LISTENING TO WESTERN MUSIC

CRAIG WRIGHT

EIGHTH

LISTENING GUIDE INDEX

(Continued on inside back cover)

Listening to Western MUSIC

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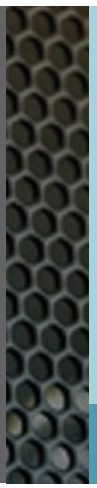

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For Clark Baxter—innovator, publisher, and valued friend

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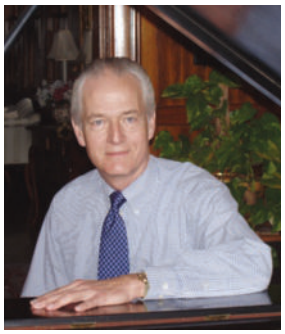
ABOUT THE AUTHOR



Craig M. Wright received his Bachelor of Music degree at the Eastman School of Music in 1966 and his Ph.D. in musicology from Harvard University in 1972. He began his teaching career at the University of Kentucky and for the past forty-three years has been teaching at Yale University, where he is currently the Henry L. and Lucy G. Moses Professor of Music. At Yale, Wright's courses include his perennially popular introductory course, Listening to Music (also part of the offerings of Open Yale Courses, which can be viewed on YouTube); his large lecture course, Exploring the Nature of Genius; and most recently, his Coursera course, Introduction to Classical Music, which has been viewed by nearly 70,000 learners worldwide. He is the author of numerous scholarly books and articles on composers ranging from Leoninus to Bach. Wright also has been the recipient of many awards, including a Guggenheim Fellowship, the Einstein and Kinkeldey Awards of the American Musicological Society, and the Dent Medal of the International Musicological Society. In 2004, he was awarded the honorary degree Doctor of Humane Letter from the University of Chicago. In 2010, he was elected a member of the American Academy of Arts and Sciences, joining fellow inductee banjo player Steve Martin.

In addition to *Listening to Music* and *Listening to Western Music*, Wright has also published *The Essential Listening to Music*, Second Edition (Cengage Learning, 2016); *Listening to Music*, Chinese Edition (Schirmer Cengage Learning/Three Union Press, 2012), translated and simplified by Professors Li Xiujung (China Conservatory, Beijing) and Yu Zhigang (Central Conservatory, Beijing), both of whom worked with Wright at Yale; and *Music in Western Civilization*, *Media Update* (Schirmer Cengage Learning, 2010), with coauthor Bryan Simms. He is currently at work on a volume titled *Mozart's Brain: Exploring the Nature of Genius*.

PREFACE

Listening to music isn't just the title of this book. It is a sincere wish that all persons on this planet come to experience the joy and expressive power of classical music, and make it part of their lives. Now it is possible to do so through this book.

Most music appreciation textbooks treat music, not as an opportunity for personal engagement through listening, but as a history of music. Students are required to learn something of the technical workings of music (what a tonic chord is, for example) and specific facts (how many symphonies Beethoven wrote), but they are not asked to become personally engaged in the act of listening to music. What listening there is, is passive, not active. *Listening to Western Music*, Eighth Edition, however, is different. Here, students are encouraged—indeed, required—to become active participants in a musical dialogue through a variety of means both within the covers of this book and beyond them. Online technology now makes this possible.

Indeed, whether your musical education occurs in a traditional classroom or online, technology drives the need for newer editions, including this one. Today, instructors are not as "textbook dependent" as they were five to ten years ago. The Internet has made possible instant access to a wealth of media that can enhance students' interest by making the musical experience immediate and relevant to their world. Textbooks themselves are increasingly becoming hybrids—a combination book and media center. The book also can be experienced entirely online, with links to a wealth of electronic resources embedded therein. The job of the textbook today is to assure not only that students have access to these resources but also that the almost limitless number of audio and video tracks and clips available globally have been reduced to a manageable number of the very best. Finally, the textbook of today must not only inform and link students to the outside world but also be educationally creative.

Video games, animations, and exercises of all sorts are the newest modes of educational engagement in the twenty-first century. Instead of viewing these electronic experiences as unwanted distractions, *Listening to Western Music*, Eighth Edition, has embraced them. Many new drills, games, and animations are built into the MindTap platform that accompanies the book. In every way, this new edition of *Listening to Western Music* is written for the digital age. Its aim is to take what is essentially a past culture (Western classical music) and present it in the mode of delivery of today and tomorrow. Only in this way will students come to see that this past culture is relevant to their current existence; only in this way will students be engaged—indeed, inspired—to learn.

MindTap: An Online Companion

When *Listening to Music* was first under development some thirty years ago, the publisher considered issuing the recordings on vinyl but, instead, dared move to a revolutionary new development: magnetic tape. Thereafter came CDs, now

streaming music and downloads. Similarly, some dozen years ago, the publisher and I created an online platform as a necessary companion to the book. Now entitled MindTap, it has grown into an engaging, personalized online environment, accessible on laptops, tablets, and hand-held devices. With relevant assignments that guide students to analyze, apply, and improve their thinking, MindTap also allows instructors to measure skills and outcomes, and record the results, with ease.

A Core Repertoire

What pieces of music are essential for students studying Western music? While we may all debate what should comprise the "canon" of Western music, *Listening to Western Music*, Eighth Edition, presents a cohort of pieces that many instructors would eagerly adopt. In fact, it is built on the opinions of many music appreciation instructors and on what is now my own nearly fifty years of teaching music appreciation at the college level. Thus, the compositions presented and discussed here are not only the staples of the concert hall today but also pieces that work in the classroom. Through them, the instructor can present all of the genres, processes, and historical changes that have appeared in Western art music during the last millennium.

New to This Edition

Although its goals have not changed, this edition of *Listening to Western Music* incorporates several improvements:

- The full integration of the text pedagogy with MindTap, to provide high-value, gradable activities (Listening Exercises, now for most pieces discussed in the textbook; Chapter Quizzes by Timothy J. Roden of Ohio Wesleyan University; and Critical Thinking Quizzes by James D. Siddons of Liberty University), as well as opportunities to engage with the content and practice what has been learned.
- The points on the MindTap learning path are, wherever appropriate, cued in the text to remind users to take advantage of its rich resources.
  - **NEW** learning objectives preview each chapter's core concepts for students.
  - **NEW** YouTube videos, as well as animations by Stephen Malinowski, of Music Animation Machine, serve as chapter-opening engagement activities, which are compatible with class discussion boards.
  - **NEW** Critical Thinking Quizzes that appear in each chapter challenge and sometimes call on students to apply information from previous chapters to the chapter at hand.
  - Additional practice is available, including videos and an Active Listening Guide for each musical selection.
  - **NEW** instant audio is only a click away for most notated examples in the book.
  - **More than 20 NEW** Listening Exercises provide in-depth quizzes on even more individual selections.

- Thirteen musical works are **NEW** to this Eighth Edition, spanning eras from Classical to Postmodernist.
- Chapter 4 now includes a discussion of the *Dies irae*, which will return again and again in later chapters.
- In Chapter 5, the *Kyrie* from Palestrina's *Missa Papae Marcelli* replaces its *Gloria* and *Agnus Dei*.
- Chapter 6 now includes the Prologue to Monteverdi's *Orfeo* as an example of early opera recitative.
- Chapter 8 now covers the second movement of Bach's *Wachet auf, ruft uns die Stimme:* "Er kommt."
- Chapter 9 adds "Behold, a Virgin shall conceive" and "O thou that tellest good tidings to Zion" to the sections of Handel's *Messiah*.
- Chapter 11 discusses Mozart's Piano Concerto in C major, accompanied by a Murray Perahia recording.
- Robert Schumann's "Träumerei" from *Kinderszenen* and Franz Liszt's "Un sospiro" now grace Chapter 19 with more accessible selections.
- Chapter 23 includes a more accessible Mahler selection: Symphony No. 1's third movement, "Funeral March."
- Chapter 26 now includes the "saddest piece ever written"—Barber's Adagio for Strings—and returns Ellen Taaffe Zwilich's *Concerto Grosso 1985* to the text.
- Chapter 27 includes "Passacaglia" by young Pulitzer Prize winner Caroline Shaw, as well as a unique bonus capstone activity, calling for students to apply what they have learned to prepare their own Listening Guide for the fifth movement (*Amhrán*) of Christopher Rouse's Flute Concerto.
- There are now five fewer chapters overall, enabling instructors to cover more of the text in class.

Pedagogical Aids

Listening Exercises

Listening to Music was the first music appreciation text on the market to include detailed Listening Exercises. Now online in MindTap, Listening Exercises can be graded electronically and results can be automatically stored in an instructor's gradebook. By means of these, students will embrace hundreds of specific passages of music and make critical decisions about them. The exercises begin by developing basic listening skills: recognizing rhythmic patterns, distinguishing major keys from minor keys, and differentiating various kinds of textures. Students then move on to entire pieces in which they are required to become participants in an artistic exchange, the composer communicating with the listener, and the listener reacting over a span of time. Ultimately, equipped with these newly developed listening skills, students will move comfortably to the concert hall, listening to classical and popular music with greater confidence and enjoyment. To be sure, this book is for the present course, but its aim—like any good educational experience—is to prepare students for a lifetime of learning, in this case, of musical listening and enjoyment. Text cues highlight the availability of online Listening Exercises.

Listening Guides

Listening Guides continue to contain such key information as genre and form, a concise suggestion of "What to Listen For," and MindTap cues to interactive streaming music, Active Listening Guides, Listening Exercises, and sometimes a video.

Chapter 27 includes a unique capstone activity, in which students are challenged to create their own Listening Guide after being given very little information about Christopher Rouse's moving Flute Concerto, fifth movement. Rather than step through the usual timed annotations, its Active Listening Guide works with students to tease out an understanding of the piece.

Ancillaries for Students

Streaming and Downloads

All of the musical content discussed in the book, printed on the inside covers, is available streaming in MindTap and as free downloads, accessible via the Music Download Card that is packaged with each copy of the textbook.

Active Listening Guides

The Active Listening Guides in MindTap contain full-color interactive and streaming listening guides for every selection, along with listening quizzes and background information.

Other MindTap Features

MindTap offers several creative and challenging features, including a timed "drop-the-needle" trivia game that provides more practice identifying music,; flash cards, ReadSpeaker, and opportunities for instructors to add their own teaching materials to the learning path.

In addition, MindTap contains numerous YouTube videos; video demonstrations of keyboard instruments; eighteen iAudio podcasts on difficult musical concepts; a checklist of musical styles with integrated musical style comparisons; musical elements, genres, and forms tutorials; an online discussion of writing concert reports; and grade management for instructors.

Students may access MindTap using a passcode either bundled with their text or purchased online at www.cengagebrain.com.

For Instructors: Instructor's Companion Site

Accompanying *Listening to Western Music*, Eighth Edition, is an Instructor Companion Website where you will find an *Instructor's Resource Manual*, Cengage Learning Testing Powered by Cognero®, and Microsoft® PowerPoint® presentations.

The extensive ***Instructor's Resource Manual***, written by Timothy J. Roden of Ohio Wesleyan University, supplements the textbook.

Cengage Learning Testing Powered by Cognero® is a flexible, cloud-based system that allows you to

- Author, edit, and manage test bank content from multiple Cengage Learning products.
- Create multiple test versions in an instant.
- Deliver tests from your LMS, your classroom, or wherever you prefer.

The **Microsoft® PowerPoint® presentations**, created for this edition by Vicki Curry of James Madison University, are predesigned for use with the book. They include full-color images, music clips, and web links, and they are fully customizable.

