

From The Musician's Guide to Theory and Analysis

Chapter 1 Pitch and Pitch Class

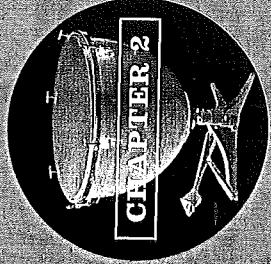
TERMS YOU SHOULD KNOW

accidental	clef	counting in thirds	musical alphabet
• flat	• treble clef	dynamic marking	octave
• sharp	• bass clef	enharmonic pitch	octave equivalence
• natural	• C-clef	grand staff	pitch
• double flat	• alto clef	half step	pitch class
• double sharp	• tenor clef	interval	staff
		ledger line	whole step

QUESTIONS FOR REVIEW

1. How do the staff and clefs work together to identify pitches?
2. Starting on D, count backward for two octaves in the musical alphabet. Count forward in thirds for two octaves, starting on G.
3. What's the difference between a pitch and a pitch class?
4. What is the function of (a) C-clefs, (b) accidentals, (c) ledger lines?
5. How do the piano's white and black keys help you determine whole and half steps?
6. On a keyboard, what special relationship do B and C have? E and F?
7. Give two guidelines for notating ledger lines.
8. How are octave numbers assigned? What is the octave number for middle C?
9. Pick a melody from music in your repertoire. Identify all its pitches by octave number, and locate at least two pitches notated on ledger lines.

Simple Meters



Outline of topics

- Dividing musical time**
- Beat, beat divisions, and meter
 - Conducting patterns
 - Tempo
 - Rhythm and meter

Rhythmic notation for simple meters

- Rhythmic values
- Meter signatures

Counting rhythms in simple meters

- Beat subdivisions
- Stems, flags, and beaming
- Counting rests and dots
- Slurs and ties
- Syncopation
- Hemiola
- Anacrusis notation

Beat units other than the quarter note

Implications for performance: Metric hierarchy

Overview

We turn now to the organization of music in time. This chapter explains how beats are grouped and divided to create meter, then focuses on simple meters, whose beats divide into two parts.

Repertoire

- Anonymous, Minuet in D Minor
- Johann Sebastian Bach
 - Chaconne, from Violin Partita No. 2 in D Minor
 - Invention in D Minor
- Frédéric Chopin, Mazurka in F Minor, Op. 68, No. 4
- "Greensleeves"
- George Frideric Handel
 - Chaconne in G Major
 - "Rejoice greatly," from *Messiah*
- Fanny Mendelssohn Hensel, "Neue Liebe, neues Leben" ("New Love, New Life")
- Scott Joplin
 - "Pine Apple Rag"
 - "Solace"
- John Newron, "Amazing Grace"
- Robert Schumann, "Trällerliedchen" ("Humming Song"), from *Album for the Young*, Op. 68, No. 3
- John Philip Sousa, "The Stars and Stripes Forever"



Dividing Musical Time

Beat, Beat Divisions, and Meter

♩ Listen to the opening of Joplin's "Pine Apple Rag" and Handel's "Rejoice greatly"—two lively works in contrasting styles. As you listen, tap your foot in time: this tap represents the work's primary pulse, or **beat**. You should also hear a secondary pulse, moving twice as fast. Tap the secondary pulse in one hand while your foot continues with the primary beat. This secondary pulse represents the **beat division**.



KEY CONCEPT Musical meters are defined by:
 (1) the way beats are divided, and
 (2) the way beats are grouped into larger recurring units.

♩ Beats typically divide into two or three parts. In the Joplin and Handel examples, the beat divides into twos. Now listen to the English folk tune "Greensleeves." Tap your foot along with the slow beat, as before. When you add the beat division in your hand, you'll notice that the beat divides not into twos, but into threes.



KEY CONCEPT There are two principle meter types: simple and compound. Musical works in **simple meters** have beats that divide into twos. Those in **compound meters** have beats that divide into threes.

The character of these two types can be quite different: simple meters feel more even, while compound meters may sound lilted.

Try it #1

Listen to each piece below to determine the beat and its division. If the beat divides in twos, circle "simple"; if it divides in threes, circle "compound."

- (a) Joplin, "Solace" ♩ simple compound
- (b) Gilmore, "When Johnny Comes Marching Home" ♩ simple compound
- (c) Mozart, *Variations on "Ah, vous dirai-je Maman"* ♩ simple compound
- (d) Schumann, "Wilder Reiter" ♩ simple compound



♩ Listen now to the opening of Sousa's "The Stars and Stripes Forever" and Chopin's Mazurka in F Minor. Tap the primary beat for each. In both works, the beat divides into twos: both are in simple meter. But besides dividing, primary beats also *group*—into twos, threes, or fours. As you listen to each piece, try counting "1-2, 1-2" (one number per beat); if the piece doesn't fit that pattern, try "1-2-3, 1-2-3" or "1-2-3-4, 1-2-3-4."



KEY CONCEPT When beats group into units of two, the meter type (either simple or compound) is **duple**. When they group into units of three, the meter type is **triple**; and when they group into units of four, it is **quadruple**.

The meter type for the Sousa march is simple duple, and for the Chopin mazurka simple triple. In music notation, the beat groupings are indicated by **bar lines**, which separate the notes into **measures**, or **bars**. On a grand staff like that in Example 2.1 (unlike a single-line staff), an initial bar line and curly brace connect the two staves, as does each subsequent bar line. Measures are often numbered at the top, as in the examples in this book, to help you find your place in a score. Listen again to the mazurka while following the notation in the example and the counts written beneath.

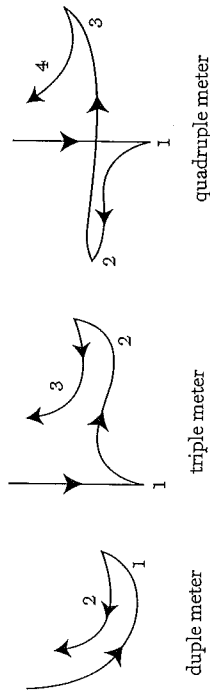
EXAMPLE 2.1: Chopin, Mazurka in F Minor, mm. 1–4

Conducting Patterns

Conductors' motions outline specific patterns for each meter to keep an ensemble playing together and to convey interpretive ideas. The basic conducting patterns for duple, triple, and quadruple meters given in Figure 2.1 are the same whether the piece is in a simple or compound meter (although the conductor may distinguish between them by subdividing the basic pattern).

As you practice each pattern, you will feel a certain physical weight associated with the **downbeat**—the motion of the hand down on beat 1 of the pattern. You will probably feel anticipation with the **upbeat**—the upward lift of the hand for the final beat. Practice these patterns until you feel comfortable with them, then use them to help you recognize meter types by ear.

FIGURE 2.1: Conducting patterns



Tempo

Conductors also use conducting patterns to establish a work's **tempo**, or speed (the plural is "tempi"). The proper tempo helps to convey the character or mood of a piece. It is often indicated on a musical score with words in Italian or other languages. Following are the most common tempo indications in Italian.

