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Source: *The Journal of Musicology*, Vol. 18, No. 2 (Spring 2001), pp. 221-248

Published by: University of California Press

Stable URL: <http://www.jstor.org/stable/10.1525/jm.2001.18.2.221>

Accessed: 06-03-2017 17:08 UTC

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# Harmonic Rhythm in the Beethoven Symphonies\*

**S**ince about 1815 it has become increasingly difficult to find discussions of the Beethoven symphonies which challenge their pre-eminent position in the musical literature. With the support of long tradition, one tends to accept them as unquestioned masterpieces. Repeated hearings only confirm the atmosphere of peculiar authority in these works, a feeling often described as "inevitability." Yet in trying to explore the sources of this mysterious power, one is repeatedly confused by Beethoven's seeming lack of pre-eminence in the various component parts of music. Always excepting certain unforgettable moments, he is not equal to Mozart in melody, to Schubert in harmonic genius, to Bach in counterpoint, nor to Berlioz in manipulation of orchestral effects. One may fairly conclude that Beethoven's forte lies rather in the combination of *all* musical elements, and that the sense of inevitability results from the perfection of adjustment among the elements. Perhaps the give and take of the adjusting process itself explains the lack of pre-eminence in any single component of his music, each being subordinate to the musical form of the greater whole. To borrow a military concept, we might describe Beethoven's characteristic method as a strategic rather than a tactical deployment of musical materials.

The word "inevitability" hints at the function of music as a time art, and suggests that Beethoven's special strength may derive from his timing, his control of the broader aspects of rhythm. Viewed in broad terms, the sense of fundamental movement in music seems to result from rhythmic arrangements of variable intensity. A continuous eighth-note pattern, for example, does not produce any fundamental sense of motion—its intensity stays the same, a motion in equilibrium. Unvarying cycles of this sort give us no sense of progression or accomplishment, for the rhythm has no direction. In order to achieve a sense of fundamental movement, then, rhythms must include contrasts in intensity.

Beethoven's mastery of contrast is quite as evident in rhythm as in modulation or dynamics. The rhythmic urgency of the *allegro con brio* of the first Symphony already shows an intensity which is rare in Haydn or Mozart. Looking merely at rhythm, this intensity results from the sharp contrast of motion and rest in three different dimensions. In the first motive (Ex. 1):

EXAMPLE 1. Beethoven 1 I 13-14<sup>1</sup>



the dotted eighth plus sixteenth shows contrast in the smallest dimension, which is confirmed at the level of the measure by the contrast of the dotted half-note with the quick pattern on the fourth beat. These contrasts produce a sense of progression, of real movement and direction, which is quickly apparent if we reduce the contrast in either dimension. As an experiment, let us level out the figure on the fourth beat by using equal eighth-notes (*a*), or balance the two halves of the measure (*b*) (Ex. 2):

EXAMPLE 2.



How bland each of these versions is, by comparison with the original. In this connection it is interesting to compare Mozart's handling of a similar figure at the beginning of his Symphony no. 41 (Ex. 3):

EXAMPLE 3.



The effect of Mozart's rhythm is not as intense as that of Beethoven, for the contrast is smaller in both dimensions:  $\text{♩} \text{ } \text{♩}$  is less forceful rhythmically than  $\text{♩} \text{ } \text{♩}$ ; and while  $\text{♩} \text{ } \text{♩}$  is almost an exact diminution of  $\text{♩} \text{ } \text{♩}$ , the fact that Mozart's first note is cut short lowers the degree of contrast as compared to Beethoven's three full beats.

<sup>1</sup> The reference numbers for each example indicate symphony, movement, and measure numbers in that order.

