



## Yale University Department of Music

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The True Principles for the Practice of Harmony

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*THE TRUE PRINCIPLES  
FOR THE  
PRACTICE OF HARMONY*

by Johann Philipp Kirnberger

Translated by David W. Beach

and Jurgen Thym

INTRODUCTION TO THE TRANSLATION

David Beach

One of the most important figures in the development of harmonic theory during the eighteenth century was Johann Philipp Kirnberger (1721-1783). His writings were well known to his contemporaries and had considerable influence on future generations of musicians. Considering his stature, it is interesting to note that Kirnberger would probably never have committed his ideas to paper had it not been for the assistance and encouragement of two men—Johann Georg Sulzer (1720-1779), an aesthetician, and Johann Abraham Peter Schulz (1747-1800), Kirnberger's student.

Shortly after his arrival in Berlin Kirnberger came in contact with Sulzer, who sought someone to give him instruction in music theory and to provide information for the music articles in his *Allgemeine Theorie der schönen Künste*.<sup>1</sup> In doing so, Kirnberger was forced to formulate his ideas about music, particularly those about harmony.

This collaboration led first to the publication of Volume 1 of his magnum opus, *Die Kunst des reinen Satzes in der Musik*, and subsequently to publication of the first volume of the Sulzer work, both in 1771. In 1773 Schulz, who had studied with Kirnberger from 1765 to 1768, returned to Berlin. He became increasingly involved in the preparation of the music articles for the second volume of the Sulzer, writing those from the letter *S* on without assistance from either Kirnberger or Sulzer.<sup>2</sup> During that time he became acquainted with the first volume of Kirnberger's treatise, which had been published in his absence. According to Schulz, his assimilation of this material led to still another publication.

I had just recently made a systematic reduction of his [Kirnberger's] principles of harmony for my own benefit and satisfaction, and at his request I had applied this system practically to the analysis of two pieces by Joh. Seb. Bach. . . . The teacher was pleased with his student's work and permitted it to be published under his name by Decker in Berlin as an appendix to his *Kunst des reinen Satzes*, with the title proposed by Sulzer: *Die wahren Grundsätze zum Gebrauch der Harmonie*.<sup>3</sup>

It seems likely that Schulz also helped Kirnberger in the preparation of Volume 2, Part 1, of *Die Kunst des reinen Satzes*, which was first published in 1776. The subsequent two parts, which deal exclusively with double counterpoint, were written by Kirnberger and published in 1777 and 1779 respectively. Two years later he published an additional work, *Grundsätze des Generalbasses*, as an introduction to his major treatise.

Although *Die wahren Grundsätze zum Gebrauch der Harmonie*—the work translated here—was not written by Kirnberger, it is, with the few exceptions noted below, a concise and accurate summary of his harmonic theories.<sup>4</sup> Here, as elsewhere, a combination of innovative thought and conservative attitude is evident. Certainly Kirnberger's definition of essential and non-essential dissonance was a major contribution to the advancement of harmonic theory. Yet in his attitude toward the treatment of dissonance, and in his clear preference for the old "strict" style (as opposed to the newer "gallant" style), he revealed his strong ties with the past. This latter attitude is most clearly expressed in Section 17 of the following translation.<sup>5</sup>

There can be no doubt that Kirnberger's conception of harmony and the relationship between vertical and linear components in music has its roots in the German tradition of figured bass. However, in Kirnberger's writings this tradition is mixed with certain ideas borrowed from Jean-Philippe Rameau (1683–1764), and the final product may in some ways be considered as a synthesis of the two. It should never-

theless be noted that Kirnberger did not adopt Rameau's mathematical-acoustical approach to the subject, but simply borrowed some of his more practical ideas. Most obvious is his adoption of Rameau's definition of chord inversion and the use of the fundamental bass to show the progression of the basic harmonies.<sup>6</sup> Kirnberger, however, was outspoken in his opposition to Rameau's theories and those of his followers, and thus it is not surprising that he was unwilling to acknowledge this influence. What is perhaps surprising at first is the extent to which Rameau's presence is evident in certain sections of *Die wahren Grundsätze zum Gebrauch der Harmonie*. Most noteworthy in this respect is Section 22, which contains rules for the progression of fundamental harmonies. These rules, which differ considerably from those given in *Die Kunst des reinen Satzes* (Volume 2, Part 1, Chapter 1), are almost exactly the same as those given by Rameau in his *Traité de l'harmonie* (1722). Also significant is the explanation accompanying Examples 77-79; here Rameau's influence is unmistakable. These and other passages (e.g., the explanation of parallel sixth chords in Section 20) point to one fact—that in writing this work Schulz incorporated some of his own ideas (borrowed from Rameau) along with those of his teacher.<sup>7</sup>

The most important feature of *Die wahren Grundsätze zum Gebrauch der Harmonie* is yet to be mentioned. This is the analytic application of the fundamental bass to two works by J. S. Bach, the Fugue in B minor (*Well-Tempered Clavier*, I) and the first part of the Prelude in A minor (*WTC*, II).<sup>8</sup> Here the relationship between Kirnberger's concept of harmony and Rameau's concept of the fundamental bass, as applied by Schulz, is clearly demonstrated. The historical significance of these analyses is twofold: (1) along with Kirnberger's analysis of his own Fugue in E minor (*Die Kunst des reinen Satzes*, I), they are the first attempts by a German theorist of the period to explain the harmonic structure of a musical composition; and (2) they constitute an important step in the development of harmonic analysis.<sup>9</sup>

In the following translation certain liberties have been taken to accommodate numbering and reference to the musical examples. Otherwise every effort has been made to represent the original text faithfully and clearly in English.

## NOTES

1. The first edition of Sulzer's encyclopedia was published in two volumes (Leipzig, 1771 and 1774); subsequent editions were published in four volumes.

2. See Schulz's article, "Ueber die in Sulzers Theorie der schönen Künste unter dem Artikel Verrückung angeführten zwey Beispiele von Pergolesi und Graun . . .," *Allgemeine musikalische Zeitung*, II (1800), pp. 276–78.
3. *Ibid.*, footnote (\*\*) on pp. 277–78.
4. For a detailed discussion of Kirnberger's harmonic theories see my dissertation, "The Harmonic Theories of Johann Philipp Kirnberger; their Origins and Influences" (Yale University, 1974).
5. Here Schulz criticizes modern composers for their free and excessive use of the chord of the diminished octave and sixth. It is interesting to compare Examples 38–40 in this work to those given in Figure 257 (p. 216) of William Mitchell's translation of C. P. E. Bach's *Versuch über die wahre Art das Clavier zu spielen*. Bach, whose work appeared several years earlier, was not at all negative in his discussion of this chord.
6. Kirnberger, however, makes an important distinction between the consonant and the dissonant six-four chord, and in this respect deviates from the literal conception of chord inversion expressed by Rameau and his followers. It is also worth noting that while Kirnberger's use of the fundamental bass is much the same as Rameau's, the results of its use are very different because of their opposing views of the relationship between linear and vertical elements, and thus of what constitutes a fundamental harmony. (For a discussion of the similarity between Rameau's and Kirnberger's use of the fundamental bass see Cecil Powell Grant's article, "The Real Relationship between Kirnberger's and Rameau's Concept of the Fundamental Bass," *Journal of Music Theory*, XXI (1977), 324–38).
7. Other differences between this work and *Die Kunst des reinen Satzes* can be found. One is Schulz's use of the term "Zwischen-accorde" to describe passing (non-fundamental) chords; although Kirnberger discussed this phenomenon, he never used that term.
8. The fact that two such highly contrapuntal pieces were suggested by Kirnberger as the subject for harmonic analysis is a clue to his conception of the harmonic nature of counterpoint. This view is significantly different from the traditional species approach to the subject, codified by Fux in his *Gradus ad Parnassum* (1725).
9. For a discussion of the development of harmonic analysis see my article, "The Origins of Harmonic Analysis," *Journal of Music Theory*, XVIII (1974), 274–307.

THE TRUE PRINCIPLES  
FOR  
THE PRACTICE OF HARMONY,

in which it is clearly demonstrated how all possible  
chords are to be explained and derived from the triad  
and the essential seventh chord, and their dissonant  
suspensions,

As a Supplement  
to

THE ART OF STRICT MUSICAL COMPOSITION

by  
Johann Philipp Kirnberger,  
Court Musician to Her Royal Highness,  
Princess Amalia of Prussia

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Berlin and Königsberg: G. J. Decker and G. L. Hartung, 1773.

## PREFACE

The first part of my *Art of Strict Musical Composition* has elicited a letter in which I am requested to reduce a certain well known Bach fugue to its simple fundamental chords in the same manner as I did with one of my own fugues in the above-mentioned work, pp. 248ff. The author of this letter is one of our most accomplished composers\*, and I value his praise too much not to consider his request as an invitation from an entire musical audience and not to comply with it immediately. No matter how easy this task would have been for me according to my principles of harmony, and no matter how pleasant it may always be for me to reveal at every opportunity the profound harmonic knowledge of the exalted composer of this fugue, nevertheless it seemed essential for me to accompany it with certain explanations from which the basis of my method would be understood and the matter safeguarded against all objections. This of course compelled me, if I may say so, to state my entire creed of harmony, and particularly to explain my own theory of fundamental chords in a systematic manner.

