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The harmonic language in the keyboard works of C.P.E. Bach

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Boston University
THE HARMONIC LANGUAGE IN THE KEYBOARD
WORKS OF C. P. E. BACH

by
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FOREWORD

One of the most significant and influential musical personalities of the eighteenth century was Carl Phillip Emmanuel Bach.¹ His compositions were widely known and often played; his work as theorist and teacher obtained the greatest recognition and respect throughout Europe. His exhaustive treatises, Essay on the True Art of Playing Keyboard Instruments, was used by Beethoven as a basic textbook.² Yet in our own time, this second son of Johann Sebastian is often pictured as a dim and relatively minor figure, obscured by the undeniable genius of his mighty father.

To the historian there is still another factor of perhaps even greater importance: Phillip Emmanuel stands in a unique position, historically speaking. He was able to look back upon the Baroque era which his own father had crowned so expertly, and he was possessed of remarkable foresight in anticipating - and perhaps shaping, to a large extent - the personal style, later cultivated by Haydn and Mozart.

Though it is only through extensive analytical examination of all his works that we may clearly ascertain his definite place in our musical heritage, it is toward that end that the present study of the harmonic language in his keyboard music is devoted.

¹ Throughout this paper the name Bach alone will refer to C.P.E. Bach.
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CHAPTER I

BACH AND HIS MUSICAL ENVIRONMENT

Carl Phillip Emmanuel Bach was born in 1714 and was tutored in musical matters by his father. The extent of his keyboard prowess can best be realized when we recall that by the age of eleven he was able to play accurately at sight.¹ His formal education was undertaken at the Thomasschule from which he went to the University of Frankfort. During his earlier school days he had written a number of keyboard works, and though the total amount of his study here is not actually known, he admitted having no teacher other than his father for both composition and keyboard.

From 1740 to 1767 he was in the employ of Frederick the Great, a position which required such a degree of toleration and deference that, as early as 1753, he was eager to seek employment elsewhere. His marriage in 1741 to a Prussian subject had made him dependent on the king's favor, however, so it was not until the death of Telemann,² his godfather, that he was able to make good his escape.

During his years at the court of Frederick, Bach composed literally hundreds of works, of which the most relevant to the present discussion

² June 25, 1767.
are the six Prussian Sonatas, published in 1742, and the six Wurtenburg Sonatas, published in 1744. It was also in this period that his very valuable theoretical work, Versuch über die wahre Art Das Clavier zu spielen, first appeared. It is extremely rare in musical history that a composer of significance leaves a musical theory volume that is worthwhile. Scarcer still is such a work found to be scholarly and complete, but these conditions are surely met in this work, and English-speaking students are now aided by a definitive edition by Professor Mitchell. This work frequently has made possible positive conclusions instead of mild inferences in the present discussion.

Entering the service of Princess Amalia in 1767 Bach was well received and accorded much more freedom than he had previously known. Burney and Reichardt\(^1\) both attested to his success in this position. Prolific in composition almost until the end, he died in 1788 at Hamburg.

It is well known that Bach contributed much to the beginning of the keyboard sonata as we know it today.\(^2\) But rarely emphasized is the extent of his harmonic development of the sonata, which, as we shall see, may well be his greatest achievement. For this reason most of our examples are drawn from these works.

The student of esthetics in music is aware of the clashes in musical style which formed an integral part of Bach's musical environment. Yet

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1 See Grove's dictionary, 1: 175.

such terms as Empfindsamkeit, galant, preclassical and rococo are devoid of meaning unless we understand the rationale of the men with whose works these terms are associated.

Bach himself was a product of diverse esthetic principles. For example, he disliked pedantry and deliberately avoided the more obvious harmonic cliches: yet in his treatise *On the True Art of Playing Keyboard Instruments*, he gives a quite pedantic set of rules for the improvisation of the "free" fantasia! On the other hand, he thought fugues and other highly contrapuntal forms to be "dry and despicable pieces," and he felt that "many more essential things are wanting to constitute a good composer." From these seemingly incongruous facts, it may be observed that he was affected by opposing sets of musical ideals. The teaching of his father left him with a firm belief in practical music; as a result of which he was not in sympathy with the artifices in counterpoint prescribed by some of the eighteenth century theorists. However, Sebastian's instruction also left him with a strong predilection for rationality, which at times, and perhaps necessarily, degenerates into dogmatic teaching and writing.

His period we call rococo, meaning the typically decorative and elegant style of the mid-eighteenth century. Within this generic term, there are at least two main trends, both of which are discernible in

1 These terms are discussed in their proper background in Lang, *op. cit.*, see under the several headings.

2 Burney, in Grove's, 1: 176.
Phillip Emmanuel's music. The first of these was called style galant, referring to the lighter and most ornamental composition of the period. Bach's fondness for ornaments is doubtless the most obvious result of this influence. Along with this, however, a group of young artists banded together in Berlin, among them our Bach, with the aim of expressing "true and natural" feelings and genuine lyricism in music. This group, known at the North German, or Berlin, School, thus anticipated in varying degrees the Romantic movement of the nineteenth century. To describe this romantic branch of the rococo, the term Empfindsamer stil has been applied.

The search for natural expression inevitably led Bach to some very curious musical results; for though he was never able to break away completely from the bonds of rococo, yet he was impelled to subjective and dramatic ideas. Two excellent examples of the almost incredible result of this conflict can be seen in the following excerpts. In the

![Musical notation]

Fig. 1.1.

1 Not all ornaments are to be considered merely decorative. As we shall see many are functional, either rhythmically, harmonically, or both.
first example desire for harshness and dissonance is countered by the compulsion to resolve the doubles tones correctly. The over-use of horizontal displacement renders both of these sections devoid of much of their emotional force.
CHAPTER II

MELODIC TYPES AND TEXTURES

If we allow for a considerable latitude in the classification of melodies, it is possible to group Bach's thematic material into two basic divisions, with a compound type evolving from these two. Such a system was devised by Dr. Wilhelm Fischer for use with regard to the preclassical symphony, and it will serve the present purpose equally well.

The first type is composed of rapidly moving notes, usually of the same duration. Joining together many fragments, it is motivistic, resembling its Baroque predecessor; but it is not so apt to continue in sequential treatment nor extend for such long periods as its Baroque prototype. Such a theme was called by Dr. Fischer Fortspinnungstypus, since it gives the impression of being able to spin on indefinitely. Bach's use of such themes is often encountered, though the "spinning" usually does not extend beyond two bars. Figure 2.1-3 shows three examples of this type of material. The first is somewhat closer to the Baroque spirit, but always these fragments are halted abruptly within a few measures, as at points x, y and z in the examples.

