How Music Works:
A First-Year Theory Textbook

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Second Edition

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www.tonalityguide.com

Public Domain Music Scores

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www.cpdl.org/wiki/index.php/Main_Page

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Introduction

Welcome to the music theory program at Kent State University. While at this university, your music theory courses will cover the Western-Classical tradition from early Gregorian chant through the late twentieth century. This textbook is designed for the first two semesters and covers the fundamentals of music and functional tonality principles circa 1700-1830. This period encompasses the careers of Bach and Handel and the lives of Haydn, Mozart, Beethoven and Schubert. This music, and the music of their contemporaries, provides the basis for the study of functional tonality. For the beginning collegiate music student, this music is the easiest to understand from an analytical perspective. Although many composers have purposefully avoided tonality since then, there is a continuous line of composition, study, and performance of tonal music.

Music theory originates after composition. Composers have rarely "painted by numbers," using music theory to create their works. Instead, music theorists throughout history researched finished compositions for recognizable patterns to document. This text book is not a manual for music composition. Music composition is a creative art, while the study of music theory is an academic discipline to understand the creative art.

Understanding music theory will make you a better musician. As a performer, it will help you make informed decisions about style, will help you memorize music, and will give you more insights into the music you perform. As an educator, as all musicians are, music theory will enable you to hear and fix mistakes, teach music fundamentals to beginning students, learn a score to conduct an ensemble, and teach music theory to more advanced students.

Acoustics of Music: A Brief Primer

Sound results from the vibration of an object such as a violin string or a tuning fork. These vibrations cause the adjacent air particles to vibrate. Sound travels much slower than light; it moves through air at approximately 1100 feet per second, or 750 miles per hour. When the air particles strike the eardrum they are transformed into what we call sound. Musical vibrations occur in a cyclic periodic process. Objects with shorter periodic structures vibrate more quickly and will have a higher *frequency*, or number of cycles per second. Objects with longer periodic structures vibrate more slowly and therefore have a lower frequency. Pitches are usually labeled by the number of cycles in one second. At the maximum, human hear frequencies from about 20 cycles per second (extremely low) to about 20,000 cycles per second (extremely high). Frequency is directly related to pitch. The note A that vibrates 440 cycles per second is often used as the standard for pitch and tuning. Doubling the number of vibrations results in the same pitch one octave higher.

Example 1
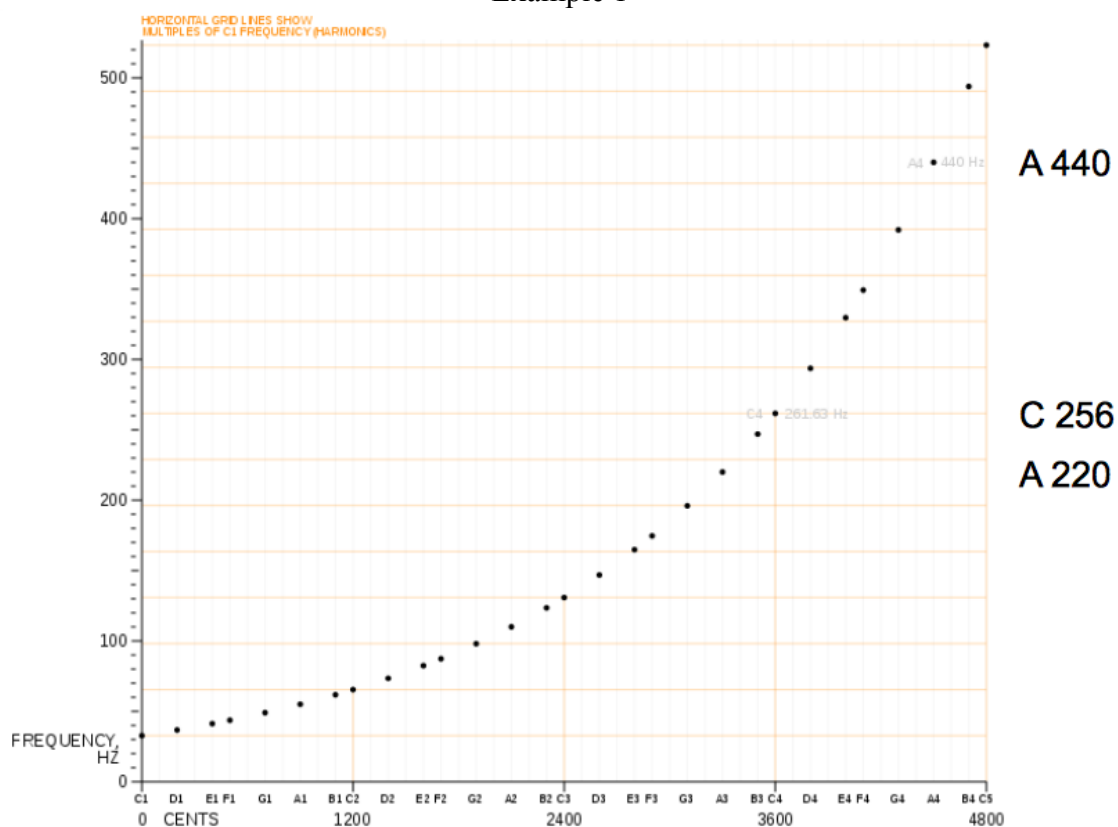
In addition to frequency, another basic aspect of sound is *amplitude*. Amplitude is the distance an object moves in each periodic cycle. It is directly related to the loudness or intensity of a sound. Amplitude is measured in units called *decibels*. The louder a sound is, the higher its decibel reading. The scale for decibels is logarithmic in structure; this means

that an object that creates 100 decibels is 10 times as loud as an object creating 90 decibels. The human threshold of pain is reached at about 130 decibels.

The periodic recurring motion of a musical object takes the form of a wave. Much like the ripples from a stone thrown into a lake, sound waves radiate outward from their source. This outward spread is called *diffusion*. The length of the wave, or *wavelength*, is directly related to the frequency of the sound. Low pitches thus have longer wavelengths than high pitches. Wavelengths vary greatly. The wavelength of a low pitch from a pipe organ, for example, might be 60 feet long, while the wavelength of a high pitch from a piccolo might be only a few inches long. Different types of sound sources create different types of waves. Some of the wave types used in music are sawtooth waves, sine waves, square waves, and triangle waves. These types are labeled by the visual representation of their waves. Each type of wave has a characteristic sound based on its musical characteristics.

Example 2
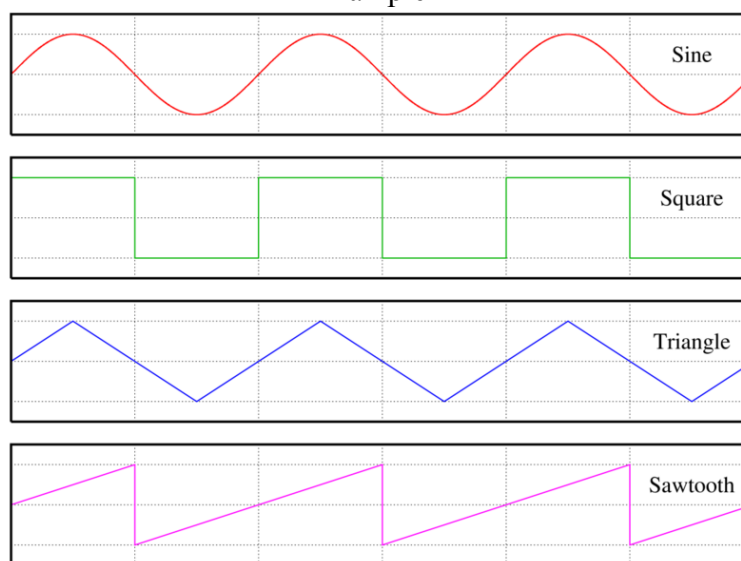
The harmonic series, or overtone series, provides the basis for many qualitative aspects of musical structure and instrumentation. Every pitch sounded on a vibrating or resonating body consists of a combination of various frequencies. The lowest of these pitches is called the *fundamental*. The pitches above it are called *overtones*. The distinctive character of different musical instruments is due to the varying combinations of harmonics that make up the sound of each. These differences are seen in the frequencies that make up the different wave types in the example above. In addition, composers have generally used the relative spacing of pitches in the harmonic series (wide at the bottom and closer together on top) as a guide in voicing chords. The harmonic series is easily reproduced by playing a series of pitches from low to high (without changing fingerings or slide positions) on a brass instrument. The seventh and eleventh harmonics do not coincide with the equal-tempered tuning used on most instruments today. The seventh harmonic is a bit flatter, and the eleventh a bit sharper. Some composers have exploited this distinctive sound.

Example 3

Harmonic Number

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

Fundamental

Early Western music used a tuning system called Pythagorean intonation, in which only the intervals of the octave and fifth were perfectly in tune. In this system an octave is equal to the numerical ratio 2:1, while a fifth is equal to 3:2. The fourth is equal to an octave minus a fifth, and therefore has the ration 4:3. This tuning system, which works very well for medieval music, is the source of the names "perfect octave," perfect fifth," and "perfect fourth" still used today to label those intervals.

As Renaissance-era composers began to use more thirds and sixth as consonances, a new tuning system that created pure thirds was needed. This system is called just intonation, and adds a 5:4 major third to the ratios listed above. Some performers today prefer just tunings for certain kinds of music, such as those sung by an a cappella choir.

During the Baroque period, composers needed to make alterations in these pure tunings to allow modulations to more distant keys. Various new systems were developed that alter some intervals from pure ratios and are called mean-tone temperaments. Mean-tone systems in general make more commonly-used intervals consonant while allowing rarely-used "hidden" intervals to be very dissonant. Period-instrument performances of Baroque music today often use various mean-tone temperaments.

By the nineteenth century, another tuning system that extended the available key relationships still further was needed. This system is called equal temperament and allows modulations to all keys, though at the expense of making every interval and chord very slightly out of tune. This system is the one in general use in Western music today. Pianos and other keyboard instruments are tuned to a modified type of equal temperament.

Interval size is measured in terms of a unit called a cent. One cent is equal to 1/1200th of an octave. In other words, 100 cents makes one equally-tempered minor second. An equal-tempered perfect fifth is thus 700 cents. Tuning systems can be easily compared by looking at the number of cents in each interval.

Strictly speaking, a "tuning" or "intonation" is a system that defines intervals based only on simple numerical ratios. Pythagorean and just intonations are organized in this way. By contrast, a "temperament" is a system that alters intervals from such ratios for various musical reasons. Mean-tone temperament and equal temperament are the most frequently-used examples.

Go to www.phys.unsw.edu.au/jw/basics.html for more information on acoustics.

Chapter 1: Rhythm

Duration

Rhythm describes how music is organized in time. The notation system for durations is proportional. In the chart below, each lower duration is half the length of the previous note or rest.

Example 1-1

Name	Note	Rest
Whole (1)	𝅝	𝄻
Half (2)	𝅗𝅥 𝅗𝅥	𝄼
Quarter (4)	♩ ♩ ♩ ♩	𝄽
Eighth (8)	♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪	𝄾
Sixteenth (16)	𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯	𝄿

Durations are lengthened with either ties or dots. A tie connects notes to create a single duration. A tie is required to extend a duration over a bar line. A dot always adds one half of the note's or rest's value to the duration. A second dot adds half of the first dot. Rests are only dotted in compound meter, and are never tied.

Example 1-2

♩‿♩ = 𝅗𝅥   ♩. = ♩‿♪   ♩.. = ♩‿♪‿𝅘𝅥𝅯

Meter

Meter is the organization of rhythm into regular groups of beats and is notated with time signatures. Time signatures reflect the type of meter and the beat division.

There are three common types of meters: duple meter has two beats, triple has three, and quadruple has four. It is also possible, but less common, to find music that has five or seven beats per measure. Such examples can be heard as combinations of duple or triple groupings (2 + 3, 3 + 2, 2 + 2 + 3, etc.)

There are two kinds of beat divisions: simple and compound. Simple meter divides the beat in two. The top number reflects the number of beats per measure, while the bottom number gives the beat's duration. The following examples illustrate simple meters.

Example 1-3

Time Signature	Beats Per Measure	Beat Duration	Beat Division
$\frac{2}{4}$	2	♩	♫
$\frac{2}{2}$ or 𝄵	2	𝅗𝅥	♩ ♩
$\frac{3}{4}$	3	♩	♫
$\frac{3}{2}$	3	𝅗𝅥	♩ ♩
$\frac{4}{8}$	4	♪	♬
$\frac{4}{4}$ or 𝄴	4	♩	♫

Example 1-4

String Quartet No. 7, Op. 59 No. 1

L.van Beethoven

Example 1-5

The Magic Flute Overture, K. 620

W.A. Mozart

Example 1-6

Piano Sonata No. 11 in B flat major, Op. 22, mvt. 3   L.van Beethoven

Menuetto

Compound meter divides the beat in three. The top number describes the total number of beat divisions, while the bottom number gives the duration of the beat divisions. In slow music, the top number may reflect beats per measure and the bottom number the beat's duration, thereby having six, nine, or twelve beats per measure. The following examples illustrate compound meters.

