CHAPTER

Triads



KEY TERMS

Homophony Polyphony Heterophonic Major triad Minor triad Diminished triad Augmented triad Major scale Tonic Supertonic Mediant Subdominant Dominant Submediant Leading tone Minor scale Natural minor scale Harmonic minor scale Melodic minor scale Root position triads First inversion triads Second inversion triads Open position Closed position Basso continuo Figured bass Realization (of a figured bass) Functional progression Phrygian cadence Doubling leading tone cadence Single leading tone cadence Authentic cadence Plagal cadence Deceptive cadence Half cadence Perfect authentic cadence Imperfect authentic cadence

We have seen scales and intervals, as well as melodic phrases, and how they work together. However, it is common in Western music to have another component in the musical spectrum: harmony. This harmonic element implies that there are several voices playing different parts at the same time and that the overall sound creates harmony. This harmony, if sounding together and moving together in the same rhythm, is called **homophony**. This is the normal chord-to-chord kind of sound that we are used to hearing, as in the example below.



If, however, the harmony is created by different melodic lines that move in different rhythms, creating a multiple-lined composition, then we have **polyphony**, such as the following example.

Example 4.2



Another kind of musical texture is found outside of western tradition, primarily in eastern and near eastern cultures. This is called **heterophonic** texture and is characterized by an embellishment of one melodic line by several different voices. In other words, it is like theme and variation at the same time. An example of this in Western popular music is Dixieland jazz, with its simultaneous presentation of the melody in variation in several instruments at once.

Harmonic sound in the Western world began, initially, with intervallic additions to a given melody. The fifth and octave were the most used intervals, but eventually all of the diatonic intervals were employed. Gradually, the texture increased from two to three voices and triadic harmony began being used. In the tonal period the seven primary triads of the scale were the backbone of the system.

Triads

Before we explore the triads found within the major and minor scale, we need to see what kinds of triads are possible. Although the word *triad* simply means three pitches sounding together, the normal usage of the term implies a sonority that has a fifth and a third above a root pitch, such as below.



In the above example we see a perfect fifth and a major third above the root, C. Because of the major third interval, this triad is labeled a **major triad**. All major triads have a perfect fifth and major third above the root pitch.

If we find a perfect fifth with a minor third above the root, it is labeled a minor triad.





If we keep the minor third, but have a diminished fifth instead of a perfect fifth, it becomes a **diminished** triad.





Finally, if we have a major third but the fifth is now an augmented fifth, then we have an **augmented** triad.



Triads within the Major and Minor Scales

There are specific triadic combinations found within the major and minor scales. In the **major scale**, the quality of the triads is specific and unique to the scale. Here is what we find when each scale degree is used as a triad.

Example 4.7



The **tonic** triad is always major; the **supertonic** is minor; the **mediant** is minor; the **subdominant** is major; the **dominant** is major; the **submediant** is minor; and the **leading tone** triad is always diminished.

The **minor scale** is significantly different than the major scale. Not only are most of the triads a different quality, but there are different arrangements depending on which minor scale we are using. Under normal circumstances we do not use the **natural minor scale** in tonal music. This is a scale that came from the modal era and is more suited to modal usage than tonal use. Therefore, we find the harmonic or melodic forms of the minor scale more attuned to tonal usage.

The **harmonic minor scale** is so named because it outlines most of what we normally find in the harmonic content when using a minor scale. Here are the normal triads found in the harmonic minor scale.

Example 4.8



You should notice that the tonic is always minor, the supertonic and leading tone triads are diminished, and the dominant triad is major. The dominant must be major in order to function as a true dominant sound. This is primarily because it contains a half-step leading tone, B natural, which will strongly pull us back to the tonic pitch of C. Without this half-step leading tone, we would have a much weaker pull to the tonic. The leading tone triad is, likewise, necessarily built on the raised seventh scale degree, in order to produce the half-step leading tone to tonic. The chord built on the seventh scale degree—the half-step below the tonic—therefore needs to be a diminished triad.

The mediant triad is listed here as augmented. We will revisit this at a later time, because we will discover that most of the time it is not actually used as an augmented triad, but as a major triad.

The subdominant is normally a minor triad, and the submediant is normally a major triad.

However, the minor scale has one additional construction as well, this one being used for melodic purposes. The **melodic minor scale** is primarily used when constructing melodic lines within the minor scale. This procedure makes a smoother line in the upper tetrachord of the scale. Raising the sixth and seventh scale degrees when moving upward and lowering them when moving downward creates a smoother and more singable line. However, if we build triads on these altered pitches, we get a very complicated system of harmonic construction. Below is a theoretical way of approaching the melodic minor scale using triadic construction.