It is in the third dimension, at the higher level of the phrase, however, that Beethoven's plotting of variable intensities becomes particularly distinctive. The continuations of the motive produce a phrase with four recognizable phases of intensity: (a) motion, (b) intensification of motion, (c) relaxation, (d) rest preparatory to renewed motion (Ex. 3a):

EXAMPLE 3a. Beethoven 1 I 13-19



Viewed at the phrase level, the Mozart example also contrasts motion (a) with comparative rest (b) (Ex. 4):

EXAMPLE 4. Mozart 41 I 1-4



Here, however, the motion is less active and the rest is less relaxed. Furthermore, Mozart continues with a second phrase of identical rhythmic structure (Ex. 5):

EXAMPLE 5. Mozart 41 I 5-8



Thus the broad rhythmic result of these two phrases is a balance or equilibrium, rather than forward motion. We do not feel a sense of direction at this point in the Mozart work, an impression which is confirmed by the trumpeting cadences and *fermata* at the end of the next fifteen measures. Notice also that the Mozart phrases maintain a melodic balance within themselves, while the continuously rising Beethoven line impels us from one phrase into the next.

While the theme of the first Symphony provides interesting evidence of Beethoven's intensive approach, the reader will doubtless have muttered to himself (with justice) that it is a special case: it is rhythmically in unison, and thus by-passes the complications which appear in the greater part of symphonic music. The moment we attempt to extend our analysis to measures in which two or more rhythms occur simultaneously, we meet with gigantic difficulties. How can we evaluate the total

rhythmic effect of a melody in quarter-notes against an accompaniment in eighths? Is this equal in rhythmic drive to its reciprocal, a melody in eighth-notes over an accompaniment in quarters? How can range, orchestration, melodic contour, harmonic tension be evaluated in their influence upon rhythm? Doubtless all of these variables could be handled by some monster cybernetical calculator. But each of the basic standards for the calculations would be a subjective judgment, too shaky a foundation for such weighty apparatus.

Faced with these obstacles, yet intuitively convinced of Beethoven's greater control of rhythm, the writer began to experiment with analyses of harmonic rhythm, the connection of harmony and rhythm as reflected in the speed of chord change. This form of analysis reduces the factors which need be considered at any one time. It does not attempt to account for the total effect, but does allow concrete comparisons of one type of rhythmic activity to be made among the various parts of a piece.

The element of subjective interpretation affects the analysis of harmonic rhythm particularly in dealing with chord changes which are momentary ornaments rather than fundamental progressions in the harmonic scheme. In making analytical distinctions, factors of *tempo*, melodic line, and rhythmic accentuation play a considerable part. Let us examine a few synthetic examples (Ex. 6):

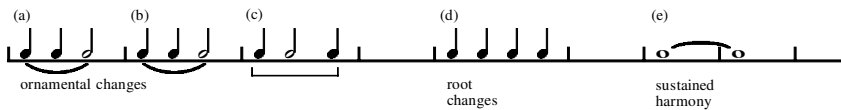
#### EXAMPLE 6.



Should one analyze progression (a) simply as a measure of ornamented tonic harmony (♩) or as a progression of three chords (♩♩♩)? Certainly in quick *tempo* the former solution would prevail; and even in *adagio*, the fact that both moving notes return to their original position emphasizes the purely ornamental nature of this progression. In (b), however, the sense of progression is a little stronger because of the change in chord position and the stress on the V chord produced by the melodic skips in the moving voices. If we add rhythmic accentuation, as in (c), the feeling of harmonic motion becomes still more tangible. Yet all three cases are fundamentally static if compared to (d), where the chords progress to new roots. On the other hand, there is no question that even example (a) gives us more feeling of harmonic motion than a

sustained C major harmony, as in (e). From this we can see that the subjective difficulties arise chiefly in trying to decide between degrees of ornamental change. We can avoid most of these subjective pitfalls by concentrating our analysis of the music in terms of the three conditions of harmonic rhythm which are most nearly self-evident: sustained harmony, ornamental change, and root change, without attempting to establish sub-categories among the elusive ornamental changes. In the notation of analyses, sustained harmonies may be indicated by ties or brackets above the notes and ornamental changes may be shown by ties or brackets below the notes, while root changes appear as unencumbered individual notes. Thus the harmonic-rhythmic analysis of our examples above would be (Ex. 7):

## EXAMPLE 7.



Passages in unison offer a further analytical problem. Even though they are technically non-harmonic, the harmonic implications are often strong. In making harmonic-rhythmic charts, however, it is important to treat unison passages as special cases, with full realization of the subjective dangers in interpreting the implied harmonies. The discussion below draws upon unison passages for illustrations only when the harmonic implications seem reasonably clear.

