

Bass Lines and Harmonic Structure

In Chapter 2 we examined aspects of upper-voice melody; in this chapter we shall consider the nature of the lowest voice, and its relationship to harmonic structure. The bass differs from other voices because of the particular role it plays in supporting and defining harmonic motion. It does so at levels ranging from immediate, chord-by-chord events to the larger harmonic organization of a entire work. As we study various bass lines we shall also explore related aspects of harmonic and voice-leading structure.

In your studies of harmony and voice leading, you learned to identify different chords and to understand how they can function in the context of a key. Roman numerals and figured-bass symbols were used to facilitate the identification of chords and tonal functions. Such labeling techniques can be an important and necessary first step in analysis. But the use of roman numerals and associated arabic figures do not constitute a complete analysis, since any chord—such as IV, V⁶, or I—can function in many different ways depending upon the context in which it occurs. As we investigate bass lines and harmonic structure, we will begin to see how such contextual differences arise.

Prolonging Tonic Harmony

The opening of the second movement from Mozart's Piano Sonata K. 545 (Example 3.1a) illustrates various kinds of chord functions. Tonic harmony influences a large portion of the phrase, from bar 1 to bar 6. The V₃ on the

third beat of bar 1 provides harmonic variety, yet it also serves to expand (or prolong) the initial tonic harmony. Melodically the bass note A (beat 3) is a neighbor; hence the contrapuntal neighbor motion G-A-G supports the (local) harmonic progression I-V $\frac{4}{3}$ -I (bars 1-2).

In Chapter 2 we saw ways in which a tone can be prolonged or extended by means of other tones. Here we see the prolongation of tonic harmony by means of a different chord. The stepwise voice leading and neighbor motion in the bass minimize harmonic contrast, and reinforce the continuity of the harmonic progression. Consider the difference in effect between the inverted V 7 in bar 1 and the root-position V that occurs in the cadence at the end of the phrase (bar 8). This V serves as the goal of the preceding harmonic motion, and is elaborated by a cadential $\frac{6}{4}$ on the first beat. Thus the dominant chords in bars 1 and 8 have markedly different functions that are determined by the context in which they occur.

Like the V $\frac{4}{3}$ in bar 1, the chords in bar 3 also embellish tonic harmony. They do so through double-neighbor motions, as shown by lines connecting the tones D-E-C#-D and B-C-A#-B in the inner voices (Example 3.1b). These linear motions create a neighboring $\frac{6}{4}$ and a common-tone diminished

EXAMPLE 3.1:

(a) Mozart, Piano Sonata, K. 545, II, bars 1-16; (b) analytical interpretation, bars 1-8

(a)

Andante

The musical score consists of three systems of piano accompaniment. The first system, labeled (a), shows the original notation for bars 1-2. The second system, labeled (b) with a circled 3, shows an analytical interpretation of bars 1-8. The third system shows the original notation for bars 3-4. The notation includes treble and bass staves with various chords, melodic lines, and articulation marks.

EXAMPLE 3.1 (continued)

⑦

Musical notation for measures 7 and 8. The treble clef staff features a melodic line with eighth-note patterns and slurs. The bass clef staff provides a harmonic accompaniment with quarter notes and rests.

Musical notation for measures 9 and 10. The treble clef staff continues the melodic line with slurs. The bass clef staff features a consistent eighth-note accompaniment.

⑪

Musical notation for measures 11 and 12. The treble clef staff shows a melodic line with slurs. The bass clef staff continues the eighth-note accompaniment.

⑬

Musical notation for measures 13 and 14. The treble clef staff features a melodic line with slurs. The bass clef staff continues the eighth-note accompaniment.

Musical notation for measures 15 and 16. The treble clef staff features a melodic line with slurs. The bass clef staff continues the eighth-note accompaniment.

EXAMPLE 3.1 (continued)

(b) ③ ⑤

I — I — I I — I

⑥

I — I⁶ IV 6 V⁴₃

seventh chord over a stationary bass. Chords formed through either passing motion or, as in Example 3.1, through neighboring motion (including the use of *incomplete* neighbors) are called *contrapuntal* chords. The contrapuntal chords in bars 1 and 3 serve to prolong tonic harmony; contrapuntal chords can also form part of a motion from one harmony to another.

The return to I in bar 6 (after another neighboring V^4_3) is followed by a descent in the bass through E to B, supporting VI and I^6 .¹ As indicated in Example 3.2, this descending sixth inverts the rising third that would typically support a motion from I to I^6 . The larger descending interval is subdivided into two smaller leaps by the tone E, which supports VI. Here, the prolonga-

EXAMPLE 3.2:

Expansion of tonic harmony through interval inversion

becomes and

I — I⁶ I — I⁶ I VI I⁶

tion of tonic harmony ($I-I^6$) involves leaps, in contrast to the stepwise bass line of bars 1-5.

Tonic harmony, therefore, is prolonged in the first six bars of the Andante. Other chords provide variety in various ways, but function within this governing harmony or harmonic "space." Integration of the related chords with the primary harmony is achieved through contrapuntal motion and close harmonic relationships, such as that of dominant and tonic, or the common-tone association of I and VI. These chords function in a more "local" way than does the tonic harmony that governs bars 1-6.