Example 1-7

Time Signature	Beats Per Measure	Beat Duration	Beat Division
$\frac{6}{8}$	2	♩.	♫♪
$\frac{6}{4}$	2	♩.	♩♩♩
$\frac{9}{16}$	3	♪.	♬♪
$\frac{9}{8}$	3	♩.	♫♪
$\frac{12}{4}$	4	♩.	♩♩♩
$\frac{12}{8}$	4	♩.	♫♪

Example 1-8

Album for the Young, Op. 68, mvt. 8 "The Wild Rider"

R. Schumann

Example 1-9

Winterreise, Op. 89, mvt. 17 'Im Dorfe'

Etwas langsam

Example 1-10

Im Haine, Op. 56, No. 3, D. 738

F. Schubert

Example 1-11

French Suite No. 5 in G major, BWV 816, mvt. 7 'Gigue'

J.S. Bach

Example 1-12

Symphony No. 3 in F major, Op. 90, mvt. 1

J. Brahms

In the examples above, the meters are as follows:
      Simple duple: Example 1-5 (p. 12)
      Compound duple: Examples 1-8 (p. 14) and 1-12 (p. 17)
      Simple triple: Example 1-6 (p. 13)
      Compound triple: Example 1-10 (p. 16)
      Simple quadruple: Example 1-4 (p. 11)
      Compound quadruple: Examples 1-9 (p. 15) and 1-11 (p. 17)
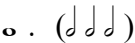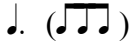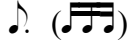
Example 1-13
Top Time Signature Number

	Simple	Compound
Duple	2	6
Triple	3	9
Quadruple	4	12

Example 1-14
Bottom Time Signature Number

Bottom Number	Simple Beat Duration	Compound Beat Duration
2	𝅗𝅥	𝅝. (𝅗𝅥 𝅗𝅥 𝅗𝅥)
4	𝅘𝅥	𝅗𝅥. (𝅘𝅥 𝅘𝅥 𝅘𝅥)
8	𝅘𝅥𝅮	𝅘𝅥. (𝅘𝅥𝅮 𝅘𝅥𝅮 𝅘𝅥𝅮)
16	𝅘𝅥𝅯	𝅘𝅥𝅮. (𝅘𝅥𝅯 𝅘𝅥𝅯 𝅘𝅥𝅯)

How to Identify a Meter

      1. Look at the top number in the time signature.
      2. Determine if the meter is duple, triple, or quadruple (see Example 1-13).
      3. Conduct a duple meter in two, a triple meter in three, and a quadruple meter in four.
      4. Look at the bottom number in the time signature.
      5. Determine if the meter is simple or compound (see Example 1-14).
      6. The conducted beat will have two divisions in simple time, and three divisions in compound time.

How to Write a Meter
      1. Determine if the music is duple, triple or quadruple.
      2. Determine if the music is simple or compound.
      3. Choose the necessary time signature to reflect the meter type and beat division (see
          Examples 1-13 and 1-14).
      4. Make sure all beams, flags, and ties show the meter correctly.

Other Rhythmic Aspects
      Syncopation disrupts meter by accenting normally unaccented beats or divisions.
Typically, syncopation displaces a note by half its value. Rests are not normally syncopated.

Example 1-15

A hemiola is a specific syncopation in simple triple meter. In two measures of triple meter, the effect is of three measures of simple duple meter at the same beat level.

Example 1-16

Example 1-17

Sleeping Beauty, Op. 66, Act I, No. 6: Valse   P.I. Tchaikovsky

Tuplets group durations into irregular pulse divisions. The triplet is the most common.

Example 1-18

Chapter 2: Pitch

Pitch is the specific highness or lowness of a musical sound. In English-speaking countries, pitches are given general names, which use the first seven letters of the alphabet.

Clefs use the five-line staff to identify specific pitches. There are four commonly used clefs: treble, bass, alto and tenor. Treble clef defines the staff's second line as the G above middle C. Bass clef defines the staff's fourth line as the F below middle C. Alto clef defines the staff's middle line as middle C. Tenor clef defines the staff's fourth line as middle C. Familiarity with all four clefs is required to read music easily and fluently.

Pitches are labeled by the register or octave in which they occur. One system of designating different octaves adds numbers to the letter names. Octave designations encompass the seventh, C to B, with the next C beginning the next designation. Middle C is C4. Ledger lines are required to notate pitches outside the boundaries of the staff.

Example 2-1

The Major Scale

A scale is a pitch pattern within an octave. A major scale contains whole and half steps using all seven note names. An example of a half step is the distance between B and the C directly above it on a piano. An example of a whole step is C to D on the piano. There are two half steps in a whole step. A major scale makes use of this pattern of steps: W W H W W W H. An example is the white keys of a piano beginning on C.

Example 2-2
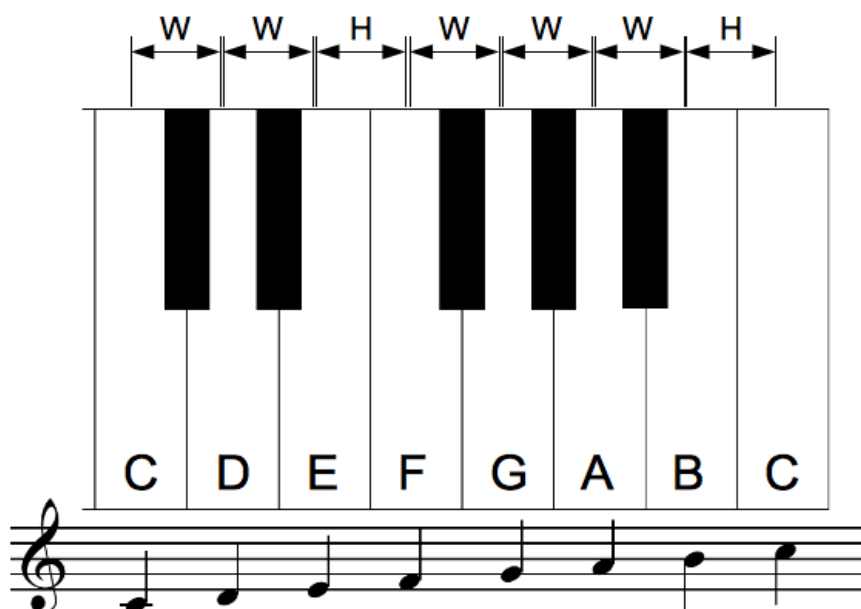
A major scale is divisible into two four-note segments called tetrachords. Both tetrachords are the same and are separated by a whole step. This pattern of WWH is called the major tetrachord.

Example 2-3
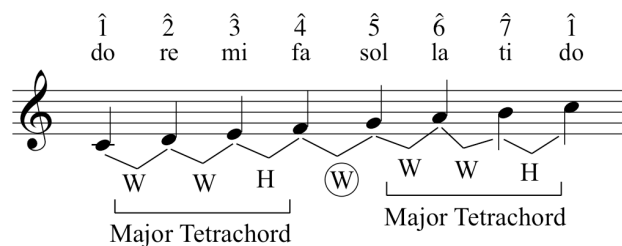
The numbers with carets are called scale-degree numbers. For any major scale, the starting pitch is $\hat{1}$, the second is $\hat{2}$, and so on returning to $\hat{1}$ at the octave. Solfege syllables are explained in *Learning to Listen*.

Accidentals

Starting a major scale on note names other than C requires accidentals. An accidental is a symbol used to raise or lower a pitch.

Example 2-4

Accidental	Symbol	Alteration
Double Sharp	𝄪	Raises two half steps
Sharp	♯	Raises a half step
Natural	♮	Cancels a previous accidental
Flat	♭	Lowers a half step
Double Flat	♭♭	Lowers two half steps

For example, starting a major scale on G requires F be raised to F sharp.

Example 2-5

The Natural Minor Scale

There are three types of minor scales. The first is natural minor, which has this step pattern: W H W W H W W. Starting on C gives the following:

Example 2-6

Another way to derive a natural minor scale is to apply accidentals to a major scale starting on the same pitch. From major, scale degrees $\hat{3}$, $\hat{6}$, and $\hat{7}$ are each lowered a half step. Note that these three scale degrees require the addition of a flat in front of the scale-degree number. Major and minor scales sharing the same starting pitch are called parallel.

Example 2-7

A third way to derive natural minor uses a major scale beginning on $\hat{6}$. Major and minor scales sharing the same pitches are called relative.

Example 2-8

The Harmonic and Melodic Minor Scales

Harmonic minor alters a natural minor scale by raising $\hat{7}$ a half step.

Example 2-9

C Natural Minor Scale

C Harmonic Minor Scale

Melodic minor alters a natural minor scale by raising both $\hat{6}$ and $\hat{7}$ when ascending. When descending, melodic minor is identical to natural minor.

Example 2-10

C Natural Minor Scale

C Melodic Minor Scale

There is another set of vocabulary (like solfege syllables and scale-degree numbers) to describe pitches in a scale. These terms are called scale-degree names. Fluency in all three systems is assumed throughout the remainder of this text.

Example 2-11

Key Signatures

Key signatures show consistently used accidentals. Relative major and minor scales share a key signature. Note the order of the accidentals, and their relative position to each other as they are added.

Ex 2-12

The following example shows the placement of all sharps and flats in alto and tenor clefs.

Ex 2-13

One way to visualize key signatures and the order of sharps and flats is the circle of fifths.

Ex 2-14
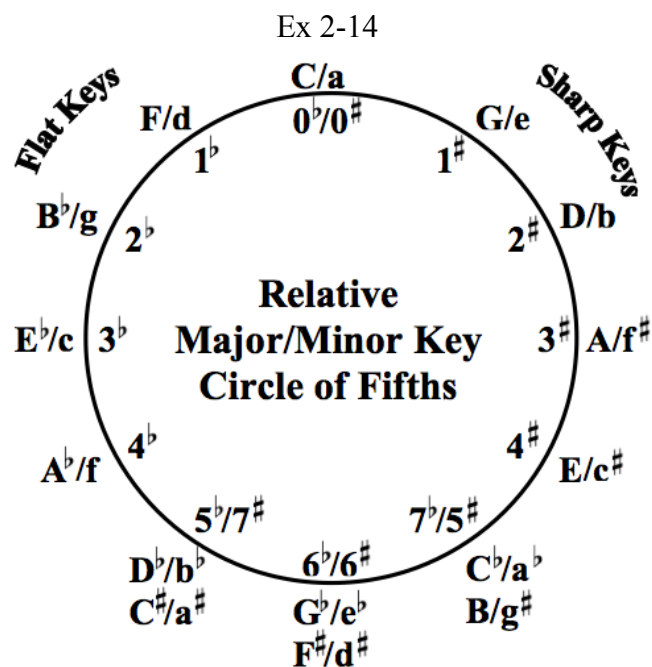
Diagram copyright MacGAMUT Music Software, Inc. Used by permission.

Intervals

An interval is the distance between two pitches. This distance can occur vertically (harmonic interval) or horizontally (melodic interval). There are two aspects of any given interval: generic size and specific quality. An interval's size is its visual distance in notation. For example, a third is a line to the next line or a space to the next space.

Example 2-15
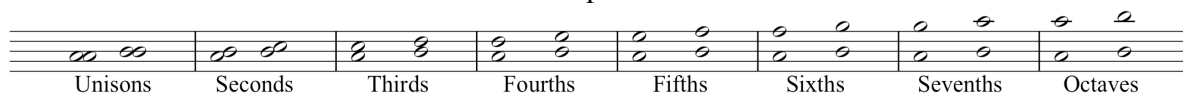
Quality refers to the specific distance between given pitches of an interval. There are two interval qualities measured from the tonic in an ascending major scale. The unison, fourth, fifth, and octave are perfect, while the second, third, sixth, and seventh are major.

Example 2-16

| Perfect Unison (P1) | Major Second (M2) | Major Third (M3) | Perfect Fourth (P4) | Perfect Fifth (P5) | Major Sixth (M6) | Major Seventh (M7) | Perfect Octave (P8) |

In a descending major scale, there are also two interval qualities measured from the tonic. The unison, fourth, fifth, and octave are still perfect, while the second, third, sixth, and seventh are now minor.