As soon as we examine Beethoven's harmonic rhythm, we are immediately impressed not only by the variety and contrast, but even more by the evident formal organization. This structure may be observed first at the level of the phrase, where three general types of arrangement predominate, variously reflecting a concentration of harmonic activity at beginning, middle, or end of a phrase. We find most frequently phrases

which indicate musical punctuation by variations in the speed of harmonic change at the phrase end<sup>2</sup> (Ex. 8):

EXAMPLE 8. Beethoven 4 IV 1–6

This passage defines the phrase by a simple quickening of the harmonic rhythm at the end of the second measure, a vital source of punctuation in the continuous sixteenth-note motion.<sup>3</sup> The clarifying function of the harmonic rhythm lies in its relative simplicity compared to other types of rhythm. It presents a broad synopsis of the texture in motion, so that the fundamental phrase structure emerges unmistakably (Ex. 9):

<sup>2</sup> Score reductions include merely the essential skeleton of harmony and melody in each example. On the harmonic time-line, long, heavy verticals indicate the phrase divisions, while the short verticals indicate measure bars.

<sup>3</sup> For other examples of quickening at phrase ends see 1 I 73–76; 1 II 26–34; 4<sup>2</sup>–45; 3 IV 44–51; 5 III 28–44.

## EXAMPLE 9. Beethoven 7 I 67-75

The musical score for Example 9, Beethoven 7 I 67-75, is presented in two systems. Each system consists of a grand staff (treble and bass clefs) and a single bass line below. The upper staff features a melody with eighth-note patterns and slurs. The bass staff has a simple harmonic accompaniment. The single bass line below each system shows a simplified harmonic rhythm with notes and rests. Pedal points are indicated by "A Ped." at the beginning of the first system and the end of the second system. An "overlap" label with a bracket is placed over the final measures of the second system, highlighting the characteristic Beethoven overlap technique.

Note the characteristic Beethoven overlap at the phrase end, produced by an anticipation of the subdominant harmony in the middle parts before the upper line reaches the new harmony. This quickening of the harmonic rhythm at the phrase end combined with the overlap technique contributes notably to the intense continuity of the Beethoven style, particularly in late works (Ex. 10):



EXAMPLE 10. Beethoven 9 I 218–225

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overlap

D Ped.

Here the overlap results from the suspended resolution of the root of the dominant, delayed so long that it becomes a pedal point in the following phrase.<sup>4</sup>

<sup>4</sup> See also 5 I 59–68; 6 V 8–9; 9 I 14–18.

A second type of arrangement of harmonic rhythm within the phrase reverses the procedure of the examples above by commencing with an active rhythm which stabilizes at the end. Phrases of this type often mark important points of the form such as double bars<sup>5</sup> (Ex. 11):

EXAMPLE 11. Beethoven 4 III 13–20

The musical notation for Example 11 consists of two systems. Each system has a treble staff with a melodic line and a bass staff with a harmonic line. The first system's melodic line begins with an active rhythm of eighth and sixteenth notes, which then stabilizes into a half note at the end of the phrase. The harmonic line in the bass staff consists of chords that support the melody. Below the first system is a rhythmic diagram showing the timing of the notes. The second system follows a similar pattern, with a melodic line that starts actively and stabilizes at the end, and a harmonic line in the bass staff. A second rhythmic diagram is provided below the second system.

<sup>5</sup> Compare 1 III 1–8; 7 I 342–353; 9 I 369–382; and Example 15.