Acknowledgments

I am especially indebted to the following reviewers, who provided invaluable in-depth feedback on both the text and MindTap:

Michael Adduci, San Jose State University
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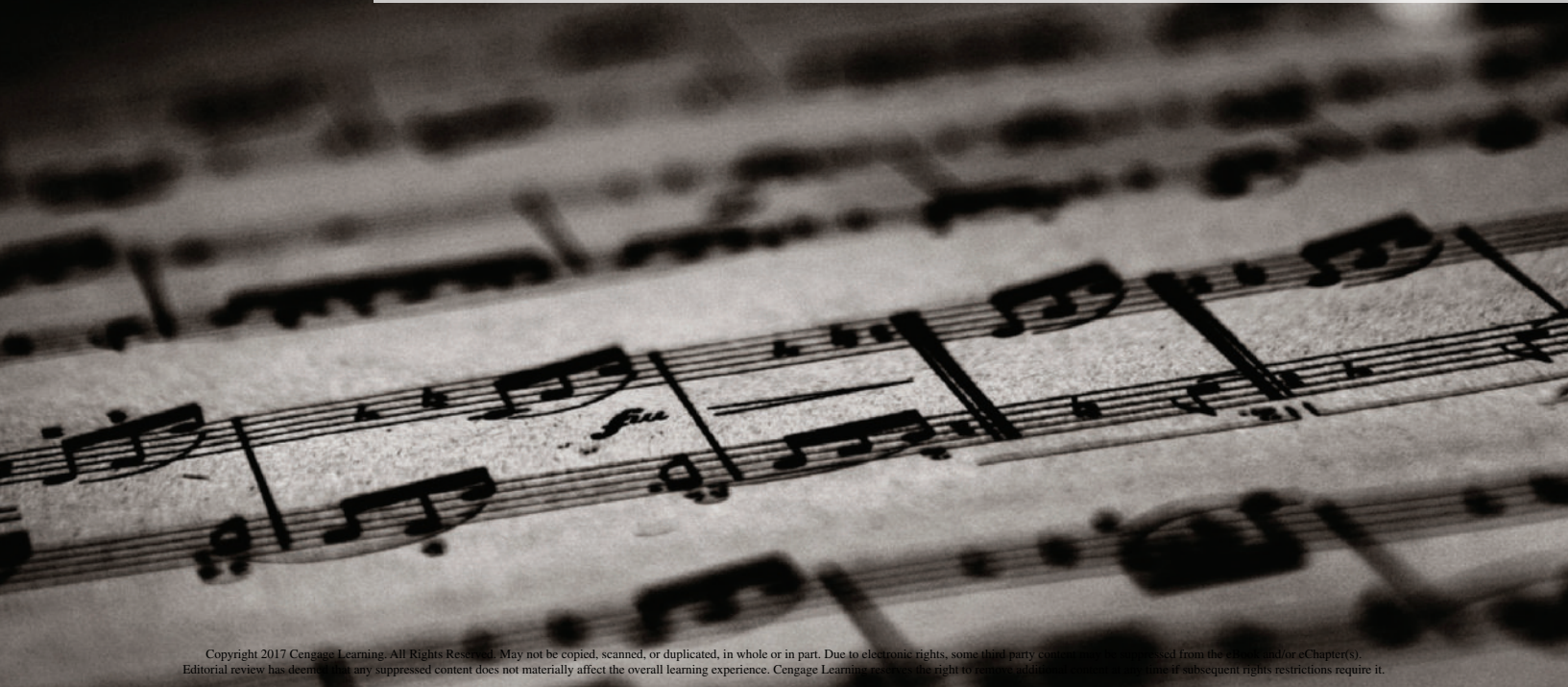
I have also benefited from the help and good will of the staff of the Yale Music Library, as well as James Park, also at Yale, who accuracy-checked and developed many of the materials that appear in MindTap. Professor Timothy Roden (Ohio Wesleyan University), the author of much of the web material, the *Instructor's Manual*, and the Test Bank, has corrected errors and saved me from myself on numerous occasions.

As always, it has been a privilege to work with publisher Clark Baxter and his successor, product manager Sharon Poore, as well as with the experienced team at Cengage Learning—Liz Newell, Erika Hayden, Rachael Bailey, Brian Giordano, Chad Kirchner, Jillian Borden, Lianne Ames, Andrea Archer, and Angela Urquhart—and especially Tom Laskey at SONY, who has provided valuable advice on recordings and has helped usher this book into the era of downloads. Behind the scenes for more than fifteen years has been Sue Gleason Wade, the shining yet silent star around whom all of these *Listening to Music* projects revolve. My heartiest thanks to all of you!

Craig Wright
Yale University

part ONE

Introduction to LISTENING



CHAPTER 1

The Power of MUSIC

START… experiencing this chapter's topics with an online video activity.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Describe how we perceive music.
2. Compare popular and classical music.
3. Know the primary genres (types) and venues (places) of classical music.
4. Consider in what ways music is a "language" of its own.
5. Recognize where and how to listen to music.
6. Test the capacity of classical music to move you by exploring two of its most famous examples.

READ... the complete chapter text in a rich, interactive online platform.

Why do we listen to music? Does it keep us in touch with the latest musical trends, help get us through our morning exercise, or relax us in the evening? Each day almost everyone in the industrialized world listens to music, whether intentionally or not. The global expenditure for commercial music is about $40 billion annually, if we include ticket sales, concert merchandise, and website advertising. Whereas in earlier centuries a music lover needed to seek out a concert or other live performance, now almost everyone can listen to music from a smartphone. Do you have an "app" for ballet or painting? Likely not. But probably you have one or more for music—iTunes, Spotify, Shazam, and Pandora among them. Turn on the radio, and what do we hear: drama or poetry? No, usually just music; the radio is basically a transmission tool for music. Whether we get it from FM radio waves or shorter electromagnetic waves carrying digital information, we choose to let music penetrate our lives.

But why is music so appealing? What is its attraction? Does it perpetuate the human species? Does it shelter us from the elements? No. Does it keep us warm? Not unless we dance. Is music some sort of drug or aphrodisiac?

Oddly, yes. Neuroscientists at Harvard University have done studies that show that, when we listen to music, we engage processes in the brain that are "active in other euphoria inducing stimuli such as food, sex, and drugs of abuse."[1] These same researchers have explained the neural processes through which listening to particular pieces of music can give us goose bumps. There is a chemical change in the human brain, as blood flow increases in some parts and decreases in others. In this way, music can lower the heart rate and reduce levels of stress. Although listening to music today may or may not be necessary for survival, it does alter our chemical composition and our mental state. It is pleasurable and rewarding, as well as therapeutic.

It is also powerful—yet mysterious. Here's a riddle: "You can't see it; you can't touch it. But it can touch you; it can make you cry or lift you up and out of your seat." What is it? Music, of course! Indeed, music has an inspirational power. Think of a religious service, or a wedding or funeral, or a parade or commencement, without music. Think of the four-note "rally" motive played at professional sports events to get the crowd energized. Think of the refined sounds of Mozart in a commercial that is intended to convince us to buy an expensive watch. Plato (*The Republic*) once said what advertisers practice today: "To control the people, control the music."

Sound perception is, in fact, the most powerful sense we possess, likely because it *was* once essential to our survival—who is coming and from where? Friend or foe? Flight or fight? We get frightened at horror films, not when the images on the screen become vivid, but when the music starts to turn ominous. In short, sounds rationally organized in a pleasing or frightening way—music—profoundly affect how we feel and behave.

Music, the Ear, and the Brain

Briefly defined, **music** is the rational organization of sounds and silences passing through time. Tones must be arranged in some consistent, logical, and (usually) pleasing way before we can call these sounds "music" instead of "noise."

[1]Anne Blood and Robert Zatorre, "Intensely Pleasurable Responses to Music Correlate with Activity in Brain Regions Implicated in Reward and Emotion," *Proceedings of the National Academy of Sciences,* Vol. 98, No. 20 (Sept. 25, 2001), pp. 11818–11823.

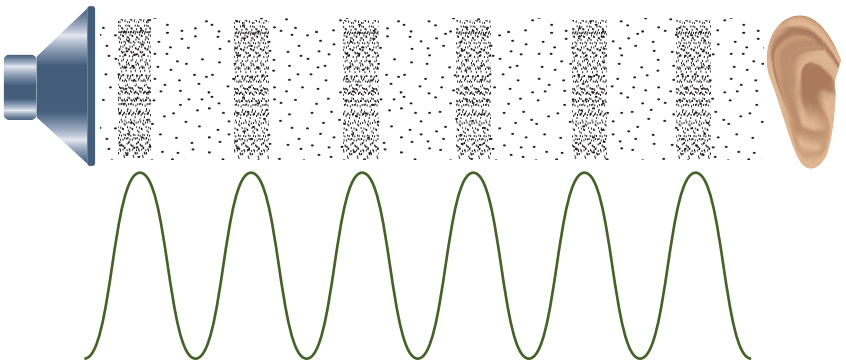


FIGURE 1.1
A representation of air molecules showing six vibrations of a single cycle of a sound wave. The more dots, the more compact the molecules. For the musical pitch middle C on the piano, such a cycle repeats 256 times per second—the strings on the piano are vibrating that quickly.

Like all sound, music is a disturbance of the atmosphere, one that creates **sound waves**, vibrations that reflect differences in air pressure. But music is special: Its sound waves come in regular patterns. Air molecules are compressed and expanded in consistently recurring cycles (Figure 1.1). And they repeat with shocking speed. When we play the pitch called middle C on the piano, a string vibrates (compressing and decompressing air molecules) 256 times per second; for the pitch A above it, this happens 440 times per second. The speed of the vibration determines what we perceive as high and low pitches. The faster the vibration the higher the pitch.

When we hear music, sound waves make their way from our outer to our inner ear, where they are transformed into electrochemical impulses (Figure 1.2). Here the "central processor" is a small organ called the **basilar membrane**, which recognizes sound patterns by frequency and sends the information, via the auditory nerve, to the brainstem and from there to the brain itself.

Given all of the love songs in the world, we might think that music is an affair of the heart. But both love and music are domains of a far more complex vital organ: the brain (Figure 1.3). When sound-stimulated impulses reach the brain, neurons go to work analyzing them for pitch, color, loudness, duration, and direction of source, among other things. Most processing of sound (music as well as language)

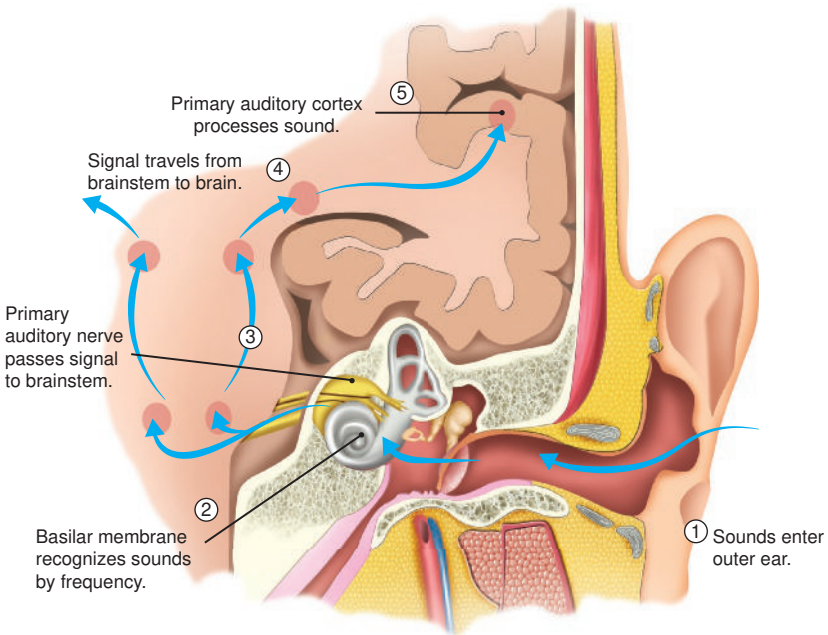


FIGURE 1.2
Sounds travel from (1) the outer ear to the inner ear, where sound waves are converted into electrochemical impulses in (2) the basilar membrane. The (3) primary auditory nerve transmits the signal to the (4) brainstem and, finally, to (5) the auditory cortex.

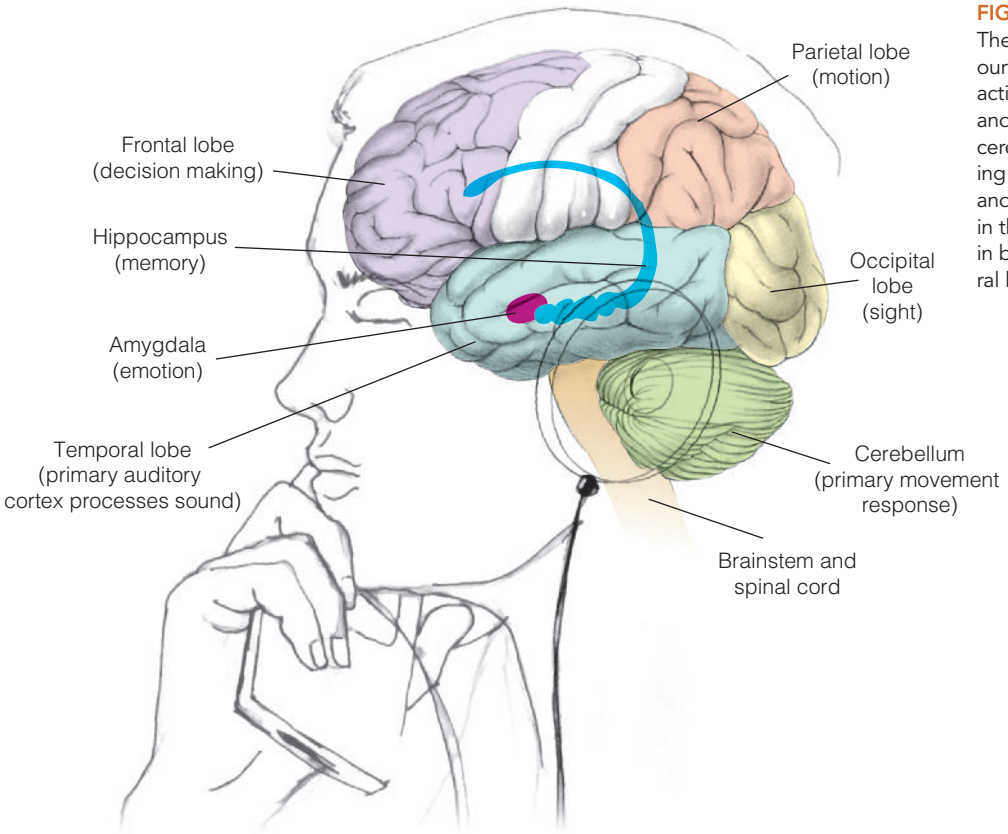


FIGURE 1.3
The processing of music in our brain is a hugely complex activity involving many areas and associated links. The first cerebral recognition and sorting of sounds, both musical and linguistic, occurs largely in the primary auditory cortex in both left and right temporal lobes.

takes place in the **primary auditory cortex** of the temporal lobe. If we are imagining how the next line of a song will go, that decision is usually reached in the frontal lobe. If we are playing an instrument, we engage the motor cortex (parietal lobe) to move our fingers and tap our foot, and the visual center (occipital lobe) to read the notes. That takes care of musical cognition, but what about emotion?