- Slower tempi: *grave*, *largo*, *larghetto*, *adagio*
- Medium tempi: *andantino*, *andante*, *moderato*, *allegretto*
- Faster tempi: *allegro*, *vivace*, *presto*, *prestissimo*
- Increasing in tempo (gradually faster): *accelerando*
- Decreasing in tempo (gradually slower): *ritardando*

Meter is considered hierarchical because you can perceive it simultaneously at different levels. In simple time, for example, the relationship between the beginning of a beat and its division is strong-weak. Then within a measure, beats may alternate strong-weak, and at a still higher level, full measures may also alternate strong-weak. For this reason, you may sometimes have trouble hearing the difference between duple and quadruple meters by ear; you may hear one measure in quadruple meter as two bars of duple. It is also possible to hear two measures of simple triple meter as one measure of compound duple. Don't worry that you are "wrong"—you are simply identifying the meter at a different level of the hierarchy. Tempo can provide an important clue. If you perceive a very fast beat in three, for example, perhaps you are hearing the beat divisions in compound meter.

Try it #2

Listen to the beginning of each of these simple-meter compositions. Listen for the grouping and metrical accent, then circle either "duple or quadruple" or "triple."

- (a) Bach, "O Haupt voll Blut und Wunden" $\frac{3}{4}$ duple or quadruple triple
 (b) Mozart, Minuet in F Major, K. 2 $\frac{3}{4}$ duple or quadruple triple
 (c) Mozart, Piano Sonata in C Major, K. 545, first movement $\frac{3}{4}$ duple or quadruple triple
 (d) Bach, *Passacaglia in C Minor* for organ $\frac{3}{4}$ duple or quadruple triple

Rhythm and Meter

Rhythm and meter are two different, but related, aspects of musical time. **Rhythm** refers to the durations of pitch and silence (notes and rests) used in a piece. **Meter** provides a framework of strong and weak beats against which the rhythms are heard.

SUMMARY

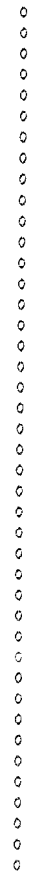
Music written in a meter has

- a recurring pattern of beats,
- perceivable divisions of beats (simple or compound),
- perceivable groupings of beats (duple, triple, or quadruple).

Rhythm consists of

- durations of pitch and silence, heard in the context of the underlying meter.

This summary applies generally to tonal music from the common-practice era, roughly 1600 through the early twentieth century. But nonmetric pieces—pieces without meter—are found in non-Western music and in Western music of the twentieth century, as you will see in later chapters.



Rhythmic Notation for Simple Meters

Rhythmic Values

The parts of a note are labeled in Figure 2.2. The wavy line attached to the stem of a single note is a **flag**, and the horizontal line connecting two or more notes is a **beam**. The **dot** (if present) is always written on a space; when you write a note on a line, the dot goes next to it on the space above, so that it can be clearly seen.

FIGURE 2.2: Parts of a note

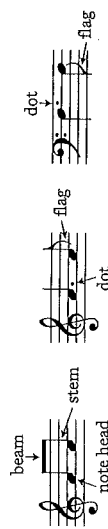


Figure 2.3 is a chart of common rhythmic values and their equivalent rests (durations of silence) in simple meters. The chart is organized to reflect the beat division in simple time: a **whole note** divides into two **half notes**, a half note divides into two **quarter notes**, and so on. You can create smaller note values by adding flags or beams to the stem: **eighth notes**, for example, have one beam, **sixteenth notes** two beams (a **thirty-second note** has three flags or beams, and a **sixty-fourth note** has four). In some meters, you will also see longer note values, such as the **breve** (≡), which lasts twice as long as a whole note; it is also sometimes written as a double whole note (∞).

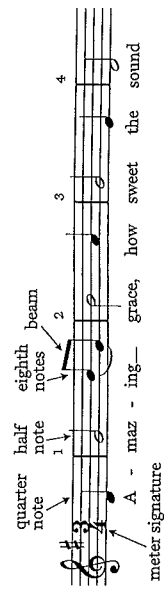
FIGURE 2.3: Rhythmic values in simple meters

NOTE VALUE	NAME	REST
	whole	
	half	
	quarter	
	eighth	
	sixteenth	

Meter Signatures

A **meter signature** (or **time signature**) at the beginning of a score establishes the meter type and **beat unit**. The meter signature in “Amazing Grace” (Example 2.2) indicates that there are three beats in each full measure, and the quarter note gets one beat.

EXAMPLE 2.2: Newton, “Amazing Grace,” mm. 1–4a. ♯



KEY CONCEPT Meter signatures are written with two numbers, one above the other. In simple meters:

- The upper number is 2, 3, or 4, to show that the meter type is simple duple, triple, or quadruple; this number tells how many beats are in each measure.
- The lower number indicates which note gets one beat (the beat unit): 2 (half note), 4 (quarter note), 8 (eighth note), or 16 (sixteenth note).

Figure 2.4 provides examples of simple meter signatures and how to interpret them.

FIGURE 2.4: Meter signatures

(a) Common simple meters

METER SIGNATURE	BEATS PER MEASURE	BEAT UNIT	METER TYPE
$\frac{2}{4}$	2		simple duple
$\frac{3}{4}$	3		simple triple
$\frac{4}{4}$	4		simple quadruple

(b) Less common simple meters

METER SIGNATURE	BEATS PER MEASURE	BEAT UNIT	METER TYPE
$\frac{2}{2}$	2		simple duple
$\frac{3}{2}$	3		simple triple
$\frac{3}{4}$	3		simple triple
$\frac{4}{4}$	4		simple quadruple
$\frac{4}{6}$	4		simple quadruple

Try it #3

Name the meter type (e.g., simple quadruple) and beat unit for each meter signature given below.

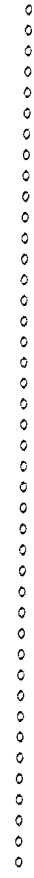
- (a) $\frac{2}{2}$ _____
- (b) $\frac{3}{16}$ _____
- (c) $\frac{3}{8}$ _____
- (d) $\frac{4}{4}$ _____

Besides numbers, you may see other symbols in scores to represent meter signatures. For example, *c*, called "common time" (a symbol dating back to the fourteenth century), is frequently used to represent $\frac{4}{4}$, and *♩*, or *alla breve* (sometimes called "cut time"), can take the place of $\frac{2}{2}$.

SUMMARY

Meter signatures you are most likely to see in simple meters include the following:

- Simple duple: $\frac{2}{2}$ $\frac{4}{4}$ $\frac{2}{8}$
- Simple triple: $\frac{3}{2}$ $\frac{3}{4}$ $\frac{3}{8}$ $\frac{3}{16}$
- Simple quadruple: $\frac{4}{2}$ $\frac{4}{4}$ *c* $\frac{4}{4}$ $\frac{4}{6}$



Counting Rhythms in Simple Meters

By interpreting the meter signature, we can now write counts for each beat into a score. Example 2.3 repeats the melody for "Amazing Grace," with the counts written below. Each full measure gets three beats; if no new pitch sounds on a given beat, as for beat 2 in each measure of the example, write the count in parentheses. The two eighth notes in measure 1 are written "3 &" (or "3 +") and counted aloud as "three and"; the "and" is the **offbeat**. The quarter note D preceding the first full measure is an **anacrusis** (also called an **upbeat**, or **pickup**). Count it as the final beat of an incomplete measure, as indicated by the number 3 in the example.