A similar but more extensive example of the same type of phrase concludes the first movement exposition of the second Symphony (Ex. 12):

EXAMPLE 12. Beethoven 2 I 120–131

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In addition to these *rest-motion* and *motion-rest* arrangements, a seemingly higher degree of organization appears in phrases of a third type in which the harmonic rhythm develops a symmetrical arrangement by starting slowly, gathering speed, then relaxing the motion at the end. We have already met this type in the theme of the first Symphony (Ex. 3), but it is worthwhile to mention a later example also<sup>6</sup> (Ex. 13):

EXAMPLE 13. Beethoven 8 I 235–242

The musical score for Example 13, Beethoven 8 I 235–242, is presented in two systems. The first system shows a melodic line in the treble clef and a bass line in the bass clef. The melodic line starts with a half note, followed by a quarter note, and then a series of eighth notes. The bass line starts with a half note, followed by a quarter note, and then a series of eighth notes. The second system continues the melodic line with a half note, followed by a quarter note, and then a series of eighth notes. The bass line starts with a half note, followed by a quarter note, and then a series of eighth notes. The tempo markings 'ritard.' and 'a tempo' are present in the second system.

An interesting rhythmic tension here results from the *ritardando* performance direction, typically late Beethoven in its conflict between slackening *tempo* and quickening harmonic rhythm. The rhythmic “dissonance” resolves at the return of the normal *tempo*, releasing the phrase like an arrow from a long-held bow.

<sup>6</sup> Further examples: 1 II 163–170; 4 I 43–52.

The symmetrical arrangement of *rest-motion-rest* may also take a transposed form, with greater activity at the beginning and end of the phrase (Ex. 14):

EXAMPLE 14. Beethoven 1 I 88–89

The musical score for Example 14, Beethoven 1 I 88–89, is presented in two systems. The first system (measures 88–89) is in C major, 2/4 time. The second system (measures 90–91) is in D major, 2/4 time. Below each system is a rhythmic diagram. The first diagram shows a sequence of eighth notes, with a dashed line indicating a rest period. The second diagram shows a sequence of eighth notes, with a dashed line indicating a rest period.

Here it becomes clear, however, that the organization of the individual phrase is incidental to a broader plan. The phrase above contains an interesting balance of motion and rest, but it cannot stand alone: the activity in it requires completion in the stabler consequent phrase<sup>7</sup> (Ex. 15):

EXAMPLE 15. Beethoven 1 I 100–109

<sup>7</sup> Note that this consequent phrase belongs to the first symmetrical type, like Exs. 3 and 13.

The intense continuity characteristic of the Beethoven style finds expression in numerous such interdependent phrases. In the following example the rhythmic impulse set in motion cannot be balanced within the confines of the single phrase (Ex. 16):

EXAMPLE 16. Beethoven 4 IV 64–73

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It spins onward through another similar phrase and finally subsides over an eight-measure pedal point (Ex. 17):

EXAMPLE 17. Beethoven 4 IV 88–92

Beethoven carries the idea of interdependent phrases to an extreme but logical extension by associating phrases each of which in itself lacks both variety and balance of harmonic rhythm. In the example following, (a), (b), and (c) attain harmonic-rhythmic interest and design mainly in relation to each other, the bustling activity of the central measures furnishing a momentary release from the tense control of the other parts<sup>8</sup> (Ex. 18):

EXAMPLE 18. Beethoven 9 I 259–274

(a)

(b)

*8va sopra* -----

(c)

<sup>8</sup> Similar cases: 4 II 50–59; 5 I 439–460; 7 IV 28–43; 9 I 383–400.