How do we *feel* about the music we hear? What creates those inner, private emotions we all experience? Emotions are generated mostly by a subregion of the brain called the **limbic system**, especially in a small area named the **amygdala**. As the music proceeds, the limbic system stores feelings as memories and constantly updates the information it receives, hundreds of times per second. At a speed of more than 250 miles per hour, associative neurons integrate all the data into a single perception of the sound. The chemical composition of our brain is altered, causing us to feel sad, to relax, or, if the impulses come strongly at regular intervals, to get up and dance.

In sum, the process of listening to music involves a continuum moving from instrument, or voice, to sound wave, to ear, to brain, and, finally, to our body and limbs as we start to clap, sing along, or dance with joy.

WATCH... a YouTube video on music and the brain, online.

Our Musical Template: Why We Like What We Like

What's your favorite piece of music—your favorite song or symphony? What types of music do you like? That depends on who you are and on the kind of musical template you have in your head. A **musical template** is simply a set of musical

expectations that each of us engages as we listen to a piece; it reminds us how we think the music ought to go, what sounds good, and what sounds bad. But how do we come by our musical template? Like most aspects of our personality, we derive it partly through nature and partly through nurture.

Natural components of our musical template include an awareness of consonant and dissonant sounds. Our sensitivity to a strong beat is another natural element, for it results from the evolution of the human brain. All people around the world have more or less the same response to consonance and dissonance, and all people respond to a regular beat.

Not all people, however, have the same expectations of how a melody should go or how a harmony should sound. These preferences are determined by where we were born and where we live, even what we heard in the womb. Each of us gradually assimilates the musical environment around us. A person reared in Beijing, China, likely will expect a melody to slide through pitches along a five-note scale; someone from Mumbai, India, likely is more comfortable listening to the sounds of the sitar playing a six-pitch scale; someone from Nashville, Tennessee, in the United States, would expect a guitar to accompany a voice singing, rather precisely, within a seven-pitch major or minor scale. Thus, the "nurture" element in music is a gradual process of musical acculturation, which happens most intensely during the impressionable adolescent years. One of the aims of this book is to alter your musical template so that you will become familiar and comfortable with the sounds, not only of pop music, but also of classical music, and eager to embrace more.

Listening to Whose Music?

Today, most of the music that we hear isn't "live" music, but recorded sound. Sound recording began in the 1870s with Thomas Edison's phonograph machine, which first played metal cylinders and then vinyl disks, or "records." During the 1930s, magnetic tape recorders appeared and grew in popularity until the early 1990s, when they were superseded by a new technology, digital recording. In digital recording, all the components of musical sound—pitch, tone, duration, volume, and more—are analyzed thousands of times per second, and that information is stored on compact discs (CDs) or in computers as sequences of binary numbers. When it is time to play the music, these digital data are reconverted to electrical impulses that are amplified and pushed through speakers, headphones, or earbuds, as sound waves, to our ears. The process of listening has begun.

Today, most music is no longer sold as a commodity you can see or hold—as sheet music, a vinyl recording, or a CD. Rather, it sits out there in electronic space, stored somewhere on a "cloud." When we want to listen, we download or, more often, stream the music as MP3 or M4A files. While the audio quality is not as good as "live" acoustic sound, surely the trade off has been worth it. What had been an expensive experience for a lucky few (listening to live music at a concert) can now be enjoyed by almost anyone, anywhere, any time. This holds true for popular and classical music alike.

Popular or Classical?

Popular music is rightly named—it's an easily assimilated music that most people want to hear. Downloads and streams of pop outsell those of classical by more than twenty to one. But why are so many people, and young people in particular,

attracted to popular music? Two immediate answers: the power of the beat (see below and Chapter 2) and the message of the lyrics.

Classical music, too, can be a powerful force. Hearing the huge, majestic sound of a mass of acoustic instruments—a symphony orchestra—can be an overwhelming experience. Classical music is often regarded as "old" music, written by "dead white men." But this isn't entirely true: No small amount of it has been written by women, and many composers of both sexes are very much alive and well today. In truth, however, much of the classical music that we hear—the music of Bach, Beethoven, and Brahms, for example—*is* old. That is why, in part, it is called "classical." In the same vein, we refer to clothes, furniture, and cars as "classics" because they have timeless qualities of expression, proportion, and balance. Broadly defined, **classical music** is the traditional music of any culture, usually requiring long years of training; it is "high art" or "learned," timeless music that is enjoyed generation after generation.

FIGURE 1.4
What helps make popular music popular? No previous experience is required! Classical music, on the other hand, necessitates years of training on an instrument and knowledge of often-complicated music theory. Some musicians are equally at home in the worlds of popular and classical music. Juilliard School of Music–trained Wynton Marsalis can record an album of New Orleans–style jazz one week and a Baroque trumpet concerto the next. He has won nine Grammy awards—seven for various jazz categories and two for classical albums.

Popular and Classical Music Compared

Today, Western classical music is taught in conservatories around the world, from Paris to Beijing to Singapore. Western pop music enjoys even greater favor; in many places, Western pop music has replaced local pop traditions, so that all that remains are the local lyrics sung in the native tongue. But what are the essential differences between the music we call popular and the music we call classical (Figure 1.4)? Cutting to the quick, here are six ways in which they differ:

- Popular music often uses electric enhancements (via electric guitars, synthesizers, and so on) to amplify and transform vocal and instrumental sounds. Much of classical music uses **acoustic instruments** that produce sounds naturally.
- Popular music is primarily vocal, involving **lyrics** (accompanying text that tells listeners what the music is about and suggests how they should feel). Classical music is more often purely instrumental, performed on a piano or by a symphony orchestra, for example, and it employs its own language of pure sound to express meaning to the listener.
- Popular songs tend to be short and involve exact repetition, which makes them catchy and memorable. Classical compositions can be long, sometimes thirty to forty minutes in duration, and most repetitions are varied in some way.
- Popular music is performed by memory, not from a written score (have you ever seen music stands at a rock concert?), and each performer can interpret the work as he or she sees fit (hence the proliferation of "cover songs"). Classical music, even if played by memory, is initially generated from a written score, and there is typically one commonly accepted mode of interpretation—the piece exists, almost frozen in time, as a work of art.
- Popular music we associate with the performer who made it famous. Classical music we remember by the composer who created it.
- Finally, popular music has a strong beat that makes us want to move in sync with it. Classical music often subordinates the beat in favor of melody and harmony.

This last point is important: Music with a regularly recurring beat has a powerful effect on our psyche, causing us to dance or motivating us to exercise. Cognitive neuroscientists have yet to fully explain the power of the beat. They suggest, however, that sounds with forcefully recurring patterns are processed in the "time-measuring" neurons of the cerebellum, one of the earliest parts of the brain to develop during human evolution. These neurons connect with motor neurons, causing us to move, a physical response to the regularly recurring stimulation of the beat. That explains how a great deal of pop music, especially dance music, "works." But what about classical music?

How Does Classical Music Work?

Explaining how classical music works requires an entire book—this one. But some preliminary observations are in order.

Genres and Venues of Classical Music

Genre in musical terminology is simply a word for "type of music." Needless to say, there are almost endless types of popular music: rap, hip-hop, blues, R&B, country, EDM (electronic dance music), and Broadway show tunes among them. **Venue** is merely a fancy word for place. Genre and venue are interrelated (Table 1.1). The place where we go to hear music determines the type of music we hear. If we go to a bar, we will likely hear a blues or rock band, and there will be room for dancing, or at least swaying. If we go to a chamber music hall, we may hear one of several musical genres—perhaps a string quartet or a piano sonata—and no one will move very much.

The venues for classical music are of three main types: opera houses and theaters for opera and ballet; concert halls for symphony orchestras; and chamber halls for smaller, solo ensembles. Opera houses and theaters are large, often public, venues providing a home for entertainment besides opera and ballet. Concert halls are also large, accommodating 2,000 to 3,000 listeners, and tend to be "music only"; excellent examples include the Disney Center in Los Angeles, the Schermerhorn Symphony Center in Nashville (Figure 1.6), and the famous Carnegie Hall in New York. Chamber or recital halls, for solo performing groups, are smaller, accommodating perhaps 200 to 700 lovers of classical music (Figure 1.5).

Finally, genre and venue determine how we dress and behave—social convention has made it so. A fan goes to hear Kanye West at the River Rock Casino in Las Vegas dressed casually, ready to dance and make a lot of noise. Yet that same person would likely attend a concert of the Boston Symphony Orchestra in Symphony Hall attired in suit and tie; any "fan" noise would only distract the orchestra. In sum, venue dictates genre and comportment: Where we go determines what we hear, what we wear, and how we behave.

TABLE 1.1 Venues for Classical Music with Typical Genres

Opera Houses and Theaters	Concert Halls	Chamber Halls
Opera	Symphony	Art song
Ballet	Concerto	String quartet
	Oratorio	Piano sonata

FIGURE 1.5
Some concerts require a large hall that can seat 2,000 to 3,000 listeners (such as the Schermerhorn Symphony Center in Nashville, Tennessee, shown in Figure 1.6). For other performances, a smaller venue with 200 to 700 seats is more appropriate, as we see here in the Hatch Recital Hall at the Eastman School of Music in Rochester, NY, which has exactly 222 seats for listeners.

The Language of Classical Music

Communication involves sending a message that generates a response. If a friend rushed up to you and said, "Your dog was just run over by a truck," you'd probably react with shock and profound sadness. In this case, a verbal language conveys meaning and elicits an emotional reaction.

But music, too, is a means of communication, one older than spoken language. Spoken language, many evolutionary biologists tell us, is simply a specialized subset of music. Over the centuries, composers of classical music have created a language that also can convey shock and sadness. This language of music is a collection of audible gestures that express the world of feelings and sensations in ways that words cannot. The Romantic composer Gustav Mahler said it best when he wrote, "If a composer could say what he had to say in words, he would not bother trying to say it in music."

Music lessons are not required to understand the language of music; we have been passively assimilating it since birth, each of us forming our musical template. We intuit, for example, that music that gets faster and rises in pitch communicates growing excitement, because we have heard these gestures frequently, as in "chase scenes" in films and on TV. Another piece might sound like a funeral march. But why? Because the composer is communicating this to us by using a slow *tempo*, low *tessitura*, regular *beat*, and *minor key*. Understanding musical terms such as these will allow us to simplify complex issues of perception and emotion, and thereby penetrate to the heart of the seemingly mysterious nature of music.

WATCH... YouTube videos comparing pop and classical music, online.

Where and How to Listen

All of the music discussed in this book is available streaming in MindTap and for downloading via a special access card packaged with each new book. For each piece, an Active Listening Guide can be found in MindTap that will lead you second by second, minute by minute, through the work. Finally, frequent Listening

Exercises in MindTap will test and reinforce what you have learned. You can play all of this music—about 100 pieces—on your computer or tablet, taking it with you wherever you go.

That's the good news. The bad news is that with ease of accessibility and mobility comes a decline in audio quality. The quality of sound available from MP3 and M4A formats is not as good as when the digital information was placed on and played from a CD; it has been compressed and many small details eliminated. Similarly, the means of projection is less sharp on a computer than it was back when quality audio (bigger files) was heard on large, stereophonic speakers. Consequently, when listening from a device such as a computer or a tablet, separate plug-in speakers or quality headphones are a necessity. They will greatly enhance your enjoyment—and improve your performance on the Listening Exercises.

