PLAYING WITH THE ELEMENTS OF MUSIC

A GUIDE TO MUSIC THEORY

by JEAN NANDI

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INTRODUCTION

The present volume is intended as a supplement to STARTING ON THE HARPSICHORD, the method for musical beginners who have chosen the harpsichord as their first instrument. The material in PLAYING WITH THE ELEMENTS OF MUSIC is intended primarily for reading and reference. It is an extension and elaboration of basic theory presented in the beginner's method. Some exercises and musical examples are included, designed to clarify the material presented and to increase the student's skill at handling the material.

The first chapter in the present volume covers briefly and summarily the essential facts about rhythm and meter needed to be able to read music and make it rhythmically intelligible. This material has already been covered in detail in STARTING ON THE HARPSICHORD, and the entire chapter can be skipped by any student who has covered this groundwork elsewhere. Its inclusion herein is primarily for those readers who come from a different background, and may also be useful for review.

Those students who are already well grounded in the elements of music can skip this volume, and go on to the second supplementary volume for the beginning harpsichordist. The second Supplement, called SKILL AND STYLE ON THE HARPSICHORD, discusses the special information specifically required for the development of appropriate performance skills on the harpsichord. Topics considered therein include Baroque musical forms, ornamentation, rhythm and articulation as it applies to the harpsichord, the composition of a bass line and rudiments of figured bass realization. Explanations of harpsichord registrations and of keyboard temperaments are also included.

Although we commonly speak of the material covered herein as "Music Theory", in reality it represents the musical practice of 17th and especially 18th century players and composers. Naturally, this practice is of particular value to the understanding of music for the harpsichord. My intent, as a teacher, is to enable the student to study in greater depth the terms which come up in lessons, as well as to expand in a meaningful way the ideas and concepts presented only briefly in a practical method.

I consider it of the utmost importance that studies of music theory be completely integrated with the study of repertoire. All too often, theory lessons are conceived and carried out as something separate from keyboard practice and musical performance. For this reason, I encourage the student to use sections of this supplement only to delve further into questions stimulated by his or her musical imagination.

Because 18th century musical practice is fundamental to so much of Western "classical" music, students of other instruments or the voice may find PLAYING WITH THE ELEMENTS OF MUSIC a useful reference presented in elementary form. It is hoped that this volume will guide any musical beginner--whether performer, composer, or listener--toward an understanding of some of the more important elements which go into creating music.

Jean Nandi
Berkeley, California 1989
IMPORTANT INSTRUCTIONS TO THE BEGINNER

Many of the musical examples in this book will appear somewhat formidable, inasmuch as they are taken directly from the harpsichord literature without simplification. The purpose of this is to allow you to see the various musical elements under discussion as they actually occur in pieces of music you will encounter.

Do not struggle with trying to play these pieces! Try to pick out the notes and combinations of notes or other elements referred to in the text. Try to find other examples in your own music, once you know what to look for on the page. Then, by all means have a friend or teacher play the excerpts in the examples, and do your best to connect the sounds with the appearance on the page! Also, you can slowly play the critical elements yourself, repeating again and again the sound of a particular cadence or chord. Do you have pieces in your own repertoire that contain similar sounds and arrangements of notes?

Used in this manner, the many examples contained herein will form a useful library of musical elements. Compare and contrast these with music encountered in your own studies and recreation and enjoy the results of your increased understanding!
PLAYING WITH THE ELEMENTS

STAFF with TREBLE CLEF and TREBLE G -- the first G (a FIFTH) ABOVE Middle C

STAFF with three C's (Middle C at the bottom) showing LEDGER LINES

STAFF with BASS CLEF and BASS F -- the first F (a FIFTH) BELOW Middle C

STAFF with three C's (Middle C at the top) showing LEDGER LINES

REMEMBER THAT---
a SHARP (#) RAISES the note a HALF STEP.
a FLAT (b) LOWERS the note a HALF STEP.
a NATURAL SIGN (♮) CANCELS a preceding sharp or flat.

GRAND STAFF with all the notes:

FIGURE 1. Review of Pitch Placement of Notes on the Staff
RHYTHM AND METER

DEFINITIONS

Without RHYTHM, music would be pretty uninteresting. In fact, RHYTHM is probably the most fundamental musical element. RHYTHM refers to the occurrence of musical sounds in time. Measured against passing time, some musical events are rapid, some slow. Fast and slow events may be grouped together in various patterns, and there may or may not be spaces or silences between these events. Regardless of how organized or disorganized the perceived patterns of music may be, these perceived patterns comprise the rhythm of the music.

Often, in music, sounds are organized in more or less regular patterns. Such regular patterns, with recurring groups of musical elements or events, are referred to as METERS. Music which is characterized by one or more METERS is referred to as METRICAL MUSIC.

When music is metrical, it is heard as groupings of pulsations which can be measured against time. Such pulsations are called BEATS. When we describe the METER of a piece of music, we describe it in terms of its BEATS.

When you listen to music, do you tap your feet or nod your head, or possibly swing your arms and body as the pulsations of the music stimulate you? What you feel, as you do this, are the beats in the music. Notice that some of the beats feel stronger than others. If you try counting beats, you will find that they are grouped in twos or threes (and sometimes more complicated arrangements). As you count and feel the stronger beats recurring, you are defining the meter of the music.

The first beat in each group is very often the strongest of all. Can you hear it in the music you are listening to? This beat is called the DOWNBEAT. When a conductor indicates the very first strong beat in each group, he or she brings the BATON (the small stick a conductor often uses to guide an orchestra) down for the downbeat.

The downbeat plus the remaining weaker and stronger beats within each recurring group is called a MEASURE. Sometimes METRICAL MUSIC is also called MEASURED MUSIC. In measured music the groups of beats recur in a regular fashion.

HOW MEASURED MUSIC IS WRITTEN

In order to help us visualize the grouping of beats, a vertical line is placed just before each downbeat in the written music. By convention, however, such a vertical line is not used at the very beginning of a piece. At the very end of a piece, two lines are written together, forming a double line to indicate that this is the end (see Figure 2, page 3).
The vertical lines written into your music are called BAR LINES. The two lines at the very end are called a DOUBLE BAR LINE. The musical notes and rhythms which occur in between two bar lines form each measure. Sometimes each measure is called a BAR, referring to its written relationship to the bar lines.

Musical notes need to be given RHYTHMIC VALUES. Written music consists of different types of notes, each of which represents a different rhythmic value, called a NOTE VALUE. Depending upon the meter of a particular piece of music, one of these note values is defined as the beat. The most common type of note (note value) given the value of one beat is the QUARTER NOTE. Quarter notes look like this \( \text{♩} \) or \( \text{♩♩} \).

(Besides rhythmic values, musical notes are also usually given PITCH VALUES. The pitch of the note—how high or low it is—is commonly indicated by its position on a MUSICAL STAFF. The modern musical staff consists of five lines with spaces in between. Each line and each space indicates a separate NOTE NAME, with the starting pitch defined by a CLEF SYMBOL placed on the staff. Additional higher and lower notes can be added on LEDGER LINES above or below a staff. The note names and clefs commonly used in keyboard music are summarized in Figure 1, facing page 1.)

Quarter notes commonly occur in groups of two, three, or four, with the first one of the group (the downbeat) feeling stronger than the others. The meter for each of these groupings is written like a fraction, as follows: \( \frac{2}{4} \), \( \frac{3}{4} \), or \( \frac{4}{4} \). The bottom number refers to the note value which is defined as one beat (\( \frac{1}{4} \) = one quarter note). The top number refers to the number of beats in each measure. These fractions, which define the meter of a whole or a part of a piece of music, are called TIME SIGNATURES.

The appearance of measures in \( \frac{2}{4} \), \( \frac{3}{4} \), \( \frac{4}{4} \), using rhythmic values alone, are shown in Figure 2 (next page). Figure 77 (page 112) shows a simple piece on the staff in \( \frac{4}{4} \) time (also called \( \frac{4}{4} \) meter). \( \frac{4}{4} \) is sometimes called COMMON TIME, and you may see it designated by the following symbol: \( \text{♩♩♩} \).

In Figure 77, you will notice that there are a mixture of different kinds of notes, despite the fact that each beat is always the length of one quarter note. The mixture enables one to hold various notes a greater or lesser time, while the steady count of 1-2-3-4 goes on. Also notice that notes in one hand may be held, while notes in the other are moving. Similarly, sometimes a note or notes in one hand may be held, while others in the same hand are moving faster. All this while, the steady count of beats continues.

Figure 82 (page 116) is a slightly more complicated example in \( \frac{3}{4} \) time or meter.
Before defining additional note values, which are expressed as being faster or slower than quarter notes, it is important to understand the difference between note values and SPEED, or TEMPO. You could play or tap the little rhythmic examples in Figure 2 at different speeds--try it now, going very slowly, or quite fast, or at a moderate pace. The TEMPO (fast or slow) is independent of the note values, and is indicated separately.

Very often tempo is simply described in words, such as fast, slow, moderate, etc. Often these words are written in Italian, which is the international musical language (see SKILL AND STYLE ON THE HARPSCICHORD).

When we want to be very precise about the tempo, we can indicate a METRONOME MARK (MM). The METRONOME will tick at 1 beat per second if it is set at 60. A speed of two beats per second would be marked MM = 120. The metronome mark needs to be set for a particular note value, usually equal to one beat. Thus a piece in $\frac{3}{4}$ meter, in which one and a half beats take up one second would be marked MM $\frac{3}{4} = 90$.

ADDITIONAL NOTE VALUES

Two notes which have longer values than the quarter note are the HALF NOTE (equivalent to two quarter notes) and the WHOLE NOTE (equal to four quarter notes in length). These notes are shown on the top of the next page.
HALF NOTE \( \frac{\text{Length of a whole note}}{2} \)

WHOLE NOTE \( \frac{\text{Length of an eighth note}}{2} = \frac{\text{Length of a sixteenth note}}{2} \)

Notes which are less than a quarter note in length are the EIGHTH NOTE and the SIXTEENTH NOTE. Each of these is progressively half the value of the one before. Thus two eighth notes are equivalent in length to one quarter note. Similarly, two sixteenth notes are equal to one eighth note. That means, that there are four sixteenth notes in each quarter note beat in \( \frac{2}{4}, \frac{3}{4}, \text{ or } \frac{3}{4} \) time.

Eighth and sixteenth notes are written with FLAGS or BEAMS. The eighth note has a single flag or beam like this: \( \uparrow, \uparrow, \text{ and } \downarrow \downarrow \text{ or } \uparrow \downarrow \downarrow \downarrow \). Double flags and beams connote sixteenth notes: \( \uparrow \uparrow, \uparrow \downarrow, \downarrow \downarrow, \downarrow \downarrow \downarrow \downarrow \).

Eighth and sixteenth notes can also be grouped together in various combinations under one beam, producing more complicated rhythms such as: \( \uparrow \downarrow \downarrow \), \( \downarrow \downarrow \downarrow \downarrow \), \( \downarrow \downarrow \downarrow \downarrow \). Note that each of these groups is the exact equivalent of one single quarter note in length.

Additional flags or beams are used to indicate progressively shorter and shorter note values. You will not encounter many of those in your beginning pieces! However, look closely at some of the musical examples, such as Figures 48 (page 66), 53 (page 72), 68 (page 100), and 72 (page 103). \textit{Skill and Style on the Harpsichord} has some further discussion of these smaller values.

RESTS

Silence is often just as significant in music as are the sounds themselves. Musical notation is just as precise about silences as it is about musical notes. However, it is necessary to use a different set of symbols to represent "silent notes", so as to distinguish them from the ones you hear. We call these "silent notes" RESTS.

There is a rest symbol which corresponds to each kind of note, and which has exactly the same value as the note from which its name is taken. Thus a quarter note rest is the same length as a quarter note. An eighth note rest is exactly half that length, and so on. Figure 3 illustrates the rests and their corresponding notes.
### FIGURE 3. Various Rests with their Corresponding Note Values

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<tr>
<td>Whole Note Rest</td>
<td>$\bullet$</td>
</tr>
<tr>
<td>Half Note Rest</td>
<td>$\downarrow$</td>
</tr>
<tr>
<td>Quarter Note Rest</td>
<td>$\updownarrow$</td>
</tr>
<tr>
<td>Eighth Note Rest</td>
<td>$\updownarrow\downarrow$</td>
</tr>
<tr>
<td>Sixteenth Note Rest</td>
<td>$\updownarrow\downarrow\downarrow$</td>
</tr>
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### TIES

Many times it is desirable to hold notes for an irregular number of beats or parts of beats. Clearly the group of symbols presented so far can only multiply or divide note values by two, and nothing could be more regular than that! In order to provide for odd note lengths, notes can be tied together with a symbol called a TIE. This is simply a form of slur which binds together two notes of the same pitch. Inasmuch as any two notes can be tied together in this manner, the use of ties enables one to hold a single pitch for any conceivable duration. Examples of tied notes are shown in Figure 4.

### FIGURE 4. Various Combinations of Tied Notes
DOTTED NOTES

Some of the irregular note values expressed by ties are used so frequently that it is convenient to use a shorthand symbol to indicate them. This symbol is called a DOT. The function of the DOT is to add time value to the note which precedes it.

Any note value can be DOTTED in this manner. DOTTED NOTES look like this: \( \cdot \), \( \cdot \), \( \cdot \), \( \cdot \), \( \cdot \). The amount of time that a dot adds to a note is exactly half the value of the written note. Thus a dotted half note is sustained for exactly three quarter note beats (2+1). It is exactly as long as \( \cdot \). A dotted whole note will be six quarter note beats in length (4+2). As you can see, this is exactly equivalent to a whole note tied to a half note: \( \cdot \).

Rests as well as notes may be dotted. Rests may not be tied, but this is unnecessary since one rest blends into another and can be combined as flexibly as tied notes. However, to make a single rest the equivalent of one and a half its length, a dot can be added: \( \cdot \) or \( \cdot \), for example.

Clearly the system of dotting notes (or rests) is not as flexible as are the ties, since one is constrained with the dot to adding only half the value of a particular note. However, a great many situations in music call for doing just that--holding a note for exactly three beats, for example. The dots are a quick way of notating that effect.

TRIPLETS

Just as one often needs to hold a note for three beats instead of two or four, it sometimes happens that one wants to divide a note into three equal subdivisions of time. Our system of note values provides only for division into two or multiples of two parts.

In order to provide for triple subdivisions, another symbol is used, the TRIPLET. TRIPLETS consist of marked groups of three notes of any value, which subdivide a note of the next higher value into three. For example, EIGHTH NOTE TRIPLETS subdivide each quarter note into three. EIGHTH NOTE TRIPLETS look like this: \( \cdot \) or \( \cdot \).

The eighth note can similarly be divided into three SIXTEENTH NOTE TRIPLETS, like this: \( \cdot \) or \( \cdot \). QUARTER NOTE TRIPLETS (\( \cdot \)) divide a half note into three equal parts.
As long as the little "3" appears above or below the notes, any combination of
notes or notes and ties will be understood to subdivide a note value into three equal parts.
Thus \( \frac{\text{\(\text{\(\frac{3}{2}\)}\)}}{\text{\(\text{\(\frac{3}{2}\)}\)}} = \frac{\text{\(\text{\(\frac{3}{2}\)}\)}}{\text{\(\text{\(\frac{3}{2}\)}\)}} \) and \( \frac{\text{\(\text{\(\frac{3}{2}\)}\)}}{\text{\(\text{\(\frac{3}{2}\)}\)}} = \frac{\text{\(\text{\(\frac{3}{2}\)}\)}}{\text{\(\text{\(\frac{3}{2}\)}\)}} \), for example.

OTHER SIMPLE TIME SIGNATURES

There are fundamentally only two ways of grouping beats in a meter--either in twos
(referred to as DUPLE METER) or in threes (TRIPLE METER). Other types of meter
turn out to be multiples (such as \( \frac{4}{2} \)) or combinations (e.g. \( \frac{5}{2} = 3+2 \) or 2+3 quarter
note beats per measure) of these fundamental groupings.

The meters we have considered so far (\( \frac{2}{2} \), \( \frac{3}{2} \), and \( \frac{4}{2} \)) are based on quarter
note beats. However, it is possible to choose any note value for the beat. Remembering
the rule that the bottom number of the time signature designates the type of note giving a
single beat. Thus you may have signatures such as \( \frac{3}{2} \) (two half notes per
measure), \( \frac{3}{2} \) (three eighth notes per measure), \( \frac{4}{16} \) (four sixteenth notes per measure),
and so on.

Another kind of time signature is that for ALLA BREVE or "CUT TIME". This
signature is written like the C of "Common Time" (another form of \( \frac{4}{2} \)) but with a
line through it, like this: \( \text{\(\text{\(\frac{3}{2}\)}\)} \). This meter is like \( \frac{3}{2} \), in that one counts the half notes
as beats, and there are two in the measure.

CHARACTERISTICS OF METERS

Each meter or time signature has a characteristic pattern of strong and weak beats
within each measure, with the first beat generally being the strongest. For example, \( \frac{2}{4} \)
meter is typically S(trong)-W(ank)/S-W/S-W, etc. The beats in \( \frac{4}{2} \) are usually S-W-
M(edium)-W/S-W-M-W. \( \frac{2}{4} \) varies, most often being S-W-S-W-S-W-W, but S-W-M and
other combinations (such as S-S-W) are also common.

The "weak" beats which lead up to a downbeat are called UPBEATS. These are
thought of as having motion and lightness, as opposed to the strong downbeats which mark
accents (the place where your foot comes down in a dance, or the conductor's baton swings downward, for example).

Very often a piece actually begins with an upbeat, or "off the beat". Such a piece does not start at the beginning of a measure, but rather in the middle or near the end of an incomplete measure. When such a piece is heard, the meter does not become clear until after a downbeat is played. Look at the beginnings of Figures 45, 3 (page 60), 68 (page 100), and 75, 2 (page 107), for example. Usually when a piece begins in this manner, most of the phrases within the piece also begin with upbeats. Upbeats which start phrases are often called "pick-ups".

By convention, when a piece begins with an upbeat or an incomplete measure, the final measure of the entire piece is also left incomplete. This leaves the number of measures a whole number.

Some of the characteristic features of the simple meters are described in STARTING ON THE HARPISCHORD, including their conducting patterns.

COMPOUND TIME

Apart from the simple time signatures described above, there are a group of meters in which the beat is a dotted note of some type. Examine Figure 65 (page 93), for example. Notice that there are six quarter notes in each measure, but that these are divided into large beats of two dotted half notes each. Similarly, in Figure 75, 2 (page 107), the six eighth notes divide into two groups of three, with the fundamental beat being a dotted quarter note.

These COMPOUND METERS have characteristics similar to simple duple meter ((2/4, 4/4) in which each beat is divided into triplets. COMPOUND TIME is actually a more usual way of treating the subdivisions of beats into three, however. In early music in particular, triplets were reserved for ornamental or decorative treatment.

One can have more than two large beats in compound meters, however. 9/8 and 12/16 are common, with three dotted eighth note beats and four dotted sixteenth note beats, respectively.

SYNCOPATION AND HEMIOLA

Although meters are characterized by certain accents or strong beats, particularly at the beginnings of measures, sometimes composers introduce a rhythmic shift which causes the main accents to occur at beats which are normally weak. Sometimes a long or strong note is placed after a downbeat, the note being held over the next normally strong beat. This gives the measure a "jazzy" flavor (because this type of shift occurs frequently in jazz music). The shifted accent is known as a SYNCOPATION.
Figure 5 shows a rhythmic example of **SYNCOPATION**. Notice the *upbeat* at the beginning. Can you recognize this piece from the rhythm alone?

An important aspect of *triple meters* is the possibility of **HEMIOLA**. This refers to a rhythmic *shift* in which the primary accents or strongest beats occur in unusual parts of the measure. In the case of HEMIOLA, the shifts in accent are consistent and of such a type that two triple measures (or parts of measures, in compound time) seem to coalesce. In these cases, a larger six-beat measure forms, with the strong beats shifted from the first of each group of three to the first of each of *three pairs* of beats. Thus the triple count of $\underline{1} 2 3 / \underline{1} 2 3 /$ becomes $\underline{1} 2 3 (\uparrow) 4 5 6$. This charming feature is characteristic of certain triple-meter dances, such as the MINUET.

Figure 6 shows a rhythmic example. Compare this with your own music. Look also at the last two measures of Fig. 53, 2 (page 72).

The two bars which are linked together by the HEMIOLA are indicated by the DOTTED bar line.

These unusual rhythmic features are discussed in more detail in *STARTING ON THE HARPSICHORD* and in *SKILL AND STYLE ON THE HARPSICHORD*.
CHAPTER II. INTERVALS

DEFINITION OF INTERVALS

An INTERVAL is the distance between two notes (two different pitches). When we play two notes at the same time, we call the result a HARMONIC INTERVAL. Two pitches played one after another produce a MELODIC INTERVAL.

There is more than one way to think about intervals. One way is to consider the distance between notes on the keyboard. Play each note in succession, including all the naturals and all the sharps. Also play successive notes (two only!) together, as harmonic intervals.

The smallest distance possible on your keyboard, from one note to the very next one (ADJACENT KEYS), is called a HALF STEP. The half step, being the smallest unit, can be thought of as the basic interval unit. All other intervals are made up of various numbers of half steps.

It is important to know that some other instruments, such as the violin or the voice, are capable of sliding from one note to another. In such cases, of course, the half step is not the smallest possible distance between two available pitches. However, by convention in Western music, we still consider the half step to be the fundamental unit.

Some keyboard instruments (including many harpsichords) are not tuned in EQUAL TEMPERAMENT, as is the piano. On the piano, all the half steps all over the instrument are all of the same size. On a harpsichord with UNEQUAL TEMPERAMENT, some half steps will be slightly larger than others! Listen for this on your instrument. There is a chapter in SKILL AND STYLE which explains the tuning and temperament of keyboard instruments.

Another way of looking at intervals is to consider the distance between letter names of notes in the musical alphabet. (Remember that the musical alphabet begins on C!) The distances (intervals) between adjacent letters of the musical alphabet (C - D, D - E, etc.) are called SECONDS (2nds).

