third edition

HARMONY *in* CONTEXT

MIGUEL A. ROIG-FRANCOLÍ

Mc Graw Hill Education

Miguel A. Roig-Francolí
College-Conservatory of Music
University of Cincinnati

Harmony *harmony* in Context

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HARMONY IN CONTEXT, THIRD EDITION

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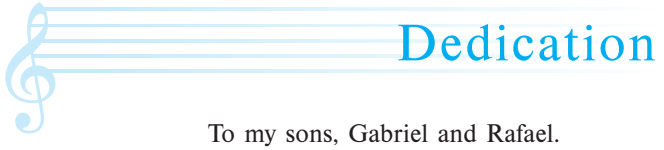

Dedication

To my sons, Gabriel and Rafael.
And to the memory of my father.

"Tell me, and I may forget.
Show me, and I may remember.
Involve me, and I will learn."

ANONYMOUS PEDAGOGUE

About the Author

A native of Spain, Miguel A. Roig-Francolí holds graduate degrees in composition from the Madrid Royal Superior Conservatory and Indiana University, and a Ph.D. in music theory from Indiana University. He is a Distinguished Teaching Professor of Music Theory and Composition at the University of Cincinnati College-Conservatory of Music, and has also taught at Ithaca College, Northern Illinois University, Indiana University, and the Eastman School of Music. His research interests include the history of music theory, Renaissance compositional theory and practice, analysis of early music, and the pedagogy of music theory. Roig-Francolí is the author of *Understanding Post-Tonal Music* and *Anthology of Post-Tonal Music* (McGraw-Hill, 2008), and his articles and reviews have appeared in numerous journals and encyclopedias in the United States, Europe, and South America. His compositions have been widely performed in Spain (including performances by nine major symphony orchestras and by the National Ballet of Spain), England, Germany, France, Italy, Switzerland, Greece, Brazil, Colombia, Mexico, Canada, and the United States. Among his many honors are first prize at the National Composition Competition of the Spanish *Jeunesses Musicales* (1981), second prize at the UNESCO International Rostrum of Composers (Paris, 1982), the Medal of Honor from the Superior Conservatory of Music of the Balearic Islands (2004), the University of Cincinnati's A.B. "Dolly" Cohen Award for Excellence in Teaching (2007) and George Rieveschl Award for Creative and/or Scholarly Works (2009), and the 2016 American Prize in Composition (band/wind ensemble division).

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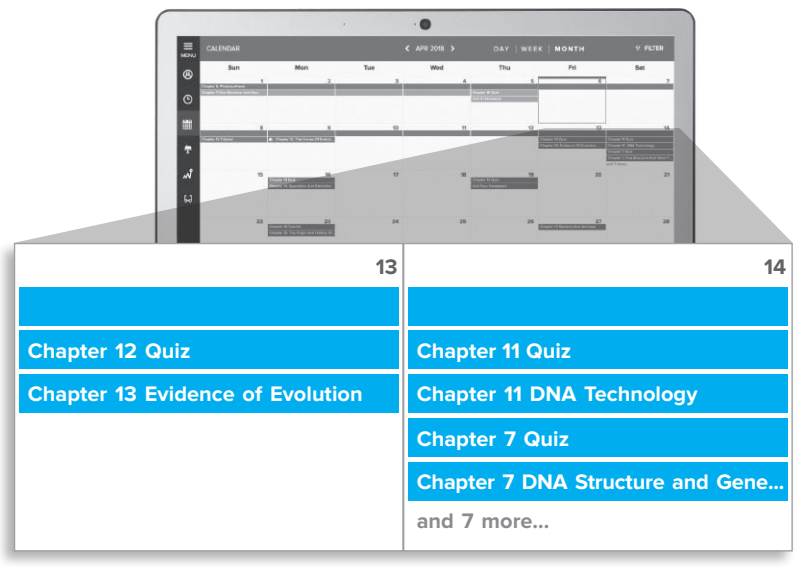

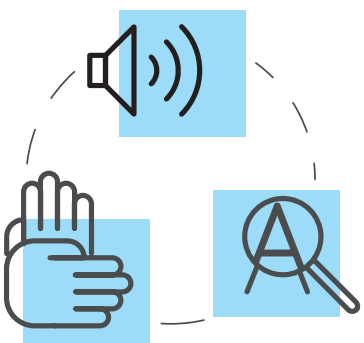

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Preface

Harmony in Context strikes a balance between a variety of pedagogical and theoretical approaches to teaching music theory. Moreover, I have sought to provide the richest possible musical context for the study of harmony. The following are the basic principles that govern this book's style:

1. ***Purpose and Intended Audience.*** This is an essentially complete harmony and analysis textbook. It is meant to be used by undergraduate music majors, and it covers all the common-practice tonal harmony usually studied in undergraduate theory core curricula over a period of three or four semesters in the freshman and sophomore years. Music fundamentals are summarized and reviewed in the introductory chapters. Because harmony exists only in the context of musical form, form and formal processes are studied throughout the book, both in discussions of specific pieces within chapters dealing with harmonic topics, and in chapters devoted to the main formal types and genres in Part 2.
2. ***Music Theory in Context.*** The "context" to which the title refers is not only the formal context of harmony. The book also includes frequent references to the metric and rhythmic contexts of harmony, as well as to its historical and stylistic contexts, and to the relationships between drama, text, and harmony in vocal music. Also taken into consideration is the *professional context of the music student*. Students are encouraged and guided throughout the book to understand the relevance of what they are studying here (harmony, musical processes, form) to the better understanding of the music they listen to and perform daily. And they are constantly encouraged to translate this better understanding of processes, tonal direction, harmonic and formal function, and so on, into *better performances and better listening,* thus providing a true context for "theoretical" work. Besides frequent references to context throughout the book, chapters in the third edition include a new section titled "The Context," where some of the chapter's materials are discussed in a relevant and broad contextual framework.
3. ***Active Learning and Student-Centered Pedagogy.*** Teaching the student how to think analytically about music and how to make connections between analytical thought and performance decisions has been a major concern in this book since its first edition. A "Socratic" pedagogical approach has often been used for this purpose. By first asking questions on examples, rather than providing immediate answers, I have involved the reader in an active process of inquiry and discovery as a learning tool. The processes of active learning and guided inquiry have been strongly reinforced in the third edition. Students are engaged in the process of discovery through new sections titled "Explorations," in which they are introduced to concepts through guided study of specific examples, even before the concepts are presented formally in class by the instructor. The "Exploration" sections can be used for large class discussions or for collaborative learning through smaller group discussions. Students thus get directly involved in the learning process through exploration, discovery, and discussion.

4. ***Organization and Style.*** Good, logical organization, clarity of exposition, and easy-to-use format are primary considerations. The style of presentation is concise and efficient, although in general the outline format has been avoided: Explanations are necessary and pedagogically desirable, and so are analytical discussions of pieces. A clear and visually attractive layout, as well as the use of section and subsection headings and lists where appropriate, are essential aspects that contribute to the effective organization of this book.
5. ***Coverage.*** The contents are thorough, with equal attention devoted to all significant areas and concepts of tonal harmony, including a detailed coverage of late-Romantic chromatic harmony. The book is aimed at providing both craft in written harmony and the techniques of voice leading, and good understanding of harmonic processes as found in actual music. Chords throughout the book are not presented as isolated vertical units, but rather as *functional* components within larger musical segments, which at the same time also result from horizontal or *linear* processes. These functional and linear processes are themselves studied in their role as form-generating structures within the context of long-range tonal designs. This book's pedagogy is thus based on a synthesis between the functional and linear approaches to hearing and understanding harmony.
6. ***Musical Examples.*** Each chapter includes numerous examples from the literature, illustrating virtually every concept that is introduced and discussed throughout the book. Besides chapter examples, a musical anthology is provided in the second part of the accompanying workbook, and anthology items are often referred to in the text. Women and minority composers are broadly represented in both the book's musical examples and the anthology. Recordings for all the musical examples from the literature included in both the book and the anthology are provided as MP3 files.

CONTENTS AND PEDAGOGY

The introductory chapters provide a review of fundamentals and an introduction to species counterpoint (acknowledging the fact that many instructors like to teach pedagogical counterpoint either during or at the beginning of harmony curricula). After that, the book is structured in two parts: Part 1, "Diatonic Harmony," and Part 2, "Chromatic Harmony and Form." Part 1 begins with elementary definitions and voice-leading guidelines and covers each of the diatonic triads and seventh chords separately and progressively. Other major topics studied in this first part are harmonic function, texture, cadences, nonchord tones, phrase structure and melodic organization, harmonic rhythm, metric reduction, and diatonic sequences.

Part 2 includes secondary dominants, modulation to closely related keys, modal mixture, the Neapolitan sixth, augmented sixth chords, altered triads, extended tertian chords, chromatic sequences, and a thorough study of modulation to distant keys. Binary and ternary forms are fully discussed in the context of modulation to closely related keys, with emphasis on long-range harmonic design. Two more chapters

on contrapuntal genres and larger formal types cover the study of inventions, fugues, sonata form, and rondo. In Chapter 30, the essential concepts of chromatic harmony are summarized and reviewed, now in the context of the German Romantic *Lied.* Chapter 31 is devoted to the study of late-nineteenth-century nonfunctional chromatic harmony.

Basic formal concepts such as phrase and period structure are central to the study of harmony. The study of small forms in association with modulation (Chapter 21) is also highly recommended. Chapters 22 and 28, on the other hand, are mostly meant for programs that integrate the study of large forms within the study of harmony. In some theory programs, however, large forms and contrapuntal genres are studied in a separate course toward the end of the theory sequence (perhaps using one of the available textbooks focusing exclusively on form). Instructors who follow the latter type of curriculum may simply prefer to skip Chapters 22 and 28, fully or partially. Doing so will cause no detriment to the study of harmony as found in adjacent chapters.

Individual chapters include clear expositions of harmonic function, voice-leading guidelines, and study of standard progressions for the specific chord or technique discussed. The following are some of the salient features included in the book chapters:

- The pedagogical stress regarding chord progressions is on standard, normative *harmonic and voice-leading patterns.* To emphasize this approach further, chapters include a section titled "Characteristic Soprano-Bass Patterns," which shows the most characteristic two-voice frames that can be harmonized with the chord or chords being studied in a particular chapter.
- A section titled "Elaborating the I–V–I Progression" provides a thread of continuity through the harmonic chapters in the book, as well as a unifying pedagogical paradigm that focuses the student's understanding of harmonic structure. These sections illustrate the use of particular chords in the elaboration of the basic I–V–I progression.
- Also stressing the concept of harmonic pattern, the *melodic pitch patterns* at the end of each harmonic chapter present linearized harmonies and chord connections, and should be used for singing or as aural exercises.
- Workbook chapters include a section of *keyboard harmony* that allows practice of various harmonic concepts at the keyboard.
- Sections titled "Procedure" outline step-by-step processes for spelling particular chords or realizing analytical tasks.
- Students are encouraged to discover and discuss the practical application of the harmonic concepts studied in each chapter in sections titled "Practical Application and Discussion." The importance of these sections, which help students make the connection between what they study in theory class and their performance experience, cannot be overemphasized.
- A list of "Terms for Review" at the end of each chapter provides a taxonomical summary of the chapter's contents.

NEW TO THE THIRD EDITION

Three new sections have been added to the third edition. All three are designed to stress the contextual study of theory and harmony, to enhance student engagement in the learning process, to provide a broad perspective of what we teach in our theory and analysis courses, and to help students understand the musical and practical relevance of the materials and concepts they will learn in this book.

1. *Exploration*. These sections anticipate the presentation of particular concepts. They instruct students to explore specific aspects of given examples, and ask them to provide some answers as a means of discovery through exploration. Instructors can use these sections to introduce new concepts in a way that will engage students directly in the discovery and learning process, thus focusing their attention on the topic before a more formal explanation is provided.
2. *The Context*. These sections discuss topics from the corresponding chapter in ways that illustrate their contextual relevance. Harmonic topics are at times discussed in their musical or formal contexts (by means of references to examples), at other times in their metric and rhythmic context. The historical and dramatic contexts of harmony and form are also addressed, as are matters of affect, performance, and texture.
3. *The Big Picture*. The purpose of this section is to place individual harmonic or formal concepts into a larger framework or picture to show how these individual items function as parts of a larger whole. Most often, this heading contains the discussion and examples also titled "Elaborating the I–V–I Progression." In some chapters, though, "The Big Picture" discusses large formal frameworks or explains techniques such as metric reduction. In all cases, a connection is made between the detail and the larger musical whole in which the detail functions.

WRITTEN EXERCISES AND KEYBOARD HARMONY

Exercises and musical examples for analysis are included in a worksheet following each chapter, which instructors may want to use for in-class practice. The accompanying workbook provides a second set of exercises to be used as assignments, plus the anthology. Students are required to realize a variety of tasks, including analysis, chord spelling, realization of short progressions, four-voice chorale-style exercises, melody harmonization (beginning in Chapter 5), writing their own progressions (beginning in Chapter 13), and writing keyboard harmonizations (beginning in Chapter 14). The types of exercise found in the corresponding worksheet and workbook sets will not necessarily be exactly parallel. This allows for greater exercise variety. (If a type of exercise appears in a particular worksheet, a different type is occasionally requested in the corresponding workbook set, rather than repeating all the same types featured in the worksheet). Answers to the analytical questions in both the worksheets and workbook, as well as sample realizations for most of the harmony exercises, can be found in a separate instructor's manual.