Rameau has filled this theory with so many absurdities that it is simply amazing how such extravagances have been able to find believers, even defenders, among us Germans, since we have always had the greatest composers among us whose treatment of harmony was certainly not to be explained according to Rameau's doctrines. Some went so far that they preferred to deny the thoroughness of [even] Bach's procedure with respect to the treatment and progression of chords, rather than admit that the Frenchman could have been wrong. Those who have acquainted themselves with Rameau's doctrines will soon notice in the course of this work how much mine differ from his and which of the two explains the origin and treatment of chords most simply and most naturally.

I flatter myself that in this brief work I have solved all harmonic difficulties quite easily, that I have generally made comprehensible all works of our greatest harmonists, and that I have shown how inferior harmonists could be recognized. This advantage alone would have made me decide to include these few pages as a supplement to my *Art of Strict Musical Composition*, even if it were not obvious how important it is in strict polyphonic composition to understand the fundamental harmonies.

\*Herr [Johann Georg] Hoffmann [1700-?], Organist at the Cathedral of Mary Magdalen in Breslau.

## THE TRUE PRINCIPLES FOR THE PRACTICE OF HARMONY

### 1.

All harmony is based on just two fundamental chords. They are the source of all other chords, and everything that is composed in the strict style can be traced to them. These are: (a) the consonant triad, which is either major, minor, or diminished; and (b) the dissonant essential seventh chord, which can be formed in four ways: It consists either of a minor seventh with a perfect fifth and a major or a minor third; or with a diminished fifth and a minor third; or of a major seventh with a perfect fifth and a major third. [See Example 1.]

### 2.

Of these fundamental chords, the preceding one is always more perfect harmonically than the one following it. Thus the major triad is the most perfect of the consonant fundamental chords, whereas the diminished triad is the least perfect; and the chord of the minor seventh with perfect fifth and major third is the most perfect of the dissonant fundamental chords, whereas the chord of the major seventh is the least perfect.<sup>1</sup>

### 3.

Every note essential to these fundamental chords can be relocated, i.e., be made the bass note. Since every chord is designated from its lowest tone, this relocation produces various other chords that differ from their fundamental chords with respect to structure and strength; these are rearranged or inverted fundamental chords, whose fundamental bass is the same. Thus the triad in inversion leads to the sixth and six-four chords [Example 2a]; and inversion of the seventh chord results in the six-five, four-three, and second chords [Example 2b]. The fundamental harmony of the former is the triad, and of the latter the essential seventh chord.

### 4.

These chords that result from inversion are treated in exactly the same way as their fundamental chords, but differ in their degree of harmonic perfection. Thus the fundamental chord itself is the most perfect, the first inversion less, the second even less than the first, and the third even less than the preceding.<sup>2</sup> These different degrees of harmonic perfection—not only of the fundamental chords themselves (see paragraph 2) but also of their inversions—produce a wonderful diversity in harmony which has a great effect upon musical expression and without which music would lose all its charm. [This is all the more true] when one considers that every chord has three different [soprano] positions over the same bass which also differ in their degree of effectiveness.





Example 1

Example 2 shows three staves of music. The top staff is in treble clef, the middle in bass clef, and the bottom in bass clef labeled *F.B.*. Measures (a) and (b) are indicated. Fingerings are shown as numbers 1-5 below notes.

Example 2

Example 3 shows two staves of music. The top staff is in treble clef, and the bottom is in bass clef. Measures (a) and (b) are indicated. Fingerings are shown as numbers 1-5 below notes.

Example 3

## 5.

In the progression from one chord to another, each note that belongs to the above-mentioned chords—no matter in which voice it is situated—can be delayed by a tone that precedes it. It can be delayed either alone or together with others, and from above or below. This tone becomes dissonant and must resolve shortly thereafter to its essential position, or resolve. This [procedure] results in a number of dissonant chords that resolve to the same fundamental chord, in relation to which they are considered as suspensions. The most useful of these can be seen in Tables I and II.

The fundamental chord of all the dissonant chords in Table I is the C major triad. The seven-four-two chord marked with an asterisk, where the suspension is in the bass as ninth from the root, is used rarely and with discretion by great harmonists. The minor and diminished triads and their inversions can be treated in this same manner; but with the diminished triad some of these suspensions are less useful than others.

The fundamental bass of the chords in Table II is G with the essential seventh chord. Anyone can easily display for himself the suspensions of the less perfect seventh chords and their inversions in both major and minor keys by following this same procedure. In this way the natural origin and treatment of all dissonant chords from the simplest to the most unusual—of which examples that have remained insoluble to many can be found on occasion in good harmonic compositions—will be clearly specified and established, as will their number and the limit beyond which no chord can possibly exist.

## 6.

All dissonances that arise in this manner from suspensions are called non-essential by us to distinguish them from the dissonance of the seventh, which we call essential. The former are most dissonant against the note they displace, and their most perfect resolution occurs over the same bass to the fundamental chord [Example 3a]. The essential seventh, on the other hand, is not dissonant because it has taken the place of a consonance; rather it is dissonant because it has been added to consonant intervals, thus disrupting the consonant harmony of the triad, or at least making it very imperfect. Since it does not substitute for another note belonging to that bass note, it cannot resolve over the same fundamental bass, but absolutely requires an entirely different harmony for its resolution [Example 3b]. Herein lies the distinction between non-essential and essential dissonance. In the last example, the fourth displaces the third, and resolves over the same bass note; thus it is non-essential. However, the seventh cannot resolve until the following harmony; thus it is essential.

# Table I. Triads with Suspensions

## The Triad with its suspensions

Two systems of musical notation for the triad with its suspensions. The first system shows a treble and bass staff with notes and fingerings (4, 3, 6, 5, 9, 8, 7, 8, 6, 5). The second system shows a treble and bass staff with notes and fingerings (9, 8, 7, 8, 9, 8, 9, 8, 9, 8).

## The Sixth Chord with its suspensions

Two systems of musical notation for the sixth chord with its suspensions. The first system shows a treble and bass staff with notes and fingerings (9, 8, 6, 3, 7, 6, 5, 6, 9, 8). The second system shows a treble and bass staff with notes and fingerings (9, 8, 9, 8, 9, 8, 9, 8, 9, 8).

# Table I (continued).

## The Six-Four Chord with its suspensions

The first system of notation shows the Six-Four Chord and its first suspension. The treble clef staff contains the notes G4, B4, D5, and F#4. The bass clef staff contains the notes C3, E2, and G2. The first suspension is indicated by a slur over the G4 and B4 notes in the treble staff, with a '7' above the G4 and a '4' below the B4. The second suspension is indicated by a slur over the B4 and D5 notes in the treble staff, with an '8' above the B4 and a '6' below the D5. The second system of notation shows the Six-Four Chord and its second suspension. The treble clef staff contains the notes G4, B4, D5, and F#4. The bass clef staff contains the notes C3, E2, and G2. The second suspension is indicated by a slur over the G4 and B4 notes in the treble staff, with an '8' above the G4 and a '5' below the B4. The first suspension is indicated by a slur over the B4 and D5 notes in the treble staff, with a '7' above the B4 and a '4' below the D5. The third suspension is indicated by a slur over the D5 and F#4 notes in the treble staff, with a '9' above the D5 and a '3' below the F#4. The fourth suspension is indicated by a slur over the F#4 and G4 notes in the treble staff, with a '6' above the F#4 and a '4' below the G4. The fifth suspension is indicated by a slur over the G4 and B4 notes in the treble staff, with a '9' above the G4 and a '7' below the B4. The sixth suspension is indicated by a slur over the B4 and D5 notes in the treble staff, with an '8' above the B4 and a '6' below the D5.

## The consonant chord with the suspension in the bass

The musical notation shows a consonant chord with a suspension in the bass. The treble clef staff contains the notes G4, B4, and D5. The bass clef staff contains the notes C3, E2, and G2. The suspension is indicated by a slur over the C3 and E2 notes in the bass staff, with a '5' above the C3 and a '2' below the E2. The first suspension is indicated by a slur over the E2 and G2 notes in the bass staff, with a '6' above the E2 and a '4' below the G2. The second suspension is indicated by a slur over the G2 and C3 notes in the bass staff, with a '7' above the G2 and a '2' below the C3. The third suspension is indicated by a slur over the C3 and E2 notes in the bass staff, with a '6' above the C3 and a '4' below the E2. The fourth suspension is indicated by a slur over the E2 and G2 notes in the bass staff, with a '7' above the E2 and a '2' below the G2. The fifth suspension is indicated by a slur over the G2 and C3 notes in the bass staff, with a '6' above the G2 and a '4' below the C3. The sixth suspension is indicated by a slur over the C3 and E2 notes in the bass staff, with a '7' above the C3 and a '2' below the E2. A '\*' is placed above the G4 note in the treble staff.

## Table II. Seventh Chords with Suspensions

The Seventh Chord with its suspensions

The Seventh Chord with its suspensions

First system (G major):

Treble clef: G4, A4, B4, C5 (quarter notes), G4, A4, B4, C5 (quarter notes), G4, A4, B4, C5 (quarter notes), G4, A4, B4, C5 (quarter notes).

Bass clef: F#3, C4, F#3, C4 (quarter notes), F#3, C4, F#3, C4 (quarter notes), F#3, C4, F#3, C4 (quarter notes), F#3, C4, F#3, C4 (quarter notes).

Second system (C major):

Treble clef: C4, D4, E4, F4 (quarter notes), C4, D4, E4, F4 (quarter notes), C4, D4, E4, F4 (quarter notes), C4, D4, E4, F4 (quarter notes).

Bass clef: C3, F2, C3, F2 (quarter notes), C3, F2, C3, F2 (quarter notes), C3, F2, C3, F2 (quarter notes), C3, F2, C3, F2 (quarter notes).

