

The background of the cover features a blue-toned musical score with various notes and rests on staves. A large, light-colored treble clef is superimposed on the left side of the cover, extending from the top to the bottom.

5TH
EDITION

HARMONY & VOICE LEADING

*Edward Aldwell, Carl Schachter,
and Allen Cadwallader*

5TH
EDITION

HARMONY & VOICE LEADING

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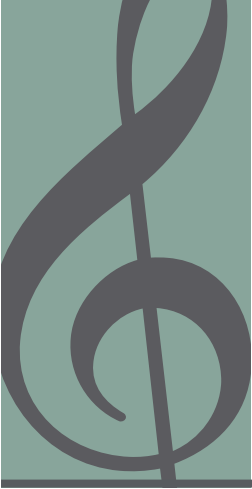
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Dedication

In Memoriam Edward Aldwell

(January 30, 1938–May 28, 2006)

Edward Aldwell's untimely death occurred during the planning stages for the Fourth Edition but before actual work had begun. His ideas about music and its teaching are evident on every page of this new edition. Edward was a complete musician. He was primarily a pianist, and a wonderful one. Edward was a great teacher of both theory and piano; he was also an outstanding chamber-music coach. His performance students benefited from his analytical insights, and his theory students benefited from his ability to derive implications for performance from theoretical observations—and from the way he translated these implications into sound in his beautiful demonstrations at the piano. My work with Edward on *Harmony & Voice Leading* was a genuine and close collaboration; whatever might be good in the book is due equally to both of us. Our friendship lasted more than forty years, and his death is a grievous loss to me and to the countless students and colleagues who gained so much from his artistry and wisdom.

Carl Schachter



Preface

The Fifth Edition of *Harmony & Voice Leading* retains the approach and goals of its four predecessors. It offers a thorough and comprehensive course of study in harmony in the music of the eighteenth and nineteenth centuries. At the same time, it emphasizes the linear aspects of music as much as the harmonic, with relationships of line to line and line to chord receiving as much attention as relationships among chords. Large-scale progressions—both harmonic and linear—are introduced at an early stage so that students can gain an understanding of the connection between detail and broad, inclusive plan in a musical composition. They learn that “harmony” is not merely the progression from one chord to the next and that “voice leading” is much more than the way two consecutive chords are connected.

In preparing this new edition, we have reviewed the entire text to improve our manner of presentation, our examples from the literature, our use of terminology, and our exercises. We hope that these changes will make the book more effective for both teacher and student. Among the new features are the following: We have incorporated the upper- and lower-case system of Roman numeral analysis to facilitate students in the recognition of chord quality. Furthermore, we have informally introduced Schenker’s notion of *linear progressions*, an important concept in later, more advanced work in tonal analysis.

The book is suitable either for a self-contained course in harmony or for an integrated program combining harmony with other aspects of music. *Harmony & Voice Leading* touches on many of these aspects, including rhythm, melody, counterpoint, and form. It can function, therefore, as the basic text for an integrated program and can serve as a convenient point of departure for systematic work in the other areas, with or without a supplementary text. Many theory programs have returned to the study of species counterpoint, usually at an early stage. This book would combine very well with work in species counterpoint; such a combination would provide an excellent basis for the understanding of tonal music. But counterpoint need not precede or accompany work in *Harmony & Voice Leading*; this is a completely self-contained and self-sufficient text.

In most theory programs, instruction in harmony or counterpoint usually follows a review of fundamentals: scales, key signatures, intervals, and so forth. This initial phase can pose difficult problems for instructors. Students vary

widely—even wildly—in the quality of their previous training. And even those with a reasonably secure grasp of the fundamentals seldom understand the significance of the material they have learned by rote. The first three units of *Harmony & Voice Leading* attempt to deal with these problems. They offer both a review of the fundamental materials and a glimpse—a first glimpse for most students—of their significance for musical structure. Thus, these opening units attempt to provide both a practical and a conceptual basis for the students' later work. For students deficient in their knowledge of fundamentals, we have provided a large number of written drills in the accompanying workbooks, as well as a smaller group in the text itself. Better prepared students will not need to devote much time to these drills, but they will profit from reading through the first three units and from classroom discussion of their contents.