EXAMPLE 2.3: Newton, "Amazing Grace," mm. 1-4a $\frac{3}{4}$

A - maz - ing - grace, how sweet the sound
 3 1 (2) 3 & 1 (2) 3 1 (2) 3 1 (2) 3 1 (2)

Try it #4

Write the counts beneath the following melodies. (The final measure of (c) is incomplete.)

(a) Horner, Mann, and Weil, "Somewhere Out There," mm. 40-42 $\frac{3}{4}$

out there, out where dreams come true.
 1 2 (3) 4

(b) Anonymous, Minuet in D Minor, mm. 1-4 $\frac{3}{4}$

1 2 3 4

(c) Bono and U2, "Miracle Drug," mm. 29-32a

Free - dom has a scent like the top of a new-born ba - by's head.

Beat Subdivisions

Now listen to Variation 19 of Handel's Chaconne in G Major, while following the score in the anthology. Here the stately melody is played in quarter and eighth notes in the right hand, while the left hand accompanies with energetic groups of sixteenth notes. These sixteenth notes represent the beat subdivision.



KEY CONCEPT In simple meters, the beat divides into twos and subdivides into fours.

EXAMPLE 2.4: Handel, Chaconne in G Major, mm. 153-156

1 e & a 2 e & a 3 e & a 1 e & a 2 e & a 3 e & a

In music with a quarter-note beat, the beat divides into two eighths (♩) and subdivides into four sixteenths (♩♩♩♩), or it may divide into a combination of eighths and sixteenths (like ♩♩♩♩).

Stems, Flags, and Beaming

Your ability to sight-read, remember, and write music will be greatly enhanced by learning the typical rhythmic patterns that can occur within a beat and notating them correctly. Look, for instance, at how stems and flags are notated in Example 2.4. In the left hand, the beams group four sixteenths into a single beat, which

stands apart visually from the rest. Flags are written on the right-hand side of the stem, whether the stem goes up or down (compare the last right-hand eighth notes of measures 153 and 154). As mentioned in Chapter 1, the stems on notes below the middle line extend up, and those above it extend down. When several notes are beamed together (as in the left hand), the stem direction corresponds with the majority of the notes in the group (or with the second note, if there are only two).

Try It #5

Circle the incorrectly notated stems and flags. Notate them correctly here.

Five rhythmic patterns for the quarter-note beat unit are given in Figure 2.5: learn each pattern with its correct beaming. Familiar patterns like these can be combined and recombined in different ways in rhythms, just as words can be recombined in a sentence.

FIGURE 2.5: Five common one-beat rhythm patterns in simple meters



KEY CONCEPT Rhythms should be beamed to reflect the beat unit. For example, groups of eighth and sixteenth notes that span one quarter-note beat unit, such as ♩, are beamed together.

There is one exception to the beaming guideline: in many older vocal scores, beaming corresponded with the sung syllables, rather than the beat unit. Though you may encounter the vocal notation style in scores, this text will stick with modern ("instrumental") beaming.

Another Way

Music educators may prefer other counting in Gordon's system are on the left. A third syllables, such as those developed by Zoltán Kodály (e.g., ta, ti-ti) or Edwin Gordon (e.g., du, du-de). Syllables for the five basic patterns right.

Your memory for rhythmic patterns will be improved if you associate them with a counting system of numbers or syllables, in Figure 2.5. There are several such systems available, and each has advantages: choose one and use it consistently.

The single-line rhythms that follow in *Try it #6* and elsewhere in the book are notated with rhythm clefs, employed as their name suggests, to show only rhythm, not pitches. To draw a rhythm clef, write two vertical lines preceding the meter signature.

Try it #6

Circle beats that are beamed incorrectly, then renotate the entire rhythm on the second line with correct beaming. Write the beat-level counts beneath the given line, as in (a), to help you.

Counting Rests and Dots

Rests represent durations of silence. Each rest lasts as long as the note that shares its name (e.g., eighth rest and eighth note; see Figure 2.3). Be careful when you read and write whole and half rests, because they resemble each other. The difference is not in their shape, but in their placement on the staff: the half rest "sits" on top of the third staff line, while the whole rest "hangs" from the fourth line. (You might think of the whole rest as "heavier," and thus it has to hang from the line, while the "fighter" half rest can sit on top. Or remember that a half rest is shaped like a /hat.)

A whole rest is sometimes written to indicate silence that lasts a whole measure regardless of how many beats are in that measure. In music with a half-note beat unit, such as 3/4, you may see a double whole rest or note (breve), which lasts four half-note beats (Figure 2.6a). Finally, some scores (particularly orchestra parts where players rest for many consecutive bars) include multiple-bar rests. Here the number above the rest tells the player how many bars to rest. The rest in part (b), for example, is counted 1-2-3-4, 2-2-3-4, 3-2-3-4, 3-2-3-4.

FIGURE 2.6:

When a beat begins with a rest, write the appropriate beat number in parentheses, as in Example 2.5. This helps you count the durations of silence (or accompaniment) as accurately as the pitches.

EXAMPLE 2.5: Handel, "Rejoice greatly" (vocal part), mm. 8-11

A dot adds to a note half its own value, as Figure 2.7a shows. That is, a dotted-quarter note equals a quarter plus an eighth, a dotted eighth equals an eighth plus a sixteenth, and so on. Dotted notes are generally paired with another note that completes a full beat or full measure. Some typical patterns are shown to the right,

along with their counts in 4. Double dots (more rare) add to a note half its value plus another quarter of its value (part b).

FIGURE 2.7: Use of dots
(a) Single dots

(b) Double dots

Slurs and Ties

Listen to the dotted passage from "Rejoice greatly" given in Example 2.6. The small arcs written above some of the notes in measures 92–93 are slurs, connecting two (or more) different pitches. Slurs affect performance articulation—bowing or tonguing, for example—but not duration: the notes encompassed by a slur should be played smoothly, or *legato*, rather than detached. For singers, slurs identify groups of pitches sung to a single syllable.

EXAMPLE 2.6: Handel, "Rejoice greatly" (vocal part), mm. 92–96a

The small arc above the F in measures 94–95, on the other hand, is a tie, connecting the same note. The F in measure 95 is not played again; rather the tie adds the duration of the two note values together, so "shout" lasts three and a half beats. Counts for the beats spanned by a tie are written in parentheses to show their full duration.



KEY CONCEPT Ties and dots should be notated in a way that clarifies the meter rather than obscuring it. For example, an eighth tied to a quarter would be clearer than a dotted quarter in the rhythmic context shown below, because it makes the placement of beat 3 explicit.

Syncopation

Syncopations are created when an expected accent is displaced or moved to another beat or part of a beat—by dots, ties, rests, dynamic markings, accent marks, or the rhythm itself. Syncopations are marked by arrows in Example 2.7. They may occur at the level of the beat (accents on beat 2 or 4 rather than 1 or 3), the division (on "&"), or the subdivision (on "e" or "a").

EXAMPLE 2.7: Syncopated rhythms

Syncopations can be found in all styles, but they appear especially frequently in popular music, jazz, and ragtime. Within a quarter-note beat, the rhythms ♩ and ♪ are the most typical syncopation patterns. In each, the longest duration of the rhythm is on the "e" of 1 e & a instead of the stronger "1" or "&."

