

HARMONIC FUNCTION AND THE MOTION OF THE BASSLINE

REED J. HOYT

It is clear to almost everyone in the undergraduate theory-teaching enterprise that the emphasis in our analytical courses falls on harmony. Whether or not the curriculum separates or integrates the three main areas of aural skills, analysis, and construction, classes tend to focus on the harmonic detail at the expense of attending to overall structural factors or of adequately treating contrapuntal structure. Fortunately, with the increased influence of Schenkerian linear techniques, the overemphasis on harmonic structure is beginning to wane. Unfortunately, critical problems with the harmonic terminology remain unsolved and are likely to remain in that state as more and more theorists apply Schenkerian methods to their teaching, because Schenkerians, by and large, are not interested in these problems. Thus, on one hand, we have traditionalists clinging to their hidebound ways and, on the other, Schenkerians who do not consider the matter sufficiently important to merit attention.

All this aside, many would agree that considerable deficiencies exist within the system we all use to describe harmonic structures, particularly in analyzing complex chromatic harmony. I would go further in saying that crucial problems arise even before the student-analyst confronts such music. Indeed, in my view, the whole method needs to be carefully scrutinized at its core.

Furthermore, from the pedagogical standpoint, theorists and teachers of theory need to adopt a system for describing harmony in a sensible way that can be more or less universally accepted and taught. Of course, complete agreement among music analysts is not a realistic possibility. As it now stands, however, variations in terminology are sufficiently numerous so as to cause great and well-founded confusion among students, teachers, and analysts alike. A terminological agreement should have been reached long ago, suggesting that the lack of terminological standardization might stem from important defects in the system as it now stands, insofar as we can determine where it stands. Terminology is, after all, the product of a method of thinking.

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The diatonic designations for chords are, in fact, quite consistently applied, with the exception of the I6/4 and ii6/5 chords, for which Schenker suggested the labels V6/4 and IV6/5, the latter certainly agreeing with Rameau's concept of *double emploi*.¹ With these seemingly minor refinements, general agreement appears to exist that chords are best described by root and inversion symbols, to which may be added a further distinction of upper-case roman numerals for major and augmented triads (if we agree that augmented triads are structural harmonies) and lower-case roman numerals for minor and diminished triads.

A reasonably obvious question arises almost immediately—one that everyone involved with beginning theory classes must face—why do the roman numerals refer to roots, whereas the Arabic numerals refer to the intervals above the bass? We can supply at least three different types of answers: historical, analytical, and philosophical. Of course, the roman numerals are the descendants of Rameau's *Basse fondamentale*. Rameau was motivated to create his theory to a great extent by the need to construct a taxonomy for the numerous types of vertical structures he observed. His system and the roman numerals that resulted from it are summary systems: all forms of C-E-G, for example, are summarized into the category I in C-major, III in A-minor, IV in G-Major, and so on.

To provide the label, we must be able to determine the root and the tonality as well as the type of triad in the most refined version of the theory. Because it can be a very difficult and complex question, we must leave aside the issue of tonality and how it is determined and consider the problem of finding the root. The concept of root is plainly an abstract one if it does not appear in the bass, and this analytical consideration leads to the philosophical question: is the root the structural generator of the chord? In the case of the (traditional) I6/4 and ii6/5 chords, Schenker's re-labeling suggests otherwise; indeed, it is very difficult to maintain convincingly that the root of a 6/4 chord is its generator. The mixture of roots and thoroughbass symbols is philosophically questionable for a related reason: the thoroughbass numbers can easily be measured as intervals above the bass, whereas the roman numerals of inverted chords must be determined by a more convoluted method. The combination results in a rather uncomfortable mixture of viewpoints: concrete and empirical on one hand as opposed to abstract and rationalistic on the other.

A second problem raised more directly by Schenker's re-labeling lies in the assumption suggested by the traditional labels that all chords carrying the same roman numeral have equal structural importance. For instance, a tonic label at the beginning of a recapitulation is not symbolically differentiated from a tonic label that might be applied in the middle of the opening phrase of a work, which seems fundamentally contrary to the

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way we would hear those two harmonies. In other words, neither levels nor long-range function are considered. By using the labels within a graphic format, Schenkerian analysis solves the problem of levels to a great extent.

Similarly, the labeling appears to assume that chords grouped under one roman numeral have the same function. As before, 6/4 chords cannot justifiably be regarded in that way. Moreover, such an assumption fails to take into account voice-leading considerations. To take a simple example, most would agree that V chords are followed by I chords. Yet, if we examine each possible V-I combination, we must conclude that this statement is subject to further qualifications as shown in Figure 1, where we see that 33% of V-I and 50% of V⁷-I progressions are either questionable or not used. In all cases, at least one reason for not using a certain combination stems from problematical voice leading: not resolving the leading tone in an outer voice, not resolving a dissonance, hidden octaves resolving a dissonance, and disjunct motion to and/or from the bass of a 6/4 chord. Certainly, one has to wonder if harmonic laws might not be better expressed by voice-leading than by summary harmonic means like "I follows V." If a rule like "I follows V," which is virtually a musical axiom (particularly for beginning students), cannot survive the scrutiny of the simple test shown in Figure 1, then the aptness of our labeling system for harmony is called into serious question.

A second question of functionality arises, that of the functional equivalence of chords that have different roots. For example, it is commonly thought that V and viio chords have a pre-tonic function, that ii (iio in minor) and IV (iv) chords have a pre-dominant function (or dominant preparation), that vi (VI) chords normally lead either to pre-dominant or pre-tonic chords, and that iii (III) chords lead to vi (VI) or IV (iv) chords. Although the discussion of individual chordal functions will be ordered in this way, I shall deal directly with this issue later.

For the present, let us consider more specifically the differences in function among the 5/3, the 6/3, and the 6/4 positions. One could argue that 6/4 chords, as dissonances, obviously differ functionally from 5/3 and 6/3 arrangements of the same pitch classes; therefore, it should not be surprising that 6/4 chords would act differently from the consonant positions because a dissonant chord cannot have exactly the same function (closure, for instance) as a consonant chord in tonal music. Further, the conventions for approaching and/or leaving the 6/4 by step (except in bass arpeggiations) certainly single out the 6/4 as a special chord, one that is treated differently from the other positions through voice leading in the bass. Although most would agree that the treatment of 6/4 chords in context differs from 5/3 and 6/3 chords, more will need to be said about them after we examine the functionality of the 6/3 chords.

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Figure 1. Dominant Tonic Progressions

Figure 1 displays two musical staves illustrating Dominant Tonic Progressions. The first staff shows a sequence of chords with labels: V, I, V, I⁶, V, I⁶₄, V⁶, I, V⁶, I⁶, V⁶, I⁶₄, V⁶₄, I, V⁶₄, I⁶, V⁶₄, I⁶₄. The second staff shows: V⁷, I, V⁷, I⁶, V⁷, I⁶₄, V⁶₅, I, V⁶₅, I⁶, V⁶₅, I⁶₄, V⁶₅, I, V⁶₅, I⁶, V⁶₅, I, V⁶₅, I⁶, V⁶₅, I⁶₄. Annotations above the staves include: ? X X (first staff); X X X NB X X ? (second staff). Internal annotations include LT and LT,D.

? = questionable, rare, exceptional

X = virtually never used

LT = leading tone in outer voice unresolved

* = dissonance unresolved

= = hidden octaves resolving a dissonance

D = unorthodox doubling

$\left(\frac{6}{4}\right)$ = 6/4 approached or left by leap

NB = See Figure 5b, noting movement of F upward to G.

Hence, the real question is this: is it appropriate to label 6/3 chords according to their roots? To my knowledge, this assumption has not been thoroughly and directly questioned since the early days of Rameau's theory.² Yet, there are clear differences in function between root-position and first-inversion chords on every diatonic scale degree. For instance, I and I⁶ may have an opposite effect. In Figure 2, we see that I⁶ acts to *avoid* the strong cadence that a I chord would have provided. In m. 14 of Figure 2, the I⁶ chord on the first beat evades the cadence that would have taken effect had the bassline sounded a G, as occurs later in m. 18. Also, the melodic motion in m. 14 leads from the potential but unrealized stability of the G on the first beat to the slightly less stable B on the third beat. At that point, G appears simultaneously in the bass, producing the harmonic closure, now coming too late, that would have produced strong overall closure had it occurred on the first beat of m. 18 supporting a root-position tonic chord. In m. 14, therefore, closure is avoided by the I⁶ chord, by the

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imperfection of the potential authentic cadence on the second and third beats of m. 14, and by the placement of the root-position tonic chord on the third beat.

By contrast, in m. 18, harmonic closure is very strong; continued forward thrust is produced by the sudden textural change, by the ongoing drive of the repeated eighth notes, and by the upward D-G movement of the bassline in mm. 17-18, which is slightly less conclusive than a downward V-I would have been. None of these changes has anything to do with harmony. With these and other minor exceptions, such as the continued addition of the seventh, C above D on the fourth beat of m. 17 (cf. m. 13, fourth beat, where the seventh drops out after the third beat—recalling from Figure 1 that I^6 rarely follows V^7), mm. 13 and 17, which prepare for the potential and then actualized cadence, are essentially identical. In this context, I and I^6 have opposite functions with respect to closure, a fundamental difference.

Figure 2. Mozart, *Eine kleine Nachtmusik*, first movement.

Allegro

The musical score for measures 11-18 of Mozart's *Eine kleine Nachtmusik*, first movement, is shown. The tempo is marked *Allegro*. The key signature is one sharp (F#), and the time signature is 3/4. The score is written for piano. Measures 11-14 and 15-18 are shown. The bass line in measures 17-18 shows a stepwise ascent from D to G, which is a characteristic feature of the I^6 chord.