Keyboard harmony sections are located at the end of each harmonic chapter in the workbook. Some of the keyboard exercises are tied to the textbook sections "Characteristic Soprano-Bass Patterns" and "Elaborating the I–V–I Progression," as well as to some of the written exercises (on Roman numeral and figured bass realization and melody harmonization) in both the worksheet and the workbook.

Miguel A. Roig-Francolí
College-Conservatory of Music
University of Cincinnati

A Message to the Student

WHY DO WE STUDY MUSIC THEORY?

When we perform or listen to music, we are dealing with an artistic expression that unquestionably reaches us emotionally. Musical composition and performance (as well as listening), however, are not only emotional—no more than we, as humans, are made up *only* of emotions. There is also an intellectual, rational aspect to music. Music is a means of expression, a language (albeit an abstract one) that functions according to a system and a set of principles and conventions. We can immediately tell a Mozart sonata from an Indian rāga or a piece for Japanese shakuhachi because the languages they use are different.

We all would agree that when actors recite, for instance, Shakespeare, their knowledge of English vocabulary, grammar, and syntax is a great asset to their understanding and rendition of the structure, rhythm, and form of what they are reciting. Similarly, our knowledge of normative English allows us to enjoy the beauty and idiosyncrasies of Shakespeare's expression.

Musical performance is made up of at least three essential components. The technical component is achieved by hours of practice. The instinctive, emotional aspect (which we usually call "musicality") is part of what we know as "talent," and is partially innate and partially acquired by listening to good music, having a good teacher, or playing with good musicians. Finally, many musical decisions are intellectual or rational. Such decisions require information and understanding. Our study of the musical language provides this understanding, as well as many criteria to evaluate or appreciate more fully the beauty of specific works. The better we understand the normative, conventional syntax of musical discourse, the better we can enjoy, both as performers or listeners, the styles of specific composers or the richness of their particular musical idioms.

This understanding of the musical system is provided by the study of music theory in its many branches (such as harmony, counterpoint, form, and analytical techniques). Many of the things we learn in the book have a direct bearing on both performance and listening. We learn that a chord or set of chords creates a tension, and why it does so; that this tension may or may not be resolved, that the resolution may be delayed, avoided, prolonged; that some chords do not have a structural entity, but rather act as "harmonic ornaments," or simply prolong other chords that do have a structural role; and that these, and many other harmonic forces, generate larger expressive units such as phrases, periods, sections, and whole compositions.

A good composer knows the musical language, and composition is as rational as it is emotional; besides following their instinct and "inspiration," composers plan and realize the shape and structure of their musical works by means of intellectual processes. All of it is directly relevant to performance and to listening, at least if their full potential is to be achieved. The beauty of understanding, provided by music theory, is a rewarding complement to the emotional experiences afforded by music making.

Acknowledgments

Among the many individuals whose direct or indirect contributions have been instrumental to the completion of this book, I would first like to acknowledge two groups of persons: my teachers and my students. Some of my teachers who deserve special recognition are the late Miguel A. Coria (with whom I first studied harmony and counterpoint in my native Spain); my counterpoint teachers at Indiana University, Lewis Rowell and the late Douglass Green (to whom I am especially indebted for many of the ideas behind the design of Chapter F); and Mary Wennerstrom, with whom I studied (and from whom I learned a great deal about) music theory pedagogy. A special token of recognition goes to David Neumeyer and Marianne Kielian-Gilbert, under whose supervision I first taught written theory, as a graduate assistant, at Indiana University. Many of their ideas, methodologies, and musical examples are still reflected in my own teaching, and certainly in this book.

The book grew out of years of teaching undergraduate theory at Indiana, Ithaca College, Northern Illinois University, the Eastman School of Music, and the College-Conservatory of Music (CCM) at the University of Cincinnati. I am grateful to my students at these institutions, as well as to my counterpoint and music theory pedagogy students at Eastman and CCM. My teaching assistants at CCM have provided expert feedback on various aspects of the book over the years. I have learned a lot from all of them, and without them this book would never have been written.

The musical examples were originally copied on Finale by Patrick Long. Joseph Hupchick was in charge of examples for the second and third editions. I am grateful to both of them, and also to the three institutions that provided generous grants to defray copying costs: Northern Illinois University, the Eastman School of Music, and the University of Cincinnati College-Conservatory of Music.

I am grateful to the following individuals for their valuable contributions to the example and anthology recordings: Nathan Hess (producer of the first-edition recordings), Darijus Spakauskas (first-edition recording engineer), Javier Clavere (producer of the new second-edition recordings), and Michael Hughes (recording engineer for both the second and third editions). I am particularly indebted to all the CCM students and faculty who performed for the recordings, and whose names are acknowledged on the MP3 files. I have been moved and inspired by their artistry. I also want to thank Naxos for allowing us to use many of their recordings for both the textbook and the anthology audio files.

Many good ideas and suggestions offered by reviewers were incorporated into the text. Reviewers for the first edition included Claire Boge, Miami University; Richard Brooks, Nassau Community College; Walter Everett, University of Michigan; Joseph Kraus, then at The University of Nebraska; Eric McKee, Pennsylvania State University; Paul Paccione, Western Illinois University; Edward Pearsall, The University of Texas at Austin; Penelope Peters, then at Oberlin Conservatory; Gary Potter, Indiana University; Elizabeth Sayrs, then at Kenyon College; and Judith Solomon, Texas Christian University. Second-edition reviewers included John Brackett, University of Utah;

David R. Castro, University of Texas at Arlington; Margaret Grant, Northern Kentucky University; Helen Hudgens, North Park University; Mark McFarland, Georgia State University; Kurt Sander, Northern Kentucky University; Bruce Atwell, University of Wisconsin, Oshkosh; Steven Block, University of New Mexico, Albuquerque; Gregory D. Carroll, University of North Carolina, Greensboro; Thomas Cody, Penn State University; Dan Duncan; Kurt Ellenberger, Grand Valley State University; M. Rusty Jones, Butler University; Jeff Junkinsmith, Shoreline Community College; Christopher Kenney, University of Rio Grande; Heidi Von Gunden, University of Illinois, Champaign; Jeff Perry, Louisiana State University, Baton Rouge; Steven Roens, University of Utah; Jonathan Schwabe, University of Northern Iowa; and Naomi Sofer. Reviewers for the third edition include Ricky Andrews, Augustana University; David Batchelor, Winthrop University; Karl Braunschweig, Wayne State University; Gerard Custer, Wayne State University; David Gordon, Wheaton College; Amelia Kaplan, Ball State University; Brandon Kreuze, Covenant College; Richard Lavenda, Rice University; Mark Petering, Carthage College; Ilia Radoslavov, Illinois Wesleyan University; Adam Ricci, University of North Carolina, Greensboro; Catherine Roche-Wallace, University of Lousiana; Anna Stephan-Robinson, West Liberty University; and Eleanor Trawick, Ball State University.

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To all of them go my acknowledgments and sincere gratitude.

INTRODUCTION

The Fundamentals of Music

Chapter A

Pitch: Notation and Intervals

Unlike music in other cultures, the Western tonal music tradition has been built largely on notated sound, at least before the advent of such twentieth-century styles as jazz and rock. The notation system we use, developed throughout the Middle Ages and the Renaissance, is based on a variety of symbols and conventions that regulate the notation of pitch and rhythm. These symbols allow us to write on paper or a screen, and then to read, any musical sounds or combinations of sounds, as well as their relative durations and the groupings that result from these durations. In this chapter we review the basic principles for the notation of pitch in Western music.

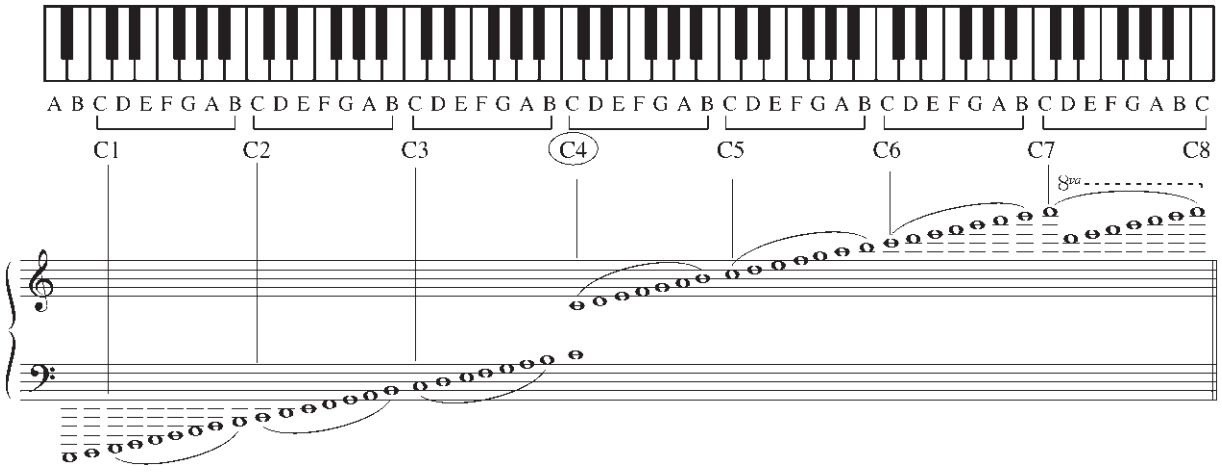
THE NOTATION OF PITCH

The Notes

The fundamental, standard Western collection of notes is made up of seven pitches. When ordered from lowest to highest or highest to lowest, such a collection is called a **scale.** If a scale contains only the seven basic, unaltered pitches, we call it a **diatonic scale.** In English, we use seven letters (**letter names**) to refer to the seven pitches of a diatonic scale: C–D–E–F–G–A–B–C. Notice that after the seventh pitch, B, the first pitch, C, appears again. Because this C is eight notes away from the original C, we say that it is (or it sounds) an *octave higher*. The same seven notes recur in the form of different octaves, as you can easily see in Example A.1.

The upper part of this example shows the location of the notes on a keyboard. Note that the same seven notes appear in several octaves. Although the letters used in each octave are the same, we also use numbers to indicate which octave a pitch belongs to. In this system, the pitch we usually call **middle C** is C4. All the pitches in this octave, from C to B, may carry the suffix 4, as in F4, A4, or B4. The octaves above this **middle octave** are indicated by the **numerical suffixes** 5 to 8, whereas the octaves below it carry the suffixes 3, 2, and 1, respectively.

Example A.1

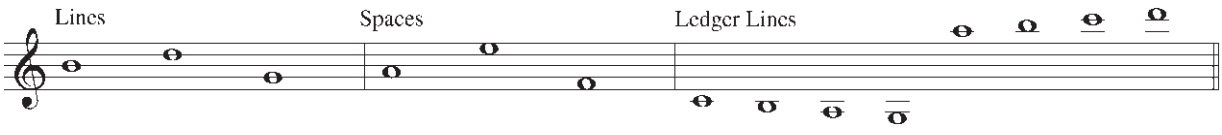


The Staff

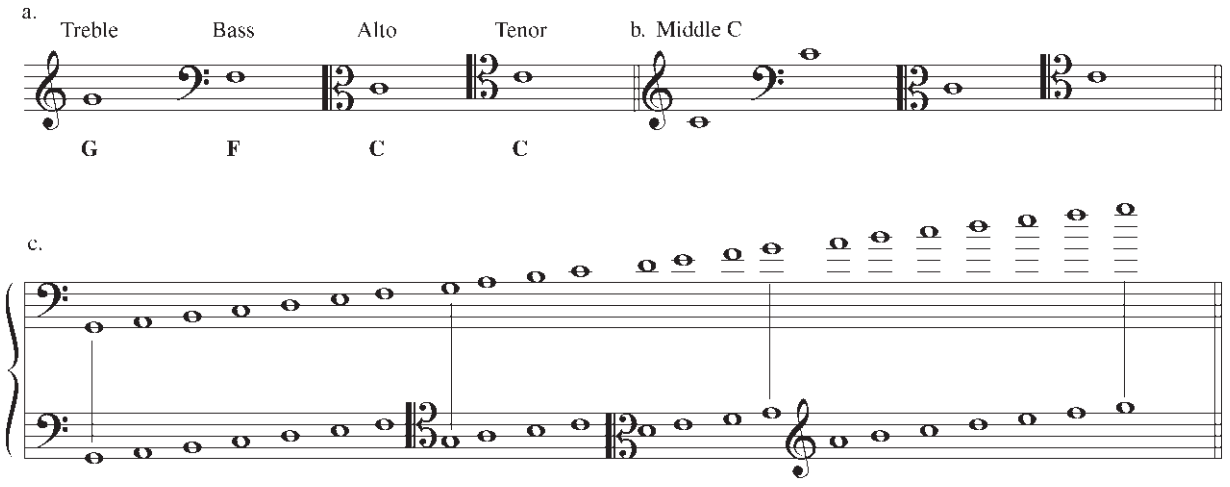
We notate pitches by means of noteheads on a **staff.** A staff consists of five **lines.** For the time being, our noteheads will be white notes. We can write a note on each of the five lines or in each of the four **spaces** between the lines. We can also extend the staff by adding additional lines, which we call **ledger lines.** Example A.2 shows pitches notated on lines, in spaces, and with ledger lines.