The prolongation of tonic harmony is followed by a motion to the dominant in bars 7-8. In the bass, the motion to B (bar 6) is followed by the tones C and D, supporting the IV and V chords. (As shown in Example 3.1b, the leap to E on the third beat of bar 7 is a local detour that does not disrupt the stepwise motion from IV to V.) Example 3.3 represents the bass and harmonic structure of the phrase in two stages: $I-IV-V$ becomes $I-I^6-IV-V$. In other words, tonic harmony is prolonged for a sixth bar by motion through a descending sixth before the cadential $IV-V$ closes the phrase in bars 7-8.

We observed above that the $\frac{6}{4}$ chord on the downbeat of bar 8 is a contrapuntal chord that serves to elaborate dominant harmony. The cadential $\frac{6}{4}$ chord typically intensifies (through suspensions or accented passing tones) the dominant to which it resolves. For this reason cadential $\frac{6}{4}$ chords will be represented by the symbol $V\frac{6}{4}$, instead of the more literal $I\frac{6}{4}$.² In general, roman numerals serve to indicate harmonic functions in Schenkerian analysis, rather than to identify the spelling of individual chords. They are used sparingly in graphs, as will be seen in later chapters.

This type of cadence—a semicadence or half cadence—exhibits a kind of dual nature: it achieves a certain degree of repose, but also embodies a sense of continuation. The dominant note in the bass usually strives for resolution; a forward melodic impulse (directed toward the tonic note) is also inherent in the second scale degree in the soprano and the leading tone in the alto. This need is fulfilled at the *conclusion of the second phrase*, where the melody completes the descent to $\hat{1}$ (G). Thus the V of the semicadence does not "resolve" to the tonic that immediately follows, which is not a goal but the beginning of the second phrase. In other words, the ultimate resolution of the V in bar 8 is achieved by the authentic cadence of the consequent phrase.³

Minor changes occur in the consequent phrase, such as the use of II^6

EXAMPLE 3.3:

Mozart, Piano Sonata, K. 545, II, bars 1-8:
bass and harmonic structure

becomes

I IV V I I⁶ IV V

instead of IV over the bass C in bar 15; furthermore, the cadential $\overset{6}{4}$, intermediate II^6 , and dominant harmonies are compressed into one bar (compare bars 7–8 with bar 15). This recomposition ensures that the tonic will arrive in bar 16, thereby maintaining two symmetrical eight-bar phrases. Fundamentally, however, the motions $\text{I}-(\text{I}^6)-\text{IV}-\text{V}$ and $\text{I}-(\text{I}^6)-\text{II}^6-\text{V}-\text{I}$ represent parallel harmonic progressions with different but complementary cadences.

Reflect for a moment on your own experiences playing and listening to tonal music. Have you felt a sense of motion and progression, both within individual phrases and in complete works? If so, have you thought about what creates that movement? Like literature and drama, Western music has traditionally incorporated some kind of progression (melodic and harmonic) from a point of departure to a goal. In this case, the phrase moves from the initial tonic to the perfect authentic cadence in bar 16. The bass line characteristically plays an integral role in harmonic motion, forming the basis and support for the succession of chords and the larger harmonic framework they create.

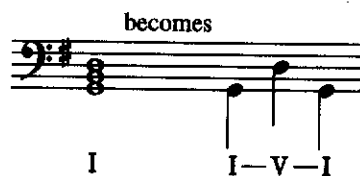
In simplest terms, the motion $\text{I}-\text{V}-\text{I}$ illustrated in Example 3.4 forms the structural harmonic framework that other chords serve to expand and elaborate. One reason why the $\text{I}-\text{V}-\text{I}$ relationship is so essential in tonal structure is that the dominant tone is the first independent pitch (after the octave) in an overtone series above a given note. Moreover, the dominant tone—the root of the V chord—is also the fifth of the tonic chord. Thus the bass of $\text{I}-\text{V}-\text{I}$ can be regarded as an *arpeggiation* of the root and fifth of the tonic (notice how the *vertical* triad is expressed as an arpeggiation in Example 3.4). Just as melodic continuity is based on stepwise motion, so the disjunct motion $\text{I}-\text{V}-\text{I}$ forms the most fundamental harmonic motion of tonal music.

The bass line is the support and organizing influence for a succession of chords, and is therefore fundamentally different in character from the types of melodic lines discussed in Chapter 2. In most compositions, however, this “foundation” bass is elaborated, which makes it more melodic in character. In other words, as we move from the framing $\text{I}-\text{V}-\text{I}$ closer to the musical “surface” (or the moment-to-moment events), we may observe a series of stages that successively embellish this essential harmonic progression.

Example 3.5a presents the bass and soprano lines for the first phrase of the chorale “O Ewigkeit, du Donnerwort.” (The complete phrase is given in Example 2.1.) Like Example 3.1, the chorale begins with a prolongation of I. Here the VII^6 (bar 1, beat 2) is used as a passing chord between I and I^6 : notice that passing motion occurs in both soprano and bass, which move in

EXAMPLE 3-4:

Linear expansion of vertical triad



EXAMPLE 3.5:

(a) J. S. Bach, Chorale, "O Ewigkeit, du Donnerwort," bars 1-2, bass and soprano lines; (b) harmonic structure

(a)

(b)

parallel tenths from the first to the third beat of the first complete bar. The prolongation of tonic harmony continues with a return to a root-position I on the fourth beat of the bar.