The evidence of interbalanced phrases directs our attention to larger units composed of more than two or three phrases. Here again we find Beethoven's harmonic rhythm supporting and intensifying other means of expression. The introduction to the seventh Symphony is a good example. A chart of its harmonic rhythm reveals three areas of distinctive procedure which coincide with the three great *crescendi* of the introduction. The first *crescendo* exploits the harmonic tension of a five-measure pedal point: the movement begins in broad harmonic rhythm which soon accelerates to a point of suspense on a prolonged dominant (measures 10–14). The delay in resolution produces a *crescendo* of harmonic tension to match the rising melodic line and the dynamic expansion (Ex. 19):

## EXAMPLE 19. Beethoven 7 I 1-15

The musical score for Example 19, Beethoven 7 I 1-15, is presented in three systems. The key signature is G major (one sharp) and the time signature is 2/4. The first system shows the initial chords and a melodic line. The second system features a piano (*pp*) section with a dense chordal texture and a melodic line. The third system shows a crescendo (*cresc.*) leading to a fortissimo (*ff*) section. Pedal markings (*Ped.*) are present at the beginning and end of the second system.

The *fortissimo* returns the broad harmonic changes of the opening measures. Gradually, however, the harmonic pulse quickens, laying the foundation for a second *crescendo* in measure 23, where a definite one-measure harmonic rhythm sets in (Ex. 20):

EXAMPLE 20. Beethoven 7 I 23–25



At the crucial point of the *crescendo* the harmonic rhythm again quickens, and with a sudden, powerful twist of syncopation releases the full intensity of the *tutti* (Ex. 21):

EXAMPLE 21. Beethoven 7 I 32–34



The procedure in the third *crescendo* is related to the first in that Beethoven marks the peak with a prolonged harmony rather than the accelerated motion of the example just seen. In the final *crescendo*, however, not merely the pedal point in the bass as in Ex. 19, but the entire

harmony is prolonged through four bars, the longest-sustained harmony up to this point<sup>9</sup> (Ex. 22):

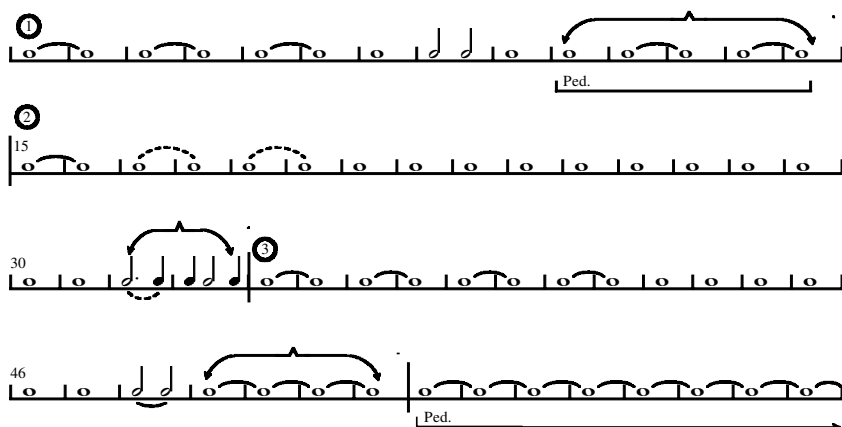
EXAMPLE 22. Beethoven 7 I 49–53

These three examples show the evident integration of harmonic rhythm with other expressive factors such as melodic phrasing and surface rhythmic development. Merely by glancing at a chart of the harmonic rhythm we can immediately locate the areas of emphasis, marked as they are by changes in the degree of harmonic activity. The

<sup>9</sup> This delayed resolution acquires significant additional tension from the fact that the F-E resolution had taken place more rapidly in measures 9–10 of the introduction.