The theorist is often primarily concerned with the contrapuntal implications of monophonic writing, but this aspect of melody is too large for inclusion here in any detail. We may say, however, that the harmony which the listener will sense from a single melodic line depends on just this factor. So, from this point of view, the f# in Figure 2.1
functions in much the same way as does the familiar pedal point, which, 
in effect, it is.

Fig. 2.1.

\[\text{Figure 2.1: Musical notation.}\]

The second type of theme is amply described by the common musical 
term, cantabile. Its song-like quality is readily discernible, but in 
the hands of Bach such themes often appear as definitely non-vocal songs. 
Figure 3 consists of three examples, the last two of which are clearly 
keyboard songs. Here, then, is an important point in the consideration 
of Phillip Emmanuel's development of a pure keyboard style, for song-like 
though they are, these tunes demand the resources of the keyboardist, 
whether the instrument used by clavichord, harpsichord or the modern 
pianoforte.

Fig. 3.1

\[\text{Figure 3.1: Musical notation.}\]
It is to be expected that these two basic classifications will not appear in their pure form. The themes of the Baroque era tend to conform to a remarkable extent to either one type or the other, but we find in Bach's work a very complete fusion of the two types in one unified whole. Such themes we shall call composites. Figure 4 gives three examples of this somewhat infrequent phenomenon.

![Musical notation](image)

Now that we have classified Bach's melodies into the two broad divisions with their occasionally resulting composite, it remains for us to show why this distinction is important. Briefly stated, we may say that throughout the course of music history it has been melody that has shaped and conditioned harmony. Upon hearing a melodic fragment, it is usually possible to determine what sort of potentialities that fragment has, although some are deceptively versatile and others with great appeal may be quite limited. Indeed, Phillip Emmanuel recalls an engaging and significant anecdote about his father. In a letter to Forkel he wrote:
When he listened to a rich and many-voiced fugue, he could soon say, after the first entries of the subjects, what contrapuntal devices it would be possible to apply, and which of them the composer by rights ought to apply, and on such occasions, when I was standing next to him, and he had voiced his surmises to me, he would joyfully nudge me when his expectations were fulfilled.¹

The authors of theory texts in the English language are rather belatedly beginning to grasp the full importance of melody, a fact which has broad implications for those of us who must select one or two of these volumes for classroom use. Recent textbooks² have devoted considerable study to the formation of melodies in the character of the period under examination prior to the actual instruction in the harmonic or contrapuntal language. That melody shapes harmony is universally true at least in Western culture, only varying in the precise amount of control exercised over possible harmonization or contrapuntal treatment. In recent years we have come to look upon certain harmonic usage as displacement, or substitution, technic, which is really nothing new, as we shall see in determining Bach's stylistic tendencies.

There can be little doubt about the chordal structure underlying the first two of the following examples, and even in the third instance we surely expect chromatic sequences, and probably feel dominant


functioning harmony in the second bar, tonic in the third.

Most of Bach's melodies are readily associated with one specific harmonization—at least in general and functional terms such as Tonic, Subdominant or Supertonic and Dominant (including the leading-tone triad, half-diminished seventh on the leading-tone and diminished seventh on the leading-tone). From this fact we infer that it is ordinarily not in his original statement of themes that one finds unusual harmonic treatment in Bach's works. With the exception of some highly chromatic subject matter,¹ the first presentation of a theme is handled in the custom of the

¹ Such as Figure 5.3.
period, which is to expose a theme with melodic decoration but little or no harmonic elaboration.

The table below shows the grouping of chords under the traditional names for the primary triads which we shall employ as designations for general function, reserving the numeral system for the specific chord label.

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<td>IV [iv]</td>
<td>V</td>
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<td>Minor Keys:</td>
<td>vi i iii</td>
<td>ii ii o</td>
<td>vii o vii 7 vii 07 o</td>
</tr>
<tr>
<td></td>
<td>vii vi</td>
<td>ii ii o</td>
<td>vii o vii 7 viii 07 o</td>
</tr>
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We cannot leave our discussion of themes without briefly noting an important aspect of the composer's style which is closely allied to both melody and harmony. Perhaps the best term to describe this feature is texture. By this word we mean the overall impression received by the listener with regard to contrapuntal complexity. This depends on the number of distinguishable horizontal lines, and not on the number of simultaneously sounding tones. A three-voice fugue would thus be dense in texture, while a series of chords lacking in linear individuality would necessarily be thin in texture. A passage in octaves of unbroken
upward or downward movement would therefore be the thinnest possible texture, but a change of direction might easily lend contrapuntal character to the fragment, thus enriching the texture. Figure 6.1. shows a thin texture; only one prevailing part—in this case the highest voice—is possessed of sufficient individuality to maintain the listener's interest.

Figure 6.2. shows a texture that is somewhat more dense, since the ear will follow the bass line to some extent, but Figure 6.3. exposes a texture which is approximately as dense as any to be found in Bach's keyboard works, which is virtually unique in that it consists of only two voices. Interest in each voice, however, is very great, due in equal measure to the song-like character of the theme in the right hand, and to the unbroken descending chromatic line in the left hand. From these three examples we are able to discern the entire continuum of textures to be found in Bach's writings.

For the most part, then, his works are homophonic—a word that has traditional but certainly not literal significance. His music is not devoid of contrapuntal interest in many places, and these textures cannot be determined merely by glancing at a page of score, for many notes sounding together may give the impression of true homophony or thin texture, while the presence of only two moving parts may denote a much richer and fuller type of composition.
One outstanding example of this is the first movement of the Sonata in C, the opening bars of which are quoted in Figure 21, p. 42.

A similar treatment is found in the final Allegro of an A♭ Sonata, as follows:
The above examples show the extent to which Bach attempted imitative writing in his keyboard sonatas. Only an occasional thematic vestige of Baroque is still discernible in his work; his search for the "personal style" probably prevented him from further contrapuntal development of his material.

Throughout the wide range of textures noted in Bach's works, he rarely if ever goes beyond a two-part framework. We may expect interest to be maintained primarily by the highest sounding part—not necessarily in soprano range, since after all, this is keyboard music. This theme-carrying part may be (1) heard alone, or (2) supplemented by purely functional harmony without the establishment of a secondary line of interest, or (3) it may have an additional line of varying degrees of melodic significance, usually appearing in the lowest part.1

---

1 The entire question of contrapuntal complexity forms the basis of a dissertation by Dr. Roslyn Brogue Henning, The Uses of Contrapuntal Techniques by Contemporary Composers, (Radcliffe College, 1947). The analytical procedures evolved in her first chapter apply to the music of any period.
It is to be expected that Bach would employ all of the so-called
primary and secondary chords—triads and sevenths on all degrees of the
scale. But it must amaze the student who makes the composer's acquaintance
for the first time to see the great amount of chromatic alterations, and
to hear the remote tonal relationships which characterize the
Empfindsamkeit of Philipp Emmanuel.