Listen to the beginning of Joplin's "Pine Apple Rag" (Example 2.8), and locate the syncopations within the beat (mm. 1 and 3) and across the beat (mm. 2 and 4), marked by arrows. Syncopations across the beat are usually notated with ties: here, the expected emphasis on beat 2 comes earlier, on the first of the tied notes.

EXAMPLE 2.8: Joplin, "Pine Apple Rag," mm. 1-4

Joplin's "Solace" (Example 2.9) also includes many syncopations. Notice that every measure of the excerpt shows a tie from the last sixteenth of beat 1 to the first sixteenth or eighth of beat 2, creating a syncopation mid-measure. Measures 10 and 12 also feature syncopations produced by ties from the last sixteenth of the previous measure. Such syncopations are characteristic of Joplin rags. They are highly effective because of the steady accompaniment pattern in the left hand; syncopations can only be perceived if there is a strong sense of the underlying beat for them to play against.

EXAMPLE 2.9: Joplin, "Solace," mm. 9-12

Hemiola

Another metrical displacement pattern is illustrated in Example 2.10. Look at the beat-level counts given in level (a), and read the rhythm aloud on "tah" or counting syllables while conducting in three. As you probably felt from your performance, the rhythmic patterns and tie across the bar line in measures 3-4 temporarily disrupt the triple meter. Now read the rhythm again, while following the counts in level (b) and changing the conducting pattern as indicated. As the counts show, the beats in these measures group into twos, implying a temporary duple meter despite the overall triple meter. This type of grouping is common enough in musical practice that it has its own name: **hemiola**.

EXAMPLE 2.10: Hemiola pattern in triple meter



KEY CONCEPT A hemiola is a temporary duple rhythmic grouping in the context of an underlying triple meter. Typically, two measures of $\frac{3}{4}$ meter are heard as three measures of $\frac{2}{4}$ meter. A hemiola may be articulated by rhythmic durations, accents, or melodic patterns that imply duple groupings.

Measures 255-256 of Example 2.11 present a hemiola with a more complex rhythmic pattern.

EXAMPLE 2.11: Bach, Chaconne, from Violin Partita No. 2 in D Minor, mm. 251-256

We may hear a hemiola as a temporary change of meter, or as both meters (duple and triple) continuing at the same time, creating a type of syncopation. A hemiola typically appears at the end of a large section or movement as in Example 2.10, where the change in metrical feel indicates the approaching end. Hemiolas are typical of Baroque style (1600-1750), but may appear in later works (by Brahms, for example) as well.

Anacrusis Notation

In music that begins with an anacrusis, notate the last measure of the piece as an incomplete bar to "balance" the initial incomplete measure. Do this by subtracting the value of the anacrusis from the last measure of the piece. For example, in $\frac{4}{4}$ meter, a quarter-note anacrusis would be balanced at the end by a final measure of only three beats. Listen to Hensels' "Neue Liebe, neues Leben," the opening of which is given in Example 2.12a. Here the two-beat anacrusis at the beginning is balanced by a final bar in the piano postlude (conclusion of the piece) of only two beats, shown in part (b). (When numbering partial measures, call the anacrusis measure 0, and use the letters a and b to designate the first and last parts of measures.)

EXAMPLE 2.12: Hensel, "Neue Liebe, neues Leben"

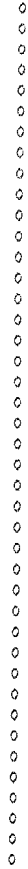
(a) Mm. 1-4a

Translation: Heart, my heart, what does this mean? What is besieging you so?

(b) Mm. 73-77 (piano postlude)

(b) Mozart, Piano Sonata in G Major, K. 283, first movement, mm. 1-4a

Final note duration: _____



Beat Units Other Than the Quarter Note

The way you count the rhythm in a passage of music depends on its meter. Even the idea that "a whole note gets four beats" is correct only in certain meters, such as $\frac{4}{4}$, where a \downarrow gets one beat and a \downarrow two beats; in $\frac{3}{4}$, a \downarrow gets a half beat, a \downarrow one beat, and a \downarrow two beats. Listen again to the opening of "The Stars and Stripes Forever" while following the piano score and counts in Example 2.13. The ϕ ($\frac{3}{8}$) meter instructs the performers to think of these measures "in two" (two beats per measure). To develop good sight-reading skills, practice reading rhythms with half-note or eighth-note beat units, as well as the more familiar quarter-note unit.

EXAMPLE 2.13: Sousa, "The Stars and Stripes Forever," mm. 1-8

Try it #7

For each of the following melodies, identify what the duration of the last pitch (or combination of pitches and rests) of the piece should be to balance the anacrusis.

(a) Willson, "Till There Was You," mm. 1-4a (melody only)

There were bells on the hill, but I nev - er heard them ring - ing,

Final note duration: _____

Hensel, "Neue Liebe, neues Leben." Edited by Eva Rieger and Kaete Walter. © 1985 Schott Music, Mainz, Germany. All rights reserved. Used by permission of European American Music Distributors LLC, sole U.S. and Canadian agent for Schott Music, Mainz, Germany.

There are various reasons why you might see compositions written with a particular beat unit. Sometimes the meter is meant to remind the performer of a particular compositional type or character—such as *alla breve* for marches. Sometimes rhythms are notated with a longer beat unit for ease of reading, so that quick-moving or complex rhythms need not be notated in small note values. In the Sousa march, for example, the *alla breve* signature allows the quick-moving pitches to be notated as eighths rather than sixteenths. And sometimes the reason for a particular beat unit has historical roots. To eighteenth-century musicians, for example, a beat unit in longer values often indicated a slower tempo and a more stately character: a signature of $\frac{3}{8}$ would indicate a sprightly jig, while $\frac{3}{4}$ would suggest the slower tempo of a minuet.

One way to gain facility with different beat units is to write equivalent rhythms in different meters, as in Example 2.14.

EXAMPLE 2.14: Equivalent rhythms notated in different meters

When you write in meters that are less familiar, be certain that the beaming is correct for the new beat unit. For example, in the $\frac{3}{8}$ rhythm of Example 2.14, write $\frac{3}{8}$ rather than $\frac{3}{4}$, in order to reflect the eighth-note beat unit. (Composers are not always consistent with this guideline, as Example 2.15, in $\frac{3}{4}$, illustrates.)

Try it #8

Rewrite each rhythm below in the meter specified. Check that your beaming correctly reflects the new beat unit. Write the counts (1, 2, 3, etc.) below the new rhythms.

Implications for Performance: Metric Hierarchy

One of the most important concepts to remember from this chapter is that meters are hierarchical: the quicker beat division represents a low level, the beat a higher level, and the downbeat of each measure an even higher level. Within each measure, different beats carry different metric weight, with the downbeat (beat 1) the strongest. In duple meter, the beats alternate strong-weak. In triple meter, the accents are strong-weak-weakest. And in quadruple meter, the first beat is metrically accented, but the third beat also gets a secondary accent.

This hierarchy is sometimes represented with rows of dots, as in Example 2.15, where a greater number of dots aligned vertically indicates a stronger metric position. The first beat of each measure, then, no matter the meter, receives the strongest metrical accent, and therefore the most dots.