A second function of I^6 is so common, particularly in Baroque and Classic music, that it need not be exemplified. This type acts to initiate a stepwise ascent in the bass through the subdominant (IV or ii^6) to the dominant (E-F-G bass movement in C-major). In a fuller context, the motion is often C-E-F-G. Or, the bass of I^6 may act as an arpeggiation between the tonic and the dominant. In both cases, the function of I^6 is medial or transitory—again, clearly opposed to the closural power of I.

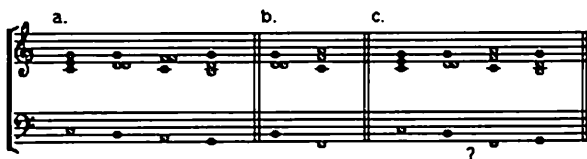
Further, V and V^6 do not produce the same cadential effect: very few

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final cadences move from V^6 (or $V6/5$) to I^3 . Or, in a diatonic chaconne bass (C-B-A-G) in C-major, the harmonies often form $I-V^6-IV^6-V$, as in Figure 3a. One could not simply substitute V for V^6 because such a replacement would break up the contour of the bassline's descent.

As is also demonstrated by the diatonic chaconne bass, the IV^6 chord may follow the V^6 . By contrast, one would be hard pressed to find many examples of V^6-IV motion, perhaps due to the tritone that would result between the two tones in the bass, but also because of the strong voice-leading proclivity of the bassline's leading tone to move back to the tonic, as in Figure 3b. Even if we precede the V^6-IV motion with a tonic chord and follow it with a dominant chord, as in Figure 3c, we would wonder why the F in the bass is not an A, which would have resulted in a more direct voice-leading connection. In general, if leaps are not parts of arpeggiations, they tend to be filled in by a subsequent pitch that lies between the two notes of the leap. In this case, however, B melodically tends to go to C, and F melodically tends to go to E—producing two puzzling and awkward contradictions of melodic tendency. If we reverse the direction of the B-F leap, the melodic motion would almost certainly generate a subsequent E, meaning that the dominant chord would be virtually unattainable directly from either B-F leap. In sum, it is clear that V^6 may move to IV^6 but that V^6-IV is not a musically usable progression, and that we cannot simply substitute a IV for a IV^6 in a chaconne bass. From this, we may conclude that IV and $IV6$ are not functionally equivalent in an important way.

Figure 3. Chaconne Bass and Attempted Alterations.



Perhaps one could object to the progression from V^6 to IV on the grounds that it is essentially faulty, since IV as a pre-dominant chord tends to go directly to V . The V^6-IV chaconne possibility, however, would seem to be a rather significant and troubling exception to that harmonic rule because the chaconne bass is not an anomalous pattern but rather an important archetypal structure common to all periods of tonal music and to much pre-tonal music as well. In other words, to argue that the chaconne bass is exceptional in some way is to present an invalid view.

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A second "exception" could be cited, the V-IV⁶ succession. Figure 4a shows a structure that could be described as a retrograded chaconne pattern, G-A-B-C in C-major (on downbeats in mm. 10, 11, 12, and 13 with a G-A-B diminution version in mm. 11-12 and G-A-B-C in mm 12-13). The first two harmonies generated by this bass are V and IV⁶ in mm. 10 and 11. Figures 4b and 4c show a deceptive motion from the dominant to the submediant. Figure 4d demonstrates that even in minor keys where the submediant is likely to lie only a half-step above the dominant, an upward linear movement is possible. Figure 4d is also interesting because it shows that the initial V may not reach its implied tonic and that the iv⁶ chord may actually lead to a modulation toward the relative major, with the iv⁶ acting as a pivot chord (becoming ii⁶ in A-major in this case) in traditional parlance. All told, it is difficult to object to either V-IV⁶ (major keys) or V-iv⁶ (minor keys) on the grounds that these successions are fundamentally incorrect from a harmonic standpoint when the voice leading is not problematical and when they may generate a coherent melodic process of some degree of flexibility in the bassline. One cannot object to V-IV⁶ for reasons of voice leading. More important, Figures 3-4 indicate that IV and IV⁶ are not interchangeable, that they may have slightly different functions, and that common practice (not modal) examples can serve to illustrate the differences in functionality between them.

Figure 4a. Beethoven, *Triple Concerto*, first movement.

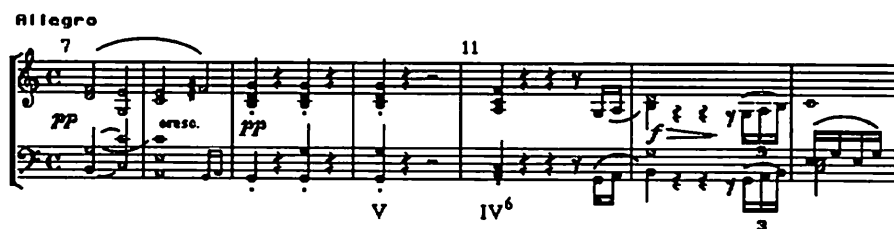


Figure 4b. Brahms, *Intermezzo*, op 76, no. 4.

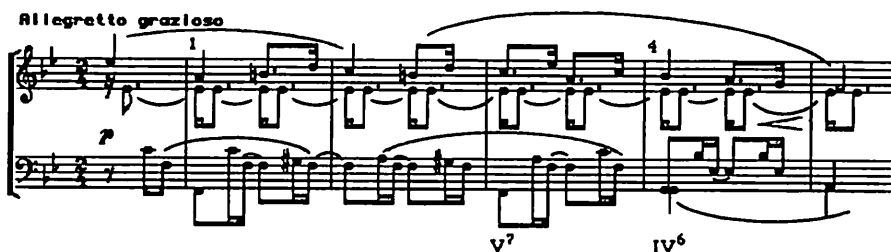
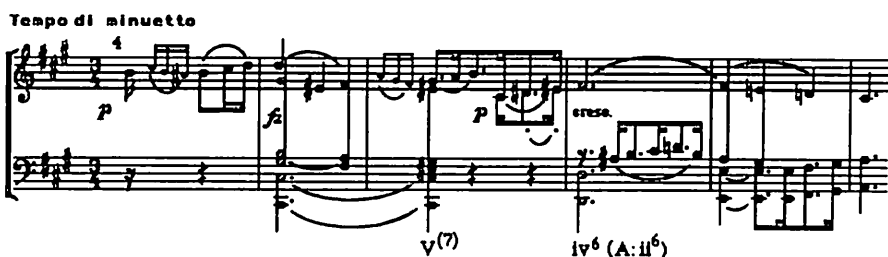


Figure 4c. Beethoven, *Missa solennis*, *Agnus dei*.



Figure 4d. Haydn, *Trio*, H. XV/26, third movement.



Hence, the so-called primary triads (I, IV, and V) exhibit significant differences in their usages in root position compared with their behavior in first inversion. These kinds of differences do not even speak to the problem of the *v* chord (as a minor triad) in minor keys, an issue Schenker and others have discussed.⁴ Minor *v* cannot be considered a primary triad; its lack of leading tone prevents it from proceeding directly to the tonic as effectively as major V. In terms of the minor tonic, minor *v* is a rather remote region. If the original tonic is to be re-established, a modulation or tonicization of the dominant as minor *v* must then be followed by raising the minor third of the triad, thereby returning the leading tone to the dominant chord. This is a typical move in Baroque binary forms at the end of the first repeated section, and it seems unnecessary to quote from the many examples that have this characteristic. In sum, there should be no controversy that *v* and V have quite different functions and that they should thus be differentiated by their symbols.

A related issue of the chaconne bass in minor is an interesting problem. Only if the descent is chromatic would the leading tone appear in the bass. In minor keys, then, *i-v*⁶ would probably signal a further descent—whereas *i-V*⁶ could indicate a return to the tonic. So, in either major or minor keys,

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it is clear that V^6 , when preceded by the tonic, may and sometimes does occasion a further descent in the bassline. The melodic process of the bassline in such instances dominates the voice-leading tendency of the leading tone to return to the tonic in an outer voice. (By contrast, it would appear that $V6/5$ would differ in that the bassline's leading tone would ascend in virtually every case, while the second between the 6 and 5 would tend to resolve to a third when the 5 falls by step.) Again, chaconne basses, as archetypal patterns, cannot be regarded as anomalies; passages supported by chaconne basses demonstrate that the melodic implications of the bassline may generate perfectly reasonable and cohesive progressions that go against the so-called norms of harmony.

Another widely accepted principle of harmony and one that involves the question of $5/3$ versus $6/3$ is the case of the only dissonant triad in the major key, vii° . The traditional view that vii° is an incomplete V^7 is highly problematical. First of all, vii° is usually found in first inversion, vii°_6 (which produces problems in textbooks that insist in first presenting exclusively root-position triads). In the motion from vii°_6 to I , the tone a third above the bass of the vii°_6 , the fifth of the chord, often ascends by step to the fifth of the next chord.

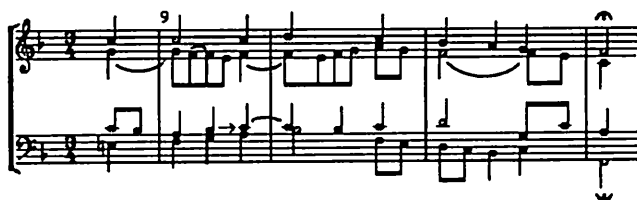
In V^7 , however, that tone would become the seventh of the chord, which normally resolves downward. Figure 5a shows a chorale that demonstrates both principles and the voice-leading contrast between a first-inversion diminished triad and a dominant seventh chord. In m. 3, where the tenor-line ascends C-D, the chord with the C is a first-inversion diminished triad. By contrast, in mm. 13-14, the F-natural in the alto-line as the seventh of a dominant seventh chord descends to E. When the chord following the first-inversion diminished chord is also a $6/3$, then the tendency of that tone to ascend is even stronger, as in mm. 5-6 of Figure 5a. (We know from Figure 1 that V^7-I^6 is rare.) The connection between these measures also illustrates that the so-called implied seventh can be doubled because it may resolve in both directions. A real dominant-seventh chord would almost never double its seventh because the seventh has only one normal resolution, leading to parallel octaves. Most interestingly, the rising tendency forms a significant exception to the rule about the seventh of the V^7 chord descending, as shown in Figure 5b (cf. Figure 1 at the NB). Thus, it would appear that the bassline motion, 2-3 by scale degrees, would tend to support parallel 4-5 motion in an upper voice, irrespective of the exact makeup of the chord above the supertonic. In summary, vii°_6 is not really similar in function to V^7 but acts more like $V4/3$. As Figure 5 demonstrates, this is rather subtle; the progressions from vii°_6 , V^7 , and $V4/3$ to I or I^6 such as these probably gave rise to the theory that vii° is an incomplete V^7 .