We may note at the outset of this discourse that he was very keenly
aware of a fact which has escaped some writers on "traditional" harmony—
that the minor tonality is an unstable pattern, and that it may easily
degenerate into a different minor form or a major key. Minor instability
may exist because of the division of the Major scale which gives the
distinct impression of having two leading tones, one (the mediant) to the
Subdominant, and the other to the tonic, or the instability may be due to
the modal implications of minor patterns. From a modal point of view,
a², d and e are very closely related to c. Only the Phrygian (e)
requires an additional alteration to assume its familiar minor appearance,
and the alteration to form a leading-tone is necessary in all derivations
of minor from Dorian, Phrygian and Aeolian.

1 Coetschius said, "The harmonic minor mode...is the only theoretically
accurate minor scale," in his Theory and Practice of Tone-Relations, New
York, G. Schirmer, p. 33.
2 Small letters, and small numerals denote minor chords and keys;
It may also be that the reason for the instability of minor keys stems from a psychological factor, namely that minor tonalities have never been used consistently enough in one form only (e.g. Harmonic) for our ears to accept that form as the only real minor. We cannot attempt to solve this problem here; we can merely point out that Bach, like many others, was aware of the minor-instability factor, and unlike many others he exploited this fact, especially in development sections, to the extent that he passes through remote keys which composers before Beethoven delighted in avoiding, and in this respect Phillip Emmanuel is worthy of comparison to Beethoven. Were it not for the limited temporal scope of his movements, he might have dared to remain in some of the distant keys to which he travelled a little longer. This matter will be discussed in detail in the chapter on Modulation, page 32.

Having mentioned the fact that Bach used all primary and secondary triads and sevenths, we must now consider what alterations he employed, and it is even more needful to see how both normal and chromatically altered chords are resolved. Perusing his chapter on Thorough Bass in The True Art of Playing Keyboard Instruments,¹ one cannot fail to be impressed with the stringent rules he applies for the treatment of such capital letters and numbers will denote major chords and keys.

¹ pp. 198-311.
alterations. One might easily suspect his compositions to be stilted and dull. To the contrary, however, his progressions are often startlingly modern, and seemingly unrestrained. Yet he is bound by the conventions of his day to recommend limited use of these alterations. Compared with the nineteenth century Romantic composers, Bach was much more concerned with preparation and somewhat more preoccupied with the resolving of dissonances than his followers. Especially in the matter of prepared dissonances or chromatically altered tones, Phillip Emmanuel advocated adherence to the established precedents.

Yet we find that the license which he grants in the matter of chordal progressions is very different from "traditional" harmony as we know it today. He says, for example, that "it does not harm the triad to omit the octave and double the third, for this establishes consonant relationships among the upper parts." He gives the following illustrations which show the comparative freedom used in such a doubling (Figure 5. 1-3.). It is doubtful whether theorists of today would analyze this treatment in the same way. We would consider the doubled e in the first example a retardation, and the doubled tone then becomes the fifth of a minor chord. That Bach did not classify the progression in this way is doubtless due to the emphasis placed on the bass figures which, of course, to him indicated a triad when marked simply 5. This dichotomy of analytical methods, which we will notice often, is basic in attempting to explain the difference in rationale between the theorists of the eighteenth and twentieth centuries.
While it is not our purpose here to offer a digest of *The True Art of Playing Keyboard Instruments*, yet it is essential that we present the fundamental framework on which Bach's harmonic practice is based. Briefly stated, he considers all intervals over a bass tone as part of the harmony, in accordance with the convention of his time. This, of course, gives us many different qualities, and hence many different functions occurring within one group which he calls by the same symbol, without regard to the degree of the scale over which the chord is formed. Thus the figures \( \frac{6}{4} \) may mean any of the following distinctly different chords:

$$
\text{I i ii iii IV V vi vii° \left( \text{all \( \frac{6}{4} \)} \right)}
$$

As Bach pointed out, "The minor and major sixth and all three kinds of fourths may be expressed by \( \frac{6}{4} \)." This statement reminds us that,

by chromatic alteration, still another type of chord may be obtained as in Figure 9.2.

In dealing with this figure he stipulates that only the diminished fourth requires preparation; each of the three fourths is considered dissonant and so must descend step-wise to the succeeding chord. He further directs that, "When the fourth is diminished, the sixth is minor; when it is augmented, the sixth is major," thus eliminating such Romantic combinations as $\frac{6^+}{4^+}$ and $\frac{6^+}{4^{+++}}$. (The latter is regarded by many as simply a misspelled $\frac{5^+}{5}$.) This is extremely interesting since he describes and gives rules for the handling of the augmented sixth chord in both its $\frac{6^+}{3}$ and $\frac{6^+}{5}$ forms.

We have chosen to illustrate his analytical method in this one instance as it makes clear just how far Bach was willing to go in allowing unprepared dissonance, and the extent to which he combined chromatic intervals.

There remain a few points concerning the chords which Bach permitted that merit our examination here. Through his concern for interval figures

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1 Bach, C. P. E., op. cit., p. 228.
2 Ibid., p. 243 ff.
above the bass, he was able to conceive of our present "dominant thirteenth" chord without the rather irrational process of building all the tones up from the root only to eliminate some of them. For this chord, he used the very logical and expressive symbol, \( 7 \), a practice which seems to be reasserting itself in some circles today. This chord in Bach's judgment required both preparation and resolution of the sixth; conversely, the seventh was allowed to enter freely, although he believed it should remain stationary, indicating that the chord seemed to him to be a retarded \( 6 \), rather than a freely-moving independent harmony.

In the same fashion he was able to dispose of ninth chords, always regarding them as \( 9 \) chords, reserving other figurations for combinations of tones which we would not call ninth chords today. The ninth, naturally, is considered a dissonance, requiring preparation and stepwise descending resolution. Other chords which he labels ninths are shown in Figure 10.

1-12.

1 See editor's footnote in Bach, C.P.E., op. cit., p. 283.

2 Excepting Figure 9.3.
Before leaving the ninth chords we must clearly distinguish them from chords containing the figure 2. These chords are so labelled because it is their bass tones that are dissonant against the other parts. The dominant seventh chord in its third inversion is such a chord: here it is the bass which demands resolution. The figure 9 indicates that the bass at least is consonant, though other dissonances, like fourths and sevenths, are apt to be present.

While this system of chord-building facilitates the playing of virtually any combination of tones from the easily manageable figures, it does not take into account the actual or theoretical roots of the chords. We are bound to conclude that its value to the performer is inestimable. But what of its importance to the theorist?