Example 2-17

| Perfect Unison (P1) | Minor Second (m2) | Minor Third (m3) | Perfect Fourth (P4) | Perfect Fifth (P5) | Minor Sixth (m6) | Minor Seventh (m7) | Perfect Octave (P8) |

Expanding a perfect or major interval by a half step creates an augmented interval, and contracting a perfect or minor interval by a half step creates a diminished interval. A minor interval expanded a half step makes a major interval and vice versa. A perfect interval cannot become major or minor. The augmented and diminished intervals in bold are commonly used.

Example 2-18

| Augmented Unison (+1) | **Augmented Second (+2)** | Augmented Third (+3) | **Augmented Fourth (+4) (Tritone, TT)** | Augmented Fifth (+5) | **Augmented Sixth (+6)** | Augmented Seventh (+7) | Augmented Octave (+8) |

| Diminished Second (°2) | **Diminished Third (°3)** | Diminished Fourth (°4) | **Diminished Fifth (°5) (Tritone, TT)** | Diminished Sixth (°6) | **Diminished Seventh (°7)** | Diminished Octave (°8) |

How to Identify Intervals

1. Determine the generic size of the interval. (2, 3, etc.)
2. Determine the specific quality of the interval (M, m, +, °). Make sure to take both accidentals into consideration.
3. Label the interval with its specific quality and generic size (i.e. +4).

How to Write Intervals

1. Determine the generic size from the given pitch and notate it either above or below the given pitch.
2. Do not change the given pitch.
3. Add accidentals to the pitch from step 1 to create the specified quality.
4. **DO NOT CHANGE THE GIVEN PITCH!**

Compound Intervals

Intervals from the unison to the octave are simple intervals, while intervals beyond the octave are compound. It is also possible to see augmented and diminished compound intervals, such as +11.

Example 2-19

| Minor Ninth (m9) | Major Ninth (M9) | Minor Tenth (m10) | Major Tenth (M10) | Perfect Eleventh (P11) | Perfect Twelfth (P12) | Minor Thirteenth (m13) | Major Thirteenth (M13) | Minor Fourteenth (m14) | Major Fourteenth (M14) | Perfect Fifteenth (P15) |

Interval Inversion

Intervals are inverted by moving one pitch an octave higher or lower. Complementary intervals add up to nine (2 + 7 = 9, 3 + 6 = 9, etc.).

When inverted, most intervals change their specific quality:
Major intervals become minor (M → m)
Minor intervals become major (m → M)
Augmented intervals become diminished (+ → °)
Diminished intervals become augmented (° → +)
Perfect intervals remain perfect (P → P)

Notice the similar relationship between major and minor qualities and augmented and diminished qualities.

Example 2-20

Consonance and Dissonance

Consonances are divided into perfect and imperfect. Perfect consonances include the perfect intervals (except the fourth, see example 2-22), while imperfect consonances include major and minor thirds and sixths. Dissonances include seconds, sevenths, and all diminished and augmented intervals.

Example 2-21

The consonance or dissonance of the P4 changes with context. The P4 is dissonant when it includes the lowest voice, otherwise it is consonant.

Example 2-22

Chapter 3: Triads and Seventh Chords

Triads

A chord is a combination of two or more intervals. Triads are three-note chords built in thirds. There are four possible triad qualities: major, minor, diminished, and augmented. The three members of a triad are the root, third and fifth. A triad with the root as the lowest note is in root position.
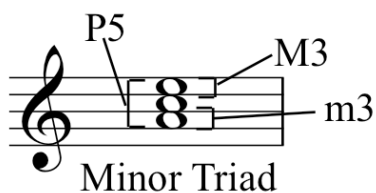
Example 3-1
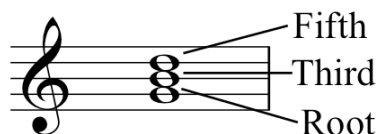
A major triad contains a major third and perfect fifth above the root, creating a minor third between the third and fifth of the chord.

Example 3-2
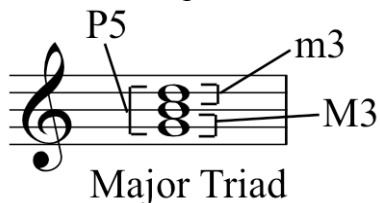
Major Triad

A minor triad contains a minor third and perfect fifth above the root, creating a major third between the third and fifth of the chord.
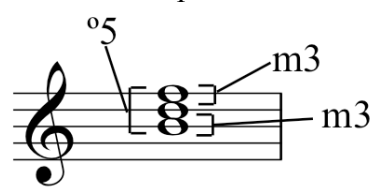
Example 3-3

Minor Triad

A diminished triad contains a minor third and diminished fifth above the root, creating a minor third between the third and fifth of the chord.
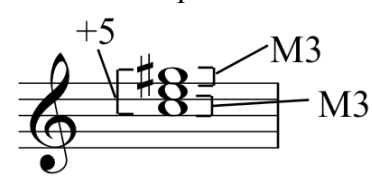
Example 3-4

Diminished Triad

An augmented triad contains a major third and an augmented fifth above the root, creating a major third between the third and fifth of the chord. Augmented triads are rarely encountered in common-practice music, the music studied in this course.
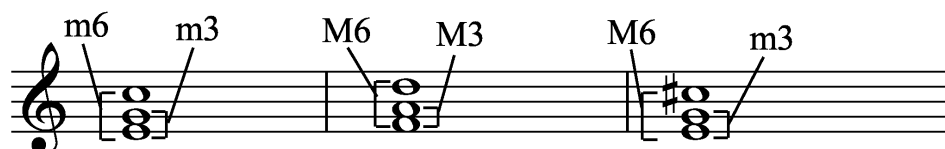
Example 3-5

Augmented Triad

Inversions

When a chord member other than the root is the lowest note, the triad is said to be inverted. A triad in first inversion has the third of the chord as the lowest note. A first-inversion triad has a third and a sixth above the lowest note.

Example 3-6

Major Triad   Minor Triad   Diminished Triad

A triad in second inversion has the fifth as the lowest note. A second-inversion triad has a fourth and a sixth above the lowest note.

Example 3-7

Major Triad   Minor Triad

Figured Bass

In the Baroque and early Classical periods, chords played by an accompaniment were indicated with a figured bass. In this shorthand system, the bass line is given, with numbers beneath indicating the intervals above. A keyboard player from this time period would build harmonies based on the figured bass. It is important to recognize that these figures are a part of the music, as are the written notes, articulations, and dynamics.

Example 3-8

	Entire Figured Bass Symbol	Shorthand
Root Position	$\begin{matrix}5\\3\end{matrix}$	[No Symbol]
First Inversion	$\begin{matrix}6\\3\end{matrix}$	6
Second Inversion	$\begin{matrix}6\\4\end{matrix}$	$\begin{matrix}6\\4\end{matrix}$

Example 3-9

Dido and Aeneas, Act III, 'When I am laid in earth'

H. Purcell

When figured bass needs to indicate a pitch that is not part of the key signature, special symbols are used.

An accidental on its own alters the third (or tenth) above the bass as follows:

Example 3-10

♭	Lowers a half step
♮	Cancels a previous accidental
♯	Raises a half step

An accidental appearing with a number alters that interval above the bass as follows:

Example 3-11

♭6	The sixth above the bass is lowered a half step
♮5	Cancels previous accidental on the fifth above the bass
♯6	The sixth above the bass is raised a half step

Both the slash through a number and the plus symbol also raise the specified interval by a half step.

Example 3-12

6̷	The sixth above the bass is raised a half step
4+	The fourth above the bass is raised a half step

Diatonic Triads and Roman Numerals

The pitches contained in a given scale or key are diatonic. Diatonic triads can occur on every scale degree. Roman numerals indicate a triad's root and quality. In major keys, the triads are as shown below.

Example 3-13

The diatonic chords in a minor key are drawn from harmonic minor, with one exception. The triad on $\hat{3}$ uses the subtonic instead of the leading tone.

Example 3-14

Roman Numerals with Inversion Symbols

To show a triad's inversion with roman numerals, figured-bass symbols are added. Note that these inversion symbols are analytical tools rather than part of the music.

Example 3-15

Triad Arrangements	Inversion Symbol
Root Position	None
First Inversion	6
Second Inversion	6 4

Seventh Chords

There are five diatonic seventh chords: major, dominant, minor, half-diminished, and fully-diminished. Root position has the root as the lowest note.

A major seventh chord is a major triad with a M7.

Example 3-16

Major
Triad   M7

Major Seventh Chord

A dominant seventh chord is a major triad plus a m7.

Example 3-17

Major
Triad   m7

Dominant Seventh Chord

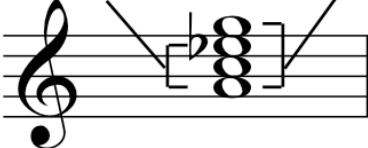A minor seventh chord is a minor triad plus a m7.

Example 3-18

Minor
Triad   m7

Minor Seventh Chord

A half-diminished seventh chord is a diminished triad plus a m7.

Example 3-19

Half-Diminished
Seventh Chord

A fully-diminished seventh chord is a diminished triad plus a °7.

Example 3-20

Fully-Diminished
Seventh Chord
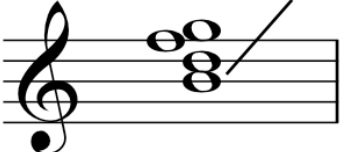
Inversions

There are three inversion possibilities for seventh chords.

First inversion has the third as the lowest note.

Example 3-21

Second inversion has the fifth as the lowest note.

Example 3-22
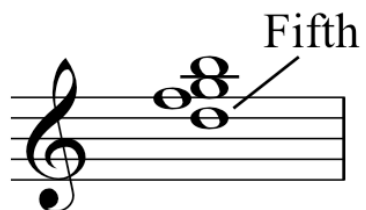
Third inversion has the seventh as the lowest note.

Example 3-23

Figured Bass

Like triads, seventh chords are notated with figured bass.

Example 3-24

	Entire Figured Bass Symbol	Shorthand
Root Position	7 5 3	7
First Inversion	6 5 3	6 5
Second Inversion	6 4 3	4 3
Third Inversion	6 4 2	4 2

Diatonic Seventh Chords

Diatonic seventh chords can also be built on each scale degree. The diatonic seventh chords in major keys are seen below.

Example 3-25

$A\flat$: I^7 ii^7 iii^7 IV^7 V^7 vi^7 $vii^{\varnothing7}$

Like triads, seventh chords in minor keys also use harmonic minor with the exception of the subtonic for III^7.

Example 3-26

f: i^7 $ii^{\varnothing7}$ III^7 iv^7 V^7 VI^7 $vii^{\circ7}$

Inversion Symbols

Again as in triads, inversions are shown with symbols borrowed from figured bass.

Example 3-27

B: V^7 V^6_5 V^4_3 V^4_2

Seventh Chord Arrangements	Inversion Symbol
Root Position	7
First Inversion	6 5
Second Inversion	4 3
Third Inversion	4 2

Chapter 4: Harmonic Progression

Harmonic Progression

Chords in common-practice harmony have functional roles. Function describes the harmonic relationship between the tonic and other diatonic triads. Ultimately, harmonic function is based on the idea of leaving the tonic and returning to it through the dominant. Progressions are seen as elaborating this fundamental functional relationship. The paradigm for harmonic progression can be seen below. Root movement by descending fifths or thirds and by ascending seconds is preferred.

Example 4-1
Major Keys

Chord	Next Chords in Progression
I	Any chord
iii	vi or IV
vi	ii or IV
IV	V, ii, I, or vii°
ii	V or vii°
vii°	I or V
V	I or vi

Minor Keys

Chord	Next Chords in Progression
i	Any chord
III	VI or iv
VI	ii° or iv
iv	V, ii°, i, or vii°
ii°	V or vii°
vii°	i or V
V	i or VI

The diatonic triads of any major key are divided into three functions: Tonic, Predominant, and Dominant. Tonic function provides areas of relief from harmonic tension, and includes I, iii and vi. Predominant function serves as a connection from Tonic to Dominant, and includes ii and IV. While not as strong as the other functions, it provides a greater opportunity for harmonic variation, as will be seen later. Dominant function creates harmonic tension that requires resolution, and includes V and vii°.

Example 4-2

Tonic Function			Predominant Function		Dominant Function	
E: I	iii	vi	ii	IV	V	vii°

In minor keys, the functions remain the same but the qualities of some chords change.

Example 4-3

Tonic Function			Predominant Function		Dominant Function	
e: i	III	VI	ii°	iv	V	vii°

Example 4-4

Piano Sonata No. 11 in A major, K. 331

W.A. Mozart

TEMA
Andante grazioso

A: I ⁶ V⁶ ⁴₃ vi⁷ V⁶ I ii⁶ I⁶₄ cad. V

T   T   D   D   T   D   T   P   D   D
T   D   T   P   D
T   T   P   D

I ⁶ V⁶ ⁴₃ vi·⁷ V⁶ I ii⁶ I⁶₄ cad. V⁷ I

T   T   D   D   T   D   T   P   D   D   T
T   D   T   P   D   T
T   P   D   T

Seventh Chords and Function

When triads are extended into seventh chords, their functions are unchanged, with one exception. The tonic loses stability when extended to the seventh. It cannot end a progression.