If you look carefully at the keyboard, you will find that not all the 2nds are of the same number of basic units or half steps. For example, the distance between C and D is actually two half steps (remember to count the raised notes, or sharps!). This interval is called a WHOLE STEP. In contrast, the distance between E and F is only one half step. Nevertheless, because both of these intervals occur between one letter name and the next, we still speak of both as 2nds (or STEPS).

Since these two ways of looking at intervals produce different results, we need to recognize two different kinds of 2nds. The kind that is the equivalent of a WHOLE STEP
(two half steps) is called a MAJOR SECOND (abbreviated M2). *Major* in this sense means *large*, and the distance between C and D, or between D and E, is a major 2nd. Look again at your keyboard, and observe that there is a note in between each of those letters (Figure 7).

The distance between E and F, however, is only a HALF STEP. This is called a MINOR SECOND (abbreviated m2). The word *minor* here means *small*. The distance or interval between C and C♯ is also a minor 2nd. Looking at your keyboard, you will see that C - C♯ is the same distance as that between E and F: namely, a half step.

*FIGURE 7. Review of Major and Minor Seconds on the Keyboard*
INTERVALS ON THE MUSICAL STAFF

There is a third way of identifying intervals. Looking at notes on the musical staff, intervals can also be measured by lines and spaces. If you want to place a 2nd on the musical staff, you could start with treble G (second line of the treble staff--review Figure 1 facing page 1) and place a note on the space above it, or on the space below it. In each case, the resultant interval would be called a 2nd. On the musical staff, then, a 2nd starts on a line and goes to the very next space. You can also start on a space (for example, A in the second space of the treble staff) and go to the very next line above or below (see Figure 8, below).

![Figure 8. Seconds on the Musical Staff](image)

Measuring 2nds on the staff does not tell you how many half steps are involved. For example, in the treble clef, an interval placed from the bottom line, E, to the bottom space, F, would be a minor 2nd. In contrast, one going from the space, F, to the line, G, would be a major 2nd. Check with your keyboard.

LARGER INTERVALS

Intervals are actually named by their positions in the musical alphabet. Whenever we skip a letter (C - E, D - A, etc.) we speak of a SKIP (in contrast to a step).

The skip from C - E is called a THIRD (3rd). A 3rd always includes three letters of the musical alphabet (think C D E). A FOURTH (4th) is an interval which encompasses four letters of the alphabet, as with C - F (think C D E F). A 4th can be any four letters as long as they are in alphabetical order (or the reverse!). For example, E to A (thinking E F G A)--and C down to G (thinking C B A G)--are both 4ths.

Of course all intervals go down as well as up! Because of our thinking in terms of the alphabet, it is easier to identify them going up. Eventually, you will want to be able to play and recognize any interval in either direction.

Continuing to name intervals, the FIFTH (5th) encompasses five letters (e.g., C to G--think C D E F G). A SIXTH (6th) includes six letters (such as C to A), and a SEVENTH (7th) has seven (for example, C to B). Finally, when we come again to the same letter of the alphabet, as in going from C all the way to the next C (usually called C'), the interval is called an EIGHTH (8th). This interval, of eight letters, is also called an OCTAVE.
Intervals larger than an octave can be named in a similar fashion. C - D’ is thus a NINTH (9th, with nine letters), and C - E’ is a TENTH (10th, having ten letters). However, after you get to the size of a 10th, it becomes inconvenient to give separate names to such large intervals. Separate naming of intervals larger than an octave also obscures the important relationships of these to the smaller, or SIMPLE, intervals.

Instead of going on with 11th, 12th, 13th etc., we usually speak of these as COMPOUND INTERVALS (Figure 9). These are larger than an octave, but named like intervals of the same type which are smaller than the octave (SIMPLE INTERVALS). Thus the 9th, C - D’, is also referred to as a COMPOUND SECOND. The 10th, C - E’, is a COMPOUND THIRD, and so on. It is much easier to think of them in this way.
As we saw with 2nds, the number of half steps can vary in most of the named intervals. For example, the interval of a 3rd also exists in two forms, depending on the specific notes involved. Thus C - E is called a large 3rd or MAJOR THIRD (M3). If you count the half steps from C to E, you’ll find there are four. However, the 3rd D - F contains only three half steps. This one is a small or MINOR THIRD (m3).

Fourths and fifths are different, in that only one kind of each is really possible. This type of interval is called PERFECT. Thus C - F is a PERFECT FOURTH, abbreviated P4. C - G is another perfect interval, a PERFECT FIFTH, abbreviated P5. How many half steps do you find in each? (P4 has five; P5 has seven.)

FIGURE 10. Tritones on the Keyboard
If you look at the keyboard, you will see that there is an interval which lies in between the perfect 4th and the perfect 5th, in this case, C - F#. Play this interval and listen to its strange sound! Count the half steps between C and F#--there are six. This is a DISSONANT (harsh-sounding) interval, which does not sound in any way like the OPEN 4ths or 5ths, although it is sandwiched right in between them! This interval, with six half steps, is called a TRITONE. See this on the keyboard in Figure 10. In early times the tritone was not tolerated at all--its use was absolutely forbidden--and it was known as the "Devil in Music"!

Looking at larger intervals, the 6ths and 7ths, like the 2nds and 3rds, exist in two forms (major or minor). The 6th C - A, for example, is a MAJOR SIXTH (M6), and consists of nine half steps (count them). The 6th from E - C', in contrast, has only eight half steps. This last is a MINOR SIXTH (m6).

Sevenths are similar. C - B is a MAJOR SEVENTH (M7) with eleven half steps (count them). The 7th from D - C', however, is a MINOR SEVENTH (m7) consisting of only ten half steps.

Finally, we come to the OCTAVE (as C - C'). Here, if you count, you'll find that there are twelve half steps. There is only one kind of an octave. Like 4ths and 5ths, it is a perfect interval. We abbreviate this P8.

Try to learn the number of half steps in each interval--major, minor, and perfect. Find them up and down from all different notes on your keyboard. How does each interval feel under your fingers? Do you need to stretch your hand? How far?

STAFF NOTATION OF LARGER INTERVALS

Now that you know how many half steps there are in each interval, you can also construct any kind of an interval starting on any note on the staff. For example, begin on E and write notes on the treble staff. You could make a 2nd going from E - F. This would be a minor 2nd. If you wanted to make a major 2nd up from E, simply write a sharp before the F, making the interval two half steps. The appearance of intervals on the staff is shown in Figures 11 and 12 (page 16).

Now write some thirds on the staff. Start with treble G and make a 3rd going to B. Notice that the 3rd goes from a line to another line (it could also go from a space to another space--the very next space or the very next line). In this case, G - B is a major 3rd, and if you look at your keyboard, you see that it has four half steps. If you want to make a minor 3rd going up from G, write a flat before the B. Count the half steps from G - B♭. There are only three.

Look at other intervals on the staff (continue to refer to Figures 11 and 12 on the next page). For example, write a perfect 4th starting with treble G. Go beyond the 3rd (B) up to a space. Thus skipping a space and going to the next space, you have written the P4, from G - C.
Another perfect 4th might start on treble F. But watch out! This 4th goes on a line, skipping a line. However, to make a perfect 4th you would have to put a flat in front of the B. F - B♭ is a perfect 4th. What interval results from writing F - B? (tritone)

Perfect 5ths on the staff are pretty easy to recognize, because they go from a line to a line, skipping a line. For example, write the P5 from G on the treble staff (second line) to D on the fourth line. Perfect 5ths can also go from a space, skipping a space, to the next space. For example, A in the second space up to E the fourth space (in treble clef) is another P5. Notice that if there was an E♭ in that fourth space, the interval would not be a perfect 5th, but a tritone. How many half steps?

Write some larger intervals. The intervals of a 6th go from a line to a space (or a space to a line) quite far away. They need to skip two spaces or two lines. In the treble clef, from F, (first space) up to D (fourth line) is a major 6th with nine half steps. It goes from a space to a line, but with that large leap. The other kind of 6th (m6) could extend, for example, from E on the first line to C in the fourth space. Again, a line to a space but skipping two lines in between.

Although 7th's are also large leaps on the staff, they always go from a line to a line, or a space to a space. The 7ths skip two spaces or two lines. Thus, E on the first line to D on the fourth line of the treble staff is a minor 7th. If you go from the first space (F) to the fourth (top) space (E), you have a major 7th (space to a space).
Finally, the octave itself goes from a line to a space or a space to a line on any staff. Look at E on the bottom line of the treble staff, and E' in the fourth space, for example. Or D just below the staff to D' on the fourth line. Can you count the number of lines or spaces in between? Try to judge this distance by eye—it helps a lot to be able to recognize this interval without counting!

No matter where the intervals are located, on either the treble or the bass staff, the relationships between lines and spaces will hold constant for any given interval. It’s important to know that the odd numbered intervals (3rds, 5ths, and 7ths) will go from line to line or space to space, skipping the lines and spaces needed in order to accommodate the size of the interval (Figure 12). The even numbered intervals (2nds, 4ths, 6ths and 8ths), go from line to space or space to line (Figure 11).

To recognize compound intervals on the staff, you need to mentally insert an octave in between the two pitches (say, for example, above the bottom note). Then see what kind of simple interval is left over!

Practice recognizing and identifying intervals on treble and bass staves, and from a staff to various ledger lines. Much of our reading of musical notation involves the rapid recognition of intervals and their translation into motions on the keyboard.

Go through your music and read (naming the intervals) and play the intervals in each hand. These will be largely melodic intervals. Also read and play the intervals between the hands—these are largely harmonic (simultaneous). Intervals between the hands are very often compound intervals.

COMPLEMENTARY INTERVALS

An important concept in the study of intervals, is that of COMPLEMENTARY INTERVALS. We know that there are exactly 12 half steps within any octave. It follows, then, that for any simple interval, there is another fixed interval which exactly completes an octave. Such pairs of intervals, which together form an octave, are called COMPLEMENTS.

Here is an example of complementary intervals: a major 2nd, such as C - D (two half steps) has as its complement a minor 7th (D - C'). Together these two intervals add up to a total of 12 half steps, a complete octave (C - C'). Look again at the number of half steps in each interval. A major 2nd has two, a minor 7th has ten half steps (2+10=12).

Take any other pair of simple intervals: for example, the minor 3rd, D - F, and the major 6th, F - D'. Count the half steps. 3+9=12, adding up to an octave, D - D'. Notice that the complements always involve notes of the same letter names.
<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>HALF STEPS</th>
<th>EXAMPLES</th>
<th>COMPLEMENT</th>
<th>HALF STEPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 (unison)</td>
<td>0</td>
<td></td>
<td>P8 (octave)</td>
<td>12</td>
</tr>
<tr>
<td>m2</td>
<td>1</td>
<td></td>
<td>M7</td>
<td>11</td>
</tr>
<tr>
<td>M2</td>
<td>2</td>
<td></td>
<td>m7</td>
<td>10</td>
</tr>
<tr>
<td>m3</td>
<td>3</td>
<td></td>
<td>M6</td>
<td>9</td>
</tr>
<tr>
<td>M3</td>
<td>4</td>
<td></td>
<td>m6</td>
<td>8</td>
</tr>
<tr>
<td>P4</td>
<td>5</td>
<td></td>
<td>P5</td>
<td>7</td>
</tr>
<tr>
<td>TRITONE</td>
<td>6</td>
<td></td>
<td>TRITONE</td>
<td>6</td>
</tr>
<tr>
<td>P5</td>
<td>7</td>
<td></td>
<td>P4</td>
<td>5</td>
</tr>
<tr>
<td>m6</td>
<td>8</td>
<td></td>
<td>M3</td>
<td>4</td>
</tr>
<tr>
<td>M6</td>
<td>9</td>
<td></td>
<td>m3</td>
<td>3</td>
</tr>
<tr>
<td>m7</td>
<td>10</td>
<td></td>
<td>M2</td>
<td>2</td>
</tr>
<tr>
<td>M7</td>
<td>11</td>
<td></td>
<td>m2</td>
<td>1</td>
</tr>
<tr>
<td>P8</td>
<td>12</td>
<td></td>
<td>P1</td>
<td>0</td>
</tr>
</tbody>
</table>

**FIGURE 13.** Intervals and their Complements
Figure 13 shows the complements of all the simple intervals. Notice that the tritone --that peculiar, "devilish", interval(!)--divides the octave in exactly two parts with six half steps in each (6+6=12). For all intervals smaller than the tritone, there is a larger complement that fills out the octave. All larger intervals have smaller complements.

One further interval which appears on the table and has not yet been described, is the one going from a note to itself, as in C - C (Figure 14). This interval is called a PERFECT PRIME or UNISON and contains no half steps! The abbreviation for this is P1. The complement of the perfect prime, of course, would be the perfect octave (0+12=12).

SLONIMSKY’S INTERVAL HAND

A wonderful way of learning the intervals and their complements has been introduced by Nicolas Slonimsky in his book The Road to Music (Dodd, Mead & Co., New York, 1947). He taught the intervals by a device he called the INTERVAL HAND, shown in Figure 15 on page 20.

Slonimsky’s drawing shows various locations on the hand, starting with the tips of the fingers (1, 2, 3, 4, 5), which represent the sequential addition of half steps. Thus the tips of the fingers, from thumb to little finger, represent the minor 2nd, major 2nd, minor 3rd, major 3rd, and perfect 4th.

Continuing with Slonimsky’s diagram, further intervals are indicated by moving around the hand, first down the little finger, and then along the base of each finger in the opposite direction (toward the thumb). Six half steps (the tritone!) appear in the middle of the little finger. The base of finger 5 represents the perfect 5th (7 half steps) and on around to 11 half steps (M7) at the base of the thumb. Two points on the wrists represent the perfect prime or unison, and the perfect octave.

The beauty of Slonimsky’s interval hand is that you can easily find the complement of any given interval. For example, the major 3rd, at the tip of your fourth finger is the complement of the minor 6th, at the base of the same finger (4+8=12). At the tip of the second finger you have a major second, and at its base occurs its complement, the minor 7th (2+10=12).
AUGMENTED AND DIMINISHED INTERVALS

For musical reasons, it is sometimes necessary to further increase or decrease the size of one of the named intervals. For example, you might wish to write an interval from C - D#. Because it is going from a C to some kind of D, the interval must be called a 2nd. However, it is larger (3 half steps) than the major 2nd from C - D (2 half steps). This kind
of interval is called AUGMENTED. C - D# is an AUGMENTED SECOND (abbreviated A2).

Similarly, if a named interval is made even smaller than minor or perfect, it is called DIMINISHED. In the case of a 2nd, this results in something peculiar! For example, if you write an interval such as E - Fb, you will have actually produced a unison. On the keyboard, this will look exactly like E - E. However, when written as E - Fb, it is called a DIMINISHED SECOND (d2).

Any interval can have an augmented or a diminished version. Thus the major 3rd from C - E could be enlarged (C - E#) to an AUGMENTED THIRD (A3). Or you might write E - Gb, a DIMINISHED THIRD (d3), one half step smaller than the minor 3rd, E - G (see Figure 16).

Augmented or diminished intervals usually turn out to sound like something else. For example, the diminished 2nd (such as B - Cb) sounds like a unison. The diminished 3rd (as E - Gb) in fact sounds like a major 2nd. An augmented 3rd (like F - A#), on the other hand, sounds like a perfect 4th.

Two exceptions are the augmented 4ths and diminished 5ths. Enlarging a perfect 4th by a half step achieves a tritone, which in this context is called an AUGMENTED FOURTH (A4). Decreasing a perfect 5th by a half step also results in a tritone, now referred to as a DIMINISHED FIFTH (d5)! The MUSICAL CONTEXT (meaning our interpretation of the sound) is very different in these two cases. For example, an augmented 4th from C - F# has a very different musical meaning than does a diminished 5th from C - Gb.
Notice, however, that a perfect 4th made smaller (diminished) will sound like a major 3rd, although its musical meaning will be different. Compare, for example, the diminished 4th D - G♭ with the major 3rd D - F♯. Similarly, the perfect 5th, enlarged or augmented, will be the same size as a minor 6th. Again, the musical meaning is different. C - G♯ does not have the same musical implications as C - A♭, although the size is the same.

The equivalence of different intervals, as described above, only holds true when your keyboard is tuned in EQUAL TEMPERAMENT. See SKILL AND STYLE for a full discussion of the implications of equal vs. unequal temperaments. Harpsichords are not usually tuned in this way, although pianos usually are!

LISTENING TO INTERVALS

We now know how to write intervals, how to name them, and how to find them on the staff and on the keyboard. It is even more important, however, to learn to hear and recognize intervals.

The sounds of intervals can be classified in three ways. The first type is OPEN, with a rather clear and uncomplicated sound. The open intervals are the ones that we call perfect: the unison, the octave, the perfect 4th and the perfect 5th.

A second type of interval is called CONSONANT. The consonant intervals still sound very pleasant. We could end a piece of music, or a phrase, on a consonant interval, and be left with a feeling of repose. However, they are more complex in sound than the open intervals. The consonant intervals are the 3rds (major and minor) and the 6ths (major and minor).

The last type of interval sound is DISSONANT. These intervals may sound rather unpleasant to you when they are by themselves and out of any musical context. In early music, pieces or large sections never ended on a dissonance. In such music—the largest part of the harpsichordist’s repertoire—dissonances were used primarily to produce a feeling of motion in the music, inasmuch as a phrase cannot stop on such a harsh interval in that style of composition.

The DISSONANT intervals (try them!) are the 2nds and their complements, the 7ths. There is an additional dissonant interval, as we described earlier, the tritone (also known as an augmented 4th or diminished 5th).

Play all these different intervals on your keyboard. Play dissonant intervals of various kinds, or consonant ones, or open ones. Listen carefully to these sounds. Then play a 3rd, or a 6th, or a tritone, or a 7th, and decide whether the sound is consonant or dissonant. It would help if you had a friend play intervals for you, so that you could hear how they sound when you can’t see or feel the keys. You need to learn to recognize the intervals both from their sound and their appearance (on the staff and the keyboard), both melodically and harmonically.
CHAPTER III. SCALES

FIVE-FINGER PATTERNS

Before starting to study SCALES, we should look at FIVE-FINGER PATTERNS on the keyboard. Remembering that the musical alphabet begins on the letter C, put your five fingers on the notes starting with C and going up five natural keys: C D E F G. Playing these notes in sequence constitutes a five-finger pattern.

**FIGURE 17. Two Major Five-Finger Patterns on the Keyboard**
You can play a five-finger pattern with a sequence of five adjacent tones, starting on any letter of the musical alphabet. Look at Figure 17 on page 23. Begin on the tone G, and play the sequence G A B C D. This five-finger pattern sounds similar to the one starting on C.

Try now starting on the tone A (letter A on the keyboard): A B C D E. Does this five-finger pattern sound the same as the other two? Indeed, it does not. In fact, there are two different names for the five-finger patterns that you have produced. The first two beginning on C and G, are called MAJOR PATTERNS. The one beginning on A is called a MINOR PATTERN.

To discover the exact difference between the major and minor patterns, you need to go back and analyze the sequence of whole steps and half steps which result from placing the five fingers on five adjacent notes (see Figure 17). Starting on C, you will find that the pattern is: whole step (going from C - D), whole step (D - E), then a half step (E - F), and finally another whole step (F - G). This can be summarized as W W h W (Whole-Whole-half-Whole).

Starting on G, again analyze whole steps and half steps: G - A is a whole step; A - B a whole step; but B - C is a half step; and finally, C - D, a whole step. Again, you come out with W W h W. This pattern, W W h W, is the MAJOR FIVE-FINGER PATTERN.

Now look at the pattern starting on A (Figure 18, above). A - B is a whole step; but B - C is only a half step; C - D is a whole step; and D - E a whole step. This sequence of intervals is different. You can summarize this one as W h W W (Whole-half-Whole-Whole). This, in fact, is a MINOR FIVE-FINGER PATTERN, which will be discussed a little later.
Supposing you wish to start on A and make a five-finger pattern that sounds major. In fact, that’s easy to do because there are enough keys on the keyboard, including the sharps, to change the pattern from one to another. Starting on A, then, you can make a pattern, W W h W, as follows: A B C# (raising the C a half step) D and E. Look at the result again. You have A - B (whole step), B - C# (whole step), C# - D (half step), and D - E (whole step). Thus the pattern (INTERVAL CONTENT) of A B C# D E is W W h W. This is now a major five-finger pattern (Figure 19).

This can be done on any letter of the alphabet. Start on E, for example. If you play E F G A B, you have a pattern that looks like this: h W W W. In order to change this to W W h W, it is necessary to add sharps on F and G. This would result in a pattern of E - F# (whole step); F# - G# (whole step); G# - A (half step); and A - B (whole step). You now have E F# G# A B, W W h W (see Figure 20, page 26).

If instead you started on F, it would be necessary to lower one tone. F G A B C does not sound like a major pattern! To find out why, determine the sequence of whole and half steps. To make this into a major five-finger pattern, you must use a B flat (lower the B by a half step). This results in: F - G (W), G - A (W), A - B♭ (h), and B♭ - C (W). F G A B♭ C has an INTERVAL CONTENT of W W h W (Figure 21, page 26).

Notice in all these patterns that the letters of the alphabet are used consecutively (that is, in alphabetical sequence). When beginning on F, for example, it would be incorrect to say F G A A# C. That sequence would repeat one letter and also leave one out. Thus we speak of lowering the B a half step, rather than raising the A.
In EQUAL TEMPERAMENT (see SKILL AND STYLE), A♯ and B♭ are the same note, and they appear to be the same on the keyboard. Nevertheless, you must be careful to give them the correct name in each different musical context.

The notes of each five-finger pattern are given Arabic numerals which correspond to your right hand fingering. Thus the right hand thumb plays a note called number "1", and the entire pattern is numbered 1 2 3 4 5. The numbers are important, as you will see when you study SCALES, because these notes also form the first five notes of the major or minor scales.

Of course, you can and do play all the five-finger patterns with the left hand as well. The fingering in the left hand is just the reverse of the right: 5 4 3 2 1. Notice that your
fifth finger is actually playing note number "1" in the pattern, while the thumb plays number "5"! Early English composers actually numbered the left hand fingers the opposite way in order to avoid this confusion (e.g. the little finger of the left hand was called 1, the thumb was 5).

**MAJOR SCALES**

Any SCALE is a "ladder" used to climb the octave. With a scale, you climb up (ASCEND) the alphabet from one letter to that same letter an octave above. Naturally, you can also climb down these ladders (DESCEND). It is convenient at first to think of the scale in its ASCENDING form, corresponding to alphabetical order.