Intermediate Harmonies

The IV chord on the next downbeat functions as part of the authentic cadence (IV-V-I) that ends the phrase. Like the IV chord in bar 7 of Example 3.1, this subdominant chord connects the initial tonic prolongation with the dominant. Chords that connect the initial tonic (prolonged or otherwise) with the structural dominant are called *intermediate* (or *pre-dominant*) *harmonies*. (In Example 3.1, both the IV in bar 7 and the II⁶ in bar 15 are intermediate harmonies.) Among the many chords that can function in this manner are II, IV, VI, and III (the II and IV chords often appear also in inversion). Intermediate harmonies are perhaps the most frequently encountered elaborations of the structural harmonic motion I-V-I. Because they appear with such great frequency in structural bass-line patterns throughout the tonal literature, we can, for the sake of convenience, consider intermediate harmonies as part of the structural harmonic pattern itself: *tonic-intermediate harmony-dominant-tonic*, as indicated in Example 3.5b.⁴

The leap of a fourth in the bass from the initial I to the IV of the cadence is filled in (compare Examples 3.5a and 3.5b), resulting in a motion that

leads mainly by step to the V of the cadence. (The return to F on the fourth beat is a consonant skip that embellishes the stepwise motion of the bass.) Notice that the designations "VII⁶" and "I⁶" appear on a separate level beneath the staff, indicating that they occur within the expanded root-position tonic harmony. We will sometimes use different levels of roman numerals to distinguish contrapuntal and prolonging chords from the more fundamental chords of the harmonic structure. The brackets, incidentally, point out a beautiful motivic relationship between the outer voices: the broader ascent from F to C in the bass is anticipated in the soprano (and highlighted by the repetition of C) as part of its octave ascent. These symbols, called *motivic brackets*, are often used in Schenkerian graphs to indicate various kinds of motivic relationships.

Example 3.6 presents the first phrase of the chorale "Wach' auf, mein Herz." While the large-scale harmonic structure in this phrase is similar to

EXAMPLE 3.6:

(a) J. S. Bach, Chorale, "Wach' auf, mein Herz," bars 1-4; (b-d) levels of bass structure

(a)

I VI IN IV V₂ I⁶ II⁶ V⁴⁻³ I

(b)

No: see NOTE 6

I II⁶ V I

(c)

I 6 II⁶ V I

(d)

avoided cadence

I VI IN IV V₂ I⁶ II⁶ V I

those in some of the previous examples, differences in its elaboration and, consequently, in the bass melody begin to illustrate the almost limitless number of ways in which the fundamental tonal pattern *tonic-intermediate harmony-dominant-tonic* can be varied.

The framing harmonic pattern I-V-I, including the intermediate harmony, is shown in Example 3.6b. Even though the bass descends in the music, in the graph (reductions *b* and *c*) we have represented the initial tonic note in two registers to clarify the role of the expanded tonic and its relationship to the intermediate harmony before the cadence. (The "understood" low B \flat , like the E at the end of Example 2.7, "Greensleeves," is shown in parentheses.)

The primary elaboration of this progression is achieved through a prolongation of the initial tonic that extends to the I 6 on the third beat of bar 2 (Example 3.6c). It is significant that the bass note of this chord and the intermediate II 6_5 almost completely fill in the melodic space between scale degrees $\hat{1}$ and $\hat{5}$ (B \flat -D-E \flat -F): it is for this reason that the implied low register has been suggested for the initial B \flat .

The next step in understanding the role of the progression I-II 6_5 -V-I as the structural bass pattern is to clarify how the initial tonic is prolonged. By so doing we will continue to discover how different passages, with different chord successions, may be based on similar underlying bass-line patterns.

Like the tonic prolongation in bar 6 of Example 3.1, the overall motion is from I *down* to I 6 (the final beat of bar 2). Levels *a* and *d* of Example 3.6, however, show many more intervening chords than in bar 6 of Mozart's sonata. In Bach's chorale, the initial tonic B \flat moves through G to D, which supports a mediant chord. (The mediant triad shares two common tones with the tonic and can substitute for a I 6 in a prolongation of the tonic.) The bass then rises to E \flat on the next downbeat before D, the bass of I 6 , enters in bar 2. As indicated in level *d*, therefore, the bass motion within the prolonged tonic consists of two descending thirds, B \flat -G-E \flat , followed by a step to D (bar 2).⁵

When IV is first heard in bar 2, it might initially be perceived as the intermediate harmony of the harmonic progression. But scale degree $\hat{4}$ is held over as a suspension, and the IV moves to an inverted dominant seventh (V 4_2) on the second beat. Because the seventh is in the bass, the tendency of this chord to resolve is very strong; its resolution highlights the I 6 shown in Example 3.6d. With the stepwise resolution to the inverted tonic chord, the structural cadence has been avoided.