The Six-Five Chord with its suspensions

The Six-Five Chord with its suspensions

First system (G major):

Treble clef: G4, A4, B4, C5 (quarter notes), G4, A4, B4, C5 (quarter notes), G4, A4, B4, C5 (quarter notes), G4, A4, B4, C5 (quarter notes).

Bass clef: F#3, C4, F#3, C4 (quarter notes), F#3, C4, F#3, C4 (quarter notes), F#3, C4, F#3, C4 (quarter notes), F#3, C4, F#3, C4 (quarter notes).

Second system (C major):

Treble clef: C4, D4, E4, F4 (quarter notes), C4, D4, E4, F4 (quarter notes), C4, D4, E4, F4 (quarter notes), C4, D4, E4, F4 (quarter notes).

Bass clef: C3, F2, C3, F2 (quarter notes), C3, F2, C3, F2 (quarter notes), C3, F2, C3, F2 (quarter notes), C3, F2, C3, F2 (quarter notes).

The Four-Three Chord with its suspensions

The Four-Three Chord with its suspensions

First system (G major):

Treble clef: G4, A4, B4, C5 (quarter notes), G4, A4, B4, C5 (quarter notes), G4, A4, B4, C5 (quarter notes), G4, A4, B4, C5 (quarter notes).

Bass clef: F#3, C4, F#3, C4 (quarter notes), F#3, C4, F#3, C4 (quarter notes), F#3, C4, F#3, C4 (quarter notes), F#3, C4, F#3, C4 (quarter notes).

Second system (C major):

Treble clef: C4, D4, E4, F4 (quarter notes), C4, D4, E4, F4 (quarter notes), C4, D4, E4, F4 (quarter notes), C4, D4, E4, F4 (quarter notes).

Bass clef: C3, F2, C3, F2 (quarter notes), C3, F2, C3, F2 (quarter notes), C3, F2, C3, F2 (quarter notes), C3, F2, C3, F2 (quarter notes).

# Table II (continued).

## The Second Chord with its suspensions

*The 2<sup>d</sup> Chord with its suspensions*

The musical notation consists of two systems, each with a treble and bass staff. The first system shows a sequence of chords with fingerings: 6-4-2, 4-2, 5-2, 4-2, 7-4-2, and 6-4-2. The second system continues the sequence with: 6-4-2, 7-5-2, 6-4-2, 6-4-2, 7-4-2, 6-4-2, 7-5-2, and 6-4-2. The notes are written as whole notes with stems, and the fingerings are indicated by numbers 1-5 below the notes.

## The Essential Seventh Chord with the suspension in the bass

The musical notation shows a sequence of chords in a treble and bass staff. The fingerings are: 5-4-2, 6-5, 5-4-2, 6-4-2, 6-4-2, and 7-5-2. The notes are written as whole notes with stems, and the fingerings are indicated by numbers 1-5 below the notes.

## 7.

The essential dissonance can occur on a weak as well as a strong beat, whereas the non-essential dissonance can occur only on a strong beat.

## 8.

From the foregoing it is evident that all intervals, even those that are originally consonant, can become non-essential dissonances when they are displacements of notes necessary to the fundamental chord. Thus there are two types of six-four chord, namely the consonant, which is the second inversion of the triad, and the dissonant, where the sixth displaces the fifth and the fourth displaces the third. These two types must be distinguished from one another, since they differ with respect to fundamental harmony and, therefore, with respect to treatment. Their principal distinguishing characteristics are as follows:

In the dissonant six-four chord, the fifth and the third can always be sounded in place of the sixth and the fourth. In the consonant, this cannot happen. [See Example 4.] In the six-four chord of the first measure (\*) it is not possible to sound the fifth in place of the sixth; therefore it is consonant, and has as its fundamental chord the triad on the fifth degree below the bass. Because this consonant fourth is the octave of the root, it can be introduced freely, like all other consonant intervals, and can also be doubled. It can appear as the resolution of a preceding dissonance, as in Example 5. Since it is a consonance, it can occur on a weak as well as a strong beat, and can progress upwards or downwards to other notes without constraint. On the other hand, the six-four chord in the second measure (+) of Example 4 is dissonant, because the fifth can be sounded in place of the sixth, which displaces the fifth and must resolve to it, while the fourth stands in place of the third and must resolve to it. The real root of this dissonant six-four chord is the bass note. Since the sixth as well as the fourth in this chord are non-essential dissonances, they can neither be introduced freely, nor be doubled. Nor can they occur other than on a strong beat, but are subject to the same rules as all other non-essential dissonances.

The consonant six-four chord often occurs with the minor third above the bass note, which is the essential seventh above the root, as in Example 6. This third never occurs with the dissonant six-four chord. Those who have a feeling for a correct progression of the fundamental harmony need only pay attention to the fundamental bass in order to distinguish the dissonant from the consonant six-four chord. And thus an end would finally be put to the eternal dispute—whether the fourth is consonant or dissonant, whether it is now a fourth or an eleventh—about which so many written wars have been waged with unspeakable bitterness without anything having been settled.



Example 4



Example 5



Example 6



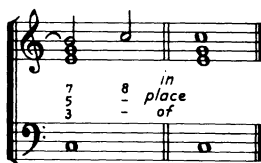
## 9.

The distinction between the non-essential seventh, which is a displacement of either the octave or the sixth, and the essential seventh, whose chord is the independent fundamental chord, can be understood from the following:

The non-essential seventh that displaces the octave is always major because it is the leading tone and resolves up by a half step to the octave of the root, as in Example 7. For this reason the minor seventh can never be a displacement of the octave, but only of the sixth. Thus with every seventh chord, if the sixth is not sounded after the seventh over the same bass, one must consider whether it could at least be sounded in its place. Where this occurs, the seventh is non-essential and is considered as a sixth with respect to the fundamental chord; but where this is not possible, it is essential. See Examples 8a, b, c, d and e. In all these examples the non-essential seventh replaces the sixth, which can be sounded in its place and to which it resolves over the same bass note. In addition to this non-essential seventh, the essential seventh, namely F, also occurs in the last three examples. No other interval can be sounded either in its place or sounded after it above the same bass note; rather it requires an entirely different harmony for its resolution. The two sevenths differ most clearly in this respect; furthermore, the fundamental harmony implied by each is so obvious that one can hardly miss it.

## 10.

It was noted above that non-essential dissonances resolve most naturally over the same bass note; but their resolution can also be delayed until a subsequent harmony, thereby appearing as if they were essential. [See Example 9.] Such delays of resolution cannot bring about any change in the fundamental harmony. Considering what has been said about the characteristics of non-essential dissonances, it can readily be seen that in the first example the fourth stands in place of the third, in the second example the ninth stands in place of the octave, and in the third and fourth examples the seventh stands in place of the sixth. They are suspensions whose resolution, instead of occurring over the same bass note, is delayed until the following harmony. Thus in the first three examples the fundamental harmony is the C major triad, and in the last it is the essential seventh chord on G. Regarding the seventh, which in such cases could cause some difficulty, one must carefully consider whether the sixth could be sounded in its place, as was already demonstrated in the preceding paragraph. We note in this case that such delayed resolutions of non-essential dissonances cannot occur on a subsequent harmony unless this harmony is compatible with the note to which the resolution occurs.



Example 7

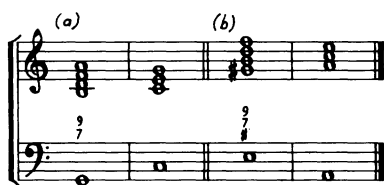
Example 8 consists of five measures labeled (a) through (e). Each measure contains a treble staff with a chord and a bass staff with a single note. The chords and fingerings are: (a) G4, B4, D5 (7, 6); (b) G4, B4, D5 (7, 4); (c) G4, B4, D5 (7, 5); (d) G4, B4, D5 (7, 4); (e) G4, B4, D5 (7, 4). The text "in place of" is written between the two staves in measures (a), (b), (c), and (d). The bass staff in measure (e) contains a single note G2. The text "F.B." is written to the left of the bass staff in measure (a).

Example 8

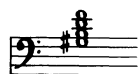
Example 9 consists of four measures labeled (1) through (4). Each measure contains a treble staff with a chord and a bass staff with a single note. The chords and fingerings are: (1) G4, B4, D5 (4, 5); (2) G4, B4, D5 (5, 9); (3) G4, B4, D5 (7, 5); (4) G4, B4, D5 (7, 5). The text "in place of" is written between the two staves in measures (1), (2), and (3). The bass staff in measure (4) contains a single note G2.