Go up a ladder from C: C D E F G A B and finally to C' (the C an octave above your starting point). Notice that there are seven distinct tones or pitches within this scale. C' is not considered a distinct tone because it is the same tonic over again, simply duplicating it an octave above. The seven notes of the scale are given the Arabic numerals, 1 2 3 4 5 6 7. These Arabic numbers are called the SCALE DEGREES.

The word SCALE specifically refers to the arrangement of notes in alphabetical sequence. However, when major and minor scales are used in actual music, we refer to them as the KEY or TONALITY of the piece. These terms refer to the fact that we are utilizing notes from a specific major or minor scale, but of course not sticking to the sequence in which they appear in the scale itself.

Going back to the scale from C to C', notice that it contains the major five-finger pattern (W W h W)--the five notes (C D E F G) which you learned already. In fact, the two most important notes of any major scale are contained within the five-finger pattern.

The most important note in a scale is number "1", the BEGINNING of the scale. This note, which will be under your right thumb, is called the TONIC.

The note which you find under the fifth finger of your right hand, number "5" in the scale, is the next most important pitch in that scale. This note is called the DOMINANT. Observe how easy it is to find TONIC and DOMINANT notes in any scale, by placing your right thumb on the first note of the scale (the note which gives the scale its name), and feeling which key lies naturally under your fifth finger.

In order to complete a full scale, you only have to add two new notes, plus the tonic note an octave above your starting point. The new notes will be numbers "6" and "7" in the scale. In the scale of C major, these will be the notes A and B, with the C' above.

Observe the INTERVAL CONTENT of the part of the major scale which goes beyond the five-finger pattern. In C major, you have: G - A (whole step); A - B (whole step); and finally B - C (half step).

A convenient way to play full scales (from one letter to the same letter an octave away--a total of eight notes) is with two hands. Start with the left hand (LH), and use the
following fingering: 5 4 3 2. Then continue with the right hand (RH): 2 3 4 5. In this manner, each hand plays a sequence of *four* notes. Each sequence of four notes is called a TETRACHORD (Figure 22).

*FIGURE 22. The Two Tetrachords of the C Major Scale on the Keyboard*
In the C MAJOR SCALE, the LOWER TETRACHORD is C D E F (left hand). The UPPER TETRACHORD is G A B C (right hand). Observe the sequence of whole steps and half steps in the entire scale: W W h W W W h. In any MAJOR SCALE, there are two identical tetrachords (with the sequence: W W h) at either end of the scale. Each of these tetrachords is separated by a whole step (boldface, above).

Using this system of fingering with two tetrachords, you can construct a major scale starting from any of the 12 distinct notes on the keyboard. Try it from E, for example. Left hand, W W h, will give you E F# G# A. Make a whole step in between the two tetrachords, putting the second finger of the right hand on B. Now go up the rest of the sequence, W W h, continuing with B C# D# E’. This is the scale of E MAJOR.

To summarize these principles for yourself, write the letter names of the notes of various scales. Try to imagine these notes on a keyboard as you do so. Start, for example, with G. The sequence W W h W W W h gives notes G A B C-D E F# G’. Write these notes on the musical staff, using the treble and then the bass clef, indicating accidentals (sharps or flats) as you need them (Figure 23).

\[\text{FIGURE 23. G Major Scales on the Grand Staff}\]

Despite the fact that each major scale is different in terms of the sharps or flats or Naturals which make it up, they all sound similar because they have the same INTERVAL CONTENT (W W h W W W h). Scales are easy to compare when you think of them in terms of their SCALE DEGREES (see page 27). Remember that these are the numbers assigned each note as you progress up the scale in alphabetical order. The scale degrees of G major are: G = 1, A = 2, B = 3, C = 4, D = 5, E = 6, F# = 7, and finally G’ again = 1.

Often you will want to play a sequence of notes in one scale, and then repeat it in another. This is a common occurrence in music, and it helps to be able to recognize it
when it happens! Additionally, it is sometimes necessary to move whole pieces from one scale or key to another, when your voice or other instruments find themselves out of range of the written music.

This process of reproducing a sequence of notes in different scales is called TRANSPOSITION (see Chapter X). It is easy to do this if you compare the SCALE DEGREES of the scales in question. Suppose, for example, that you wanted to play the sequence B C D F♯ G' in the key of G major, and then TRANSPOSE this sequence into the key of F major. In the scale of G, the sequence starts on note number (or scale degree) 3, and goes on to 4 5 7 1'. This sequence of note numbers in F major would produce the notes A♭ C E F♯.

Besides their Arabic numbers, each scale degree also has a name. Some of these names are very important, others we use hardly at all. You have already learned the two most important names (see page 27, above). These are the TONIC (scale degree number 1) and the DOMINANT (scale degree number 5).

Two other important names are the SUBDOMINANT (the note just under the dominant, or scale degree 4) and the LEADING TONE (scale degree 7). Scale degree 7 is the note just under the tonic, and is sometimes known as the SUBTONIC. The term LEADING TONE is preferable, because it helps describe its function in the key, leading up to, and pointing towards, the tonic.

Just for completeness, here are the names of the other scale degrees: 2 (SUPERTONIC), 3 (MEDIANT), and 6 (SUBMEDIANT).

Naming or numbering scale degrees helps us learn about the functions of each of these tones in a piece of music. Their functions are similar in all of the MAJOR SCALES; MINOR SCALES also exhibit specific functions for each scale degree.

THE CIRCLE OF FIFTHS

The sharps, flats, and naturals included in any MAJOR SCALE are fixed, being determined by the first note (tonic) of the scale. It is interesting to observe the relationships of major scales to each other, in terms of the accidentals needed to make up the required interval series (W W h W W W h). For example, the scale of C major is built only on naturals, and has no sharps or flats. If you go up a perfect fifth from C, you can start a scale on G. The G major scale has one sharp, F♯, which is added to its 7th degree.

Continuing to go up by perfect fifths, you next come to D major, which has two sharps. Keep the F♯ added previously, but also add C♯ on the 7th degree of this scale. Go up another fifth from D to A. This time a third sharp is needed, while still keeping the original two (F♯ and C♯). The new addition, G♯, is again the 7th degree of the A major scale.
As you work at these scales, be sure you understand where and why you are adding sharps. Keep analyzing the results in terms of the universal interval content of a major scale, W W h W W W h.

Continue to leap up by perfect fifths. For your convenience in doing this, remember that dropping down a fourth (the complement of a fifth--see above, pp. 17-19 will give you the same starting letter (Figure 13, p. 18)). Thus the perfect fifth above A (or the P4 below) will give you E major. This new scale will have four sharps: F#, C#, G#, and finally D# (7 in the key of E major!). B major has five sharps (adding A# in addition to retaining the others).

Be careful with the next one! Up a perfect fifth from B, F# major has six sharps (adding E# on its 7th degree). Finally, C# major has seven sharps! Look! When you have seven sharps, every note in the scale is a sharp (C# D# E# F# G# A# B# C#'). Why do we speak of B# in this case, rather than C natural? (Remember: in a major scale you must use the letters in sequence and must not skip any.)

Suppose you want to make a major scale starting a perfect fifth below C. Again, noticing that C major has no sharps or flats, the scale starting a fifth below (F major) will be found to have one flat: Bb. Counting the notes in the F major scale, Bb is found on the 4th scale degree.

Go down another fifth from F. Careful! Be sure it's a perfect fifth! You will next encounter the key of Bb major. As a matter of fact, except for F major, all the major scales which have flats in them also begin on a note which is flat. Bb major has two flats, Bb (1st degree) plus Eb, the 4th degree of this scale.

Keep going down by perfect fifths (remembering that, where convenient, you can also go up a fourth). From Bb you will come to Eb. Eb major has 3 flats, the new one being Ab (on scale degree 4). The next key is Ab major, which has 4 flats, Db being the new one. You can continue on down to Db major, Gb major, and finally, Cb major. The latter has every single note flat: Cb Db Eb Fb (not E♭! ) Gb Ab Bb and finally, Cb♭ (not B♭! ).

Again, check each of these scales against your knowledge of the interval sequence of major scales. Can you name the notes correctly without getting confused between the sharps and flats?
FIGURE 24. Circle of Fifths--Relationships between the MAJOR KEYS and their SIGNATURES
The information about adding sharps or flats to each scale as you progress up or down from C by perfect fifths is conveniently summarized in the chart shown in Figure 24. Assuming equal temperament (refer to *Skill and Style*), then notes within pairs such as C♯ and D♭, F♯ and G♭, B♭ and C♭, are actually the same notes. Such pairs are called ENHARMONIC EQUIVALENTS. When these relationships hold true, the summary chart can be made in the form of a circle. This circle is known as the CIRCLE OF FIFTHS.

The circle of fifths shows C major at the top. The scales going off to the right are going up by fifths, and each of them adds a new sharp (always on the 7th degree!). The scales going off to the left, in contrast, go down by perfect fifths and add flats (always on scale degree 4!).

Look at the bottom area of the circle of fifths. You will find that the scales overlap. In other words, the entire scale of C♯ major is equivalent (in terms of its note content) to D♭ major. The same is true of the pairs of scales F♯ major and G♭ major, and of B major and C♭ major. These pairs of scales are also called ENHARMONIC EQUIVALENTS.

Again, when enharmonic equivalents exist, the circle of fifths forms a complete circle with no breaks. This means that one can move freely from any part of it to any other. It is important to know, however, that some of the systems of tuning of the harpsichord (discussed in *Skill and Style*) do not permit the existence of enharmonic equivalents. In such cases, the circle of fifths is broken, and it is not a complete circle.

Inherent in the circle of fifths idea is the concept that the addition of a sharp (raising a note by a half step) is the equivalent of cancelling a flat. Thus B♭ to B♯ is a half step up, as is A to A♯. Similarly, lowering a note by a half step can be seen in terms of adding a flat or cancelling a sharp. You can thus go completely around the circle of fifths to the right by first adding sharps and then cancelling flats, until you return to your starting place! You can similarly go all the way around the circle to the left by means of adding flats and then cancelling sharps.

**KEY SIGNATURES**

A preview of all the sharps or flats in a scale, or in a piece of music based on that scale, is contained in the KEY SIGNATURE. This is a cluster of the symbols for sharps or flats, placed in a conventional manner on the bass and treble staves, at the beginning of the piece. All the sharps or flats indicated in the key signature are to be played automatically throughout the piece, unless another accidental supercedes them.

Try to become familiar with the key signatures of keys close to C major (meaning, closest to C in the circle of fifths)—at least to 4 sharps and 3 flats. These are the keys used most often in Baroque music (the kind of music most often played on the harpsichord).
Figure 25 is a table of keys and their key signatures, showing the gradual accumulation of sharps on the one side of C major, and flats on the other.

<table>
<thead>
<tr>
<th>C</th>
<th>F</th>
<th>B♭</th>
<th>G</th>
<th>D</th>
<th>A</th>
<th>E</th>
<th>B</th>
<th>A♭</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>

\[ C = 0 \]

\[ F = 1 = B♭ \]

\[ B♭ = 2 = B♭ E♭ \]

\[ E♭ = 3 = B♭ E♭ A♭ \]

\[ A♭ = 4 = B♭ E♭ A♭ D♭ \]

\[ D♭ = 5 = B♭ E♭ A♭ D♭ G♭ \]

\[ G♭ = 6 = B♭ E♭ A♭ D♭ G♭ C♭ \]

\[ C♭ = 7 = B♭ E♭ A♭ D♭ G♭ C♭ F♭ \]

\[ C# = 7 = F#C#G#D#A#E#B# \]

**FIGURE 25. Table of Major Keys and their Key Signatures**

See if you can memorize one or two keys, with their key signatures, every week. It would help a lot to learn the order in which sharps and flats are added. For example, if asked to play the scale of D major, you would then know right away that it has two sharps, and that these are F# and C#.

When writing pieces of music, we don't normally add all of the sharps and flats within the piece. Usually the composer writes the KEY SIGNATURE, as described above, of the key or tonality in which the piece begins and ends (called the TONIC KEY). For example, a piece "written in D major" (or having D major as its TONIC KEY) would show two sharp symbols at the beginning of the first staves, corresponding to the notes F and C. These would indicate that all Fs and Cs are sharp within the entire piece, except where these sharps are cancelled by natural signs.

Figure 26 is a chart which shows how the sharps or flats are actually added in key signatures, so that you can recognize them when you see them. Musical pieces are constructed from the scales indicated by their key signatures, but any given piece may not use every one of the notes of the indicated scale. It is also possible--in fact, very likely--that a piece will wander away temporarily from the tonic key, or that key in which it begins and ends.
It should be noted that the key signatures given in Figure 26 apply only to major tonalities. However, for each major key, there is also a corresponding minor key which has exactly the same key signature. This is called the RELATIVE MINOR, described below. When you look at sharps or flats at the beginning of a piece, therefore, you need to consider both the major and the minor tonalities to which the key signature corresponds.

C Major  G Major  D Major  A Major
E Major  B Major  F♯ Major  C♯ Major
C Major  F Major  B♭ Major  E♭ Major
A♭ Major  D♭ Major  G♭ Major  C♭ Major

*FIGURE 26. Chart of Key Signatures as Written on the Staff*
FINGERING OF MAJOR SCALES

You have already learned the fingering of five-finger patterns—left hand, 5 4 3 2 1, and right hand 1 2 3 4 5. You also learned to finger tetrachords, with the two hands dividing up an entire scale (p. 28).

There is a basic seven-note scale fingering, however, for each hand. Sometimes it is convenient to play the entire scale in one hand. It should be emphasized, however, that this is not done nearly as often on the harpsichord as it is on the piano. Therefore, it is not recommended that harpsichord students spend a great deal of time on scale practice, as is the usual rule among other keyboard players.

Technically, in order to play 7 notes (actually 8, for completeness) in sequence, it is necessary to change hand position. We do this by moving the thumb under either the 3rd or the 4th finger. This takes a little practice, as the thumb needs to "zip" under a "tunnel" created by 2 or 3 of the other fingers, and arrive at the other side just in time to play the next note!

For example, you can ascend the C major scale using the right hand fingers: 1 (on C), 2 (D), 3 (E). As you are doing that, "zip" the thumb under fingers 2 and 3, playing the next note (F) with 1. Quickly straighten the hand into a new 5-finger position starting on F. G will be 2, and so on, with the 5th finger arriving on C'.

Coming down the C major scale with the right hand, just reverse this process. The descending fingering would be 5 4 3 2 1. The 3rd finger needs to flop over the top of the thumb (which will be on F) like a pole vaulter, coming down on E. Thus, for the last three notes of the scale, use fingers 3 2 1. Again, the hand must straighten into the C major 5-finger position as soon as the 3rd finger arrives on E.

The right hand fingering for the C, G, D, A, and E major scales is the same, as follows: 1 2 3 1 2 3 4 5. It is possible to "zip" the thumb under the 4th finger as well, coming out with 1, for example, on C'. If you do that you can go up another octave! This is indicated more concisely in this manner—RH: 1 2 3 1 2 3 4 5 (or 1). Note that the fingering is given for the ascending form of the scale (going up). Naturally, in order to descend a scale you need to reverse these procedures. To go down the scale, read the fingerings from right to left.

The left hand fingering for ascending the same five scales (C, G, D, A, and E major) is as follows: 5 4 3 2 1 3 2 1. To continue up another octave, flop the 4th finger over the thumb, starting again on the 2nd degree of the scale with this 4th finger.

When descending the scale with the left hand, read the fingerings from right to left. Notice that the left hand fingering for descending is identical to that of the right hand going up! Continuation down another octave involves "zipping" the thumb under the 4th finger, and landing with the first finger on the next tonic note (first degree). Again, straighten the hand and proceed down the scale for another octave.
The following scales have special fingerings: F major, Bb major, and Eb major. The left hand pattern is the same for each of these scales. Start with the 3rd finger in the left hand on the first note of the scale, ascending in the following manner: 3 2 1 4 3 2 1, and then again 3. This is necessary to avoid having either the 1st or the 5th finger on a flat, which places the hand awkwardly on the keyboard.

The right hand fingerings for these special scales are as follows: F major: 1 2 3 4 1 2 3 (4 or 1); Bb major: 4 1 2 3 1 2 3 (4); Eb major: 3 1 2 3 4 1 2 (3). These are easiest to remember if you notice that that the 4th finger of the right hand is always on Bb in these three scales. Simply arrange the rest of the fingers to accommodate that 4th finger on Bb.

One final note about fingering. In all scales, "zip" the thumb under the 3rd finger once (and only once!) and under the 4th finger once (and only once!) within each octave. Never go twice under the 3rd finger or twice under the 4th finger. One way to remember this is that 3+4=7, the seven notes of the scale.

MINOR SCALES

The basic five-finger patterns in minor have been compared with those in major (page 24). Now compare the two patterns when they start on the same tonic, such as C. The major five-finger pattern will be C D E F G, with the interval content of W W h W.

The minor five-finger pattern, starting on C as a tonic, will show a change on scale degree 3. The 3rd degree, E, must be lowered by a half step to Eb. This five-finger pattern will be C D E b F G, with the interval composition: W h W W.

You can convert any major five-finger pattern, starting on any tonic, to a minor five-finger pattern, by lowering the 3rd degree of the scale. The minor key or minor five-finger pattern which starts on the same tone or tonic as a major key or pattern, is called the PARALLEL MINOR of that major key. Likewise, C major is the PARALLEL MAJOR of C minor.

Try constructing a minor five-finger pattern on a different tonic, for example F. You know that the major pattern (W W h W) will be F G A Bb C. The parallel minor (W h W W) would be F - G (W), G - Ab (h), Ab - Bb (W), Bb - C (W).

Beyond the first five notes, the upper end of the seven-note minor scale is variable. Beginning with scale degree 6, three different patterns are possible. Each pattern has a different name. The first is called the NATURAL MINOR, or the NATURAL FORM of the minor scale. The interval content of the NATURAL MINOR SCALE is (W h W W) h W W. Remember that the first five notes (in parentheses) will be the same in all forms of the minor scale.
Suppose you start with C as a tonic. Can you construct a seven-note minor scale in its natural form? This would be: (C D E♭ F G) A♭ B♭ C. Look at the intervals on the keyboard in Figure 27. What is the key signature of the natural minor scale which is the parallel minor of C major? (Answer: 3 flats: B♭ E♭ A♭).

In fact, the parallel minor always has 3 "flats" more than the major, if you count the cancellation of sharps as being the equivalent of adding a flat (see page 33). Thus E major, with 4 sharps, has 3 of its sharps lowered by half steps to become the parallel E minor with 1 sharp. You should be able to verify this yourself. (Count the intervals in Figure 28).

Common major scales and their parallel minors are shown in Figure 29 on page 40. The minor scales are shown in their natural forms.

What major scale has the same key signature (3 flats) as C minor in its natural form? (E♭ major) On what scale degree, and on what interval above the tonic (C) does this major scale begin? The major scale with the same key signature, E♭ major, is called the RELATIVE MAJOR. Similarly, C minor is the RELATIVE MINOR of E♭ major. Notice that the tonic notes (1st degrees) of the relative major and minor are 3 half steps apart. The major key begins 3 half steps (a minor 3rd) above the tonic of its relative minor.

If you take any major scale, the natural minor scale starting a minor 3rd (3 half steps) below its tonic will have the same key signature. This minor scale will be called the RELATIVE MINOR (Figure 30, page 41).

Try this! The relative minor of D major (2 sharps: F♯ & C♯) will be _______? Starting on this tonic, construct a natural minor scale using the interval series (W h W W) h W W, and confirm the key signature.
The relationships between major scales and their relative minors enable us to find the key signature of any minor scale. Consulting the circle of fifths, one needs only to look up the major scale whose tonic lies a minor third above the tonic of the minor key in which you are interested. Thus, for a minor scale starting on D, look up the key signature of F major. For the key signature of E minor, look up G major, etc.

In determining the key of a piece, given a key signature, it is important to think always of two possible tonalities, major and minor. If the key signature has two sharps, think of both D major and B minor. Other considerations (starting and ending notes, presence of other accidentals, etc.) enable you to decide between the two possibilities.

*FIGURE 28. The Derivation of the E Minor Scale from E Major*
FIGURE 29. Common Major Scales and their Parallel Minor Keys

(Minor Scales in their Natural Forms)
(Numbers between staves = scale degrees in the minor keys. 
Numbers beneath staves = scale degrees in their relative major keys.)

**FIGURE 30.** Common Major Scales and their Relative Minor Keys 
(Minor Scales in their Natural Forms)
FINGERING OF MINOR SCALES

Minor scales starting on *naturals* are fingered like their *parallel majors*. For example, C major is fingered in the right hand: 1 2 3 1 2 3 4 5 (or 1). C minor has exactly the same fingering, although many flats are added. (How many?)

Minor scales starting on *sharps* are fingered like their *relative majors*. An example of this would be F♯ minor. The relative of this key is A major. The right hand fingering of A major is: 1 2 3 1 2 3 4 5 (or 1). In this scale, the sequence F♯ G♯ A is fingered 3 4 5 (or 1). Therefore with the relative F♯ minor, we begin on 3 (F♯), going to 4 (G♯), then 1 (A), 2 (B), 3 (C♯), 1 again (D), 2 (E), and finally 3 again on F♯ (to summarize, RH: 3 4 1 2 3 1 2 3) (Figure 31). Notice again that the thumb passes under finger 4 once and finger 3 once.

FIGURE 31. Fingering of A Major and F♯ Minor, as Shown on the Keyboard
OTHER FORMS OF THE MINOR SCALE

Remember that the first five notes (five-finger pattern) of the minor scale are fixed (W h W W). The natural minor, which you have just learned (pp. 37-38), places the 6th degree a half step above 5, and the 7th degree a whole step below 1'. This form of the scale is useful because of its direct relationship to the key signature.

The natural minor scale is also useful, especially in moving from one key to another (MODULATING) within a piece of music, because of its coincidence with the relative major. In fact, the natural minor scale is exactly the same scale as its relative major! Look at any major scale, starting on scale degree 1 and going to 1' (as in C to C'). The relative minor of that scale in fact goes from scale degree 6 to 6' (e.g., A to A') (see Figure 30, page 41). However, the natural minor scale is not used very much in pieces, except in a transition to its relative major tonality.