As we have already noted, the roots must be determined by context, not simply from the symbol alone. However, viewing all intervals as chord tones over the bass, one can immediately sense the vertical results of a group of notes. At the same time, it is convenient to consider any appropriate dissonances as anticipations, retardations, suspensions, and the like. Indeed, Bach himself mentions many of these elements that we are inclined to call "non-chord tones," the only real difference in approach being the fact that he believes them to be parts of the chords as well as embellishments. In short, he applies a "double aspect" methodology.

So in one sense, at least, this kind of analysis has advantages that outweigh our present system which often fails itself when we attempt to use it to designate the functional elements of harmony. A few examples
may prove useful at this point:

Appearing above the examples are the symbols that might be applied in one of our current systems, with "non-chord" tones appropriately labelled. The figures occurring below the examples are reproduced from Bach's text. It should be obvious that his approach is more easily followed. The chord roots as well as "non-chord" tones are quite apparent; the confusion created by attaching specific names to each such tone is totally unnecessary if one is careful to follow Bach's advice for resolving such dissonances.

Similarly, the structural elements of the harmony can be readily understood apart from the Roman numerals, which only serve to cloud and disguise the functional picture. It is also extremely easy to see how the composer arrived at a Neapolitan sixth, not considering it a separate and
distinct phenomenon, far from the chords he usually encountered, for to
him it is simply one variant of the ordinary sixth chord, the chromatic
alteration notwithstanding.

Figure 11.2 illustrates again Bach's handling of chromaticism, but
this time of a different sort. Despite the lack of theoretical or actual
roots, once more it is obvious that good progressions will result if
concern for good voice-leading is exercised. This example brings up
still another point of significance. If we attempt to label non-chord
tones, why should we not consider $I_4^6 (i_4^6)$ as a form of suspension when
it is followed by $V$, after the fashion of the sixteenth century writers?\(^1\)

If one follows, instead, the teaching of Bach in this matter, he
already is imbued with the concept of dissonance inherent in all kinds
of fourths, and the suspension problem can no longer exist for him.
Hence, the second chord of Figure 11.3, is dispatched with facility,
resulting in the familiar "passing $i_4^6$" of today.

In the two examples of Figure 12 Bach states his preference for the
latter, giving this reason:

I am little in favor of strange intervals; yet, study
of various writings on accompaniment has convinced me that
ugliness often results from unusual combinations of usual
sounds.\(^2\)

---

This is an unusually perceptive statement, despite his avowed aversion to "strange intervals." We would do well to recommend the avoidance of "unusual combinations of usual sounds" in our classrooms today; although some of our modern composers occasionally seek out just such combinations, which doubtless have their place in the harmonic idiom of the present. The intervals 9\# and minor 9 are likewise defended by

Perhaps we can best characterize Bach's remarks on thorough bass by saying that it is not so much an essay on harmony in the sense of chords versus dissonances as it is a manual on how to achieve good voice-leading, taking dissonance for granted as an integral part of harmonic vocabulary - never as merely embellishments.
CHAPTER IV
THE DRAMATIC ASPECT OF HARMONY

We might expect that Bach's theory would not always correspond to his practice, since material used in teaching is often simplified and limited in scope. But such is not the case here; Bach's approach to harmony is so flexible and permits so much latitude that we are able to apply his analytical system to his music without finding notable exceptions to his text. Nor, indeed, is his book a simplified one. To the contrary, in each of the several matters discussed his treatment is exhaustive and complete. The only significant feature of his style in composition which does not conform to his text is the sudden adding or dropping out of tones in the accompanying parts. This procedure creates a perceptible change that is both dynamic and dramatic, doubtless the reason for its occurrence.

The question of dramatic effect accomplished through changes in dynamics is not properly a part of our topic. But wherever these changes are the outgrowth of alterations in harmonic texture or harmonic intensity, they ought to be examined since they constitute a very vital part of Bach's harmonic vocabulary.

Let us first clarify the term "harmonic intensity." This term refers to the amount of force carried by a momentary aural stimulus, as opposed to harmonic texture which refers to contrapuntal complexity.

(See pages 14 to 17.)
The physical basis of this force is the degree to which a chord root is reinforced by the presence or absence of its partials. Figure 13 will show the reader the extent of the continuum of harmonic intensity within which Bach worked. In these examples the indications of harmonic texture are included to demonstrate that these two elements may or may not be related, but there is no essential connection between them.

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**Figure 13**

Texture: 1 part
Intensity: 1

Texture: 2 part
Intensity: 2

Texture: 1-2 parts
Intensity: 3

Texture: 2 part
Intensity: 4

Texture: 1 part
Intensity: 8 (no root)
The octave in which an aural stimulus is placed will make a difference in harmonic intensity of significance to the physicist, but this variation does not have appreciable musical consequences in the keyboard compositions of Bach except for complete triads in the low register, as in Figure 14, which sound poorly on the modern pianoforte.

This notation sounds quite different on the harpsichord or clavichord, neither of which was cross-strung. The muddled effect which the piano gives us is due to this cross-stringing process, resulting in the presence of additional overtones.

Fig. 14.

The personal style that we associate with Bach owes not a small part of its individuality to the matter of harmonic intensity. Johann Sebastian was carefully consistent in this regard, allowing himself to increase harmonic intensity only in passages having the nature of codas. Handel was not so cautious, often permitting extra tones to become involved even in fugues for the purpose of greater intensity. In this respect Phillip Emmanuel resembles Handel on the one hand, and Haydn and Mozart on the other, for while the classical composers divested themselves of elaborate harmony, nevertheless they borrowed heavily from the wide assortment of dynamic devices, many of which were cultivated by Bach.
The variations in dynamics which are inherent in the harmonic intensity of the music are followed by Bach without exception. Thus he wrote the expression marks of Figure 15.1, and would never have reversed this natural tendency by indicating that the full chord should be soft and the unsupported single line loud, as in Figure 15.2, differing in this respect from Beethoven, who was very fond of reversing implied dynamics.

This fact brings up an interesting question. Did Bach adhere to the implied dynamic scheme of his harmony because he did not dare to reverse it? Or were there other forces restraining him from such a device? It seems certain that Bach would have dared to do anything that would enhance the dramatic power of his compositions. He dared to defend strange intervals, he dared to experiment with form; surely the writing of piano or forte in unconventional places would not have disturbed him if it were effective.