Clefs are used to indicate which letter names correspond with each of the lines and spaces in the staff. Although there are many possible clefs, we illustrate here only the four clefs most commonly found in modern scores: the **treble, bass, alto,** and **tenor clefs.** The treble clef is a **G clef;** that is, it shows where the pitch G is notated. The bass clef is an **F clef,** and both the alto and tenor clefs are **C clefs.** Example A.3a shows each of these clefs and the pitch that each indicates. Example A.3b shows the notation of middle C with each of these clefs. By using clefs, we can avoid writing too many ledger lines (which make for cumbersome notation). This is illustrated in

Example A.2



Example A.3



Example A.3c, where the same scale is notated first with a single clef and then with several clefs. In modern scores, the viola is mostly written in alto clef, and the cello, bassoon, and trombone use mostly bass and tenor clefs.

In the lower part of Example A.1 you can see what we call a **grand staff,** in which two staves are connected by a brace. The bass clef is used in the lower staff, and the treble clef is used in the upper staff. The grand staff allows us to notate the complete range of the keyboard, with the help of ledger lines above and below it.

EXERCISE

To practice identifying and notating pitches in various clefs, refer to Exercise 1 in Worksheet A at the end of this chapter.

INTERVALS

Half Steps, Whole Steps, and Accidentals

Look at the keyboard in Example A.1 and observe the following points:

1. Although the diatonic scale contains only seven different notes (the white keys of the keyboard), there are twelve different keys if you also count black keys.
2. The modern Western tuning system (**equal temperament**) divides the octave into twelve equal parts. The resulting twelve-note scale is called the **chromatic scale.**

3. The distance between two adjacent pitches in the chromatic scale is called a **half step** or **semitone.** The half step is the smallest distance between two different pitches in the standard Western tuning system.
4. Going back to the diatonic scale (the white keys), you can see that some adjacent pitches are related by half step (E–F and B–C), and the rest of them are at the distance of two half steps (C–D, D–E, F–G, G–A, and A–B). Each of the latter has a black key between each of the dyads (a **dyad** is a pair of pitches). The distance of two half steps between two pitches is called a **whole step** or a **whole tone.**

Although the chromatic scale has twelve different pitches, we use only seven different letters to designate notes. To notate the remaining five pitches (the black keys), we use symbols known as **accidentals.** Accidentals (which always *precede* the affected note) raise or lower a note in the following ways:

1. A **sharp** symbol (♯) raises a note by a half step.
2. A **flat** symbol (♭) lowers a note by a half step.
3. A **natural** symbol (♮) cancels out any previous accidental.
4. A **double sharp** symbol (𝄪) raises a note by a whole step.
5. A **double flat** symbol (𝄫) lowers a note by a whole step.

Enharmonic Spellings

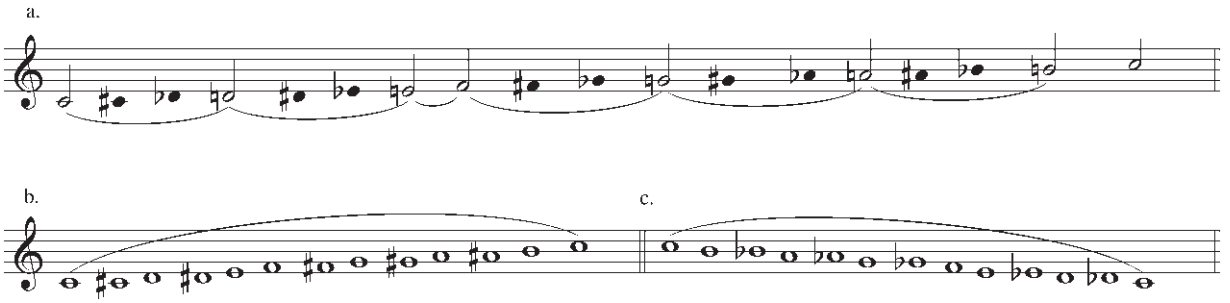
We can easily observe that any of the twelve pitches can be notated in different ways using accidentals. To begin with the most obvious, each of the notes represented by black keys can be spelled as a sharp or as a flat note. The pitch between C and D, for instance, is both C♯ and D♭. White-key notes, however, can also be notated by means of accidentals: D is the same pitch as C𝄪, C is the same as D𝄫, F is the same as E♯, and so forth. Notes that are spelled differently but sound the same, such as C♯ and D♭, are said to be *enharmonic.* Example A.4a shows the two possible spellings (the **enharmonic spellings**) for each of the black-key notes in the chromatic scale. In practice, however, we use only one of the spellings at a time. Which one we use is determined by the harmonic and musical context, as we will study throughout this book. As a general melodic principle, however, sharps are often (but not always) used in ascending passages and flats in descending passages. Examples A.4b and c illustrate an ascending chromatic scale using sharps and a descending chromatic scale using flats.

A result of enharmonic spellings is that we can notate a half step in different ways. A half step spelled using different letter names, as in C–D♭, is called a **diatonic half step,** whereas the same half step, spelled using the same letter name, C–C♯, is a **chromatic half step.**

Types of Intervals

An **interval** is the distance between two pitches. If the two pitches sound simultaneously, the interval is **harmonic.** If the pitches sound successively, the interval is **melodic.**

Example A.4



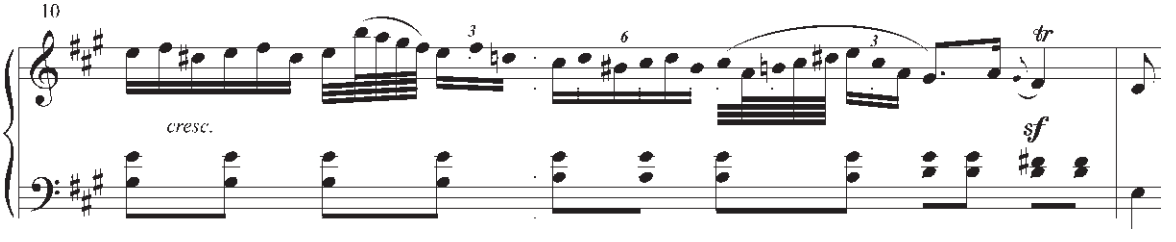
The right hand (upper staff) of Example A.5 is melodic, and its intervals are heard horizontally, or melodically. The left hand (lower staff), on the other hand, presents a succession of vertical, or harmonic, intervals.

To label intervals we use two terms. The second term denotes the **size of the interval:** second, third, fourth, and so on. (2nd, 3rd, 4th, etc. are used to indicate the interval size.) The first term describes the **quality of the interval** (perfect, major or minor, and augmented or diminished). Thus, we speak of a minor 2nd, a perfect 4th, a major 6th, and so forth.

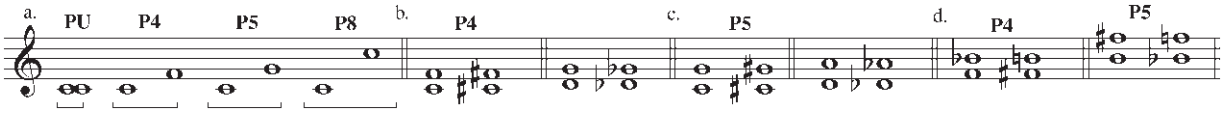
Intervals can be **ascending** or **descending.** The same note names, C and F for example, may be used to denote two different intervals: the ascending distance between C and F (C–D–E–F) is not the same as the descending distance between C and F (C–B–A–G–F).

To determine the size of an interval, count the number of notes between the two pitches, including both pitches in your count. Thus, an ascending C–F is a 4th (four notes, C–D–E–F); an ascending E–C is a 6th (E–F–G–A–B–C); a descending C–F is a 5th (C–B–A–G–F); and a descending A–G is a 2nd (A–G).

Example A.5 Marianne Martínez, Sonata in AM, I, mm. 10–11



Example A.6



Perfect Intervals

The modifier **perfect,** used to indicate the quality of certain intervals, refers to the pure and essential sound of these intervals. The only perfect intervals are the perfect unison (abbreviated PU), the perfect 4th (P4), the perfect 5th (P5), and the perfect 8ve (P8). Examples of each of these intervals, starting from C, appear in Example A.6.

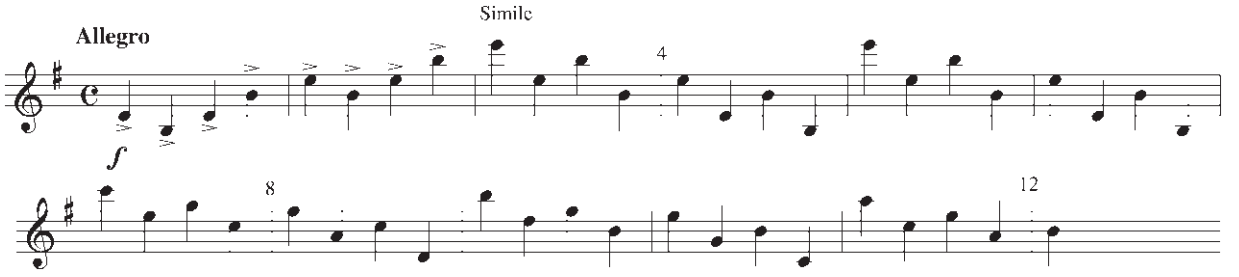
1. The perfect unison or perfect prime (PU) is the interval formed by any pitch and itself (C–C, D–D, E♭–E♭, F♯–F♯, etc.). The P8, on the other hand, is formed between a pitch and its octave projection, as in C4–C5, D2–D3, and so forth.
2. The P4 is made up of five half steps. You should learn by memory all the possible P4s built from diatonic (white-key) pitches. In ascending form, these are C–F, D–G, E–A, F–B♭, G–C, A–D, B–E. You can see that the only "glitch" in the system is the P4 from F, which requires an accidental (B♭). The interval F–B♮ is not a P4, because it contains six, not five, half steps. If we want a P4 with B♮ as the upper pitch, then we need an F♯: F♯–B♮.
3. The P5 is made up of seven half steps. The ascending P5s from white keys are C–G, D–A, E–B, F–C, G–D, A–E, and B–F♯. Here again, the only "glitch" also involves the notes B and F. Seven half steps up from B take us to F♯. If we want a P5 with F♮ as the upper pitch, we need a B♭: B♭–F♮.
4. How about spelling P4s and P5s from pitches other than white keys? Leaving aside the P4s and P5s involving the notes B and F, an accidental applied to any of the pitches in the P4s and P5s listed above automatically requires the same accidental for the other pitch. For instance, in the P4 category, you have C♯–F♯, D♭–G♭, E♭–A♭, and so on. And in the P5s, you have C♯–G♯, D♯–A♯, E♭–B♭, and so on. Examples A.6b and c illustrate the application of accidentals to P4s and P5s; Example A.6d shows the P4s and P5s involving the notes B and F.

Measures 1–6 of Example A.7 are exclusively made up of perfect intervals. Identify and label all of them. Then identify and label the perfect intervals in mm. 7–12.

EXERCISE

To practice writing perfect intervals, refer to Exercise 2 in Worksheet A at the end of this chapter.

Example A.7 Fritz Kreisler, "Praeludium and Allegro," for Violin and Piano, mm. 1–12

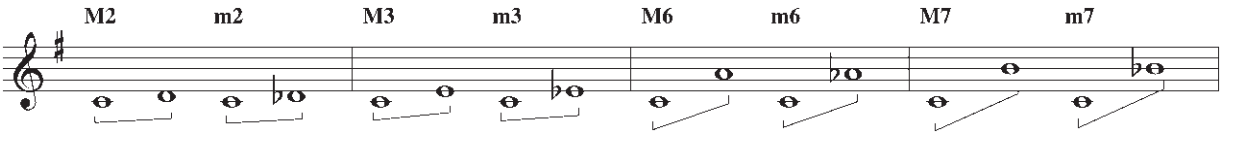


Major and Minor Intervals

Refer to the chromatic scale in Example A.4a. If you try to build a 3rd up from C, you will probably think first of the pitches C–E. That is indeed a 3rd. The pitches C–E♭, however, also form a 3rd. Several intervals allow for two possible standard forms, one smaller and one larger in size. These intervals are the 2nd, 3rd, 6th, and 7th. In each of these cases, the larger interval is called **major** (abbreviated M), and the smaller interval is called **minor** (abbreviated m). In all cases, the difference between major and minor is a half step (major is a half step larger than minor). Examples of each of these intervals presented in ascending form from C appear in Example A.8.

1. *M and m 2nds.* We have already discussed these intervals as the whole tone and the semitone (whole step and half step). The M2 contains two semitones, and the m2, the smallest possible interval in our system other than the unison, is made up of a single semitone.
2. *M and m 3rds.* The m3 contains three semitones, and the M3 four. As we will study in Chapter E, these intervals are the basic building blocks for triads (three-note chords). The lower interval in a major triad (C–E–G) is a M3 (C–E), whereas the lower interval in a minor triad (C–E♭–G) is a m3 (C–E♭).