The IV in bar 2, therefore, is not the intermediate harmony of the fundamental bass-line structure. Such an internal progression that appears to lead toward a cadence and then "backs off," often through the motion V 4_2 -I 6 , is called an *avoided cadence*, and is one way in which a phrase can be extended. The avoided cadence also explains why we must regard the II 6_5 , and not the IV, as the principal intermediate harmony: the II 6_5 leads to a *root-position* V in an authentic cadence that achieves closure (finality) in the harmonic progression of the phrase, with the characteristic leap from dominant to tonic in the bass.⁶

Dominant Harmony and Cadences

The motion I-V-I can be expanded with an almost limitless variety of bass-line patterns. Example 3.7, the beginning of the second movement of Beethoven's Piano Sonata, Op. 13 ("Pathétique"), begins with tonic harmony prolonged from bar 1 to the downbeat of bar 3. The elaboration of the tonic can be understood on two levels, which are illustrated in Example 3.8. The primary motion is I-I⁶-I, which is expanded by two inverted dominant seventh chords. We have seen that the function of a contrapuntal chord is often determined by the role of its bass note as a melodic (contrapuntal) element. Here, the bass tones D^b and G are incomplete neighbor tones to C and A^b, respectively. The V₂⁴ and V₃⁶ chords, consequently, are neighbor chords (more specifically, *incomplete* neighbor chords).

Now focus on the contrapuntal relationship between the bass and soprano (bars 1-3) in the chordal reduction of Example 3.9. As the numbers above the soprano indicate, the intervals between the two voices alternate between tenths and sixths. In general, the relationship between the outer voices constitutes a primary element of tonal structure; here, the predominance of imperfect consonances produces a fluid motion within the initial tonic region.

We have seen that a single harmony can be prolonged with other chords. Similarly, a motion from one harmony to another can be expanded by one

EXAMPLE 3.7:

Beethoven, Piano Sonata, Op. 13, II, bars 1-8

Adagio cantabile

⑤

EXAMPLE 3.8:

Beethoven, Piano Sonata, Op. 13, II: expansion of initial tonic

becomes IN IN

Chord sequence: I, I⁶, I, I, V₂⁴, I⁶, V₅⁶, I

Interval markings: I ——— I ———

EXAMPLE 3.9:

Beethoven, Piano Sonata, Op. 13, II, bars 1–8: chordal reduction

④

Interval markings: 2nd, 2nd, 5th, 5th

Chord sequence: I, V₂⁴, I⁶, V⁶, I, V⁶, VI, V₃⁴, V, V₂⁴, I⁶, V⁷

Interval markings: I ——— I ——— V ———

⑧

Interval marking: 5th

Chord sequence: II, V⁷, I, II, V⁷, I

EXAMPLE 3.10:

Beethoven, Piano Sonata, Op. 13, II, bars 1–8: structural bass motion

Chord sequence: I, V, II, V, I

or more intervening chords. In the motion from I to V (bars 3–4) indicated in Example 3.9, the bass notes G and F (bar 3) support chords that connect A^b (I) and E^b (V). Since G and F are passing tones, the chords are referred to as passing chords. The last of these, however, is altered chromatically, and functions as V^4_3 of V. Notice the manner in which the leading tone is introduced in the applied dominant chord: an inner-voice passing motion leads from A^b to E^b (bars 3–4). The resolution of the leading tone does not occur in the same voice, but is transferred to the soprano line. This contrapuntal motion, in conjunction with the falling bass line and the rapidly rising soprano in the first part of the bar, intensifies the progression to the dominant chord in bar 4. The passage also illustrates the primary importance of the leading tone, both as a melodic element and as an agent of directed harmonic motion.

The remainder of the passage is based on motion from V (bar 4) to the authentic cadence in bars 7–8. The bass initially descends by step to a I^6 chord in bar 6.⁷ Subsequently, the stepwise motion of the bass gives way to falling fifths, with the tones F, B^b , E^b and A^b supporting root-position chords (with one of the fifths expressed as an ascending fourth to remain within an appropriate range in the bass). A series of chords related through falling fifths is the most basic type of harmonic motion, and may therefore be contrasted with contrapuntal motion, which, as we have seen, is fundamentally stepwise. The combination of “harmonic” leaps with “contrapuntal” stepwise motion gives the bass line its distinctive melodic character.

Example 3.10 illustrates that the bass line of this excerpt traces stepwise motion through an octave. The octave is subdivided by the arrival on E^b in bar 4, a division that creates strong coherence in the passage. Variety is achieved through changes of register (such as the octave leaps) and by the descending fifths at the cadence (bars 6–8).⁸ Intervallic relationships with the soprano (for instance, the parallel tenths indicated in Example 3.9 on the downbeats of bars 5, 6, and 7) reinforce the integration of the outer voices both motivically and contrapuntally.⁹

LARGER CONTEXTS

Our next example, Bach’s figured-bass chorale “Ihr Gestirn, Ihr hohen Lüfte” (Example 3.11), illustrates some distinctive qualities of the minor mode.¹⁰ Bach’s setting of the chorale melody uses various techniques of prolongation, many of which we have already seen in earlier examples. Bars 1–8 are summarized below (compare with the outer-voice reduction in Example 3.12):

1. Bars 1–2 (tonic prolongation): Two root-position tonic chords are connected by a dominant chord in root position. In other words, the prolonged I is elaborated by an octave leap, which is subdivided by A, the root of the dominant chord, into two smaller descending leaps, a

EXAMPLE 3.11:

J. S. Bach, Chorale melody with figured bass, "Ihr Gestirn, ihr hohen Lüfte"

fourth and a fifth. Note that the bass leaps, plus the soprano's ascending third, fully outline the tonic triad.¹¹