The real reason for his somewhat prosaic solution to the problem of dynamics, so far as harmonic structure is concerned, is the fact that the harpsichord was incapable of producing much distinction between piano and forte except for a few extraordinary instruments. And Bach did not care to compose music the performance of which would be restricted.
because of the demands made on the *clavier*. He states this with unmistakable clarity when he writes, "I have so constructed my Lessons that they may be played on a four-octave keyboard." These modest demands in his Lessons are not greatly exceeded in any of his other Sonatas and keyboard pieces; he demands a single keyboard and a four-octave range. This is extremely pertinent to the present issue since the reversal of implied dynamics might conceivably be effective on a two-manual harpsichord which was more, apparently, than Bach could expect his students and admirers to possess. Thus a full chord must sound louder than a single unaccompanied line. The dynamics, moreover, are brought about through just this device; any attempt to go against the dynamics created by the harmonic intensity would necessarily result in conflict and confusion.

The fact that the clavichord would be able to reverse the relative loudness conditioned by the harmony in no way hinders the validity of our argument, for again we can turn to the composer's own words, when he directed that, "Every keyboardist should own a good harpsichord and a good clavichord to enable him to play all things interchangeably."¹


² This term refers to the "Eighteen Lessons in Six Sonatas," which accompanied the first edition of The True Art of Playing Keyboard Instruments.

³ The total range used by Bach in the works we examined was small by today's standards: from Contra G to 3-line F.

We have a situation, then, in which the dynamically dramatic aspect of the piano sonata might very well have been expanded, except that the ideal instrument was not in general use, nor was it perfected to its eventual practical status. Each testifies to this fact, declaring:

The more recent pianoforte, when it is sturdy and well built, has many fine qualities, although its touch must be carefully worked out, a task which is not without difficulties. Yet, I hold that a good clavichord, except for its weaker tone, shares equally in the attractiveness of the piano-forte and in addition features the vibrato and portato. 11

There is a second way by which drama may be introduced through harmony in music, and it is this means that generally receives the most attention, being a less subtle factor than intensity. This, of course, is the use of unexpected progressions, as when the Neapolitan or augmented sixth 2 displace a more conventional harmony. Regretfully, we must admit that most of the time these chords fail to be shocking as they must have been in Bach's day.

However, when a series of chords contains many instances of chromatic harmony having extra-tonic relationships, we still are surprised and delighted with the dramatic force which these elements contribute to the music. Figure 16 is an excellent example of this technic; it is important to note that the purpose of the harmony is definitely not modulatory.

1 Bach, C. P. E., op. cit., p. 36.
2 These are discussed on pp. 19 and 22.
Most dramatic of these progressions involving extra-tonic movement of harmony are those which either modulate to remote keys or drift through a number of tonal centers before settling down upon a new tonic. This treatment is of such importance that the next chapter is devoted entirely to it.
CHAPTEIR V

MODULATION

Once we have managed to view the whole question of chordal progression through the eyes of Bach, and once we have realized the extent of the limitations imposed on him due to the instruments, it behooves us to move on to the larger field of tonal progression that we call modulation.

Expediency demands that we include in this category the elusive and fleeting hints of new tonalities that are often called transitions by theorists who would have us reserve the more general term for changes wherein both the old and new keys are definitely established by means of cadences. These rapid shifts of tonal center, so common in late nineteenth and twentieth century music, must be inextricably bound up with any discussion of Bach's harmony, since the comparative brevity of his movements precluded the possibility of extensive use of the larger, key-establishing modulations. Except for the tonic and closely related keys, the results of our analyses have shown that Bach judiciously avoided remaining in any key for very long.

1 Closely related will refer in these pages to dominant, tonic with changed mode, and the three minors mentioned on p. 17 (Dorian, Phrygian and Aeolian).

2 Of keyboard works including 18 of the sonatas (from three different periods) and several miscellaneous Stücke.
He doubtless sensed that by so doing he would have destroyed the feeling for the need of returning to the home key which the listener must have in order for the music to be at all meaningful tonally. Since the acuteness of musical perception differs widely among listeners, the precise amount of dwelling "at home" that is required to bring about recognition of the original key on the listener's part is a matter of grave concern to the composer who would be understood by his audience. It is safe to say, however, that Bach was able to dispose of this matter successfully, though he occasionally comes dangerously close to accomplishing that disastrous disorientation of his audience in which the original tonic is forgotten altogether.

Surely the minimum amount of key establishment at the opening of a movement is heard in the following example (Figure 17). The "drift" through many keys begins almost at once; only the tonic and dominant chords are presented previous to the chromatic alterations, and even these two chords are not confirmed or otherwise enforced on the listener's memory.
Yet this same example is totally satisfactory from the standpoint of creating an adequate impression of home key. Let us consider, briefly, how this is accomplished. Without the rather useless inclusion of statistics on the number of times a particular harmony appears, we may note the results of our analysis with regard to tonal movement, for it is this feature which is particularly remarkable in this instance.

In bars 1 - 4 (Figure 17) the bass glides smoothly down the upper half of the chromatic scale, passing through (but not establishing) E (IV) and affirming the dominant (F#) by means of its own dominant (2nd half, 3rd bar), closing halfway through the fourth bar in a half-cadence. We can now begin to see the method applied here to establish the key of b. It is actually a procedure of encirclement, approaching a tonic cadence from above and below within a very short space of time.

From this point (bar 4½), the theme is reiterated with slight melodic changes, making a full cadence in the tonic key half-way through measure 8. This eight-bar period is presented again, the second time considerably varied, after which the theme winds through other keys in the following order: G, D, b, G, e, C and a. A retransition of five bars includes 3½ bars over an unusual leading-tone pedal-point, followed by a restatement
of the theme, which, in its essential features, greatly resembles the first exposition. All this tonal movement — enough, really, for a symphonic first movement — happens in the space of 68 bars.\(^1\)

The foregoing analysis has been chosen for inclusion here as perhaps an ideal example from which to derive a conception of Bach at his chromatic best. In other\(^2\) instances, the result of the chromatic drift becomes downright confusing to the ear, but in general such matters are conveyed to the listener smoothly and satisfactorily. The analysis above illustrates (1) rapidly moving but convincing shifts of tonal center, (2) simplicity of texture,\(^3\) and (3) nearly uniform harmonic intensity, the only reinforcement of the two parts occurring at point \(x\), third measure. There are, of course, countless examples of transitional modulations, but there is none in which the process is accomplished more smoothly and simplistically.

The relationship of the original key (b) to the others through which the piece travels is worth noting also in this instance. Only once did the composer modulate to what is ordinarily called the relative major (mediant). Twice he approaches \(G\), though only one of these changes sets us squarely in that key. Once he moves to the subdominant (e), once to the very distant (Neapolitan) \(C\), and once to \(a\), which is negated by the \(A\#\) pedal-point mentioned above.

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\(^2\) Cf. the Larghetto of the B\(^b\) Sonata, \#11 in Peters ed., Sonaten und Stücke, (#4188) p. 47.