The form of the minor scale which is used most often in music is the HARMONIC FORM. In this form, all scale degrees from 1 through 6 are the same as in the natural scale. Scale tone 7, however, is raised a half step. This results in a half step between steps 7 and 1', just as occurs in the major scale. This must be done by adding an accidental within each measure (a sharp or a natural sign), as the raised 7th degree cannot be included in the key signature. Why? (Remember the order of adding sharps and flats.)

In C minor, which has 3 flats, the harmonic form of the scale results from changing B♭ to B♯. This raises the 7th degree a half step, making it a half step below the tonic (1'). In A minor, using G♯ instead of G♭ accomplishes the same purpose. (Remember that adding a sharp is the equivalent of cancelling a flat, and vice versa.)

As a result of the raising of 7, there is an abnormally large interval between scale degrees 6 and 7 in the harmonic minor. This interval is a half step larger than a whole step or major 2nd. In the present musical context, this interval is called an AUGMENTED 2ND (equals 3 half steps, and is abbreviated A2--see pp. 20-21).

Although the augmented 2nd appears to be the same as a minor 3rd (3 half steps), it is not the same in its present context. Why is this? Within any major or minor scale, the notes 6 and 7 must have adjacent scale or letter names. Thus in A minor, the harmonic form goes from F to G♯ (A2), which does not have the same musical meaning as F to A♭ (m3).

The interval content of the harmonic minor scale is as follows: (W h W W) h A2 h. Construct some harmonic minor scales beginning on different notes. Construct the harmonic version of F minor (F G A♭ B♭ C) D♭ E♭ F' or D minor (D E F G A) B♭ C♯ D', for example. Listen to the beauty of the augmented second in these scales!
A Minor: Natural Harmonic Melodic

D Minor: Natural Harmonic Melodic

G Minor: Natural Harmonic Melodic

C Minor: Natural Harmonic Melodic

E Minor: Natural Harmonic Melodic

B Minor: Natural Harmonic Melodic

F# Minor: Natural Harmonic Melodic

C# Minor: Natural Harmonic Melodic

**FIGURE 32.** Comparisons of the Three Forms of some Minor Scales

(Only the Melodic form differs ascending and descending.)
There is still a third form of the minor scale, which is used in many melodies. This version is called the **MELODIC FORM**. The MELODIC MINOR SCALE is not the same going up (ascending) as it is coming down (descending)! Its function is to smooth out the strange melodic shape of the harmonic minor, produced by its augmented 2nd. Although the A2 sounds lovely in a scale, it is awkward in melodic writing, and was avoided in early music.

The **ascending** portion of the melodic minor scale raises both the 6th and 7th degrees. From scale degree 5 up to 1’, the interval content becomes identical to that of the parallel major scale (W W h). This is done, of course, by adding sharps or naturals to these two notes as they appear in the natural form of the scale. These sharps or naturals, of course, do not appear in the key signature.

You already know the **descending** portion of the melodic minor, as it corresponds exactly to the natural form of the scale, as well as to the key signature. That means that the accidentals (on scale degrees 6 and 7) which you added going up the scale, must be cancelled when the scale descends.

The melodic form of E minor, for example, is (E F♯ G A B) C♯ D♯ E’. This is the **ascending** portion. Going back down, however, E minor (melodic) looks like this: E’ D♭ C♭ (B A G F♯ E). As another example, the melodic form of F minor is: (F G A♭ B♭ C) D♭ E♭ F’ (ascending); F’ E♭ D♭ (C B♭ A♭ G F) (descending).

Figure 32 reviews the three forms of the minor scale.

**MODAL SCALES**

Music based on the major scale, and on the minor scale with its three forms (especially the harmonic form), is called **TONAL MUSIC**. The consistent use of these scales in western classical music began in the 17th century. Between 1700 and 1900, these scales were used virtually exclusively.

One of the most striking characteristics of tonal music is the fact that the 7th degree of the scale is only a half step away from the tonic. (This is true for all the scales discussed above, except for the natural form of the minor.) One of the things which immediately distinguishes MODAL MUSIC (based on the modal scales described below) from TONAL MUSIC, is the presence of a whole step, instead of the half step, between 7 and 1 of the scale.

Western classical music composed before 1600 is based on a system of scales known as **CHURCH MODES**. Music based on these scales is called **MODAL MUSIC**. Two of these modes are of great importance to harpsichordists because they were still very much in use during the 17th century. Music from this period is often found to be based on a mixture of modal and tonal scales. The two modes still used extensively in the 17th century are the **MYXOLYDIAN MODE** and the **DORIAN MODE**.
The MYXOLYDIAN MODAL SCALE can be discovered by starting on the note G and playing to an octave G', using only the naturals on your keyboard (no F♯). As you can see, this scale is just like the major scale except that the 7th degree is a whole step (M2) below 1' (and a half step above 6). The interval content of the Myxolydian mode is therefore: W W h W W h W.

Now that you know the interval content, it is possible to transpose this scale to some other place on the keyboard (see page 30 and Chapter X). You can play the same series of intervals, starting from a different note (as you have done with other scales and patterns). This, in fact, was done frequently by early composers. Thus a "Myxolydian" piece may have a tonic starting on some note other than G. Example: C D E F G A B♭ C'.

The DORIAN MODE is obtained by playing all the naturals on your keyboard, from D to D'. This scale sounds minor, and resembles the natural form of the minor scale except that the 6th degree (and not the 7th!) is raised a half step. The interval content of this scale is thus (W h W W) W h W. Again, this series of intervals can be transposed to any starting note. Example: (F G A♭ B♭ C) D E♭ F'.
Interestingly, even as late as the 18th century, many composers still wrote minor key signatures to correspond with the Dorian mode (whether transposed or not). For example, C minor was written with a key signature of two flats (B♭ and E♭) instead of three (B♭ E♭ A♭). This results in: C D E♭ F G A B♭ C (W h W W h W, a Dorian scale). However, the music in fact was tonal, and therefore A♭ would be written into each measure as an accidental. In addition, of course, one frequently finds B♭ written in as an accidental in C minor (harmonic form!).

All the modal scales, beginning on each letter, use only the naturals of the keyboard. We have seen the examples of Myxolydian, starting on G, and Dorian, starting on D. However, before the 19th century, the modal scale beginning on B was considered too strange to be permitted!

The modal scales beginning on C and on A, and using only the natural keys, are of interest because these modes actually became the tonal major scale (C to C' was the IONIAN MODE) and the natural minor scale (A to A' was the AEOLIAN MODE). In fact, shifting from the major scale to the minor, or vice versa, is still called "changing the MODE". Thus the major and minor SCALES are sometimes called major and minor MÖDES, respectively.

One further church mode is important to us today, because it is used often in 20th century music. This is the PHRYGIAN MODE (pronounced "Frij-ee-anl). This scale can be constructed by starting on E, and going to E' on naturals only. This can also be transposed, as long as you preserved the interval content: h W W W h W W. For example, start a Phrygian scale on D: D E♭ F G A B♭ C D'.

Like the Dorian mode, the Phrygian scale also resembles the natural minor. In the Phrygian mode, however, there is only a half step (m2) between notes 1 and 2 of the scale. The minor 3rd between notes 1 and 3 makes the scale sound minor. The lowered second degree is quite striking and may be used as a colorful effect in places, even in tonal music.

The three important modal scales described here are reviewed in Figure 33.

OTHER SCALES

Like the Phrygian mode, there are a number of additional scales which have been used extensively in modern (20th century) music. More and more, harpsichordists of today are finding excellent contemporary compositions created for their instrument. It is important, therefore, to explore the various additional scales likely to be encountered in this new body of harpsichord music.
Theoretically, one could use any combination of intervals and any number of notes between 5 and 12 (why these numbers in particular?) to form a scale or ladder that climbs the octave. Many combinations have been tried. One of the interesting aspects of 20th century music is the exploration of the musical possibilities available with a variety of scales, both new and old.

Three scales, in addition to the ones discussed above, have been of particular importance in Western musical culture. The first of these is very ancient, and is found in folk music throughout the world. This is the PENTATONIC SCALE, so called because it consists of only five different notes (the prefix "penta" means five; "tonic" refers to tones or notes).

You can discover the pentatonic scale by playing on the sharps of your keyboard. For example, play from $F\#$ to $F\#$, using only sharps and no naturals! What is the interval content of this scale? (W W m3 W m3). Can you now transpose this to a new note, for example, C on the keyboard? (C D E G A C') (See Figure 34)

![Image of pentatonic scale](image)

**FIGURE 34.** Pentatonic Scales, Showing Interval Content

Renaissance and Baroque composers made little or no use of the pentatonic scale in "classical" or art music, but it has been brought into the art music of the 20th century (see particularly the music of the Hungarian composers, Bartók and Kodály). Also if you play or sing folk melodies, you will find that many of them are based on this scale.

The scales that you have learned so far are composed of mixtures of half steps and whole steps. The last two scales I want to describe are unique, in that the interval content is uniform throughout each of these scales.

The first of these is called the WHOLE TONE SCALE. This scale has often been used in 20th century music, particularly by piano composers such as Claude Debussy. As the name implies, the interval structure consists exclusively of whole steps. There are six different notes in the scale: W W W W W W (e.g. C D E F# G# A# C) (Fig. 35).

The other scale with uniform intervals is the CHROMATIC SCALE. This one could logically follow from the above (but didn't!) and it consists entirely of half steps from one end to the other. The chromatic scale consists of 12 different notes--all that are available on the keyboard (such as C C# D D# E, etc.) (see also Fig. 35).
There is an interesting consequence of having all the tones of a scale of equal distance from one another, as in the whole tone or chromatic scales. One loses any sense of which note actually begins such a scale! It is thus not clear which tone is the tonic.

In the major, minor, and modal scales, there is a definite HIERARCHY OF PITCHES, each of which has a known relationship to the tonic. This is not true of the whole tone and chromatic scales. Indeed, in the 20th century a new kind of music was developed, in which the usual harmonic relationships do not exist. This is TWELVE TONE or ATONAL MUSIC.

Apart from being used as a scale, CHROMATIC NOTES can be added to a major or a minor scale for decorative purposes. For example, in the scale of D major, you might want to write D F# A A# B B# C# D, making a decorative run from the dominant (A) up to the tonic D’ (Figure 36). The added sharps (A# and B #), which are not part of the D major scale, are called CHROMATIC NOTES. The notes which belong to the scale (major or minor) are called DIATONIC NOTES. The use of chromatic notes as decoration within another kind of scale is called CHROMATICISM.
CHAPTER IV. TRIADS

DEFINITIONS

A CHORD is a combination of 3 or more pitches. These can be played all at once (simultaneous or BLOCKED CHORDS). They also can be separated in time, being played one after the other. This last manner of playing a chord is called ARPEGGIATION (the chords are said to be ARPEGGIATED).

Generally the pitches within a chord involve some skips. When three or more adjacent tones (that is, notes which are next to each other on the keyboard) are played at the same time, the result is called a CLUSTER. However, as we will see later, it often happens that two of the notes within a chord are adjacent to one another.

A TRIAD is a type of 3-note chord. This chord is logically derived from the 5-finger pattern, being the tones found under fingers 1, 3, and 5. When the three notes of a triad are a 3rd apart (as they are found in the 5-finger pattern itself), the triad is said to be in ROOT or FIRST POSITION.

We speak of the three elements of a triad as the ROOT (the bottom note), the THIRD (the next note up), and finally the FIFTH (5th from the root). If we begin on C, the ROOT is C, the THIRD above is E, and the FIFTH will be G. Notice that this triad has a major 3rd on the bottom (C - E) with a minor 3rd (E - G) on top of it. This type of triad is called a MAJOR TRIAD. It corresponds to the notes 1 - 3 - 5 of the major scale or 5-finger pattern.

Four different types of triads can be distinguished, depending on the interval content above the root. We have seen the MAJOR triad with a major 3rd and perfect 5th above the root. A MINOR triad corresponds to notes 1 - 3 - 5 of the minor scale. This consists, as you might expect, of a minor 3rd and perfect 5th above the root. (This is also a minor 3rd with a major 3rd on top!) Illustrations are: C - E - G (major triad) and C - E♭ - G (minor triad) (see Figure 37).

The third type of triad represents an expansion of a major triad, enlarging the perfect 5th to an augmented 5th. Thus you can have a triad starting on C (root), with E (third) and then G♯ (still called the fifth of the triad!). This kind of triad, which you will notice has two major 3rds piled on top of each other, is called an AUGMENTED TRIAD.

The fourth type of triad is created by making a minor triad still smaller. That is, a minor 3rd is on the bottom, and the 5th is diminished. This makes two minor 3rds on top of each other. This type of triad is called a DIMINISHED TRIAD.
Play the four types of triads starting on different root tones, and try to learn the character of each sound.

![Diagram of triads](image)

**Figure 37. Different Types of Triads in Root Position**

**Triads on the Scale Degrees**

Try building triads on each of the seven tones of a major scale, keeping all the notes within the key signature. You will find that triads of different types result on the different scale degrees. This is of great importance in trying to recognize the relationship of the scale degrees to each other, because you can associate each note of the scale with its own type of triad.

Discover the triad types on the notes of the C major scale. Starting on C (scale degree 1) you can construct a major triad (C - E - G). With the 2nd degree (D), play just the tones within the scale of C major (that is, do not add any accidentals). The triad on the
2nd degree will be D - F - A, a minor triad. Similarly, 3 in the scale results in another minor triad, E - G - B.

Continuing with scale degree 4, F is associated with a major triad, F - A - C. Degree 5 also generates a major triad, G - B - D. The next, on 6, is minor, A - C - E. Finally on 7, what kind of a triad do you find here? B - D - F has a minor third (B - D) and a diminished fifth (B - F). This triad is therefore diminished.

Are you surprised to notice that there are three minor triads within the major scale? There are also three major triads and one diminished one (Figure 38).

<table>
<thead>
<tr>
<th>SCALE DEGREES</th>
<th>TRIAD TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I</td>
</tr>
<tr>
<td>2</td>
<td>II</td>
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<td>3</td>
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<td>6</td>
<td>VI</td>
</tr>
<tr>
<td>7</td>
<td>VII</td>
</tr>
<tr>
<td>1'</td>
<td>1</td>
</tr>
</tbody>
</table>

major minor minor major major minor dimin. major

FIGURE 38. Triad Types on the C Major Scale Degrees

Notice that the major triads seem to have musical relationships to each other. If you play the F major triad and then the G major, you want to hear C major afterwards. This is actually a CADENCE--the sequence of triads associated with phrase endings (see Chapter V). This one consists of the triads built on 4, 5 and 1 in the key of C major. It is interesting that the musical "pull" that 5 (the dominant) has toward 1 only works if the triad attached to scale degree 5 is major. The importance of this will be clear when you listen to the triads associated with minor scales, below.

When writing about triads on different scale degrees, we always use ROMAN NUMERALS. This tells you that we are talking about the triad on C (I) or the triad on F (IV), for example, and not just the notes (ARABIC NUMERALS) C (1) or F (4) in the scale of C major.

Knowing that all the major scales are identical in terms of interval content, one also can see that the Roman numerals (chords associated with the scale degrees) are the same for every major scale. Thus compare two major scales and their triads in Figs. 38 and 39.
Now build triads on the scale of A minor, the relative of C major (see page 38). Its key signature is the same as that of C major. However, in order to build triads that will function harmonically, you will need to use the harmonic form of A minor (page 43). Do you remember how that goes? (A B C D E F G# A).

Now play the Roman numerals I through VII, and listen to the triads. Starting on A, the triad A - C - E is minor. Then 2 in the scale, B, will have a diminished triad just like 7 in C major (B - D - F). Something surprising happens to the triad on 3 if you use the harmonic form. This triad would be C - E - G# --an augmented triad! Sometimes, however, you may want to make III of A minor into a major triad, C - E - G (particularly when you wish to MODULATE or move into a different tonality). In this case, just go back to the natural form of the scale.

The next triad on 4, D - F - A, is minor. Keeping the harmonic form of the scale, the triad on 5 will be major (E - G# - B). This is very important if you want to make CADENCES (see Chapter V) using the dominant. Scale degree 6 has F - A - C, a major triad. Again, keeping the G# of the harmonic minor, the triad on 7 would be diminished G# - B - D), just like VII in the major scale. (See Figure 40 on page 54 for review.)

Now compare the kinds of triads that are found in the minor scale with those in major. The minor scale generates only two minor triads (I and IV)! There are two diminished triads (II and VII). There is an augmented triad (III) when using the harmonic form of the scale. There are two major triads (V and VI). Sometimes III is also major if you change the scale back to its natural form.
As expected, the triads to be found on each note of the minor scales are the same in each scale, as can be seen in Figures 40 and 41. Remember, however, that the three different forms of each minor scale will produce different types of triads on certain scale degrees (consider, especially, the triads on 3, 5, and 7 of the minor scale).

It’s important to learn the quality or type of triad which occurs naturally on each scale degree. Then, when you hear a triad in a piece of music, it tells you something about its CONTEXT or musical function. For example, a diminished triad must be VII in a major scale, or VII or II in minor. If you hear an augmented triad, it is probably III in
the minor scale. If you’re in a major key and you hear a major triad, it has to be either I, IV or V. Similarly, when a minor triad occurs in a major tonality, we should associate it with steps 2, 3, or 6 of the scale.

**TRIAD POSITIONS**

You have learned what a triad looks like when the root is on the bottom. This is the easiest way to tell which triad it is, because you can easily see which notes are ROOT, THIRD, and FIFTH. However, the same notes can also be rearranged on the keyboard (or the staff), so that they do not consist of two thirds one on top of each other ("stacked")!

For example, when a C major triad is played or written in ROOT POSITION (perhaps better termed FIRST POSITION), it looks like this: C - E - G. However, it could be written another way, so that the C is on the top, like this: E - G - C'. When you play triads in just the right hand (especially when adding a bass note with the left), the various arrangements of the three notes are called POSITIONS (see Fig. 42).

<table>
<thead>
<tr>
<th>FIRST</th>
<th>SECOND</th>
<th>THIRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\text{major major dimin. minor major augm. dimin. minor})</td>
<td>(\text{root on the top})</td>
<td>(\text{root on the bottom})</td>
</tr>
<tr>
<td>(\text{root in the middle})</td>
<td>(\text{root on the middle})</td>
<td></td>
</tr>
</tbody>
</table>

**FIGURE 42. Triads in Three Different Positions**

When the root is on the bottom of the triad, we have the FIRST POSITION. With the root on the top and the third on the bottom, we call it SECOND POSITION.
The triad can still be rearranged one more time, putting the third way at the top. Now the same C major triad looks like this: G - C' - E'. This arrangement, with the fifth at the bottom, is called the THIRD POSITION.

If you try to rearrange these same notes still another time, you will find yourself back at FIRST POSITION, but an octave higher: C' - E' - G'! With three different notes in a triad, there are in fact only three distinct possibilities: first, second, and third positions.

Now notice the interval relationships between the bottom note and the next one. For example, in second position (E - G - C) there is a minor 3rd and a perfect 4th (or a minor 3rd with a minor 6th above the bottom note). In the third position, there is a perfect 4th above the bottom note, and a major 3rd above that. The top note of the triad in this (third) position is a major 6th above the bottom note (see Figure 42, page 55).

Play these triads. Feel how the shape of your hand changes as you play the different positions in your right hand. Try them also in your left hand. It is very important to remember, however, that even though your hand changes shape and the position of the triad is different each time, it is still the same triad! It is still a C major triad, or I in the key of C major.

Triads are identified by their root and quality. That is, the note on the bottom of a first position (or root position) triad gives that triad its name. This name is then further qualified by an adjective such as "major", "minor", "augmented", or "diminished". If you have trouble identifying a triad that is not in first position, shuffle the three notes around until you have an arrangement of two thirds "stacked" one on top of the other. In this arrangement, you know that the bottom note must be the root of the triad.

TRIAD INVERSIONS

When playing triads with both hands, we usually add an extra note--not a new note, but a DOUBLING of one of the members of the triad. Thus with only three distinct notes, we frequently play in four parts. If you play a whole series of triads in this manner, it begins to sound like a "chorus" of voices, and, indeed, each of the parts is called a VOICE.

In four parts, a common way of playing the tonic triad (I) in the key of C major, is to play a C in the bass (left hand) and the notes C - E - G in the right hand. This is called CLOSED POSITION (see Figure 43).

Another way of playing the same triad is to spread it out between the two hands. You might play C and G in the left hand and E and C in the right hand, for example (Fig. 43). This type of arrangement is called OPEN POSITION.

When playing in four parts, it is important to identify the root of the chord. If the root is in the BASS—that is, if it is the very lowest note—we speak of the chord as a ROOT POSITION TRIAD. It is called root position no matter how we rearrange the top parts! For example, we could play C in the bass and then E - G - C' in the right hand.
Although the right hand is playing the C major triad in its second position, because the root C is in the bass, we still call the entire chord a ROOT POSITION TRIAD.

Unfortunately, this terminology is very confusing, because the word "position" is used to mean more than one thing. For the keyboardist, the terms FIRST, SECOND and THIRD POSITIONS generally refer to the arrangement of the three notes of the triad in the right hand. ROOT POSITION, on the other hand, refers to the occurrence of the root of the chord in the bass, as the very lowest note.

To add to the confusion, we have just referred to CLOSED and OPEN POSITIONS of triads. This uses the word "position" in yet another way, one which in fact has nothing to do with the order (or sequence) of notes in the chord.

Furthermore, a triad played in just three parts (no doubling) might be in both root and first position, with the root at the bottom. This same triad, with an added bass note which is a doubled member of the triad (four parts), would not be in root position unless that added bass note were in fact the root. Go back and carefully review the definitions given above!
As I just implied, you can play a C major triad in four parts, even if C is not in the bass. Try playing E in the bass, with any three notes of the triad in the right hand (in any order or position!). When you do this, you are no longer in root position, because the root is not in the bass. The arrangement of the triad with the third, E, as the lowest note (bass) is called a FIRST INVERSION (Figure 44).

![Inversions of Triads]

**FIGURE 44. Inversions of Triads**

No matter how you arrange the notes of the triad in the right hand, you still have a first inversion if the third is in the bass. Notice how different the first inversion sounds in comparison with the root position triad. Play a first inversion C major triad, using all different positions of the right hand. Then again play the root position, putting the C back in the bass, and hear how the quality of this triad seems to change.