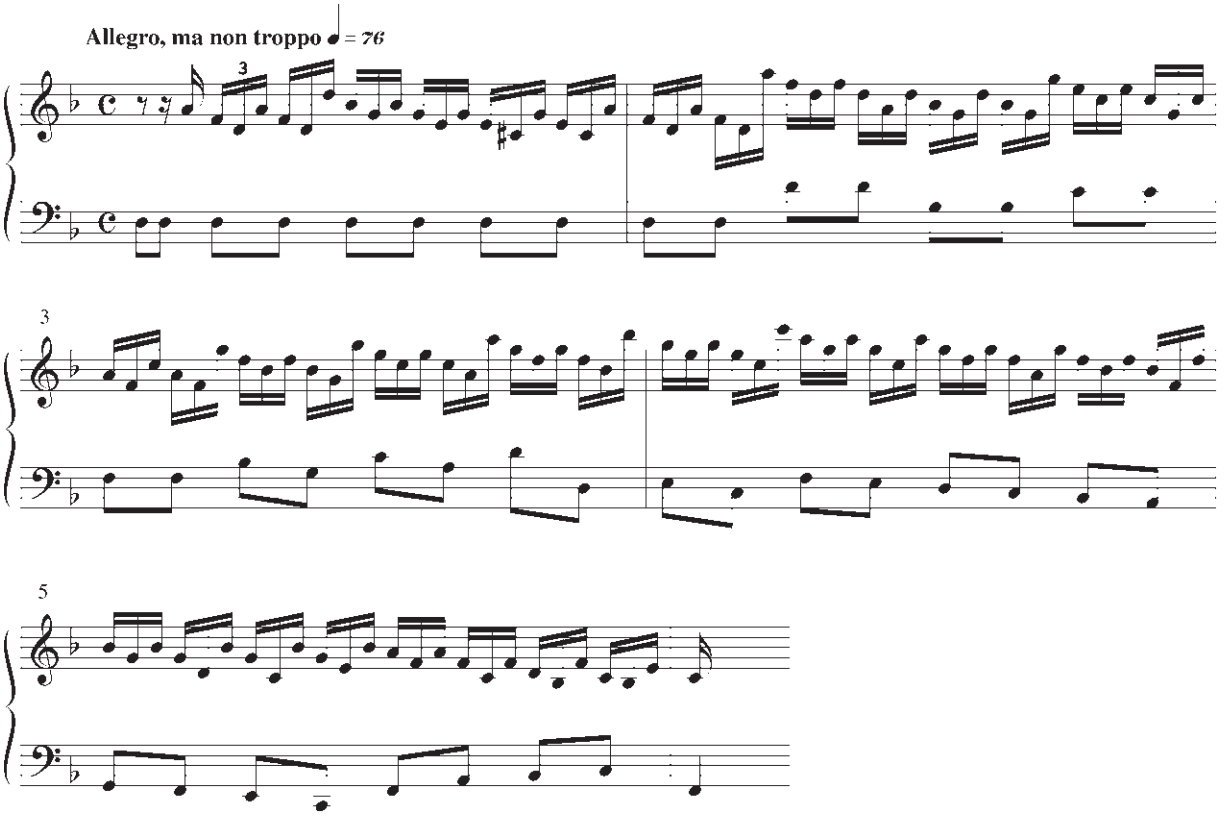
Example A.8



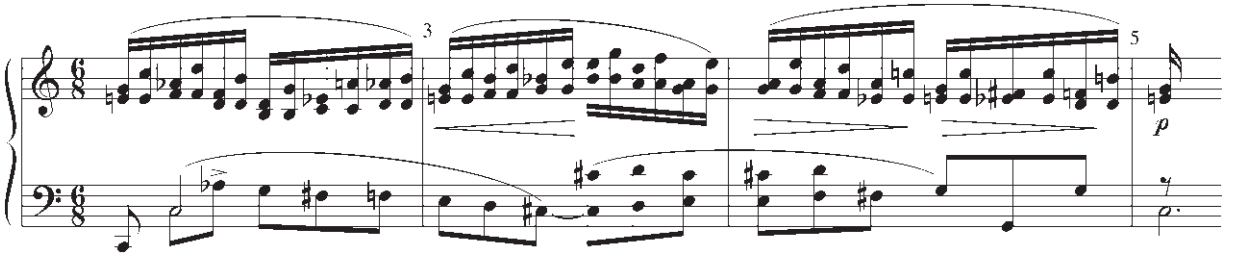
3. *M and m 6ths.* The easiest way to figure out these intervals is by comparing them to a P5. A M6 (C–A) is a whole step larger than a P5 (C–G), and a m6 (C–A♭) is only a half step larger than a P5.
4. *M and m 7ths.* Here again, it is easier to figure out these intervals with reference to the P8. The M7 (C–B) is only a half step smaller than the P8 (C–C), whereas the m7 (C–B♭) is a whole step smaller than the P8.

The following passages enable you to practice the recognition and labeling of 3rds (Example A.9a), 3rds and 6ths (Example A.9b), and 2nds and 7ths (Example A.9c). For further practice, identify and label all the nonperfect intervals in Example A.7.

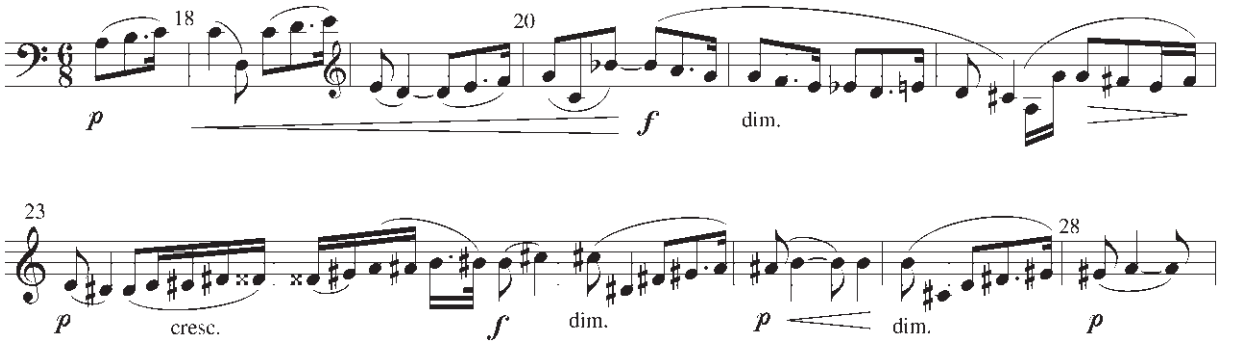
Example A.9a Johann Sebastian Bach, Prelude no. 6 in Dm, from *The Well-Tempered Clavier,* I, mm. 1–6



Example A.9b Frédéric Chopin, Étude in CM, op. 10, no. 7, mm. 2–5



Example A.9c Richard Wagner, Prelude to *Tristan und Isolde,* mm. 18–28



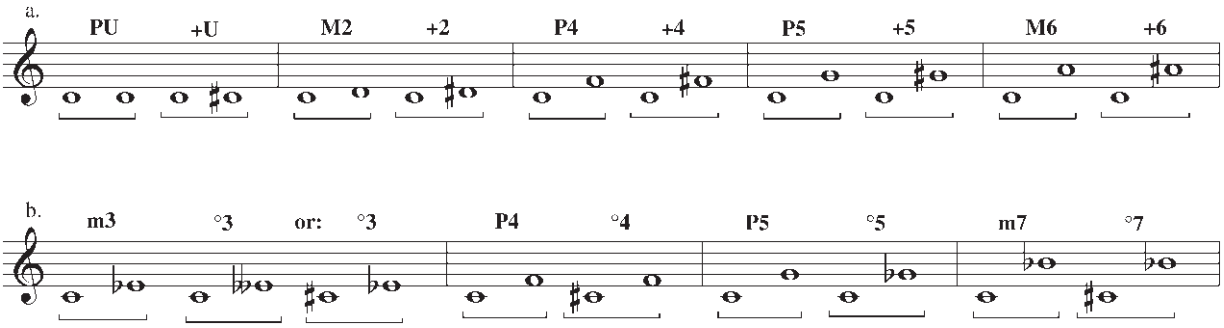
EXERCISE

To practice writing M and m intervals, refer to Exercise 3 in Worksheet A at the end of this chapter.

Augmented and Diminished Intervals

In Example A.9b you may have noticed some intervals that do not fit our perfect/major/minor definitions. In measure 4, for instance, the fifth dyad in the right hand, E♭–A, is a 4th (from E to A there are four notes), but it contains six half steps. It is one half step larger than the P4. The ninth dyad, E♭–F♯, is a 2nd (two notes from E

Example A.10



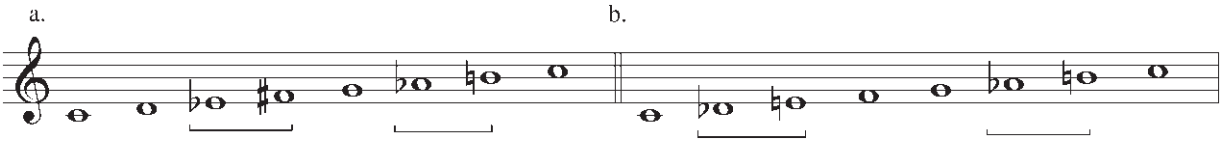
to F), but its three half steps make it one half step larger than the M2. In measure 2, on the other hand, the eleventh dyad (D–A♭) is a 5th, but its size is only six half steps, one half step smaller than the P5. These are all **augmented** or **diminished** intervals.

1. An augmented interval (abbreviated +) is a half step larger than the corresponding P or M interval. Although any interval can be augmented, the most frequent among these intervals are the +2 (three half steps) and the +4 (six half steps). The +6 is also a prominent interval in chromatic harmony, and so is the +5. Example A.10a shows some augmented intervals, along with the P or M intervals from which each of them is derived.
2. A diminished interval (abbreviated °) is a half step smaller than the corresponding P or m interval. The diminished intervals most frequently found in music are the °5 and the °7. Some diminished intervals, along with the P or m intervals they are derived from, appear in Example A.10b.

Because the +4 consists of three whole tones (C–D–E–F♯), it is often called a **tritone** (a term which is sometimes also used, inaccurately, to refer to the °5). The tritone appears in the diatonic scale between F and B (see Example A.9b, m. 3, third dyad). We have already discussed that to spell a P4 or a P5 involving the pitches F and B we need some accidental. The reason is that with no accidental, F–B is an +4, and B–F a °5.

Notice also that, although sometimes augmented or diminished intervals can be spelled enharmonically as perfect, major, or minor intervals, the two groups of intervals have different musical functions. In isolation, for instance, an +2 (A♭–B) may sound like a m3 (G♯–B), but in a musical context these are two different intervals. Sing or play, as an example, the two interesting non-Western scales in Example A.11, both of which feature +2s, and you will appreciate the characteristic melodic color of the +2 in contrast to the m3. In Western music, however, the +2 is considered awkward melodically, an interval usually to be avoided.

Example A.11



EXERCISES

To practice writing augmented and diminished intervals, refer to Exercise 4 in Worksheet A at the end of this chapter. To practice enharmonic spellings of intervals, refer to Exercise 7 in Worksheet A at the end of this chapter. To practice writing and identifying all intervals, refer to Exercises 5, 6, and 11 in Worksheet A at the end of this chapter.

Compound Intervals

All the intervals we have seen so far are no larger than an octave (**simple intervals**). Intervals larger than an octave are called **compound intervals.** Musically, a compound interval results from the addition of a simple interval plus an octave. Numerically, however, the size of a compound interval results from this formula: simple interval + 8 − 1 (or simple interval + 7). In other words, a compound second will be a 9th (2 + 8 − 1 = 9), and a compound third will be a 10th (3 + 8 − 1 = 10). The simple/compound equivalences are as follows:

2nd → 9th

3rd → 10th

4th → 11th

5th → 12th

6th → 13th

7th → 14th

8ve → 15th

EXERCISE

To practice identifying compound intervals, refer to Exercise 8 in Worksheet A at the end of this chapter.

Interval Inversion

You may already have observed that two different intervals are possible with any two pitches: C–F is a 4th and F–C is a 5th (both ascending). A 4th plus a 5th equals an octave (C–F–C, ascending). These intervals are the **inversion** of each other.

1. To invert an interval, place the lower pitch an octave above, over the higher pitch. Or place the higher pitch an octave below, under the lower pitch.
2. Two intervals related by inversion add up to an octave. Numerically, they add up to nine. All the intervallic inversions by size are presented in the following table:

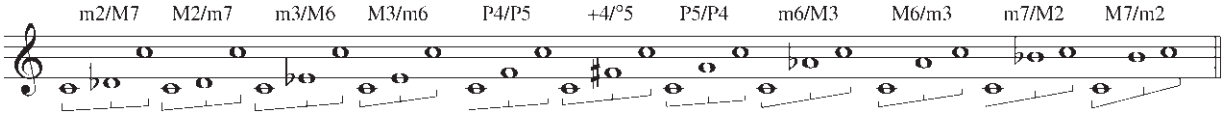
U → 8ve (1 + 8 = 9)	8ve → U
2nd → 7th (2 + 7 = 9)	7th → 2nd
3rd → 6th (3 + 6 = 9)	6th → 3rd
4th → 5th (4 + 5 = 9)	5th → 4th

3. When you invert an interval, the intervallic quality also inverts in the following way:

P inverts into P	+ inverts into °
M inverts into m	° inverts into +
m inverts into M	

Example A.12 presents a summary of intervallic inversions as explained above.

Example A.12



NOTE

Intervallic inversion provides a quick and accurate means of spelling large, more difficult intervals. To spell a large interval, we need to think of its intervallic inversion in the opposite direction. For instance, an ascending m7 from G♯ can be derived by thinking of a descending M2 from G♯; that is, F♯. And a descending M6 from B♭ can be calculated by thinking of an ascending m3 from B♭; that is, D♭.

EXERCISE

To practice writing intervallic inversions, refer to Exercise 9 in Worksheet A at the end of this chapter.