Ironically, having so much great music at our fingertips has created a problem: organization. With hundreds of pop and classical pieces on a device, separate categories are a necessity. Create playlists by musical genre and be sure to have at least one for classical music, arranging the music by composer. But be careful. Most of the classical pieces that you will buy, despite what iTunes says, will not be "songs." Songs have lyrics, and a great deal of classical music, as mentioned, is purely instrumental: instrumental symphonies, sonatas, concertos, and the like.

Finally, performances of all the pieces discussed in this book can be found on YouTube. Watching the performers of a symphony orchestra offers an advantage: The listener gains familiarity with the sounds of the various instruments by associating a particular sound with a visual image. Visual listening also humanizes the experience; the viewer can witness the performer struggle with and (usually) overcome seemingly impossible technical challenges. The skill of the performers on YouTube varies enormously, from rank amateur to gifted professional. For the classical repertoire, seek big-name artists (Luciano Pavarotti and Renée Fleming among them) and top-of-the-line orchestras (the New York Philharmonic or the Chicago Symphony Orchestra, for example).

Live in Concert

Pop megastars now make more money from live concerts than they do from recording royalties, and so, too, with classical musicians. Indeed, for classical musicians and listeners alike, there is nothing better than a live performance. First, there is the emotional impact of bonding with the artist(s) on stage. Second and equally important, the sound will be magnificent because it is pure, usually acoustic, music.

Compared to pop or rock concerts, however, performances of classical music (Figures 1.5 and 1.6) can be rather staid affairs. For one thing, people dress "up," not "down." For another, throughout the event, the classical audience sits quietly, saying nothing to friends or to the performers on stage. No one sways, dances, or sings along to the music. Only at the end of each composition does the audience express itself, clapping respectfully.

But classical concerts weren't always so formal. In fact, they were at one time more like professional wrestling matches. In the eighteenth century, for example, the audience talked during performances and yelled words of encouragement to the players. Dogs wandered about, as vendors sold pitchers of wine. The audience clapped at the end of each movement of a symphony and often in the middle of the movement as well. After an exceptionally pleasing performance, listeners

FIGURE 1.6
Schermerhorn Symphony Center, Nashville, Tennessee. Constructed between 2003 and 2006 at a cost of $123 million, the 2,000-seat auditorium is home to the Nashville Symphony as well as concerts of pop, cabaret, choral, jazz, and blues music. If that isn't enough for music lovers visiting Nashville, right across the street is the Country Music Hall of Fame.

would demand that the piece be repeated immediately in an **encore**. If, on the other hand, the audience didn't like what it heard, it might express its displeasure by throwing fruit and other debris at the stage. Our more dignified modern classical concert was a creation of the nineteenth century, when musical compositions came to be considered works of high art worthy of reverential silence.

Thinking and Writing about Music: The Concert Report

Whether you are a student taking a course that requires you to attend a concert or a lifelong learner just going for pleasure, you may benefit from the author's "Insider's Guide to Writing a Concert Report." In this guide, you will learn how to prepare for the concert by listening in advance at YouTube or Spotify and reading at Oxford Music Online, a service to which most colleges and public libraries subscribe. You'll also learn what to think and write about and what is irrelevant. Whatever type of concert you attend—classical, pop, jazz, or world music—focus on the music, not on the life of the composer or the dress and hairdo of the performer. Perhaps most important, show your instructor (and yourself) that you have learned something; incorporate in your thinking the musical vocabulary and concepts to which you have been exposed in this book.

READ... "Insider's Guide to Writing a Concert Report" online.

Getting Started: No Previous Experience Required

"I'm tone deaf, I can't sing, and I'm no good at dancing." Most likely this isn't true of you. What *is* true is that some people have a remarkable memory for sounds, whether musical or linguistic. Mozart, who had perfect pitch, could hear a piece

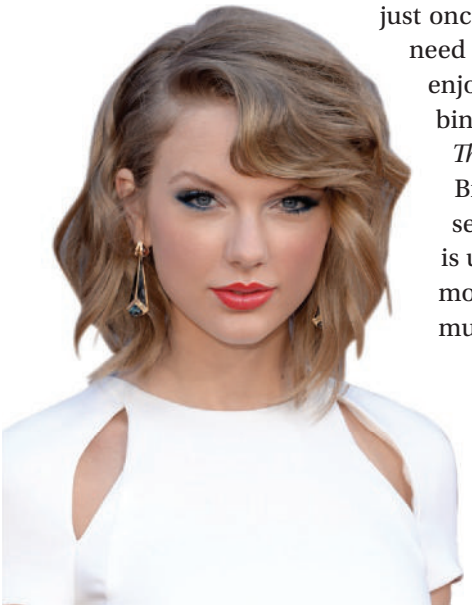


FIGURE 1.7
Taylor Swift at the Academy of Country Music Awards in 2014

just once and reconstruct several minutes of it note for note. But you don't need to be a Mozart to enjoy classical music. In fact, you likely know and enjoy a great deal of classical music already. A Puccini aria ("O, mio babbino caro") sounds prominently in the best-selling video game *Grand Theft Auto*, no doubt for ironic effect. The seductive Habanera from Bizet's opera *Carmen* (see Chapter 22) underscores the characters' secret intentions in an early episode of *Gossip Girl*. Mozart's Requiem is used to advertise Nike basketball shoes, just as a Bach concerto promotes Grey Poupon mustard. Resting beneath the surface, classical music quietly plays on our psyche.

Take the Classical Music Challenge

To test the capacity of classical music to move you, try a simple comparison: Taylor versus Renée. Watch a YouTube video of Taylor Swift (Figure 1.7) singing "Shake It Off" from her album *1989* (2014), followed by a recent video clip of soprano Renée Fleming (Figure 1.8) singing Puccini's aria "O, mio babbino caro." How much of the effect of these performances is due to beat, electronic enhancements, orchestral sound, visual effects, vocal training, and lyrics? Which would you want to listen to again and again? Which, if either, would you be able to shake off? Or, listen to Coldplay's latest hit next to a rendition of Richard Wagner's "Ride of the Valkyries" (see Chapter 21), to compare the sound of a rock band with that of a symphony orchestra. Which piece gives you chills, and which one just leaves you cold? Were you moved by the classical video clips?

WATCH... a YouTube video of Taylor Swift singing "Shake It Off" online. Compare it with Renée Fleming singing "O, mio babbino caro."

LISTEN TO... a podcast about learning how to listen, online.

Two Classical Favorites

If you weren't moved by the preceding experiment, try listening to two other famous moments in the history of classical music. The first is the beginning of Ludwig van Beethoven's Symphony No. 5 (see Listening Guide), perhaps the best-known moment in all of classical music, which you've already seen in animated form in this chapter's opening video online. Its "short-short-short-long" (SSSL) gesture (duh-duh-duh-DUHHH) is as much an icon of Western culture as the "To be, or not to be" soliloquy in Shakespeare's *Hamlet*. Beethoven (see Figure 1.9 and Chapter 15 for his biography) wrote this symphony in 1808 when he was thirty-seven and had become almost totally deaf. (Like most great musicians, the nearly deaf Beethoven could hear with an "inner ear"—he could create and rework melodies in his head without relying on external sound.) Beethoven's **symphony**—an instrumental genre for orchestra—is actually a composite of four separate instrumental pieces,

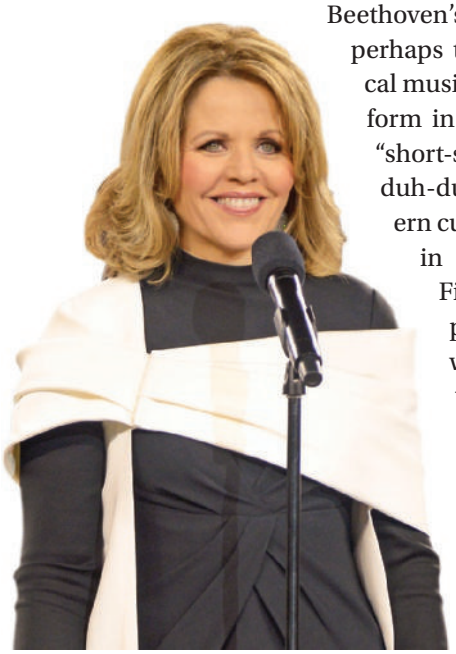


FIGURE 1.8
Renée Fleming led the singing of "The Star-Spangled Banner" at 2014's Super Bowl XLVIII. Needless to say, the high notes didn't pose a problem.

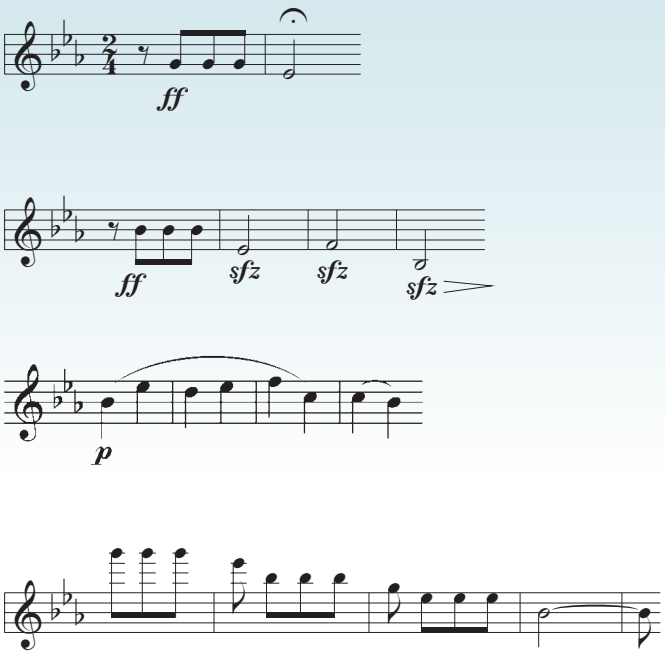
LISTENING GUIDE

Ludwig van Beethoven, Symphony No. 5 in C minor (1808) **Download 1 (1:29)**

First movement, *Allegro con brio* (fast with gusto)

WHAT TO LISTEN FOR: The ever-changing appearance of the four-note motive as the force of the music waxes and wanes

0:00	Opening "short-short-short-long" motive
0:22	Music gathers momentum and moves forward purposefully.
0:42	Pause; French horn solo
0:46	New, lyrical melody sounds forth in strings and is then answered by winds.
1:08	Rhythm of opening motive returns.
1:17	Opening motive reshaped into more heroic-sounding melody



LISTEN TO … this selection streaming online.

WATCH … an Active Listening Guide of this selection online.

each called a **movement**. A symphony is played by an **orchestra**, and because an orchestra plays symphonies more than any other musical genre, it is called a **symphony orchestra**. The orchestra for which Beethoven composed his Fifth Symphony was made up of about sixty players, including those playing string, wind, brass, and percussion instruments.

Beethoven begins his symphony with the musical equivalent of a punch in the nose. The four-pitch rhythm (SSSL) comes out of nowhere and hits hard. This SSSL figure is a musical **motive**, a short, distinctive musical unit that can stand by itself. After this "sucker punch," we regain our equilibrium as Beethoven takes us on an emotionally wrenching, thirty-minute, four-movement symphonic journey dominated by his four-note motive.

Turn now to this opening section (in Download 1, as well as in this chapter's streaming music online) and to its Listening Guide above. You will see written music, or **musical notation**, representing the principal musical events. This notation may seem alien to you (the essentials of musical notation will be explained in Chapter 2). But don't panic. Millions of people enjoy

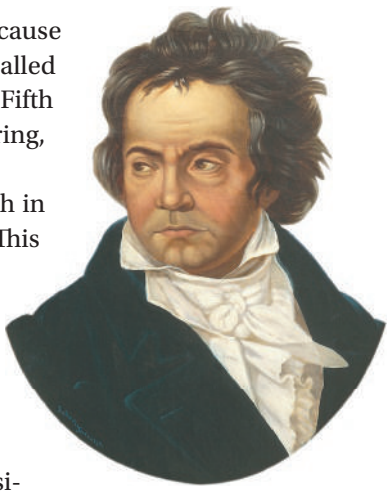


FIGURE 1.9
Ludwig van Beethoven

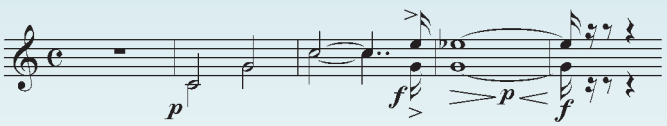
LISTENING GUIDE

Richard Strauss, *Also sprach Zarathustra* (1896) **Download 2 (1:32)**

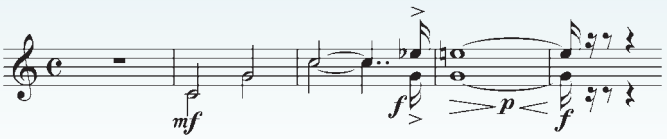
Genre: One-movement tone poem

WHAT TO LISTEN FOR: A gradual transition from the nothingness of murky darkness to shafts of light (trumpets) and, finally, to the incandescent power of the full symphony orchestra

0:00	Rumbling of low string instruments, organ, and bass drum
0:14	Four trumpets ascend, moving from bright to dark (major to minor key).