2. Bars 2–3 (continued tonic prolongation): Return to original octave in the bass; motion from I to I⁶ via a passing VII⁶.
3. Bar 3 (continued tonic prolongation): Return from I⁶ to I by means of a V⁴₃. (Though the figure implies a VII⁶ chord, A is sustained in the top voice, so that a V⁴₃ chord is actually heard. In figured-bass settings, a "6" is frequently realized as a $\frac{4}{3}$.)
4. Bars 3–4: Motion away from prolonged tonic harmony to dominant harmony. Compare the function of the V chord in bar 1 to that in bar 4: the former appears on a weak beat between two tonic chords, and supports a passing tone in the soprano. In contrast, the V chord in bar 4 occurs on the downbeat, and its bass and soprano notes are melodically prominent. However, the chord is not entirely stable: its soprano

EXAMPLE 3.12:

(a) J. S. Bach, "Ihr Gestirn, ihr hohen Lüfte": melodic and harmonic interpretation;
 (b) transformation of III

(a) ④

I V I VII^{°6} I⁶ VII^{°6} I V I⁶ V⁶ V⁷ I F: I⁶

⑨ ⑪

II⁶ V⁴⁻³ I V V⁶ V I I⁶ IV II⁷ V⁴⁻³ I

III

⑬ ⑯

D: III VII^{°6} I⁶ V⁶ I II⁶ V⁴⁻³ I III⁵ III⁶ II⁶ V⁴⁻³ I

EXAMPLE 3.12 (continued)

(b) ⑬

F: I⁵ — 6 5 — 6
D: III — I⁶

note is the leading tone, and the subsequent continuation $V_2^4-I^6$ connects bars 1–4 with bars 5–8.

5. Bars 4–6: Return to I; notice the combination of stepwise motion and leaps in the bass. After the stepwise descent A–G–F (V to I^6), a continued stepwise motion through E to D might have been expected. Instead, the bass leaps to C# and A, both of which belong to dominant harmony. These tones substitute for the expected E (which would probably support a VII^6 or V_3^4 chord).

The crossed lines in bars 5–6 indicate a *voice exchange*: the upper and lower voices exchange the tones D and F in the motion from I^6 to I. This exchange of tones associates the I^6 and I_3^5 chords; however, because of the intervening dominant chords, the return to tonic harmony is not fully established until bar 6. In essence, the I^6 chord “looks ahead to” or anticipates the associated root-position tonic chord in bar 6, as indicated by the arrow in the example.¹²

In the soprano, notice the broad ascent through an octave from d^1 in bar 1 to d^2 in bar 5, followed by a continuation to f^2 in bar 6. This stepwise ascent lacks only scale degree $\hat{6}$ (bar 3) to be completely stepwise: this tone is replaced by the elaborated motion up to D in that bar. The goal of the ascent, f^2 , occurs as tonic harmony returns in bar 6.

6. Bars 6–8: Modulation to III. In contrast to the brief tonicizations that we observed in earlier examples, F is established as a key area in its own right. The soprano tone f^1 in bar 8 serves as the melodic goal of the phrase, and also initiates a new melodic ascent in the next phrase.

Modulation creates a temporary change of key center, in which a new pitch is heard as the tonic. Accordingly, it is often said that the piece “changes key.” This is true in a sense, but it is not a sufficient explanation. For example, a modulation to the dominant in a sonata-allegro movement creates a dy-

dynamic opposition to the tonic not only because of the contrast of tonality, but also because of the potential of the new "tonic" to function as a dominant again, as it eventually does. In a larger sense, therefore, it remains the dominant, even though it is treated like a tonic for a period of time. Because of this dual characteristic, Schenker described modulation as motion to an "illusory key." That is, the impression of a new key is ultimately perceived as illusory when viewed from the perspective of the global (or home) tonic.

In listening to the individual phrases of "Ihr Gestirn," one may perceive a modulation from D minor to F major. In a larger sense, however, F represents III in D minor, and is part of a broader harmonic motion that will continue after the double bar. From this perspective, the modulation can be seen as an extended tonicization of III, an intermediate harmony in the global tonic of D minor. Indeed, from a broad perspective, *every* modulation can be understood as a tonicization within the home key (in a tonal work that begins and ends in the same key).

We have seen the importance of the octave in the bass (as in bars 1–2, 6, and 7). This interval permeates the work, becoming a kind of motive and occurring in a variety of different ways. In the soprano (bars 1–6), a long-range ascent from d^1 to f^2 unfolds essentially through an octave, which is extended to a tenth by the repetition of the opening D–E–F figure from bars 1–2 (see the brackets in Example 3.12). The octave relationship between these two figures is then echoed by the descending leap from f^2 to f^1 in bar 6. Two different registers are thus compositionally related, a technique that we shall encounter frequently.

The motion to III may be regarded as a modulation in part because of the continued prolongation of the mediant key area after the double bar. The bass line employs many leaps in this passage, arpeggiations and harmonic (V–I) motions that enhance the stability of the new key area. Notice also that the final bass motion of the cadence in bars 7–8, C–C–F, is echoed an octave lower in bars 11–12, reaching the lowest bass note of the piece.

In bars 13–14 the I chord in F is transformed into a I^6 chord in D; the transformation is shown in Example 3.12b. Such a motion over a chord in $\frac{5}{3}$ position to one in $\frac{6}{3}$ position over a common bass note (or, in figured bass terms, simply "5–6") is very common and is called the *5–6 technique*.¹³ By means of this motion, Bach leads from the prolonged key area of the mediant back to the tonic key. Through the raising of the natural seventh degree, which had been employed throughout the prolongation of the mediant, the leading tone of the home tonic is reestablished.