Example 4-5

The Well-Tempered Clavier, Book I, Prelude No. 1 in C major   J.S. Bach

C:V⁶ ... I⁴₂ ... vi⁷

Circle of Fifths Progression

A circle-of-fifths progression uses root movement by descending fifths (ascending fourths). Used diatonically, the circle progression can cycle through each scale degree as a root. All these fifths will be perfect, except for the °5 (+4 when ascending) between IV (iv in minor) and vii°.

Example 4-6

Ballade, Op. 118, No. 3   J. Brahms

E♭:ii   ⁷ V⁷ I⁷ IV⁷ vii°⁷ iii⁷ vi⁷ ii⁷ V⁷   I   V⁷ I

Example 4-7

Suite No. 7 in G minor, HWV 432, mvt. 6   G.F. Handel

g: i   iv⁶   V/III   III   VI   ii°⁶   V   i

Harmonic Rhythm

Harmonic rhythm is the rate at which chords change. Normally composers retain a relatively constant harmonic rhythm throughout a musical passage, as in the example above. It can be manipulated to affect the musical structure, as in the following example where the harmonic rhythm accelerates, creating forward motion.

Example 4-8

Piano Sonata No. 1 in F minor, Op. 2, No. 1, mvt. 1   L.van Beethoven

f: i   V$^6_5$

i   vii°⁶   i⁶   ii°⁶   V

The texture often visually disrupts an aurally clear harmonic rhythm. The following example has a continually changing lowest pitch, but the texture implies a continuous harmony that is labeled once rather than with each pitch.

Example 4-9

Piano Sonata No. 16 in C major, K. 545, mvt. 1

W.A. Mozart

Guidelines for Analysis

Remember to include in every analysis, unless otherwise stated: key, roman numerals with inversion symbols, *(six-four chord types, nonharmonic tones, cadences, phrase diagrams, modulations, borrowed harmonies, and form labels)*.

Chapter 5: Part Writing

Voices

The conventional texture in functional harmony is for four-part chorus. The standard distribution of voices in descending order is soprano, alto, tenor, and bass (SATB). Typically, the voices are written in a single grand staff, with soprano and alto in the treble clef, and tenor and bass in the bass clef. Although these four voices create vertical harmonies, it is vital to consider the melodic aspect of each voice as an independent element.

When writing two voices in one staff, the upper voice is stemmed upwards, and the lower voice downwards, regardless of the location of their pitches. As part writing involves writing four voices on two staves, rhythmically aligned pitches must be visually aligned as well.

Each voice has a specified range, as seen below.

Example 5-1

Spacing

The largest acceptable interval between adjacent upper voices (SA, AT) is a perfect octave. It is possible to have a larger interval between the tenor and bass, but it is best to avoid intervals larger than a P12. This spacing will create a pleasing sonority, because it is similar to the structure of the harmonic series.

Example 5-2

Open and Close Position

When there is an octave or more between the soprano and tenor, the chord is in open position. When there is less than an octave, the chord is in close position.

Example 5-3

| More than an octave | One octave | Less than an octave |

Open Position   Open Position   Close Position

Voice Crossing and Overlap

When one voice moves above or below an adjacent voice, the independence of lines is lost. This voice crossing should be avoided.

Example 5-4

When the tenor and bass move in the same direction, a common error is the overlapping of voices. This overlap occurs when one voice sings a pitch above or below the preceding pitch in an adjacent voice. In the example below, the bass and tenor have parallel thirds, and the resulting leaps bring the bass to a higher pitch in the second chord than the tenor had in the first one.

Example 5-5

Motion

When considering voice leading, it is important to compare every two-voice combination: SA, ST, SB, AT, AB, and TB. There are five types of motion.

Static motion (repetition) occurs when two voices stay on the same pitch.

Example 5-6

Oblique motion occurs when one voice moves and another stays stationary.

Example 5-7
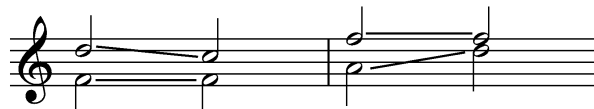
Static and oblique motion create the smoothest chord connections.

Parallel motion occurs when two voices move in the same direction and have the same generic (numeric) interval between them in both chords. There are three types of parallel motion to avoid: perfect unisons, perfect fifths, and perfect octaves.

Example 5-8

Similar motion occurs when two voices move by different intervals in the same direction. Generally, similar motion is acceptable.

Example 5-9
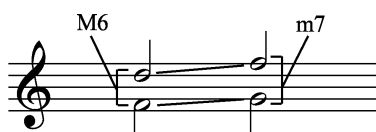
Contrary motion occurs when two voices move in opposite directions. This motion is preferred against the bass in most cases. There are two types of contrary motion to avoid: fifths by contrary motion and octaves by contrary motion.

Example 5-10

Tendency Tones

A tendency tone is a scale degree that normally requires resolution by step. For current purposes, all tendency tones resolve to members of the tonic triad.

When *ti* occurs in the soprano or bass it must ascend to *do*.

Example 5-11

Fa often descends to *mi* (*me*), but not with the regularity of *ti* to *do*.

Example 5-12

Le commonly goes down to *sol*. It rarely goes from *le* to *ti*, because this creates a melodic +2. Avoid augmented melodic intervals.

Example 5-13

Melodic diminished intervals should rarely be used and typically require resolution by step in the opposite direction.

Example 5-14

Connecting Chords

1. The best motion is no motion. Keep common tones.
2. The next best motion is contrary motion with the bass.
3. Movement by seconds and third in the upper voices is preferable.
4. Movement by fourths and fifths is possible. Larger leaps should be avoided.
5. Leaps are more common in the bass than the upper voices, for example, sixths and octaves. Avoid leaps of a seventh.

Root-Position Part Writing

Writing triads in four parts requires doubling one chord member. In root position, the root is doubled. However, never double the leading tone. Diminished triads are problematic in root position, because vii° has a doubled leading tone, and both vii° and ii° have a dissonant °5 with the bass. Avoid them in root position.

Example 5-15

Repeated Roots

When voicing chords with a repeated root, the upper voices move freely within the chord. In the first example below, the upper voices ascend in similar motion to the nearest chord member. In the second example, the voicing changes from open to close position.

Example 5-16

Root Movement by Third

The smoothest chord connections occur between two chords with roots a third (or sixth) apart since they have two common tones.

Example 5-17

Root Movement by Fifth

The next smoothest connections occur between chords with roots a fifth (or fourth) apart. There is one common tone.

Example 5-18

When V moves to I (i) at the end of a work, it is possible to triple the root and omit the fifth.

Example 5-19

To achieve a complete triad, it is also possible to "frustrate" the leading tone by moving *ti* down to *sol* in the alto or tenor.

Example 5-20

Root Movement by Second

Chords with roots a second apart have no common tones. It is best to have the upper voices move in contrary motion to the bass to avoid objectionable parallels. In minor, contrary motion avoids the +2 between *le* and *ti*.

Example 5-21

When V moves to vi (VI), which is called a deceptive progression, extra care is required. To avoid parallels, double the third in the vi (VI) chord. In minor chords, this also avoids the +2 from *ti* to *le*.

Example 5-22

In the above example, notice that the bass and tenor sing B♭3 at the same time. This situation is notated by stemming the notehead in both directions. When this occurs on a whole note, it requires two noteheads next to each other.

Part Writing from a Figured Bass

1. Label the harmonies with roman numerals specified by the figured bass.
2. Supply the alto and tenor for the first chord, using correct doubling and spacing.
3. Continue connecting chords, making sure to move as smoothly and melodically as possible in each voice while retaining the correct doubling and spacing.
4. Check each voice combination. (BT, BA, SA, ST, AT)
5. Check for voice-leading errors and correct them. Playing at the piano will help identify these errors.

Using First-Inversion Triads

First-inversion triads allow for greater freedom in doubling. Doubling one of the outer voices is generally preferable, subject to voice-leading considerations. Remember never to double the leading tone.

One purpose of first-inversion triads is to make chord connections smoother by replacing root-position chords. First-inversion triads help to avoid leaps in the bass line. Note the doublings of the first-inversion triads in the example below.

Example 5-23

G: I   (I)   V   I   V   vi   ii   V

G: I   (I)   V⁶   I   V⁶   vi   ii⁶   V

Changing inversions allows a composer to extend the duration of a particular harmony without losing musical interest. In general, root-position triads have more structural weight than first-inversion triads.

Example 5-24

c: i   iv   c: i   i⁶   iv

First-inversion triads often substitute for root-position triads with the same bass note, allowing more chord possibilities for given bass notes and providing added harmonic color.

Example 5-25

Bb: I   IV   V   Bb: I   ii⁶   V

Common First-Inversion Triads

Using vii° in root position requires doubling the root, the leading tone, creating parallel octaves when it resolves. Using ii° in root position creates a °5 with the bass. These problems are avoided when the triads are in first inversion.

Example 5-26

f: vii°⁶   ii°⁶

In major keys, ii⁶ is used more frequently than ii in root position. It shares the predominant function and the bass note with IV.

Another chord commonly used in first inversion is V⁶. It creates a neighboring bass motion to elaborate the tonic. Note that **ti** in the bass requires resolution to **do**.

Example 5-27

do   ti   do
A: I   V⁶   I

Second-Inversion Triads

In second inversion, the fifth (bass) is doubled. A second-inversion (six-four) triad only occurs in four specific contexts.

An arpeggiated six-four occurs when the bass outlines a triad beneath a single harmony. It functions similarly to first-inversion chords by extending harmonic duration, and is the least common second-inversion triad.

Example 5-28

A pedal six-four occurs when the six-four chord has the same bass note as the two chords surrounding it. The most common pedal six-four chord is IV$^6_4$ surrounded by root-position tonic triads. In the example below, the moving voices ascend from *mi* and *sol* to *fa* and *la* and return to *mi* and *sol*. This formula is the preferred voice leading.

Example 5-29

A passing six-four occurs when the bass note of the six-four chord is approached and left by step in the same direction. The most common passing six-four chord is V^6_4 surrounded by tonic triads in root position and first inversion. Notice in the example below that as the bass ascends *do-re-mi*, another voice, in this case the soprano, descends *mi-re-do*. This pattern is typical in a passing six-four and is called voice exchange.

Example 5-30

Db: I V^6_4 I^6 I
pass.

A cadential six-four signals a cadence. It is a tonic triad with a dominant function, which occurs on a strong beat in a measure. It appears directly before V. In the example below, notice the two common tones and the motion in the soprano and tenor, descending from *mi* to *re* and from *do* to *ti*.

Example 5-31

G: I   IV I^6_4 V   I
cad.

Harmonizing a Given Soprano
1. Start and end on I (or i) to establish the tonality.
2. Find all chord possibilities for each pitch. (Melody note as root, third, or fifth of a chord)
3. Select chords that follow the harmonic progression.
4. Notate the bass using appropriate root-position, first-inversion, or second-inversion chords.
5. Check the bass and soprano voices for part-writing errors.
6. Fill in alto and tenor voices, using correct doubling and spacing.
7. Check each voice combination. (BT, BA, SA, ST, AT)
8. Check for voice-leading errors and correct them. Playing at the piano will help identify these errors.

Guidelines for Analysis

Remember to include in every analysis, unless otherwise stated: key, roman numerals with inversion symbols, six-four chord types, *(nonharmonic tones, cadences, phrase diagrams, modulations, borrowed harmonies, and form labels)*.

Chapter 6: Nonharmonic Tones

Pitches in music that are dissonant against the harmony are called nonharmonic tones. Nonharmonic tones can be described as accented or unaccented. An accented nonharmonic tone occurs on a change of harmony, while an unaccented nonharmonic tone occurs anywhere else.

Unaccented Nonharmonic Tones

A passing tone (PT) is preceded by a step and followed by a step in the same direction. Note that there can be multiple consecutive passing tones.

Example 6-1

A neighbor tone (NT) is preceded by a step and followed by a step in the opposite direction. It can also be thought of as an ornament of a single pitch.

Example 6-2

Passing and neighbor tones can also be accented.

An escape tone (ET) is an unaccented dissonance preceded by a step and followed by a leap in the opposite direction.

Example 6-3

An anticipation (ANT) is a dissonance that arrives at a new harmony before the other voices of the chord. It is usually rhythmically shorter in duration than the resolution.