\(^3\) The theme of this movement was used as an example in our remarks on melodic types, p. 9.
Recalling our remarks\textsuperscript{1} regarding the relationships of minor and major keys, we find that Bach exploits this point of view for his purposes in writing personal and dramatic music of a highly chromatic character. The use of G in the example (Figure 17) as a related major key is unquestionable evidence of this. In our analysis we found that the composer often used the major key found two whole tones below the minor as a relative from which and to which he moved with great facility.

In view of the numbers of his works involving clavier, no attempt was made in our researches to enumerate the times in which he uses this submediant key in preference to the mediant relative major. However, it is possible to generalize to the extent of saying that the number of times either key appears within a movement is almost evenly divided, but there was slightly more frequency of occurrence for the submediant in slow movements, while in faster movements the converse is true.

There is an important exception to this which does not come to light if we are content to merely tabulate frequencies. This exception exists when a binary minor movement has its second section beginning in major, instead of dominant. In this situation the key chosen is always the traditional "relative" (mediant) major.

Roughly the same sort of phenomena may be observed in movements in major. Bach displays a strong inclination to employ supertonic and submediant as equally accessible keys. This is somewhat more conventional in major than the similar situation in minor. Again, when the second

\textsuperscript{1} See pp. 15-16.
portion of a binary major movement begins in minor — a rather infrequent
device — he invariably chooses the submediant related minor.

Throughout Bach's keyboard works there appears one factor which pro-
hibited him from using complete key-establishing modulations extensively.
This is the matter of brevity which we have noted before. Rarely indeed
does a movement occupy more than ninety measures; an average length would
probably be somewhere between 60 and 70 bars for first and third movements,
even less for the second movements.

A logical inference, based on these facts, is that without expanding
the temporal scope of his music, the composer was forced to employ the
transitional type of modulation, which, in turn, caused him to create melo-
dies, often of chromatic contours, that could easily change their inter-
vallic distances without losing their individual configurations. This is
not, of course, the only factor that conditioned the character of his
themes, but he was little concerned with contrapuntal possibilities. So
from the harmonic point of view, it is probably the most significant single
conclusion that can be drawn from our analyses, since it affords us with
an explanation of the reasons underlying his particular type of chromati-
cism.
CHAPTER VI

TONAL ORGANIZATION

We turn now to the largest aspect of harmony, which is the basis of musical form. It is not our purpose here to discuss Bach's contribution to the growth of the sonata, but insofar as harmony and form are implicated, we will concern ourselves with the problem. All of the material for this chapter is derived from examination of twenty-four sonatas, composed from 1740 to 1783, which disclosed some important data with regard to the effect of length on the overall tonal plan, as well as the system of key relationships in his architectural design.

In any discussion of the formal aspect of harmony, it is necessary to distinguish between two very different types of chordal usage. The first of these types is the basic underlying harmonic sense of a passage; the second includes the purely ornamental progressions which serve only to enhance the basic harmony. If we employ conventional methods of harmonic analysis, we get a somewhat dim view of this matter, for in such a procedure we inevitably mix both of these types and hence are not able to determine the basic harmonic sense of the music under examination.

The accompanying examples will make the distinction clear:

\[ \begin{align*}
\text{Fig. 18-1.} \\
\end{align*} \]
The first of the above examples occurs in the exposition of the Sonatas; its basic harmonic meaning is obviously dominant of C. The second example shows how the same theme is treated in the recapitulation. Here, despite the elaboration of the harmony, the meaning is again dominant, only this time, of course, it is dominant to the original key, f. To the skilled composer, this sort of distinction is of the most vital importance, since he may conceive of long passages comprising fanciful and richly-woven harmonies for ornamental purposes, while the sense of the entire section may rely on only one chord.

The significance of this question in relation to Bach's keyboard compositions is clear when we consider his artistic development. Let us arbitrarily divide his work into three periods, early, mature and late - a division which is dangerous if one expects to find the first work of the "mature" period to be radically different from the last work of the "early" period. Such a dichotomy has a great value, however, despite its possible pitfalls, for we find certain general trends that definitely support this classification.

In order to separate these periods, it is of course, necessary to examine the music to determine where and when the significant features of
his style, both general and particular, seem to change. From this stand-
point, it is logical to place the end of the "early" period at some time
after the completion of the "Prussian" Sonatas (1742), but before the com-
position of the "Wurtemburg" Sonatas (1744). Although thematic construc-
tion is not so much altered, the harmonic nuances of the "Wurtemburg" So-
natas support this separation, and it is rarely in the matter of individual
thematic growth that Bach shows much change; it would seem that he always
wrote melodies that were interesting enough despite their customary brevity.
His thematic development is more significant when he begins to write second
themes that are possessed of a different character from his first themes.¹

It is in the early period that we find extensive use of basic harmony
with fairly simple ornamental harmony. As an experimenter, Bach was not
averse to searching for new effects now and again throughout his life, but
in the main, the music of this time is rather plain and stable, often lack-
ing in enough harmonic or contrapuntal complexity to maintain the listener's
interest.

The second or "mature" period, beginning with the Wurtemburg Sonatas
extends roughly to the time of his entry into the service of Princess Amalia
in 1767. It is during this time that second themes achieve their greatest
individuality. A notable example of this occurs in the Sonata in A (1765)
where the first and second themes are completely unlike in spirit as well
as in texture and intensity, though the second theme lacks tonal independ-
ence, since it comes first in the tonic key.

¹ See page 46.
It must be pointed out, however, that in this period Bach wrote opening movements of two clear types: monothematic, without a hint of secondary themes, and bithematic with a fully developed second theme, as shown in the following example.
The first movement of the Sonata in c shows the monothematic treatment with unmistakable clarity.
Harmonically, the mature period represents the fullest exploitation of the possibilities of ornamental harmony, while the basic harmony is usually quite obvious. The compositions of this time contain frequent examples of dramatic effects accomplished by means of harmonic elaboration, a feature which is present also in the later works.