EXAMPLE 2.15: Anonymous, Minuet in D Minor, mm. 1–4

At an even higher level of the hierarchy, measures themselves typically group together in what's called "hypermeter": measures 1 and 3 are heard as metrically stronger than measures 2 and 4. This hypermetric grouping of measures is illustrated in Example 2.15 by the vertical columns of dots; in performance, think of strong and weak measures, just as you might think of strong and weak beats.

When you perform passages with continuous eighth-note motion, remember that not every eighth note is equally important. Carefully studying a work's metric and harmonic organization can help you determine the relative importance of each beat and pitch, and thus shape an effective performance. For example, listen to the opening of Schumann's "Trällertiedchen" (Example 2.16). Even though the left hand moves in continuous eighth notes, the sensitive performer will not play them all the same way.

EXAMPLE 2.16: Schumann "Trällertiedchen," mm. 1–4

Hypermeasure:

Measure:

Half-measure:

Quarter note:

Eighth note:

The "offbeat" eighth notes of the left hand (on "and") are weakest of all in the metric hierarchy. The downbeats of measures 1 and 3 are strongest metrically, followed by the downbeats of measures 2 and 4. Try singing or playing the right-hand melody, keeping in mind the implied strong and weak beats.

In performance, you may find it helpful sometimes to think "one to the bar" to create a large-scale hypermetric alternation between strong and weak measures. This will help contribute to a performance with broad sweep, one that is not bogged down by rhythmic detail. Try comparing several recordings of Schumann's piano work, listen for strong and weak measures, and consider whether the recordings agree in their hypermetric interpretations.

Did You Know?

Baroque musicians sometimes used motion of the hand down and up to conduct performances, but their patterns were somewhat different from those seen today. German composer and theorist Johann Mattheson (1681–1764), a contemporary of J. S. Bach, describes in one treatise the motions associated with duple and triple meters: both meters are based on a downward and upward motion of the hand, but in triple meters the up-stroke lasts twice as long as the down-stroke. Because the hand motion in triple meters was uneven, they were called "uneven" meters; duple meters were referred to as "even."

During this time, ensemble music was led by one of the players, usually the harpsichordist or organist, who signaled the first downbeat, then played with the ensemble. Sometimes opera or large-ensemble conductors indicated the downbeat by banging a large baton or staff on the floor. This proved hazardous in at least one case: Jean-Baptiste Lully, a ballet and opera composer and conductor at the French court of Louis XIV until 1687, died from an infection in his foot after energetically striking it with the conducting baton during a performance.

TERMS YOU SHOULD KNOW

alla breve	hemiola	rest	syncopation
anacrusis	measure	rhythm	tempo
bar line	meter	rhythmic value	tie
beam	• simple	• eighth note	time signature
beat	• compound	• half note	upbeat
common time	• simple duple	• quarter note	
cut time	• simple quadruple	• sixteenth note	
dot	• simple triple	• whole note	
downbeat	meter signature	slur	
flag	note head	stem	

QUESTIONS FOR REVIEW

1. What is the difference between (a) simple and compound meters, (b) rhythm and meter, (c) beat division and subdivision, (d) a flag and a beam, (e) a tie and a slur, (f) a syncopation and a hemiola?
2. What do the two numbers in a simple meter signature represent?
3. Provide two appropriate meter signatures each for a simple duple, simple triple, and a simple quadruple piece. Write three measures of rhythm in each meter, using rhythm clefs.
4. What are the notation rules for (a) stem direction, (b) beaming beat divisions and subdivisions, (c) upbeats?

5. How are syncopations created? Write two syncopated rhythmic patterns.
6. Find a piece of music from your repertoire in each of the following meters: simple duple, simple triple, simple quadruple. Choose at least one with an eighth- or half-note beat unit, and practice counting its rhythm while conducting the meter.
7. Choose a short passage from your repertoire. Try to perform it with equal stress on each beat. Then mark the strong and weak beats and perform again.

Pitch Collections, Scales, and Major Keys



Outline of topics

Chromatic and diatonic collections

Scales: Ordered pitch-class collections

- Scale degrees
- Spelling major scales
- Spelling chromatic scales

Major keys

- Key signatures
- The circle of fifths
- Identifying a key from a key signature
- Writing key signatures
- Identifying the key of a piece
- Scale-degree names

The major pentatonic scale

Implications for performance

Overview

The concept of key is fundamental to Western music. In this chapter, we learn about keys by notating and playing major scales. The major key signatures and scale-degree names will serve as foundations for the study of harmony.

Repertoire

- Johann Sebastian Bach, Invention in D Minor
 Wolfgang Amadeus Mozart, Piano Sonata in C Major, K. 545, first movement
 "My Country, 'Tis of Thee"
 John Newton, "Amazing Grace"
 Dolly Parton, "I Will Always Love You"
 Robert Schumann, "Tyallerliechen," from *Album for the Young*, Op. 68, No. 3
 Richard Sherman and Robert Sherman, "Feed the Birds," from *Mary Poppins*
 John Philip Sousa, "The Stars and Stripes Forever"
 Anton Webern, *Variations for Piano*, Op. 27, second movement

Compound Meters

CHAPTER 4

Outline of topics

Hearing compound meters

Meter signatures

Rhythmic notation in compound meters

- The dotted-quarter beat unit
- Subdividing the beat
- Beat units other than the dotted quarter

Syncopation

Mixing beat divisions

- Triplets
- Duplets, quadruplets, and polyrhythm

Hemiola

Metrical accent and implications for performance

Overview

This chapter focuses on compound meters. We learn typical rhythmic patterns in compound meters, how to notate these patterns, and how to perform them.

Repertoire

"Agin-court Song"

Johann Sebastian Bach, Fugue in E♭ Major for Organ (St. Anne)

Johannes Brahms

"Die Mainacht" ("The May Night")

Trio in E♭ Major for Piano, Violin, and Horn, Op. 40, second movement

Frédéric Chopin, Nocturne in E♭ Major, Op. 9, No. 2

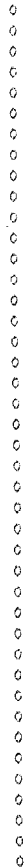
"Down in the Valley"

"Greensleeves"

John Lennon and Paul McCartney, "Norwegian Wood," from *Rubber Soul*

Smokey Robinson, "You've Really Got a Hold on Me"

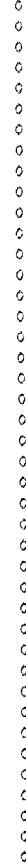
Franz Schubert, "Der Lindenbaum" ("The Linden Tree"), from *Winterreise* (*Winter Journey*)



Hearing Compound Meters

🎧 (anthology)

Listen to the beginning of two contrasting folk songs: "Greensleeves" (arranged for guitar) and "Down in the Valley." Tap the primary beat in each, then listen for a quick-paced secondary beat that helps establish each song's character. To determine the meter type, conduct along—"in two" for "Greensleeves" and "in three" for "Down in the Valley" (which begins with a three-note anacrusis)—while tapping the beat division. Recall that when the beat divides into twos, the meter is simple, and when it divides into threes, the meter is compound. Both songs are in compound meters: "Greensleeves" is compound duplet and "Down in the Valley" is compound triple. Because we associate a "lilting" quality with music in compound time, composers often choose these meters for pastoral or folk-like music, lullabies, and certain types of dances.