You will notice a distinctly complicated design in this, with dominant chords as both major and minor, supertonic chords as both diminished and minor, submediant chords as both major and diminished, and so on. Some of this actually happens when employing the melodic minor scale in practice, but, generally speaking, this kind of complexity is rarely found in actual music. Occasionally, there are some alterations when employing the upper tetrachord changes in music, but they are rare, and we will deal with them on an individual basis when we confront them.

Overall, the harmonic construction of the minor scale tends to be simpler than any of the above would suggest. The normal harmonic scheme is given below. It is a combination of features found in both the harmonic and melodic scales and is actually simpler than either of them.



If we look at a large segment of music, this is the normal harmonic scheme that we find used for the minor scale. However, because of the melodic changes occasionally found, there are some changes that occur in some cases.

Inversions of Triads

An important aspect of triads, which gives them increased use and interest, is their invertibility. Each triad can be used in **root position**, **first inversion**, or **second inversion**. Root position has the root on the bottom of the triad; first inversion has the third of the triad on the bottom; second inversion has the fifth of the triad on the bottom. These different *inversions* of triads produce significantly different sounds as well as different usage within the harmonic fabric of a piece. Below is an example of the inversions. Notice that the arrangement of pitches above the lowest sounding pitch can vary significantly, depending on the kind of sound and texture desired.



You should notice the arrangement of the voices in the above example. There are two basic structures to the vertical arrangement of chords: **open position** and **closed position**. When using a four-voice texture, open position occurs when there is an octave or more between the soprano voice and the tenor voice. In closed position there is an octave or less than an octave between the soprano and tenor. So, you will see in the above example that it starts in closed position for the first two root-position triads and then shifts to open position for the third root-position triad. Likewise, all of the first inversion triads are in closed position, and the first two second-inversion examples are also in closed position. Using open and closed positioning of chords helps to vary the texture within a piece and creates more interest in the sound.

Thus far we have only discussed the triads with specific names—major, minor, diminished, or augmented. For simpler analytical processes, we also use Roman numerals to identify the triads within the scales. In most cases, theorists differentiate between major and minor triads by using upper- and lowercase Roman numerals, like I for the major tonic triad and ii for the minor supertonic triad. Further designations are used for diminished and augmented triads: A small circle superscript for diminished and a small plus superscript for augmented. Like this: vii^o and III⁺. So, here are the Roman numerals for the major and minor triads that are normally found in the harmony of pieces.



Diatonic Harmonic Use

The example below is a fairly simple chorale from the mid-17th century that uses primarily a homophonic texture. Below each chord we have written the Roman numeral analysis within the key of F major. The inversions of the chords are also indicated, but not all of the figures are given. Certain ones are left out because we assume they will automatically be included.





You will notice that the root position triads have no numbers attached to them. We assume that the intervals above the root of the triad will be a fifth and a third, but we do not add the 5 and 3 next to the Roman numeral; they are assumed. Likewise, the third of the first inversion triad is not given, because it is assumed. So, only the sixth is given to indicate that it is in first inversion. The second inversion triad, however, needs to have both numbers given. Otherwise, we will not know that it is in second inversion.

Figured Bass

The numbers used with the Roman numerals for analysis can be used by themselves in a system that is called **basso continuo** or **figured bass**. This system of writing a bass line with figures underneath developed in the early baroque period, sometime around 1600 and following. It is a shorthand system that can quickly give you the basic chord progression of a piece, but without providing the specific notes to be played above the bass itself. Although not used for all pieces in the Baroque period, it was used frequently for accompaniments to solo lines. For example, a violin sonata with keyboard accompaniment might look like this:





The violin part in this case is the top line of this piece, and the accompaniment, on harpsichord or organ, is the bottom part, with figures under it to indicate the actual chord structure. This so-called *continuo part* on the bottom is then *realized* by playing the chords that are indicated above the actual bass line that is given. However, the **realization** of the continuo part is not controlled by the composer; only the actual inversions of the triads are indicated. So, below you find two possible realizations of the figured bass that was given above.







Example 4.15B

It is important to understand that the numbers below the bass line were actually given as indications of intervals above the bass. In the early Baroque period the actual inversions of triads were unknown, but the sound of inversions produced by different interval structures above the bass line were understood very well. That is how the system came into being, and only later, with the 18th century theorist Rameau, did the system of inversions come into play.

With this interval structure in mind, then, it is possible to see interval indications in the figured bass that do not refer to inversions at all, but to melodic configurations that occur above the bass line. For example, the use of a dissonant figure (which we will identify in a later chapter) could be indicated, such as 4-3 to indicate an interval of a fourth that resolves to a third above the bass. Like this:



This concept of a linear premise to figured bass can be extended to many other areas. Sometimes an embellishment figure is indicated by figures, as below.