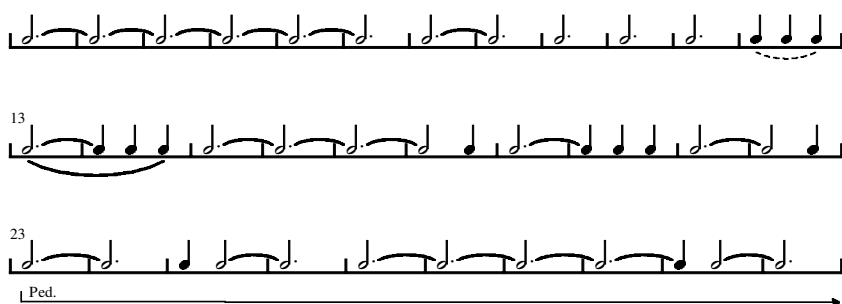
three sections of the introduction and the *foci* of the *crescendi* stand out clearly (Ex. 23):

EXAMPLE 23. Beethoven 7 I 1–60



Further study of harmonic-rhythmic charts of the symphonies shows that Beethoven extends to the major formal outlines the same general techniques already observed in the individual phrase and in groups of phrases: the chief divisions of the form are similarly underscored by changes in the patterns of harmonic rhythm. These punctuating changes reflect a structure and planning in harmonic rhythm which goes far beyond the often-observed harmonic quiescence of the secondary section, or the common occurrence of a dominant pedal point before the recapitulation. In the third Symphony, for example, the first movement is outstandingly irregular from the point of view of harmonic motion. Amid the greatest variety in harmonic durations, few rhythmic patterns repeat, and the forward motion receives constant impetus from numerous syncopations. These characteristics may all be seen even in the opening sections (Ex. 24):

## EXAMPLE 24. Beethoven 3 I 1–32



As a punctuation for the compulsive flow generated by these asymmetrical rhythms, the ends of the exposition and recapitulation<sup>10</sup> stand out because of sixteen bars in which the harmony changes with predictable regularity (Ex. 25):

## EXAMPLE 25. Beethoven 3 I 132–148

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<sup>10</sup> The analogous passage in the recapitulation (not illustrated) is 3 I 535–551.

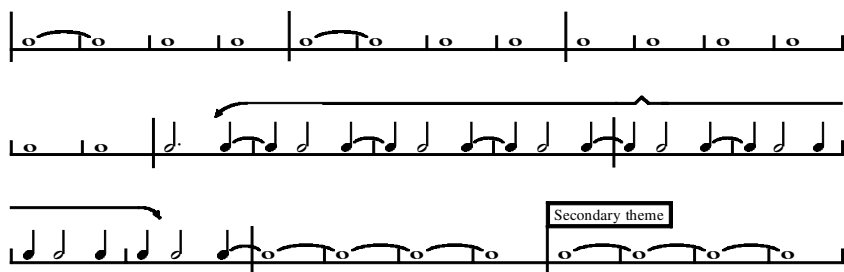
At the end of the coda, the general irregularity of the movement receives a final stabilization from a whole chain of regular four-bar changes followed by one-bar changes leading to the eight-bar dominant of the final cadence (Ex. 26):

EXAMPLE 26. Beethoven 3 I 631–691

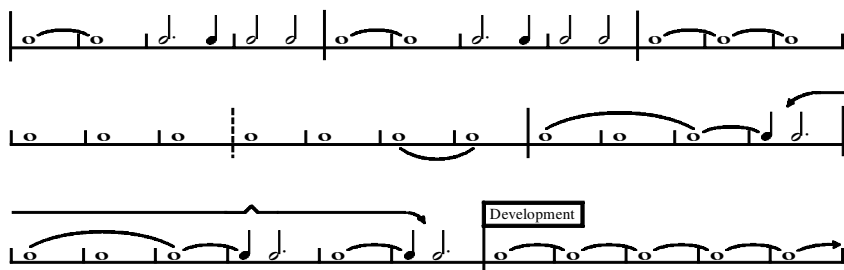
242

The fourth Symphony exhibits a reversal of the procedure noted above: where the *Eroica* punctuated its basic irregularity with contrastingly regular sections, the Fourth, which is extremely regular in its harmonic rhythm, employs *irregularity* as its source of punctuation. In the first movement, for example, violent syncopations announce the beginning of the secondary section and the end of the exposition<sup>11</sup> (Ex. 27):