Meter Signatures

Compound meter signatures differ from simple meter signatures in important ways. Because the beat divides in threes, the beat unit is always a dotted note ($\text{♩} = \text{♩}$). But the numbers in compound meter signatures, unlike those in simple meters, represent beat *divisions* rather than the beat unit: that is, a bottom number of 8 indicates the ♩ division rather than the ♩ beat.



KEY CONCEPT

In compound meters:

- The top number of the meter signature is 6, 9, or 12, representing duplet, triple, or quadruple meter, respectively. Divide this by three to get the number of beats per measure (two, three, or four).
- The lower number is usually 8, but can also be 4 or 16. This number shows the type of note that represents the *division* of the beat (usually ♩). Add three of these note values together to get the beat unit, which will always be a dotted note (♩, ♩, ♩, or ♩).

The most common compound meters are summarized in Figure 4.1.

FIGURE 4.1: Compound meter signatures

METER SIGNATURE	BEATS PER MEASURE	BEAT UNIT	METER TYPE
$\frac{3}{8}$	2	♩	compound duple
$\frac{3}{4}$	3	♩	compound triple
$\frac{12}{8}$	4	♩	compound quadruple

(b) Other beat units

METER SIGNATURE	BEATS PER MEASURE	BEAT UNIT	METER TYPE
$\frac{6}{4}$	2	♩	compound duple
$\frac{9}{4}$	3	♩	compound triple
$\frac{12}{4}$	4	♩	compound quadruple
$\frac{16}{8}$	2	♩	compound duple
$\frac{9}{8}$	3	♩	compound triple
$\frac{12}{8}$	4	♩	compound quadruple

How would you interpret the $\frac{8}{8}$ meter signature for "Down in the Valley" (Example 4.1)? To determine the number of beats per measure, divide the top number by three: $9 \div 3 = 3$ beats per measure. For the beat unit, add three eighth notes—from the bottom number, 8—to get a dotted quarter. The meter type is compound triple: three beats per measure with a ♩ beat unit.

EXAMPLE 4.1: "Down in the Valley," mm. 1–4a $\frac{8}{8}$ (anthology)

This tune begins with an anacrusis of three eighth notes, equaling one beat. As in simple meters, the final measure will be incomplete—with only two beats—to balance the anacrusis. To read rhythms in compound meters, conduct in two, three, or four, and choose a counting system that divides each beat in threes (such as 1 la li, 2 la li).

Conducting patterns remain the same for compound meters as for simple. Only in very slow tempi would the conducting pattern correspond with the upper number of the meter signature (for example, $\frac{8}{8}$ conducted "in nine"). In that case, it's considered a "subdivided" pattern.

Look now at the meter signatures of Examples 4.2 and 4.3. The $\frac{12}{8}$ meter of "Norwegian Wood" has four beats per measure ($12 \div 3 = 4$) and again a ♩ beat unit. The $\frac{8}{8}$ meter of the "Agincourt Song" has two beats per measure ($6 \div 3 = 2$) and a dotted-half beat unit ($\text{♩} = \text{♩}$). At the beat level, metrical accents are the same as in simple meters: compound duple meter ($\frac{6}{8}$) is strong-weak, compound triple meter ($\frac{9}{8}$) is strong-weak-weak, and compound quadruple meter ($\frac{12}{8}$) alternates strong-weak, with beat 1 slightly stronger than beat 3.

EXAMPLE 4.2: Lennon and McCartney, "Norwegian Wood" (vocal part), mm. 13–14 $\frac{12}{8}$

EXAMPLE 4.3: "Agincourt Song" (England, c. 1415), mm. 1–4a. $\frac{6}{8}$

Try it #1

For each simple or compound meter in the chart below, provide the meter type (e.g., simple triple), beat unit, and number of beats per measure.

METER	METER TYPE	BEAT UNIT	BEATS PER MEASURE
8	compound triple		3
2			
4			
4			
3			
2			
8			

Rhythmic Notation in Compound Meters

The Dotted-Quarter Beat Unit

Figure 4.2 provides a table of note values and rests in compound meters, while Figure 4.3 shows the most common one-beat patterns in meters with a $\frac{1}{2}$ beat unit, along with one possible counting system.

FIGURE 4.2: Note values and rests in compound meters

NOTE VALUE	NAME	REST
	dotted whole	
	dotted half	
	dotted quarter	
	eighth	
	sixteenth	

Try it #2

Write the counting syllables for the melodies below, using Figure 4.3 as your model. Write the counts for rests in parentheses. Perform each melody; you can compare (a) and (b) with the anthology recordings.

(1)

(2)

(3)

(4)

(5)

1 la li 1 la li 1 la li 1 la li 1 ta li

KEY CONCEPT As in simple meters, rhythms in compound meters should be beamed to reflect the beat unit. For example, write $\frac{1}{2}$ (which implies simple triple meter). Rests likewise reflect the beat and its division. When two rests appear together, choose a notation that makes this clear: $\frac{1}{2}$; not $\frac{1}{4}$. Sometimes $\frac{1}{2}$ is notated $\frac{1}{4}$, and $\frac{1}{4}$ is notated $\frac{1}{8}$ —both reflect the beat division.

Try it #2

Write the counting syllables for the melodies below, using Figure 4.3 as your model. Write the counts for rests in parentheses. Perform each melody; you can compare (a) and (b) with the anthology recordings.

(a) "Greensleeves," mm. 1-4a

(b) Hensel, "Nachtwanderer," mm. 3-6a

(c) Robinson, "You've Really Got a Hold on Me," mm. 6-9

Ich wand-re durch die stil-le Nacht, da schleicht der Mond so Heim-lich sacht...

I don't like you, but I love you;

Seems that I'm al-ways think-ing of you.

Subdividing the Beat

As illustrated in Figure 4.2, an eighth note in compound meters can be subdivided into two sixteenths, which may be grouped with quarters or eighths to make additional patterns, as in Figure 4.4a. In each pattern, eighths and sixteenths are beamed together to reflect a single beat unit. Learn these patterns, together with their correct beamings and counting syllables. You can vary their sound by substituting rests—at the beginning of the beat as in part (b), or elsewhere within the beat.

FIGURE 4.4: Selected compound-meter patterns with subdivisions

(a) Without rests

(b) With rests

Another Way

To read rhythms with the Gordon method each subdivision is its own syllable: ♪ is “ta ki (which is typically used by music education students in the United States), substitute “du da di” for “1 la li.” Six sixteenths are read “du ta da di ta.” Another counting system gives on the score to show where each beat begins.

Try it #3

A. Decide which of the two rhythms below is beamed correctly, and write the counts below it.

(1)

(2)

B. For each rhythm, provide the missing bar lines that correspond with the meter signature given, and write in the counts.

(1)

(2)

(3)

Beat Units Other Than the Dotted Quarter

Listen again to “Greensleeves,” this time comparing the alternate rhythmic notations given in Example 4.4. If performed with the same tempo for each beat unit, all three versions would sound the same, but they look quite different.

EXAMPLE 4.4: “Greensleeves,” mm. 1–4a

(a) Original notation (♩ , beat unit)

(b) Transcribed to $\frac{3}{4}$ (♩ , beat unit)

(c) Transcribed to $\frac{6}{8}$ (♩ , beat unit)

Figure 4.5 shows the five main one-beat patterns for compound meters written with the less common \underline{d} and \underline{d} beat units, as well as the \underline{d} .