A motion from I^6 to I in bar 14 begins to highlight the return to the home tonic of the piece (note the voice exchange between the outer voices); the definitive confirmation of tonic harmony, however, occurs only at the cadence in bars 15–16. Example 3.13 shows the large-scale bass and harmonic structure for the work: I–III– II^6 –V–I. The use of the mediant as a secondary key area is characteristic of pieces in minor.

Our next composition is also by Bach, the well-known C-major Prelude from the *Well-Tempered Clavier*, Book I (Example 3.14). The complete work will be studied later; at this point we shall consider the bass line and harmonic structure.¹⁴

EXAMPLE 3.13:

J. S. Bach, Chorale, "Ihr Gestirn, ihr hohen Lüfte":
structural bass

① ⑧ ⑮ ⑯

I III II_{5/2} V I

The consistent figuration and rhythm create a continuum of motion from the beginning of the prelude until its end. The work has the quality of an improvisation in which no major sectional divisions occur. Internal articulations are created by the bass and harmonic structure and are reinforced by subtle changes in the arpeggiated patterns. (The nature of the upper voices will be explored in Chapter 8.) For most of the piece a single chord is arpeggiated in each bar, a feature that is closely related to improvisation. It will be useful to represent the chords in block form (Example 3.15).

A four-bar progression establishes the tonic at the beginning of the work. In this quasi-cadential progression all voices move by step or retain common tones; both the II₂⁴ and V₅⁶ chords function as contrapuntal chords. The dissonances formed by the left hand in bar 2 (C–D) and the diminished fifth between the outer voices in bar 3 (B–F) create tension that is resolved by the return to I in bar 4.

In tonal music continuity and change are often combined, particularly at points of transition. This happens in bars 4–5, where the tonic is transformed,

EXAMPLE 3.14: [truncated]

J. S. Bach, Prelude in C major (WTC I)

Praeludium I

through a 5–6 motion, into an A-minor $\frac{6}{3}$. Two chords related by a 5–6 motion are closely associated: the A-minor $\frac{6}{3}$ chord of bar 6 is related to tonic harmony through two common tones (note that the bass note C is a common bass tone; in other words, the $\frac{6}{3}$ chord of bar 5 is an outgrowth of the root-position tonic chord).¹⁵ This contrapuntal motion “destabilizes” the tonic of bar 4, and the resulting $\frac{6}{3}$ chord initiates the descending-fifth sequence in bars 5–8 (which occurs in the variant form $\frac{6}{3}$ – $\frac{4}{2}$ – $\frac{6}{3}$, etc.). This sequence leads to V, which is established as an intermediate goal by the cadential pattern II^7 – V^7 –I in G (bars 9–11).

Another sequence begins after the tonicized V, one similar in structure but more chromatic than the sequential pattern in bars 5–8 (the pattern changes from $\frac{4}{2}$ – $\frac{6}{3}$ to $\frac{6}{3}$ – $\frac{6}{3}$). This second sequence leads to a cadence in the tonic (bars 17–19) that parallels, in transposed form, the cadential motion of bars 9–11.

Bars 1–19, therefore, comprise two broad motions, the first leading to V, the second returning to I. As shown in Example 3.16, the bass descends a fourth from I to V (bar 11) and then continues to I (bar 19). (Compare this division of the octave with the similar division in Example 3.10.)¹⁶

The bass thus descends through an octave, which is subdivided by the arrival on G in bar 11. When tonic harmony returns in bar 19, the upper voices are in the same position as in bars 1 and 4 (E over C), but an octave lower. The association of the tonic chords (bars 1, 4, and 19), produced in part by the stepwise descent in the bass and the parallel cadences, represents a prolongation of tonic harmony in bars 1–19. (Compare this prolongation with bars 1–2 in Examples 3.11 and 3.12, where the octave descent is much more rapid, and therefore only a dominant chord intervenes.) Within this harmonic space a variety of different types of chords and motions occur that are unified by the descending bass and the framing tonic chords.

Bach’s C-major Prelude contains several large-scale harmonic prolongations, the first of which, the prolonged tonic of bars 1–19, we have examined in detail. For the sake of context, we will also point out that a three-bar prolonged subdominant is followed by an eight-bar prolonged dominant; a four-bar prolonged tonic then concludes the prelude (these bars unfold over a pedal; the appearance of the structural tonic triad is delayed until the final bar). Because of the consistency of figuration and rhythm, clearly delineated phrases and marked sectional divisions do not occur. Rather, harmonic and melodic motions establish the prelude’s shape and form. The harmonic prolongations, which we will examine in greater detail in Chapter 8, create the sectional boundaries within the composition.