Example 9

When the ninth is added to the essential seventh chord as a displacement of the octave, and its resolution is delayed until the following harmony, as in Examples 10a [major] and 10b [minor], there remains, after removal of the bass note, a seventh chord which could mislead some to consider it as an independent fundamental chord, since it is composed of a third, fifth, and seventh as is the essential seventh chord, and is capable of the same inversions. In fact, some theorists have chosen to attribute characteristics of a fundamental chord to the diminished seventh chord in particular [Example 11], and have even declared it to be one, but without cause. (Because of its perfect proportions of superimposed minor thirds, it is agreeable to the ear and easy to comprehend. Thus it is not always prepared by harmonists, as are the other dissonances, but is introduced freely and not resolved until the following harmony.) Other theorists, who have realized the inadequacy of this interpretation, have established the third below the bass note of this chord as the root; yet they have erred in a different way, namely by considering it as a fundamental chord and as an independent nine-seven chord. Both interpretations are wrong. Only one thing need be mentioned: In the former case the seventh can proceed to the sixth over the same bass note without detriment to the harmony; indeed the sixth can be sounded in its place. In the latter case the situation is the same for the ninth, in whose place the octave can be heard. But this is contrary to the nature of a fundamental chord, which must be so constituted that no essential change of its intervals—where one interval can replace another—is possible. According to our stated definition of non-essential dissonances and the delay of their resolution until the following harmony, it follows quite naturally that this seventh chord (be it diminished or not), which we choose to call unauthentic to distinguish it from the essential fundamental chord, is indeed a nine-seven chord above the root, that is, a nine-seven chord above the tone a third below the bass note. However, since the ninth is a non-essential dissonance and merely a displacement of the octave, whose resolution is delayed until the following harmony, it could be nothing other than our essential seventh chord. It is that and nothing else. This can be seen clearly from Examples 12a and 12b. The treatment of this unauthentic seventh chord becomes immediately apparent when the non-essential seventh preceding the sixth is removed, leaving the six-five chord as first inversion of the essential seventh chord. Since the bass note of the six-five chord leads most naturally by step to the triad or its inversions, the authentic seventh chord must also progress in the same manner, a fact that is confirmed by experience. However, this progression is not at all natural to the essential seventh chord. Thus the seventh chords in Example 13 are not unauthentic, and [each] is based on



Example 10



Example 11



Example 12



Example 13

the essential seventh chord whose root is a third below the bass note. In the last example the essential seventh chord follows the unauthentic one. The bass progression of the former is entirely different from the latter, and thus cannot in any way be confused with it.

12.

The same also applies to the inversions of the unauthentic seventh chord; its progressions are entirely different from those of the essential seventh chord. Thus, if the previously given explanation is also applied to the inversions of this seventh chord, one could not miss the true fundamental harmony in Example 14. It can easily be seen that in each chord marked with an asterisk the non-essential ninth displaces the octave, and that all these chords are inversions of the unauthentic seventh chord. If they were inversions of the essential seventh chord, they would have to have an entirely different progression, as is evident from Example 15.

13.

For anyone capable of distinguishing between a natural and an unnatural harmonic progression—and this is assumed in the case of those who want to have a thorough understanding of the reduction of all chords to their true fundamental chords—it will be an easy matter after these explanations to understand precisely the treatment of the different seventh chords and to identify their correct fundamental chords just by paying attention to the preceding as well as the following harmony. Otherwise it will not always be possible to know whether the seventh is essential or non-essential, and whether or not the sixth could be sounded in its place. Every seventh chord that leads to a subsequent harmony is either the fundamental harmony itself or is based on the essential seventh chord whose root is a third below the bass note. The diminished seventh chord cannot possibly be interpreted in two different ways; since its seventh always displaces the sixth, it is always based on the third below the bass note. The same is true of the inversions of this chord, which are most clearly distinguishable from all other inversions of seventh chords, and cannot cause the slightest difficulty in identifying their fundamental harmony. However, either of these fundamental harmonies can apply to the seventh chord in Example 16. But if we consider the preceding harmony, as given in Example 17a or 17b, we can see that in the first case the seventh displaces the sixth and its resolution is delayed until the following harmony; consequently it is based on the third below the bass note, that is, on C with its triad. In the other case the seventh is essential and the chord itself is the fundamental harmony.

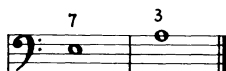
Another situation where the seventh chord can be either essential or unauthentic is given in Example 18. If we now consider the following harmony, as given in Example 19a or 19b, we recognize without

The musical score for Example 14 consists of six staves of music, all in bass clef. The notation includes various fingerings (6, 5, 4, 3, 2, 1, 7) and a forte dynamic marking (*f*). The music is organized into three systems of two staves each. The first system includes a *f*.b. marking. The notation features a mix of eighth and quarter notes, some with slurs, and rests. The key signature has one sharp (F#).

Example 14



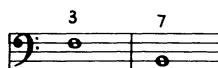
Example 15



Example 16



Example 17



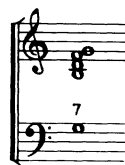
Example 18



Example 19



Example 20



Example 21

difficulty that the seventh is essential in the first case, but non-essential in the other. Thus the diminished triad on B in the first example and the major triad on G in the second would have to be doubled in a full-voiced texture, since they are the fundamental harmonies of the two seventh chords. Likewise, we recognize the inversions of the seventh chords from the preceding or following harmony, and determine their true fundamental chords.

#### 14.

Since the essential seventh chord on the dominant of a tonic is the most perfect dissonant chord (see paragraph 4) and therefore just as comprehensible to the ear as the triad, its seventh need not always be prepared; it can be introduced freely, even when the octave is not contained in the preceding chord. However, in the latter situation, care must be taken that both intervals are not heard next to one another as a second, since the chord thereby loses clarity. Thus, in the arrangement of all dissonant chords, especially when there are many voices, the main concern is a fitting distribution of the intervals so that they sound comprehensible to the ear. Every dissonant chord can be considered with respect to the dissonant relationship of its tones to the fundamental harmony, and with respect to the consonant or dissonant relationship of its constituent intervals. The more dissonances there are in relation to the fundamental harmony, the more necessary it is that the intervals be consonant in relation to each other. Where this is not the case, the dissonances must at least be so arranged that each can be heard for itself; that is, they must be widely separated and not closer to one another than a minor third. A chord is most intelligible if it can be arranged in such a fashion that every interval is consonant with its neighbor. However, it becomes less intelligible when seconds are next to one another in its arrangement; the more and the closer these seconds are to each other, the less intelligible is the chord. Therefore even the non-essential ninth, when it is combined with the essential seventh of the dominant, can be introduced without preparation in the consonantly arranged position shown in Example 20. And it is often better understood than the octave itself, if the octave forms a second with the seventh, as in Example 21. For this reason many dissonant chords have either no inversions whatsoever, or only a few that are permissible, depending on the greater or lesser number of dissonances they contain that cannot be combined as consonances. For the same reason the [soprano] positions of a chord or its arrangements over the same bass are not of equal quality, but are either more comprehensible and useful or less intelligible and of no use. Generally chords that have a non-essential dissonance in the bass are least useful. In this case the intervals that are consonant in relation to the fundamental bass become



dissonances in relation to the bass note, and these dissonances proceed without resolution. Two dissonances are contained in the previously mentioned nine-seven chord, namely the essential seventh and the non-essential ninth. In addition, there are three dissonant seconds in this chord, namely from the seventh to the octave, the octave to the ninth, and the ninth to the tenth or third. Nevertheless, the chord sounds very intelligible in the above-mentioned position because the intervals are distributed in superimposed minor thirds only. However, this same chord is less intelligible in the positions shown in Example 22, since, in addition to the above-mentioned dissonances, a second is heard, whereby too much is demanded of the ear. If this second is further separated by a half tone, as in Example 23, then the chord becomes far more comprehensible. If we invert the nine-seven chord, the four chords shown in Example 24 result. They are unintelligible, at least in these positions, and of these the last is least useful because the non-essential dissonance is situated in the bass. But if the intervals of the first three inversions are distributed consonantly amongst themselves, or at least by a certain distance, as in Example 25, they become more comprehensible.

Since no chord can contain any more than four dissonances, the fundamental harmony is doubled in the lower parts in all chords having more voices. [See Example 26.] This is generally the case in all multivoiced chords, even when they do not contain all four dissonances. [See Example 27.] From the preceding, it can be seen how necessary it is to know the fundamental harmony of every chord. Otherwise we would not know which intervals would have to be doubled in multivoiced chords, and the risk of doubling dissonances instead of consonances would arise. Thus, not only could forbidden and unintelligible progressions arise, but also chords entirely different from those intended and required by the progression.

## 15.

Now that we have defined the most essential features concerning the recognition and treatment of fundamental harmonies and the chords arising from them, it is necessary to give a sufficient explanation of a few unusual chords that appear to be related to neither of our fundamental chords, and of certain harmonic licenses.

The chord of the augmented sixth, which is combined with the major third and augmented fourth [Example 28], is apparently neither an inversion of the triad nor of the essential seventh chord. Then what is it? It is really nothing other than the dissonant four-three chord that arises from the second inversion of the third essential seventh chord (see paragraph 1). One need only review the origin and treatment of this chord to be convinced of this. When the older composers wanted to make a half cadence on the dominant of the tonic in a minor key,



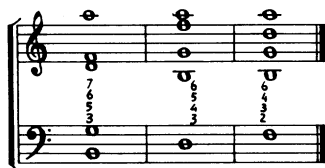
Example 22



Example 23



Example 24



Example 25



Example 26



Example 27



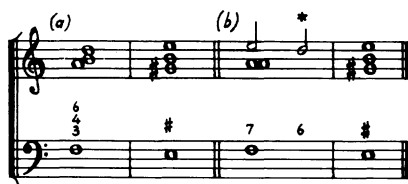
Example 28

they used the natural four-three chord as a suitable leading chord to such a cadence [Example 29a], or without the fourth [Example 29b], which is really the same chord. If they wanted to make the cadence more striking, they would raise the sixth by a half step and put D-sharp in place of D, thereby making the E chord more necessary and the cadence more sensible. But to avoid a certain *mi-fa*, which arises from inversion of the diminished third D-sharp-F, and which was generally forbidden, they raised the bass note by a half step at the same time, and put F-sharp in place of F, as in Example 30a or 30b. [This procedure] resulted in another natural four-three chord, which comes from the inversion of the first essential seventh chord. Modern composers have sought to retain the striking quality of this last cadence; but since the F-sharp in the bass is foreign to the key of A minor and sounds harsh, F instead of F-sharp was deemed more natural (in spite of the forbidden *mi-fa*), and the augmented sixth was introduced as in Example 31. Thus the minor key was better characterized, the following chord was made more necessary and the cadence was made smoother. This is the origin of the augmented sixth. Since it is merely a decoration transferred from the melody to the harmony and stands in place of the customary major sixth, which can always be sounded in its place, the augmented sixth can neither effect a change in the fundamental harmony nor much less form an independent fundamental chord, as some have incorrectly taught. Therefore the augmented sixth chord is always based on our third essential seventh chord, whose root is a fifth below the bass note, as shown in Example 32. And if the fifth instead of the fourth is used in this chord, the fifth is the non-essential ninth from the fundamental bass. This ninth either resolves over the same bass or its resolution is delayed until the following harmony, where it goes to the fifth.