FIGURE 4.5: One-beat rhythm patterns with different beat units

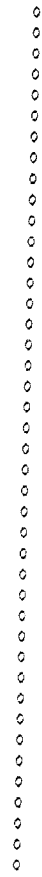
When the bottom number of the meter signature is 4, it becomes trickier to beam according to the beat units. To see why, look at Example 4.5, drawn from Bach's *St. Anne* Fugue. Here, the compound duplet meter is $\frac{6}{4}$, with a beat division of three quarter notes (see, for example, the top notes in the right hand of mm. 80–81). But beaming the three quarters together to reflect the beat would turn them into eighths—it can't be done without altering their duration. In this example, only the beaming of the eighth notes into groups of sixes shows the dotted-half beat unit clearly. You may find that compound meters with \underline{d} beat units are more difficult to sight-read. It is up to the performer to group the rhythms mentally to reflect the proper metrical accents. In this example, the strong-weak alternation occurs at the \underline{d} level (every half measure).

EXAMPLE 4.5: Bach, *St. Anne* Fugue, mm. 77–82a

Try it #4

(a) For each rhythm below, provide the missing bar lines that correspond with the meter specified.

(b) Write the rhythm of "Home on the Range" (mm. 1–4a) in the meters specified below. Add the counts underneath.



Syncopation

As in simple meters, ties and rests can create offbeat accents, or syncopations, within or across the beat.



KEY CONCEPT Syncopations are created in compound meters by placing (1) ties from a weak part of a beat across a stronger part;

1 la li (2) la 1 ta ta ta

(2) an accent mark on a weak beat or the weak part of a beat;

1 la li 2 la li

(3) a rest on the strong part of a beat that causes a weaker part to sound accented.

(1) la (1) ta ta ta

Example 4.6 illustrates syncopations in the compound quadruple melody of "You've Really Got a Hold on Me," marked with arrows. In measure 15, on "hold," the weaker third eighth note is tied across beat 2, delaying "on." This creates an offbeat emphasis on the second division (1a) of beat 2. In measure 16, the singer enters (on "Baby") an eighth note ahead of the beat, creating an accented offbeat entrance—another syncopation.

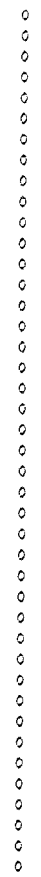
EXAMPLE 4.6: Robinson, "You've Really Got a Hold on Me," mm. 14-16

(1) (2) li 3 li 4 li 1 la li (2) la 3 (4) (1) (2) (3) 4 la

Typical syncopations within the beat are given in Figure 4.6, where the dotted-quarter note is the beat unit. As here, ties are often renoted so that an eighth note substitutes for two sixteenths tied together.

FIGURE 4.6: Typical syncopations within the beat (1/2-beat unit)

1 ta ta li 1 la ta ta 1 ta ta ta 1 ta ta ta



Mixing Beat Divisions

Triplets

Listen to the excerpt from Schubert's "Der Lindenbaum" given in Example 4.7a. The melody moves primarily in quarter and eighth notes, except for the last beat of measure 11, which is divided into three eighth notes instead of two (indicated with a small 3 above the group).

EXAMPLE 4.7: Schubert, "Der Lindenbaum"

An Bru - nen vor dem Tho - re da steht ein Lin - den - baum;
& 1 (2) & 3 & 1 2 (3) & 1 (2) & 3 la li 1 (2)

Translation: At the well in front of the gate, there stands a linden tree.



KEY CONCEPT In simple meters, the beat may occasionally be divided into three parts instead of the normal two. These beats, marked with a 3, are called triplets. Count triplets with syllables borrowed from compound meter (e.g., 1 la li).

Now compare part (a) with part (b), the second verse of the song. Here, Schubert has developed the triplet idea by featuring this rhythm in the piano accompaniment. In measures 29–30, the interplay of the piano's triplet division on beat 1 with the $\frac{3}{4}$ rhythms (beat 2 of the piano and beat 3 of the voice) propels the music forward and provides contrast with the more placid first verse.

(b) Mm. 28b–32a $\frac{3}{4}$

Translation: I had to travel by it again today in dead of night.

Finally, listen to the beginning of the piano introduction to this song, given in part (c). Here the triplets are written as sixteenth notes: they divide the eighth note (rather than quarter note) into threes. The triplets create a wonderful effect, depicting the rustle of the linden tree's leaves.

(c) Mm. 1–2 (introduction) $\frac{3}{4}$

KEY CONCEPT When notating triplets, use a note value that is one duration unit “smaller” than the beat unit it replaces (see Figure 4.7). For example, an eighth-note triplet replaces a quarter note, and a sixteenth-note triplet replaces an eighth note.

FIGURE 4.7: Notation of triplets

BEAT UNIT	DUPLE DIVISION	TRIPLET

Duplets, Quadruplets, and Polyrhythm

Just as triple divisions may appear in simple meters so may double or quadruple divisions appear in compound meters: these are called **duplets** ($\frac{2}{3}$) or **quadruplets** ($\frac{4}{3}$). Triplets, duplets, and quadruplets are sometimes collectively called “**tuplets**.” As an example of a quadruplet, look at measure 18 from Chopin’s Nocturne in E \flat in Example 4.8. Although the piece is in compound quadruple ($\frac{16}{8}$) meter, a group of four eighth notes appears in the right hand of measure 18, with a 4 beneath. To count the quadruplet, shift from compound-meter divisions (1 la li) to simple-meter divisions (1 e & a).

Measure 16 shows a somewhat more complicated division: a *triplet* within the beat division of compound meter. On beat 2, the eighth-note division is subdivided into $\frac{3}{4}$ on the first two-thirds of the beat; on the third part, the last two of the thirty-seconds are replaced with a thirty-second-note triplet ($\frac{3}{32}$). Other types of tuplets are possible as well, such as quintuplets (groups of five), sextuplets (groups of six), and septuplets (groups of seven). These appear most often in Romantic-era repertoire (around 1830 to 1910), such as the Chopin nocturne, where they mimic the freedom of virtuoso improvisation.

EXAMPLE 4.8: Chopin, Nocturne in E \flat Major, mm. 16–18 $\frac{16}{8}$

quadruplet
18
1 e^a & a
polyrhythm:
3 against 4

Look again at the quadruplet in measure 18. It sounds simultaneously in the right hand with the triple division in the left hand. This juxtaposition of two beat divisions—here, three against four—is called a **polyrhythm**.

The other polyrhythm you will typically encounter in performances is two against three, shown in Example 4.9. In this song, Brahms introduces triplets in the right hand of the piano, while the singer continues with eighth-note divisions of the beat (see mm. 33 and 34, beat 4). A typical strategy for performing such polyrhythms is to learn the composite pattern that emerges when the two rhythms are placed against each other. For two against three, for example, tap one rhythm in each hand to the words “nice piece of cake”: “nice” (both hands together) “piece” (hand 1 “of” (hand 2) “cake” (hand 1) “nice” (both hands), and so on; there should be equal time between “nice,” “piece,” and “cake.” Hand 1 will be tapping threes and hand 2 twos.