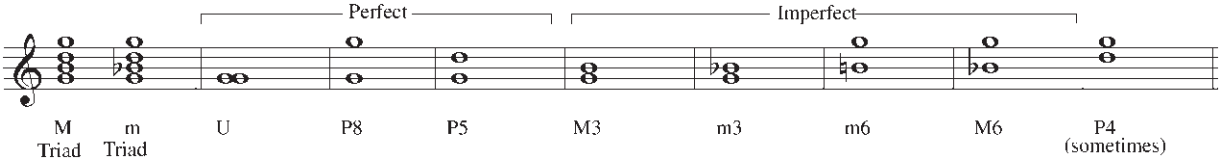
Consonant and Dissonant Intervals

The concepts of intervallic consonance and dissonance are largely determined by cultural and historical contexts and vary depending not only on the world culture under consideration, but also within Western music on such factors as geographic location or historical period. Our present discussion of these intervallic categories is based on criteria that apply, at least in a general way, to Western music roughly from the fifteenth century to the late nineteenth century.

Intervals are **consonant** if they produce a sense of stability. **Dissonant** intervals, on the other hand, create a sense of tension or instability, which we normally perceive as a clash that requires resolution to a consonance. The consonant intervals are the unison, the 8ve, and all the intervals found in major and minor triads, along with their inversions: P5, M3, m3, m6, M6, and P4 (see Example A.13). All other intervals are dissonant: m2, M2, m7, M7, and all augmented and diminished intervals.

The most stable consonances are the U, 8ve, and P5. These are called **perfect consonances.** 3rds and 6ths are called **imperfect consonances.** The **P4** (perfect 4th) is sometimes consonant and sometimes dissonant, depending on its context, as discussed in Chapters D, F, and 7.

Example A.13



ASSIGNMENT

For an assignment based on the materials learned in this chapter, refer to Chapter A in the workbook.

Terms for Review

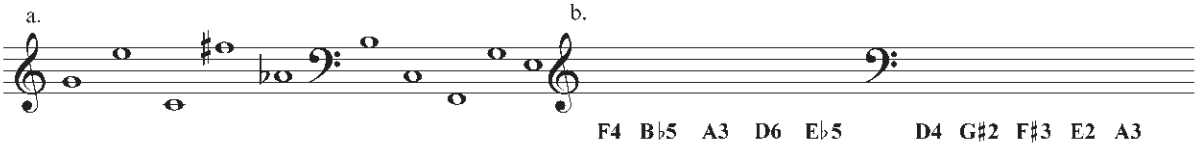
Scale
Diatonic scale
Letter names
Middle C
Middle octave
Numerical suffixes for octaves
The staff
Lines, spaces, ledger lines
The clefs
Treble, bass, alto, tenor clefs
G, F, C clefs
Grand staff
Equal temperament
Chromatic scale

Half step, semitone
Dyad
Whole step, whole tone
Accidentals
Sharp, flat, natural, double sharp, double flat
Enharmonic spellings
Diatonic half step
Chromatic half step
Interval
Melodic and harmonic intervals
Interval size, interval quality
Ascending and descending intervals
Perfect intervals
Major and minor intervals
Augmented and diminished intervals
The tritone
Simple and compound intervals
Interval inversion
Consonant and dissonant intervals
Perfect consonances
Imperfect consonances
The perfect 4th (P4)

Worksheet A

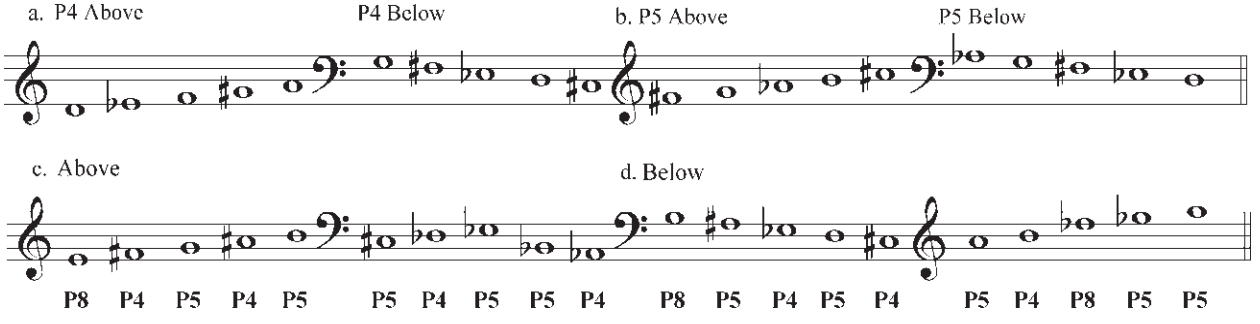
EXERCISE 1

1. Name the notes in Exercise 1a, and provide the octave suffix for each of them.
2. Notate the notes in Exercise 1b in the correct octave.



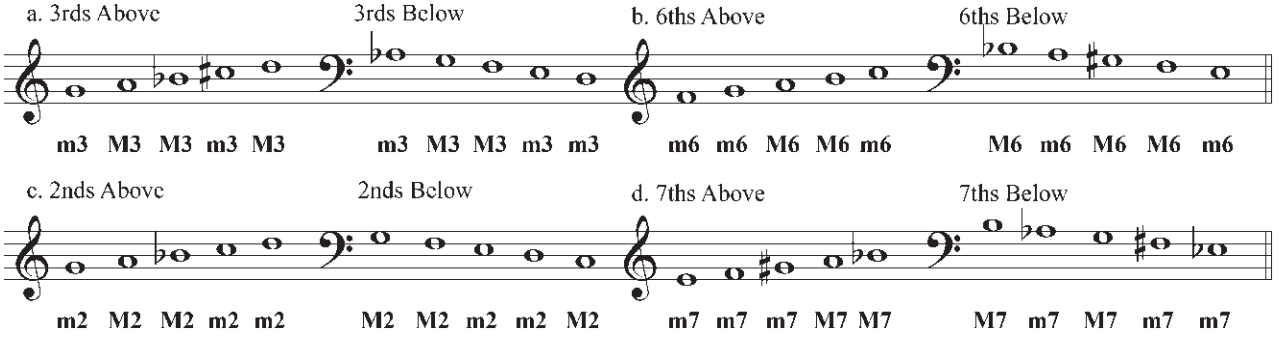
EXERCISE 2

Notate the required perfect intervals above or below the given notes as indicated.

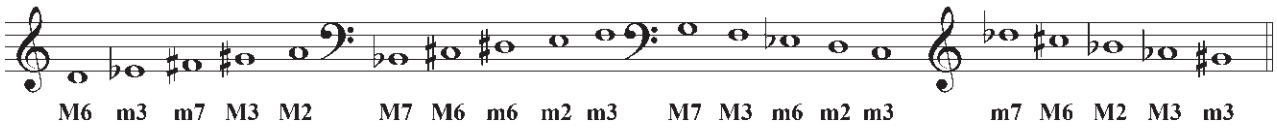


EXERCISE 3

Notate the required intervals above or below the given notes as indicated.



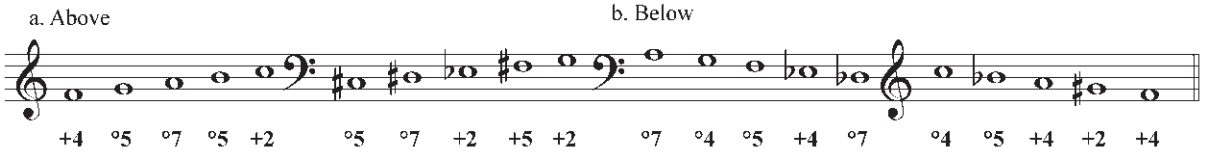
c. Above f. Below



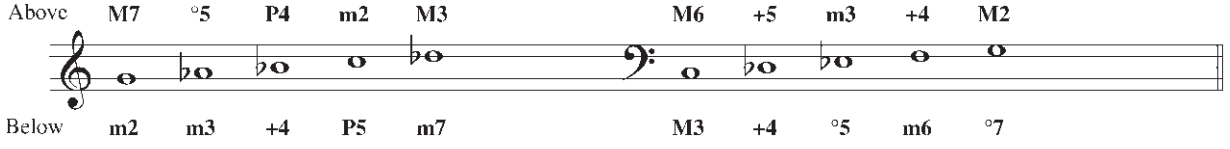
EXERCISE 4

1. In Exercise 4a write the + or ° intervals above the given notes.
2. In Exercise 4b write the + or ° intervals below the given notes.

a. Above b. Below

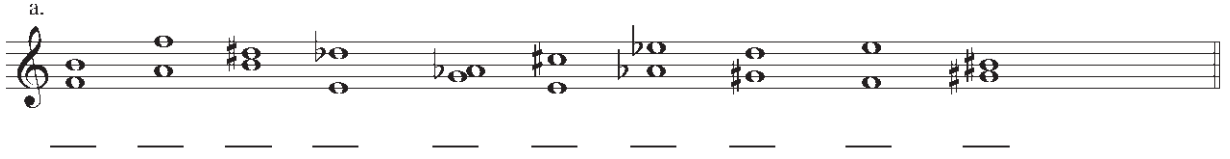


EXERCISE 5 Write the intervals above and below the given notes as requested.

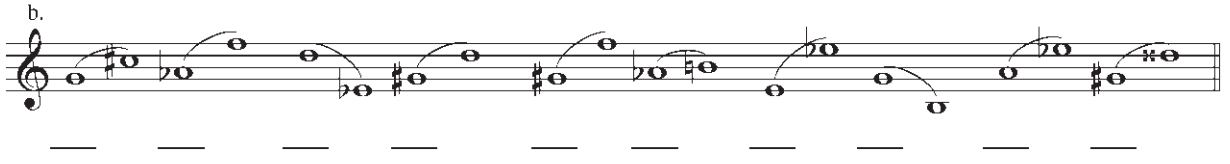


EXERCISE 6 Identify the intervals by size and quality.

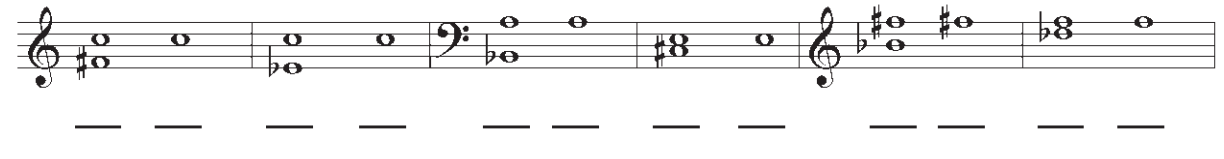
a.



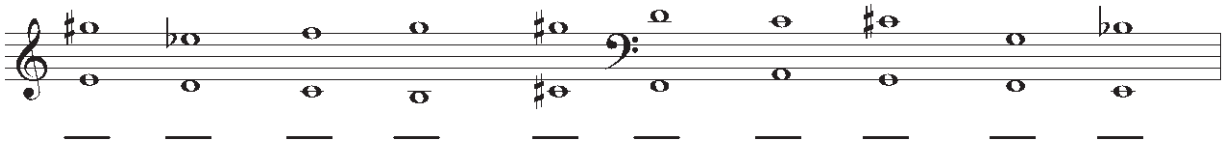
b.



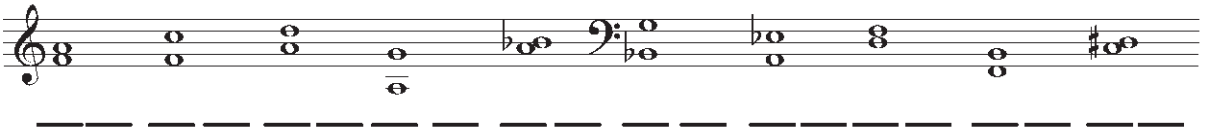
EXERCISE 7 Identify the intervals by size and quality. Then renotate the lower note enharmonically and identify the resulting interval.



EXERCISE 8 Identify the compound intervals by size and quality. For each of them, provide labels for both the actual compound interval and its simple equivalent (e.g., M10–M3).



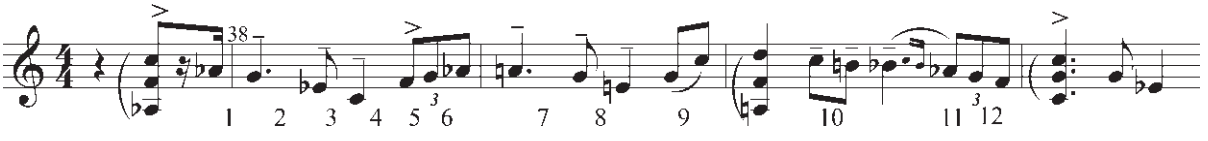
EXERCISE 9 Write the intervallic inversion for each of the following intervals. Identify both the given interval and its inversion.



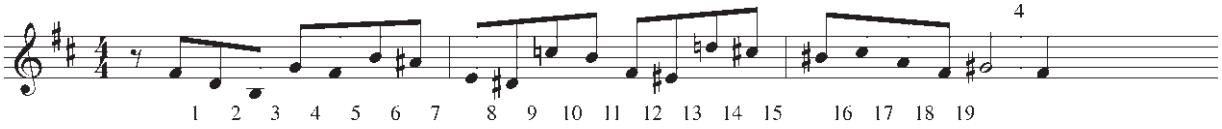
EXERCISE 10 Refer back to Exercises 6a and b. Under each of the intervals in these exercises, write a C or D depending on whether the interval is consonant (C) or dissonant (D).