0:26	A drum (timpani) pounds forcefully.
0:30	Four trumpets ascend again, moving from dark to light (minor to major key).



0:44	A drum (timpani) pounds forcefully again.
0:50	Four trumpets ascend a third time.
1:06	Full orchestra joins in to add substance to impressive succession of chords.
1:15	Grand climax by full orchestra at high pitches

LISTEN TO ... this selection streaming online.

WATCH ... an Active Listening Guide of this selection online.

DO ... Listening Exercise 1.1, Musical Beginnings, online.

classical music every day without looking at a shred of written notation. For the moment, simply listen to the music and follow along according to the minute and second counter on your music player. If you prefer a more animated version of this Listening Guide (and all other guides in this book), you will find Active Listening Guides online.

Finally, for the grandest of all sounds, popular or classical, we turn to the beginning of an orchestral work by Richard Strauss, *Also sprach Zarathustra* (*Thus Spoke Zarathustra*). The German title sounds intimidating, but the idea is very simple: the advent of a superhero, backlit by a sunrise (Figure 1.10).

How do you depict the advent of a superhero and a sunrise through music? Strauss tells us by means of a few very simple techniques that express musical

FIGURE 1.10
Strauss attempts to replicate in music the coming of a superhero, the apex of human development, who ascends with the rising of the sun.

meaning. The music ascends in pitch, gets louder, and grows in warmth (more instruments). Moreover, the leading instrument is the trumpet, the sound of which has traditionally been associated with heroic deeds. The climax sounds with the great volume of the full orchestra—in this case, the large Romantic orchestra of the late nineteenth century. So impressive is this passage that it has been borrowed for use in countless radio and TV commercials (to sell digital TV and phone delivery services, insurance, carpets, and storm windows, among other things). The aim is to astound you, the consumer, with the power, durability, and brilliance of the product. In contrast to Beethoven's composition, Strauss's piece isn't a symphony in four movements but, rather, a one-movement work for orchestra called a **tone poem**. If you think classical music is for wimps, think again!

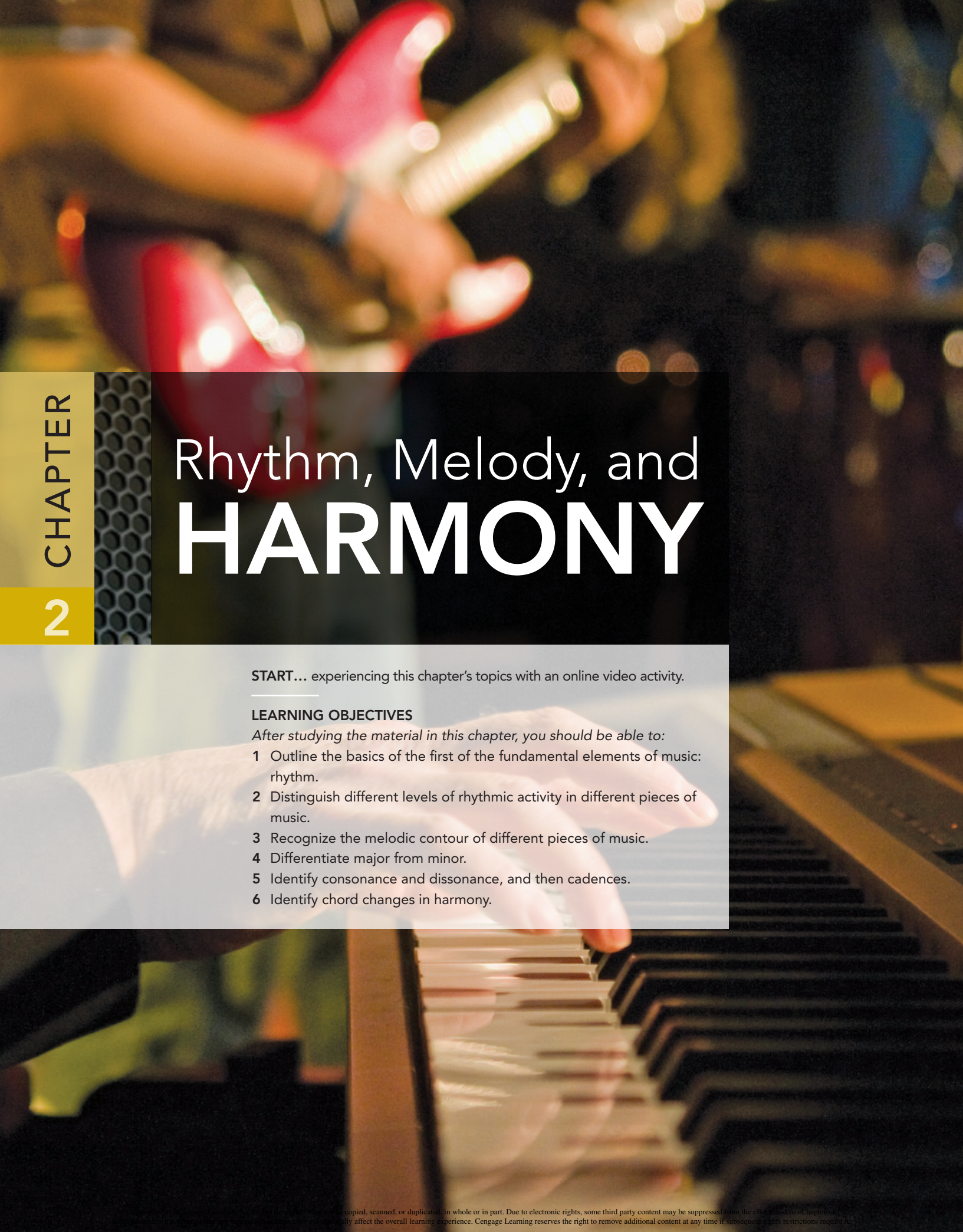
KEY WORDS

music (3)
sound wave (4)
basilar membrane (4)
primary auditory cortex (5)
limbic system (5)
amygdala (5)
musical template (5)
popular music (6)
classical music (7)
acoustic instrument (7)
lyrics (7)
genre (8)
venue (8)
encore (11)
symphony (12)
movement (13)
orchestra (13)
symphony orchestra (13)
motive (13)
musical notation (13)
tone poem (15)

Join us on Facebook at Listening to Music with Craig Wright

PRACTICE ... your understanding of this chapter's concepts by working once more with the chapter's Active Listening Guides online.

DO ... online multiple-choice and critical thinking quizzes that your instructor may assign for a grade.



CHAPTER 2

Rhythm, Melody, and HARMONY

START… experiencing this chapter's topics with an online video activity.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Outline the basics of the first of the fundamental elements of music: rhythm.
2. Distinguish different levels of rhythmic activity in different pieces of music.
3. Recognize the melodic contour of different pieces of music.
4. Differentiate major from minor.
5. Identify consonance and dissonance, and then cadences.
6. Identify chord changes in harmony.

Music is an unusual art. You can't see it or touch it. But it has matter—compressed air molecules yielding sounding pitches—and these pitches are organized in three main ways: as rhythms, as melodies, and as harmonies. Rhythm, melody, and harmony, then, are the three primary elements—the *what*—of music.

READ… the complete chapter text in a rich, interactive online platform.

LISTEN TO… a podcast about tempo online.

WATCH… Michael Jackson respond to and redefine the beat in a YouTube video online. Compare with screen actor Christopher Walken in action.

Rhythm

Humans are rhythmic beings. Our heartbeat, brain waves, and breathing are all rhythmic. How fundamental is rhythm? Remember that recognition of the beat, as mentioned in Chapter 1, is mainly a function of the cerebellum, that part of the brain to develop first in human evolution. Consider, too, that we heard the beat of our mother's heart before we were aware of any sort of melody or tune. Consequently, our brain reacts powerfully and intuitively to a regularly recurring, strongly articulated "beat" and a catchy, repeating rhythmic pattern. We have a direct, even physical, response to rhythm, especially as expressed in pop music (Figure 2.1). We move, exercise, and dance to its pulse.

The basic pulse of music is the **beat**, a regularly recurring sound that divides the passing of time into equal units. **Tempo** is the speed at which the beat sounds. Some tempos are fast (*allegro*) or very fast (*presto*), and some are slow (*lento*) or very slow (*grave*). Sometimes the tempo speeds up, producing an ***accelerando***, and sometimes it slows down, creating a ***ritard***. But oddly, whether the tempo proceeds rapidly or slowly, undifferentiated streams of anything aren't appealing to us humans. We organize passing time into seconds, minutes, hours, days, years, and centuries. We subconsciously group the chirping of a seatbelt warning chime into units of two or three "dings." So, too, with the undifferentiated stream of musical beats: Our psyche demands that we organize the musical beats into groups, each containing two, three, four, or more pulses. The first beat in each unit is called the **downbeat**, and it gets the greatest **accent**, or stress. Organizing beats into groups produces **meter** in music, just as arranging words in a consistent pattern of emphasis produces meter in poetry. In music, each group of beats is called a **measure** (or **bar**). Although there are several different kinds of meter in music, about 90 percent of the music we hear falls into either a **duple meter** or a **triple meter** pattern. We mentally count "ONE-two" or "ONE-two-three." There's a quadruple pattern as well, but in most instances, our ear perceives this as simply a double duple meter pattern.

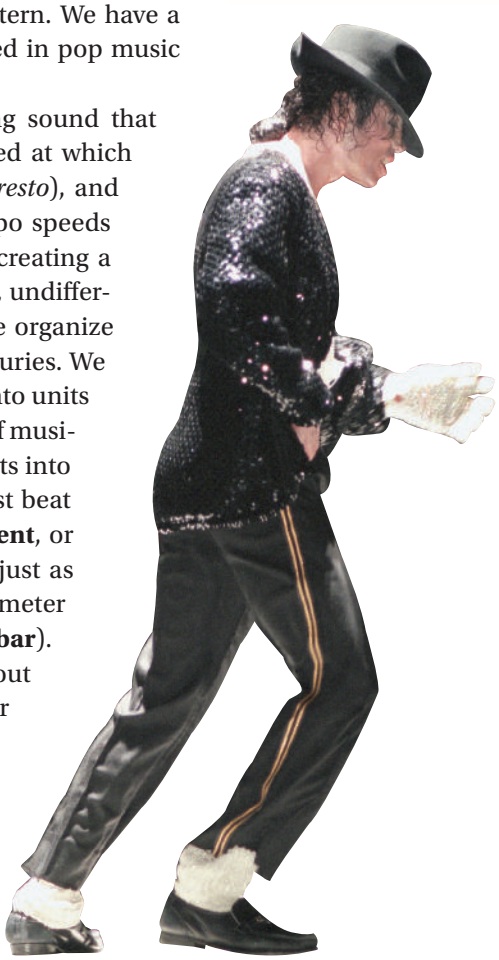
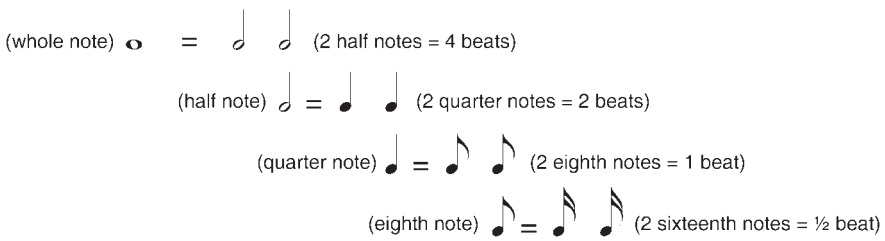


FIGURE 2.1
When we listen to a song with a strong beat, auditory neurons stimulate motor neurons, causing us to dance. In the realm of pop song and dance, perhaps no one was better at this immediate connection between the auditory and the motor than Michael Jackson. Although he died in 2009, the estate of the "King of Pop" still generates about $100 million annually from the sale of music and merchandise.

Rhythmic Notation

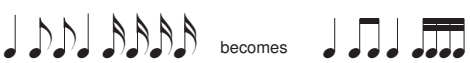
About 800 years ago, in thirteenth-century Paris to be precise, musicians began to devise a system to notate the beats, meters, and rhythms of their music. They created visual symbols that stood for long or longer, and short or shorter, durations. Over the centuries, these visual symbols developed into the notational symbols that we use today, as seen in Example 2.1.