The first example is simply a melodic indication, giving the keyboard player a more detailed example of the melodic configuration above the bass. The second example is one of multiple dissonance, all of which resolve at the same time. The details of this will also be discussed in a later chapter. Note that all of the figures are referring to intervals above the bass line and can be realized in any octave or position, as long as it is above the bass itself.

The final concept that you must understand in figured bass is that the composer, especially in a piece in the minor key, can change the third of a triad from minor to major by raising the third from a natural to a sharp. This is indicated by adding a # under the note in the bass. This accidental always refers to the third above the bass. Likewise, the composer could add a b sign under a note and this would lower the third above the bass. And, if a *natural* sign is given, then the flat in the key signature is raised, or the sharp in the key signature is lowered. Here are the examples you will see.



Root Progression in Tonal Music

The way a composer uses triadic material determines the actual sound of the piece. If we look at tonal composers from the 17th through the 19th centuries, we find that there are some very specific ways of organizing the harmonic material. This is usually follows what we refer to as the **functional progression** of chords. Below is listed the normal ordering for the diatonic triads as they are used in tonal music. The tonic is the ultimate goal in this progression, with the other chords progressing toward that goal.





52 Part One Introductory Material

As can be seen here in the bass line of this progression, the primary root movement is by fifth down (or fourth up). The strongest root progression in a tonal setting is movement down by a fifth. We also see some progression of second, notably the IV chord moving to V, or the vii^o chord moving to I.

There are basically four classes of chords that have specific functions: tonic (I), dominant (V or vii^o), predominant chords (ii and IV), the chord that moves to the pre-dominant chords (vi) and the iii chord, which moves to the level of vi.

Movement of functional chords, from left to right:

iii vi ii V I IV vii°

The tonic chord is stable, as it is what the other chords are moving toward. Once we get to the tonic, it can be the resting place, or the resolution point of the phrase, or of the entire piece. To get there, we use dominant chords. The primary dominant sound is the dominant chord itself, the V chord. However, the vii^o chord also has a strong pull to the tonic, so we can consider this as a strong dominant function as well. Both V and vii^o have a strong pull to the tonic chord. The pre-dominant chords are the IV and ii chords. There are also some altered, or chromatic, chords that function as pre-dominant, but these will be covered in a later chapter. And, finally, the furthest away from the tonic itself is the iii chord, which needs to move to vi before moving to the pre-dominant level.

It should be noted that any of these levels can skip one level in its movement to the tonic. The iii chord can move straight to IV or ii and then continue; the vi chord can go straight to V or vii^o; the IV or ii chord can move straight to the tonic, skipping the dominant function altogether. This skipping, however, is usually not done too frequently, because it would avoid the more prominent and strongly functional fifth function.

Below is our previous example of a chorale by Johann Schein that demonstrates the use of basic tonal progression within the diatonic key.

Example 4.20



You will notice that when to tonic chord moves to another level, the process begins to get back to the tonic. V returns to I; IV goes to V and then to I. A more complicated example is below. Here we have a III chord that skips the level of VI and moves to iv, which also skips the dominant level and moves directly to i. The ii chord goes to V and to I to end the phrase. In the second phrase, the III chord again moves directly to the pre-dominant level of ii, and then to vii and I. The V/V is an altered predominant, which will be discussed in a later chapter. So, all of the progressions move in the prescribed manner.





You will notice in the above example that Brahms does not follow our tonal chart of chords to the letter. Sometimes he will move backward in the chart—retrogression—for example from ii to vi or from ii to iii. This weakens the tonal feeling of the piece, but it also adds variety within it. For the most part, however, he follows the patterns that are characteristic of tonal usage of harmony.

Root Progression in Modal Music

There are significant differences between the use of triads in tonal music and in modal music. The primary difference is the decreased use of root movement by fifth. There are V-I motions used in modal music, but the harmonic use within the phrase is determined more by melodic, stepwise motion from the melodic control of the piece, which produces root movement that is considerably more focused on seconds or thirds than on fifths. Here is an example by Josquin des Prez from the early part of the 16th century. Notice that the strong cadence at the end of the section is V-I in C major, but the other root progressions produce considerably more movement by seconds and thirds. This produces a different sound structure than that found in the more tonal composers of later centuries.