The structural harmonic progression I–IV–V–I thus serves as the foundation of Bach’s prelude; it is truly remarkable that such a motion can serve as a cadential pattern, the basis of a phrase, or, as in this case, the underpinning of an entire piece (Example 3.17). Schenker referred to such structural harmonic “pillars” as *Stufen* (the English translation is “scale steps”). In essence, a *Stufe* is a triad that serves in the harmonic foundation of a passage or composition; it may or may not be prolonged, depending on the context.¹⁷ In Bach’s prelude, I–IV–V–I are scale steps. Notice that Schenkerians identify

EXAMPLE 3.15:

J. S. Bach, Prelude in C major (WTC I): chordal simplification

⑤ ⑪

I II[#]₄ V[#]₆ I⁵⁻⁶ $\frac{\#4}{2}$ 6 $\frac{4}{2}$ G:II⁷ V⁷ I-

⑫ ⑮ ⑳

$\frac{\#4}{3}$ 6 $\frac{4}{b3}$ 6 $\frac{4}{2}$ C:II⁷ V⁷ I V⁷ IV⁷ I IV

㉒ ㉗ ㉓

V⁷ $\frac{6}{4}$ $\frac{7}{4-3}$ $\frac{6}{4}$ $\frac{7}{4-3}$ $\flat 7$ I

㉔

$\frac{6}{4}$ $\frac{7}{4}$ I

EXAMPLE 3.16:

J. S. Bach, Prelude in C major (WTC I), bars
1–19 bass structure

The musical notation shows a single staff with a bass clef. The notes are: C4 (quarter), D4 (quarter), E4 (quarter), F4 (quarter), G4 (quarter), A4 (quarter), B4 (quarter), C5 (quarter), B4 (quarter), A4 (quarter), G4 (quarter), F4 (quarter), E4 (quarter), D4 (quarter), C4 (quarter). Roman numerals I, V, and I are placed below the staff at the beginning, middle, and end respectively. Circled numbers 11 and 19 are placed above the staff at the beginning and end of the phrase.

scale steps with roman numerals (which refer in the usual manner to the *root* of the harmony). Other chords, such as passing and neighboring sonorities, may also be assigned roman numerals for identification or other purposes. But in principle, such elaborating chords serve to expand or connect other harmonies, and are not themselves scale steps.

You should notice that we use block chords and figured-bass symbols extensively in Example 3.15, which can be considered a “continuo” realization of the prelude. Bear in mind that the thoroughbass tradition—so prevalent in the eighteenth century—continued to influence approaches to composition well into the nineteenth century, even when a continuo part was not an aspect of performance. In other words, it is usually possible to construct an “imaginary continuo” for a tonal composition. This procedure can be a valuable first step in analysis. As we proceed to more advanced techniques of composition, the imaginary continuo will help you, for instance, in making decisions between local melodic detail and broader, structural associations among tones.¹⁸

CHORD PROLONGATION: SUMMARY

In this chapter we have discussed the notion of *chord prolongation*: that is, the expansion of a chord (or scale step) by means of one or more other chords.

EXAMPLE 3.17:

J. S. Bach, Prelude in C major (WTC I): harmonic structure

The musical notation shows a single staff with a bass clef. The notes are: C4 (quarter), F4 (quarter), C4 (quarter), F4 (quarter), C4 (quarter), F4 (quarter), C4 (quarter), F4 (quarter). Roman numerals I, IV, V, and I are placed below the staff at the beginning, middle, and end respectively. Circled numbers 1, 21, 24, and 32-35 are placed above the staff at the beginning, middle, and end of the phrase.

We have also seen that, just as a single chord can be prolonged, so the motion between two different chords can be expanded.

Chord prolongation occurs in a variety of different ways. Typically the melodic and contrapuntal motion of one or more voices forms the basis of the prolongation. A variety of different types of prolongation is illustrated in Example 3.18; the patterns are drawn from previous examples studied in this chapter.

EXAMPLE 3.18:

- A. *Bass arpeggiation expanding a triad by moving from one inversion to another* (Example 3.11, bars 9–10; see also Example 3.1, bar 7; Example 3.5, bar 1, beats 3 and 4)

V 6 I 6

- B. *Neighbor motion*

1. *In the bass* (Example 3.1, bars 1–2; Example 3.7, bars 1–3)

I N I

I IN I⁶ IN I

2. In the inner voices (Example 3.1, bars 2-4)

3. Alternating in upper voices and bass (Example 3.14, bars 1-4)

C. *Passing motion*

1. In the bass (Example 3.11, bars 3-4)

2. In the upper voices (Example 3.14, bars 24-27)

3. Parallel tenths (Example 3.5, bar 1)

P

I — 6 I⁶

D. *Voice exchange between the outer voices* (Example 3.11, bar 14)

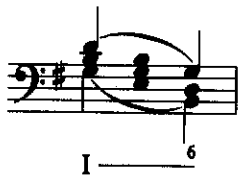
P

I⁶ IN I $\frac{6}{3} = \frac{5}{3}$

E. *Applied dominant chord* (Example 3.7, bars 6–7)

I⁶ V⁷ II

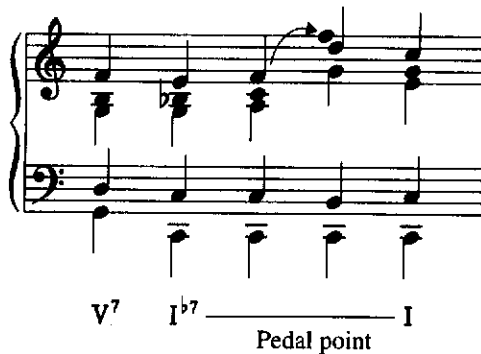
- F. *Leaps in bass* (Example 3.1, bar 6). In this example the bass motion from I to I⁶ is inverted from an ascending third to a descending sixth. The resulting sixth is subdivided by E into two descending leaps of a third and a fourth. A typical example of this type of prolongation is motion in descending thirds; I–VI–IV, for instance, can prolong the motion from I to IV.