The length of time needed to work through the book will vary, depending on the students' preparation, the number of class hours devoted to harmony, and the thoroughness of the course. We have tried to treat the subject as comprehensively as possible, knowing that different teachers may have very different ideas about which aspects of the study to emphasize. Some may choose to skim over certain units or sections within units, while others may devote a fair amount of time to those very units or sections. We hope that our comprehensive approach will give teachers the possibility of designing a course that best fits their students' needs. We know that some schools that have adopted the book go through it in three semesters and that others take as long as three years (together, of course, with other aspects of music, notably counterpoint). Most schools seem to accommodate it within a two-year theory sequence. The text and the two workbooks contain far more exercise material than could be covered in any single course. Instructors can thus choose the number and type of exercises that best meet the needs of their particular class. The remaining exercises will provide valuable material for classroom demonstration, exams, and review.

The order in which important materials and procedures are presented differs from that found in any other text. After a discussion of chord vocabulary, chord construction, and voice leading, the fundamental harmonic relationship between tonic and dominant is introduced, and the discussion then proceeds quickly to the most frequent linear expansions of tonic harmony. Confining students' work in these initial stages to a single harmonic relationship and to a number of closely related contrapuntal ones makes it much easier for them to *hear* what they are doing than if they are confronted immediately with seven root-position chords, each with a different sound and function. In subsequent units, students learn new usages a few at a time in a way that relates to and expands on the techniques they have already mastered. This order of presentation also makes it possible to show examples from the literature at a much earlier stage than in other approaches—and without including usages that students have not yet learned. Thus, they develop their ability to hear in a logical and orderly fashion, and they can begin their analysis of music of the highest quality much sooner than in other approaches. The book's order of presentation also makes it possible to pursue a number of fundamental concepts, such as tonic-dominant relationship, voice exchange, and 5-6 technique, by starting with their simplest manifestations and gradually revealing more complex developments and ramifications. By relating new

material to large inclusive ideas, rather than simply piling rule upon rule, we hope to help students to begin thinking about music in productive ways that will benefit their analysis, writing, and performing.

Although *Harmony & Voice Leading* probably covers more material than any comparable text, it does not require an inordinate amount of time to complete. Nonetheless, this book offers no shortcuts. There are no shortcuts in learning music theory—especially in the development of writing skills. If twenty-first-century students wonder why they need to master such skills—why they need to take the time to learn a musical language spoken by composers of the past—they can be reminded that they are learning to form the musical equivalents of simple sentences and paragraphs. The purpose is not to learn to write “like” Mozart or Brahms, but to understand the language the great composers spoke with such matchless eloquence, the language that embodies some of the greatest achievements of the human spirit.

In the initial years of the twenty-first century, no one can minimize the importance of a thorough study of twentieth-century music. But we believe that to combine in a single text an intensive study of tonal harmony with an introduction to twentieth-century techniques would fail to do justice to either subject. For one thing, some of the simplest and most fundamental principles of earlier music—the functioning and even identity of intervals, for example—become radically altered in twentieth-century usage, so that it is impossible to proceed directly from one kind of music to the other. And the twentieth century has seen the development of compositional styles that sometimes differ from one another so profoundly as to amount to different languages. To deal adequately with this disparate and often complex material requires a separate text.

Many readers will realize that this book reflects the theoretical and analytic approach of Heinrich Schenker, an approach many musicians recognize as embodying unique and profound insights into tonal music. *Harmony & Voice Leading* is not a text in Schenkerian analysis—no knowledge of it is presupposed for either instructor or student—but the book will provide a valuable preparation for the later study of Schenkerian analysis. We believe that a solid foundation in harmony and voice leading is an indispensable prerequisite for learning Schenker’s approach; without it, students have no secure basis for the analytic judgments they are called upon to make.

The Fifth Edition features MindTap, which offers several challenging and interesting features, including playable musical examples, flashcards, ReadSpeaker, and opportunities for instructors to add their own teaching materials to the learning path.

Students are now able to use their computers as an adjunct to the text and may listen to examples while reading the explanations and studying the scores.

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

Your MindTap for *Harmony & Voice Leading*, Fifth Edition, includes:

- The **eBook** for *Harmony & Voice Leading*, Fifth Edition, including the narrative, examples, and exercises as well as the appendices.
- All the **audio examples**, as part of the eBook.