In the late period Bach shows an extraordinary development, since most of this music is fantastic and rhapsodical, sometimes appearing to be literal transcriptions of improvisations. Just as his post in the services of Princess Amalia offered him personal freedom which he had not known before, so his composition reflects many liberties in form, and often a contentment and serenity in the fluency of his writing not previously noted. It would appear that some of his discontent with his position at the court of Frederick is reflected in the moving, stormy, violent music which is to be found, for the most part, in his mature period. This is not to say that the late works are devoid of dramatic impact; we would rather say that the dramatic power in the late works is achieved with less conscious effort on the composer's part, although the demands on the keyboardist may
be very great. Some of this music, however, contains work which one would imagine to be early indeed.¹ The Rondo in E⁰ of 1787 is such a piece. Some instances furnish evidence of a lack of tonal organization, and the basic harmony is thoroughly obscured by the preponderance of ornamental chromatic harmony. In these works it is often difficult to ascertain what the composer really had in mind. A fragment from one such piece appears below:

¹ Not a small question here is the authenticity of the dates of composition given by the editors. Some of the posthumously published work is definitely early; this is not included here. But even those dates given by Farrenc and Wotquenne seem doubtful at times.
One other important feature of Bach's style may be observed as we consider the basic harmony in its relation to the thematic material. There is an interesting connection here which is without doubt one of the main ways by which Bach achieves unity in his ostensibly loosely-woven musical fabric. In order to demonstrate this point, let us examine the opening bars of the first movement, first Wurttemburg Sonata. Here we find thematic material divided into three distinct phrases, each of nearly equal length. Yet the underlying harmony of the passage divides itself into two portions, symmetrical except for a small extension of the last part. This gives us a binary harmonic unit containing a ternary thematic unit—a sort of formal two versus three, since these two elements are the very basis of musical organization.

Our examination has shown that this treatment is no mere accident. Moreover, Bach's use of this technic grew along with his concept of sonata form, so that we occasionally find this principle to be virtually the only unifying factor in some of his more fantastic sections. Some curious modifications of this technic have been noted in many places; for example, if the melodic units are short and choppy, the basic harmony is often unchanging for relatively long units, as in the opening of the Sonata in A\textsuperscript{b} (Wotquenne III, 57, 2). The converse of this is also practiced by Bach, though with less frequency since his melodic phrases are more often short than long.

\textsuperscript{1} Of. the exposition of the first theme in the final Allegro of the Sonata in a (1781), Wotquenne III, 57, 2.
A number of his first movements are binary from the tonal standpoint, with both sections marked to be repeated. Sometimes the first movement is little more than a prelude,\(^2\) and not a prelude in the sense that the term was understood by Johann Sebastian, but simply an introductory movement which, unable to stand by itself, modulates to the dominant key, or makes a half-cadence, not unalike the preludes of Handel. Or again, one finds extensive movements complete in themselves, which are still distinctly monothematic.\(^3\)

In some of the opening movements which might be considered bithematic, such as that of the Sonata in a, published in 1781,\(^4\) the second theme is not a distinctly independent entity as it was destined to become at the hands of Haydn and Mozart, since it rarely is distinguished by enough tonal separation from its surrounding material nor is its character very different from that of the first theme. For this reason we cannot feel that the growth of the modern sonata was much aided in this respect.

His second movements tend to conform loosely to what has become known as "song form." They are usually slower and uniformly the shortest of the movements. Quite commonly, they are consistently chromatic, drifting through several keys but not having firmly established modulations.

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\(^1\) This is the Sonata in G, composed in 1751, in *Le Trésor des Pianistes*.

\(^2\) See the Andante of the Sonata in g (Wotquenne III, 52, 3) reprinted in Peters (\#4182), p. 36.

\(^3\) See figure 21.

\(^4\) Wotquenne III, 57, 2; reprinted in Buelow ed., p. 12.
These movements may be in various keys, such as:

1. Relative (mediant) major or relative (submediant) minor.
2. Dominant (major).
3. Tonic with changed mode.

The above are the most common, but the use of the submediant related major in sonatas having a main tonality that is minor tends to confirm our remarks concerning this relationship.¹

His final movements are unquestionably the most interesting from the formal standpoint. Harmonically, this may or may not be true, for Bach maintains harmonic interest throughout a composition with almost alarming consistency. However, one can find virtually any type of form employed by Bach for a final movement in a sonata. The only possible generalization is that some sort of rondo form is usually discernible, but this does not tell us much, for a rondo can mean practically any form in which two or more themes take part.

In some instances we found dance movements, reminiscent in form (but not in content) of the Baroque period. These are found, as one might expect, in the earlier works. Then, we find that in approximately the middle of his career he was undecided about the form and content of final movements. In one example² he wrote "Tempo di Menuetto," and the movement itself is made up of two clearly different themes in rondo form. Here the modulations are complete, and they serve to distinguish the separate

¹ See pp. 15-16, 36.
² The last movement of the B♭ Sonata (Wotquenne III, 50, 5); reprinted in Peters ed. (#4188), p. 48.
sections and themes of the form. Yet the sound does not betray the underlying paradox.

In another place,¹ we find a movement in which the use of separate keys help create an impression of the presence of two themes. But even a glance at the material (Figure 23) will show this impression to be false.

Most often we find full-blown rondo form with distinctly different material separated by well-defined modulations. Such movements may be from 90 to 135 bars in length, indicating that the themes are not long nor is the development extensive. The formal scheme of one such example is as follows:

**Length in Bars**

<table>
<thead>
<tr>
<th>EXPOSITION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Theme in tonic major; transition to)</td>
<td>46</td>
</tr>
<tr>
<td>B₁ (Theme of different texture and intensity in dominant major; transition to)</td>
<td></td>
</tr>
<tr>
<td>B₂ (Theme, again different in character, still in dominant; transition to)</td>
<td></td>
</tr>
<tr>
<td>B₃ (Theme, different but in dominant)</td>
<td></td>
</tr>
<tr>
<td>Closing theme</td>
<td></td>
</tr>
<tr>
<td>(1st and 2nd endings)</td>
<td></td>
</tr>
</tbody>
</table>

Length in Bars

DEVELOPMENT

of A (in dominant)
of B\(_1\) (in mediant minor)
of B\(_2\) (in tonic)
of A (in mediant minor)
of B\(_2\) (in dominant) which serves as a retransition to

RECAPITULATION

A (tonic)
B\(_1\) (altered so as to modulate to)
B\(_2\) (in subdominant, with transition to)
B\(_3\) (tonic)
Closing theme (tonic)

The movement described above must not be considered typical, for both in length and elaboration of tonal plan it is exceptional, while in the matter of modulation, it is quite conservative. Yet it shows with undeniable clarity the extent to which Bach developed this aspect of the sonata.

Before concluding our discussion of his final movements of sonatas, we must take note of a development that occurred fairly late in Bach's life. In the G major Sonata which Farrenc identifies as having been composed in Hamburg in 1783, we find a concluding movement in which Bach seems to have condensed his material and crystallized his style. It is not amiss to state that there is not a single unnecessary note in this little gem of eighty-five measures. Nor can there be any doubt about the sense of "home key" at any time. Except for the fact that the second theme is

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1 i.e., the Allegro vivace of the A Major Sonata, #3 in Buelow ed., p. 22; also in Le Trésor des Pianistes.

chromatic, and hence, predisposed to modulate, the movement greatly re-sembles one by Mozart in its total effect, and is surely worthy of compari-son to Mozart's best.