EXAMPLE 4.9: Brahms, “Die Mainacht,” mm. 33–35 $\frac{3}{4}$

33
34
35
Wann, o lä - chein des Bild, wel - ches wie Mor - gen - rot
polyrhythm:
2 against 3

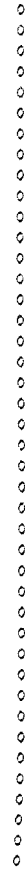
Translation: When, O smiling image, who [shines] like rosy dawn.

Duplets and quadruplets may be found in simple triple meters as well, at the measure level rather than the beat level. The second movement of Brahms's Horn Trio, given in Example 4.10, begins with quarter-note motion in a quick $\frac{3}{4}$. Then

in measures 14–16, there are two quarter-note beats per measure rather than three; these are marked with a bracket and a 2 to show the duplet. This type of “super duplet” temporarily disrupts the meter (from triple to duple).

EXAMPLE 4.10: Brahms, Horn Trio in E \flat Major, second movement, mm. 9–17a $\frac{3}{4}$

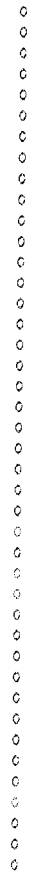
Violin
Horn in E \flat
Piano
duplets
13 14 15 16 17
f f f f f



Hemiola

Example 4.11 shows a less typical type of hemiola: this one in compound meter, where the normal three-part division of the beat is temporarily grouped in twos in the upper voice. Here it is possible to hear both meters ($\frac{3}{2}$ for the three half notes in the highest voice and $\frac{6}{4}$ in the other voices) continuing simultaneously for a measure and then realigning into the notated meter at the cadence.

EXAMPLE 4.11: Bach, *St. Anne* Fugue, mm. 57-59 4/8




Metrical Accent and Implications for Performance

Listen again to the opening of Chopin's Nocturne in E \flat (Example 4.12) to consider ways that knowledge of the metrical hierarchy might help to shape a performance. The left-hand part consists of a repetitive rhythm that sounds on every eighth note of the $\frac{3}{8}$ meter, but these eighths don't carry the same metrical weight, as the dots beneath the staff indicate. The pianist might want to bring out the lowest bass notes (E \flat 2, E \flat 2, D2, C2, etc.)—a melodic line whose pitches fall primarily at the measure and half-measure—and to minimize the chords on the offbeats.

EXAMPLE 4.12: Chopin, Nocturne in E \flat Major, mm. 1-4 3/8

Hypermeasure:
Measure:
Half-measure:
Quarter note:
Eighth note:

The metric analysis could also influence performance of the right-hand melodic line. For example, the pianist might want to shape the line in a pattern of strong and weak beats that corresponds to the half-measure (stronger beats on 1 and 3). Thinking in larger units sometimes raises interesting performance questions: for example, whether to aim measure 2 toward the highest pitch, C6, or beyond it to the metrically accented B \flat 5—while paying attention at the same time to the *crescendo* and *decrescendo* marks () in the score. Such questions make the interaction of analysis and performance a fascinating topic for exploration. Compare some recordings to decide which interpretations you hear and which you prefer.

At best, rhythmic notation only approximates a truly musical performance. The performer's interpretation will usually include tempo fluctuations that speed up or slow down slightly as the work approaches an important musical goal. This type of transitory tempo fluctuation is called *rubato*.

SUMMARY

Meter is hierarchical, and implies accent patterns that are identical whether the meter is simple or compound.

- duple: strong-weak
- triple: strong-weaker-weakest
- quadruple: strong-weak-medium-weak

Did You Know?

Composers and performers from earlier eras didn't think of meter in exactly the way we do now. For example, in the 1770s, German theorist and composer Johann Philipp Kirnberger (a student of J. S. Bach) wrote that simple meters can be divided into two or three parts: $\frac{3}{4}$ divides two beat units into two eighth notes per beat; and another simple meter, $\frac{3}{8}$, divides two beat units into three eighth notes per beat. What makes both these meters "simple" for Kirnberger is that they each require one main accent, on the downbeat of the measure.

Compound meters, in contrast, are made of several measures of simple meter put together, or "compounded": for example, the compound meter $\frac{6}{4}$ is two $\frac{3}{4}$ measures combined, and $\frac{9}{8}$ is two measures of $\frac{3}{8}$. Compound meters, for Kirnberger, take

an accent on beats 1 and 3. He even describes two types of $\frac{4}{4}$: one with a strong beat only on the downbeat of the measure ("simple" $\frac{4}{4}$) and the other with accents on beats 1 and 3 ("compound" $\frac{4}{4}$).

Clearly musicians of earlier eras understood beats within the measure to belong to an implicit hierarchy of strong and weak, which affected notation choices, performance practice, and conducting. Leopold Mozart, Wolfgang Amadeus's father, commented in *Gründliche Violinschule* (a violin manual) that $\frac{6}{8}$ is more suitable for a quick melody than $\frac{3}{8}$ because the latter "cannot be beaten quickly without moving the spectators to laughter." From his remarks, Leopold presumably conducted $\frac{6}{8}$ in four.

TERMS YOU SHOULD KNOW

anacrusis	duplet	rubato
compound duple	hemiola	triple
compound triple	metrical accent	tuplet
compound quadruple	quadruplet	

QUESTIONS FOR REVIEW

- How are compound meters distinguished from simple meters?
- When reading a compound meter signature, how do you determine (a) the number of beats per measure and (b) the beat unit?
- Provide the number of beats per measure and the beat unit for each of the following meter signatures: $\frac{4}{2}$, $\frac{3}{8}$, $\frac{9}{8}$.
- What guidelines should you follow in beaming rhythms together? What makes this difficult when the dotted-half note is the beat unit?
- How do the guidelines for metrical accent compare in simple and compound meters?
- If possible, find a piece of music from your repertoire in each of the following meters: compound duple, compound triple, compound quadruple. Choose at least one with a beat unit other than $\frac{4}{4}$, and practice chanting its rhythm while conducting the meter.

Minor Keys and the Diatonic Modes



Overview

Here, we continue our study of keys and scales by writing and playing in minor keys and diatonic modes. We will use this knowledge to identify keys and modes in musical works.

Repertoire

Johann Sebastian Bach
Chaconne, from Violin Partita No. 2 in D Minor
Invention in D Minor

Béla Bartók, "In Lydian Mode," from *Mikrokosmos*

Archangelo Corelli, Allemanda, from Trio Sonata in A Minor, Op. 4, No. 5

"Greensleeves"

John Lennon and Paul McCartney, "Eleanor Rigby," from *Revolver*

"Old Joe Clark"

Franz Schubert, "Der Lindenbaum" ("The Linden Tree"), from *Winterreise (Winter Journey)*

"Wayfaring Stranger"

Outline of topics

Parallel keys: Shared tonic

Relative keys

- Relative minor: Shared key signature
- Finding the relative minor key
- Finding the relative major key
- Identifying the key of a musical passage

Variability in the minor scale

- The "forms" of minor
- Hearing minor scale types
- Writing minor scales

Scale degrees in minor

The minor pentatonic scale

Modes of the diatonic collection

- The "relative" identification of modes
- The "parallel" identification of modes
- Spelling modal scales
- Twentieth-century and contemporary modal practice