sharp in a G major scale.

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 \sharp 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

A musical staff in treble clef showing seven key signatures. Each key signature is represented by a set of sharps on the staff. Below the staff, the number of sharps is indicated: 1 sharp, 2 sharps, 3 sharps, 4 sharps, 5 sharps, 6 sharps, and 7 sharps. Above the staff, the corresponding major key names are listed: G major, D major, A major, E major, B major, F# major, and C# major.

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

Example 1-12 displays seven major key signatures on a grand staff (treble and bass clefs). Each key signature is shown with its name and the number of flats:

- F major: 1 flat
- B♭ major: 2 flats
- E♭ major: 3 flats
- A♭ major: 4 flats
- D♭ major: 5 flats
- G♭ major: 6 flats
- C♭ major: 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.

B major = C♭ major

F♯ major = G♭ major

C♯ major = D♭ major

Notes that have the same pitch but that are spelled differently, like E and F♭, are said to be **enharmonic** (or **enharmonically equivalent**). Keys can be enharmonic as well, such as the three pairs of keys shown above. 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.

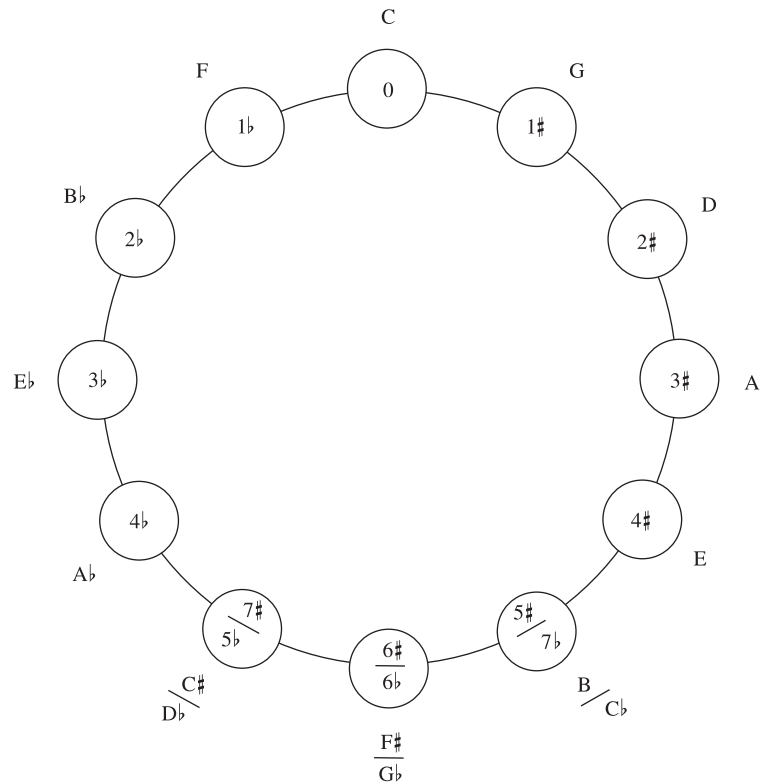
The key signatures in Examples 1-11 and 1-12 must be memorized—not only the number of accidentals involved but also their order and placement on the staff. Notice that the pattern of placing the sharps on the staff changes at the fifth sharp for both the treble and the bass clefs. Try saying aloud the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

Key signatures are written in much the same way using the alto and tenor clefs as they are for treble and bass. The only exception is the placement of sharps in the tenor clef, as you can see in Example 1-13.

Example 1-13

Example 1-13 shows key signatures in alto and tenor clefs. The first system shows a key signature with three sharps (F♯, C♯, G♯) in an alto clef. The second system shows a key signature with three flats (B♭, E♭, A♭) in a tenor clef.

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 on the following page, you will see that each new key begins on $\hat{5}$ (the fifth scale degree) of the previous key. If you go counterclockwise, each new key begins on $\hat{4}$ of the previous one.



CHECKPOINT

1. Does G3 lie below or above middle C?
2. How is a double sharp notated?
3. Half steps in the major scale occur between scale degrees _____ and _____ as well as between scale degrees _____ and _____.
4. The major scale consists of two identical four-note patterns called _____.
5. What relationship can you see between the order of sharps and the order of flats?
6. Name the 15 major keys.

Self-Test 1-2

(Answers appear in Appendix D.) (p. 564)

- 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 \flat major B \flat major

C \sharp major A major

F major F \sharp major

B. Identify these major key signatures.

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

C. Notate the specified key signatures.

A major D \flat major F \sharp major B \flat major B major C \flat 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 \flat major
2. Seven sharps	___ major	9. One sharp	___ major
3. _____	D major	10. Five flats	___ major
4. One flat	___ major	11. _____	F \sharp major
5. _____	A \flat major	12. _____	C \flat major
6. _____	B major	13. Four sharps	___ major
7. Six flats	___ major	14. _____	A major