EXAMPLE 27. Beethoven (a) 4 I 81–110



(b) 4 I 159–190

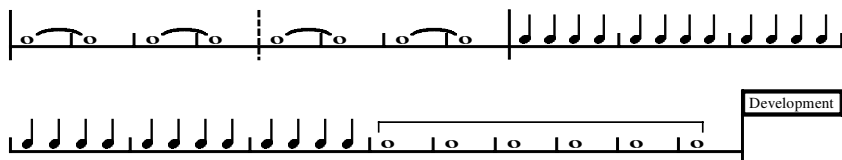


<sup>11</sup> Compare 6 I, which consists largely of alternations of tonic and dominant over pedal points. A doubling of the speed of alternation I–V over increasingly lengthy pedals marks the end of the exposition.

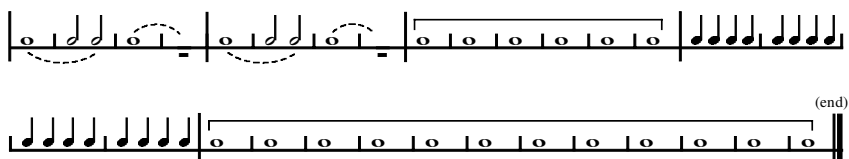


The sudden activity of the syncope is heightened in both cases by the contrasting harmonic stability of the following phrases. Such areas of high contrast in harmonic activity frequently serve as large-scale punctuations indicating major formal divisions. Examples of this closing-section technique occur in clearest form in the Second and Ninth symphonies<sup>12</sup> (Ex. 28):

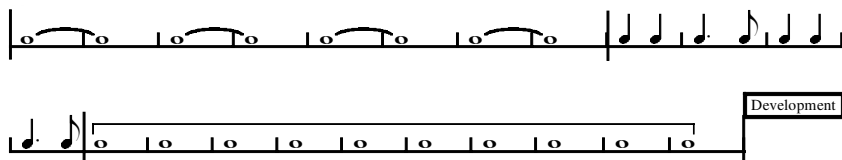
EXAMPLE 28. Beethoven (a) 2 I 112–131



(b) 2 IV 416–442



(c) 9 I 138–159

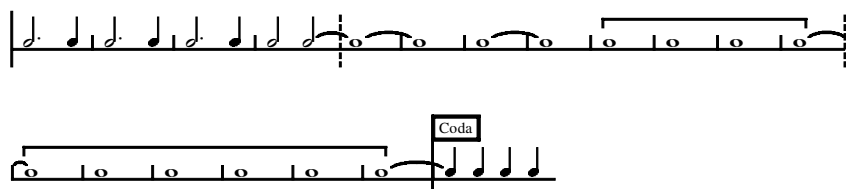


Beethoven does not limit his harmonic-rhythmic resources to punctuation effects, however: broad planning of the harmonic activity underlies all parts of his forms. Notice, for example, the development section of the first Symphony, which consists of two sections of rapid modulation set off by two long pedal points. The admirable balance here is no coincidence. A conscious structure of harmonic rhythm becomes even more evident in passages such as the finale of the eighth

<sup>12</sup> Another comparable example: 8 IV 450–502.

Symphony, which employ a gradual retard effect to introduce the coda (Ex. 29):

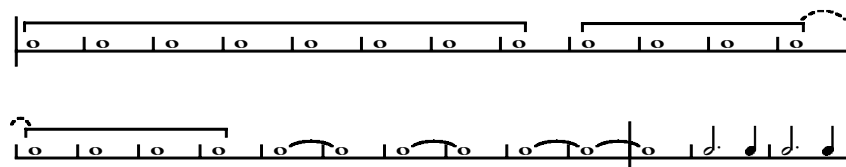
EXAMPLE 29. Beethoven 8 IV 256–274



Equally clear in plan, but opposite in effect, the dramatic “storm” *crescendo* in the Sixth derives no little of its power from the exact progression of acceleration in the harmonic rhythm (Ex. 30):