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Figure 5a. J. S. Bach, *Aus meines Herzens Grunde*, B.W.V. 269.



Figure 5b. J. S. Bach, *Hilf, Gott, dass mir's gelinge*, B.W.V. 343.



In Figure 6, we see a less subtle difference between $\text{vii}^{\circ 6}$ and V^7 . The vii° and $\text{vii}^{\circ 6}$ chords in Figure 6a could be analyzed as pivot chords, becoming ii° and $\text{ii}^{\circ 6}$ in the temporary tonic of E-minor. As Figure 6b shows, $\text{V}^4/3$

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could serve a similar function but would be less likely because of the D-D# cross relationship that would arise. Of course, the vii° in root position leading to iii , as in the circle of fifths sequence of Figure 6c, illustrates a stronger distinction between vii° and V^7 since a $\text{V}^7\text{-iii}$ progression would probably be regarded either as aberrant or modal by most analysts. The most striking difference between vii° and V^7 occurs when the vii° assumes a pre-dominant function, as in the $\text{vii}^4/2$ chord in Figure 6d. Or, to take the train of thought one step further, $\text{vii}^4/3$ may lead directly to V , as in Figure 6e, where F in mm. 17-18 supports the diminished chord that leads to a dominant chord on the second half of the first beat of m. 19 and eventually to a fairly strong cadence on V in m. 20, second beat. (Note also V-iv^6 in m. 19.)

By contrast, the $\text{vii}^4/3$ chord may also lead to I^6 , in which case it acts like a $\text{V}^4/2$ chord, as in Figure 6f, which is more orthodox in that it equates the function of $\text{vii}^4/3$ with that of $\text{V}^4/2$. The $\text{V}^4/2$ chord, however, would almost never assume the role of a pre-dominant chord, as in the $\text{vii}^4/3$ chord of Figure 6e. That the bass of the $\text{vii}^4/3$ may simultaneously act like a subdominant and like a dissonant upper neighbor tone to the mediant is indicated by Figure 6g, where the cello and bass parts move D-G-D while the second bassoon part moves the G to F. The bass motion, 1-4-1, goes with a $\text{i-vii}^\circ\text{-i}$ harmonic motion, thus co-ordinating the tendency of the bass and the harmony to lead to the tonic—but, in different ways: plagal in the second bassoon part, leading tone in the harmony of the upper parts. Thus, $\text{vii}^4/3$ may have both a pre-tonic and a subdominant (dominant preparation) function. So, when vii° or vii° moves in the fashion of a V^7 chord, the bass tones match in function: vii° and $\text{V}^4/3$, $\text{vii}^4/3$ and $\text{V}^4/2$. Here, we see again that the inversions of a triad or seventh chord do not have the same function as the root-position chord and that identical tones in the bass often function in similar ways, regardless of the content of the upper voices.

Figure 6a. J. S. Bach, "Goldberg" Variations, Var.4.

Figure 6b. Attempted alteration with cross relationship.

The image contains two musical excerpts, labeled 'a.' and 'b.', in G major. Excerpt 'a.' shows a sequence of chords in the bass line, starting with a diminished seventh chord (vii°) and moving through various inversions. Excerpt 'b.' shows an attempted alteration with a cross relationship, where the bass line moves from G to F# and back to G, creating a dissonance with the upper voices. The notation includes treble and bass staves with various chord symbols and figured bass notation.

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Figure 6c. Circle of fifths progression with unlikely alteration.



Figure 6d. Schumann, *Carnaval*, *Valse noble*.



Figure 6e. Brahms, *Academic Festival Overture*.

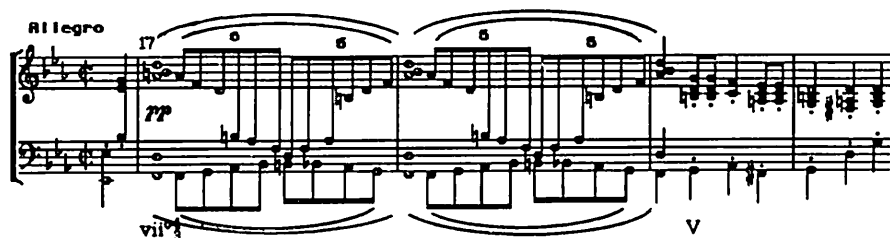
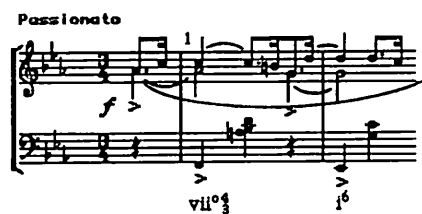


Figure 6f. Schumann, *Carnaval*, *Chiarina*.



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Figure 6g. Weber, *Der Freischütz*, Act II, Scene 4, #10 (Finale)
24 m.m. after poco più moto.



To continue in a functional direction away from the tonic in traditional thought, even in the case of ii and ii^6 (ii° and $ii^{\circ 6}$), which most would consider to be virtually identical in function, the two positions have slightly different voice-leading functions. First of all, a root-position supertonic triad almost never directly follows a root-position tonic triad. (See Figure 7a.) This is rather strikingly, though only peripherally, demonstrated by several studies of an archetypal pattern, one by Leonard B. Meyer and two by Robert O. Gjerdingen.⁵ In all of these studies, initial motion from tonic to supertonic almost never goes with a root-position progression from tonic to supertonic; rather, the supertonic in the bass supports $6/4$, $4/3$, or $6/3$ in most cases.⁶ The outcome of the movement in the bassline from tonic through the supertonic and dominant back to the tonic has also been studied. In brief, such motions tend to support soprano-line motion to the third degree above the final tonic. By contrast, the use of either IV or ii^6 before the dominant ($I-IV-V-I$ patterns in the bass) may generate any member of the tonic triad above the final tonic in the bass.⁷ We must conclude that significant differences between the functions of ii and ii^6 exist.

Hence, it is the ii^6 chord and not the ii chord that more closely resembles IV in terms of function. As in the case of vi and IV^6 , as well as $V6/4$, $V4/3$, and $vii^{\circ 6}$, the function of the chord, its tendency in approach and departure context, seems to be governed by the propensities of the bass tone rather than the root. Further, the whole issue of the root of $ii6/5$, a matter that in Rameau's theories can fairly be regarded as confused and inconsistent, relates directly to the problem of root theory. Rameau realized that the $ii6/5$ had, in effect, two potential sources, the supertonic and the subdominant, as noted also by Schenker (see Note 1). When the $ii6/5$ was followed

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by V, the root was the supertonic; when it was followed by I, the root was the subdominant. This kind of inconsistency plagues the root-inversion theory.

We may now continue in the harmonic path that in traditional thought leads to regions ever further away from the tonic, namely to the submediant triad. The contrast in function between vi and vi⁶ is more pronounced than that between ii and ii⁶. The root-position submediant triad is often used in the deceptive cadence, of course, whereas vi⁶ usually acts as a pivot chord—most often becoming ii⁶ in the dominant key (Figure 7a, m. 11) or occasionally as iv⁶ in the mediant key (Figure 7b). (M. 1 of Figure 7a also shows vi⁶ as a mitigating chord placed between I and ii, thereby demonstrating the point made just before: that root-position ii rarely immediately succeeds root-position I.) In minor keys, as Figure 7c illustrates, VI⁶ may become IV⁶ in the relative major key (quite analogous to Figure 7b). An interesting variant of this motion occurs in Figure 7d, where the first-inversion subdominant chord in the relative major is changed to a minor triad. Only late in the nineteenth century, by which time the root-inversion theory had permeated composers' thinking, do we find such progressions as V-vi⁶ (V-VI⁶ in minor keys) as possible variants of deceptive cadences, as seen in Figures 7e-f.

Figure 7a. Mozart, *Sonata*, K. 333, first movement.

The image displays a musical score for Mozart's Sonata, K. 333, first movement. It consists of two systems of music, each with a treble and bass staff. The first system is marked 'Allegro' and '(P)'. The second system shows measures 11 and 14, with a label 'vi⁶ (F: ii⁶)' below measure 11. The score is in G major (one sharp) and 3/4 time. The first system shows a sequence of chords: I (C4-E4-G4), vi⁶ (F4-A4-C5), and ii (D4-F4-A4). The second system shows a sequence of chords: I (C4-E4-G4), vi⁶ (F4-A4-C5), and ii⁶ (D4-F4-A4).

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Figure 7b. Beethoven, *Sonata*, op. 53, first movement.

Allegro con brio

14

pp

18

cresc.

p

vi^6 (E: iv^6)

E: V

Figure 7c. Beethoven, *Quartet*, op. 18, no. 1, second movement.

Adagio affettuoso ed appassionato

14

pp

cresc.

p

VI^6 (F: IV^6)

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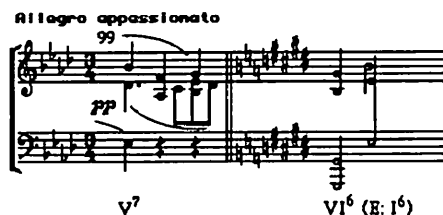
Figure 7d. Chopin, *Mazurka*, op. 33, no. 1.