Example 6-4

Accented Nonharmonic Tones

An appoggiatura (APP) is preceded by leap and followed by a step in the opposite direction. When unaccented, a leap followed by a step is better described as an IN.

Example 6-5

A suspension (SUS) is prepared by the same pitch (preparation) and followed by a step down (resolution). Suspensions are always labeled with the intervals of the suspension and resolution above the lowest consonant pitch. The most common suspensions are the 9-8, 7-6, and 4-3. When the bass suspends, it is labeled SUS 2-3. Suspensions can be shown with figured bass symbols, as seen below.

Multiple suspensions in a row are called a chain of suspensions.

Example 6-6

A retardation (RET) is preceded by the same pitch and followed by a step up. Retardations do not use intervallic labels.

Example 6-7

Labeling Nonharmonic Tones

1. Determine the harmonic rhythm.
2. Label with roman numerals (including inversion symbols and six-four chord types) the harmonies that clearly state a triad or seventh chord.
3. Find the areas that do not fit a clear chord.
4. Determine which pitch is the nonharmonic tone. Put parentheses around or circle the pitch.
5. Make sure that your labeled harmonies fit the harmonic progression.
6. Determine the kind of nonharmonic tone (see Example 6-11), and label it with the proper abbreviation.

Keep in mind that there will be exceptions (where the harmonies do not follow strict progressions or where nonharmonic tones do not fit specific labels).

Passing Seventh

One of the most common melodic movements occurs in a dominant chord moving to the tonic. *Sol* in the upper part descends by step through *fa* to *mi*. This "passing seventh" is usually labeled as a chord member because of the tonal pull of *fa* as a tendency tone. When this same passing movement occurs in another diatonic chord, this pitch is labeled as a PT. The resulting nondominant seventh chord has far less tonal pull, and therefore is heard as a melodic dissonance.

Example 6-8

Writing Nonharmonic Tones

1. Make sure that your nonharmonic tone does not create another chord.
2. Make sure to check that rhythms are aligned correctly, especially when adding accented nonharmonic tones.
3. Generally avoid using multiple nonharmonic tones simultaneously.

Other Nonharmonic Tones

An incomplete neighbor (IN) is a neighbor tone that is missing stepwise motion either before or after the nonharmonic tone. It could be considered an "unaccented appoggiatura" or an "accented escape tone."

Example 6-9

Changing Tones (CT) are two consecutive nonharmonic tones, one above and one below the chord tone they ornament.

Example 6-10

A pedal point (PED), or pedal, is a pitch that is retained through a change of harmony. In the first harmony, this pitch is a chord member, but becomes a nonharmonic tone when the harmony changes. The pitch returns to being a chord member in the final harmony. The pedal is the only nonharmonic tone that is stationary against changing harmony. Typically, a pedal occurs in the bass. Chord inversions are not labeled when a pedal point is present in the bass.

Example 6-11

Example 6-12

Nonharmonic Tone	Abbreviation	Approach	Resolution	Accented/Unaccented
Passing Tone	PT	By step	By step in the same direction	Both
Neighbor Tone	NT	By step	By step in the opposite direction	Both
Escape Tone	ET	By step	By leap in the opposite direction	Unaccented
Anticipation	ANT	By step	Same note	Unaccented
Appoggiatura	APP	By leap	By step in the opposite direction	Accented
Suspension	SUS #-#	Same note	Down by step	Accented
Retardation	RET	Same note	Up by step	Accented
Incomplete Neighbor Tone	IN	By step	By leap in the opposite direction	Accented
Incomplete Neighbor Tone	IN	By leap	By step in the opposite direction	Unaccented
Changing Tones	CT		See text	
Pedal Point	PED	Same note	Same note	

Nonharmonic Tones versus Consonant Tones

There are usually more consonant pitches than dissonant pitches at any given moment. The interaction of large-scale musical form, harmonic rhythm, and nonharmonic tones creates a notable exception often called a "suspension chord." In the example below, the clear dissonance on the downbeat of the final measure is best labeled with a consonant bass and three nonharmonic tones.

Example 6-13

Piano Sonata No. 2, K. 280, mvt. 2   W.A. Mozart

Guidelines for Analysis

Remember to include in every analysis, unless otherwise stated: key, roman numerals with inversion symbols, six-four chord types, nonharmonic tones, *(cadences, phrase diagrams, modulations, borrowed harmonies, and form labels)*.

Chapter 7: Melody

General Melodic Guidelines

      Melody is the principal part in harmonized music. In SATB part writing, the soprano has the melody. Melodies use mostly conjunct (stepwise) motion. Disjunct motion (leaps) should be few and should not be larger than a fifth. After a leap larger than a third, the next pitch normally moves in the opposite direction by step.

Example 7-1

Avoid augmented intervals. Diminished intervals are acceptable only if the next note is a step in the opposite direction.

Example 7-2

If leaping twice in the same direction, the leaps must outline a triad.

Example 7-3

For part-writing purposes, keep rhythms simple. Make sure to end on a strong beat.

Example 7-4

The melodic contour (the shape of the melody) usually has a single focal point. Frequently, this focal point is the highest pitch.

Example 7-5

Be aware of the melodic line of each voice. The upper voices will be more conjunct than the bass. The alto and tenor will often have repeated pitches.

Melodic Tendency Tones

When *ti* occurs in the soprano or bass it must ascend to *do*. The only exception is when either voice steps down from *do* to *sol*.

Example 7-6

Another important tendency tone is the lowered sixth scale degree in minor, *le*. *Le* most commonly descends to *sol*. It rarely ascends to *ti*, because this creates a melodic +2.

Example 7-7

Motive

Most melodies are constructed of motives. A motive is a short rhythmic or melodic unit that is repeated throughout the music. One of the most famous motives in Western music is shown below.

Example 7-8

Symphony No. 5 in C minor, Op. 67

L.van Beethoven

Original Rhythmic Motive:
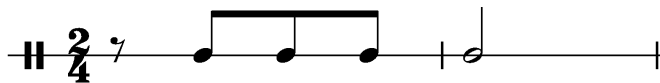
Original Pitch Motive:

(m3)
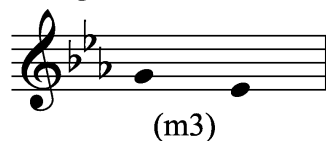
Sequence and Imitation

A sequence is the successive repetition of a motive in a voice at new pitch levels. A tonal sequence alters the motive to retain the key, as seen in Example 7-9. A real sequence maintains the melodic intervals exactly, requiring the addition of accidentals, as seen in Example 7-10.

A related technique is imitation, which is the use of the same motive in close proximity in different voices. It usually occurs in polyphonic textures, as in a fugue.

Example 7-9

Flute Sonata in E major, BWV 1035, mvt. 2

J.S. Bach

Example 7-10

Symphony No. 29 in A major, K. 201, mvt. 1

W.A. Mozart

Allegro moderato

Chapter 8: Cadences

A cadence is a succession of two chords that marks a structural point in music. Cadences are analogous to punctuation in sentences. Four basic kinds of cadences are used in common-practice music.

Authentic Cadences

An authentic cadence is V-I (i in minor). This cadence defines tonality in music. Authentic cadences are conclusive, similar to periods ending sentences. They can be split into two subcategories: perfect and imperfect.

A perfect authentic cadence (PAC) uses both V and I (i) in root position and has **do** in the soprano in I (i). This cadence is the most conclusive and frequently ends large sections of movements.

Example 8-1

Any other kind of authentic cadence is an imperfect authentic cadence (IAC). If either chord is in inversion, the soprano ends on *mi* (*me*) or *sol*, or if vii° replaces V the cadence is imperfect. The imperfect authentic cadence is less conclusive than the perfect.

Example 8-2

Half Cadences

The other primary cadence is the half cadence (HC). A half cadence ends on V. Half cadences are inconclusive and analogous to commas: they pause, but do not complete sentences.

Example 8-3

F: I   V
HC

One special kind of half cadence is called the Phrygian half cadence. It stems from the Medieval and Renaissance cadence used in Phrygian mode. Only occuring in minor, a Phyrgian half cadence is iv^6-V. Notice the half-step motion in the bass from *le* to *sol*.

Example 8-4

a: iv^6 V
HC

Cadences do not occur every time there is a V-I or similar progression in music. They are specific structural moments in music where clear harmonic movement and melodic structure align.

Other Cadences

Authentic and half cadences are the most common cadences in tonal music. The other two cadences are used in more specific ways.

A plagal cadence (PC) often occurs after a perfect authentic cadence at the end of a work. Although a conclusive cadence, it is reflexive and is not capable of marking structure on its own. A plagal cadence is IV (iv) – I (i).

Example 8-5

D: IV   I
     └─── PC ───┘

A deceptive cadence (DC) is so named because it avoids an authentic cadence by replacing I with another chord, most often vi (VI). In this way, deceptive cadences extend phrases, making them inconclusive. Remember to double the third in vi (VI) to avoid part-writing errors.

Example 8-6

d: V   VI   d: V   VI
    └── DC ──┘   └── DC ──┘

Example 8-7

Cadence	Abbreviation	Roman Numerals	Conclusive or Inconclusive
Perfect Authentic	PAC	V → I (i)	Most Conclusive
Imperfect Authentic	IAC	V → I (i)	Conclusive
Plagal	PC	IV (iv) → I (i)	Conclusive
Half	HC	various → V	Inconclusive
Deceptive	DC	V → vi (VI)	Inconclusive

Guidelines for Analysis

Remember to include in every analysis, unless otherwise stated: key, roman numerals with inversion symbols, six-four chord types, nonharmonic tones, cadences, *(phrase diagrams, modulations, borrowed harmonies, and form labels)*.

Chapter 9: Phrase Structure

Musical form occurs on several levels. Large-scale forms include binary, ternary, sonata, and rondo, which will be discussed later. Within these forms, music is organized into smaller structural units.

Phrase

A phrase is a melodic/harmonic unit ending in a cadence. Phrases normally include multiple motives and occur in four-measure lengths. In very fast music, they may be eight measures, or in slow music, they may be two. Although they can be different lengths, four-measure units are most common. Composers sometimes extend four-measure phrases by immediate cadence repetition, sequences, or other means. To identify phrases, look for cadence points. The melodic material between cadences will likely be a cohesive unit.

Example 9-1

Phrases and Cadences

Phrases and cadences are two interrelated aspects of musical structure. Composers use the shapes of phrases and cadence placement in tandem to delineate their music.

Labeling Cadences

1. Determine the harmonic rhythm.
2. Find a place where the harmonic rhythm changes, where there are obvious rests, and/or where the melody pauses. Let your ear guide you.
3. Label the harmonies.
4. Determine the kind of cadence based on the last two chords before the pause (see Example 8-7).
5. Place a bracket beneath the roman numerals and write the correct cadence label.

Building Larger Units Out of Phrases

A repeated phrase occurs when a phrase is immediately restated.

Example 9-2

String Quartet in C major, Op. 76, No. 3 "Emperor," mvt. 2   J. Haydn

A period is a two-phrase unit with a more conclusive cadence at the end of the second phrase. The first phrase is called the antecedent, and the second phrase is called the consequent.

A period is parallel when the melodic material at the beginning of each phrase is similar.

Example 9-3

Piano Sonata H. XVI:37, mvt. 1   J. Haydn

A period is contrasting when the melodic material at the beginning of each phrase is different.

Example 9-4

Piano Sonata No. 12 in F major, K.332   W.A. Mozart

A three-phrase period is still organized into two sections, but contains either two antecedents or two consequents. It can be parallel or contrasting.

Example 9-5

Symphony No. 7 in A major, Op. 92, mvt. 2

L.van Beethoven

A repeated period, like a repeated phrase, is a period that is immediately restated. Note that in the following example, the second statement of the period is transposed an octave higher and has a thicker texture.

Example 9-6

A double period is a period structure enlarged to cover four phrases. It can be parallel or contrasting based on the relationship between the first and third phrases. The cadence at the end of the second phrase should be less conclusive than the final cadence.

Example 9-7

Piano Sonta No. 5, Op. 10, No. 1, mvt. 2

L.van Beethoven

Diagramming Phrases

       Labeling phrase structure is the beginning of form analysis. Phrases are labeled with lowercase letters. Varied repetitions share the same letter, while phrases containing similar material share the same letter with a prime symbol (a'). Further similar phrases add more prime symbols (a", a'''). New phrases with contrasting material are labeled with the next letter.

       Phrases are not diagrammed in the score. Instead, a phrase is shown as a bracket with phrase label, key, cadence, and cadence measure number. The larger phrase structure is labeled above, including whether parallel or contrasting (for example, parallel double period). The following diagrams are templates of the various phrase structures. Specific pieces will have varied phrase content. For example, the double periods could end with b' instead of c.