As you can guess, it is possible to have one more inversion--still keeping a C major triad--by using still a different tone in the bass. Remember always to play the same three notes, C - E - G, no matter how you arrange them. This time play the fifth (G) in the bass, and play the C major triad above in different positions. You now have a SECOND INVERSION TRIAD (Figure 44). This one sounds very different yet! Try it. Compare it with the first inversion. Compare it with the root position.

Notice that when you are playing a triad in three parts in one hand, the second and third positions will correspond to the first and second inversions, respectively. Think in each of these cases, which note will be the lowest note (the bass). Test your understanding of this complicated terminology!
Remember that you can take any triad (for example, all of the major triads you can make on the keyboard) and play with them as you have just done with the C major triad. Your right hand can put the notes in different positions, rearranging the elements so that the root, or the third, or the fifth is on top. You can change the bass note from the root to the third to the fifth, thus changing from root position to first or second inversion.

Compare various major triads--D major, F major, A major and so on--and hear how the quality of these triads, in different positions and inversions, compares with that of C major. You may find some differences in the sound of various major triads, depending on how your harpsichord is tuned.

Play a triad of a different quality, such as A minor, using various positions in the right hand. Now try the root, the third (first inversion), or the fifth (second inversion) in the bass. Again, you will find that although these triads still retain their minor quality, their sound changes, particularly with different inversions. Try this also with some diminished triads and with some augmented triads.

When you do the above exercises, be sure that you retain the same triad throughout. With each different triad, always use the same three notes however you rearrange them, and whichever (doubled) note you use for the fourth voice in your left hand.

Now let’s look at some music. Can you find any triads in the music which you are now studying? Sometimes in fact, they are written out in the melody with the notes of the triad coming one after the other (ARPEGGIATED) instead of one on top of the other. Draw circles around the triads in your music. Is the left hand playing a note from the triad that you have circled? If so, is it the root, or the third, or the fifth? Do you have a root position, or a first or second inversion of the triad that you found?

As you find triads either in solid (chordal) form, or broken up (arpeggiated) within the melody, you will also find that they change as you go through the piece of music you are examining. In a piece in G major, for example, do you find a triad on I (G major), a triad on IV (C major), then a triad on V (D major), followed by a triad on I again? You may find that you have many different triads before you get to the end of a single phrase.

A series of different triads (and other types of chords), such as you find in your music, is called a CHORD PROGRESSION. Although chord progressions can involve chords other than simple triads, a series of triads such as I, IV, V, I is still a chord progression. Later you will study some particular chord progressions known as cadences.

Some examples of chord progressions found in actual music are shown in Figures 45 and 46 on pages 60 and 61. The procedure of finding the triads within a piece and naming them constitutes a part of what we call HARMONIC ANALYSIS (see Chapter IX).

In music, you often find fewer than four of the chord tones. That is, the three basic tones of the triad, plus one tone repeated or doubled, may not be present. Sometimes there are only three notes, and frequently only two, which may still imply a full triad. Then you need to make a guess as to which triad is intended. When guessing, remember that the root must always be present (not always at the bottom!), although the third and the fifth, and occasionally both, can be omitted.
1. (The Fitzwilliam Virginal Book, No. 173)

F major: I - - - V I IV V IV₆ I V - I₆

2. J. J. Froberger, Sarabande (from Suite IX)

G minor: I V₆ I VII₆ III
(natural form)

3. A. Forqueray, Rondeau "La Mandoline"

G major: I V₅/₃ I VII₄ I₃ VII₃ I V

**FIGURE 45. Chord Progressions in Music**

**Examples using Solid Chords**


Fig. 45, 2, J. J. Froberger, Œuvres Complètes pour Clavecin. Vol. I, p. 190. H. Schott, ed. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.

Fig. 45, 3, A. Forqueray, Pièces de Clavecin, p. 23. C. Tilney, ed. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.
1. J. S. Bach, Praeludium XV (from *Das Wohltemperierte Klavier, I*, BWV 860)

G major: I - IV (with I pedal) VII (with I pedal)

2. J.-F. Dandrieu (from *Premier Livre, "Le Concert des Oiseaux"")

G minor: I - V (V73) I

FIGURE 46. Chord Progressions in Music
Examples of Broken (Arpeggiated) Chords

Fig. 46, 1. J. S. Bach, Verzeichniss der Mitglieder der Bach-Gesellschaft Breitkopf & Härtel, Leipzig, 1866. Vol. XIV. BWV 860
Fig. 46, 2. J.-F. Dandrieu, *Trois Livres de Clavecin*. Editions LABATIAZ & SCHOLA, P. O. Box 112, CH - 1890, ST. MAURICE (Switzerland). Used with permission.

IN EXAMINING THESE and other figures taken from the musical literature, BE SURE to proceed according to the "important instructions" on page vii!

USE OF FIGURES TO INDICATE INVERSIONS

Another way to indicate the inversions of triads (apart from stating "root position", "first inversion", etc.), is to actually designate the intervals above the bass.

When a triad is in root position, the intervals above the bass note are 5/3. This FIGURE indicates that the fifth and the third above the bass occur in the chord. It is not necessary that these intervals occur at exactly a fifth or a third. The notes can be transposed
into any octave, and the third may be above the fifth (e.g., use compound intervals at times). The figure also does not tell us which, if any, of these notes are doubled, or in fact how many notes there are in the chord altogether.

FIGURE 47. Figures Indicating Inversions--Intervals above the Bass
A root position triad in C major can be indicated by figures in one of two ways: the bass note (C) can be placed on the staff with the numbers \( \frac{5}{3} \) written over or under it (see Figure 47), or the chord can be referred to as (in C major) \( I_3 \).

The first and second inversions are similarly indicated by the intervals that occur over the bass. In a first inversion C major triad, for example, the notes of the chord are E in the bass, and then somewhere above, a G and a C. The G and the C are indicated by figures \( \frac{5}{3} \) (representing intervals) 3 and 6. The first inversion triad is therefore called a \( \frac{5}{3} \) chord. In C major it may be written either as the note with the figure \( \frac{5}{3} \), or as \( I_3 \) (Figure 47).

In the case of a second inversion triad, again in C major, G will be in the bass and the notes C and E above in any order. Those intervals above the bass are a 6 and a 4. This second inversion triad can be written as either \( G_6 \) (Figure 47) or \( I_4 \) in the key of C major.

These figures, therefore, express the inversions as well as the exact intervals of the notes in a chord relative to the bass note. An understanding of these figures gives us the beginnings of the study of FIGURED BASS (see the section on Figured Bass in SKILL AND STYLE).
CHAPTER V. CADENCES

CADENCES are "harmonic signatures". They are CHORD PROGRESSIONS, usually just two consecutive chords, which indicate the current key or tonality. A CADENTIAL "signature" occurs at the end of every phrase of music, and most emphatically at the end of a large section or at the end of a piece.

TYPES OF CADENCES

The most important cadence is called an AUTHENTIC or PERFECT CADENCE. This is one which begins on V (the chord representing the dominant), and ends on I, or the chord of the tonic (review these terms on page 27). This kind of cadence often ends a phrase and almost always ends a piece.

Look for authentic cadences everywhere in your music. You will find the 5 - 1 (scale degrees) progression in the bass in many many places within a piece. Sometimes the 5 - 1 (roots of the chords V - I) will be in the tonic key, and sometimes in a key to which you have modulated. (Remember that one seldom stays within a single tonality, except in the briefest of pieces.) Figure 48 on page 66 illustrates some authentic cadences of different styles.

Sometimes the authentic cadence (V - I) is replaced by a progression of VII to I. In this case, often the bass will have the leading tone (scale degree 7 in the key), moving to the tonic (1). (Remember that the Arabic numerals indicate scale degrees!) Figure 49 (page 67) shows some cadences of this type, where the progression VII - I substitutes for V - I.

When an authentic cadence occurs in a minor key, the HARMONIC FORM of the minor scale must be used. Remember, in that case, that the 7th degree of the scale is raised a half step (review page 43). This will turn the V chord into a major triad. The sound of an authentic cadence (V - I) in minor will be that of a major triad going to a minor one. Try it out!

You will find that, if the minor dominant is used (as would occur with the NATURAL FORM of the scale), it will not have the same musical effect. (See Figure 50 on page 69 for examples of V - I cadences in minor keys.)

The next most common cadence is the HALF CADENCE (also called IMPERFECT). This one seems rather backwards! This is because it goes from I to V. Listen to this cadence after playing a bit in the tonic key (for example C major). If you now end a phrase by going from a C major triad (I) to a G major triad (V), this will sound a little incomplete. However, the half cadence serves a very definite musical function. The incomplete sound of this phrase ending tells us right away that this is not the end of the piece!
Sometimes a phrase ends on a dominant chord without being preceded directly by the tonic. Such a progression almost always starts with I, but the tonic triad may be at or near the beginning of the entire phrase. In this case, there will be one or several chords in between I and V. This type of half cadence does not differ functionally from the simpler version described above.

Usually a phrase ending with a half cadence (of either type) will be followed by a second phrase which moves from the dominant back to I (tonic). (Examples of half cadences are shown in Figure 51 on page 70.)

A third kind of cadence--very important to us--is the PLAGAL CADENCE (pronounced "play-gal"). This one goes from the chord IV (subdominant) to I. The plagal cadence is used quite commonly in early 17th century music, particularly in early English music (see Figure 52, page 71).

Very often a plagal cadence will follow an authentic cadence at the end of a piece, forming a kind of coda or final statement after the piece seems to be over. This cadential combination (V - I followed by IV - I) always occurs at the end of hymns. The IV - I chords accompany the word "Amen" at the end of the hymn. For this reason, the plagal cadence is often referred to as the "Amen cadence". Its sound is very distinctive (Figure 52, 2, page 72).

Finally, a fourth kind of cadence which is extremely important is the DECEPTIVE CADENCE. This one most often occurs in the middle of a phrase! It can also form a very unstable phrase ending.

The deceptive cadence starts out with the dominant (V). This chord must be "prepared", meaning that is preceded by a chord progression that sounds as though we are leading up to an authentic cadence (V - I). Having led us to expect a tonic triad to follow the V, another chord is substituted! Usually the surprise chord is VI, although other surprises occasionally occur. The effect of the deception, if adequately prepared by the performer, can quite take our breath away!

The deceptive cadence is most often used as a delaying tactic. When we feel that the piece is coming to an end, the composer may suddenly insert a V - VI cadence. Another few measures (2 - 4, or even more) will be required to bring the piece to its final close on an authentic cadence. This happens because, after the jolt of deception, it is necessary to go back and lead up to the final (authentic) cadence all over again. Only then will our ears accept the inevitability of the concluding V - I cadence (the "real" one!). Many of the two-part inventions of Bach include this kind of surprise (see Figure 53, page 72, and Example 1 in Figure 52).
FIGURE 48. Authentic Cadences in Major Keys

Fig. 48, first Bach example from J. S. Bach, 389 Chorale Melodies, Kalmus Edition number K03047, No. 46, p. 31. Reproduced by the consent of BELWIN-MILLS PUBLISHING CORPORATION, c/o CPP/BELWIN, INC., Miami, FL 33014

(Citations continued on page 67)
Fig. 48, J. S. Bach, examples 2 and 3, Verzeichniss der Mitglieder der Bach-Gesellschaft. Breitkopf & Härtel, Leipzig, n.d. Vol. III. BWV 778 and BWV 791.

Fig. 48, Telemann--SOLI FÜR CEMBALO, Edited by Ruf. Copyright B. Schott's Soehne, Mainz, 1964. Copyright renewed. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Soehne, Mainz.

Fig. 48, Louis Couperin, Pièces de Clavecin, A. Curtis, ed., p. 111. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honore 75040 Paris Cedex 01.

FIGURE 49. VII - I Progressions Substituting for Authentic Cadences

(Citations for Fig. 49 are on page 68)


Fig. 49, C. P. E. Bach, Sechs Sonaten, p. 13. BREITKOPF & Härtel, Wiesbaden. Used with permission.

Fig. 49, J. Pachelbel, Suiten für Cembalo, ed. by Moser/Fedtko. Internationale Musikverlage Hans Sikorski, 2000 Hamburg 13, Johnsallee 23, Postfach 132001. Used with permission.

Fig. 49, J. S. Bach, Verzeichniss der Mitglieder der Bach-Gesellschaft. Breitkopf & Härtel, Leipzig, n.d. Vol. III. BWV 810

Fig. 50 (page 69), J.-P. Rameau, Pièces de Clavecin, K. Gilbert, ed., pp. 34, 58. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.

Fig. 50, D. Scarlatti, Sixty Sonatas, R. Kirkpatrick, ed., Vol. I, p. 7 (K7). Copyright © 1953 G. Schirmer, Inc. (Copyright Renewed). International Copyright Secured. All Rights Reserved. Reprinted by Permission.

Fig. 50, A. Forqueray, Pièces de Clavecin, C. Tilney, ed., p. 85. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.

Fig. 50, F. Couperin, L'Art de Toucher le Clavecin, Prélude VI. Source: Facsimile of the 1717 edition, p. 59. Reprinted by arrangement with Broude Brothers Limited, 141 White Oaks Rd., Williamstown MA 01267.


Fig. 51 (p. 70), Louis Couperin, Pièces de Clavecin, A. Curtis, ed., p. 131. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.

Fig. 51 (p. 70), F. Couperin, Pièces de Clavecin, Vol. I, K. Gilbert, ed., Ordre V, p. 135. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.

Fig. 51 (p. 70), F. Couperin, L'Art de Toucher le Clavecin, Prélude III. Source: Facsimile of the 1717 edition, p. 54. Reprinted by arrangement with Broude Brothers Limited, 141 White Oaks Rd., Williamstown MA 01267.
FIGURE 50. Authentic Cadences in Minor Tonalities
Figure 51. Examples of Half Cadences

(Citations for Figure 51 are on page 68.)
1. Orlando Gibbons, Fantasia *(Musica Britannica, Vol 20, No. 13, mm. 40 - 43)*

![Score of Orlando Gibbons, Fantasia](image)

C maj: I

DECEPTIVE & PLAGAL CADENCE

2. Hymn "God my Father", mm. 7 - 8

![Score of Hymn "God my Father"](image)

G maj: I₆ V₅ I I₆ I₄ V I IV I

AUTHENTIC & PLAGAL CADENCE


![Score of John Bull, "A Gigge. Dr. Bull's My Selfe"](image)

G maj: I IV I₄ V I IV I

AUTHENTIC & PLAGAL CADENCE

**FIGURE 52.** Plagal Cadences


(continued)
Fig. 52 (p. 71), Hymn 239 from the Episcopal Hymnal.

1. F. Couperin, "L'Auguste" (Premier Ordre, mm. 16-17)

2. J. S. Bach, "Two-Part Invention in D Major" (BWV 774, mm. 51-54)

3. D. Scarlatti, "Sonata in A Major" (K208, mm. 21-23)

FIGURE 53. Deceptive Cadences

Fig. 53, F. Couperin, Pièces de Clavecin, Vol. I, K. Gilbert, ed., Ordre I, p. 3. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.
1. AUTHENTIC CADENCES (V - I)

\[
\begin{align*}
I & \quad V \\
I & \quad V \\
I & \quad V \\
I & \quad V \\
I & \quad V \\
\end{align*}
\]

C maj: I V I I V I I V I

2. PLAGAL CADENCES (IV - I)

\[
\begin{align*}
I & \quad IV \\
I & \quad IV \\
I & \quad IV \\
I & \quad IV \\
\end{align*}
\]

C maj: I IV I I IV I I IV I

3. HALF CADENCES (I - V)

\[
\begin{align*}
I & \quad I \\
I & \quad I \\
I & \quad I \\
I & \quad I \\
\end{align*}
\]

C maj: I I V I I I V I I V

4. DECEPTIVE CADENCES (V - VI)

\[
\begin{align*}
I & \quad V \\
I & \quad V \\
I & \quad V \\
I & \quad V \\
\end{align*}
\]

C maj: I V VI I V VI I V VI

FIGURE 54. Chord Progressions which Form Cadences
PLAYING CADENTIAL PATTERNS

Now that you know how to play triads with a bass (four parts), it is important to learn to play cadences. This will help you to hear them in music, both as a player and as a listener.

Practice playing the various progressions described above, always beginning on the tonic. Try each CADENTIAL FORMULA (I - V - I, I - I - V, I - IV - I, I - V - VI) in several different keys or tonalities. Figure 54 on page 73 illustrates each type of cadence, starting from different positions of the right hand.

In working with chord progressions like these, try to keep the movement from one chord to the next as smooth as possible. Wherever possible, use COMMON TONES between chords--that is, any pitches which two adjacent chords share in common should be retained and repeated in the second chord. Where no common tone exists, use CONTRARY MOTION between the two hands. This means to have the right and left hand move either toward each other or away from each other at each chord change.

Later (in Chapter XI) we will add some other chords to these progressions and you can learn to improvise short preludes. Try to find the various types of cadences at the ends of the phrases in all of your music, as well as any V - VI progressions which occur in the middle of phrases.

PEDAL POINTS

Various technics are used in music to intensify and prolong cadences. You have already been introduced to the DECEPTIVE CADENCE (page 65), which itself can prolong the "idea" of a final authentic V - I progression.

Another technic which greatly extends and intensifies the experience of a final cadence is the use of a DOMINANT PEDAL. A PEDAL NOTE (also called PEDAL POINT or ORGAN POINT) is a single note which appears in the bass of the music, and which is continually sustained or repeated while the harmony is changing above it. The name of this sustained note is derived from the fact that it often appears in the pedal part of organ music (usually written on a third staff below the normal keyboard staves).

A DOMINANT PEDAL is a pedal note which happens to be scale degree 5, or the dominant, of the tonality of the music. In the key of G major, for example, the appearance of many measures with only D in the bass will suggest that such a pedal is occurring. Even as the harmonies change above this note, the constant repetition of the dominant note will lead the listener to expect a final authentic cadence. (Such a pedal point is likely to occur only at or near the end of a piece.) Indeed, one can think of the pedal as an enormous preparation for, and elongation of, the V in a V - I cadence. A dominant pedal is illustrated in Figure 55, page 75.
J. S. Bach, "Little Prelude in C Major" (BWV 924, mm. 11-18)

**FIGURE 55. Dominant Pedal as Preparation for a Cadence**

Fig. 55, J. S. Bach, Verzeichniss der Mitglieder der Bach-Gesellschaft. Breitkopf & Härtel, Leipzig, 1890. Vol. XXXVI, Bd. 4. BWV 924.
Theoretically, one could make a pedal point out of any note in the scale. The other common note which is used as a pedal is the tonic (scale degree 1). This, naturally enough, is called a TONIC PEDAL.

The function of a tonic pedal is very different from that on the dominant, however. A tonic pedal is apt to make the music more static, as it reiterates the "idea" of the home key and home triad. Thus, even though a chord progression is moving above it, the ear is constantly reminded of the fact that we are still in the place where we started! This is illustrated in Figure 56, and was seen also in Figure 46 on page 61.

Remember, then, that the dominant pedal produces a strong sense of forward motion, not being resolved until the final statement of the V and I chords. The tonic pedal, in contrast, keeps us hovering around the home key, with a feeling of tension which will resolve with a return to our starting place.

FIGURE 56. Tonic Pedal

Fig. 56, J. S. Bach, Verzeichniss der Mitglieder der Bach-Gesellschaft. Breitkopf & Härterl, Leipzig, 1890. Vol. XXXVI, Bd. 4. BWV 926.
CHAPTER VI. SEVENTH AND OTHER CHORDS

So far, we have been discussing three-note chords (triads). You have also played these in four parts, with one of the notes of the triad being doubled (generally the root). However, it is possible also to form other four-note chords—notably the SEVENTH CHORDS.

Seventh chords are built much like triads. However, instead of having just two thirds piled on top of each other, they have three thirds piled up! When you do this, you will find that the last (top) note is a seventh (major, minor, or diminished!) above your starting point. This is what gives the seventh chord its name.

In the case of seventh chords, when you play four parts you will actually have four distinct tones. (Verify this by starting on any note and adding three thirds—major or minor.) The different seventh chords are named according to the qualities of the 3ds, 5ths, and 7ths which are arranged on top of the lowest note.

DOMINANT SEVENTH CHORDS

The most important seventh chord is the DOMINANT SEVENTH CHORD. This one consists of a major triad with a minor 7th on the outside. If you start with G, you can build a major triad (G - B - D) and then add a m7 from the root, G, to F. Note that, above the bass, there is a M3 plus a P5 and m7. Looking at the thirds stacked one on top of the other, you find a M3 plus a m3 plus another m3 at the top.

In the key of C major, play a chord on G (which is V in the key), consisting of G - B - D - F (all notes within the key of C major). Such a chord functions as a DOMINANT, and has a very strong pull toward the tonic. In fact, the V - I cadence using the dominant seventh chord is a much stronger cadence than that using just the plain V triad. This seventh chord (G - B - D - F) is indeed a very restless chord. As long as it is sounded, one feels an urgent need to RESOLVE it as soon as possible on the tonic. (Of course, any delay in its RESOLUTION produces a delicious tension in the music, with relief and relaxation only occurring with the sound of the tonic—at last!)

You can build a dominant seventh chord on any tone, as long as the chord contains a M3, P5, and m7. One reason why this chord seems so powerful is that it is unique within a key. There is only one seventh chord with this particular combination of intervals within any major or minor tonality. Verify this fact by building seventh chords on various degrees of major and minor scales. Only the one on the 5th degree will produce the necessary combination of intervals—and, above all, the right sound!

In a minor tonality, it is necessary to use the harmonic form of the scale to produce a dominant seventh chord on the 5th degree of the scale. Remember that only with the harmonic form will you have a major triad on 5 (review pages 53, 64).
FIGURE 57. Use of the Dominant Seventh Chord in Authentic Cadences

Fig. 57, Froberger, *Oeuvres Complètes pour Clavecin*, Vol. I, p. 85. H. Schott, ed. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040, Paris Cedex 01.

Fig. 57, Frescobaldi, *The First Book of Toccatas and Partitas*, Vol. II, p. 89. Kalmus edition number K03047, reproduced by the consent of BELWIN-MILLS PUBLISHING CORPORATION, c/o CPP/BELWIN, INC., Miami, FL 33014

Fig. 57, J. S. Bach, Verzeichniss der Mitglieder der Bach-Gesellschaft. Breitkopf & Härtel, Leipzig, 1897. Vol. XLV, Bd. 1. BWV 814.