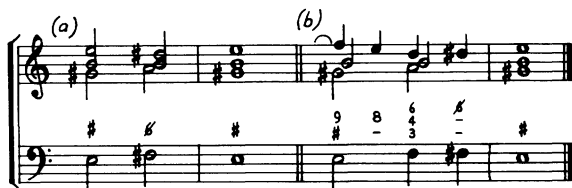
This augmented sixth chord should not be arranged in such a way that the diminished third resulting from inversion is formed by adjacent notes, since this third cannot be well understood even when separated by a distance of one or two octaves (see paragraph 14).

## 16.

The characteristics of the augmented sixth chord are similar to those of the triad with the augmented fifth [Example 33] and its inversions [Example 34]. This augmented fifth from the fundamental tone is no more essential to the chord than the augmented sixth; it is, as the latter, a mere decoration that is used to make the following note, to which it wants to progress, necessary and sensible. However, since the customary perfect fifth can just as well be used in its place, and the progression can be exactly the same to the following note as well as to the following chord, the fundamental harmony also remains exactly the same as it



Example 29



Example 30



Example 31



Example 32



Example 33



Example 34

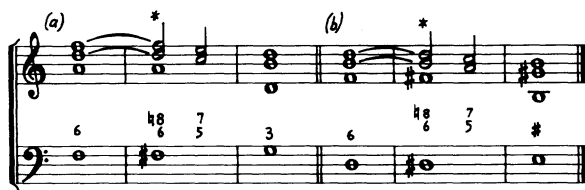
would be if this and all similar decorations were not used. These new-found decorations, no matter how much they might alter a chord, function in the same way as the non-essential dissonances; they cannot generate any change in the fundamental harmony, but are considered as if they were not there.

17.

We are indebted to the modern composers for the appearance of yet another chord. Presumably it must flatter the fine ears of our gallant composers greatly, since it appears several times on most every page of their compositions; yet they might have difficulty giving a sufficient reason for it. This chord consists of a diminished octave, minor sixth and minor third, and is used primarily as an introduction to a half cadence on the dominant of the principal key, as in Example 35a or 35b.

The extent to which simple melodic ornaments such as the *appoggiatura* have been abused in the works of the more recent composers is ridiculous. When an *appoggiatura* was used by the older teachers of composition, it always preceded an interval consonant with the root of the chord, so that the ear, which would have been shocked by the suddenness of an unprepared dissonance, would be satisfied shortly thereafter. The more modern composers, whose ears apparently are not so easily shocked, have noticed first of all that in certain situations, dissonances—particularly the essential seventh with the dominant chord and the ninth when it is combined with this seventh—sound quite agreeable when introduced freely. Then they have treated these tones as if they were consonant by allowing them to be delayed by others that were in turn treated as freely introduced *appoggiaturas*. These *appoggiaturas* were then interpreted as genuine chord-tones, which were decorated with new *appoggiaturas*, and so forth, until no shadow of the fundamental harmony remained in the structure of the chord. Who would not believe that this diminished octave chord was meant to be heard simultaneously as the major and minor triads on the third below the bass note? And yet the diminished octave and sixth as prepared in Example 35 can still be understood as mere suspensions or *appoggiaturas* preceding the seventh and fifth, as shown in Example 36. And the fundamental bass, which is not affected by such ornaments, must be understood from the following harmony; thus the fundamental bass of the given example must, of course, be as shown in Example 37.

From this the treatment of the diminished octave and sixth chord becomes obvious; that is, since both these intervals are suspensions preceding dissonances which can be introduced freely, they should be prepared and contained in the preceding chord. However, when these suspensions are written without any preparation in our modern



Example 35



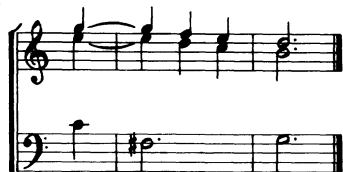
Example 36



Example 37



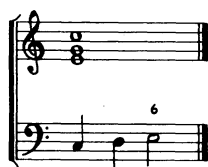
Example 38



Example 39



Example 40



Example 41



Example 42

compositions, and are treated as a principal chord [Example 38], which is in turn delayed by other *appoggiaturas* [Example 39], which are sometimes prepared as little as shown in Example 40a or even as in Example 40b, then these gentlemen may assume the responsibility themselves. We cannot justify the style of the unmusical foreigners and those who have modeled themselves after them. Meanwhile let us stick with the essential seventh chord on the third below the bass note in such passages. Those who are not satisfied with this fundamental bass may request a different one from the inventors of such delicacies or may manufacture one by themselves. Harmony profits and forfeits nothing thereby.

## 18.

In harmony there are passing chords that are not based on any fundamental harmony. They are to be considered in the same manner as melodic passing notes, from which they arise when various voices progress in a passing fashion. In Example 41, the second bass note (D) is a simple melodic passing note in relation to the chord above it. However, a passing chord is formed above this D when one or more voices of the preceding chord progress simultaneously with it, as in Examples 42a, b, and c. Thus passing chords are intermediate chords that are formed by the stepwise and mostly consonant progression of one or more voices from the preceding to the following fundamental chord. They always stand between two fundamental chords that are either the same or at least follow one another very naturally. Therefore they can occur only on weak beats, because every chord stated on a strong beat is necessarily felt as a fundamental chord. Passing chords can be further recognized by their unnatural harmonic progressions. These progressions are unnatural either because some dissonance is left unresolved or because the passing chords, even when they appear as regularly treated fundamental chords, would nevertheless inhibit the natural progression of the fundamental harmony. Illustrations of these chords are given in Example 43.

The French use this last progression at half cadences in the way shown in Examples 44a [minor] and 44b [major]. They have formed an independent fundamental chord from this passing six-five chord, whose sixth they call "*la sixte ajoutée*." This is wrong, since in cadences of this kind, the sixth, like all other passing intervals, always falls on the weak beat of the measure between two fundamental chords that follow one another naturally. For this reason it cannot be considered other than passing; it serves merely to make the half cadence on the dominant somewhat more striking. Were this sixth not passing, the chords in Example 45, which are formed in the same way, would also have to be considered as so many fundamental chords, whereby the

The musical score for Example 43 consists of four systems, each with a piano (P) and bass (B) staff. The notation includes various musical symbols such as notes, rests, and fingerings, along with specific markings like asterisks and brackets.

**System 1:** The piano staff features a sequence of chords and notes, with asterisks marking specific measures. The bass staff includes fingerings: 6, 6, 3 1, 4 2, 5 3, 4 2, 3 1.

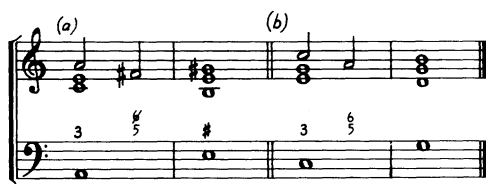
**System 2:** The piano staff continues the sequence with more complex chordal structures. The bass staff includes fingerings: 7, 6, 6 5, 6, 7, 7 6 5, 6 5.

**System 3:** The piano staff shows a series of chords. The bass staff includes fingerings: 8 - 7, 8 - 7, 7.

**System 4:** The piano staff features a sequence of chords and notes, with asterisks marking specific measures. The bass staff includes fingerings: 7 5, 5 3, 6, 4 3, 7 #, [6], #.

Example 43

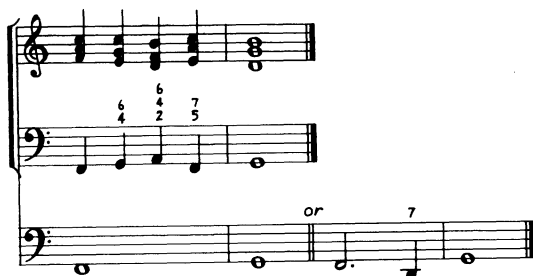




Example 44



Example 45



Example 46

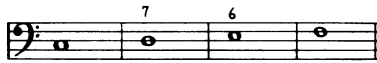
system of harmony would become so mottled that eventually it would no longer be recognizable. For this reason passing chords of this kind are not always indicated by figures in the thorough-bass, especially when the motion is rather fast. It can easily be seen that the French six-five chord arises from the first inversion of the passing seventh chord. If it were to be accepted as a fundamental chord, the latter would arise from the former, which is surely as nonsensical as if one were to maintain that cause results from effect. When a chord is definitely expected in the context of a piece, as for example at cadences, greater harmonists use far stranger intermediate chords to make the expected harmony all the more striking. However, these intermediate chords are all passing. [See Example 46.] There are examples, of course, where the six-five chord even falls on the strong beat of the measure and progresses without resolution. In this case the resolution is omitted, a phenomenon that will be demonstrated with respect to several dissonant chords in the following paragraph.