Figure 7e. Franck, *Violin Sonata*, third movement.



Figure 7f. Brahms, *Clarinet Sonata*, no. 1, first movement.



The last root whose function needs to be discussed is the mediant. The root-position mediant triad leads either by fifth to the submediant or upward by step in the bass to the subdominant. Many familiar circle-of-fifths patterns contain iii-vi (III-VI) progressions, and it would serve little purpose to quote such passages here—though we shall find some interesting conclusions regarding these progressions when inversions are considered. The iii (III) of the iii-IV (III-iv) progression acts much like I⁶ or i⁶ in its tendency to rise to the subdominant in the bass, which, as mentioned, may

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generate IV (iv), ii⁶ (ii^{o6}), or ii6/5 (ii^{o6}/5). The iii-IV (III-iv) progression is common within melodies that move from 7 to 6. The use of iii below 7 seems to negate, at least partially, the tendency of 7 to rise to 8. The iii-IV (III-iv) progression appears in all tonal styles, as Figure 8 shows.

In Figure 8a, Bach uses the same chords below 7-6 as in the original harmonization.⁸ Figures 8c and d(m. 3) show the progression as part of a sequential treatment: C-G-A^b-E^b in Example 8c and E^b-B^b-C-G in Figure 8d. Figure 8e, which also has a sequential bassline of sorts (C-G[#]-A-E-F), illustrates the possibility of the major triad with minor seventh above the mediant in the major key leading, in effect, deceptively to the subdominant. Figure 8, then, demonstrates the stylistic universality of the iii-IV (III-iv) progression and introduces the possibility of chromaticism (Figure 8e) within that progression.

Figure 8a. J. S. Bach, *Nun lob', mein' Seel', den Herren*, B.W.V. 17.



Figure 8b. J. S. Bach, *O wie selig seid ihr doch, ihr Frommen*, B.W.V. 406.

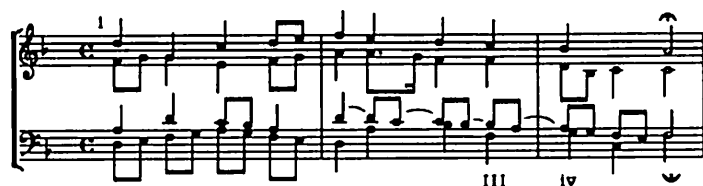
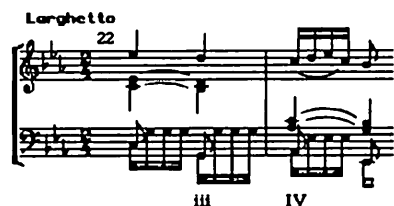


Figure 8c. Mozart, *Le Nozze di Figaro*, Act II, Scence 1, #10 (*Cavatina*)



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Figure 8d. Mozart, *Requiem, Offertorium*, #1.

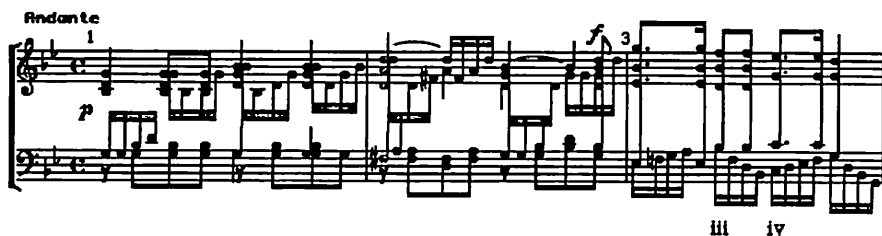
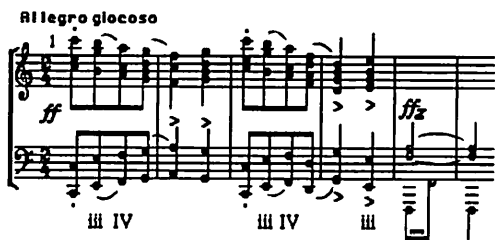


Figure 8e. Beethoven, *Sonata*, op. 53, first movement.



Figure 8f. Brahms, *Symphony no. 4*, third movement.



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Figure 8g. Brahms, *Rhapsody*, op. 119, no. 4.



By contrast, the iii^6 chord may have a totally different function. Often, the first inversion mediant triad directly precedes the tonic. The motion in the bass, then, moves from dominant to tonic. In Figures 9a-c, the progression is shown in major and minor. The augmented mediant triad is generally used in this way in minor keys. By contrast, in Figure 8, all of the root-position mediant triads in minor keys (Figures 8b, d, and g) were major. Further, one cannot justifiably analyze away the augmented triad in such cases as Figure 9c by maintaining that it is purely the product of voice-leading. It is true that in each case in Figures 9a-c, the top voice above the iii^6 or III^6 chord might be explained as an escape tone. Nonetheless, in Figure 9a, the penultimate F-sharp in the melody forms the end of the linear ascent, C#-D-E-F#; in Figure 9b, the A in the melody at the end of m. 8 terminates the F-G-A ascent; and, in Figure 9c, the F in the top voice on the second beat of m. 24 closes the D-E-F rising process. In other words, the melodic motion to the third scale degree, which is the tone that differentiates this chord from an ordinary dominant chord, occurs as the result of a well-motivated structural melodic process with melodic closure on scale degree 3 and not from a simple ornament like an escape tone. Thus, the melodic tone cannot be validly analyzed away as an ornament to, or substitution for, some sort of “understood” 2. Most important, we see once again the tone in the bass and its movement as the primary factors in determining the function of the chord, irrespective of root motion.

The most problematical and interesting issue concerning the iii^6 -I (III^6 -i) progression arises when the inverted mediant chord appears to be combined with a dominant seventh chord. (See Figures 9d-f.) In these cases, the determination of a root is difficult. If one argues for the mediant as the root, then the chord would be an incomplete inverted ninth chord. On the other hand, if the dominant is labeled as the root, then both 7 and 6 would be necessary as thorough-bass symbols.

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In Figures 9d-f, the third degree in the melody above the dominant in the bass is not treated as an escape tone, meaning again that the third degree in the melody cannot be considered as a mere ornament. The A's in Figure 9d are, in effect, disjunct neighbor tones to the F's, the A's being auxiliary to the main note, F, which precedes and follows the A's. In m. 46, the A becomes the melodic tone of the F-major tonic triad. (Probably, the alternation of F with A can be considered a microcosm of the overall tonal motion from F-major to A-minor.) In m. 131 of Figure 9e, the high-level motion from C to F in the melody of mm. 131-132 moves through the A over the harmony in question. The third degree, E in Figure 9f, is approached from F-sharp and reaches C-sharp as an anticipation of the final C-sharp over the tonic harmony. Certainly, this chord, however one chooses to label it, has a dominant (pre-tonic) function and not a mediant (pre-submediant or pre-subdominant) function—that is, the chords act according to the function of the bass, not the root.

Figures 9g and h have other additions above the dominant. M. 196 of Figure 9g has a ninth, a seventh, a sixth, and a third above the dominant. In m. 32 of Figure 9h, both the sixth (F) and the fifth (E-flat) appear over the A-flat on the third beat; furthermore, the G-flat passing tone at the end of m. 32 (and 31) suggests a seventh as well. In both cases, elements of both the mediant triad and the dominant seventh chord are combined to make harmonies that are unusual but nonetheless have clearly dominant functions.

Some clarifying discussion is necessary regarding Figures 9i-k. The F-sharp on the third beat of m. 1 of Figure 9i is not a nonharmonic tone since the melodic motion does not move away from the F-sharp by step; nor is the F-sharp an escape tone. In Figure 9j, the eighth-note chords in m. 67 indicate that the F in m. 66 is the harmonic tone, not the succeeding E on the second sixteenth note of the fourth beat. Figures 9i and j point up an interesting ambiguity: are $\text{iii}^6\text{-vi}$ in Figure 9i and $\text{III}^{*6}\text{-VI}$ in Figure 9j deceptive progressions or circle of fifths root progressions? Such progressions appear to contain both types of functional movement but are primarily deceptive because of the motion of the bassline. Figure 9k, the most interesting of all, begins with a series of mostly parallel 6/5 and 6/3 chords ($\text{i}^6\text{-ii}^{*6}/5\text{-III}^{*6}\text{-iv}^6$), and also contains a deceptive move in the bass, B-C in m. 50, where B supports 6/3—in effect substituting III^{*6} for V and iv^6 for VI! The augmented triad here cannot be ignored but must be considered an important structural harmony, though most would probably hear the G in the melody of m. 50 prospectively as an escape tone that leads very surprisingly upward by step until the B is reached on the fourth beat. The D-sharp in the alto on the second beat of m. 50, of course, resolves the preceding E suspension. These voice-leading movements produce the truly unusual passage shown

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in Figure 9k. In all cases in Figure 9, the chord above the dominant acts like a root-position dominant chord, not like a mediant triad.

Figure 9a. Haydn, *Symphony no. 101*, fourth movement.

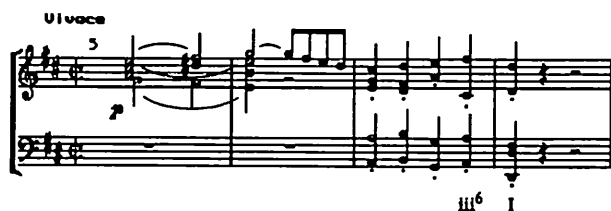
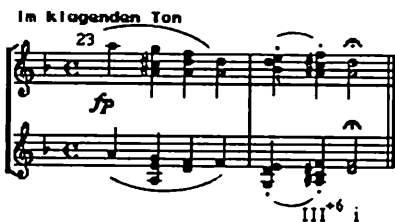


Figure 9b. Brahms, "Geistliches Wiegenlied," op. 91, no. 2.