- **Guided exercises**, which show in stages the solution for one exercise from the core book's Units 7–16 and 18–33.
- All **workbook exercises** in PDF format.

Finally, we have developed for instructors a series of guidelines that highlight the primary topics of each unit; we hope the suggested strategies will be of use in developing class presentations.

*Carl Schachter
Allen Cadwallader*

Acknowledgments

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A stylized abstract graphic in shades of green and grey. It features a thick, curved line that starts from the top left, curves down and then up, resembling a leaf or a branch. Below this, there is a large, light green circular shape with a vertical line passing through its center, and a smaller, light green circular shape at the bottom left. The background is white, and a dark grey horizontal band runs across the middle of the page.

PART I

The Primary Materials and Procedures



Key, Scales, and Modes

1-1 Mozart, Piano Sonata, K. 545, I

Allegro

The musical score is presented in four systems, each with a treble and bass clef staff. The first system begins with a treble clef and a common time signature. The second system includes a trill (tr) and a five-fingered scale (5) in the right hand. The third system continues the scale and includes a sharp sign (#) in the bass line. The fourth system shows the end of the piece with a final cadence.

MINDTAP

-  Listen to the audio of all the unit's examples.
-  Practice the workbook's exercises, available in PDF.

Tonal Relationships; Major Keys

1. **Key.** We'll begin by considering the opening of Mozart's familiar Sonata in C major, K. 545 (Example 1-1). The piece obviously contains many tones besides C. Why, then, do we call it a "sonata in C major," or say that "it's written in the key of C"? Most people would answer that music is "in a key" when its tones relate to one central tone—the one that has the same name as the key—and when the functions of the other tones result from the ways in which they relate to the central one. According to this answer, the Mozart Sonata is in C because C is the central tone; we hear the other tones as subordinate to C. (Why it's not simply in C but in C *major*, we'll discuss presently.)

This explanation of key is certainly correct as far as it goes, but it tells us little about the *kinds of relationships* that exist between the central tone and the others. (A definition of chess as "a game played on a board by two people, each with sixteen pieces" would be correct in the same way. But it wouldn't help anyone to learn to play chess.) Let's now look more closely at these relationships.

2. **The Tonic.** We call the central tone of a key the *tonic*. In Example 1-2, which shows the most prominent tones of the Mozart, both hands begin on the tonic, C. The left hand stays around C for most of bars 1–4 and moves on to C as the lowest point in the downward motion F–E–D–C, bars 5–8. The right-hand part does not return to C after the opening bars, but its subsequent course points to C as its eventual goal. In bars 3 and 4, the melody moves from the high A down as far as E. The sixteenth-note scales that follow repeat, in varied form, the melodic line A–G–F–E but then carry it one step further, to D (bar 9). In listening to the melody, we are led to expect it to finish on C, to complete the circle by ending where it began. But it doesn't—not yet, at any rate. Instead the D is taken up again in bars 11 and 12; the first part of the piece closes without having arrived at its melodic goal.

1-2 Example 1-1's most prominent tones

And, in fact, C's function as a goal is not fulfilled until almost the end of the piece (Example 1-3). Generalizing from the Mozart, we can state that the *tonic*, the central tone of the key, forms *the point of departure* from which the other tones move and the *goal* to which they are directed. As in bars 1–12, the music does not always reach its goal at the moment we expect it to; by ending a part of the piece in a state of suspense, a composer can enhance the feeling of finality at the very end.

1-3 Mozart, Piano Sonata, K. 545, I

(Allegro)

67

70 D

C

3. Scales. In Example 1-1, Mozart uses only some of the tones that the piano keyboard can produce. Almost all the sounds in these twelve bars result from playing the white keys; of the nearly 200 notes, the only exceptions are two C#'s (bar 9) and one F# (bar 10). And if we were to look at other pieces in C major, we would find similar tonal materials. For the most part the pieces would contain the tones C, D, E, F, G, A, and B, and any other tones would play a subordinate role.