EXAMPLE 2.1 Notational symbols for rhythmic durations



To help the performer keep the beat when playing, the smaller note values—specifically, those with flags on the vertical stem—are beamed, or joined together, in groups of two or four (Example 2.2).

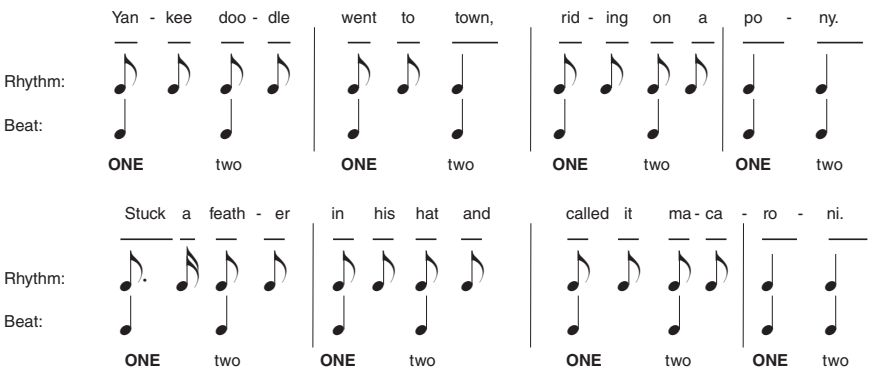
EXAMPLE 2.2 Short durations grouped



Today, the symbol that usually represents, or "carries," one beat in music is the quarter note (♩). Normally, it moves along roughly at the rate of the average person's heartbeat. As you might suspect from its name, the quarter note is shorter in length than the half note and the whole note, but it is longer than the eighth note and the sixteenth note. There are also signs, called **rests**, to indicate the absence of sound for different lengths of time.

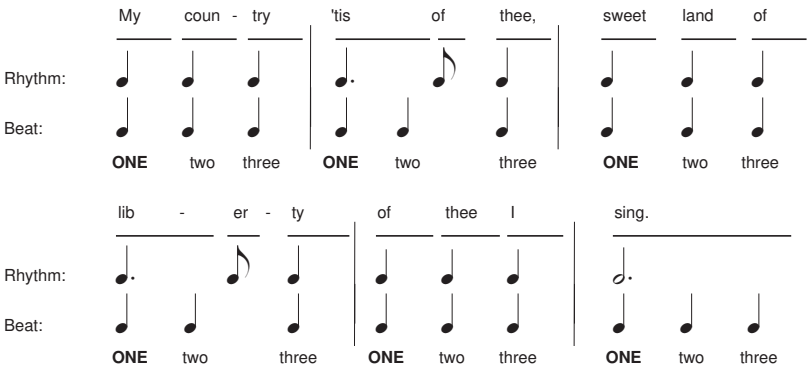
If music proceeded only with beats organized into meter, it would be dull indeed—like the endless sound of a bass drum (ONE-two, ONE-two, or ONE-two-three, ONE-two-three). In fact, what we hear in music by way of duration is **rhythm**, the division of time into compelling patterns of long and short sounds (see Listening Cue, "The Basics of Rhythm"). Rhythm emerges from, and rests upon, the durational grid set by the beat and the meter. In fact, no one actually plays just the beat, except perhaps a drummer; rather, we hear a mass of musical rhythms, and our brain extracts the beat and the meter from them. To see how this works, let's look at a patriotic song from the time of the American Revolution in duple ($\frac{2}{4}$) meter, in Example 2.3.

EXAMPLE 2.3 Beat and rhythm in duple meter



Example 2.4 shows another patriotic song, "America" (first known in England and Canada as "God Save the King"—or "Queen"), arranged the same way. It is in triple ($\frac{3}{4}$) meter.

EXAMPLE 2.4 Beat and rhythm in triple meter

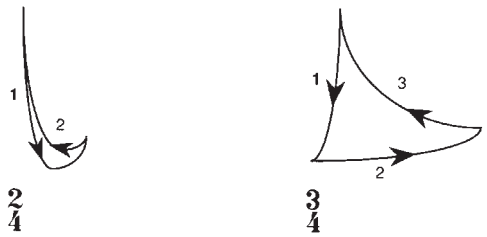


The numbers $\frac{2}{4}$ and $\frac{3}{4}$ aren't fractions but, rather, **meter signatures** (also called **time signatures**). A meter signature tells the performer how the beats of the music are grouped to form a meter. The bottom number of the signature (usually a 4, representing the quarter note) indicates what note value receives the beat, and the top number tells how many beats there are in each measure. The small vertical lines in the preceding examples are called **bar lines**; they help performers keep the music of one measure, or bar, separate from the next and thus tell the performers how to keep the beat. Although all of this terminology of music theory might seem intimidating, the important question is this: Can you hear the downbeat and then recognize a duple meter (as in a ONE-two, ONE-two march) contrasted with a triple meter (as in a ONE-two-three, ONE-two-three waltz)? If so, you're well on your way to grasping the rhythmic element of music.

Hearing Meters

One way you can improve your ability to hear a given meter is to establish some sort of physical response to the music: Keep time with your foot, stomping hard on the downbeat and tapping softly on the weak beats; or conduct with your hand (Figure 2.2), using a conductor's pattern (down-up, or down-over-up), as shown in Example 2.5.

EXAMPLE 2.5 Conducting patterns for duple and triple meter



One final observation about meters and conducting patterns: Almost all music that we hear, especially dance music, has a clearly identifiable meter and a strong

FIGURE 2.2
Marin Alsop, musical director of the Baltimore Symphony Orchestra, conducts during a rehearsal.

LISTEN TO... a podcast about the basics of hearing meter online.

downbeat. But not all music *starts* with the downbeat. Often a piece will begin with an upbeat. An upbeat at the very beginning of a piece is called a pickup. The **pickup** is usually only a note or two, but it gives a little momentum or extra push into the first downbeat, as can be seen, in Example 2.6, at the beginning of two other patriotic songs.

EXAMPLE 2.6 Pickup

Oh	beau-	ti-	ful	for	spa-	cious	skies				
two	**ONE**	two	**ONE**	two	**ONE**	two	**ONE**	two			

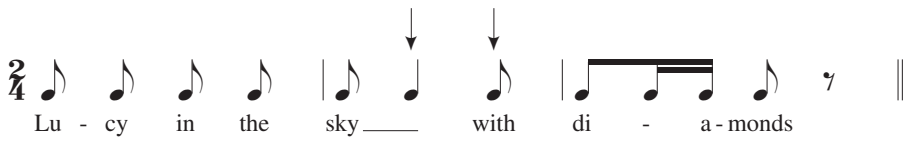
Oh	say	can	you	see		by	the	dawn's	ear	-	ly	light	
three	**ONE**	two	three	**ONE**	two	three		**ONE**	two		three	**ONE**	two

Syncopation

Surprisingly, much Western classical music *doesn't* have a strong rhythmic component; rather, the beauty of the music rests in the melody and harmony. Popular music, on the other hand, is often irresistible, not only because of a strong beat, but also because of a catchy rhythm, created by syncopation. In most music, the accent, or musical emphasis, falls directly on the beat, with the downbeat getting the greatest emphasis of all. **Syncopation**, however, places the accent either on a weak beat or between beats—literally, it's "off beat." This unexpected, offbeat moment in the music creates the catchy "hook" of the tune, the part that pops up when you least expect it and sticks in your head.

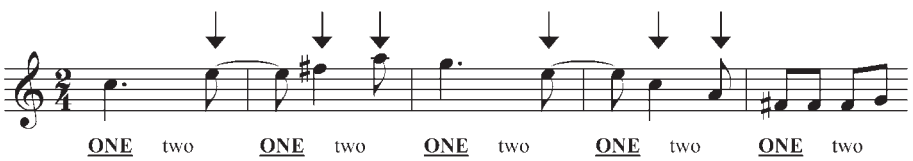
A short example of syncopation can be heard in bar 2 of the chorus of The Beatles' song "Lucy in the Sky with Diamonds." The arrows in Example 2.7 show the moments of syncopation.

EXAMPLE 2.7 Simple syncopation



A far more complex example of syncopation can be found in Example 2.8, the popular theme song to *The Simpsons*.

EXAMPLE 2.8 Complex syncopation



If you're a fan of jazz, Afro-Cuban music, or Latin music, you may be responding to the syncopation that gives these styles their bounce or lift.

LISTENING CUE

The Basics of Rhythm

WHAT TO LISTEN FOR: Practice recognizing different levels of rhythmic activity in different pieces of music.

WATCH … an Active Listening Guide of this demonstration online.

DO … Listening Exercise 2.1, Hearing Meters, online.

Melody

A **melody**, simply put, is the tune. It's the part we sing along with, the part we like, the part we're willing to listen to again and again. Amazon and iTunes offer album downloads of "50 All-Time Favorite Melodies," yet there are no similar collections devoted to rhythms or harmonies. Needless to say, Beyoncé, Adele, Taylor Swift, Sam Smith, and Renée Fleming sing the melody. They, and it, are the stars.

Every melody is composed of a succession of pitches, usually energized by a rhythm. **Pitch** is the relative position, perceived high or low, of a musical sound. We traditionally assign letter names (A, B, C, and so on) to identify specific pitches. When an instrument produces a musical tone, it sets into motion vibrating sound waves that travel through the air to reach the listener's ears. A faster vibration will produce a higher pitch, and a slower one, a lower pitch. Pressing the lowest key on the piano sets a string vibrating back and forth 27 cycles (times) per second, while the highest key does the same at a dizzying 4,186 times per second. Low pitches lumber along and sound "fuzzy," whereas high pitches are clear but fleeting. A low note can convey sadness; a high one, excitement (we don't usually hear a high-pitched piccolo as sad, for example). In Western music, melodies move along from one discrete pitch to another. In other musical cultures—Chinese, for example—melody often "slides," and much of its beauty resides *between* the pitches.

Have you ever noticed, when singing a succession of tones up or down, that the melody reaches a tone that sounds like a duplication of an earlier pitch but is higher or lower? That duplicating pitch is called an **octave**, for reasons that will become clear shortly, and it's usually the largest distance between notes that we encounter in a melody. When a melody leaps up an octave, our spirits soar.

Pitches that are an octave apart sound similar because the frequency of vibration of the higher pitch is precisely twice that of the lower pitch. The ancient Greeks, from whom much of our Western civilization derives, knew of the octave and its 2:1 ratio, and they divided it into seven pitches using other ratios. Their seven pitches plus the eighth (the octave) yield the white keys of the modern keyboard. When early musicians reached the repeating pitch, the octave, they began to repeat the A, B, C letter names for the pitches. Eventually, five additional notes were inserted. Notated with symbols called **flats** (♭) and **sharps** (♯), they correspond to the black keys of the keyboard (Figure 2.3).

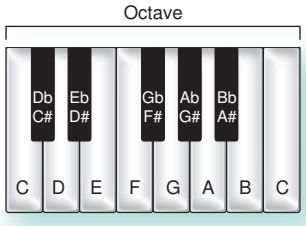


FIGURE 2.3
An octave

When a tune moves from one pitch to another, it moves across a melodic **interval**. Some of these distances are small; others, such as the octave, are large. Melodies with large leaps are usually difficult to sing, whereas those with repeated or neighboring pitches are easier. Example 2.9 shows the beginning of a well-known melody based on a large interval; both phrases of the tune begin with an ascending leap of an octave. To hear the octave, try singing "Take me…" to yourself.

LISTEN TO…
Example 2.9 online.

EXAMPLE 2.9 An octave in "Take Me Out to the Ball Game"

Take me out to the ball game, take me out to the crowd

Now, Example 2.10 shows the opening to Beethoven's famous *Ode to Joy* from his Symphony No. 9 (1823), in which almost all of the pitches are adjacent. It is known and beloved around the world because it is tuneful and singable. Try it—you'll recognize the melody. If you're not comfortable with the words, try singing the syllable "la" to each pitch.

LISTEN TO…
Example 2.10 online.

EXAMPLE 2.10 Adjacent pitches in *Ode to Joy*

Praise to Joy the God de - scend- ed, Daugh - ter of E - ly - si - um.

Ray of mirth and rap - ture blend - ed, God - dess to thy shrine wel - come.

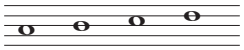
DO… Listening Exercise 2.2, Hearing Melodies, online.

"Take Me Out to the Ball Game" and Beethoven's *Ode to Joy* are very different in both intervallic structure and mood. Indeed, using all possible combinations of rhythms and pitches, an almost endless number of melodies can be created.