When considering the weak beat of the measure with regard to passing chords, it remains to be noted that here we are talking in general about the strong and weak parts of the metric unit. In *alla breve* time, or when the unit is fairly long, passing chords can even fall on the downbeat of a measure, as in Example 47. In this case the second measure is the weak half of a rhythmic unit, just as the second half of a measure is its weak part.

## 19.

When great harmonists want to express something intense or want to startle the listener, they take the liberty of omitting the resolution of the essential seventh completely. That is, the consonant chord which would result from the resolution of this dissonance is omitted, and another dissonant chord, which should have followed the omitted one and whose dissonance would have been prepared by it, is immediately taken in its place. Thus instead of the progression in Example 48 and its inversions, those in Example 49 often occur. The resolution of the essential seventh is omitted in all the latter progressions [Example 49], and the fundamental harmony [Example 50] is to be understood as in the former [Example 48].

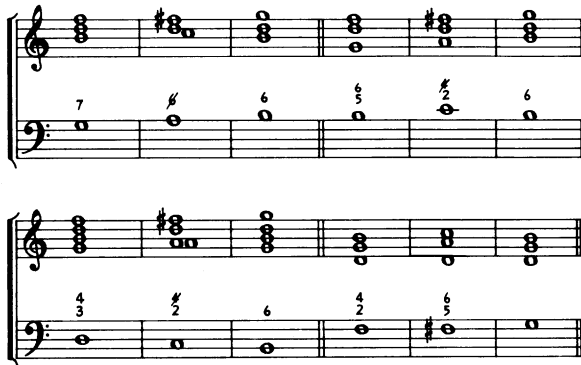
The situation is similar in Example 51, although the chords sounding in place of the omitted ones are consonant rather than dissonant. Example 51-1 ought to have been as shown in Example 52, but the second chord has been omitted. In Example 51-2 the six-five chord, which Rameau and his disciples are determined to consider as a fundamental chord, is placed on a strong beat and progresses without resolution. When this occurs, it is clear that the resolution has been omitted, and the example is to be understood as shown in Example 53.



Example 47



Example 48



Example 49



Example 50



Example 51



Example 52



Example 53

The so-called chord of the added sixth is no more a fundamental chord here than it is in the French half cadences, where it falls on a weak beat and is passing. (See the preceding paragraph.) In fact, if an omission of resolution is not assumed in such passages, but rather the six-five chord is considered as fundamental, how could one possibly imagine a natural progression of the fundamental harmony with respect to Example 54? Which succession of the fundamental harmonies makes sense here? That of Rameau [Example 55], which certainly does not explain how the first two chords can follow one another? Or does one not feel rather that the resolution has been omitted between the first two chords, and that the harmonic succession must be understood as shown in Example 56?

How would the chord *de la sixte ajoutée* appear if Example 54 were written as in Example 57, which would not be at all unusual? Here, where F-sharp is in the bass, it is impossible to conceive of the six-five chord on F as the fundamental harmony. And yet Rameau's disciples want to know of no other fundamental bass. Perhaps they might raise their root by a half step and give the fundamental harmony the progression shown in Example 58. But that would be too awful. However, such progressions become easily intelligible if one follows the straightforward path which nature always provides, and if one considers the following: that the six-five chord is an inversion of the seventh chord; that in the given example its most natural progression is to the triad on G followed by the triad on C; and that the composer, for the sake of expression and voice-leading, omits the first triad and allows the following one to be heard in its place. This is also the case with several [other] chords, whose omission does not interfere with the natural progression; they can indeed astonish but not trouble the listener. And how unnecessary it is to burden the system of harmony, which rests on such simple pillars, with so many grotesque extravagances simply to appear scholarly among feeble thinkers and even to be considered the inventor of harmony. The system of harmony was understood and discovered long before this, but was not distorted to such an extent.

Surely no depth of harmony was hidden from the elder Bach. He had command of all harmonic possibilities and, more important than all else, has brought them all into practice. No theorist, with all his speculations, is capable of producing anything new after him. Yet all of Bach's compositions, even though some may initially appear intricate, can be reduced to a natural progression of the fundamental bass and to two simple fundamental chords, the triad and the essential seventh chord. Examination of his doublings will reveal that he has never used any other chord as fundamental. If this man were still alive, who would be able to tell him that he had composed haphazardly, that harmony had been discovered or at least been put in order after him, that a



Example 54



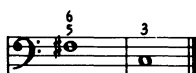
Example 55



Example 56



Example 57



Example 58

six-five chord, an augmented sixth chord, a diminished seventh chord, an eleventh-, thirteenth-, and Apollo only knows how many more chords existed that were not inversions of other chords? The discovery of these chords was attributed to a recent Frenchman, whose practical compositions are, by the way, more faulty than correct and reveal far less knowledge and understanding of harmony than the compositions of his superior predecessors and contemporaries of his own as well as other nations. —But let us return to our material.

It is evident from Examples 51-3 and 51-4 that several dissonant chords—when they remain without resolution and are passing chords on a weak beat, or on a strong beat where they must be fundamental harmonies—can be understood only by assuming an omission of resolution. In Example 51-3 the sixth chord on A could not follow from the preceding chord in a natural way if the triad on C were not understood as being omitted. Similarly in Example 51-4 the resolution of the seventh above the second bass note, which would normally lead to the essential seventh chord on G, has been omitted. Even the resolution of the non-essential ninth, when it is joined with the essential seventh, can be omitted, as is to be noted from the enharmonic progression in Example 59, which is really to be understood as shown in Example 60. However, the chord of resolution has been omitted and the following one sounded immediately in its place. Except in the case of this ninth, which is joined with the essential seventh, the resolution of non-essential dissonances can never be omitted. Thus if one encounters an unresolved fourth above the bass note in the works of good composers, this fourth is not the non-essential dissonance that displaces the third; it is either the consonant fourth or the third of the fundamental seventh chord, as in the four-two chord.

## 20.

It is not necessary to explain here what is meant by anticipation, retardation and transfer of resolution; nor is it necessary to explain that they cannot produce any change in the fundamental harmony. Yet it deserves to be noted here that the familiar ascending or descending sixth progression [Example 61] is based solely on anticipation and retardation; otherwise it could not be justified. These stepwise consecutive sixth chords cannot possibly be so many inversions of the triad. How could the C major, D minor, E minor triads, etc., which are not at all capable of such close association, occur in succession without offending our ears? The analysis of the succession of sixth chords in Example 62 shows that they are not really sixth chords; rather they result from anticipations in the top voice, and are founded on fundamental harmonies that follow one another very naturally. Or if the progression is as shown in Example 63, the retardations can also be in the lower voices, as is evident from the analysis provided in Example 64.



Example 59

Example 60 is a musical piece in G major, consisting of seven measures. The treble staff contains chords: G4-A4-B4, G4-A4-B4-C#5, G4-A4-B4-C#5, G4-A4-B4-C#5, G4-A4-B4-C#5, G4-A4-B4-C#5, and G4-A4-B4. The bass staff contains notes with fingerings: 6 (G2), 2 (F#2), 4 (E2), b7 (D#2), 3 (G2), #3 (F#2), and [6] (G2). The F.B. staff contains notes with fingerings: 7 (G2), 7 (F#2), 7 (E2), and 7 (D#2).

Example 60

Example 61 is a musical piece in G major, consisting of ten measures. The treble staff contains chords: G4-A4-B4, G4-A4-B4-C#5, G4-A4-B4-C#5, G4-A4-B4-C#5, G4-A4-B4-C#5, G4-A4-B4-C#5, G4-A4-B4-C#5, G4-A4-B4-C#5, G4-A4-B4-C#5, and G4-A4-B4-C#5. The bass staff contains notes with fingerings: 6 (G2), 6 (F#2), 6 (E2), 6 (D#2), 6 (G2), 6 (F#2), 6 (E2), 6 (D#2), 6 (G2), and 6 (F#2).

Example 61



The musical score for 'The Rose Tree' is presented in three staves. The top staff is for the vocal melody, featuring a treble clef and a key signature of one flat (B-flat). The melody consists of two phrases, each ending with a double bar line. The first phrase is: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F4 (quarter), E4 (quarter), D4 (half). The second phrase is: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F4 (quarter), E4 (quarter), D4 (half). The middle staff is for the guitar accompaniment, featuring a treble clef and a key signature of one flat. It includes a capo on the 5th fret, indicated by a '5' at the beginning. The accompaniment consists of two phrases, each ending with a double bar line. The first phrase is: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F4 (quarter), E4 (quarter), D4 (half). The second phrase is: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F4 (quarter), E4 (quarter), D4 (half). The bottom staff is for the bass line, featuring a bass clef and a key signature of one flat. It includes a capo on the 5th fret, indicated by a '5' at the beginning. The bass line consists of two phrases, each ending with a double bar line. The first phrase is: G3 (quarter), A3 (quarter), B3 (quarter), A3-G3 (beamed eighth notes), F3 (quarter), E3 (quarter), D3 (half). The second phrase is: G3 (quarter), A3 (quarter), B3 (quarter), A3-G3 (beamed eighth notes), F3 (quarter), E3 (quarter), D3 (half). The score is labeled 'FB' in the bottom left corner.