When all the tones that belong to a key occur in consecutive order, each one next to those closest to it in pitch, the result is a *scale* (Latin *scala*, “steps, staircase, or ladder”). In bars 5–8 of the Mozart, C-major scales occur beginning on A, G, F, and E. The basic form of a scale, however, is the one that

begins and ends on the tonic. A scale in this basic form can be thought of as a symbol of, or abstraction from, the natural flow of music—at least of music that is written “in a key.” For such a scale begins on the tonic as its point of departure and concludes on the tonic as its goal (Example 1-4).

1-4 scale degrees in C¹



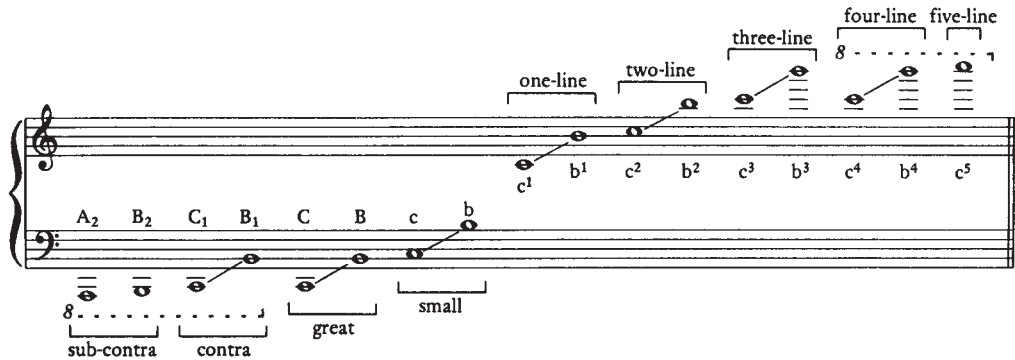
The capped numbers above the notes in Example 1-4 indicate *scale degrees* (sometimes called *scale steps*) and will be used for this purpose throughout the book. In addition to numbers, the following traditional names are used so often for the scale degrees that you should memorize them:

- 1̂. Tonic
- 2̂. Supertonic
- 3̂. Mediant
- 4̂. Subdominant
- 5̂. Dominant
- 6̂. Submediant
- 7̂. Leading tone

4. **The Octave.** The beginning and ending tones of Example 1-4 are both C, but they are not one and the same tone. The last tone sounds considerably “higher” in pitch than the first. Yet, despite this marked difference in register, the sounds of the two C’s are very similar; that’s why we call them both by the same letter name. When two tones are separated by an *octave* (Latin *octava*, “eighth”) they are equivalent—*that is, they are variants of the same sound.* This phenomenon of *octave equivalence* is one of the most important aspects of pitch organization in music. In technical writing about music, it is frequently helpful to indicate the register in which a tone occurs. Example 1-5 shows how this can be done.

¹Throughout the examples, the exercises, and the workbook, capital letters are used for major keys and lowercase letters are used for minor keys. Thus, G and g indicate the keys of G major and G minor, respectively. (Names of individual pitches, in contrast, are always indicated with a capital letter.)

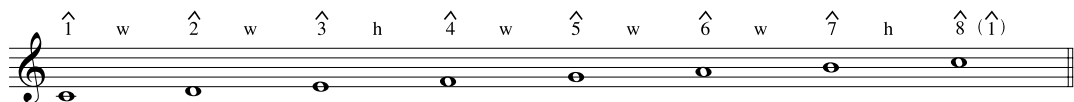
1-5 registers



5. Major Scales; Whole Steps and Half Steps. If we play a white-key scale from C to C on the piano, we can easily see that there is a black key between most of the adjacent white keys—between C and D, D and E, F and G, and so on. However, no black key appears between E and F or between B and C. The distance between one tone of a scale and the next is usually called a *step*. The scale from C to C contains two kinds of steps: small ones between E and F and between B and C, larger ones between the other adjacent tones. The small ones occur where there is no intervening black key; the larger ones occur where there is a black key. (See Example 1-6.)

We call the smaller steps *half steps* (or *semitones*) and the larger ones *whole steps* (or *whole tones*). The half steps occur between $\hat{3}$ and $\hat{4}$ and between $\hat{7}$ and $\hat{8}$; all the others are whole steps.