EXERCISE 11 In the melodic examples from the literature in Example A.14, identify each of the numbered intervals by size and quality.

Example A.14a Gustav Mahler, Symphony no. 7, II, mm. 37–41

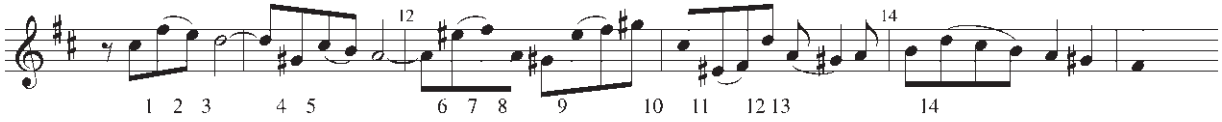


Example A.14b J. S. Bach, Fugue 24 in Bm, from *The Well-Tempered Clavier*, I, mm. 1–4



LISTEN | J S Bach-WTC I-Fugue 24 Bm [Albert Mühlböck]

Example A.14c J. S. Bach, "Kyrie," from Mass in Bm, mm. 10–15



Chapter B

Rhythm and Meter

Sing or play the tune "London Bridge." The following observations will be immediately clear to you:

1. Not all notes have the same *duration.*
2. Notes are *grouped* in various ways. The melody can be *partitioned* into these groups, and some of the groups form durational *patterns* that are repeated (such as, for instance, the pattern to the words "falling down" in our tune).
3. Regardless of the note durations or patterns, you can easily tap what we usually call the "beat"; that is, you can "keep time" to the music by establishing a regular "pulse." Your pulses, however, will not all be equally stressed. Some of them will naturally come out more *accented* than others. If we notate pulses (accented or not) as syllables in italics, and accented beats as syllables in boldface, we come up with the following interpretation of the "London Bridge" words:

   London *bridge* is ***fall***ing *down,* ***fall***ing *down,* ***fall***ing *down,*

   London *bridge* is ***fall***ing *down,* ***my*** *fair* ***la***dy.

These are temporal aspects of the "London Bridge" tune, having to do specifically with rhythm and meter. This chapter focuses on the rudiments and notation of rhythm and meter. The term **rhythm** refers to the *grouping, patterning, and partitioning of musical events* (such as notes), whereas **meter** refers to the *measurement of the number of pulses between regularly recurring accents.* In most Western music, meter provides the framework and context against which we hear rhythm. We will now study the notation of these two temporal aspects of music separately.

DURATIONAL SYMBOLS

To notate rhythm, we need **durational symbols**, that is, symbols that express the relative duration of notes. The elements of rhythmic notation needed to express duration are represented in Example B.1a. Durational symbols are made up of **noteheads**, **stems**, and

Example B.1a The Elements of Rhythmic Notation

Example B.1b Basic Durational Symbols

VALUE	NOTE	REST
Breve (double whole)	=	=
Whole	=	=
Half	=	=
Quarter	=	=
Eighth	=	=
Sixteenth	=	=
Thirty-second	=	=
Sixty-fourth		

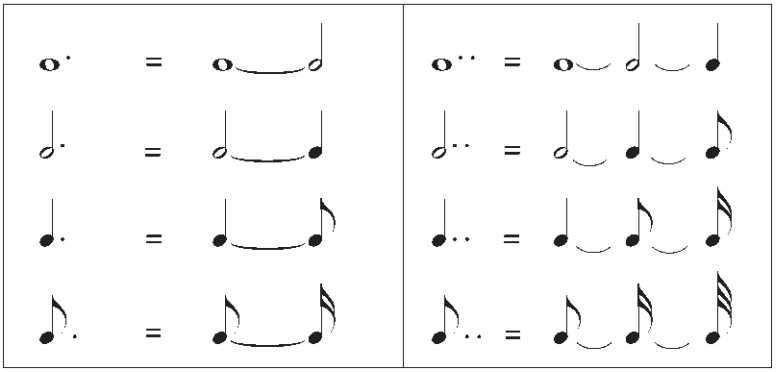
flags or **beams**. The chart in Example B.1b presents all the basic durational symbols, their equivalence in terms of the next shorter duration, and the notation of the **rest** equivalent to each of the durations.

EXERCISE

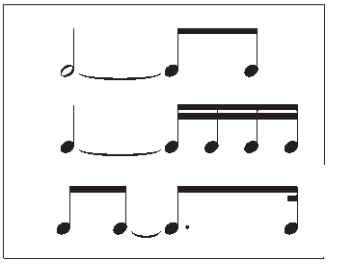
To practice equivalences among various durational symbols, refer to Exercise 1 in Worksheet B at the end of this chapter.

Example B.2

a.



b.



The possible durations that can be notated increase enormously when we use dots and ties. A **dot** added *after* a note or rest increases the duration of that note or rest by half its value. A **double dot** increases the duration of a note or rest by three-quarters its original value (half the original duration plus half the first dot). **Ties** are used to connect two values of any kind. We can express dotted notes by means of ties (this is how they have to be notated over a bar line) but we can write many durations by means of ties that cannot be expressed with dots. Example B.2a shows some dotted notes and their equivalent notation with ties; Example B.2b presents some tied values that cannot be expressed in any other way.

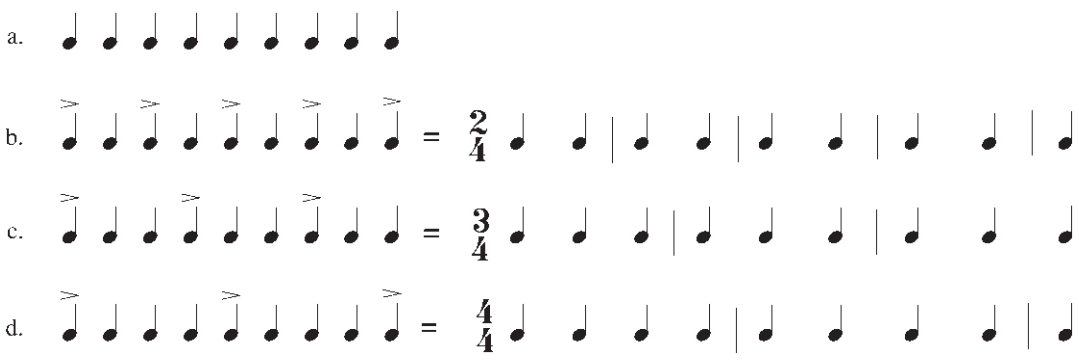
EXERCISE

To practice durational values that require the use of dots and ties, refer to Exercises 2 and 3 in Worksheet B at the end of this chapter.

PULSE, BEAT, AND METER

Consider the undifferentiated stream of time points in Example B.3a. These are regularly recurring time points, which we call **pulses**. Now tap or say (on "tah") the line in Example B.3b. We have added an accent every other pulse. Accents are points of emphasis, and through them we create groupings in the stream of pulses. The grouping in Example B.3b is "in two." In Example B.3c, the accents appear every three pulses, and they create a grouping "in three." Similarly, the grouping in Example B.3d is "in four." These examples illustrate meter, as defined on page 20. For a musical context to be metric, we need pulses and recurring accents. We refer to pulses in a metric context as **beats**. In other words, the time points in Example B.3a are pulses, whereas in the other three examples the same time points become beats because the regularly recurring accents provide a metric frame.

Example B.3



TEMPO

Because the exact meaning of some meter signatures depends on how fast the music moves, we need to review the concept of **tempo** at this point. The term *tempo* (Italian for "time") refers to the speed of the beat. Most frequently, Italian terms (**tempo markings**) are also used to describe the tempo of a movement or composition. These terms are relative and have meant different things in different historical periods. In general, tempos (or tempi) were faster in the Baroque and Classical periods than in the Romantic period. A Baroque *adagio,* for instance, would be performed faster than a late-Romantic *adagio.* Nevertheless, the slow tempos (listed from slower to faster) are *grave, largo, lento,* and *adagio*; the moderate tempos are *andante, moderato,* and *allegretto*; and the fast tempos are *allegro, vivace,* and *presto.*

A more "objective" measurement of tempo is provided by metronome markings. In scores from the past two centuries, metronome markings often accompany or replace the tempo markings. The letters M.M., which stand for "Maelzel's metronome," often precede the metronome marking. The metronome setting (a number) indicates fractions of a minute. Thus, M.M. "♩= 60" means a quarter note per second (60 quarter notes per minute, or fairly *adagio*); "♩ = 80" means 80 quarter notes per minute (*moderato*), and "♩= 120" means a quarter note every half second, or 120 quarter notes per minute (a fast tempo).

SIMPLE AND COMPOUND METERS

Sing the tunes "Camptown Races" and "Greensleeves" while you tap or conduct the beat in each case. (If you don't know these tunes, you can also try "Mary Had a Little Lamb" and "Row, Row, Row Your Boat.") Then sing them again, and now *divide* the beat. That is, tap more than once per beat, following the beat division appropriate to each song. If you are doing this right, you will have come up with two divisions per

beat in "Camptown Races" and "Mary Had a Little Lamb," and three divisions per beat in "Greensleeves" and "Row, Row, Row Your Boat." Meters with a duple division of the beat are called **simple meters**, whereas meters with a triple division are **compound meters**. Now sing "Pop Goes the Weasel," "Star Spangled Banner" ("O Say Can You See"), "Old MacDonald," and "My Bonnie," and determine whether each is in simple or compound meter.

THE NOTATION OF METER

A complete metric unit is called a **measure**, and measures are indicated by **bar lines**. Meters are indicated by means of **meter signatures** or **time signatures.** A meter signature consists of two numbers written one over the other. The exact meaning of meter signatures changes between simple and compound meters, as we discuss next.

Meter Signatures in Simple Meters

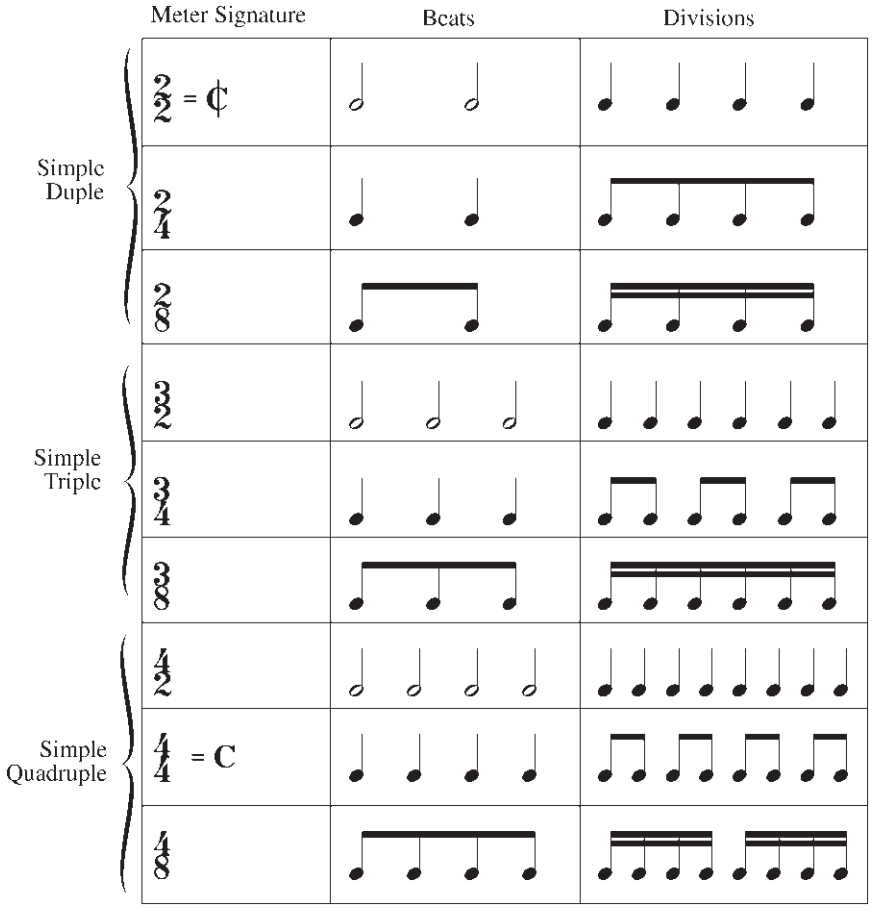
The most common simple meters are $\frac{2}{4}$, $\frac{3}{4}$, and $\frac{4}{4}$. The upper number in meter signatures for simple meters is 2, 3, or 4. In simple meter, the upper number indicates the *number of beats per measure.* Thus, in $\frac{2}{4}$ there are two beats per measure, in $\frac{3}{4}$ there are three, and in $\frac{4}{4}$ there are four. The lower number indicates the **value of the beat**. By convention, "4" means "quarter note." The beat value in each of the three meters we just mentioned ($\frac{2}{4}$, $\frac{3}{4}$, and $\frac{4}{4}$) is, then, a quarter note. The lower number 2 means a half note per beat, and 1 means a whole note. Similarly, 8 means an eighth note, and 16 means sixteenth note. Examples B.3b, c, and d show how each of the metric phrases, which we first notated by means of accents, can be notated using a meter signature and bar lines.

Any meter with two beats (such as $\frac{2}{4}$, $\frac{2}{2}$, or $\frac{2}{8}$) is called a **duple meter**. Meters with three beats (such as $\frac{3}{4}$, $\frac{3}{2}$, or $\frac{3}{8}$) are **triple meters**, and meters with four beats ($\frac{4}{4}$, $\frac{4}{2}$, or $\frac{4}{8}$) are **quadruple meters**. Notice that $\frac{4}{4}$ can also be referred to as **common time** (symbol **c**), and $\frac{2}{2}$ as **cut time** (symbol **¢**).