From the harmonic point of view it is extremely difficult to determine Bach's greatest contribution. If it be in a particular portion of the so-mata, we suggest that it is in the final movements, in accordance with the many features discussed above.

It is possible, however, that his most significant achievement, as far as harmonic form is concerned, is the simple fact that his keyboard sonatas have each of their middle movements in different keys; the inevitable re-turn to the original key for the final movement becomes in Bach's usage, a great unifying factor. The use of related keys for middle movements is one of the insurmountable barriers of the Baroque period which Johann Sebastian was never able to overcome altogether, and it is probably this, more any-thing else, that has given Phillip Emmanuel his widespread reputation for being instrumental in the development of sonata form.

No doubt it required a vast amount of careful planning for this nuance to be employed by Bach, but the most hypercritical student of his works must admit that this structural design does give his sonatas the necessary balance and unity which must be conveyed to the listener, and this is ac-complished to a degree that most of the earlier sonata-composers utterly failed to achieve.

This, then, is the final test of a composer whose harmonic language has been under examination in these pages. That he succeeded admirably in the broadest aspect of harmony as well as in its most minute detail is
sufficient testimony to his greatness. That he remains virtually unplayed is the result, perhaps, of historical accident, but that his music would be beautiful to hear in concert as well as fascinating to examine critically in private is an undeniable fact.
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ABSTRACT

The purpose of the study is to reveal the significant features of C. F. E. Bach's harmonic vocabulary, and also to disclose, as far as possible, his own system of musical thought out of which this harmonic language grew. For this reason an examination was made of both his practice and his theory. Hence our material is taken from his keyboard works, especially the Sonatas, and his valuable theoretical volume, On the True Art of Playing Keyboard Instruments.

In order that we may better comprehend Phillip Emanuel, it is necessary to have an understanding of the clashes in musical ideologies which formed an integral part of Bach's environment. Bach himself was a product of diverse esthetic principles. Disliking pedantry, he often becomes pedantic in his book; displaying contempt for the contrapuntal forms employed by his father and the other Baroque composers, Phillip Emanuel's own composition shows unmistakably that he was more concerned than he would probably have admitted with the contrapuntal problems in his "homophonic" music. The search for natural expression led Bach to some very curious results; though he was never able to break away completely from the bonds of Rococo, he was nevertheless continually striving for subjective, dramatic ideas.

The starting point for any examination of harmony must be melody, since melody inescapably predetermines harmony, at least in classical and pre-classical music. The melodies of Bach are classified into two basic types: (1) those which seem to be capable of spinning on indefinitely, due usually to the use of short notes of equal length,
and (2) those which are song-like in character. When these two types are combined within a single theme, the result is called a composite melodic type. The harmonic possibilities of these types demonstrate that Bach's themes are usually best harmonized by only one basic harmony, except for changes of purely ornamental nature.

Another classification of Bach's music is made possible by a consideration of texture. By this term we refer to the contrapuntal complexity of a given movement or portion thereof. Having established this dichotomy, it becomes apparent that Bach's writing rarely exceeds a two-part framework, and often consists of one main line of interest, the other being reduced to accompaniment status. In other words, the homophonic style of classical music is emerging throughout the works of Bach.

Turning to his theoretical work, we set forth the uses of harmony as seen through the eyes of Phillip Emmanuel. Not so much concerned with the principles of harmony as revealed in the book (and which offer a rather superficial knowledge of the composer), we attempted to disclose something of the attitude with which Bach approached the then-prevailing views of harmony. We conclude that he employed a "double-aspect" methodology: that is, while considering any combination of consonant and dissonant tones as a possible chord, the usefulness of the chord depends on the other aspect - the possibility of resolving all dissonances along traditional lines.

The dramatic elements of harmony as employed by Bach are discussed first in terms of harmonic intensity - the degree to which a chord tone, usually the root, is reinforced by the presence or absence of its over-
tones.- It was observed that Bach did not attempt to reverse the dynamics conditioned by the harmonic intensity of a passage, as did later composers. The limitations of the claviers of the 18th century offer the best explanation of this fact. It was found that most of the dramatic power of Bach's music comes not from the changes of harmonic intensity or general dynamics, but rather from the actual chord progressions used, especially those which either modulate to remote keys or drift through various tonal centers before settling on a new tonic.

An examination was made of Bach's modulatory technique which exposed some important data. One observation is that Bach judiciously avoided remaining in any key for very long. He doubtless sensed that by so doing he would have destroyed the feeling for the need of returning to the home key which the listener must have in order for the music to be at all meaningful tonally.

Also throughout Bach's keyboard works there rarely appear extensive key-establishing modulations. This is not to be regarded as a weakness in his composition, but as a necessity, for without expanding the temporal scope of his music, the composer was forced to employ the transitional type of modulation which in turn caused him to create melodies of chromatic contours. Such themes easily change their intervallic distances without losing their individual configurations. This affords us an explanation of the reasons underlying his particular type of chromaticism.

Turning to the largest aspect of harmony which is the basis of musical form, we distinguish between two very different types of
chordal usage. The first of these is the basic underlying harmonic sense of a passage; the second includes the purely ornamental progressions which serve only to enhance the basic harmony. To the skilled composer this sort of distinction is of the most vital importance, since he may conceive of long passages comprising fanciful ornamental harmony, while the sense of the entire section may rely on only one chord. Viewing Bach's clavier sonatas from a standpoint of ornamental versus basic harmony, we are able to divide his work into three periods: early, mature and late. In general the early period (before 1743) is marked by extensive use of basic harmony with the ornamental harmony fairly simple. The mature period represents the fullest exploitation of the possibilities of ornamental harmony, while the basic harmony is usually still quite obvious. The late period (after 1767) is characterized by music that is fantastic and rhapsodical, often even improvisational. Such works contain many formal liberties, but also possess a contentment and serenity, observed more from the fluency of the writing than in the mood of the music. In the late period Bach may have undergone something of a musical regression, which gives to some of these works the appearance of being early. Or it may be that the dates given to many of the posthumously published compositions are incorrect. This is a problem which our limited resources forced us to leave unsolved.

A very significant feature of Bach's tonal organization may be seen if we consider the basic harmony in its relation to the thematic material. Often harmonic units do not coincide with thematic units of the same passage. This gives us a sort of formal two-versus-three.
Since harmonic and thematic elements are the bases of form, this is without doubt one of the main ways by which Bach achieves unity in his ostensibly loosely-woven fabric.

His formal progress is noteworthy in other respects also. The simple fact that the middle movements of sonatas are not in the original tonic key is a very great contribution to the growth of the sonata, and his arrangement of material within a given movement, though never fully systematized, certainly aided his followers in the establishment of the "classical" sonata.