Example 9-8

Phrase

a		a	
Key:	Cadence	B:	PAC
	Measure #		m. 4

Repeated Phrase

a		a	
F:	PAC		PAC
	m. 4		m. 8

Parallel Period

a		a'	
d:	HC		PAC
	m. 4		m. 8

Contrasting Period

a		b	
f#:	HC		PAC
	m. 4		m. 8

Three-Phrase Period

a		a		b	
E♭:	HC		HC		PAC
	m. 4		m. 8		m. 12
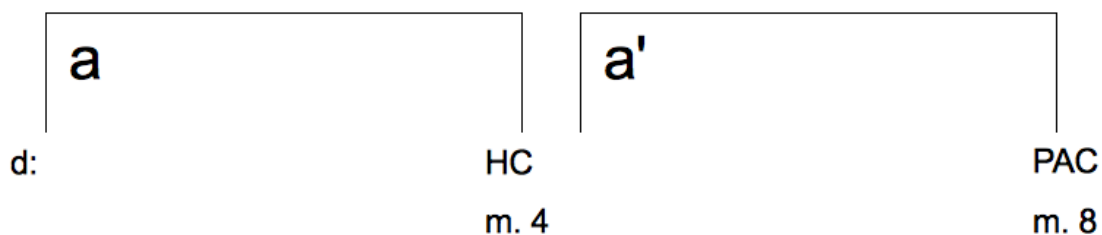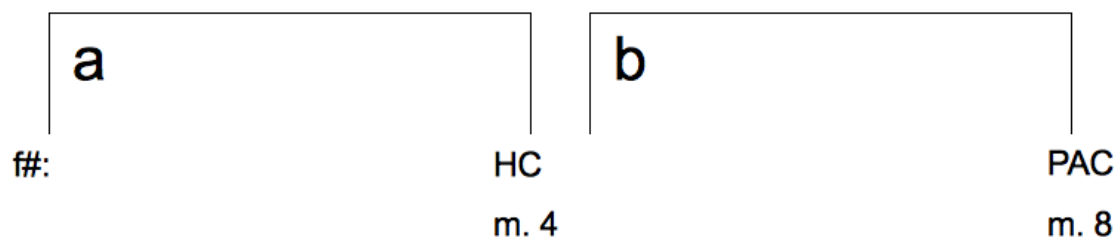
Repeated Parallel Period

a		a'		a		a'	
D:	HC		PAC		HC		PAC
	m. 4		m. 8		m. 12		m. 16
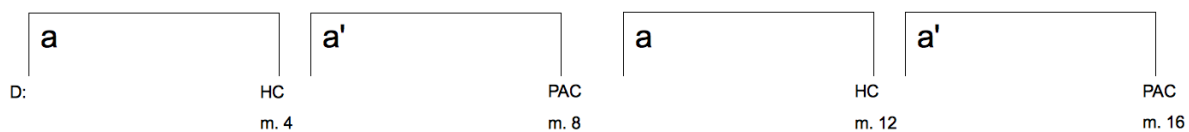
Repeated Contrasting Period

a		b		a		b	
b:	HC		PAC		HC		PAC
	m. 4		m. 8		m. 12		m. 16

Parallel Double Period

a		b		a'		c	
f:	HC		IAC		HC		PAC
	m. 4		m. 8		m. 12		m. 16
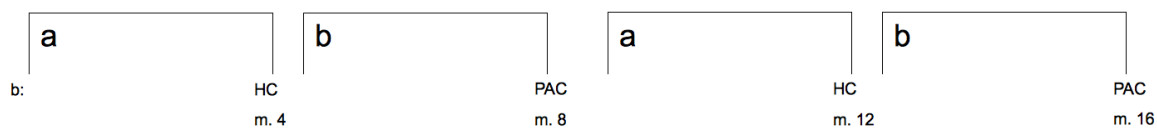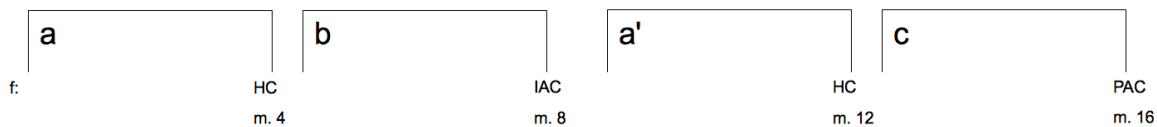
Contrasting Double Period
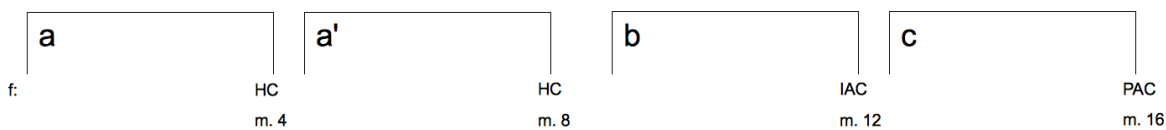
a		a'		b		c	
f:	HC		HC		IAC		PAC
	m. 4		m. 8		m. 12		m. 16

Guidelines for Analysis

Remember to include in every analysis, unless otherwise stated: key, roman numerals with inversion symbols, six-four chord types, nonharmonic tones, cadences, phrase diagrams, *(modulations, borrowed harmonies, and form labels)*.

Chapter 10: Part Writing Seventh Chords

Part writing seventh chords is similar to part writing triads but requires careful handling of the seventh of the chord. Avoiding parallel fifths and octaves, using correct doubling, and maintaining good spacing are still necessary for quality part writing.

The seventh of any chord resolves down by step. It is approached by either step or common tone.

Example 10-1

Piano Sonata No. 1, Op. 2, No. 1, mvt. 3   L. van Beethoven

Example 10-2

"O Herre Gott, dein göttlich Wort"   J.S. Bach

Since seventh chords are four-note chords, it is possible for each voice to have its own pitch. A fully voiced seventh chord is called complete. An incomplete seventh chord most often omits the fifth and doubles the root. Never double the seventh of the chord.

Example 10-3

Root Position: $V^7 \rightarrow I$ (i)

By far the most common seventh chord is V^7. There are multiple voicing possibilities when writing V^7 to I with both chords in root position. The bass will always move from *sol* to *do*. V^7 includes a tritone between its third and seventh (*ti* and *fa*), which is normally resolved when moving to I. When it is written as an +4, the pitches resolve outward; when it is written as a °5, the pitches resolve inward. This resolution requires that one chord be incomplete, as seen below.

The first voicing possibility is a complete V^7 resolving to an incomplete I. The seventh resolves down by step (*fa* to *mi*), the third resolves up by step (*ti* to *do*), and the fifth moves down by step (*re* to *do*). This voice leading results in a tonic triad that has a tripled root and omits the fifth.

Example 10-4

The second possibility is an incomplete V^7 resolving to a complete I. The seventh resolves down by step (*fa* to *mi*), the third resolves up by step (*ti* to *do*), and the doubled root (not the bass) remains as a common tone (*sol* to *sol*).

Example 10-5

The third possibility is a complete V^7 resolving to a complete I. The seventh resolves down by step (*fa* to *mi*), the third descends by leap (*ti* to *sol*) only in an inner voice, and the fifth moves down by step (*re* to *do*). This voicing allows for both chords to be complete, but does not resolve the tritone.

Example 10-6

Inversions of V^7 and any other seventh chords follow the previous part writing guidelines.

Root Position: $V^7 \rightarrow$ vi (VI)

As with V to vi, V^7 to vi results in a doubled third (*do*). The seventh resolves down by step (*fa* to *mi*), the third resolves up by step (*ti* to *do*), and the fifth moves down by step (*re* to *do*). Watch for potential voice-leading problems, such as parallels or the +2 in minor.

Example 10-7

vii°⁷ → i

vii°⁷ contains two tritones: one between the root and fifth (***ti*** and ***fa***) and the other between the third and seventh (***re*** and ***le***). Resolving both tritones and doubling the third in the tonic triad is the most common voice leading.

Example 10-8

°5   +4

d: vii°⁷   i

Circle of 5ths with Seventh Chords

In root position, a circle of fifths progression using seventh chords requires alternating complete and incomplete chords. In inversion, it is possible to use complete chords. While the seventh of the chord still resolves down by step, the third of the chord moves to the seventh of the following chord.

Example 10-9

G: I   IV⁷   vii°⁷   iii⁷   vi⁷   ii⁷   V⁷   I

g: i   iv⁶₅   V⁴₂/III   III⁶₅   VI⁴₂   ii°⁶₅   V⁴₂   i⁶

g: i   iv⁴₃   V⁷/III   III⁴₃   VI⁷   ii°⁴₃   V⁷   i

Chapter 11: Secondary Function

Tonicization

   Composers often emphasize pitches other than the tonic by chromatically altering scale degrees to create half-step motion that parallels **ti** to **do** in diatonic music. This technique is called tonicization. The chromatically raised pitch is called a secondary leading tone. Tonicization in a harmonic context often uses the secondary leading tone in a dominant-function chord. The tonicized pitch, the pitch a m2 above the secondary leading tone, is treated like a temporary tonic. In the example below, the E in the bass in the first progression becomes an E♯ in the second progression to tonicize the following F♯. Secondary function chords resolve to the chord they are tonicizing.

Example 11-1
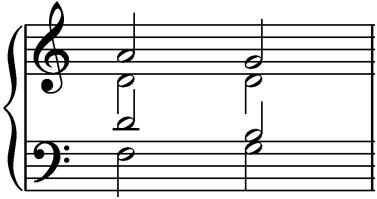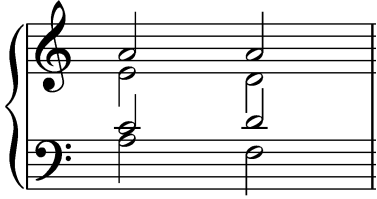
B: I ii⁶ V I
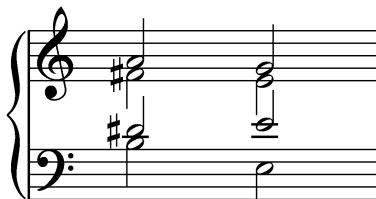
B: I V^6/V V I

Secondary Dominants

A secondary dominant is a major triad or dominant seventh chord built on the pitch a P5 above the temporary tonic. Any major or minor triad (other than the tonic) can be tonicized, while diminished triads cannot be tonicized. A secondary dominant resolves to the chord a P5 below its root, as in V resolving to I. The example below shows secondary triad and seventh chord possibilities in various inversions. Note that in certain chords, the chromatically altered pitch is the seventh of the chord. It is lowered a half step and resolves down, paralleling *fa* to *mi*.

Example 11-2
Secondary Dominants in Major Keys

Diatonic	Secondary Triad	Secondary Seventh Chord
C: ii^6 V	C: V^6/V V	C: V^6_5/V V
C: I IV^6		C: V^4_2/IV IV^6
C: vi ii^6	C: V/ii ii^6	C: V^7/ii ii^6
C: iii vi	C: V/vi vi	C: V^4_3/vi vi

Diatonic	Secondary Triad	Secondary Seventh Chord
	C: V/iii iii	C: V⁷/iii iii

Secondary Dominants in Minor Keys

Diatonic	Secondary Triad	Secondary Seventh Chord
a: ii°⁶ V	a: V⁶/V V	a: V⁶₅/V V
a: i iv⁶	a: V/iv iv⁶	a: V⁴₂/iv iv⁶
	a: V/III III	a: V⁷/III III
a: III VI		a: V⁴₃/VI VI

The most common secondary dominants are V^7/V, $V^7/IV(iv)$, and V^7/III. Secondary dominants appear as seventh chords more frequently than as triads. It is also possible for secondary chords to resolve deceptively.

Example 11-3

Symphony No. 1 in C major, Op. 21, mvt. 1

L. van Beethoven

$V^{(7)}/III$ in minor uses $\flat\hat{7}$ as its root, requiring no accidentals. Since it always resolves to III, it is analyzed as a secondary dominant, as is seen in Example 4-7 (p. 46) and Example 11-4 below.

Example 11-4

"Jesu, du mein liebstes Leben," BWV 356   J.S. Bach

How to Identify a Secondary Dominant

      1. Find the chromatically altered chord.
      2. Find its root. The chord is either a major triad or a dominant seventh chord.
      3. Find the pitch a P5 below the root.
      4. This pitch is the root of a diatonic major or minor triad.
      5. The chromatically altered chord is a secondary dominant and is called
          $V^{(7)}/x$. (X is the roman numeral of the triad in the previous step.)

If the altered chord does not meet all of the criteria listed above, it is not a secondary dominant. Proceed to "How to Identify a Secondary Leading-Tone Chord" below.

How to Write a Secondary Dominant

      1. Find the root of the chord to be tonicized. It should be a major or minor triad.
      2. Find the pitch a P5 above the root.
      3. Build either a major triad or a dominant seventh chord on this pitch. It will
          normally require accidentals.