(Citations continued)
Because of its unique position, the function of the dominant seventh chord within a key—as a chord on V—is immediately identifiable. We naturally feel that the resultant chord must resolve to another whose root is down a P5 (V - I!). Because we hear this chord as belonging to a particular place within the scale, it becomes important in MODULATION, or changing from one key to another within a piece. This subject will be covered in more detail in Chapter VII.

For example, if you start on the tone E and play E - G# - B - D, this particular dominant seventh needs to resolve to a tonic chord with A as a root (a 5th below E). One very interesting thing about this is that the resolution can be either on a major or a minor triad with the root A. When using the harmonic minor form, it can be shown that the dominant of any minor key is the same chord as the dominant of its parallel major. Remember that the dominant seventh chord, which is also called a MAJOR/MINOR SEVENTH (consisting of a major triad plus a m7), always acts as though its root is scale degree 5 of some key.

The use of dominant seventh chords in cadences is illustrated in Figure 57.

SOME OTHER SEVENTH CHORDS

You can probably figure out what other kinds of seventh chords are possible. One has a minor triad with a m7 on the outside. If you were to build a seventh chord (three stacked thirds, with all notes within the tonality) on the second degree (2) of the C major scale (D), it would in fact be such a MINOR/MINOR seventh chord.

A MINOR/MAJOR seventh chord is one with a minor triad with a M7. This could occur, for example, on I of a minor key such as D minor. In this case the chord would be D - F - A (minor triad), and then, in the harmonic form of the scale, C#.

A MAJOR/MAJOR seventh chord has a major triad plus a M7. This occurs, for example, on I of a major key. In C major, to the C - E - G major triad one could add B, which would be a M7.

These three kinds of seventh chords give "color" to the tones of any key, in the same way that the various types of triads do. None of them has functions analogous to the dominant seventh.

Seventh chords are dissonant chords, needless to say, inasmuch as they contain the dissonant interval of a seventh. In the Baroque period, seventh and other dissonant chords were considered to require RESOLUTION. This means that, eventually, the dissonant interval (the seventh) would have to move downward to a consonance in the next chord.
RESOLUTION, in the musical sense, means relaxation from tension, such as that produced by the harsh sound of a dissonance.

In some Baroque music, however, chains of seventh chords were used to prolong the tension of a musical passage. Such a technic also produces strong forward momentum, as the music seems constantly driven toward the release and resolution at the end of the phrase.

DIMINISHED SEVENTH CHORDS

You might not have guessed this, but there are still two other kinds of seventh chords available to us. The most important of these is called the DIMINISHED SEVENTH CHORD. It consists of three minor thirds piled on top of each other. Another way of describing it is a m3 plus a d5 plus a d7 above the bottom note.

Here is an example of a diminished seventh: C - E♭ - G♭ - B♭♭. This chord, as written here, has a DOUBLE FLAT (♭♭) in it. This symbol means that the note is lowered twice by a half step (or is lowered two half steps!). Thus B♭♭ is ENHARMONICALLY EQUIVALENT (see page 33) to A in equal temperament. (Remember that there is also a symbol, ♯♯, for a DOUBLE SHARP. This symbol, illustrated in Figure 37 on page 51, directs you to raise the note twice by a half step, or to raise it by two half steps.)

Notice that the diminished seventh chord, C - E♭ - G♭ - B♭♭, can actually be "spelled" in more than one way. For example, the same chord could be written as follows: B♯ - D♯ - F♯ - A. Remember, though, that you need to write the letters so that each skip is a third. Don’t write this chord C - D♯ - G♭ - A! (What intervals are these?)

Listen to the diminished triads again, and then to the diminished seventh chords. These chords feel "unstable", and one wants to hear them resolve to a more stable major or minor chord. Like the dominant seventh, then, the diminished chords "pull" you toward a cadential resolution.

A very interesting characteristic of the diminished seventh chord is that we can’t tell which note is the root! This is because all of the thirds within the chord are exactly of the same size. In fact, diminished chords are very much like the scales we examined in which every component is equidistant (see the whole tone and chromatic scales on pages 48-49). Because of this, it is possible to use a diminished seventh chord to jump from one seemingly unrelated key to another (see Chapter VII).

In modulations, the diminished seventh chord can be used in place of a simple VII triad. VII - I, or a diminished seventh chord followed by I, can substitute for V - I as an authentic cadence (see page 64, above). When using the diminished seventh cadentially,
however, any one of its four tones could be heard as the scale degree 7! The use of a diminished seventh to make a distant jump in tonality is discussed further in Chapter VII.

The chord described above can be called a FULLY DIMINISHED SEVENTH chord, with both the 5th and the 7th above the bass being diminished. Another chord, called the HALF DIMINISHED SEVENTH CHORD, has a minor 7th with a diminished triad. An example is: B - D - F - A. The fully diminished form would be: B - D - F - A♭.

The half diminished seventh chord can have a dominant function. Both of these diminished sevenths are generated from the 7th degree of the scale: the half diminished seventh occurs on scale degree 7 in a major scale, whereas the fully diminished chord occurs naturally on scale degree 7 of the harmonic minor scale. Hence both chords can represent V or VII in cadences. However, the half diminished seventh does not have the same flexibility as the fully diminished chord in modulations. In the half diminished seventh, of course, not all the intervals are equally spaced, so the root of the chord is not ambiguous.

Various types of seventh chords, which I hope you have already tried out on your keyboard, are illustrated in Figure 58 on page 82.

**POSITIONS AND INVERSIONS OF SEVENTH CHORDS**

Before leaving the subject of seventh chords, I should mention that you can put them in various positions or inversions, just as you did with triads. Because there are four distinct pitches in any seventh chord, more positions are possible than is the case with triads (three pitches).

Review, on pages 55-58, the distinction between positions and inversions of triads. The same distinction applies to seventh chords. Thus the four members of the chord can be arranged in various positions in the right hand (or between the hands, as long as the note in the bass remains constant). As long as the root of the chord is played in the bass, the chord is in root position. Inversions occur when a chord member other than the root appears in the bass itself.

Another aspect of chord writing and performance needs to be clarified. Sometimes one omits one or more of the inner members of a seventh chord (e.g., the third or fifth). It is also possible to omit the third or the fifth of a triad. However, in order to identify a chord, it is at least essential to hear the root (in some part of the chord!). In a seventh chord, the seventh itself must also be heard, or the chord would become a simple triad! In this manner, one can double different members of a chord, and/or reduce the number of CHORD MEMBERS (the notes actually sounding at any one time) from 4 to 3 or 2.

When a dominant seventh is in root position, one figures it as $\frac{7}{3}$. In the key of C major, the chord G - B - D - F will be designated $\frac{7}{3}$. (Review pages 61-63, and Figure 47 on page 62.)
FIGURE 58. Seventh Chords and their Inversions
Experiment with moving the elements of seventh chords around in the manner in which you did the elements (or members) of triads (see pages 56-59). You will discover that, with a seventh chord, three different inversions are possible.

When the chord G - B - D - F is rearranged so that the B is at the bottom, you have a FIRST INVERSION SEVENTH CHORD, with the third in the bass. This would be figured B_6^3 or, in the case of C major, V_6^3.

A SECOND INVERSION (fifth in the bass) of the same seventh chord would be D - F - G - B, figured as D_6^3 or V_6^3 in C major. Yet another inversion, the THIRD INVERSION would have F (the seventh) in the bass: F - G - B - D. The figures in this case would be F_6^2 or (in C major) V_6^2.

These various inversions of seventh chords are illustrated in Figure 58. Notice that all the inversions of such chords have a 2nd somewhere within the chord.

SHORT FORMS OF FIGURES

The FULL FIGURING of chords and their inversions, as given above, is not always used. In musical analysis, as well as in reading or writing FIGURED BASSES (see SKILL AND STYLE), the musical shorthand represented by figures is usually abbreviated still further!

Among the triads, the root position is normally not designated by a figure. A root position triad is understood if no figures or numbers are present. The first inversion triad is usually given the abbreviated figure of 6. The second inversion, 6, is always given full figuring.

A root position seventh chord (7_3) is generally indicated by the figure 7 alone. The three inversions are abbreviated as follows: first inversion 6_3 = 6; second inversion 6_3 = 4; third inversion 6_2 = 4_2.

OTHER CHORDS

There are some other chord types, besides the triads and seventh chords, which you will occasionally encounter in Baroque music.

The first category of chord types include additional dissonant chords which are created by continuing to add thirds on top of triads and seventh chords. If you add another third to the three comprising a seventh chord, you will have a NINTH CHORD. Continuing to add thirds produces ELEVENTH and THIRTEENTH CHORDS. Each time you add a third, notice that you add another dissonant tone to the chord.
What happens if you try to add one more third on top of a THIRTEENTH CHORD? Try it! If you remain in a single key or tonality, the thirteenth chord is as far as you can go in this direction!

Actually, in Baroque music, these large dissonant chords, when present at all, are usually the result of some kind of ornamentation. Thus the dissonant notes, such as the ninth, are almost always attributed to a SUSPENSION, an APPOGGIATURA, an ACCELLERATION, or other NONCHORD TONE which is added as an ornament. (Suspensions and nonchord tones are discussed in Chapter IX. Other ornaments are described in detail in SKILL AND STYLE.) Sometimes, additionally, such chords (usually incomplete) result from the movement of different melodic voices (see Figure 105, page 134).

Previously I have described some chords which can "stand in" for the V chord (dominant), such as the diminished seventh (see page 80). The NEAPOLITAN and AUGMENTED SIXTH CHORDS can similarly substitute for IV (the subdominant) in certain CHORD PROGRESSIONS. Chord progressions are series of chords which generally lead to a cadence. One of the most common is the series IV - V - I (see Chapter XI). The Neapolitan and augmented sixth chords are sometimes found as colorful substitutes for IV in this progression.

The NEAPOLITAN SIXTH is a major triad, the root of which is scale degree 2 lowered by a half step. This note is called the NEAPOLITAN, often referred to as "flat two". The Neapolitan is an ALTERED TONE; that is, one which does not naturally occur in the scale.

The Neapolitan chord occurs in minor scales. In C minor, for example, the Neapolitan is D♭, and the Neapolitan triad is D♭ - F - A♭. The reason for the word "sixth" in the name of this chord is that it almost always occurs in first inversion, and is thus a 6 (or 6) chord.

The AUGMENTED SIXTH CHORD is another substitute for the subdominant (IV) which contains an ALTERED TONE. The name comes from the interval of an augmented sixth which forms the outer two members of the chord (review the definition of an augmented interval on pages 20-21). The altered tone is part of this interval. Thus, in C minor for example, the augmented sixth consists of A♭ - F♯, the F♯ being the altered tone.

The augmented sixth chord may contain one or two other chord members. In Baroque music, the chord usually contains the third above the root--in C minor this would be C.

The augmented sixth is a dissonant chord, inasmuch as the outer parts sound like a minor seventh. The normal resolution of this chord is for the F♯ to move up a half step to G, while the A♭ moves down a half step to the G an octave below. Thus the "stand-in" chord for IV moves to V in the key of C minor.

The Neapolitan and augmented sixth chords were not used much before the 18th century, and you will find them only rarely in music up to 1750.
CHAPTER VII. TONICIZATION AND MODULATION

ESTABLISHING THE KEY OF A PIECE OF MUSIC

As we saw in the chapter on scales (pages 27, 34), a piece of music is said to be in a particular key or tonality when it is built on that particular scale. A piece in G major, for example, will have a key signature of one sharp. The beginning and end of the piece will almost certainly use notes exclusively from the G major scale. This means, of course, that we think of 1 of the scale (in this case, G) as the "home base" or TONIC of that key as well as of the piece as a whole. It is not necessary to use all of the tones of a scale in order to make a piece of music "in" that scale. We simply need to be able to identify which of the tones is "home base".

In order to establish any key whatsoever, it is necessary to play an AUTHENTIC CADENCE (V - I) in that key (review page 64). A G major triad by itself could have various meanings. For example, it could be III in the scale of E minor, or it could be V in C major. You may be able to think of other contexts in which a G major triad could exist as well. However, in order to hear G as the tonic itself, we must hear it in relation to a D major triad or dominant (major/minor) seventh chord! This will establish the V - I relationship, and G will be heard and recognized as scale degree 1 (root of I).

TONICIZATION

In the course of an extended piece of music, it is possible temporarily to change the "home base". This can be done by the introduction of an ACCIDENTAL (a sharp, flat or natural which is not a part of the key signature). Using this accidental it is also possible to create a cadence (V - I or VII - I), which sounds as though it is in a different tonality.

This new cadence is accomplished by playing a triad or major/minor seventh chord which sounds like V of some key other than the tonality of the piece. When the newly introduced chord is heard as a dominant (V), it is referred to as a SECONDARY DOMINANT. This is labelled V/?, where ? is any chord other than I (see Figure 51, page 70). If the chord represents VII, we call it a SECONDARY VII CHORD (labelled VII/?, as in Figure 51--example from Louis Couperin).

Remember that the establishment of a dominant, V (especially with the added seventh), immediately sets up a requirement for a resolution a fifth below (review pages 77-79). Our ears inform us as to which note is the new tonic! Similarly, hearing a chord as VII (a diminished triad!) makes us want to follow it with a chord whose root is a half step higher.
Figure 59, d’Anglebert, Pièces de Clavecin, p. 27. K. Gilbert, ed. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040, Paris Cedex 01.

Figure 59 shows a piece in G major, although all of the F sharps are written into the music, rather than appearing in the key signature. Notice that C# (an accidental not belonging to the key of G) is introduced before the end of the first phrase. This phrase ends on a D major chord (m. 4). The introduction of that C# suggests a new tonic. C# sounds like 7 in a new scale with D as 1, thus temporarily moving away from G major. As soon as the C# is cancelled, you find yourself back in G major.

In m. 6, a similar move occurs with the introduction of an F natural. This note also does not belong to the key of G major. The measure in which it occurs contains a C major chord, which briefly sounds like the tonic introduced by a first inversion triad on its dominant, which happens to be G (m. 5)! The restoration of the F# in m. 7 immediately reestablishes the G major of the piece.

This type of motion away from one tonic and toward another one is called TONICIZATION. In the examples given (Figure 59) this is very temporary.
MODULATION

Supposing you were to reconfirm one of the new tonic notes momentarily established in Fig. 59 (with another cadence, for example). You might then write an extended passage in the new key (D major or C major). In such a case you would have really moved away from G major. This is no longer a temporary tonicization, but rather a MODULATION into the new key.

Figure 60 gives an example of a piece which has MODULATED from G major to D major. It has an extended passage in D major ending with a cadence in that key. This is a true modulation.

The term MODULATION is used here owing to the length of time that the piece remains in the new key, as well as to its confirmation in mm. 13 - 14 and 15 - 16 by two AUTHENTIC CADENCES (V-I).

FIGURE 60. Modulation from G Major to D Major (Dominant)

A piece of greater length may go through several modulations. Figure 61 (page 88) gives excerpts from a piece which modulates through several different keys. Each new tonic is established with a cadence, and there is an extended passage in each new key. You can hear the piece moving through these various tonalities.
FIGURE 61. Excerpts from a Prelude which Modulates through Several Keys

Fig. 61, J. S. Bach, Verzeichniss der Mitglieder der Bach-Gesellschaft. Breitkopf & Härtel, Leipzig, 1897. Vol. XLV, Bd. 1. BWV 809.
1) C. P. E. Bach

A minor (middle of piece)  
dimin. B minor, confirmed by  
7th  
(3rd omitted)

2) G. F. Handel

E₆ maj: III  
I  
I₆  

diminished 7th chord  to D min: I₆  

FIGURE 62. The Use of the Diminished Seventh Chord in Modulations

Fig. 62, C. P. E. Bach, Sechs Sonaten, p. 16. BREITKOPF & Härtel, Wiesbaden. Used with permission.
As we have seen, the use of secondary dominants for modulation serves to move us smoothly through a series of closely related tonalities. By adding a single accidental, and introducing a major triad (or major/minor seventh chord) which can serve as a dominant, we can jump from key to key in either direction around the circle of fifths.

Another method, touched upon on pages 80-81, is through the use of DIMINISHED SEVENTH CHORDS. Because VII is a diminished triad, the diminished seventh chord sounds like a chord built on scale degree 7. Just as VII can replace V in authentic cadences, the diminished seventh can also replace VII (see page 80).

As pointed out above (pages 80-81), the diminished seventh chord has an ambiguous nature (you can’t tell which note is the root!). Because of this, it is possible to make a large jump (around the circle of fifths) away from the original tonic. The diminished seventh can thus be used to move to an apparently unrelated tonality. Figure 62 on page 89 demonstrates the use of this fascinating chord in modulations.

G. F. Handel, SECOND movement of "Suite" No. 6 (really a SONATA)

Beginning of movement, in F# minor:

End of movement, in C# major:

Typically, this ending forms a dominant of the NEXT movement, which also begins in F# minor.

FIGURE 63. Sonata Movement Beginning in One Key and Ending in Another

(Citation on page 91)
RETURNING TO THE HOME KEY

Usually one wants to reintroduce the original tonic in an extended piece of music. This must be done using the same technics described above. Thus a dominant triad or seventh chord (or, less commonly, a diminished seventh) can be introduced to prepare us for the original tonic. This is called DOMINANT PREPARATION. Only in this manner will the piece end in the same key in which it began.

Sometimes the dominant preparation of the final tonic is greatly extended through the use of a DOMINANT PEDAL. Pedal points were described on pages 74-76, and illustrated in Figure 55 (page 75).

There are occasional exceptions to the rule that a piece must end in the key in which it began. Exceptions occur frequently in 20th century pieces, in which the sense of tonality is not as strong as it is in Baroque music.

Occasionally even Baroque pieces move away from their original key and don’t come back to it. Sometimes this occurs in individual movements of an extended work, such as a sonata. Figure 63 gives the beginning and end of such a movement. However, this is part of a larger key scheme which will take us ultimately back to the tonic key in which the sonata began. There are some other exceptions such as that shown in Figure 64 (page 92), which shows part of a piece by J. S. Bach. This begins in C minor and ends, surprisingly, in G. Possibly this piece was actually intended to be part of a larger work.

In many early 17th century works, particularly among the Elizabethan composers, the pieces begin very strongly in the dominant and only reveal their true tonic much later. Figure 65 (page 93) shows a piece by Farnaby which illustrates this.

THE PERFORMER’S NEED TO FOLLOW THE KEY SEQUENCE

Why do we need to know whether the music has moved from one key to another? There are at least three important reasons for the player to develop an awareness of tonalities.

First, the accidentals (sharps, flats, or naturals) which occur throughout a piece are not there by accident (despite their name!) or caprice. They are there very often because indeed we are using a different scale from that designated by the key signature. (Be aware of the exceptions to this rule in the case of altered chord tones, as well as the use of the harmonic or melodic forms of the minor scale!) When you continue to be alert to the scale you are actually using at any given moment, it is obviously much easier to remember what accidentals are present. Your fingers will much more easily go over the notes if you are conscious of the changes of key.
Beginning of piece, in C minor:

End of piece (moves to, and ends in, the DOMINANT TONALITY, G major):

**FIGURE 64.** Little Prelude by J. S. Bach (BWV 999)

Fig. 64, J. S. Bach, Verzeichniss der Mitglieder der Bach-Gesellschaft. Breitkopf & Härtel, Leipzig, 1890. Vol. XXXVI, Bd. 4. BWV 999.
This piece is in G minor, but it begins on the DOMINANT, D.

Secondly, when ornaments are to be added (see SKILL AND STYLE), you need to remember that auxiliary pitches must conform to the key that you are actually using at the moment. François Couperin graciously informed us of the sharps, naturals, or flats occurring in the upper or lower auxiliaries of trills and mordents. J. S. Bach (and many other composers), however, expected that the performer would know what accidentals to add. Since these depend on the tonality of the moment, it is necessary to be aware of modulations, tonicizations, and changes of scale within the music.

Finally, as interpreters, we need some awareness of the musical significance of changes of tonality within a piece. Different scales represented different "ideas" to baroque composers. Various character traits were associated with each scale, but not always the same ones by different writers and composers. The emotions and character ascribed to each tonality was called its AFFECT.

In any event, one needs to be aware of the movement from a jolly sounding major key to its darker parallel or relative minor. Similarly, movement from a tonic to its subdominant tonality represented the darker side of the musical world to a baroque composer. Therefore, these (and other) modulations should certainly influence your musical expression as a performer.
CHAPTER VIII. PHRASE STRUCTURE

Having learned so far about intervals, chords, and the movement from one scale to another, it's time to put this material together into musical thoughts.

THE ELEMENTS OF A PHRASE

The smallest unit which conveys a complete musical idea is called a PHRASE. A phrase generally must move somewhere harmonically. This means that it should contain a number of different triads--a CHORD PROGRESSION--even if it ends on the same chord on which it began. This harmonic activity and motion needs to be followed by a feeling of repose or rest, giving a sense of completion to the phrase. The phrase ending is often accompanied by a slight pause in the rhythm (either indicated in the musical notation, or simply added by the performer).

Phrases can be as short as two measures in length, or as long as six or eight bars. In Baroque music, four-bar phrases are the most usual length.

Phrases can often be subdivided into smaller sections called PHRASE MEMBERS. Sometimes these smaller sections contain MOTIVES. Motives are musical fragments (usually melodic) which have significance for the entire composition. They usually consist of 2 - 7 notes. To be called a true motive, the melodic fragment must appear at least twice within the phrase. The fragments must be recognizable each time in order to qualify as a motive, but their precise form can vary.

In the minuet shown in Figure 66 (pages 96-97), measures (abbreviated mm.) 1-4 are an example of a phrase. This one has two phrase members of two bars each (labelled a and a'). A 6-note motive extends from the first D to the D in m. 2. The motive is repeated SEQUENTIALLY (similar material repeated in a series) starting in m. 3, although the intervals are not precisely the same. Notice that the same motivic material occurs in the second phrase (beginning in m. 5). Here it is played "upside-down" (INVERTED). Look at the remainder of the piece and discover how this motive appears throughout in various guises.