Figure 9c. Schumann, "Volkslied-chen," op. 68, no.9.



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Figure 9d. Chopin, *Ballade no. 2*.

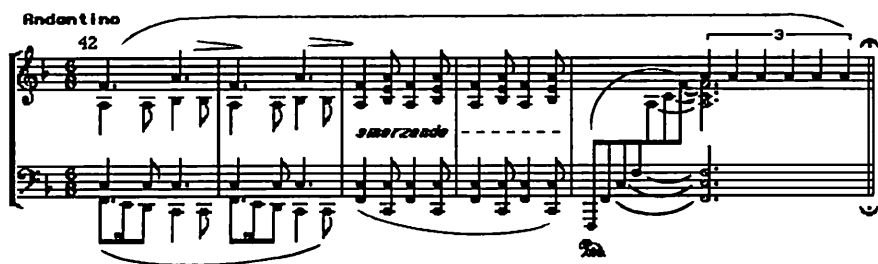


Figure 9e. Franck, *Symphony*, first movement.

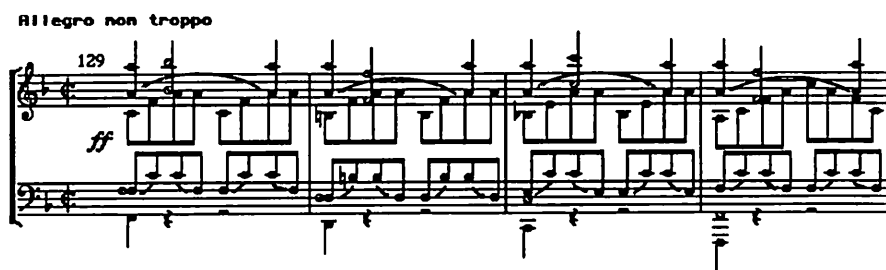
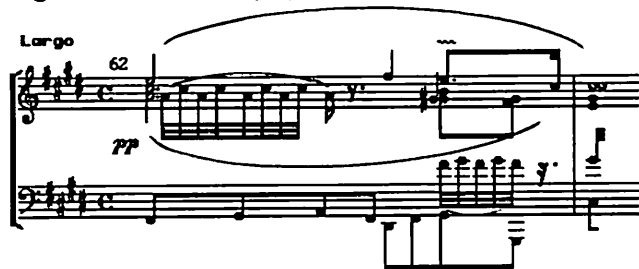


Figure 9f. Dvorak, *Symphony no. 9*, second movement.



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Figure 9g. Grieg, "Valse mélancolique," op. 68, no. 6.

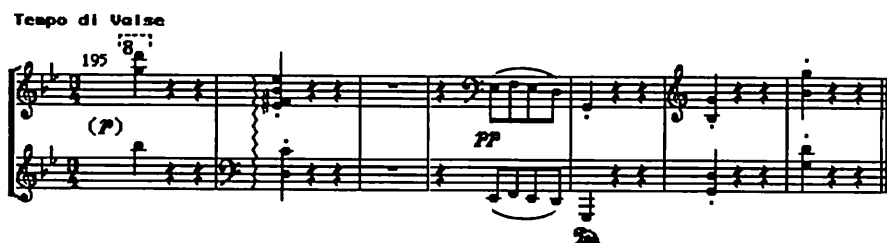


Figure 9h. Bruckner, *Symphony no. 5*, third movement.

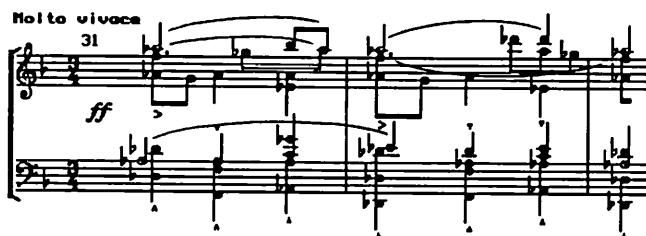
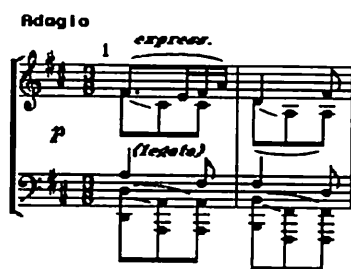


Figure 9i. Brahms, *Violin Sonata no. 3*, second movement.



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Figure 9j. Mendelssohn, *Elijah*, Overture.



Figure 9k. J. S. Bach, *Cantata*, B.W.V. 4 ("Christ lag in Todesbanden"), Versus II.



And so labeling 6/3 chords according to their roots appears to be misleading in a fundamental way. In every case, the function of the root-position triad differs significantly from that of the first-inversion triad. Rather, we have found a great deal of functional equivalence between root-position and first-inversion chords that have the same scale degree in the bass. First, we discovered that V-IV⁶ could be used deceptively as a variant of V-vi. Of course, no sense of cadence on the IV⁶ chord would arise because a 6/3 chord does not have the closural capability of a 5/3 chord. Nevertheless, the V-IV⁶ progression can still be a deceptive move if not a deceptive cadence; in that way, IV⁶ may exhibit a certain measure of functional similarity to vi. A more convincing and generally accepted principle is that of the equivalence of IV and ii⁶ (iv and ii⁶). Also, it is clear that iii⁶ and V (III⁶ and V) share the same pre-tonic function and could even be interchanged in deceptive progressions to a certain extent. Furthermore, one could build a case for the functional equivalence of I⁶ and iii as pre-subdominant (either IV or ii⁶), since either I⁶ or iii may directly precede the subdominant in the

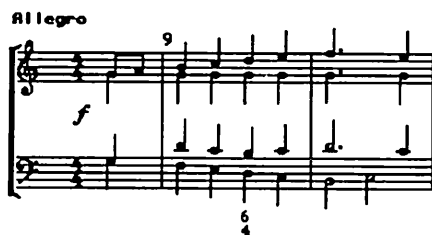
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bass. Thus, in 5/3 and 6/3 positions, ample evidence shows that criteria for functional equivalence are not convincingly established by theories of root motion but rather would be better expressed in terms of the motion of the bassline.

We may now treat in more detail the easier question raised earlier: can we find a significant functional equivalence between root-position triads and second-inversion triads? Because of the dissonant fourth above the bass in the second-inversion triad, it is unlikely that a potentially closural harmony can have much functional similarity to a 6/4 chord. The possibility of the bass leaping to or away from a 6/4 chord is virtually eliminated (except in a *Stimmtausch* or arpeggiation) because the fourth must resolve. For instance, I6/4 (Schenker's V6/4) actually functions as a direct contextual predecessor of the 5/3 above the same bass tone. Thus, we can say that 5/3 and 6/4 above the same bass tone are too far apart on the stability (consonance-dissonance) spectrum to have any important degree of functional similarity; indeed, the 6/4 often resolves to the 5/3.

On the other hand, first- and second-inversion chords, as nonclosural harmonies, are for that reason not so far apart in relative stability. Furthermore, if the only dissonance in the 6/4, namely the fourth, were to resolve, then the result would be a 6/3 with the same tone in the bass. Therefore, we might expect to find similarities in function between 6/3 and 6/4 chords that have a common bass tone. Here are some instances of this functional similarity. In Figure 5a, m. 3, we see 2-3 motion in the soprano with the 2 supported by a 6/3. In Figure 10 the same 2-3 soprano motion generates a 6/4 below the 2. Because both of these chords are dissonant, it is perhaps not surprising to find some functional similarities between them. Both chords also contain the leading tone, with its proclivity to move upward above the supertonic in the bass. As before, this is the sort of tendency that probably led theorists to regard vii° as an incomplete V⁷ chord. Nevertheless, as we have seen, it is clear that the tone in the bass is mainly responsible for such similarities in function.

Figure 10. Haydn, *The Creation*, no. 14.



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When the leading tone is in the bass, it may support a root-position seventh chord, a 6/3, or a 6/5, all of which tend to resolve to a tonic chord. On those infrequent occasions when the leading-tone generates a 6/4, the aftermath may also be a tonic chord, as shown in Example 11. The preceding measures (236-238) suggest a tonicization of F# minor, so there is no sense of the F-sharps in the chord being nonharmonic. Further, the fact that the chord in m. 239 is heard in prospect as i6/4 (Schenker's V6/4) in F# minor indicates that a 6/4 chord on the leading tone may lead directly to a tonic chord even when there is some ambiguity as to the prospective function of the 6/4 chord.

Figure 11. Beethoven, *Missa solennis*, *Credo* (key signature altered)



The presence of the leading tone would also seem to make a crucial difference in the comparison of the 6/4 and 6/3 chords above the dominant (I6/4 and iii⁶ in traditional terms) where only the latter chord has the leading tone. As we have seen in Figure 9, the 6/3 chord often leads directly to the tonic chord. The 6/4 above the dominant, except in simple arpeggiations, rarely leads directly to the root-position tonic chord (with the famous and notable exception of Beethoven's *Fourth Symphony*, mm. 305-333, striking because it is so unusual). It is also true, however, that iii⁶, like I6/4, may precede an actual dominant chord or dominant seventh chord, as shown in Figure 12. In Figure 12a, m. 4, the F in the alto on the first beat is suspended from m. 3. (One can compare this procedure to that of the tenor on the second beat of m. 1 and the alto on the first beat of m. 9 of the same chorale.) The E in the alto on the second half of the first beat of m. 5 results in a iii⁶ chord. After the subsequent D, a neighbor tone, a real dominant chord follows on the third beat. In the third measure of Figure 12b, the 6-5 motion emerges over the dominant with 7/3 above the bass. These examples indicate that iii⁶ seems to be a kind of incipient dominant chord, which becomes fully formed when the sixth moves to a fifth above the dominant. In other words, even though iii⁶ may function as a dominant because it contains the leading tone, iii⁶ may also act like I6/4 (which has no leading

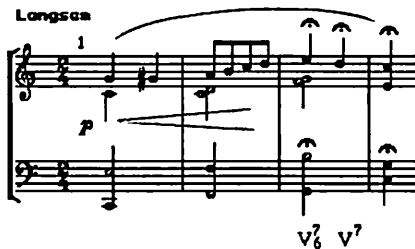
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tone) as a pre-dominant function because iii^6 has one tone that can move to form a true dominant chord.