Melodic Notation

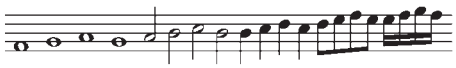
The type of notation used above for "Take Me Out to the Ball Game" and *Ode to Joy* is useful if we need only to be reminded of how a melody goes, but it isn't precise enough to allow us to sing it if we don't already know it. When the melody goes up, how *far* up does it go? Around the year 1000, even before the advent of rhythmic notation, church musicians added precision to pitch notation in the West. They started to write black and, later, white circles on horizontal lines and spaces so that the exact distance between these notes could be judged immediately. This grid-work of lines and spaces came to be called a **staff**. The higher on the staff a note is placed, the higher its pitch (Example 2.11).

EXAMPLE 2.11 Pitches on a staff

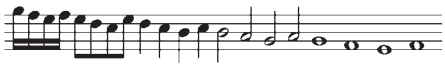


Over the course of centuries, the note heads also came to imply different durations, by means of stems and flags. Example 2.12A shows low, slow pitches that become gradually higher and faster, while Example 2.12B shows the reverse.

EXAMPLE 2.12A Pitches becoming higher and faster



EXAMPLE 2.12B Pitches becoming lower and slower



In notated music, the staff is always provided with a **clef** sign to show the range of pitch in which the melody is to be played or sung (Example 2.13). One clef, called the **treble clef**, designates the upper range and is appropriate for higher-sounding instruments, such as the trumpet and the violin, or a woman's voice. A second clef, called the **bass clef**, covers the lower range and is used for lower-sounding instruments, such as the tuba and the cello, or a man's voice.

EXAMPLE 2.13 Clefs

For a single vocal part or a single instrument, a melody could easily be placed on either of these two clefs. But for two-handed keyboard music with a greater range, both clefs are used, one on top of the other (Figure 2.4). The performer looks at this combination of clefs, called the **great staff** (also **grand staff**), and relates the

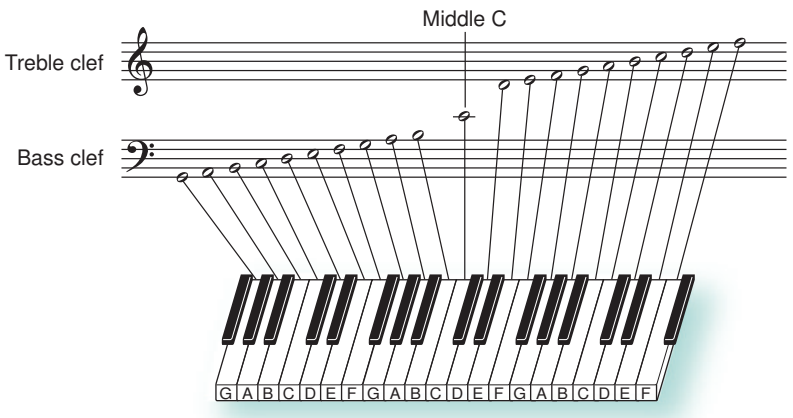


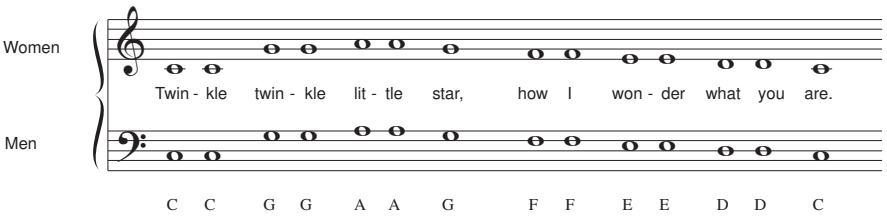
FIGURE 2.4
The great staff

notes to the keys beneath the fingers. The two clefs join at middle C (the middle-most C key on the piano).

Each musical pitch can be represented by a particular line or space on the great staff as well as by a letter name (like C). We use only seven letter names (in ascending order, A, B, C, D, E, F, and G) because, as we've seen, melodies are made up of only seven pitches within each octave. As a melody reaches and extends beyond the range of a single octave, the series of letter names is repeated (see Figure 2.4, bottom). The note above G, then, is an A, which lies exactly one octave above the previous A. In Example 2.14, "Twinkle, Twinkle, Little Star" is notated on the great staff, with the pitches doubled at the octave, as might happen when male and female voices sing together—the women an octave higher than the men.

LISTEN TO...
Example 2.14 online.

EXAMPLE 2.14 "Twinkle, Twinkle, Little Star"



Scales, Modes, Tonality, and Key

When we listen to music, our brain hears a succession of pitches spaced out on a grid. That grid is a **scale**, a fixed pattern of tones within the octave that ascends and descends. Think of the scale as a ladder with eight rungs, or steps, between the two fixed points, low and high, formed by the octave. You can go up or down the ladder, but not all the steps are an equal distance apart. Five are a full step apart, but two are only a half step apart. For example, the distance between A and B is a full step, but the distance between B and C is only a half step—that's just the way the ancient Greeks built their musical ladder, an odd arrangement that Western musical culture retains to the present day.

The position of the two half steps functions something like an aural global positioning system (GPS), providing both a general and an exact location. Specifically, it tells us what kind of scale is in play and where we are within that scale. Since the seventeenth century, almost all Western melodies have been written following one of two seven-note scale patterns: the major one and the minor one. The **major scale** follows a seven-pitch pattern moving upward 1–1–½–1–1–1–½. The **minor scale** goes 1–½–1–1–½–1–1. Once the eighth pitch (octave) is reached, the pattern can start over again. Figure 2.5 shows a major and minor scale, first on the pitch C and then on the pitch A.

The choice of the scale (whether major or minor)—and our ability to hear the difference—is crucial to our enjoyment of music. To Western ears, melodies based on major scales sound bright, cheery, and optimistic, whereas minor ones come across as dark, somber, and even sinister. Go back to the end of Chapter 1 and compare the bright, heroic sound of Richard Strauss's *Also sprach Zarathustra*, built on a major scale, with the almost-threatening sound of Beethoven's Symphony No. 5, written in a minor scale. Switching from a major to a minor scale, or from a minor to a major scale, is called a change of **mode**. Changing the mode affects the mood of the music. To prove the point, listen to the familiar tunes in Example 2.15.

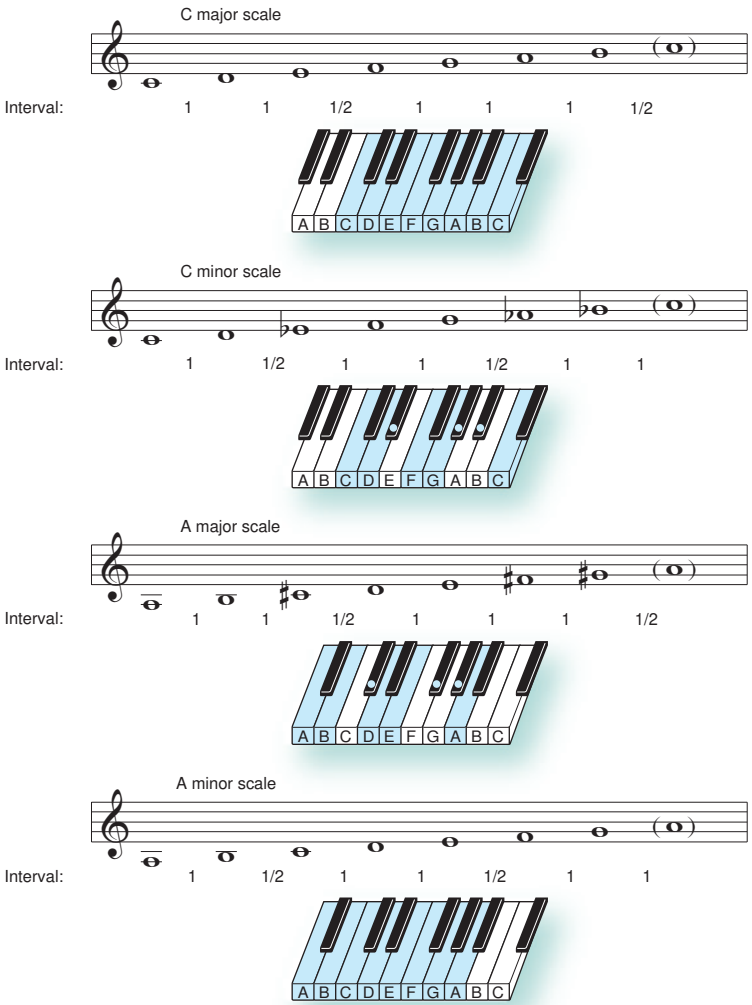
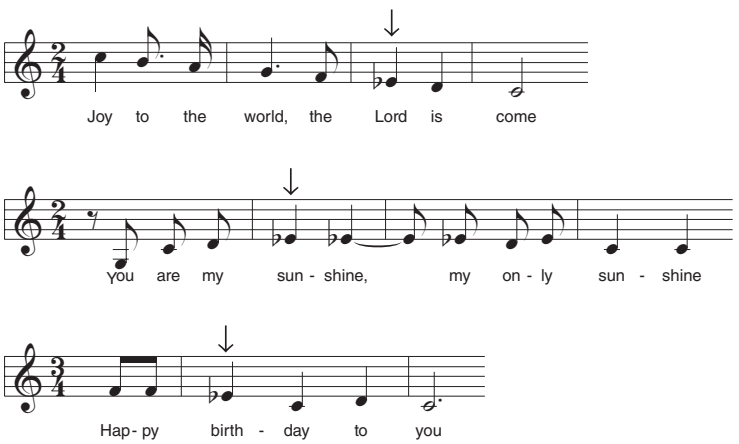


FIGURE 2.5
Major and minor scales

LISTEN TO... audio of Figure 2.5 online.

The mode has been changed from major to minor by inserting a flat into the scale near the last pitch (C), thereby switching from the beginning of the major scale (1–1–½) to that of the minor (1–½–1). Notice how this alteration sucks all the happiness, joy, and sunshine out of these formerly major melodies.

EXAMPLE 2.15 Major melodies become minor melodies



LISTEN TO... Example 2.15 online.

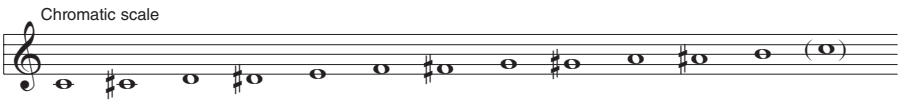
DO... Listening Exercise 2.3, Hearing Major and Minor, online.

LISTEN TO... a podcast about hearing major and minor online.

Finally, a third, special scale sometimes sounds in music: a **chromatic scale** (Example 2.16), which makes use of all twelve pitches, equally divided, within the octave. *Chromatic* (from the Greek *chroma*, "color") is a good word for this pattern, because the additional five pitches do indeed add color to the music. Unlike the major and minor scales, the chromatic scale is not employed for a complete melody, but only for a moment of twisting intensity. You can hear it in the first line of the song "White Christmas."

LISTEN TO...
Example 2.16 online.

EXAMPLE 2.16 Chromatic scale



When listening to any music, we take pleasure, consciously or not, in knowing where we are. Again, the steps of the scale play a crucial role, orienting us during the listening experience. Virtually all the melodies that Western listeners have heard since birth have been in major or minor, so these two patterns are deeply ingrained. Intuitively, our brain recognizes the mode and hears one pitch as central and the others as gravitating around it. That central, or home, pitch is called the tonic. The **tonic** is the first of the seven pitches of the scale and, consequently, the eighth and last as well. Melodies almost always end on the tonic, as can be seen in the familiar tunes given in Example 2.15, all of which happen to end on the pitch C. The tonic provides a point of focus and repose, a powerful force that pulls us back home (Figure 2.6).

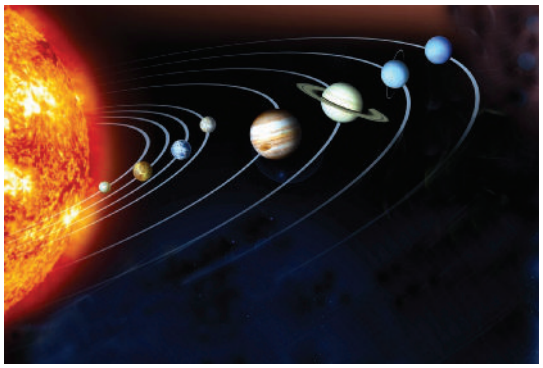


FIGURE 2.6
Planets rotate around and are pulled toward the sun, just as outlying pitches are pulled toward the tonic pitch.

The organization of music around a central pitch, the tonic, is called **tonality**. We say that such and such a piece is written in the tonality, and similarly the **key**, of C or of A (musicians use the terms *tonality* and *key* almost interchangeably). Composers—classical composers, in particular—like to move temporarily from the home scale and home tonality to another, just for the sake of variety. Such a change is called a **modulation**. In any musical journey, we enjoy traveling away from our tonic "home," but we experience even greater satisfaction arriving back home. Again, almost all music, pop as well as classical, ends on the tonic pitch.