MELODIC CHARACTERISTICS OF PHRASES

Phrases can be characterized in many ways. Melodically, we can observe the presence or absence of motives, or whether the phrase uses different material throughout. In Figure 66 (page 97), beginning in m. 21, there is a phrase of the latter type (with no motivic material).

Look also at the way a phrase is "shaped" melodically. Where is the peak and the low point? In the first phrase of Fig. 66, the peak occurs almost at the end. In contrast, the
peak occurs right at the beginning of the second phrase, and there is a kind of downward momentum through the whole of this phrase. In the phrase beginning in m. 21, the melodic peak occurs in the second measure.

How would you characterize the beginning of each phrase? Does it start with an UPBEAT? An upbeat is a note or notes starting just before a bar line or before another rhythmically strong point in the meter. Or does the phrase begin with a DOWNBEAT (directly on a strong beat in the meter)? The phrases in Fig. 66 all begin on downbeats—on the strong first beat of the measure. Figure 68 (page 100) shows a phrase beginning on an upbeat consisting of a single note. In Figure 69 (page 100), a group of notes form an upbeat which leads to the first strong beat after the bar line. Often you will find that phrases begin similarly through all or perhaps a large part of a piece.

Phrases are frequently extended through the use of SEQUENCES. In a sequence, a motive is repeated several times (usually three times), but on each repetition the notes begin on a different pitch. Generally a pattern is established such that each sequential repetition begins, for example, a step above the previous statement of the motive. Any pattern can be used: each statement may start a step or a skip of any size above or below the preceding.

To qualify as a SEQUENCE, material must be repeated in the same VOICE (e.g. top or bottom, right hand or left hand), but at different pitch levels. REPETITION occurring at the same pitch is just called repetition, and not sequence. When the material appears in different voices, the process is called IMITATION (see Figure 69, 2 on page 100).

Look for sequences in your music, and discover the pattern used in each. Understanding the pattern will help your performance a great deal. Often you will be able to use the same fingering for each repetition of a motive in sequence, which again will greatly increase your facility.

Observe the sequence in the first phrase of Figure 66 (page 96). Another good example, starting in m. 13 of Figure 66, shows three repetitions of the motive at different pitches.

HARMONIC CHARACTERISTICS OF PHRASES

A study of the harmony within phrases gives us different information. First, the harmonic organization needs to include, at the very end of the phrase, some kind of CADENCE (see Chapter V). This will give the necessary feeling of full or partial repose, and will also give the "signature" of the tonality of the phrase ending.

One way to characterize a phrase harmonically is to determine whether or not the phrase moves from one chord or tonality to a different one. Some phrases simply return to the same place where they started. Phrase 1 (mm. 1-4) of Figure 66 is of the second type. It goes from the tonic (G major) back to the tonic triad (in first inversion). The phrase passes through the subdominant (IV) in m. 3. Phrase 2 (mm. 5-8) is of the opposite type, harmonically. This phrase starts on a II chord, passes through the tonic, and finally ends up on the dominant (V).
( \( P = \) Passing Tone -- marked in the bass only )

Phrase A (a) \( \rightarrow \) (a')

\[
\begin{array}{cccc}
\text{G maj:} & I & I_6 & IV & I_6 \\
\end{array}
\]

Phrase B

\[
\begin{array}{cccc}
II & I & V & I_6 & I & V \\
\end{array}
\]

Phrase A'

\[
\begin{array}{cccc}
I_6 & I & IV & I_6 & (I) \\
\end{array}
\]

Phrase B'

\[
\begin{array}{cccc}
II & VII & I & I_6 & II_6 & V & I \\
\end{array}
\]

**FIGURE 66.** G Major Minuet from the Notebook for Anna Magdelina Bach (BWV Anhang 114)

Fig. 66, J. S. Bach, *Klavierbüchlein für Anna Magdelina Bach*, p. 44. Bärenreiter-Verlag, Kassel. BA 5115. Used with permission.
Note the return to the tonic with the addition of a C⁷ in m. 24

*FIG. 66, continued (G Major Minuet, BWV Anh. 114)*
(P = Passing tone -- marked in the bass only)

Phrase A

EXACT REPEAT of Phrase A

Phrase B' (VERY different from Phrase B!)

FIGURE 67. G Minor Minuet from the Notebook for Anna Magdelina Bach (BWV Anhang 115)
FIG. 67, continued  (G Minor Minuet, BWV Anh. 115)
FIGURE 68. Phrase Beginning with a Single Note Upbeat (U)

1. Louis Couperin

FIGURE 69. Phrases Beginning with Longer Upbeats

2. J. S. Bach

(notice the IMITATION)

Fig. 68, J. J. Froberger, Oeuvres Complètes pour Clavecin, Vol. I, p. 191. H. Schott, ed. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040, Paris Cedex 01.

Fig. 69, Louis Couperin, Pièces de Clavecin, p. 58. A. Curtis, ed. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040, Paris Cedex 01.

Fig. 69, J. S. Bach, Verzeichniss der Mitglieder der Bach-Gesellschaft. Breitkopf & Härtel, Leipzig, 1897. Vol. XLV, Bd. 1. BWV 807.
Another way to discuss the harmony of a phrase, is to define the type of cadence which closes it. Review the four types of cadences described in Chapter V, above. See if you can determine the types of cadences at the phrase endings of Figure 66 (pp 96-97). They will be discussed in Chapter IX, on Analysis.

An additional way to describe a phrase, melodically as well as harmonically, is to observe whether it ends on a strong or a weak beat. All of the phrases in Figure 66 end on the strong beats. This means that the closing harmony is sounded on the first beat of the final measure of the phrase. This is called a MASCULINE ENDING.

Perhaps you can guess that phrases which end on weak beats have FEMININE ENDINGS! This type of phrase ending is shown in Figure 70. This has a very different feeling from the masculine ending. In performance, it is necessary to at least simulate (pretend!) a rather quiet final chord. (On the harpsichord, this can only be accomplished by playing that final chord a little late, and by not holding it very long!)

Another aspect of harmonic organization is the frequency of dissonance within the phrase. Phrases can be extremely dissonant, but resolve at the end to consonances. This highlights the feeling of relaxation and repose at the phrase ending. Figure 71 on page 102 gives an example of a particularly dissonant phrase which resolves in this manner.

Look also at the length of the cadence itself. How much time is spent "preparing" the cadence, for example with the dominant note or chord. The longer the cadence itself, the more conclusive the final chord feels. An extreme example of a long dominant preparation was seen in Figure 55 on page 75. Here the cadence was enormously extended through the use of a DOMINANT PEDAL (see page 74).

It is also possible to delay a cadence, thereby extending and prolonging the phrase. The use of a pedal point, as discussed above, can prolong a phrase almost to the despair of the listener! Another tactic is to insert a DECEPTIVE CADENCE (see page 65, and Figure 53 on page 72) near the end of the phrase. It is then necessary to repeat (not necessarily
Dissonances are created by a remarkable series of SUSPENSIONS.

**FIGURE 71.** Dissonant Phrase, Resolving to a Consonance at the End

Fig. 71, F. Couperin, *L’Art de Toucher le Clavecin*, Prélude I. Source: Facsimile of the 1717 edition, p. 51. Reprinted by arrangement with Broude Brothers Limited, 141 White Oaks Rd., Williamstown, MA 01267

exactly) the series of harmonies that preceded the deceptive cadence. Only then can the final authentic cadence be re-introduced convincingly.

Another important point about the harmonic structure of the phrase concerns what we call HARMONIC RHYTHM. This refers to the *rate of change* of harmonies within a phrase or a piece. Looking again at Figure 66 (pages 96-97), the CHORD SYMBOLS (Roman numerals with figures to indicate inversions) written below the music show how rapidly the harmonies are changing. For a review of the chord symbols, as well as the figures and their abbreviations (short forms), see pages 52, 61-63 and 81-83, above.

In the first phrase of Figure 66 (mm. 1-4 on page 96), for example, there is only one chord change per measure. This phrase has a *slow* harmonic rhythm—in fact, even slower than would appear on the page. Essentially the harmony in 3 of the 4 measures is all tonic triad (twice presented in first inversion).

Look at the final phrase in that piece (mm. 29-32, page 97), and notice how frequently the chord symbols are changing! In this place the harmonic rhythm is *fast*. Can you hear
Notice the musical effect of the strong harmonies on weak beats -- one temporarily loses the sense of where the barlines and downbeats are located!
In example 2, it is very hard to find the beats, so they have been numbered for you.

**FIGURE 72. Examples of Strong Harmonies Placed on Weak Beats**

Fig. 72, D. Scarlatti, *Sixty Sonatas*, Vol. I, p. 83 (K140) R. Kirkpatrick, ed. Copyright © G. SCHIRMER, INC. (Copyright Renewed) International Copyright Secured. All Rights Reserved. Reprinted by Permission.

Fig. 72, J. S. Bach, *Verzeichniss der Mitglieder der Bach-Gesellschaft*. Breitkopf & Härtel, Leipzig, 1890. Vol. XXXVI, Bd. 4. BWV 903.
the difference, in the complexity of the sounds which accompany the continual chord changes in this final phrase?

A different aspect of harmonic rhythm is the consideration of whether the strongest chords in the key (such as I and V) occur in rhythmically strong places in the measure. In other words, do strong harmonies correspond with the strong beats of the meter? Figure 72 (page 103) shows two phrases in which strong chords occur on weak beats, resulting in a kind of CROSS RHYTHM between the harmony and metrical structure of the phrase.

OTHER ASPECTS OF PHRASE STRUCTURE

Notice whether a phrase seems to be complete in itself, or whether it is LINKED in any way to a subsequent phrase. One type of simple LINKAGE can be seen at the end of the second phrase (mm. 5-8) in Fig. 66 (page 96). Here you see an upbeat, in the left hand, which begins a new phrase while still completing the final measure of the old phrase.

Another type of linkage is the ELISION. This is seen in the third phrase (mm. 9-12) of the same piece. Here the bass movement toward the new measure has begun before the end of the melody in m. 12. Thus the fourth phrase begins before the third phrase has ended! Another example of an elision is seen in Figure 73. The ending of the first phrase does not have much feeling of repose, because the dissonant passing note in the bass is already beginning the next phrase. Additional examples of such linkages are seen in Figure 75 on page 107.

![Rameau](https://example.com/rameau.png)

**FIGURE 73. Example of an Elision, where Phrases Overlap**

The first phrase (end of m. 4) ends on a DISSONANCE, propelling you onward into the next. (See also the two examples in Figure 75, below.)

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Fig. 73, J.-P. Rameau, *Pièces de Clavecin*, p. 13. K. Gilbert, ed. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.

Fig. 74 (p. 105), J. J. Froberger, *Ouvres Complètes pour Clavecin, Vol. I*, p. 194. H. Schott, ed. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.


Fig. 74, G. Frescobaldi, *The First Book of Toccatas and Partitas, Vol. II*, p. 77. Kalmus edition number K03452, reproduced by the consent of BELWIN-MILLS PUBLISHING CORPORATION, c/o CPP/BELWIN, INC., Miami, FL 33014.
Play these -- notice the varying degree of "finality" of these phrase endings.
(All of the examples show the final chord of the piece!)

1. Froberger -- Final triad has the ROOT on top

```
A minor: I IV7 V III6 I6 V I major
```

2. Adapted from Giles Farnaby -- Final triad has the THIRD on top

```
G major: I II IV VI V I II V I
```

3. Adapted from Frescobaldi -- Final triad has the FIFTH on top

```
D minor: I II V6 I V I6 V I major
```

* The raised (sharp) third on the final tonic triad of a minor piece is called a PICARDY THIRD. It was a conventional ending in the early 17th century.

**FIGURE 74.** Cadences with Different Triad Members on Top of the Final Chord

(Citations on page 104)
The most restful and conclusive ending to a phrase occurs when the root of the final triad appears in both the bass and the high treble. Compare the four phrase endings in the first half of the minuet in Figure 66 (page 96). Only the last phrase ends in this manner, with the tonic note, G, in both bass and soprano.

Figure 74 on page 105 gives several phrases ending with V - I cadences, but with different members of the tonic triad as final notes. Notice that the degree of finality or "completeness" varies with different combinations. (This figure also shows a "PICARDY THIRD". Seventeenth century pieces in the minor mode usually ended on a major triad with the tonic as the root. Thus the third of the I triad was raised a half step.)

Finally, it is important to notice how phrases are combined in music. Often two phrases appear to be paired, with the second phrase giving some kind of answer to the first. Such pairs are called ANTECEDENT-CONSEQUENT PHRASES (sometimes called "QUESTION AND ANSWER"). Two examples are shown in Figure 75 on page 107. The material in phrases A and B can be seen to be parallel, but the endings are different. Another, less clear, type of pairing is seen in Figure 66 (p. 96), particularly with the two phrases that close the first half of the minuet.

THOUGHTS ON PHRASING FOR THE PERFORMER

The study of phrases is important for performance. In order that the phrases be conveyed to the listener, the player must have the entire phrase in mind from its beginning. He or she needs to focus on each phrase ending, as the music flows throughout each musical thought. Only then will there be rhythmic motion from beginning toward the end of each phrase, with a true sense of repose at its conclusion.

In studying your pieces, then, you must locate the cadences in order to define the phrase endings. Once delineated, notice as much as possible about the structure of each phrase. Where does its peak occur? Is it connected to another phrase in some way, either by linkage or as an antecedent-consequent pair? Does the music seem to come to a complete stop at the end of the phrase? How does the musical content of this phrase fit into the larger groupings of the piece (see Chapter IX, below)?

On the harpsichord, the shaping of phrases involves subtle rhythmic alterations, since the instrument does not have the capability of waxing and waning in loudness. It is usually necessary to make a slight pause at phrase endings, even when an elision or other linkage occurs. One needs to select the best point at which a slight rhythmic alteration would most clearly delineate the phrase ending and beginning. An awareness of moments of harmonic tension and dissonance, with subsequent resolution to consonant chords, will help shape the phrase as the composer intended. The technics involved in such subtle shaping and coloring of musical ideas are described in SKILL AND STYLE as well as in STARTING ON THE HARPSCICHORD.


Fig. 75, F. Couperin, Pièces de Clavecin, Vol. I, K. Gilbert, ed., Ordre I, p. 3. Published with the kind authorization of Éditions Heugel, 175 Rue Saint-Honoré 75040 Paris Cedex 01.
1. H. Purcell -- a simple example

Phrase A -- Antecedent

Phrase B -- Consequent

ELISION

2. F. Couperin -- a more complicated case, with each phrase divided into two parts

Phrase A (a) (b)

Phrase B (a) (b)

ELISION

FIGURE 75. Antecedent-Consequent ("Question and Answer") Phrase Pairs
(Notice also the Elisions--refer to Fig. 73)
CHAPTER IX. MUSICAL ANALYSIS

You have, in fact, been analyzing all of your pieces from the beginning. Anything that one says, in words, about the structure or musical content of a piece constitutes some form of analysis. This section serves to summarize, in a way, the kinds of analytical procedures you have been using all along. It also represents a continuation and extension of material discussed in the last chapter on phrase structure.

Before beginning this chapter, please review (on pages 52, 61-63 and 82-83) the use of chord symbols and their abbreviations.

To illustrate the process of musical analysis, I will use two well-known minuets from the Anna Magdalena Bach notebook. The first of these, in G major (BWV Anh. 114), has already been much discussed above in the chapter on phrasing (Figure 66, pages 96-97). The second minuet, in G minor (BWV Anh. 115), is paired with the first. This has been placed next to it in Figure 67, pages 98-99.

ANALYSIS can involve many different approaches to the study of a piece. You have seen its use in the determination of PHRASE STRUCTURE. Analysis can also mean the study of the FORM of a piece (FORMAL ANALYSIS). It can also involve the study of the harmonic structure of the piece (HARMONIC ANALYSIS).

The two minuets which will be discussed, are almost entirely in two parts or VOICES. Some further explanation is given (below) of how one determines what chords are represented by the two notes which are sounded simultaneously. Of course, when four parts are present it is easy to determine which triad or seventh chord one is dealing with, since all elements of each chord are likely to be present. Figures 52, 2 (page 71) and 76 (page 109) shows how this can be done.

There is a new element present in Figure 76 which has not previously been discussed. This is the SUSPENSION. Frequently a tone from one chord is held over, or repeated, in the next chord. That produces a dissonance due to the NONCHORD TONE present within the second harmony. Such suspensions must resolve (usually downward) to a consonance within the following (third) chord.

See how a SUSPENSION works in mm. 1-2 of Fig. 76. The F from the ALTO VOICE (second from the top) of the F major triad is played again on the downbeat of m. 2. This note clashes with the remainder of the new triad (G major in first inversion). The F then moves down to E, forming a consonant part of the third triad (C major).

When only two parts are present, it is not so obvious which chord is intended. Perhaps the two voices include the root and third (less often, the fifth) of the chord only. (See the discussions on pages 59 and 81.) Occasionally only the root is present (remember that the root is always present!). A little imagination is sometimes needed to fill out the members of the chords, and to guess which of the two pitches is most likely to be the root.
It is necessary, also, to determine whether PASSING TONES are present in the musical lines. These are another kind of NONCHORD TONE, which is simply "passing" or moving from one chord tone to the next. One needs to decide whether to interpret some of the notes as passing tones, or whether to analyze each vertical pair of notes as a separate chord.

Let us begin with a FORMAL ANALYSIS of the minuet in Figure 66 (pages 96-97). This has nothing to do with dignity, but merely refers to the fact that we are about to examine the musical FORM!

First, observe that the piece is BINARY (two sections, each of which is repeated). The two "halves" or sections are of equal length, each consisting of four phrases. Each of these phrases (designated by capital letters) is also four measures in length. In the first half, since phrases 3 and 4 are variants of 1 and 2, we indicated them by the letters A, B, A' and B'. Some of the phrases seem to be further divisible into two PHRASE MEMBERS (labelled a and a' in the first phrase, mm. 1-4).

Look at the beginnings and ends of phrases to identify the cadence types (see also Chapters IV and V, above). Phrases A and A' begin on chord I (tonic), pass through IV, and end on I₆, making a plagal cadence. Phrase B starts on II, and ends in a half cadence, I - V. Phrase B', while also beginning on II, this time ends with an authentic cadence (V - I) to close the section. The closure of the first half on the tonic, G major, is not too common in binary pieces.

The second half of this piece has four distinct phrases. Since there is no repetition of material, they are best designated with distinct letters: C, D, E, and F.
Phrase C moves deceptively from I to V\textsubscript{6} to VI, and finally ends on a SECONDARY DOMINANT (V/V). This sets up the possibility of a MODULATION to the tonality of D major, which is the key of the dominant. (Review pages 85-90.)

The whole of phrase D is actually in the key of D major. The Roman numerals in Figure 66 for this phrase refer to chords in that tonality. The phrase ending is an authentic cadence in D major. Immediately after the cadence, the reintroduction of C\textsuperscript{\upshape 3} brings us back to the G major tonality. The D major "triad" (here represented only by the doubled root, D) is REINTERPRETED. This means that we have first called it "I" in the key of D major, and later choose to call the same triad "V" in the key of G major.

Phrase E also ends on a D major chord. This time the D major triad clearly forms the end of a half cadence (I - V) in the original tonality of G major. Phrase F, beginning on the V, moves through two cadences (V\textsubscript{7} - I and V - I) to end the piece with great finality.

Notice how the HARMONIC RHYTHM (page 102) is speeded up in phrases D and F. In phrase D, the use of two cadences (V\textsubscript{7} - I followed by V - I) serves to very quickly establish the new D major tonality. In phrase F, the same device is used to finalize and confirm the end of the piece, which is now solidly in the tonality in which it began.

The minuet in G minor (Figure 67, pages 98-99) is intended to be played together with the G major minuet. The sequence of performance should be: G major (with all repeats)--G minor (all repeats)--G major (no repeats).

The form of the G minor minuet is again binary, with four phrases of four measures each in each section. The pairing of the two minuets is quite evident—unusually so in that much of the MOTIVIC MATERIAL (see p. 94 for a definition of "motive") occurring in the first one appears also in the second, transposed to the minor mode.

In Figure 67, phrase A, motives appear in mm. 2 and 3 which resemble those of mm. 1 and 2 of Figure 66. In phrase B the melodic material is almost identical to that of phrase B in the G major minuet. The third phrase should be called A again, as it is identical to the first phrase (except for the B\textsuperscript{\upshape 7} in the left hand in m. 12). Phrase B', on the other hand, is very different from B, although it uses similar motives.

Compare the second halves of the two minuets. Except for the change of mode, the phrase structures and motivic material are very similar.

Despite the close melodic parallelism of the two minuets, harmonic analysis reveals much that is different. The very first phrase in Fig. 67, for example, ends in a half cadence on V. Phrase B', indeed, actually modulates to a new key, the relative major (B\textsubscript{b} major). In Fig. 67, the chord analysis shows the beginning of phrase B' as still in G minor. The chord progression is shown by Roman numerals in both the old and the new tonalities, demonstrating the transition from one to the other.
The second half of Figure 67 remains in B♭ major for two phrases. In phrase C, however, the dominant (F) is TONICIZED (page 86) through the introduction of E♭. At the end of phrase D, the B♭ major triad can be reinterpreted as III of G minor, because phrase E has clearly moved away from the key of B♭ major (compare the treatment of the D major triad in m. 24 of Figure 66).

Notice that the transition (in mm. 24-27 of Fig. 67) from the relative major (B♭) back to the tonic minor (G) is gradual and somewhat nebulous. This easy "slippage" from relative major to minor (and the reverse) is characteristic of the relationship of the two scales. The appearance of F♯ in m. 27 finalizes the move to G minor, as this pitch has no place in a B♭ major scale.

In phrase F of Fig. 67, the harmonic movement is similar to that of phrase F in the G major minuet. Notice the important differences, however. The authentic cadence appears only once, with what effect on the sound of this ending?

It should not be necessary to analyze all your pieces in such minute detail. As you can see from these examples, however, the process of analysis can make one aware and appreciative of many facets of the compositional process. Many of these details can be emphasized in performance, bringing them equally to the awareness of your listeners.
CHAPTER X. TRANSPOSITION

Sometimes it is convenient or necessary to TRANSPOSE (or move) a passage or an entire piece from one tonality into another. In ensemble work, voices or sometimes instruments cannot sing or play at the written pitches. One occasionally encounters a piece which is not in a convenient range for your keyboard, and therefore needs to be transposed. Thirdly, transposition is an excellent way to develop a good understanding of tonality and modulation.