Figure 12a. J. S. Bach, "O Lamm Gottes, unschuldig," B.W.V. 401.



Figure 12b. Schumann, *Fantasiestücke*, no. 6 ("Fabel")



It would then follow that a bass tone that normally leads to the dominant could support almost any harmonic configuration and still generate a pre-dominant function. In Figure 6e, the subdominant ascends to the dominant in the bass despite very little actual motion in the voice-leading. To compare Figures 6e and f is to discover two of the functions of the subdominant in the bass, whether the chord above is dissonant or consonant, whether the leading tone is present or not. In addition to the stepwise motion from the subdominant in either direction, we can also see the plagal motion directly to the tonic even when a diminished chord lies above the subdominant, as in Figure 6g. In these cases the motion of the bassline clearly dominates any tendency that the chord above the subdominant might have as long as the dissonant tones resolve.⁹

When the leading tone appears as the bass of a dissonant chord, such

as $\text{iii}^6/4$, $\text{V}^6/5$, or $\text{vii}^{\circ 7}$, then the resolution of the dissonant tones will go with the ascending motion of the leading tone to the tonic. This is a pre-tonic but not a dominant function because only dominant-tonic motion produces an authentic cadence. As noted in Figure 3, when the chord above the leading tone is not dissonant, then the succeeding tone in the bass may not necessarily be the tonic. Thus, typical dissonant chords above the leading tone have equivalent pre-tonic functions.

The sixth degree as the bass of a chord generates many possible harmonies, some of which also have a pre-dominant function. The picture here is complicated by the existence of two different submediant scale degrees in the minor scale; moreover, the lowered submediant is often borrowed for use in the parallel major mode. Frequently, as in the chromatic chaconne bass (the chromatic or mainly chromatic descent from tonic to dominant), the raised submediant may lead through the lowered submediant to the dominant. When the submediant has been chromatically lowered (in the major scale), then the exact chord generated above has little bearing on the function of the chord: $\text{vii}^{\circ 4}/2$ (Figure 6a), $\text{V}^4/2$ of $\flat\text{III}$ (Figure 13a), $\text{ii}^{\circ 4}/3$ (Figure 13b), or iv^6 (Figure 13c) all lead directly to the dominant, provided the lowered submediant has not been directly preceded by the dominant (as in Figure 4d, for instance). The four examples mentioned above show four different chords above the lowered submediant by the same composer and do not include an obvious solution to this bassline motion frequently used by Schumann and many others: augmented sixth chord to dominant (see below).

Figure 13a. Schumann, *Davidsbündlertänze*, no. 9.

Lebhaft

$\text{V}^2/\flat\text{III}$ V^7

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Figure 13b. Schumann, *Liederkreis*, op. 24, no. 9 ("Mit Myrthen und Rosen")

Innig, nicht rasch
ritard.

22

sel - ber im Grab, wenn ich sel - ber im Grab.

ritard.

$11^{\#4}_3 \vee^7$

Figure 13c. Schumann, *Piano Quartet*, first movement.

Sostenuto assai

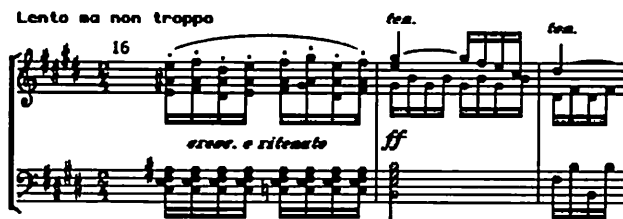
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$11^{\vee}_6 \vee^7$

Yet, a subtle difference in intensity seems to occur when the lowered submediant generates an augmented sixth above even where the previous chord is also dissonant. As shown in Figure 14, the augmented sixth interval results from the use of two chromatic inflections moving in contrary motion leading to the dominant. When both predominant chords are dissonant, as in Figure 15, the apparent increase in instability is both melodic and harmonic. Hence, the second chord (above C natural) is more unstable than the first because of the additional dissonance caused by the augmented sixth and by the C natural-F# tritone, which is unarguably more dissonant than the C#-F# perfect fourth in the first chord. Although chords on the lowered submediant that follow chords on the raised submediant clearly have pre-dominant functions, the addition of the augmented sixth above the lowered submediant has an even stronger tendency to proceed directly to the dominant—as contrasted to chords above the lowered submediant triad that are not further inflected, which are somewhat more flexible in

their implications (as in Figure 4d, albeit here, the dominant, C#, precedes the submediant, D).

Figure 14. Chromatic inflections moving in contrary motion toward the dominant.

Figure 15. Chopin, *Etude*, op. 10, no. 3.

Submediant chords have a second important function, that of a pre-subdominant. In terms of the bassline, the diatonic submediant and subdominant (or, occasionally, raised subdominant) act to focus on the dominant by creating a melodic gap that the dominant acts to fill. A very interesting question, one often posed by beginning undergraduates, concerns the reason that vi (VI) goes to IV (iv) whereas IV does not generally precede the vi. Of course, one can invoke some kind of table of tendencies for root motion; as should be clear, however, we should attempt to find a more convincing explanation that does not rely on such rules whose validity is highly questionable.

Here is a possible explanation for vi-IV rather than IV-vi as a normal progression. In many cases, submediant-subdominant-dominant bassline motion is preceded by the tonic, as shown in Figure 16. The raised subdominant is shown in Figure 16b, first beat of m. 12. In no case does the subdominant precede the submediant. Were the subdominant to intervene between the tonic and the submediant as in the first part of Figure 17a, a 6/4 chord would be outlined. As the second part of Figure 17a demonstrates, even if the tonic is placed above the succeeding subdominant, the submediant is still not the implied root of the outlined chord; and the pattern ends with the implied third instead of the implied root.

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By contrast, Figure 17b first shows the pattern found in Figures 16a and c, which outlines a root-position triad. It is likely that we hear the subdominant as the more stable tone, relative to the submediant, in these progressions for that reason—even if the initial tonic were to be placed below the submediant, as in the second part of Figure 17b. In other words, it may be we sense that the submediant should lead to the subdominant and not vice versa. Admittedly, this is rather speculative reasoning, but the rationale is suggested by the evidence of Figure 16 (as well as many similar passages).¹⁰ Further, the argument summarized in Figures 16-17 is not based on any preconceived harmonic thinking other than the accepted fact, undisputed here, that the root of a chord is more stable than the third.

Figure 16a. J. S. Bach, "Zeuch ein zu deinen Thoren," B.M.V. 28.

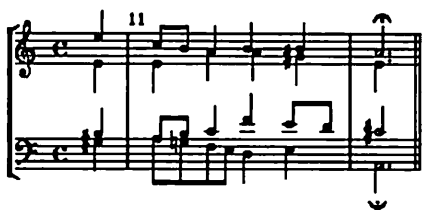


Figure 16b. J. S. Bach, "Vater unser im Himmelreich," B.W.V. 245.

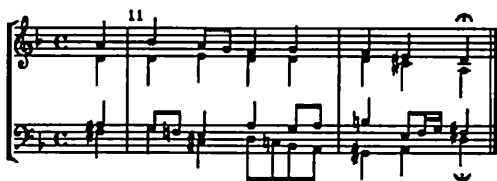


Figure 16c. Schumann, *Davidsbündlertänze*, no. 8.



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Figure 17. Melodic structures in the bassline using tonic, submediant, and subdominant.



Indeed, the question of preconception is the most fundamental issue in the entire discussion. Since the acceptance of the root-inversion theory, music theorists have assumed that, with the exception of I (V)6/4 and ii (IV)6/5 in some theories, the root position triad is the progenitor of the two rearrangements of the same three notes such that all arrangements are believed, at least by the implication of the symbology, to have the same function in an actual context. In this study, we have examined many short musical examples associated with this line of thinking. Before drawing any sweeping conclusions, let us consider one larger example where it might seem obvious that the inversion of the chord is substituting for another by analogy—namely, in a set of variations. For the sake of concision, only the basslines of the first section of the theme as well as those of the first and fifth variations of the third movement of Mozart's Sonata, K. 284 will be discussed, since these two variations contain the most contrast with the theme with respect to the bassline. In the forthcoming discussion of Figure 18, the focus will be placed on these differentiations. Because the bassline and the harmonies generated above it determine the harmonic labels, only the bassline and the thoroughbass symbols will be shown.

In general, the meaning of the symbols in the graph is easily comprehended. In this type of analysis, closure on a tone on lower levels leads to transfer of that tone to the next level. So, for instance, the closure of the triadic process D-B-G at the beginning (Level 1) results in D-G on Level 2. Levels 3 and 4 of the theme indicate two movements from D downward to A in mm. 1-2 and 3-4. The latter D-A motion (d¹-a) also leads further downward to D (d) in m. 5. The 6/3 above the lower D (see Level 1) goes with its ongoing melodic function that results in the E in m. 6, an E that becomes a dominant of A at the two cadences in mm. 6-7 and 7-8, which are most clearly seen on Level 2 (a typical example of vi⁶ as a pivot, becoming ii⁶ in the dominant key). Level 3, then, shows the most important harmonic moves: D-A twice, the second of which leads to a tonicization of A in m. 8. Level 4 shows how the initial D becomes temporarily the subdominant of A in the most general sense.