The bass line in this case looks like something straight out of tonal music, but the upper voices define the harmonic progression in a much more modal manner. Notice that the opening progression looks like it is going to be very tonal: I-IV-V-I. But, the tenor line (which is actually a replica of the soprano line, except down a fifth and one beat later) shifts the tonal motion into a much more modal sound: The IV chord shifts to a ii_6 chord and the V chord shifts to a ii_6 chord, producing root movement by seconds and thirds rather than strongly functional progressions moving by fifths. You should notice, however, that the final cadence is very convincing: iii-vi-IV-V-I. This is a very strong functional progression, so we do find this in the renaissance period, but it is by no means the standard harmonic usage.

Cadences throughout History

There are cadences in all music, whether melodic or harmonic in nature. It is an oversimplification, but many of the cadential structures in monophonic music are either 2-1 or 7-1. When these cadences are extended to two- and three-part music, we find that many of the cadences move linearly by stepwise motion. This means that a sixth usually moves to an octave and a third usually moves to a fifth. Also, the third sometimes moves into a unison. The example below demonstrates this motion. Note that both the major third and the minor third can move to a fifth.





When we move into three-part music we find the same motion, but usually see that the third moves to a fifth and the sixth moves to the octave. If we reproduce those cadential motions in each of the primary modes, the Dorian, Phrygian, Lydian, and Mixolydian, we find that the following are the primary cadences used in those modes. The example below shows the generic cadences found in the four modes.

Example 4.25



Later in the modal period, during and after the 14th century, composers began to favor the Lydian cadence and the **Phrygian cadence** above the others. To do this they used accidentals to replicate the interval structure of the Lydian cadence. So, to achieve this structure in the Dorian mode, we need to add a G# and C#; to the Mixolydian mode we need to add a C# and an F#. It looks like this:



The structure of this Lydian cadence produces one of leading tones. There is a half-step leading tone in the top voice, C# to D, as well as a half-step leading tone in the middle voice, G# to A. So, we see (and hear) a leading tone to the octave and to the fifth. Therefore, modern theorists refer to this cadence as a **double leading tone cadence** (DLT).

Somewhat later, in the late 14th and early 15th century, composers started experimenting with this sound and began to alter it and use only one leading tone, the half-step to the octave. The motion to the fifth was replaced by melodic motion of a whole step rather than the half step. Therefore, we begin to see the use of the **single leading tone cadence** (SLT).



In tonal music, cadences developed from the **authentic cadence**, V to I, which is the strongest motion in the key and provides a satisfactory close to the phrase. However, there are several others that developed in tonal music, some that strongly close a phrase and others that pull us in other directions.

The **plagal cadence** is also a fairly strong cadence. Although not as strong as V-I, it does move to the tonic, but through the IV chord. So, a IV-I cadence is the plagal cadence. A *leading tone cadence* moves strongly from vii^{\circ} to I.

There are also cadences that keep us from the tonic itself. The most unusual of these is the **deceptive cadence**, which moves from V to vi. This obviously deceives us into thinking that we are going to cadence on the tonic, but moves to the vi chord instead.

Finally, there are cadences that keep us hanging, by not letting us get to the tonic. The **half cadence** is one that actually stops on the V chord. This produces tension and we want it to move to the tonic, and it usually does so in the next phrase, but it keeps the tension at the actual cadence and then releases it later in the piece.



In some theory texts there is a distinction made between a **perfect authentic cadence** and an **imperfect authentic cadence**. The distinction is really a simple one: the perfect authentic cadence ends with the top voice on the tonic pitch and the imperfect authentic cadence ends with the top voice on either the mediant or the dominant (the third or fifth of the tonic triad). It makes a certain amount of sense to make this distinction, because by ending on the tonic in the top voice there is a greater strength and finality about the way that it sounds. It is a stronger way to end—*perfectly*—rather than with the weaker third or fifth—*imperfectly*.



Homework

Homework 4.1: Writing of triads in root position.

Homework 4.2: Identification of triads and the inversion.

Homework 4.3: Writing of intervals above and below; writing triads with inversion.

Homework 4.4: Providing a Roman numeral analysis of a given chord progression.

Homework 4.5: Realizing the figured bass as given, with good voice leading in four voices.

Homework 4.6: Identification of modal and tonal cadences.

Homework 4.7: Writing of modal and tonal cadences.

Drills

On the website there are several drills for the material in Chapter 4. Click on the drill section and then choose which area you wish to practice. There are several different kinds of drills for each of the following areas:

- Triads: Writing triads in root position, first inversion, second inversion.
- Triads: Identification of triads and inversion.
- Chord progressions: Analysis of a chord progression with Roman numerals; writing chord progressions.
- Cadences: Identification of modal and tonal cadences.
- Intervals: Continuation of writing and identifying intervals, above and below a pitch.