### Example 62

The musical score for 'The Rose Tree' is presented in two systems. The first system contains the first two measures of the melody and the first two measures of the bass line. The second system contains the next two measures of the melody and the next two measures of the bass line. The melody is written in treble clef with a key signature of one flat (B-flat). The bass line is written in bass clef. The melody features a mix of eighth and quarter notes, with some measures containing rests. The bass line consists of eighth notes, with some measures containing rests. The score is set in a common time signature (C).

### Example 63

The musical score for 'The Rose Tree' is presented in three systems. The first system contains the first two measures of the melody and bass line. The second system contains the next two measures. The third system contains the final two measures. The melody is written in a treble clef, and the bass line is written in a bass clef. The key signature has one flat (B-flat), and the time signature is 4/4. The melody features a mix of eighth and quarter notes, with some measures containing rests. The bass line consists of quarter notes and eighth notes, often moving in parallel motion with the melody. Fingering numbers (1-5) are indicated below the notes in the melody, and the bass line includes some accidentals (flats) and fingering numbers.

### Example 64

Example 65 and similar ones also belong here. The sixth above the second bass note is anticipated for the sake of good voice leading or for other reasons. The seventh should occur in its place and the sixth should follow directly afterwards, as in Example 66. Thus the fundamental bass of Examples 65 and 66 are to be understood in the same way, namely as shown in Example 67.

Concerning transfer of resolution, we note that it occurs only in connection with the essential seventh and its inversions. The resolution of non-essential dissonances can neither be transferred nor omitted, except in recitatives.

## 21.

A pedal point, which usually appears near the end of a fugal composition, is formed by a succession of harmonies sounding against a sustained note in the bass, or in the soprano voice, or even (albeit infrequently) in a middle voice. In determining the fundamental harmony, the sustained note is disregarded when the harmonies are not directly related to it; rather the fundamental harmony is derived from the moving parts, which must always be composed as if the sustained note were not there. A pedal point deviates from the chord of the sustained tone, which is either the tonic or the dominant (preferably the latter), and returns to it gradually. If the return occurs at the right moment, it compliments the ear greatly. However, since pedal point is a liberty, care should be taken not to use any chords that would lead too far from the goal and make the return difficult. Although the familiar progressions in Examples 68a and 68b do not always occur just in contrapuntal compositions, they are also to be considered as types of pedal point. In Example 68a the departure from the harmony of the sustained note occurs with the seven-four-two chord, and the return to it occurs with the following chord. The same situation exists in Example 68b. Since the sustained note is not considered in such cases, the fundamental harmony of the first is that shown in Example 69, and that of the second in Example 70.

The passages in Example 71a and 71b should not be confused with pedal point. Here the sustained voices, which are in the majority, indicate the fundamental harmony against which the bass is heard in ascending or descending scales. This is really nothing other than the permissible passage shown in Example 72, which can be embellished and prolonged as is fitting.

## 22.

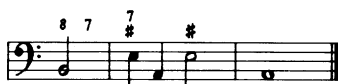
These are the principles by which everything that is written in the strict style, no matter how enigmatical it may first appear or sound, can be reduced to the two fundamental chords that are the foundation of all harmony. Now the questions are: Which progressions are proper to



Example 65



Example 66



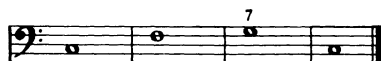
Example 67



Example 68



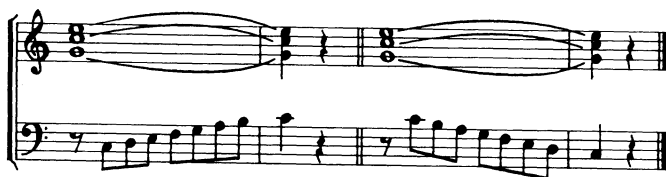
Example 69



Example 70



Example 71



Example 72

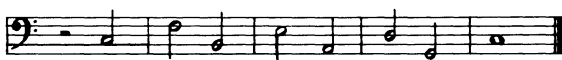
the fundamental bass? Or which fundamental harmonies can follow one another naturally? To answer these questions correctly would require that every triad and essential seventh chord in a given key be considered separately, that the possibility of each and every progression of these chords be indicated, and that the reason why each of these progressions is or is not possible be stated. This would be too detailed for our purpose. Thus we are content, since it is best for beginners, to touch upon only the most natural and most common progressions of the fundamental bass.

These are, first of all, those in fourths and fifths [Examples 73 and 74]; secondly those in sixths or descending thirds [Example 75]; thirdly, those in seconds, but seldom different from the situation shown in Example 76.

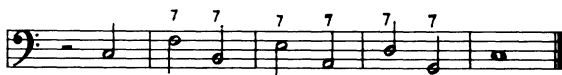
The fundamental bass often appears to progress by step even when this is not really the case, as in Example 77. These chords all appear to be triads, and the bass line of the example, which progresses by step from the second to the third chord, seems to be the fundamental bass. But the second chord permits the addition of the sixth, and thus is not a fundamental chord but a six-five chord whose root is a third below the bass note. This invalidates the stepwise progression. One must pay close attention to this, since the fundamental harmony is also changed when an interval not present in the chord can be sounded after it, as in Example 78. Thus the fundamental bass of this example is not as shown in Example 79a, but more correctly as shown in Example 79b.

Only when the change of harmony occurs too suddenly and the intention of the composer is to startle the listener with an unexpected progression, as in Example 80a or 80b, should the sixth not be sounded after the A chord in the first example, which is delayed by the non-essential sixth. However, the sixth could be sounded in its place under different circumstances. The fundamental bass of this example, which is shown in Example 81, is to be preferred to the one shown in Example 82, since it is more in accord with the intention [of the composer], and in this case is more natural. The same fundamental bass applies all the more to Example 80b, since the F-sharp chord makes even less sense when the seventh is added to the A chord. In such cases stepwise progression of the fundamental bass can certainly occur.

All possible remaining progressions more or less exceed the ordinary, and are thus bound by many kinds of conditions. To discuss all of these conditions here would far exceed the intention of this work. Those who study the works of great harmonists diligently and pay attention to the succession of the fundamental chords, will easily perceive the extraordinary progressions of the fundamental bass according to our



Example 73



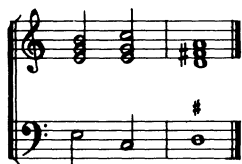
Example 74



Example 75



Example 76



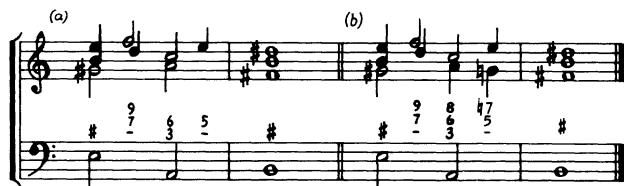
Example 77



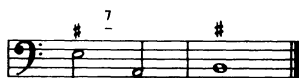
Example 78



Example 79



Example 80



Example 81



Example 82

given doctrines and will recognize when and how such progressions are possible from their treatment.

23.

The following fugue by Johann Sebastian Bach, which to this day has appeared insoluble even to great men of our time, is published here together with our analysis of its fundamental chords as proof of our stated principles [see Appendix A]. We believe that our reasoning is based on the nature of the matter itself when we state that these principles of harmony are not only the true ones, but also the only ones by which this fugue may be explained, and by which all apparent difficulties in the other works of this greatest harmonist of all times<sup>3</sup> may be solved and made comprehensible. Conversely, we maintain that all music which cannot be reduced to a natural progression of both fundamental chords according to our principles is composed unintelligibly, hence incorrectly and contrary to the strict style of composition.

### SUPPLEMENT

The rule that one must pay close attention to the progression of each chord cannot be repeated too often, since a chord is often entirely different than it appears to be as a result of its progression. In order to please the less experienced, we are adding the following examples [Table III] of different progressions with their fundamental chords. Their explanation is already obvious from the preceding. Nevertheless these progressions could be puzzling to some who have not grasped the theory of fundamental chords completely or to those who still lack the feeling for a natural progression. Such individuals could be misled in finding the correct fundamental bass.

In the last example the tenor is a pedal point. (See Paragraph 21.)

Since we are concerned here only with the less experienced, to whom the harmonic arts are not yet so familiar that they would completely understand the reduction of the preceding fugue to its fundamental chords, we believe to render them an agreeable service by adding an easier prelude by the same composer together with an analysis of the first part [see Appendix B]. We have omitted the fundamental bass from the second part, which is not much more difficult than the first, to give each an opportunity to analyze it on his own.<sup>4</sup> Only two kinds of progressions which occur frequently in this prelude merit attention: (1) One could imagine hearing an F chord on the second eighth note of the first measure; however, since this chord progresses to the E major chord on the third eighth note, one realizes that it is not an F chord, but a D chord with the essential seventh. (2) Similarly, one could imagine hearing the dominant seventh chord of A on the first eighth note of the third measure; however, since this chord must be

# Table III

*F.B.*

*Or.*



interpreted in relation to the last eighth note of the preceding measure, which progresses naturally to the tonic triad at the beginning of the following measure, it is not to be understood as the seventh chord on E, but as the suspended six-four chord on E, whose root is a fifth below the bass note. From this it also becomes clear that Bach indeed understood the distinction between the consonant and the dissonant six-four chords; while the former is used freely in Bach's works, the latter is never found without preparation. (See Paragraph 8, where the treatment of these chords was discussed at length.)