Meter Signatures in Compound Meters

The most common compound meters are $\frac{6}{8}$, $\frac{9}{8}$, and $\frac{12}{8}$. The upper number in meter signatures for compound meters is 6, 9, or 12. **Compound meter signatures**, however, lend themselves to some confusion if we think of them in the same terms we defined above for simple meters. The beat in such compound meters as $\frac{6}{8}$, $\frac{9}{8}$, and $\frac{12}{8}$ *is the dotted quarter,* not the eighth note. The eighth note is the beat *division.* In other words, the top number in these signatures does not indicate the number of beats per measure, but rather the number of divisions. And the bottom number does not indicate the value of the beat, but rather the value of the division. $\frac{6}{8}$ will normally be conducted *in two* because it has two beats (compound duple); $\frac{9}{8}$ is normally conducted *in three* because it has three beats (compound triple), and $\frac{12}{8}$ *in four* because it has four beats (compound quadruple). The beat note in each of these compound meters is the dotted quarter note. Each of these meters, however, is often subdivided

Example B.4 Simple Meters

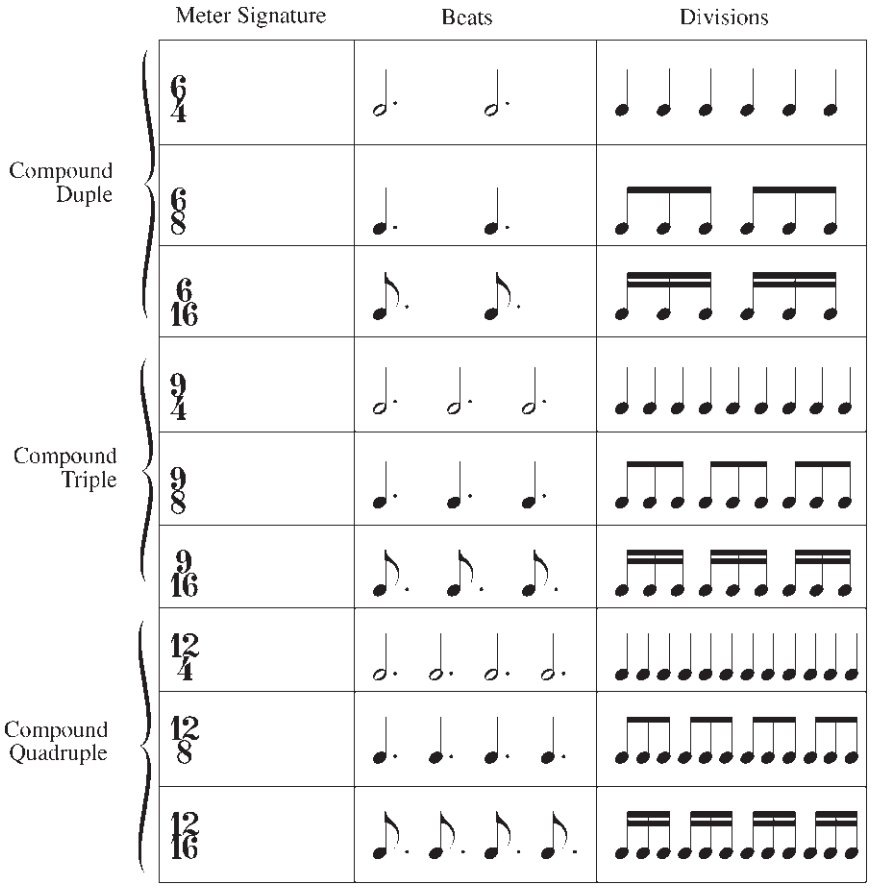


in slower tempos. Thus, $\frac{6}{8}$ with a *largo* indication is conducted or felt *in six*. Examples B.4 and B.5 present a summary of the most common simple and compound meters and their characteristics.

EXERCISES

To practice identifying simple and compound meter signatures and counting beats in a variety of simple and compound meters, refer to Exercise 4 in Worksheet B at the end of this chapter. To practice providing meter signatures for given rhythmic passages, and identifying rhythmic errors in given meters, refer to Exercises 5 and 6 in Worksheet B at the end of this chapter.

Example B.5 Compound Meters

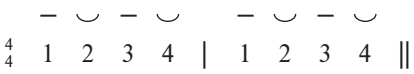


METRIC ACCENT

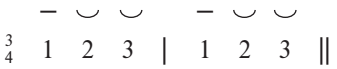
We have already seen that beats in a metric context are not all equally stressed. That is, some beats are naturally more accented than others as a result of the grouping of pulses into regularly recurring patterns. We call these accents, which result from metric organization, **metric accents**. **Strong and weak beats in all meters** are illustrated below.

1. In duple meter, beat 1 is strong and beat 2 is weak. We use the symbols – for strong and ◡ for weak.

2. In quadruple meter, the odd-numbered beats are strong (1 and 3), whereas even-numbered beats are weak (2 and 4). Beat 3, however, is weaker than beat 1.



3. In triple meters, only beat 1 is strong. In principle, beats 2 and 3 are weak. Beat 2, however, is often stressed by a variety of means, one of which is illustrated in Example B.11a. Thus, although beat 2 is metrically weak, we may indeed perceive it as either weak or strong depending on the musical context.



4. These same strong-weak relationships also apply to beat divisions. In a beat divided into two eighth notes, the first one is strong, the second one weak. If the division is into four sixteenth notes, notes 1 and 3 are strong, and notes 2 and 4 are weak. In beats divided into 3 notes (in triplets or compound meters), note 1 is strong, and notes 2 and 4 are weak.

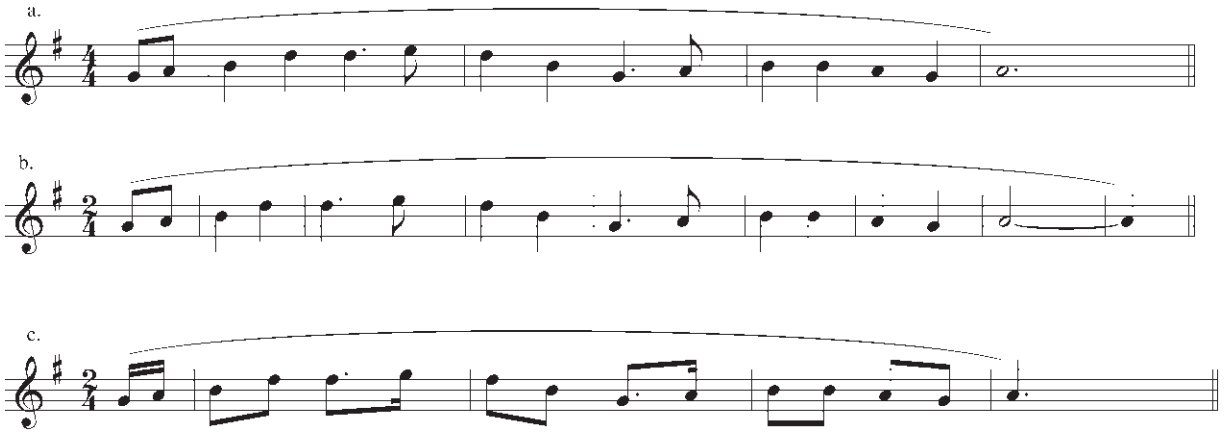
The first beat in a measure is called a **downbeat**; the last beat is an **upbeat**. Weak beats, especially upbeats, create a metric tension that usually calls for continuation to a resolution, a strong beat or downbeat. Sing the beginnings of "Happy Birthday" and "Star Spangled Banner" ("O Say Can You See"). You will find that both are in triple meter and that both begin on upbeats (on beat 3). An **anacrusis** is a note or group of notes that begins a melodic phrase on an upbeat. The type of melody that begins on an upbeat is called an **anacrusic melody**.

CHOOSING A METER TO NOTATE A MELODY

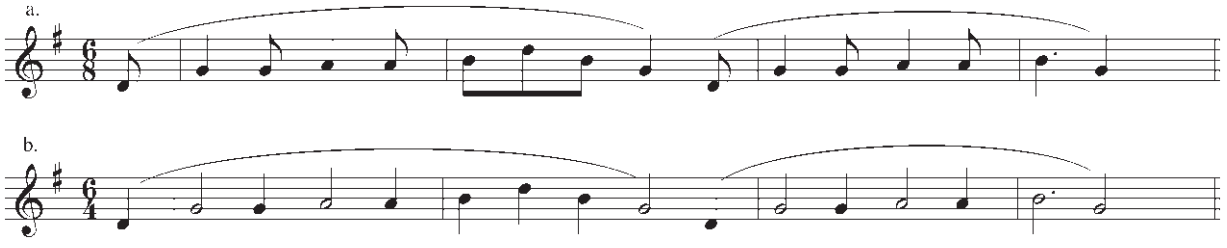
Determining whether a melody is in duple or triple meter and whether it is in simple or compound meter should not be much of a problem. This process basically entails counting the number of beats between downbeats (which we easily perceive as metrically accented beats) and checking whether the beat division is in two or three. After we have decided on these points, however, several possibilities arise. Take, for instance, the tune "Oh! Susanna." There seems to be no question that its meter is simple quadruple, as notated in Example B.6a. It is difficult, however, to distinguish between quadruple ($\frac{4}{4}$ or $\mathbf{c}$) and duple ($\frac{2}{4}$ or $\frac{2}{2}$) meters; in fact, that is often an arbitrary decision of the composer. Examples B.6b and c show two alternative notations for "Oh! Susanna," each of which is perfectly plausible. What is at issue in each of these versions is what value gets the beat and how long the measure is. Notice that we could also assign Example B.6c a $\frac{4}{8}$ meter signature without changing the notation in any other way.

The same notational ambiguities apply to compound meters. In Example B.7a we have chosen to notate "Pop Goes the Weasel" in $\frac{6}{8}$, that is, with a dotted quarter beat. The notation in Example B.7b, in $\frac{6}{4}$ (we have doubled the value of the beat, which now is a dotted half note), is also perfectly correct. These examples show the relativity of

Example B.6 Stephen Foster, "Oh! Susanna"



Example B.7 "Pop Goes the Weasel"



exact meter signatures. What matters mostly is to identify and represent correctly the fundamental metric parameters (duple or triple, simple or compound).

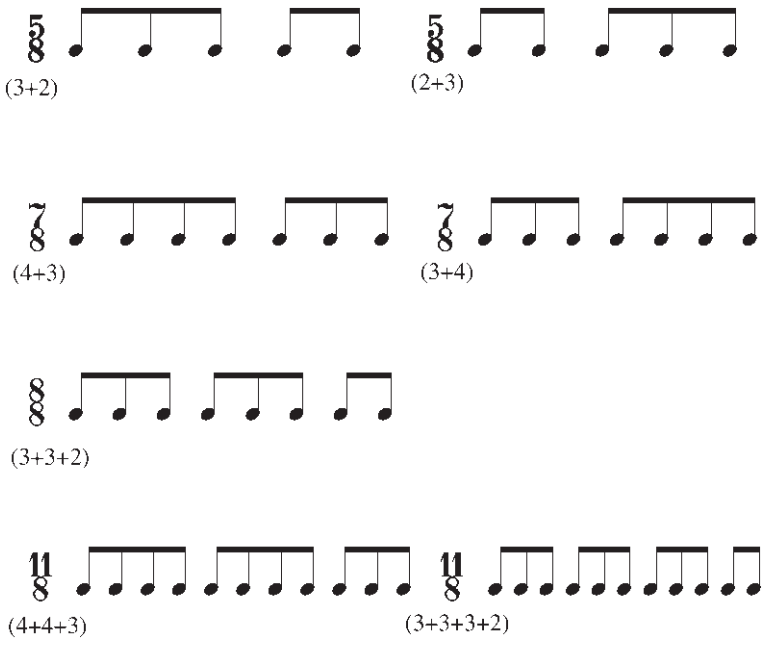
EXERCISE

To practice various possible metric notations for a melody, refer to Exercise 7 in Worksheet B at the end of this chapter.

ASYMMETRICAL METERS

All the meters we have discussed so far are **symmetrical** or **divisive.** We think of them in terms of their divisions, and the divisions form symmetrical patterns. A different type of meter, however, is **asymmetrical** or **additive.** When we think of $\frac{5}{8}$, for instance,

Example B.8

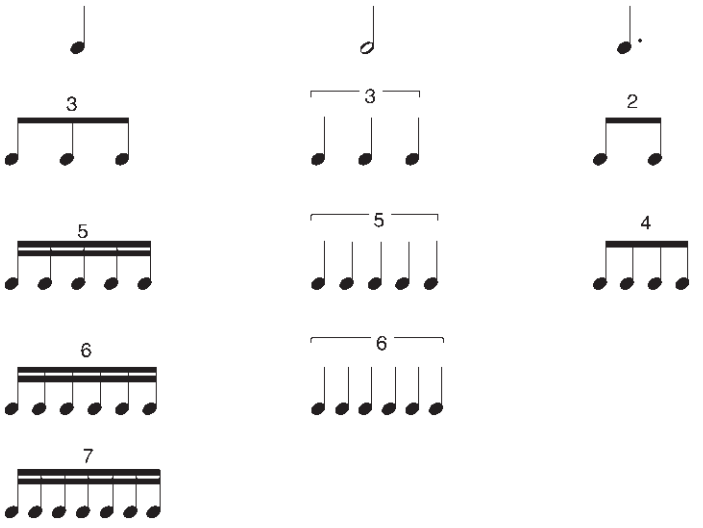


we usually think of two combined metric units (3 + 2 or 2 + 3) that form an asymmetrical metric structure. Similarly, $\frac{7}{8}$ and $\frac{11}{8}$ are asymmetrical meters. All these meters are conducted in unequal beats. $\frac{5}{8}$ is usually conducted in two (subdivided as 3 + 2 or 2 + 3). How would you conduct $\frac{7}{8}$ and $\frac{11}{8}$? Notice that $\frac{8}{8}$ (very much unlike $\frac{4}{4}$) is often an asymmetrical meter to be conducted in three: 3 + 3 + 2. Example B.8 shows some possible patterns with asymmetrical meters.