1-6 major scale



A scale with half steps and whole steps arranged in this order is called a *major scale*. Only the major scale has half steps between $\hat{3}$ and $\hat{4}$ and $\hat{7}$ and $\hat{8}$. Any piece whose tones form the same pattern of whole and half steps, starting with the tonic, is a piece in a major key.

The major scale is one kind of *diatonic scale*. All diatonic scales contain five whole steps and two half steps within the octave, but each of the different types of diatonic scale has the half steps in different places. From the time of the ancient Greeks through the nineteenth century, most Western art music was based on diatonic scales. Other kinds of scales are used in some Western folk music, music of non-Western cultures, and much twentieth-century music.

- 6. Intervals.** Example 1-7a shows the tones that begin each of the first four bars of the Mozart Sonata in both the left-hand and the right-hand parts. We call the relationship between two tones heard in a single context an *interval*. Intervals formed by simultaneously sounding tones are called *vertical* (because they are written one above the other). Intervals formed by tones that sound one after the other are called *horizontal* (Example 1-7b). The terms *harmonic* and *melodic* are often used instead of vertical and horizontal.

1-7 (a) vertical intervals (b) horizontal intervals



We can describe intervals, whether horizontal or vertical, by ordinal numbers arrived at by counting letter names up from the lower to the higher tone, or down from the higher to the lower. Thus C up to G is a *5th*, because it spans five letter names, C, D, E, F, and G. From B to C is a *2nd*, because it spans two letter names. From G to the next G above is an *octave* (not an “eighth,” though it has the same meaning as “octave”). Finding the numerical size of an interval does not identify it completely. For example, B-C and C-D are both 2nds. Yet C-D (a whole step) is larger than B-C (a half step). Later on we will specify intervals more exactly; for now, it is enough to be able to determine the numerical size.

- 7. Chords; Triads.** Compare the first and last bars of the Mozart (Examples 1-1 and 1-3). Both bars contain the same three tones (with octave duplications); the tones are C, E, and G ($\hat{1}$, $\hat{3}$, and $\hat{5}$). These three tones are very closely associated, the basis of their association being membership in the same chord. A *chord* is a group of three or more tones that make sense when played or sung all at the same time. In essence a chord is a vertical unit; the simplest and most basic way to present it is as a *block chord*, with all the tones sounding at once (as in the last bar of the Mozart, second beat). But a composer can also present the tones one after the other, as Mozart does in bar 1. Because our ear and memory can group the tones into a unit, we still hear a chord. But not a block chord; it is a *broken chord* or *arpeggio*.

The chord C-E-G contains three tones; the upper two form the intervals of a *5th* and a *3rd* from C, the lowest. A three-tone chord formed in this way is a *triad*. The triad is the basic chord in Western music from the fifteenth through the nineteenth centuries. All other chords are derived from it. In every key, the triad $\hat{1}\hat{3}\hat{5}$ has the tonic as its lowest tone. The lowest tone, called the *root*, functions as the basis of the chord, so we call this triad the *tonic triad* or *tonic chord*.

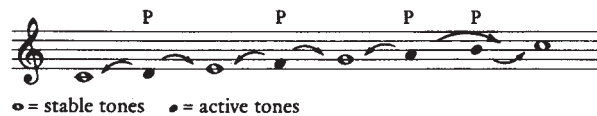
- 8. Active Tones; Stable Tones.** Among the many mysterious powers of music is its ability to suggest *motion*. In listening to a piece of music, we do not hear a succession of static tones; rather, we hear tonal motions, one tone moving to another. In part, this impression comes from rhythm, for musical rhythm has

close relationships to some of the physical activities—walking, for instance—that form our primary experience of motion. But the impression of motion also arises from tonal organization. We have already seen that $\hat{1}$, the tonic, functions as the goal to which the other tones are directed. (And musical motion is essentially *directed* motion, motion to a goal.) We might say that all the other scale degrees, in different ways, are *active* in the direction of $\hat{1}$, that they tend to move to this stable, central tone. However, $\hat{3}$ and $\hat{5}$ can also function as stable tones, though they are less stable than $\hat{1}$. They can serve as goals to which other, still more active tones can move because they are members of the tonic triad and thus closely associated with $\hat{1}$. Motion to $\hat{3}$ or $\hat{5}$ will not have the same finality as motion to $\hat{1}$.