Secondary Leading-Tone Chords

      A secondary leading-tone chord is a diminished triad, half-diminished seventh chord, or fully-diminished seventh chord built on the pitch a m2 below the temporary tonic. A secondary leading-tone chord resolves to the chord a m2 above its root, as in vii° resolving to I. A secondary leading-tone chord serves the same function as a secondary dominant that tonicizes the same scale degree. For example, vii°⁷/V and V⁷/V both tonicize the dominant, V. The example below shows secondary fully-diminished seventh chord possibilities in various inversions.

<p align="center">Example 11-5</p>
<p align="center">Secondary Leading-Tone Chords in Major</p>

Secondary Leading-Tone Chords in Minor

Diatonic	Secondary Dominant	Secondary Seventh Chord
a: ii°⁶ V	a: V⁶₅/V V	a: vii°⁷/V V
a: i iv⁶	a: V⁴₂/iv iv⁶	a: vii°⁴₃/iv iv⁶
	a: V⁷/III III	a: vii°⁷/III III
a: III VI	a: V⁴₃/VI VI	a: vii°⁶₅/VI VI⁶

The most common secondary leading-tone chords are vii°⁷/V, vii°⁷/IV(iv), and vii°⁷/III. Secondary leading-tone chords appear as seventh chords more frequently than as triads. When tonicizing a major triad, the secondary leading-tone seventh chord is normally fully-diminished, but half-diminished is possible.

Example 11-6

Piano Sonata No. 8 in C minor 'Pathétique,' Op. 13

L. van Beethoven

How to Identify a Secondary Leading-Tone Chord

1. Find the chord that is chromatically altered and is not a secondary dominant.
2. Find the root. The chord is a diminished triad, a half-diminished seventh chord, or a fully-diminished seventh chord.
3. Find the pitch a m2 above the root.
4. This pitch is the root of a diatonic major or minor triad.
5. The chromatically altered chord is a secondary leading-tone chord and is called vii°$^{(\emptyset)(7)}$/x. (X is the roman numeral of the triad in the previous step.)

If the altered chord does not meet all of the criteria listed above, it is not a secondary leading-tone chord. Proceed to "How to Identify a Borrowed Chord" in chapter thirteen.

How to Write a Secondary Leading-Tone Chord

1. Find the root of the chord to be tonicized. It should be a major or minor triad.
2. Find the pitch a m2 below the root.
3. Build a diminished triad, a half-diminished seventh chord, or a fully-diminished seventh chord on this pitch. It will require accidentals.

Secondary Functions in the Harmonic Progression

As stated above, a secondary-function chord resolves to the chord it tonicizes (the chord below the slash). There are three possibilities for determining the chord to precede it: 1. a secondary dominant chord replaces the diatonic chord built on the same root, while a secondary leading-tone chord replaces the diatonic chord whose root is a M3 lower, 2. a secondary-function chord occurs between two adjacent chords in the harmonic progression (V → V^7/vi → vi), or 3. a secondary-function chord is approached and resolved by its tonicizing chord (V → V^7/V → V). When in doubt, precede it with the tonic.

Chapter 12: Modulation

Composers often change keys during a piece of music to delineate its structure. Such a key change, which helps create interest and tension, is called modulation. Modulation requires a change of tonic. Movement between parallel keys is called change of mode, not modulation, because the tonic remains the same. Change of mode is discussed in chapter thirteen.

Closely Related Keys

Modulations usually occur between closely related keys, which include the relative key and the ones with one accidental more or less in their signatures. These relationships are easily visualized on the circle of fifths, as seen below. Keys can be labeled with roman numerals to show their relationships.

Example 12-1
Closely Related Keys to C major

F *C* G

IV I V

d a e

ii vi iii
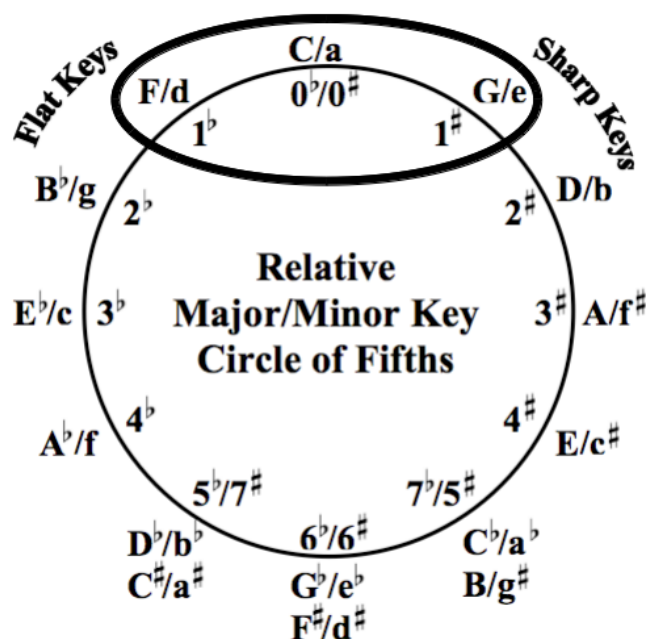
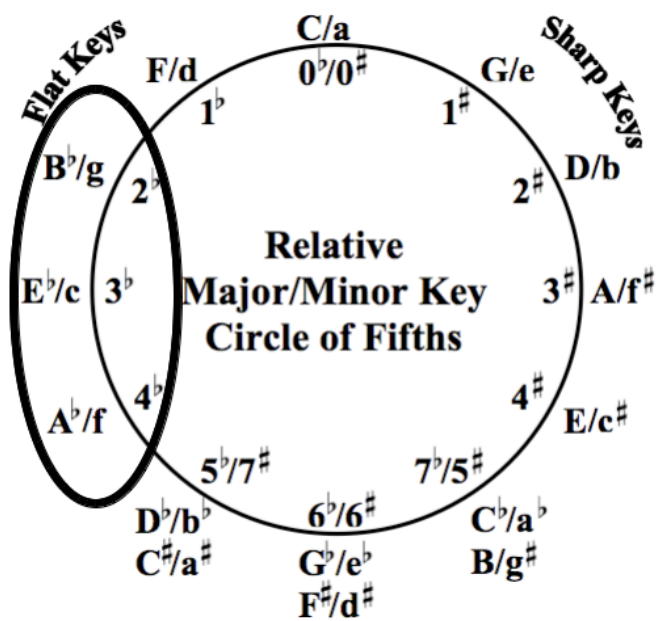*Diagram copyright MacGAMUT Music Software, Inc. Used by permission.*

Closely Related Keys to C minor

A♭ E♭ B♭

VI   III   VII

f   *c*   g

iv   i   v

Diagram copyright MacGAMUT Music Software, Inc. Used by permission.

How to Identify Modulations

1. Consistently used chromatic pitches that imply a new key.
2. "Clue chords" (dominant seventh chords and leading-tone chords) in the new key.
3. Cadences in the new key.
4. Bass movement of $\hat{1}$, $\hat{4}$, $\hat{5}$, $\hat{1}$ or similar tonal patterns in the new key.

Pivot-Chord Modulation

The most common kind of modulation is the pivot-chord modulation, which uses a chord diatonic to both keys as a common chord. This chord (the pivot) smoothly connects the keys within a single phrase. One way to find common chords between two closely related keys is to align the keys' diatonic chords as seen below.

Example 12-2

The pivot is normally predominant in function (ii, IV, or sometimes vi), and is marked with a bracket that includes roman numerals in both keys as seen in Example 12-3.

How to Identify Pivot-Chord Modulations
    1. Find the new key using "How to Identify Modulations" above.
    2. Find the first chord that does not make sense in the original key.
    3. Go back one chord. This is the pivot. Label it in both keys with a bracket.

Example 12-3

Piano Sonata No. 10 in G major, Op. 14, No. 2, mvt. 2   L. van Beethoven

Example 12-4

Notebook for Anna Magdelena Bach, Menuet

F:

IV   V

d: VI

i   ii°⁶ V i   i

Other Modulations

A chromatic modulation has a chromatic line in one voice that leads to a new key. The altered pitch is often ***ti*** or ***fa*** in the new key. No common chord is labeled between the two keys; each chord is labeled only once. One note must be raised or lowered by a half step in a single voice without changing the note name (for example, from C to C ♯).

Example 12-5

"Jesu, der du meine Seele," BWV 78

J.S. Bach

B♭:   I   ⁶ V⁷ g: V⁶

i

A phrase modulation occurs when a phrase ends in one key and the next phrase begins in a new key. No common chord is labeled between the two keys; each chord is labeled only once.

Example 12-6

Piano Sonata No. 9 in D major, K. 311, mvt. 1

W.A. Mozart

Another kind of modulation, common-tone modulation, will be discussed in chapter thirteen.

Tonicization and Modulation

The line between secondary functions and changes of key is not always clear. A brief passage in a different key usually indicates tonicization, while an extended passage in a different key signals modulation. In example 9-5 (p. 80), Beethoven begins in A minor, but ends the first phrase with an imperfect authentic cadence in C major. The second phrase returns immediately to A minor. This example clearly shows the ambiguity between tonicization and modulation.

Guidelines for Analysis

Remember to include in every analysis, unless otherwise stated: key, roman numerals with inversion symbols, six-four chord types, nonharmonic tones, cadences, phrase diagrams, modulations, *(borrowed harmonies, and form labels)*.

Chapter 13: Modal Borrowing

To achieve harmonic variety, composers often borrow chords from the parallel key. This technique can be viewed in three different ways. The first is a brief use of a borrowed chord, called borrowed harmony. The second includes a longer passage of borrowed harmonies and is called mode mixture. The last, change of mode, implies an extended passage in the parallel key, such as a symphony in minor that ends in the parallel major (for example, Beethoven Symphony No. 5).

Modal Borrowing in Minor

The most common borrowing in minor is the Picardy third. Baroque music in minor often ends on the tonic triad borrowed from the parallel major key by raising $\hat{3}$.

Example 13-1
The Well-Tempered Clavier, Book II, Fugue No. 22 in B♭ minor, BWV 891   J.S. Bach

Modal Borrowing in Major

Most borrowed chords occur in major keys because minor keys contain more diatonic chord-quality possibilities. The chords that are most likely to be modified contain $\hat{6}$, which is lowered to $\flat\hat{6}$ when borrowed. Borrowed chords can be divided into two groups: ones with and ones without altered roots. In the following example, the roman numerals $\flat$VI and $\flat$III require flats because of the altered roots that are lowered a half step. Flats are still used with the roman numerals, even if the altered root requires a natural accidental. To reflect the mode mixture, "bor" is added to each roman numeral.

Example 13-2

Example 13-3

Der Wanderer, D. 493

F. Schubert

Etwas geschwinder

Wo bist du, wo bist du, mein ge - lieb - tes Land? ge

36

sucht,_____ ge- ahnt,_____ und nie_____

E: IV   iv   •6
                bor   14
                           bor

40

Geschwind

_ ge - kannt. Das Land, das Land so hoffnungsgrün,

V⁷   I

How to Identify a Borrowed Chord
1. The chord is chromatically altered and is not a secondary dominant or a secondary leading-tone chord.
2. The chord quality occurs diatonically in the parallel major or minor key.
3. The chromatically altered chord is a borrowed chord and should be labeled with a roman numeral, "bor," and a ♭ if the root is altered.

If the altered chord does not meet all of the criteria listed above, it is not a borrowed chord. Proceed to "How to Identify a Neapolitan Sixth Chord" in chapter fourteen.

Chromatic Mediants

Borrowed chords are often chromatic mediants, which are chords of the same mode a third apart. When labeling chromatic-mediant chords, first make sure the chord is not functioning as a secondary dominant.

This chromatic-mediant relationship can also be applied to modulations. From a given key, there are four chromatic mediants, which are distantly related.

Example 13-4

A		E
VI		III

C

I

A♭		E♭
♭VI		♭III

Example 13-5

Vier Aritten und ein Duett, Op. 82, No. 1, "Hoffnung"

L. van Beethoven

Nim - mer dem lie - ben-den Her - zen zür - nen auf e - wig die Göt- ter;

und schnell in ih - rer Hand_____ wird Leid in Glück_____ ge - wandt!

Kühn nur zum Zie - le_ stre ben, treu nur der Hoff - nung_ le - ben, und aus den

Stür - men bricht der Ge-wäh-rung sü-ßes Licht, ja, aus den Stürmen

bricht der Ge- währung sü-ßes Licht! Nimmer,

p

tr   *tr*

poco ritard.

nim-mer   zür-nen die Göt - - - - - ter.

poco ritard.