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In Variation I, Level 1, we see that the initial D-A move ascends rather than descends in mm. 1-2. For this reason, an F-sharp is needed to begin the ascending tendency, hence the F-sharp in m. 1 of Variation I in lieu of the B of the D-B-G descent in the theme. The D-F# leap then forms a gap filled by E on the first beat of m. 2 in Variation I. The E avoids the parallel octaves between the outer voices that would have resulted had the G from the theme at this point been preserved. The E, therefore, is necessitated by the voice leading and does not derive from a substitution of ii for the ii⁶ of the theme.

The initial A on level 1 in Variation I (m. 2) disappears in Level 2 because of the E-A-F# gap process in mm. 2-3, which weakens the A. The subsuming of the A into the gap process, however, is in effect compensated for by the subsequent prolongation of A in mm. 2-4 by another gap process on Level 1, A-F#-G-A. To create the prolongation, F# in m. 3, rather than the D of the theme at that point, is necessary in the context of the variation. Again, this is no arbitrary replacement of one chordal position by another but rather a fundamental change in the melodic structure of the bassline. It makes little difference in this context that the G in m. 3 of the variation supports a 5/3 chord whereas the G in m. 3 of the theme carries a 6/3 chord. On Level 2 of Variation I, then, we see only one move in the bassline from D to A, an ascent; and the contrast of direction with the overall D-A descent in the bassline of the theme necessitates changes in the melodic structure of the bassline that produce the harmonic alterations indicated in the example.

In mm. 5-8 of Variation I, the upward leap in the bassline from the cadence on A in m. 4 to the F-sharp in m. 5 contrasts with the downward movement of the bassline of the theme. In moving the bass to the A in m. 7, a series of descending thirds is created, F#-D-B-G# in mm. 5-7, the last of which (B-G#) forms a gap that surrounds the A in m. 7. As a result, the B on the first beat of m. 6 supports a new chord, which is inevitable given the change in the bassline. Also, the G# in m. 6 now carries a 6/5 chord, which has the same function as the root position diminished chord from the second half of m. 6 of the theme. Here, there is no analogous move to E, the dominant of A, until the penultimate measure, making the tonicization of A slightly weaker than was the case in the theme. On Level 3, B, the result of the filling of the triadic gap on Level 1 (A-F#-D-B) is shown as a neighbor tone to A. Thus, two leaps in the bassline in the variation, D-F# in m. 1 and A-F# in mm. 4-5, generate the harmonic differences from the theme in mm. 1 and 6.¹¹

Because of the complexity of the note-to-note level of the bassline in Variation V, Level 2 of Figure 18b will be the principal level to be compared with Level 1 of the theme. Level 3 must also be considered in the analysis because the constantly moving bassline creates different harmonies as more pitches accumulate. On Level 2, the G from the first beat of m. 2 carries a

root-position rather than a first-inversion triad, which does not affect the voice leading at all—as shown on Level 3, which is identical to mm. 1-2 of the theme. Indeed, even on Level 3, the pitches add up to a dissonance, 6/5 above the G; nonetheless, the melodic structure of the bass is unaffected. To return to Level 2, the 6/3 above B on the second beat of m. 3 is completely different from the G's of the theme and of Variation I (as well as the G's in this place in all of the previous and most of the following variations as well).

On Level 1 of both the theme and Variation I, mm. 1-4, A is emphasized by two downward gap structures: D-G-A in mm. 3-4 of the theme and A-F#-G-A in mm. 2-4 of Variation I. In Variation V, the direction of the gap structure is reversed, becoming A-D-B-A in mm. 2-4 (Level 2 of Figure 18b). More importantly, Level 2 of Example 18b indicates a subsequent triadic rise, A-D-F# in mm. 4-5, meaning that the D on the first beat of m. 5 differs from the F-sharps in both the theme and the first variation. In this case, the D, in its ascent to F-sharp on the third eighth note of m. 5, precedes a descent in thirds on Level 2, which, in comparison to a similar process on Level 1 of Variation I, reaches G-sharp on the first beat of m. 6. Here, the D acts to link the A with the high F-sharp, a goal which another F-sharp, as in m. 5 of the theme, obviously could not accomplish.

In Variation V, Level 2, G-sharp and E simply occur in opposite order to that of the theme's bassline so that the descent in thirds, which was not present in the bassline of the theme, can continue downward to E. On Level 3, in contrast to the diminished chord of the theme, the G-sharps in Variation V appear to support 6/5 harmonies. Nonetheless, there is no difference in function between the 5/3 and 6/5 above the G-sharp, only one of level in this instance. As for the E, it appears as a disjunct neighbor tone to the main G-sharp of m. 6, despite its traditional role as the "root" of the V/V harmony. Because the G-sharp is so much more important metrically and durationally in this bar, it is elevated to Levels 4 and 5; it seems utterly misleading to regard E as anything but a tone that acts to prolong G-sharp. The E does not generate the chord in this context.

In all cases in Figure 18, the modifications in the voice-leading of the bassline can readily explain the changes in harmony without the necessity of referring to the root-inversion system, as shown by the x's in the graphs. The tones with asterisks show that changes of inversion also can be explained in terms of voice leading. The "equals" signs demonstrate the point made earlier, that the same tone in the bass in the same voice-leading context produces a predictable voice-leading result, almost irrespective of the exact chordal contents. Hence, even in a larger example, we can easily explain equivalence and non-equivalence of harmonic function without having to rely on the traditional system with all its previously noted deficiencies.

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Figure 18a. Mozart, *Sonata*, K. 284, third movement: basslines and analysis thereof in the theme and first variation.

Thema Andante

6 3 6 3 6 5 6 7 6 6 5

3 4 3 3 3 3

Bass Line

1.

2.

3.

4.

Var. I

x * * = 6 5 6 6 x = 6 6 7

3 3 3 4 3 3 3 3 5 3 [4] 3

Bass Line

1.

2.

3.

= melodic process

= gap process

= nonimplicative process

x = change of bass tone in variation

* = change of inversion in variation

= = same bass tone, different chord in variation

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Figure 18b. Comparison of the bassline of the theme with that of the fifth variation.

Thema Andante

6 3 6 3 6 5 6 3 6 7 6 6 5

3 3 4 3 3 3 3 4 #

Bass Line

1.

2.

3.

4.

Var. V.

3 3 6 6 5 6 3 3 6 5 6 6 5

3 3 4 3 3 3 5 3 4 #

Bass Line

1.

2.

3.

4.

5.

The contention here is not that the principle of inversion is invalid but that inversions are not necessarily generated by a root-position basis. Rather, inversions should be regarded in the way many early harmonic theorists considered them: as rearrangements, permutations (*Verwechslungen*) of the same pitches with *Stimmtausch* in the bassline (and possibly in the upper parts). The *Verwechslung* is subtly contrasted to the

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term *Umkehrung*, the more modern term, which implies a single chord as the basis in all instances for the rearrangements.¹²

Nevertheless, it is necessary to have some kind of summary system for describing harmonic structures without always resorting to analysis wherein each chord is related only to a process. In harmonic process analysis, simultaneities are described by thoroughbass symbols and displayed according to harmonic implications and realizations. Such a procedure is probably essential in passages where the tonality cannot clearly be established but is needlessly complex, in my view, when the tonality can be easily identified. (Harmonic process analysis, however, generally yields worthwhile insights even in analyzing harmonically simple passages.) The modifications in the older method to be proposed presently should solve most of the problems posed earlier but will not address the question of when the summary system should be abandoned in favor of harmonic process analysis, an inquiry that would require a long and complex study in itself.

Here are the suggested modifications, which are summarized in the Appendix. First, the roman numerals should stand for tones in the bass, as Schenker began to suggest in *Harmony*. To have symbolological differentiation, upper-case roman numerals would be used for scale degrees in major keys, lower case for minor keys. As it now stands, iv, for instance, may be either a diatonic chord in minor or a chromatic chord in major, the latter of which exemplifies Schenker's idea of mixture, but which creates an undesirable symbolological ambiguity. (It is unlikely that any array of summarizing symbols can adequately describe cases of genuine major-minor ambiguity, as in Schubert's *Moment musicale*, D. 780, no.6.) In diatonic chords, °, ♯, and + will be used to indicate diminished, half-diminished, and augmented chords and intervals where applicable, including diatonic intervals within a key and root-position seventh chords—not, however, for chromatic accidentals, which will have different symbols. That is, in minor keys, there are accidentals that are diatonic, namely the raised sixth and seventh degrees. Where these need to be specified, the appropriate symbol or accidental, ♯, ♭, or x (indicating the raising of the third above the bass), would be used in the label.

In chromatic chords, ♯ and ♭ preceding the roman numerals would indicate raising and lowering the bass irrespective of key signature, similar to current practice. The symbols associated with thoroughbass designations, however, would consist of ^b or ^{bb} as well as older thoroughbass signs represented as follows: 6 for raised sixth above the bass, 4+ for raised fourth, and 2+ for raised second. To distinguish between diatonic and chromatic accidentals, raised thirds above the bass in diatonic (minor key) situations would be indicated simply with the appropriate accidentals; whereas the raising of a third above the bass in a chromatic chord would be symbolized

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by 3#, 3^b, or 3x, as the case may be. In this way, the confusion of a second- or third-inversion secondary chord leading to an inverted chord is eliminated: symbolological inconsistency arises when, say, V4/2 of ii leads to ii⁶, not to ii; whereas V4+/2 would quite clearly imply the resolution of the augmented fourth and the second such that a 6/3 chord would follow above the succeeding subdominant in the bass.