IRREGULAR DIVISIONS OF THE BEAT

Although the normal division of the beat in simple meters is into two or four parts, and the normal division of compound beats is into three or six parts, beats (or any note values) can also be divided irregularly. Thus, beats or notes that would normally be divided into multiples of two can also be divided into three parts (**triplets**), five parts (**quintuplets**), six parts (**sextuplets**), seven parts (**septuplets**), and so forth. Beats or notes that would normally be divided into multiples of three can also be divided into two parts (**duplets**), four parts (**quadruplets**), and so on. The notation of the most frequent irregular divisions of notes is shown in Example B.9.

Example B.9



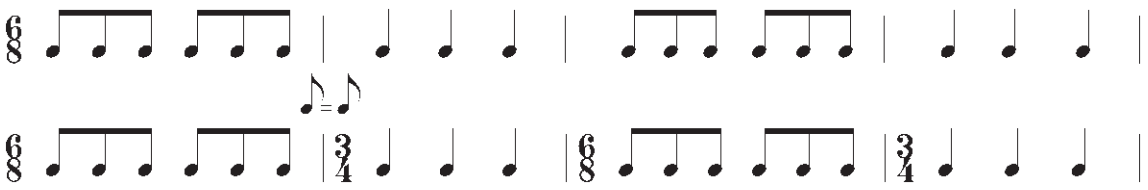
IRREGULAR RHYTHMIC AND METRIC RELATIONSHIPS

Meter and rhythm allow for numerous irregular relationships, which have often been used by composers to break the regularity of notated meter, metric divisions, and metric accents. We now discuss some of these possible irregularities.

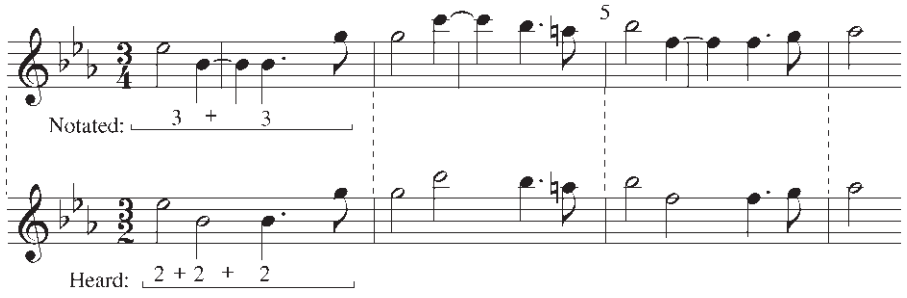
1. **Syncopation** is the rhythmic contradiction of a metrical pattern of strong and weak beats. This occurs when a metrically weak beat or beat division is emphasized by a rhythmic and/or dynamic accent (Example B.10a).
2. **Hemiola** consists in the juxtaposition of, or interplay between, three and two beats at the metric level. A usual hemiola pattern is based on the alternation of $\frac{6}{8}$ and $\frac{3}{4}$ (that is, alternating two and three beats, as in Leonard Bernstein's song "America,"

Example B.10a

Example B.10b



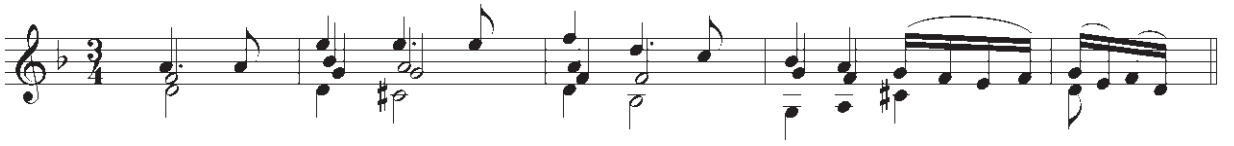
Example B.10c Robert Schumann, Symphony no. 3 in E♭M, I, mm. 1–7



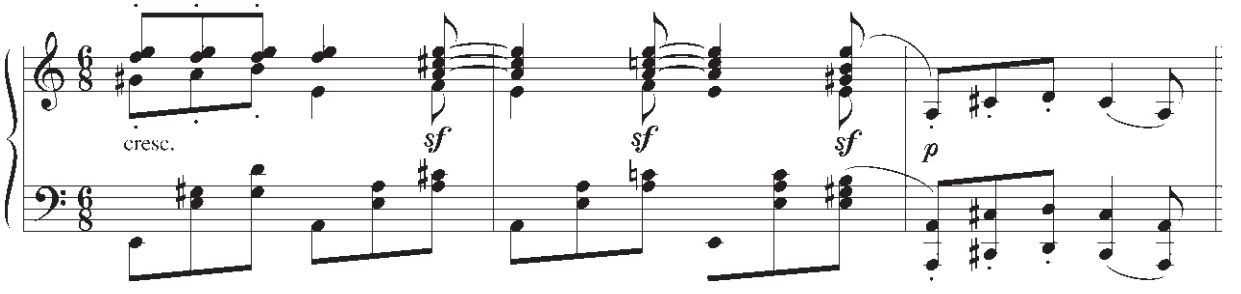
from *West Side Story*). In another type of hemiola, a sense of three $\frac{2}{4}$ measures (or of one $\frac{3}{2}$ measure) is created in the place of two $\frac{3}{4}$ measures. Both of these types of hemiola are illustrated in Examples B.10b and B.10c. In the Robert Schumann example, the notated meter suggests beats grouped in three, whereas the beat grouping we actually hear is in two.

3. Whereas metric accents create a recurring pattern of strong-weak beats, other types of accent may generate patterns that conflict with the underlying metric patterns. Accents that result from grouping, note length, a sense of harmonic or tonal arrival, and other nonmetrical factors are **rhythmic accents**. In the phrase from Bach's "Chaconne" reproduced in Example B.11a, we hear a rhythmic accent on beat 2 of a $\frac{3}{4}$ meter, produced by the longer note and the dotted rhythm pattern, both of which begin on beat 2. A rhythmic accent produced by the duration of a note (that is, by a note of longer duration) is called an **agogic accent**. As we saw

Example B.11a J. S. Bach, "Chaconne," from Partita no. 2 in Dm for Violin Solo, mm. 1–5



Example B.11b Johannes Brahms, Intermezzo in CM, op. 119, no. 3, mm. 23–25



on page 27, beat 2 in triple meter may be weak or strong, depending on the context. This example illustrates a case of a strong beat 2 in a $\frac{3}{4}$ meter, and the stress is produced by agogic accent.

4. In Example B.11b, on the other hand, Johannes Brahms explicitly requires an accent on the last eighth note of every beat by writing a *sforzando* mark (*sf*). An accent created by a dynamic mark is called a **dynamic accent**. Notice that syncopations are usually heard as accented notes. What kind of grouping does this syncopation/dynamic accent generate in the right hand, and how does it conflict with the metric grouping?

EXERCISES

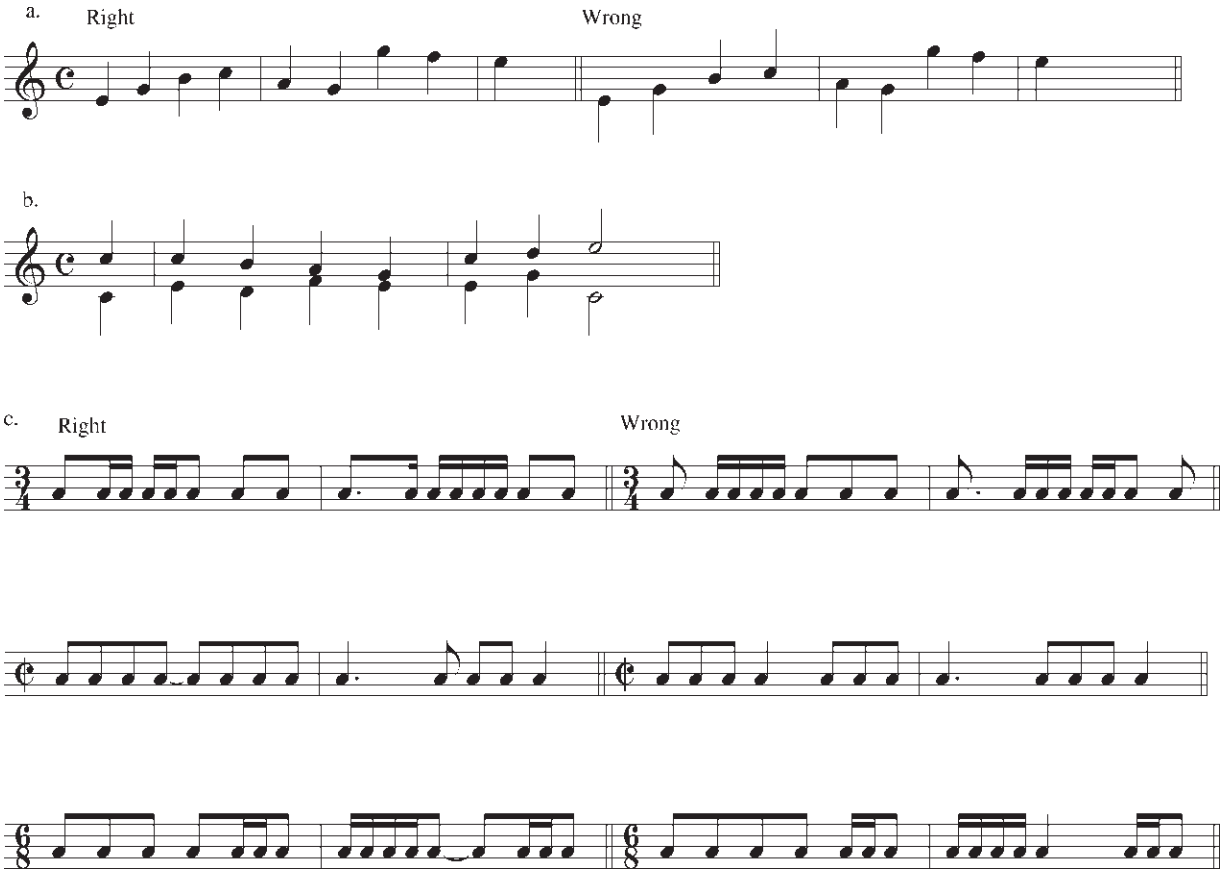
To practice identifying syncopations and hemiolas, refer to Exercise 8 in Worksheet B at the end of this chapter.

SOME NOTES ON THE CORRECT NOTATION OF RHYTHM

The following are some points that should be observed when copying rhythmic notation by hand.

1. If you are writing a single melodic line, stems should go up if the note is below the middle line and down if the note is above the middle line. If the note is on the middle line, the stem may go up or down, depending on the stems of adjacent notes (Example B.12a). All stems should be of equal length (spanning a length of three staff spaces, or four consecutive staff lines).
2. If you are writing two voices on the same staff, the stems for the upper voice will go up, and the stems for the lower voice will go down (Example B.12b).

Example B.12



3. Beams that connect groups of notes should reflect the standard metric grouping (the beats) for the meter of the passage, rather than obscuring it (Example B.12c).
4. In dotted notes that are on a line, dots are usually placed above the line (not *on* the line).
5. Meter signatures are written only at the beginning of a piece (unless there are meter changes). They should not be written again at the beginning of each staff.
6. The whole-note rest can be used to indicate a full measure of rest in any meter, even if the measure does not add up to four beats (for instance, in a $\frac{3}{4}$ measure).

EXERCISE

To practice renotating rhythms providing appropriate beamings, refer to Exercise 9 in Worksheet B at the end of this chapter.

ASSIGNMENT

For an assignment based on the materials learned in this chapter, refer to Chapter B in the workbook.

Terms for Review

Rhythm
Meter
Durational symbols: breve, whole, half, quarter, eighth, sixteenth, thirty-second, sixty-fourth notes
Notehead, stem, flag, beam
Rest
Dot
Double dot
Tie
Pulse
Beat
Tempo
Tempo markings
Simple meters
Compound meters
Measure
Bar line
Meter signatures (Time signatures)
Beat values
Duple meter
Triple meter
Quadruple meter
Common time
Cut time
Beats in compound meters
Metric accents
Strong and weak beats in all meters
Downbeat
Upbeat
Anacrusis
Anacrusic melodies
Symmetrical (divisive) meters
Asymmetrical (additive) meters
Irregular divisions of the beat
Irregular groups in simple meters: triplet, quintuplet, etc.
Irregular groups in compound meters: duplet, quadruplet, etc.
Syncopation
Hemiola
Rhythmic accent
Agogic accent
Dynamic accent