Many melodies begin on $\hat{3}$ or $\hat{5}$ rather than on $\hat{1}$. If these melodies are harmonized, the tonic will almost always appear in the lowest part. Thus, the music will still move from a tonic at the beginning to a tonic as the final goal even if $\hat{1}$ does not serve as the initial *melodic* tone.

9. **Passing Tones; Neighboring Tones.** Example 1-8 contains a diagram of the C-major scale. The stable tones, $\hat{1}$, $\hat{3}$, $\hat{5}$, and $\hat{8}$, are shown as whole notes; the more active tones are written with black noteheads.

1-8 stable and active tones



As the diagram indicates, the active tones lead from one stable tone to another: up from $\hat{1}$ to $\hat{3}$, $\hat{3}$ to $\hat{5}$, and $\hat{5}$ to $\hat{8}$; down in the reverse order. A tone that forms a stepwise connection between two stable tones is called a *passing tone* (abbreviation, P); the term clearly conveys the transitional character of these tones. We can readily hear this transitional character if we play the scale in the right hand while holding the tonic triad in the left. Note that a single passing tone connects $\hat{1}$ with $\hat{3}$ and $\hat{3}$ with $\hat{5}$, but that two passing tones are needed to connect $\hat{5}$ with $\hat{8}$.

Motion along the scale—that is, motion with passing tones—is by no means the only type of melodic progression, though it is the basic type. Example 1-9 shows another important possibility. Here the active tones decorate a single stable tone rather than move from one to another. A tone that moves by step away from and back to a stable tone is called a *neighboring tone*, or simply *neighbor* (N). Sometimes it is helpful to specify the direction of a neighboring tone by referring to it as an upper or a lower neighbor (UN or LN).

1-9 neighboring tones



In Unit 5 we will examine passing and neighboring tones in greater detail. For now, look at the two excerpts of Example 1-10, which will introduce how these tones work in a musical composition. In the Brahms, the accompaniment sustains $\hat{1}$ and $\hat{3}$; with the melody's prominent $\hat{5}$ (opening upbeat and long notes in bars 1 and 2), a complete tonic chord seems to form the background of the whole line. Against this background, two segments of the descending E_b scale create melodic motion: the first one leads from $\hat{8}$ down to $\hat{5}$ (bar 1) and the second from $\hat{5}$ to $\hat{1}$ (bars 1–2). In listening to the first segment, we experience no stability until the line comes to rest on $\hat{5}$; the transitional, “passing” character of $\hat{7}$ and $\hat{6}$ is very evident. In the second segment, $\hat{4}$ and $\hat{2}$ receive more rhythmic emphasis than $\hat{3}$ and $\hat{1}$, but the dissonances they form against the “background” tonic direct them strongly toward the more stable tones.

In the *Messiah* excerpt, the scalar motion leads from $\hat{1}$ up to $\hat{5}$, which is embellished with its upper neighbor, $\hat{6}$. This upward motion is balanced by a line that moves down, but only as far as $\hat{3}$, not $\hat{1}$. Note that bar 2 contains the motion $\hat{5}$ - $\hat{4}$ - $\hat{3}$ on two different levels. The main note of the first beat, G, moves on to F and E on beats 2 and 3, but a smaller version of the same line fills out beat 1. In music, as in language, we perceive connections between elements that are not right next to one another. We hear $\hat{5}$ in the Handel moving to the $\hat{4}$ of beat 2 despite the two notes in between, just as we connect the subject and verb of a sentence even if they are separated by many words.

1-10

(a) Brahms, *Intermezzo*, Op. 117/1

Andante moderato P P P P

$\hat{5}$ $\hat{8}$ $\hat{7}$ $\hat{6}$ $\hat{5}$ $\hat{4}$ $\hat{3}$ $\hat{2}$ $\hat{1}$ $\hat{3}$ $\hat{5}$

p *dolce*

(b) Handel, *Pastoral Symphony*(from *Messiah*)

Larghetto e mezzo piano

P P N P

$\hat{1}$ $\hat{2}$ $\hat{3}$ $\hat{4}$ $\hat{5}$ $\hat{6}$ $\hat{5}$ $(\hat{4} \hat{3})$ $\hat{4}$ $\hat{3}$

strings