Appendix A. Analysis of the Fugue in B minor from *The Well-Tempered Clavier*, vol. I, by J. S. Bach

*Largo.*

The musical score is presented in five systems, each with a treble and bass staff. The key signature is B minor (two flats) and the time signature is 3/4. The tempo marking is *Largo.* The first system shows the beginning of the piece with a treble and bass staff. The second system continues the melody in the treble staff and adds a bass line. The third system continues the melody and adds a bass line with figured bass notation. The fourth system continues the melody and adds a bass line with figured bass notation. The fifth system continues the melody and adds a bass line with figured bass notation.

First system of musical notation, measures 1-4. The system consists of two staves (treble and bass clef) with a key signature of one flat (B-flat). The music features a complex, fast-moving melody in the treble staff, often using triplets and sixteenth notes. The bass staff provides a steady accompaniment with eighth and sixteenth notes. Measure numbers 1, 2, 3, and 4 are indicated below the staves.

Second system of musical notation, measures 5-8. This system continues the musical piece, maintaining the same key signature and complex melodic style. The treble staff continues with intricate patterns, while the bass staff provides harmonic support. Measure numbers 5, 6, 7, and 8 are indicated below the staves.

First system of a musical score, measures 1-4. It consists of two staves (treble and bass clef) with a grand staff bracket. The music is in 2/4 time. The melody is in the treble staff, and the bass staff provides harmonic support. The key signature has one sharp (F#).

Second system of a musical score, measures 5-8. It continues the melody and bass line from the first system. The notation includes various musical symbols such as notes, rests, and accidentals. The key signature remains one sharp (F#).

First system of musical notation, measures 1-4. The system consists of two staves (treble and bass clef) with a key signature of one sharp (F#). The music features a complex, flowing melody in the treble staff, often with triplets and sixteenth notes. The bass staff provides a steady accompaniment with eighth and sixteenth notes. Measure numbers 1, 2, 3, and 4 are indicated below the bass staff.

Second system of musical notation, measures 5-8. This system continues the musical piece with similar complexity. The treble staff maintains the intricate melodic line, while the bass staff continues the rhythmic accompaniment. Measure numbers 5, 6, 7, and 8 are indicated below the bass staff.

First system of musical notation, consisting of two staves (treble and bass clef) with various musical notes, rests, and dynamic markings. The notation includes eighth and sixteenth notes, as well as rests and dynamic markings like  $mf$  and  $f$ .

Second system of musical notation, continuing the piece with two staves (treble and bass clef). The notation includes eighth and sixteenth notes, rests, and dynamic markings like  $mf$  and  $f$ .

First system of a musical score, consisting of two staves (treble and bass clef) and four systems of figured bass notation. The first staff features a complex melodic line with many beamed sixteenth and thirty-second notes. The second staff contains a similar but less dense melodic line. The third and fourth systems are for figured bass, with numbers indicating fingerings and positions for the left and right hands.

Second system of the musical score, also consisting of two staves and four systems of figured bass notation. The first staff continues the complex melodic line from the first system. The second staff continues with a similar melodic line. The third and fourth systems are for figured bass, with numbers indicating fingerings and positions for the left and right hands.

First system of musical notation, measures 1-4. The system consists of four staves. The top staff is a treble clef with a key signature of one flat (B-flat). The second staff is a bass clef. The third and fourth staves are also bass clefs. The music features complex rhythmic patterns, including sixteenth and thirty-second notes, and various rests. Fingering numbers (1-7) are indicated above several notes.

Second system of musical notation, measures 5-8. This system continues the musical piece with four staves, maintaining the same clefs and key signature as the first system. It includes similar complex rhythmic figures and fingering instructions. The notation is dense, with many beamed notes and rests.

First system of a musical score on the left page. It consists of six staves. The top two staves are for a treble clef instrument, and the bottom four staves are for a bass clef instrument. The music features complex rhythmic patterns, including sixteenth and thirty-second notes, and various rests. Fingering numbers (1-5) are visible above several notes.

Second system of a musical score on the right page. It consists of six staves, continuing the piece from the left page. The notation includes complex rhythmic figures and rests, with fingering numbers indicated above the notes.

Third system of a musical score on the left page. It consists of six staves. The notation continues with complex rhythmic patterns and rests, including some beamed sixteenth notes. Fingering numbers are present above the notes.

Fourth system of a musical score on the right page. It consists of six staves. The notation continues with complex rhythmic patterns and rests, including some beamed sixteenth notes. Fingering numbers are present above the notes.



[illegible][illegible]

First system of music on the left page. It consists of four staves. The top staff has a treble clef and a key signature of one flat (B-flat). The second staff has a bass clef. The third and fourth staves are grand staves (treble and bass clefs). The music features complex rhythmic patterns, including sixteenth and thirty-second notes, and various rests.

Second system of music on the right page. It consists of four staves, continuing the musical notation from the first system. The notation includes various note values, rests, and dynamic markings.

Third system of music on the left page. It consists of four staves. The notation continues with complex rhythmic figures and rests, maintaining the same musical style as the previous systems.

Fourth system of music on the right page. It consists of four staves, continuing the musical notation. The system concludes with a double bar line and repeat signs.

First system of musical notation, measures 1-4. The system consists of two staves (treble and bass clef) with complex rhythmic patterns, including sixteenth and thirty-second notes, and rests. The notation includes various musical symbols such as beams, slurs, and dynamic markings.

Second system of musical notation, measures 5-8. The system continues the musical piece with similar complex rhythmic patterns and notation as the first system. It includes two staves with intricate melodic and harmonic lines.

First system of a musical score, consisting of two systems of staves. Each system contains a treble and bass staff joined by a brace. The music is written in a key with one sharp (F#) and a 3/4 time signature. The notation includes various note values, rests, and dynamic markings such as *mf* and *f*. The first system of staves shows a complex melodic line in the treble and a more rhythmic accompaniment in the bass.

Second system of the musical score, also consisting of two systems of staves. The notation continues from the first system, featuring similar melodic and rhythmic patterns. The key signature and time signature remain consistent. The second system of staves shows further development of the musical themes, with some measures containing multiple rests and dynamic markings.

First system of a musical score, measures 1-4. It consists of four staves. The top staff is in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. The second staff is in treble clef. The third staff is in bass clef. The fourth staff is in bass clef. The music features a complex rhythmic pattern with many sixteenth and thirty-second notes, and some triplets. There are various musical notations including slurs, ties, and dynamic markings.

Second system of a musical score, measures 5-8. It consists of four staves. The top staff is in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. The second staff is in treble clef. The third staff is in bass clef. The fourth staff is in bass clef. The music continues with complex rhythmic patterns, including slurs and ties. The system concludes with double bar lines on all staves.

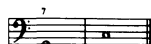
Appendix B. Analysis of the Prelude in A minor from *The Well-Tempered Clavier*, vol. II, by J. S. Bach

*Preludium.*

The image displays a musical score for the Prelude in A minor from J.S. Bach's *The Well-Tempered Clavier*, Volume II. The score is presented in two systems, each containing three measures of music. The notation is written for two staves, with the right hand (treble clef) and left hand (bass clef) parts clearly delineated. The key signature is one flat (A minor), and the time signature is 3/4. The music features a continuous eighth-note pattern in the right hand, while the left hand plays a more complex, syncopated pattern. The score includes various musical symbols such as notes, rests, and accidentals, and is labeled "Preludium." at the beginning.

## NOTES

1. Proof of this is as follows: The first seventh chord, which is formed above the dominant, prepares the tonic triad to which it leads directly, thereby effecting a complete rest.



The second seventh chord is less perfect because it cannot lead directly to the tonic triad, but first must go to its dominant. Yet it leads to a major cadence,



and is therefore more perfect than the third seventh chord, which leads in the same manner to a minor cadence:

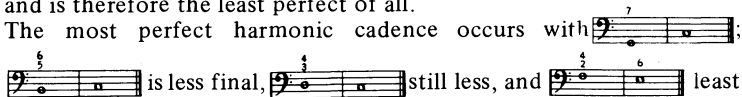


The fourth seventh chord requires still one more progression before coming to rest,



and is therefore the least perfect of all.

2. The most perfect harmonic cadence occurs with



is less final, still less, and least

of all, because the seventh from the fundamental, which in a second chord is in the bass and must move down by step, resolves to the third of the chord rather than to the tonic note itself; and since the tonic must be in the bass at a cadence, no close can be achieved.

3. Anyone who is a connoisseur of the art will hardly find this praise exaggerated. If one takes into consideration the astonishing skill of this man on the clavier as well as on the organ, his admirably learned manner of improvising in many voices, and the quantity of his works which have come down to us and which are all models of the art, then one must look down with pity upon the [following] distorted judgment of a critic who is very poorly versed in music. On p. 174 of the twenty-second volume of the *Jenaische Zeitung von gelehrten Sachen*, this critic does not hesitate to say that the fine passage by Gesner—who takes occasion in a remark on p. 61 of his new edition of Quintilian to do full justice to the merits of the late Bach—suits Vogler as well and perhaps even better than the old Johann Sebastian Bach, etc. If one now asks, “Who is this Vogler?” one finally learns after many inquiries that he is burgomaster and organist in Weimar and a pupil of Bach. But he was by no means even one of his best pupils. [Johann Matthias Gesner (1691–?) was Rector of the Thomas-Schule in Leipzig from 1730 to 1734. His edition of Quintilian was published in 1738. John Casper Vogler (1696–1763), who studied

with Bach at Arnstadt and Weimar, was Bach's second successor as organist at Weimar.]

4. [*Ed. note:* Only the first part of the prelude has been reproduced here.]