G. *Prolongation through transformation* (Example 3.14, bars 19–21). The prolongation includes the addition of $\flat 7$, which transforms the initial prolonged tonic triad into V^7 of IV. This type of prolongation also includes 5–6 motions (Examples 3.14 and 3.15, bars 4–5).¹⁹



H. *Elaboration of a chord* (Example 3.1, bars 8–9; Example 3.14, bars 31–35)



- I. *Elaborating motions between two chords* (Example 3.9, bars 3–4: passing motion in the bass). Other types of elaborating motions may include chordally supported passing motion in an upper voice. See Example 3.6, bars 1–2: I–VI–IV becomes I–VI–(III)–IV, where III supports the tone A in the upper voice. Consider also motion in thirds, as in the progression I–(VI)–(IV)–II.

The musical notation consists of two staves. The upper staff is in treble clef and shows a melody. The lower staff is in bass clef and shows the bass line. The bass line starts with a whole note chord labeled 'I', followed by two eighth notes labeled 'P' (passing notes), then a whole note chord labeled 'I 6', and finally a whole note chord labeled 'V'. Above the first two 'P' notes, the text 'P P becomes' is written. Below the bass line, the Roman numerals 'I', 'V', 'I 6', and 'V' are aligned with their respective notes. A 6/4 time signature is indicated below the bass line.

Like the examination of melody and voice leading presented in Chapter 2, this investigation into the nature of bass lines and harmonic structure should be regarded as an introduction. Detailed analysis requires that all aspects of the music be considered, and our understanding of one facet of a passage will often be influenced by other features. Thus melody, harmony, and rhythm, as well as such compositional elements as texture and instrumental setting play a role in what Schenker called *composing-out* (*Auskomponierung*), or the expansion of a structure through prolongations and motions of various kinds. Through the diminutions which develop from level to level, “All the manifold experiences of the lines—which are none other than our experiences—are transformed into song . . . [and] music itself organically lives, sings, and speaks.”²⁰

In later chapters we will learn to examine works in a comprehensive way, and to relate the concepts that you have learned in these introductory discussions. We will initially examine excerpts from longer compositions (occasionally interspersed with some complete works). We shall then undertake the analysis of whole movements and compositions.

Exercises

Exercise 1. Bach Chorale No. 269 (G minor), first phrase, fourth phrase (bars 8–10; analyze in B \flat major), and last phrase only. Focus on the harmonic structure.

- a. Some distance below the bass line, write in the roman numerals for each chord.

- b. Below that, write the roman numerals for those harmonies that function on a higher level of structure. (What are the main scale steps in the bass-line framework of each phrase?)

Exercise 2. Beethoven, Variations on "God Save the King," WoO 78

- a. Theme: Analyze the *bass-line* structure only. Identify the primary scale-step progression (the "main" harmonies; think in terms of tonic-intermediate-dominant-tonic) of both phrases. Don't be overly concerned with graphing symbols; use the analyses in this chapter as your guide.
- b. Variation 5: Analyze bars 1-6 and 11-14.
1. Focus first on the harmonic structure (along the lines of the theme). Identify the main harmonic "framework" (two phrases) and explain the harmonic "areas" (expansions) that elaborate the scale steps of the frameworks.
 2. Then, align the tones of the melody above the corresponding bass pitches.

Exercise 3. Explain the harmonic and bass-line structure in the passages listed below. Indicate the following:

- a. *All local chords*, using roman numerals and figures (or simply figures) as appropriate.
- b. *Contrapuntal and other prolonging chords* (N for neighbor chord, P for passing chord, etc.).
- c. The main elements of the bass-line structure: tonic-intermediate-dominant-tonic areas. Be able to explain how each is prolonged (if applicable).
- d. On a lower level of the page, indicate with roman numerals those harmonies that are primary in each phrase. Use lines to indicate prolongations (as in Examples 3.6 and 3.9).
- e. (optional) Using slurs, indicate associated motions and prolongations in the bass melody itself (as in Examples 3.6 and 3.10).
 1. Mozart, Piano Sonata, K. 570, II, bars 1-4
 2. Beethoven, Piano Sonata, Op. 10, No. 2, I, bars 1-12
 3. Beethoven, Piano Sonata, Op. 14, No. 2, I, bars 1-8
 4. Brahms, Waltz, Op. 39, No. 2 (complete)
 5. Beethoven, Piano Sonata, Op. 10, No. 3, II, bars 1-9
 6. Mozart, Piano Sonata, K. 333, III, bars 1-16
 7. Beethoven, Piano Sonata, Op. 14, No. 2, II, bars 1-20
 8. Bach, *St. Matthew Passion*, Aria, "Erbarme dich," bars 1-8
 9. Beethoven, Piano Sonata, Op. 26, III, bars 1-21
 10. Schumann, *Album for the Young*, Op. 68, Little Study, bars 1-17

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11. Beethoven, Piano Sonata, Op. 2, No. 3, III, Trio (bars 1-24)
12. Handel, Keyboard Suite No. 7 in G minor, Sarabande (complete)
13. Beethoven, Piano Sonata, Op. 2, No. 1, III, Menuetto (bars 1-40)
14. Bach, French Suite in E major, Sarabande (complete)