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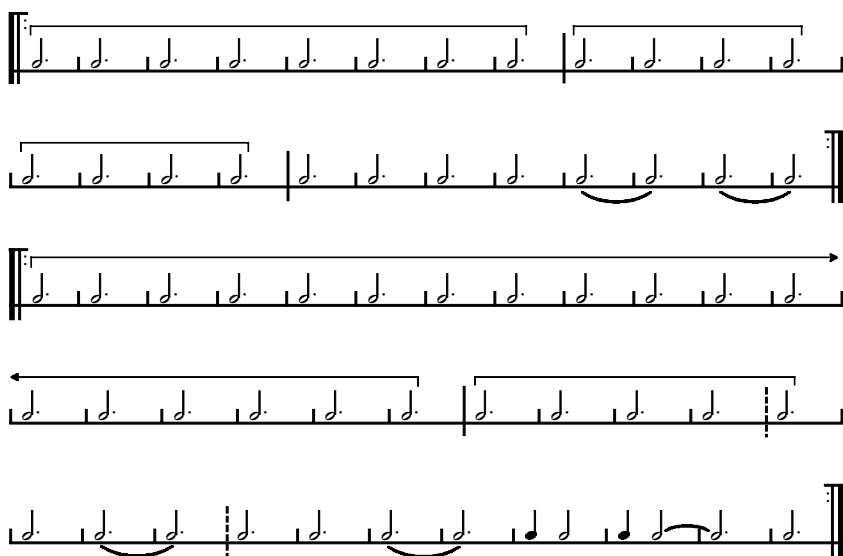
EXAMPLE 30. Beethoven 6 IV 56–80



As final illustrations for our study, let us examine two complete sections from scherzo movements. Rhythmically these movements pose a special problem for the composer. On the one hand, the dance character places certain conventional limitations on both the surface rhythm and the phrasing. On the other hand, the small scope of the form demands a precision and balance in rhythmic values far more stringent and immediate than in other movements. Under these requirements, Beethoven’s harmonic rhythm shows specially clear planning. The trio

of the first Symphony, for example, balances extreme stability against powerful root-position activity (Ex. 31):

EXAMPLE 31. Beethoven 1 III 80–137



Note that the second section intensifies both the motion and the rest of the first part: the sustained harmonies are even longer held, while the quick changes reach a sharper culmination in the syncopes (♩♩) near the end. Looking for a moment beyond the trio, we may also observe a larger harmonic-rhythmic balance: the rapid progressions of the menuetto find a satisfying contrast and relief in the broader harmonic sentences of the trio.



In the *Lustiges Zusammensein* of the sixth Symphony, the four-square phrasing of the peasant dance challenges Beethoven's artistic ingenuity.

His solution lightens the cloddish regularity with a variety and symmetry planned in a larger dimension (Ex. 32):

EXAMPLE 32. Beethoven 6 III 165–204

The first four phrases (a) propel the movement with a rest-motion formula; in the middle we find two pivotal phrases (b) of contrasted activity; and the last four phrases balance the first four by inverting the rest-motion formula (Ex. 33):

EXAMPLE 33.

Harmonic rhythm also indicates the major formal division at the double-bar by the same high-contrast technique observed earlier:<sup>13</sup> the shortest harmonic durations in the entire section () are juxtaposed with the longest () , all stabilized over a pedal point.<sup>14</sup>

The examples we have reviewed, though selective rather than comprehensive, unmistakably point to an intimate connection between harmony and rhythm in the Beethoven symphonies. It is evident that rhythmic planning has penetrated the harmonic scheme to an unusual degree. The close integration of these two factors with the form produces a unity of effect which in part explains the sense of inevitability and the deep emotional impact of Beethoven's music.

<sup>13</sup> See Ex. 28.

<sup>14</sup> For another example of interesting scherzo organization, see 3 III 199–260 (2nd section of trio). The balance of rest and motion within and between phrases is remarkable.