A:

a tempo

nim-mer dem lie-ben-den Her - zen   zür-nen auf e - wig die Göt - ter, und

a tempo

Mode Mixture and Modulation

Mode mixture creates new possibilities for smooth progressions between distantly related keys. Composers often use a change of mode to prepare for a modulation to a key that is distantly related to the original key, but is closely related to its parallel major or minor.

Example 13-6
Distantly Related Keys to A major and minor

F *C* G

VI III VII

d *a* e

iv i v

↑
↓

D *A* E

IV I V

b f♯ c♯

ii vi iii
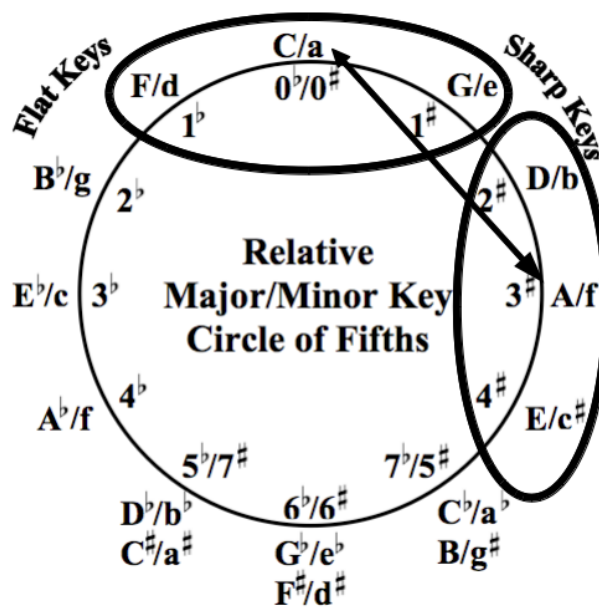
Diagram copyright MacGAMUT Music Software, Inc. Used by permission.

Example 13-7

36 Originaltänze, D.365, No. 33

F. Schubert

Common-Tone Modulation

   A common-tone modulation is another way to create a smooth modulation to a distantly related key. Often the composer emphasizes the common tone, which is a single pitch that is reinterpreted as a different member of the triad (A♭: C as the third becomes the root in C major). This modulation is usually to a key that is a chromatic mediant away.

Example 13-8

Symphony No. 4 in B♭ major, Op. 60, mvt. 1

L. van Beethoven

Guidelines for Analysis

Remember to include in every analysis, unless otherwise stated: key, roman numerals with inversion symbols, six-four chord types, nonharmonic tones, cadences, phrase diagrams, modulations, borrowed harmonies, *(and form labels)*.

Chapter 14: Altered Predominants

Neapolitan Sixth Chord

The Neapolitan sixth chord (N^6) is a common chromatic alteration of ii$^{\circ 6}$ or iv in minor, which: 1. occurs in first inversion, 2. has a root lowered a half step (*re* becomes *ra*), 3. doubles the bass (*fa*), 4. maintains its predominant function, and 5. resolves to a dominant chord with *ra* descending to *ti*. The Neapolitan can also be considered a major triad built on $\flat\hat{2}$, which gives the chord a pungent sound in the key.

Example 14-1

Example 14-2
Piano Sonata No. 14 in C sharp minor, "Moonlight," Op. 27, No. 2, mvt. 1   L. van Beethoven

It is also possible for an N^6 to occur in major, which requires an additional accidental to change *la* to *le*. N^6 is more common in minor.

Example 14-3

do   ra   ti   do

G: I N^6 V   I

The use of *ra* is akin to *ti* in that it is a half step from the tonic and functions as an upper leading tone. By descending to *ti*, this upper leading tone strengthens the impulse to resolve to *do*. When chords such as the cadential six-four occur between N^6 and the dominant, *do* occurs between *ra* and *ti*. *Do* in the six-four chord creates a smooth melodic voice, but because this chord is dissonant, it requires resolution through *ti*.

Example 14-4

do   ra   do   ti   do

g: i N^6 i_4^6 V   i

How to Identify a Neapolitan Sixth Chord
1. The chord is chromatically altered and is not a secondary dominant, secondary leading-tone chord, or a borrowed chord.
2. The chord is a major triad in first inversion with *ra* as its root.
3. The chromatically altered chord is a Neapolitan sixth chord and should be labeled N^6.

If the altered chord does not meet all of the criteria listed above, it is not a Neapolitan sixth chord. Proceed to "How to Identify an Augmented Sixth Chord" below.

Other Uses of the Neapolitan

Like other chords, the Neapolitan may occur in other inversions, as a seventh chord, be preceded by its secondary function, or be resolved with chords other than V. The following example shows the interpolation of vii°⁷/V between N⁶ and V. Note the movement of *ra* to *do* to *ti* on the beats in the soprano.

Example 14-5

Seven Variations on "God Save the King," WoO 78, Variation V   L. van Beethoven

Augmented Sixth Chords

The three augmented sixth chords (+6), Italian, French, and German, also have predominant function. They each contain the two tendency tones to *sol*: *le* and *fi*, which create an +6. For now, *le* always appears in the bass. Like N[6] and other altered predominants, +6 precedes V.

Italian Augmented Sixth Chord

The Italian augmented sixth chord (It[+6]) contains *le*, *do*, and *fi*. In four-part writing, *do* is doubled. *Le* and *fi* both are resolved to *sol*, while one *do* descends to *ti* and the other *do* ascends to *re*.

Example 14-6

Example 14-7

String Quartet No. 2 in G major, Op. 18, No. 2, mvt. 3

L. van Beethoven

French Augmented Sixth Chord

The French augmented sixth chord (Fr^{+6}) contains *le*, *do*, *re*, and *fi*. *Le* and *fi* are both resolved to *sol*, while *do* descends to *ti* and *re* remains as a common tone.

Example 14-8

Both It^{+6} and Fr^{+6} may resolve to the cadential six-four before arriving on V.

Example 14-9

Symphony No. 40 in G minor, K. 550, mvt. 1

W.A. Mozart

German Augmented Sixth Chord

The German augmented sixth chord (Ger⁺⁶) contains **le**, **do**, **me**, and **fi**. Unlike It⁺⁶ and Fr⁺⁶, Ger⁺⁶ must proceed to the cadential six-four chord before arriving on V to avoid parallel fifths. **Le** and **fi** are both resolved to **sol**, while **do** remains as a common tone until V, when it descends to **ti**. In minor, **me** also remains as a common tone until V, when it either descends to **re** or ascends to **fa** (creating an incomplete V⁷). In major, **me** becomes **mi** before descending to **re** or ascending to **fa**.

Example 14-10

Example 14-11

Piano Trio, Hob. XV: 25 F.J. Haydn

How to Identify an Augmented Sixth Chord

      1. The chord is chromatically altered and is not a secondary dominant, secondary leading-tone chord, borrowed chord, or a Neapolitan sixth chord.

      2. The chord contains *le*, *do*, and *fi*. It may also contain either *re* or *me*.

      3. The chromatically altered chord is an augmented sixth chord and should be labeled It⁺⁶ (*le*, *do*, *fi*), Fr⁺⁶ (*le*, *do*, *re*, *fi*), or Ger⁺⁶ (*le*, *do*, *me*, *fi*).

If the altered chord does not meet all of the criteria listed above, it is not an augmented sixth chord. Any other chromatically altered chords will be discussed later in your theory studies. If you have arrived at this point in attempting to identify a chromatically altered chord, please double check your work.

Other Uses of Augmented Sixth Chords

      Augmented sixth chords can occur as double tendency tones to scale degrees other than *sol*, with enharmonic respellings, or in inversion (*fi* in the bass).

Chapter 15: Binary and Ternary Form

As seen in chapter nine, phrases are combined to create periods and double periods. This same process is used to create the next structural level of musical forms. The three standard small forms are binary, rounded binary, and ternary. More complex large forms, such as sonata and rondo, will be discussed later in your studies.

Binary Form

Binary form, as its name suggests, is organized into two parts. Part One begins in the tonic key and presents the basic musical material. Part One may end tonally in two different ways, creating either a tonally closed or a tonally open form. The less common form, tonally closed binary, ends Part One with an authentic cadence in the tonic key. The more common form, tonally open binary, ends Part One in one of three ways: 1. a half cadence in the tonic key, 2. an authentic cadence in the dominant key in major, or 3. in minor, an authentic cadence in the relative major. Part Two normally tonicizes or modulates to various closely related keys before returning to the tonic near the end of the binary.

Motivically, binary forms are normally based on one thematic idea, which is extended and modified during the movement. Tonally, binary forms are usually based on an overall movement from tonic to dominant and back to tonic that connects the two parts of the form. Even in minor-key examples that move to the relative major, there is usually a section in the dominant before the return to the tonic.

Another defining characteristic of binary form is the relative length of each part. If Part One and Part Two have the same number of measures, it is called a symmetrical binary form. If Part Two is longer than the first, it is called an asymmetrical binary form. Binary forms are normally tonally open and asymmetrical.

Example 15-1

36 Original Dances, D. 365, mvt. 7

F. Schubert

Example 15-2

Piano Sonata No. 15 in C major, mvt. 2

F.J. Haydn

M. D. C.

Another frequently used unifying feature of binary form is called cadence rhyme. Cadence rhyme occurs when the cadence at the end of Part One in the dominant or relative major key returns at the end of Part Two transposed to the tonic. This similarity of cadences mirrors poetic rhyme in literature. Note that the similarity will be rhythmically and/or melodically recognizable, but not necessarily identical.

Example 15-3

French Suite No. 5 in G major, BWV 816, mvt. 6

J.S. Bach

Bourrée II

Rounded Binary

Rounded binary contains all the features of binary form discussed above but adds an additional element: the return of the opening melodic material from Part One in the tonic key near the end of Part Two. This return, called the rounding of the form, extends Part Two. Note that rounding may be disguised or modified to fit the musical context. Rounded binary forms can likewise be tonally open or closed, asymmetrical or symmetrical, and contain the same tonal paradigms as non-rounded binaries. Non-rounded binary form often uses similar material in Part One and Part Two, but avoids literal repetition or return. Rounded binary includes literal repetition. Rounded binary forms are normally tonally open and asymmetrical.

Example 15-4

Piano Sonata No. 2 in A major, Op. 2, No. 2, mvt. 3

L. van Beethoven

Scherzo d. C.

Labeling Binary Forms

1. Is the piece in binary form?
2. Find the cadence at the end of Part One. Is Part One tonally open or closed?
3. Compare the lengths of each part. Is the form symmetrical or asymmetrical?
4. Look at the end of Part Two. Is the form rounded?
5. Do the cadences at the ends of Parts One and Two rhyme?
6. Label the form using terminology from steps 1-5. For example, tonally open asymmetrical binary with cadence rhyme (TOAB w/CR).

Ternary

Ternary form contains three discrete and tonally independent sections, and is fundamentally based on the concept of statement, contrast, and restatement (ABA). Each section is usually tonally closed. The first A section is in the tonic key and presents the basic musical material. Part B creates strong contrast with the outer sections through the use of new musical material. It normally introduces a new key, new melodic material, and may contrast in other aspects such as rhythm, texture, and range. The third section of the form is a return of A; if not exact, it is labeled A'. The three sections are usually similar in length, though the B section may be somewhat shorter than the outer sections if it provides extreme contrast.

Example 15-5

Kinderscenen, Op. 15, No. 6, "An Important Event"

R. Schumann

Example 15-6
Album for the Young, Op. 68, mvt. 8 "The Wild Rider"

R. Schumann

Rounded Binary or Ternary?

It is sometimes difficult to differentiate between rounded binary and ternary. Here are general characteristics to help identify ambiguous forms. These are only the norms; there will be exceptions to these guidelines.

1. Rounded binary is tonally open, while ternary is tonally closed.
2. Rounded binary uses the same motivic material throughout, while ternary has unrelated melodies between the sections.
3. Rounded binary contains a single harmonic movement across the two sections, while the modulations in a ternary form do not connect the three sections.
4. The return of Part One material in rounded binary is often partial or altered, while the ternary return of Part A is complete.
5. Part Two in rounded binary moves from dominant back to tonic, while Part B in ternary begins in a non-tonic key and does not return to the tonic.
6. Rounded binary often has two repeat signs, while ternary does not.

Compound Ternary

In the minuet and trio (third) movements in classical-period multi-movement works, such as sonatas and symphonies, each section is usually a binary form, but the large-scale form containing the minuet, the trio, and the return of the minuet is called compound ternary. It is compound because each section of the ternary is its own smaller form.

Example 15-7

Piano Sonata No. 1 in F minor, Op. 2, No. 1, mvt. 3

L. van Beethoven

Guidelines for Analysis

Remember to include in every analysis, unless otherwise stated: key, roman numerals with inversion symbols, six-four chord types, nonharmonic tones, cadences, phrase diagrams, modulations, borrowed harmonies, and form labels.