Finally, the greatest musical mystery of all: What makes a good melody? Why are some pieces ("Greensleeves" and Beethoven's *Ode to Joy*) timeless and others immediately forgettable? Although there is no certain recipe for composing a great tune, consider the following: Most have an overall arch (shape), are composed of symmetrical phrases (subsections of 4, 8, or 16 bars), progress to a climax, and end with a final affirmation of the home pitch (the tonic). Beyond this, it's anyone's guess.

Harmony

Perhaps because of the long history of the piano and organ in the West—keyboard instruments that can play several pitches at once—Western music is exceptional among musical cultures in its emphasis on harmony. Simply said, **harmony** is the

sound of one or more pitches that support and enhance a melody. Almost always, the pitches of the melody are higher than those of the accompanying harmony. At the piano, for example, the "higher" right hand usually plays the melody and the left hand plays the harmony (see Example 2.17). Although a melody can stand by itself, an accompanying harmony adds a richness to it, just as the dimension of depth adds a rich backdrop to a painting.

EXAMPLE 2.17 Harmony supporting a melody

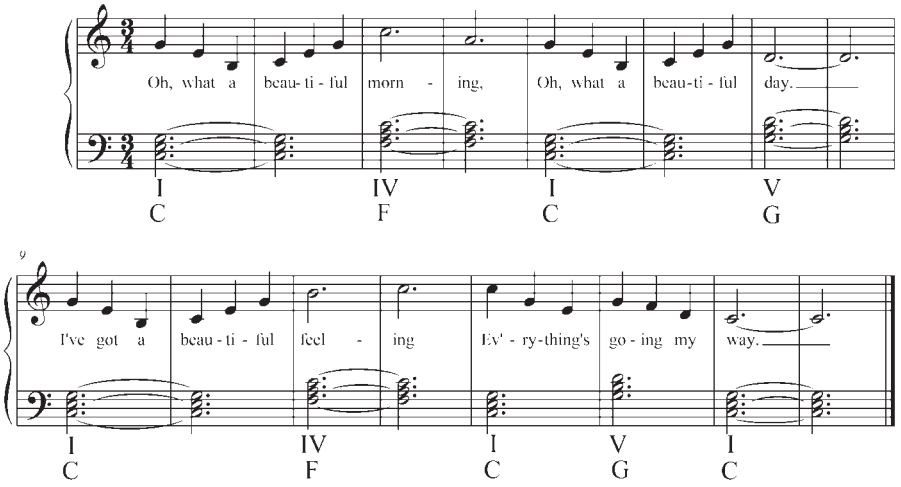


FIGURE 2.7
Claude Monet, *Waterlily Pond: Pink Harmony* (1900). Monet's painting of this famous bridge at Giverny, France, reveals not only the harmonious qualities of nature but also the painter's ability to harmonize various colors into a blend of pastels.

By definition, every harmony must be harmonious (Figure 2.7). From this truism we can see that there are two meanings of *harmony*. First, *harmony* means "a general sense that things work or sound well together"; second, *harmony* specifically denotes an exact musical accompaniment, as when we say "the harmony changes here to another chord."

Building Harmony with Chords

Chords are the building blocks of harmony. A **chord** is simply a group of two or more pitches that sound at the same time. The basic chord in Western music is the **triad**, so called because we construct it using three pitches arranged in a very specific way. Let's start with a C major scale, beginning with the tonic note C. To form a triad (Figure 2.8), we take one pitch, skip one pitch, and take one pitch—in other words, we select the pitches C, E, G (skipping D and F) and sound them together.

Triads can be constructed in a similar fashion on every pitch of the scale. But, given the irregularity of the scale (remember, not all steps on our musical ladder are the same distance apart), some triads will be major and others, minor. A major triad has its middle pitch a half step closer to its top pitch than to its bottom one; conversely, a minor triad has its middle pitch a half step closer to its bottom pitch than to its top one. While this may seem complicated, the difference between a major and a minor triad is immediately audible. Major triads sound bright; minor ones, dark. Example 2.18 shows triads built on every note of the C major scale. Each is assigned a Roman numeral to indicate on which pitch of the scale it is built.

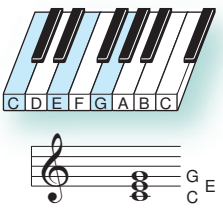
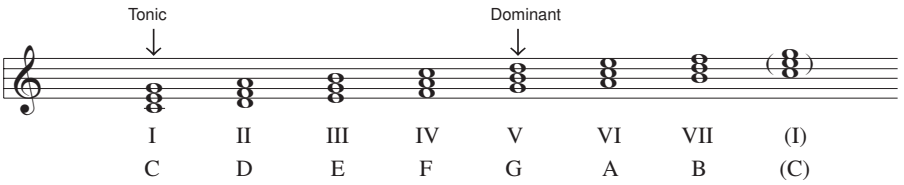


FIGURE 2.8
A triad

These triads provide all the basic chords necessary to harmonize a melody in C major.

LISTEN TO... Example 2.18 online.

EXAMPLE 2.18 Triads of the C major scale



But why do we need more than one chord to harmonize a melody? Why is it necessary to change chords? The answer lies in the fact that the pitches of a melody continually change, sometimes moving through all the notes of a scale. But a single triadic chord can be harmonious, or consonant, only with the three notes of the scale that it contains. In order to keep the harmony consonant with the melody, then, chords must continually change.

As chords change in a purposeful fashion beneath a melody, they create what is called a **chord progression**. Chords, other than the tonic, are unstable. They want to reach the tonic, "pulling" each other along. One gives way to the next, all gravitating toward the powerful tonic triad. Along the path of the progression, a surprising, unexpected chord might sound, and this can cause a sudden, powerful emotional response. The end of a chord progression is called a **cadence**. Usually, at a cadence, a triad built on degree V of the scale, called the **dominant** triad, will yield to the tonic triad. This is a powerful harmonic move, one conveying a strong feeling of conclusion, as if to say, "THE END."

WATCH... YouTube online to hear how thirty-six pop songs have been constructed on the same chord progression.

To sum up, in Western music, melodies are supported by an enriching, chordal accompaniment—a harmony. The harmony gains force and enriches the melody as the chords move in a purposeful progression. It is necessary to change chords in a harmony so as to avoid unwanted dissonance.

Consonance and Dissonance

What is art? Art can be seen as a parallel life outside of ourselves. As we engage the external work of art, we experience another life of the emotions within us. And just as emotional life is full of consonance and dissonance, so, too, with music.

LISTEN TO... a podcast about consonance and dissonance online.

You've undoubtedly noticed, when you're pressing the keys of the piano at one time or another, that some combinations of keys produce a harsh, jarring sound, whereas others are pleasing and harmonious. The former chords are characterized by **dissonance** (pitches sounding momentarily disagreeable and unstable), and the latter by **consonance** (pitches sounding agreeable and stable). Generally speaking, chords that contain pitches that are very close to one another, just a half or a whole step apart (C joined to D, for example), sound dissonant. On the other hand, chords built with the somewhat larger interval of a third (C joined to E) are consonant, as is the case for each triad in Example 2.18. But culture, and even personal taste, play a role in dissonance perception, too; what might be an unpleasantly spicy, distasteful dissonance to one listener might be a delight to another. While some, for example, find the loud, aggressive distortion of heavy metal bands such as Metallica intolerable, others thrive on it.

But whatever the music, dissonance adds a feeling of tension and anxiety, while consonance produces a sense of calmness and stability (see Listening Cue).

LISTENING CUE

Consonance and Dissonance; Cadences

WHAT TO LISTEN FOR: A demonstration of consonance and dissonance, as well as chord progressions and cadences

WATCH … an Active Listening Guide of this demonstration online.

Dissonant chords are unstable, and thus they seek out—they want to move to—consonant resolutions. The continual flux between dissonant and consonant chords gives Western music a sense of drama, as a piece moves between moments of tension to longed-for resolution. We humans try not to end the day with an unresolved argument; nor do we want to end our music with unresolved dissonance.

Hearing the Harmony

If you were asked to listen to a new song by your favorite pop artist and sing it back, you'd undoubtedly sing back the melody. The tuneful melody is invariably the line with the highest-sounding pitches. Thus, we've become trained, consciously or unconsciously, to focus on the top part of any musical texture. To hear and appreciate harmony, however, we've got to "get down" with the bass. Chords are usually built on the bass note, and a change in the bass from one pitch to another may signal a change of chord. The bass is the foundation of the chord and determines where the harmony is going, more so than the higher melody. Some pop artists, such as Paul McCartney and Sting, control both the upper melody and the lower harmony simultaneously. While they sing the tune, they play electric bass, setting the bass pitches for the rhythm guitar to fill out as accompanying triads.

LISTEN TO… a podcast about hearing the bass line online.

To begin to hear the harmony beneath a melody, let's start with two completely different pieces, one from the world of popular music and the other, a well-known classical favorite. The first one is a bit of soul music called doo-wop. **Doo-wop** emerged in the 1950s as an outgrowth of the gospel hymns sung in African American churches in urban Detroit, Chicago, Philadelphia, and New York. Often doo-wop was improvised **a cappella** (voices only; that is, unaccompanied) on the street because it was direct and repetitive—the accompanying singers could easily hear and form a harmony against the melody. And because the lyrics that the accompanying singers sang were often little more than "doo wop, doo wah," the name "doo-wop" stuck to describe these songs. Finally, doo-wop harmony used a short chord progression, most commonly a sequence of triads moving I-VI-IV-V-(I) that repeated over and over again (for these four repeating chords, see Listening Guide, "Harmony (Chord Changes)".

LISTEN TO… a podcast about chord changes online.

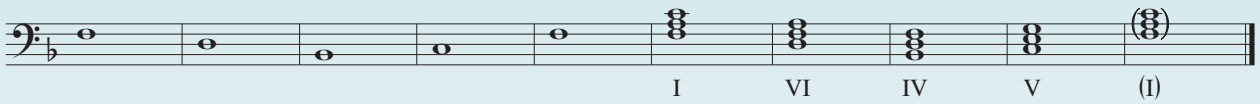
In music, any element (rhythm, melody, or harmony) that continually repeats is called an **ostinato** (from the Italian word meaning "obstinate thing"). In the doo-wop song "Duke of Earl," we hear the bass voice lead, not with "doo, doo, doo," but with "Duke, Duke, Duke," setting the foundation for the chords that soon enter in the other voices. The tempo is moderately fast, and each of the four chords lasts for four beats. Every time the harmony voices sing "Earl," the chords change. The I-VI-IV-V-(I) chord progression lasts for about nine seconds and then repeats over

LISTENING GUIDE

Harmony (Chord Changes) **Download 3 (2:33)**

Gene Chandler, "Duke of Earl" (1962)

WHAT TO LISTEN FOR: A harmony that repeats as a four-bar ostinato. The bass singer first sets the bass line, and the other singers then add a chordal harmony in support of the melody.



0:00	Bass leads with:
	Duke, Duke, Duke, Duke of Earl, Duke, Duke, Duke of Earl, Duke, Duke, Duke of Earl
	I----------VI----------IV----------V
0:09	Other voices and instruments enter, filling out harmony
0:18	Voice of Gene Chandler enters with lyrics
0:27	Further statement of harmonic pattern
0:37	Each chord now holds for two bars rather than one.
0:54 (and 1:03)	Each chord again holds for one bar.
1:13	Each chord again holds for two bars rather than one.
1:32 (and 1:41)	Each chord again holds for one bar.

For the rest, you're on your own!

LISTEN TO ... this selection streaming online.

WATCH ... an Active Listening Guide of this selection online.

WATCH... Vitamin C's "Graduation (Friends Forever)," in which you can hear the Pachelbel harmony very clearly.

DO... Listening Exercise 2.4, Hearing the Bass Line and Harmony, online.

and over again. As you listen to this doo-wop classic, sing along with the bass, no matter what your vocal range. Anyone can hear this harmony change.

Finally, for a similar, but slightly more complex, piece from the classical repertoire, we turn to the famous Pachelbel Canon. (See also "Pachelbel and His Canon" in Chapter 7.) Johann Pachelbel (1653–1706), who lived in Germany and was a mentor to musicians in the Bach family, composed this piece for four musical lines. The top three, here played by violins, are performed as a **canon** (a "round" in which one voice starts out and the others duplicate it exactly, as in "Three Blind Mice"). Below, the three-part canon is a harmonic ostinato, this one consisting of eight chords. So popular has Pachelbel's harmony become that it has been "borrowed" by countless pop singers, including The Beatles ("Let It Be"), U2 ("With or Without You"), and Vitamin C ("Graduation [Friends Forever]"). For Pachelbel, musical imitation has been an endless form of flattery.