Let us start with a very simple melody, Frère Jacques, shown in Figure 77. This SETTING (melody with composed accompaniment) is HOMOPHONIC (chordal) rather than CONTRAPUNTAL (with voices set against each other), as we usually hear it (in a CANON or ROUND). These terms are explained more fully in SKILL AND STYLE. However, the result is that the well-known melody is accompanied by very simple chords: I - V - I, with a dominant seventh chord (second inversion) leading to the tonic triad (I) at the end.

The ARABIC numerals represent SCALE DEGREES.

FIGURE 77. Frère Jacques, in C Major
If you are still unfamiliar with the chord symbols and their abbreviations, review pages 61-63 and 81-83, above.

First, transpose the melody of Frère Jacques from C major, as given, into another key. Melodic transposition involves understanding the relationships of notes to each other within their scale. Then, keeping these same relationships, a different scale can be used. In practice, the simplest way to do this is to think of each note as a SCALE DEGREE, first in its original key, and then transferred to the new scale.

In the melody of Figure 77, the scale degrees of the first four measures are as follows: 1 2 3 1 / 1 2 3 1 / 3 4 5 -- / 3 4 5 --. Without looking at the music, see how easy it is to play the same sequence of scale degrees in any other major scale. In Figure 78, you can see the resulting notes in G major. Try to do the same in F major, or any other tonality.

**FIGURE 78. Frère Jacques, Transposed to G Major (1st four bars only)**

Now that you know how, transpose the rest of the melody from C major into G major and F major. The end is given in Figure 79 in F major, so you can check your work.

**FIGURE 79. Frère Jacques, transposed to F major (mm. 5 - 8 only)**

The BASS LINE (the very lowest notes of the accompaniment) can also be given the Arabic numbers of scale degrees. Bars 1 - 4 are: 1 - - - / 1 - - - / 1 - 7 - / 1 - 7 -. This should be easy to do in any other key! Try to play this in G major without looking at the music, along with the right hand part. Check your work in Figure 78.
Possibly a little more difficult is to imagine the chord progression itself, now using the Roman numerals in the key of C major. Bars 1-4 go like this: I / I / I - V - / I - V - /. Remember that you must keep the original bass line while filling in these harmonies.

Practice these bars in G major, and check your results against Figure 78. Try the same technics for the last four measures, and compare the F major version in Figure 79.

Try transposing this simple piece into other keys, such as D major, B♭ major, etc. An interesting experiment would be to transpose it into a minor key. Remember that the V chord must remain major! This is accomplished by raising the 7th degree (harmonic form of the minor scale).

A slightly more complicated example, in which the original modulates into a new key, is given in Figure 80. This is the first half, consisting of two phrases, of a binary piece in the key of F major. The first phrase of the example, in F major, ends in a half cadence of I - VII (with VII taking the place of V). The second phrase actually modulates to C major, and can be treated in its entirety in that key (the dominant of F).

First two phrases, in the original key of F major

2nd phrase is in a NEW KEY!
(the DOMINANT = C major)

1st phrase, F maj: 1 5 5 3 1 2 7 1 1 5
harmony: I V I6 I II V6 I VII

C maj: 4 2 5 3 4 5 5 1 5 1
harmony: IV II V III IV 15/4 V I 1

FIGURE 80. Piece from the Notebook of Anna Magdelina Bach (BWV Anh. 131)

Fig. 80, J. S. Bach, Klavierbüchlein für Anna Magdelina Bach, p. 101. Bärenreiter-Verlag, Kassel. BA 5115. Used with permission.
In Figure 80, both Arabic and Roman numerals are indicated throughout. Since the piece is in two voices only, it is possible to transpose without doing the harmonic analysis. However, the Roman numerals should help your understanding of how the notes of the two parts combine.

I have transposed these two phrases into C major in Figure 81. Notice that, since the second phrase is in the dominant key (now G major), it is necessary to include the accidental F♯ in the new key.
Now try transposing Figure 80, at first with the hands separately, into one or two other keys. As you do this, you will find you need to think strongly in the tonality in which you are playing. It will also help if you carefully observe MELODIC INTERVALS between consecutive notes as you proceed. For example, the octaves in the bass (mm. 1, 3, and 7) as well as the octave leap in the SOPRANO (top) VOICE (m. 5) are useful landmarks. Use your knowledge of the skips and steps along the way, but be sure to think in terms of the new scale. Only then will you remember to add accidentals where necessary.

A final example, also from the Anna Magdalena Notebook, is the G minor Polonaise in Figure 82. This will illustrate the process of transposition from a minor key—necessarily a little more complicated than the major owing to the various forms of the minor scale.

First two phrases in the original key, G minor

\[
\begin{align*}
\text{G minor:} & \quad 1 \quad 1 \quad 1 \quad 7 \quad 6 \quad 7 \quad 5 \quad 1 \quad 1 \quad 4 \quad 5 \quad 1 \\
\text{harmony:} & \quad I \quad IV^6 \quad VII \quad V7 \quad I \quad IV \quad V \quad I \\
\end{align*}
\]

**FIGURE 82. Polonaise from the Notebook of Anna Magdelina Bach (BWV Anhang 119)**

The harmonic analysis of Figure A76 is complicated by the presence of several ornaments. On the downbeat of m. 2 is a BASS SUSPENSION—the G from the previous chord is held over into the new chord (VII), resolving downward to the F# according to rule (see page 108). The final measure is confusing, and makes harmonic sense only if the two B flats in the soprano voice are viewed as ornamental notes, with the A being a chord member (of V). Additionally, there are PASSING TONES (see page 109) in the first three bars which fill in the spaces between chord tones (e.g. the A in m. 1, soprano voice). The E♭ in the bass of m. 2 is also an ornament.

Melodically, the right hand is very straightforwardly in G minor, with scale degrees as indicated. The left hand, however, shows the minor scale in its MELODIC FORM (page 45) in m. 2. It is important to remember this, since the sequence 1 - 7 6 7 5 would vary according to the form of the scale.
These phrases are transposed to D minor in Figure 83. Notice the left hand passage in m. 2. D minor in its natural form would result in the sequence: D - C - B♭ - C - A. What would the harmonic form of this scale give you? Only the melodic form with raised 7 (C♯) and 6 (B♭) will give you the same sound as the original.

\[ D - C - B♭ - C - A. \]

Notice that the bass line has been transposed down an octave as well.

**FIGURE 83. Polonaise (BWV Anh. 119) Transposed to D Minor**

Finally, one can note the occasional OCTAVE TRANSPOSITIONS used to smooth out a passage or to squeeze all the notes onto your keyboard. This type of transposition is necessary much of the time, especially since harpsichord keyboards are not standardized! Try to look ahead in your music, and judge the best places to bring the bass or soprano up or down. It is possible to do this in such a manner that the listener will be unaware that any notes have been moved from their original position!
CHAPTER XI. CHORD PROGRESSIONS AND IMPROVISATION

It is beyond the scope of this book to discuss all the ways in which one can improvise at the keyboard. However, there is one style of improvisation which is of special importance to harpsichordists. In 17th century England, this was called "PRELUDING". It is expected, when performing a group of pieces in a single tonality, that you precede the group with a free style piece called a PRELUDE.

We are indeed fortunate that some early composers wrote some of their improvisations down, which we can use as models (see SKILL AND STYLE). However, if no prelude is written, it is still desirable to perform an improvisation in the key of the music to follow.

This may sound impossibly difficult. However, all it involves is the construction of a CHORD PROGRESSION in the given key. This can be quite simple, but then one needs to open it out in such a way as to make a nice piece. Preludes are pieces in FREE STYLE, and are often played in an UNMEASURED manner (see SKILL AND STYLE.)

In this section you will use your knowledge of chords to develop the capacity to improvise little preludes. These will at first be very short and simple; later you can try longer and more elaborate improvisations.

Through a series of musical examples (Figures 84-105) on the following pages, I will illustrate the technics involved in creating improvised preludes. The examples are (with one exception) all in C major, as it is probably easiest for you to think in that key. However, you should immediately transpose each progression into other tonalities. Just remember that in minor keys, you must still use a major triad on the dominant. This involves the use of the harmonic form of the minor scale.

Observe that OCTAVES and FIFTHS are occurring in PARALLEL MOTION.

Notice also the ugly jumps from one chord to the next.

FIGURE 84. Forbidden Progressions!
Figure 84 shows a very simple chord progression: I - V - I in the key of C major. Actually, Fig. 84 is not a desirable way to play these chords! The example contains what are called FORBIDDEN PROGRESSIONS. These include PARALLEL OCTAVES between the lowest note in the right hand (RH) and the bass. There are also PARALLEL FIFTHS between the lowest and highest notes in the RH. Notice also that there are ugly jumps from one chord to the next.

Figure 85 shows the use of COMMON TONES to avoid ugly jumps and thereby achieve a SMOOTH PROGRESSION. In the series I - V - I, the note G is a common tone. This note is retained in the same place (or repeated), as you move from chord to chord. The other members of the chords move up or down to create the correct harmonies. Notice how this can be done from various POSITIONS of the triads (review pages 55-56).

Another important feature demonstrated in Figure 85 is the use of CONTRARY MOTION between the moving parts in the two hands. This means that as the RH goes down, the LH (left hand) goes up, and vice versa. The use of contrary motion enables you to avoid the "forbidden" parallel octaves and fifths.

Figure 86 shows the progression IV - V - I. Without common tones between the first two chords, one can still use contrary motion to achieve a smooth progression.
Sometimes you need to change the position of one hand on the keyboard. This happens frequently when your hands get too close together, but you might want to do this for other reasons, just to make a change in the relative position of one part. This is called changing TESSITURA.

Figure 87 shows you how to change tessitura. Usually you do this when you can repeat a chord, and simply move it to a new position. Similarly, you can change octaves in the bass while retaining the same chord above. In contrast to Fig. 84, this kind of jumping is not ugly, and the holding of one part against the other avoids any parallel motion. These leaps can be done freely, at any time. Later you will learn to ARPEGGIATE the chords gracefully, and any sense of ugly, chunky motion will be avoided.

Use the SAME CHORD in different positions.

![Figure 87. Changing Tessitura](image)

So far you have been using BLOCKED CHORDS in CLOSED POSITION. This means that the four-note chords have been played solidly, with three of the notes taken in the RH. Fig. 88 shows the same I - V - I progression in OPEN POSITION. Here two notes are taken by the LH and two by the RH. Now the chords are spread out more evenly, giving more possibilities for the movement of the voices.

Note: Some of these notes are VERY hard to reach!

For a possible solution, see the next example (Figure 89).

![Figure 88. Progressions in Open Position](image)
Since no rhythmic values have been indicated, you can hold notes as long as you like. They do not have to be all the same!

FIGURE 89. Arpeggiation, or Broken Chords

Figure 89 shows the use of ARPEGGIATION. Here the chords are broken—that is, spread out with the notes coming one after another. If you like, you can hold many of notes down, so that you get a continuation of the harmony. Notice, also, that you can prolong the individual harmonies in interesting ways, using each chord several times as you break it.

Arpeggiation is a beautiful effect on the harpsichord. In fact, you will want to use it most of the time when you create preludes. Sometimes it helps to think through your harmonic progression with blocked chords, adding the arpeggiation later. There are an endless variety of ways to break or arpeggiate chords, giving an equal number of ways to perform a simple chord progression. Study the different approaches used in these examples, and also begin to examine composed preludes to see the various imaginative ways in which chords can be presented.

FIGURE 90. Establishment of a Meter with Arpeggiation

Figure 90 shows the use of arpeggiation to establish a meter (in this case, \( \frac{4}{4} \)). (Review the topics of rhythm and meter on page 1.) Although this music is written in a metrical way, the performance can still be in a free style. However, a somewhat loose idea of meter will give your prelude more shape than it would have were it without reference to any strong or weak beats.
Remember that one of the most beautiful aspects of music is the occurrence of DISSONANCE which ultimately resolves into CONSONANCE. Figure 91 shows you how to introduce NONCHORD TONES into your arpeggiated chord progression. These particular dissonant notes are called PASSING TONES (page 109). They are not part of the chords, but pass melodically from one element of a chord to another. As they arrive at a chord tone (chord member), the dissonance disappears, resolving to the consonant sound of each triad.

Notice that the PASSING TONES are placed on the WEAK parts of beats.

**FIGURE 91. Use of Passing Tones (marked "P")**

In performance, it is usual to SLUR the suspension to its resolution.

**FIGURE 92. Suspensions (S) and their Resolutions (R)**

Remember, as you play these preludes, to perform them in a free and easy style, not sticking too closely to the meter, even where indicated. The use of the metrical form should
give you a sense of strength and weakness, downbeat and upbeat, and an overall shaping of phrases. Playing preludes rigidly, as though with a metronome, will quickly destroy the sense of their improvisatory nature.

When examining these examples, also, try to contrive others of your own invention, following the chord patterns and other musical elements illustrated herein. See how many different tonalities you can use with your own progressions, once you have transposed these!

Figure 92 shows another way to achieve dissonance. This is through the use of a SUSPENSION. A suspension is a note which is derived from one chord and held over into the next one (see page 108). It can either be held (suspended), or the note can be repeated as the new chord is played. The musical result is the same, but try them both ways!

The dissonance created by a suspension must be resolved, usually downward, into a consonance. This can be done either by moving by step into a chord tone of the second chord, or by step downward into a chord tone of a third chord which follows immediately. These possibilities were illustrated in Figure 76 on page 109.

Some suspensions do resolve upward, particularly if they involve the 7th degree of a scale. The suspension and its resolution are given FIGURES, just as chords are. The figures represent the intervals above the bass, first of the suspended dissonant note, and then its resolved consonant note. Thus 4 - 3 and 7 - 1 or 2 - 1, as shown in Fig. 92.

Figure 93 shows still another kind of ornamental note, which often results in dissonance. This one is called an ANTICIPATION. The anticipation is just the reverse of a suspension. It is a note which belongs to the following chord, and is therefore a nonchord tone in the place where it is introduced. As with the suspension, the anticipation can be held or repeated with the harmony of the new chord (the latter is more usual with the harpsichord).

With Figure 94 (page 124), you are still using the very simple I - V - I chord progression. However, you can always add some ORNAMENTS to your arpeggiated chords, as you have learned to do in composed pieces (see STARTING ON THE HARPSICHORD and SKILL AND STYLE). In Figure 94, the addition of some TRILLS and MORDENTS shows you how to create quite a lovely and distinctive prelude with the most economical harmonic means possible.
FIGURE 94. Adding Ornaments to Simple Progressions

The basic chord progression, using the final pitches used below:

The finished prelude (passing tones indicated by "P"):  

FIGURE 95. Use of a Triad Inversion and a Seventh Chord in a Progression  
(Original Composition by Léonic Jenkins)
You are now ready to try some more elaborate chord progressions. The finished preludes in Figures 95 through 102 were especially composed by Léonie Jenkins in order to show you how. See if you can add these more complicated elements to your improvisations, a little at a time!

Figures 95 and 96 show slightly longer progressions which use triad inversions, as well as seventh chords and their inversions. Notice that the dissonant notes which are chord tones in the seventh chords must resolve downward.

The basic chord progression. Can you make another version (same chords, different pitches)?

\[
\begin{array}{cccccc}
I & III & IV & II_6^6 & V & V_7 & I \\
\end{array}
\]

The final prelude. Can you make another version?

\[
\begin{array}{cccccc}
I & III & IV & II_6^6 & V & V_7 & I \\
\end{array}
\]

**FIGURE 96.** Use of the First Inversion of a Seventh Chord (Original Composition by Léonie Jenkins)

Now you can extend these simple ideas in order to make more substantial pieces. Remember, as the progressions get longer and form more than one phrase, you need to end each phrase with a cadence. These next few examples will illustrate other aspects of chords and their relationships which you have already learned.

Figure 97 (page 126) shows the use of SECONDARY DOMINANTS (V_7/IV and V_7/V). Also shown is a DECEPTIVE CADENCE (V_7 going to VI). Notice how this postpones the end of the piece. Note also the extensive addition of ornamental tones. These include passing tones and many others. Try to understand their use without worrying about their names! Refer to **SKILL AND STYLE** for more information.
Basic progression:

One possible prelude from the same progression (count the bars and compare!)

Added ORNAMENTAL TONES are circled (see page 125)

*Although this ornament resembles a passing tone, in this position (on a strong beat) it is called an APPOGGIATURA (see SKILL AND STYLE).

**FIGURE 97. The Use of Secondary Dominants and a Deceptive Cadence**
(Original Composition by Léonie Jenkins)

Figure 98 is a much more elaborate progression. A secondary dominant (V6/V) is used "decoratively", as a colorful PASSING CHORD. The phrase moves through another
secondary dominant ($V_6/VI$) to end on VI (a deceptive move—see pages 65 and 110). The progression ends with a PLAGAL CADENCE, in its position as a final afterthought (like the "Amen" cadence, page 65). Can you distinguish the ornamental tones?

![Basic progression diagram](image-url)

One version of this prelude:

![One version of this prelude diagram](image-url)

*FIGURE 98. More Secondary Dominants, with a Plagal Cadence to Finish (Original Composition by Léonie Jenkins)*
Basic progression:

One prelude based on this progression:

**FIGURE 99. Two Phrases, the First Ending in a Half Cadence**
(Original Composition by Léonie Jenkins)

Figure 99 illustrates the use of a HALF CADENCE at the end of a phrase. The second phrase has a DOMINANT PEDAL—with scale degree 5 played repeatedly in the bass while varying the chords above it. This anticipates the final strong V - I cadence.

Figure 100 (next page) uses a diminished seventh chord (labelled VII7).

Figure 101, on page 130, is a much longer progression which actually MODULATES into a second key and then returns. Remember that the modulation must be prepared with a secondary dominant. To remain significantly in the second key, you need to make a chord progression in the new key. To complete your piece, you must return via a dominant to the original tonality. This progression uses a minor tonality (C minor) to give an example of the use of the minor mode. Hopefully, you are trying your other "practice" preludes in minor.
keys as well as major. The prelude which represents one "realization" of the chord progression in Figure 101 appears on page 131 (Figure 102).

Basic progression:

\[
\begin{array}{cccccccc}
I & III & VII7/VI & VI & II7 & V7 & VII7/VI & V/III & IV7 & II6 & I6 & V7 & I & IV4 & I
\end{array}
\]

Here’s an example of the use of this progression:

Notice the DIMINISHED SEVENTHS in mm. 3 and 6, as well as the DECEPTIVE MOVES in mm. 6 - 7.

**FIGURE 100.** The Use of Diminished Seventh Chords
(Original Composition by Léonie Jenkins)
Can you work out the chord symbols for this progression yourself? You can compare with the fully realized prelude in Figure 102. Use these chords to work out which notes in the Prelude are chord tones, and which are ornaments.

FIGURE 101. Progression in the Minor Mode
(A complete realization of these chords is found in Figure 102)

The progression in Figure 101 modulates from C minor, first to F minor (the subdominant), and then, through a change of mode, to F major. Observe how the original tonic is reestablished!

There are two dominant pedal points in this progression. Can you find and identify them? The fully realized prelude is on the next page.
This is one possible realization of the progression presented in Figure 101.

F min: I V F maj: V I₄ (minor) VII₆/V V I₆ IV

F maj: V₇ I₄ V I V₇/V V₆ VII₂/V V (minor)

C min: VII₂ I VII₂

C min: VI V I₄ I₆ IV II₆ I₄ Ⅴ/V I

FIGURE 102. A Prelude in the Minor Mode--Realization of Chords
(Original Composition by Léonie Jenkins)
Figure 103, below, gives the chord symbols for a progression which is the basis for a C major prelude by Henry Purcell. The progression should be clear to you by this time. Purcell's prelude (Figure 105) appears on page 134, and is discussed further below. In the meantime, try to play through this progression with blocked chords, and then try to improvise a prelude by arpeggiating these chords as you have been doing.

Measure numbers correspond to those in Purcell's prelude, Figure 105.

Figure 104 on page 133 is one possible realization of the progression given in Figure 103. Remember to play this in an improvisational style--I hope you will be able to do something similar, but which is entirely your own creation!

Finally, Figure 105 on page 134 is the original piece by Henry Purcell from which the progression in Figure 103 was abstracted. The chord symbols are indicated, so you can compare this with the composition by Léonie Jenkins (Fig. 104) and with your own prelude.

Notice the manner in which Purcell arpeggiated the chords, and how he set them up in a meter. He added a number of ornaments: passing tones, anticipations, and suspensions both in treble and bass. One new ornament is the ECHAPPÉE (pronounced "ay-shah-pay"), or ESCAPE NOTE. This is a little note just above the main note (written) which subsequently drops down into the next chord. Observe, also, the NINTH CHORD which appears in m. 2. This results from the movement of the soprano voice against the steady bass. (See the discussion of ninth chords on page 83.)

Although the piece in Figure 105 is written in a measured way, it is just a chord progression of the type you have been playing here. In fact, this piece would have been played in a very free style. See if you can play it now.
FIGURE 104. "Purcell Revisited" by Léonie Jenkins
An Original Prelude based on Purcell's Progression

(Note small changes from the harmonies in Figure 103, as well as the change in meter!)
(A = Anticipation; E = Echappée; P = Passing Tone; S = Suspension)

FIGURE 105. Prelude (Z. 665) by Henry Purcell

(Citation on page 135)
Try now to create other preludes in free style, using these and similar chord progressions. One way to begin would be to extract the progressions from written pieces, and then use them to construct your own improvisations. Do try to do these in many different keys, and transpose from one to another. Try using different approaches to arpeggiation and ornamentation of a single chord progression. Using the same series of harmonies, make different preludes which are as varied in their realization as possible.

Apart from being fun, I can think of no better way to summarize for yourself all the music theory you have learned. Additionally, doing your own "preluding" will greatly enhance your appreciation and enjoyment of music composed by the great masters. This practice will also enable you to perform written preludes in the "free and easy" style which was intended.

Now, before you perform a dance suite in the key of D major, can you not improvise a little prelude to try out the instrument, check the tuning, and introduce our ears to this tonality?
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ACKNOWLEDGMENTS

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Jean Nandi
Berkeley, California, 1989
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