In cases where the tendency of the bass is not to move by step, the older secondary system should be preserved to reflect that tendency, e.g., V/V moving to V and not to III or I. (This differs from Schenker's practice.) Here, the proposed symbology could differentiate between stepwise and circle of fifths tendencies on the part of the bassline. Hence, harmonic movement like V/V going to V⁶ would be notated as V/V going to VII⁶, thereby showing more concretely the unexpected motion of the bassline. In so-called inverted secondary chords, the implied motion of the bassline supersedes the more abstract motion of roots: a progression consisting of V⁶/V-V is more similar to that of vii^o7/V-V than to V/V-V because only the last is a potential authentic cadence and thus a potential modulation. There is no need to use secondary leading-tone symbols because #I, #V, and the like already imply ascending stepwise motion to the succeeding tone in the bassline. By contrast, the proposed system does not proscribe occasionally useful symbols such as IV/IV, vi/IV, etc. to indicate transposed plagal and deceptive cadences. Indeed, the symbols for such cadences would become more consistent: for ii⁶/5 of IV-IV looks less like a plagal cadence than the Schenker-influenced IV6/5/3^b of IV to IV; V/VI-ii⁶ does not look like a deceptive cadence at all, but V/VI-VI6/VI would clearly symbolize a deceptive cadence because of the V-VI (of VI) pattern shown by the roman numerals. Such progressions, of course, could also be symbolized by means of a bracket, (see example) as in: $\boxed{V \quad VI}$.

VI

In any case, only root-position secondary dominant and dominant seventh chords need to be labeled as such.

"Borrowed" chords could be indicated by means of thoroughbass symbols, as in IV^b, IV6/5/3^b, and the like. Secondary chords of borrowed chords would follow the symbology proposed for secondary chords.

A great advantage in the suggested system would accrue in labeling augmented sixth chords, which have no true roots in most harmonic theories. As it now stands, even if the analyst attempts to sidestep the problem of identifying the root with a label such as +6/5/3 for a so-called German sixth chord, an appearance of the chord in another position requires a change in figures, strictly speaking—for instance, 7^b/5/3^b. The proposed system does not necessarily label the root and would avoid labels like +6inv. (which inversion?), and the like. Moreover, suppose the German

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sixth, for example, occurs on the lowered third degree; should we use +6/5/3 of V or +6/5/3 of V of V? What if the augmented sixth is built on the fourth or lowered second degree (+6/5/3 of I⁶ or of iii or of V/vi?; +6/5/3 of I or of V/IV?)? These labels are very confusing and at present unstandardized. In symbolizing augmented sixth chords by using roman numerals for the tones in the bass, the whole problem of transposing and "inverting" these chords is eliminated.

The real question, of course, is whether or not these reforms are worth making, particularly in this age of linear analysis.¹³ It seems to me that as long as harmonic details so characteristic of Western music are there to be discussed, we need a better methodology and symbology, a way of thinking about harmony that does not depend on the root-inversion system. It may seem rather unpalatable to consider the effects of the overhaul outlined here, but should we continue to perpetuate a system so fraught with fundamental problems and inconsistencies? Perhaps serious music theorists would take more interest in the details of harmony if the analytical methodology and symbols were more concretely descriptive.

The suggested terminology could be used as a part of a Schenkerian or other linear approach and is, in fact, ideally suited to linear analysis because its basis is linear and in my view is adumbrated by some of Schenker's own work. In addition to his V6/4 and IV6/5 labels mentioned before, Schenker compares basslines according to their actual melodic processes near the beginning of his examples in *Free Composition*; for instance, C-E-F-G-C middleground patterns are grouped together regardless of the harmonies generated above the E and F.¹⁴ This kind of grouping procedure constitutes another step forward, away from the root-inversion theory and toward a theory of harmony based on linear considerations. The present study extends these changes back to lower levels as well.

To accept the concepts behind the terminology, one must agree that harmony is regulated by the bassline and that harmonic process is generated by the motion of the bassline in conjunction with the upper parts. In this way, we can reject the notion that harmony generates its laws independent from contrapuntal motion. Rather, harmonic motion can be seen as a product of counterpoint, eventually producing harmonic conventions, but also retaining its basis in the interaction of melodic voices.

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APPENDIX: Proposed New Labels in the Text

Diatonic Triads in C-major.



Diatonic Triads in C-minor.

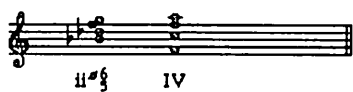
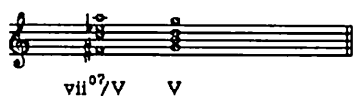
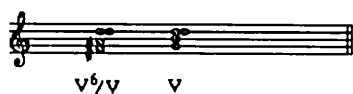
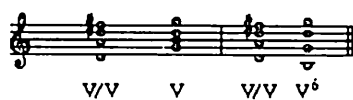


* or # or x depending upon the key signature

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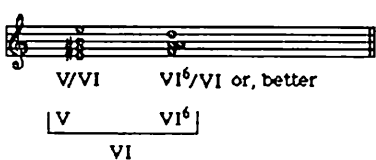
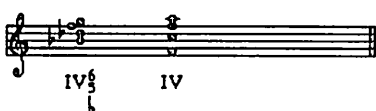
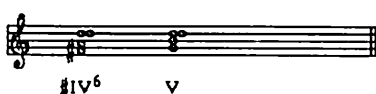
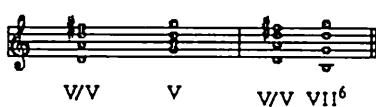
Traditional Symbols

(C-major unless
otherwise indicated)

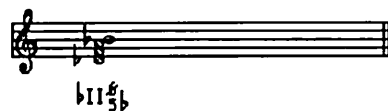
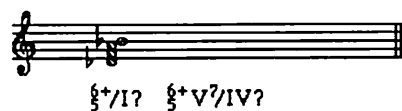
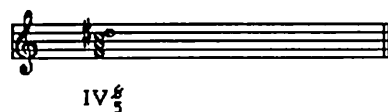
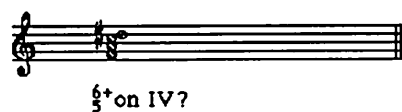
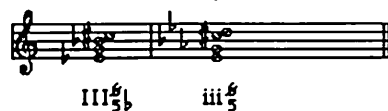
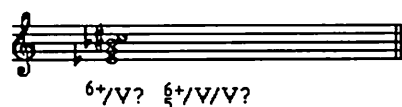


Proposed Symbols

(C-major unless
otherwise indicated)



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NOTES

¹Heinrich Schenker, *Harmony*, edited by Oswald Jonas, trans. by Elisabeth Mann Borgese (Chicago: University of Chicago Press, 1954), p. 34, ex. 25.

²William J. Mitchell, "Chord and Context in 18th-Century Theory," *Journal of the American Musicological Society* 16(1963):221-239. C. P. E. Bach's well-known letter to Kirnberger expresses his and his father's antipathy for Rameau's theories in general. See, for instance, David Beach's introduction to Johann Philipp Kirnberger, *The Art of Strict Musical Composition*, trans. by David Beach and Jürgen Thym (New Haven and London: Yale University Press, 1982), p. xv.

³For two exceptions, see the choral prelude settings of "Allein Gott in der Höh' sei Ehr'," B.W.V. 664, mm. 90-96 (V6/5-I) and B.W.V. 716, mm. 87-89 (VI-I), the second of which may not be by J. S. Bach. In these cases, the motion from leading tone to tonic at the end of the tune appears in the bass as the ending of the prelude, eliminating the possibility of a V-I ending.

⁴Schenker, *Free Composition*, trans. and edited by Ernst Oster (New York: Longman, 1979), vol. 1, p. 37.

⁵Leonard B. Meyer, "Exploiting Limits: Creation, Archetypes, and Style Change," *Daedalus* 109, no. 2 (1980): 177-205; Robert O. Gjerdingen, "A Musical Schema: Structure and Style Change, 1720-1900," (Ph.D. dissertation, University of Pennsylvania, 1984) and "The Formation and Deformation of Classic/Romantic Phrase Schemata," *Music Theory Spectrum* 8 (1986): 35-43.

⁶Reed J. Hoyt, "The Bassline in Tonal Music: Its Relationship to Melodic and Harmonic Structure" (Ph.D. dissertation, University of Pennsylvania, 1979), pp. 352-360.

⁷*Ibid.*, pp. 360-404.

⁸The original harmonization is attributed to Loys Bourgeois. Bach uses the mediant triad at this point in three other chorale settings of this melody: B.M.V. 29, 389, and 390.

⁹See Walter Piston, *Harmony*, 4th ed. revised and expanded by Mark DeVoto (New York: W.W. Norton, 1978), p. 314, Ex. 20-24, though it lacks the inclusion of the move from subdominant in the bass as a possibility.

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¹⁰The double-neighbor motion surrounding the dominant in the bass is an important cadential structure and almost always precedes the subdominant with the submediant. See Hoyt, "Bassline," pp. 108-116 and also "The Axial Prolongation of the Dominant in the Bassline: Its Archetypal Pairings and Its Relationship to Cadential Structure," Paper presented at the Meeting of the Southern Chapters of the American Musicological Society and the College Music Society, Baton Rouge, LA, March 27, 1981.

Note also the D-B-G-A motion at the beginning of the theme in Figure 18.

¹¹In m.7, the seventh above the E is not considered to be a significant change because the E at this point clearly functions as the dominant of A. Were we to consider an analysis of harmonic process, a difference would be shown by the symbols.

¹²See, for instance, Mitchell, "Chord and Context," pp. 222-229.

¹³The struggle between linear and harmonic theories is epitomized by the recent exchange between Charles J. Smith and David Beach: Smith, "The Functional Extravagance of Chromatic Chords," *Music Theory Spectrum* 8 (1986): 94-139; Beach, "On Analysis, Beethoven, and Extravagance: A Response to Charles J. Smith," *Music Theory Spectrum* 9 (1987): 173-185; Smith, "A Rejoinder to David Beach," *Music Theory Spectrum* 9 (1987): 186-194.

¹⁴Schenker, *Free Composition*, vol. 1, p. 30, Section 57 and pp. 32-34; vol. 2, Figs. 15, 16, and 18, part 3 of each figure.