

CONSISTENT INSTABILITY IN BEETHOVEN'S "RONDO-VARIATION" FORM

A Structural Analysis of Op. 106 ("Hammerklavier"), IV

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Beethoven's twenty-ninth piano sonata, composed in the years 1817-18, represents the composer's most ambitious composition for the instrument, and is unquestionably one of the most monumental works in the solo piano repertoire. The sonata is approximately 45 minutes in duration – more twice the length of the average Haydn symphony. It is the only one of Beethoven's sonatas for which the composer's metronome markings are known, and these markings (particularly in movements I and IV) are so fast as to be generally unplayable. The third movement, marked *Adagio sostenuto*, is particularly massive, requiring over 20 minutes to perform. And the fourth movement, a fugue in three voices, is lengthy and opaque enough to baffle most casual listeners.

For all of these reasons – its technical and emotional demands on the performer, its cerebral nature, and above all its sheer length – the "Hammerklavier" sonata is a work which remains more admired than loved. There is a general feeling among performers that the piece's moments of genius are needlessly buried in the midst of an outsize form. This consensus, however, was not borne out by my examination of the fourth movement of the piece. The fugue, which seems scattered and inscrutable on first listen, is in fact tightly constructed both formally and thematically. More interesting still is that this finale contains the seeds of a new form, one which revitalized the contrapuntal technique and which Beethoven carried forward in other massive late fugues (Op. 110 mvmt. III, moments in the *Missa Solemnis*, and the *Grosse Fugue*). This being so, the finale of Op. 106 becomes important from an historical as well as analytical perspective.

As always, my approach in beginning this analysis was to describe the obvious, and then use these general observations to guide further exploration of the minutia. The following pages detail this process and will, hopefully, bear out my conclusions.

Large Structure

The fourth movement of “Hammerklavier” begins with a slow introduction which is episodic to the point of resembling recitative. This introduction does not directly allude to any of the previous movements (though it does anticipate the opening of the ninth symphonies finale, which does) – rather, the opening 15 measures of the piece serve as a transition in mood from the lengthy *adagio* to the coming fiery fugue.

The fugue itself begins in measure 16, and is labeled by the composer. From that point forward, there is no *clear sectional divider* (by which I mean a clear cadence coupled with silence) until the half-cadence and grand pause in measures 248-49. This silence is quite striking because of the continuity of the texture before it – even upon first listening, material will be classified by the listener as happening either before or after this pause. It is a clear sectional divider. I will therefore refer to everything from measure 16 to measure 249 as *Large Section Y*.

The next clear sectional division is in measure 366, where an abrupt authentic cadence on B \flat , the tonic of the work, is followed by a quarter-note rest (the only other long-value rest in the fugue). I will therefore refer to everything from measure 250 to measure 366 as *Large Section Z*.

The piece concludes with a coda, which begins in measure 367. The coda contains only snippets of thematic material, and is texturally quite different from the preceding material. In measure 381, Beethoven briefly marks the music *poco adagio* – a tempo change which recollects the opening of the movement – before finishing with a fast and assertive final flourish.

Thus, on an extremely large level dictated by clear sectional dividers, the fourth movement of “Hammerklavier” could be diagrammed as follows:

<i>mm.</i>	<i>Material</i>
1-15	Introduction/Transition from Adagio
16-249 //	Large Section Y [clear sectional divider]
250-366 //	Large Section Z [clear sectional divider]
367-400	Coda

When divided into four sections in this way, several architectural components of the fugue are made clear. For example, the proportion of Large Section Y (234 measures in duration) to Large Section Z (117 measures in duration) is 2:1 – a ratio of such precision that it is unlikely to have been accidental. It's also worth noting that measure 249, the only measure of the piece which is completely silent and the single most striking moment of the work, lies nearly exactly at the golden section of the movement's 400 measures ($400/249 = 1.61$). Such formal calculation is not at all typical in Beethoven's music. It is therefore worth exploring why, exactly, these ratios might be present.

It is well-known that Beethoven knew and admired the music of J.S. Bach. Anton Schindler, in his 1860 biography of Beethoven, wrote, “The evening gatherings at [Baron Gottfried van] Swieten's home had a marked effect on Beethoven, for it was here that he first became acquainted with the music of Handel and Bach. He generally had to stay long after the other guests had departed, for his elderly host was musically insatiable and would not let the young pianist go until he had 'blessed the evening' with several Bach fugues.”¹ One of the hallmarks of a Bach fugue is formal clarity, often expressed via clear and specific ratios. It stands to reason that Beethoven would have perceived this and made an effort to reflect the technique in his own expansion of the fugal idea.

Assuming that the proportions of the piece were planned deliberately (and, again, it seems impossible that they weren't), this could explain the unusual notation of the piece's introduction.

¹ Anton Schindler, *Beethoven as I Knew Him*, 3rd Ed., Constance Jolly, Trans. (Chapel Hill, NC: University of North Carolina Press, 1966).

Although presumably in 4/4 time, the introduction is labeled with a stunningly slow metronome mark of ♩ = 76. This designation, seemingly so strange, could be logically explained if it was Beethoven's intent to place the silent measure near the golden mean of the piece (after all, this would require a precise number of measures in the introduction). It's worth noting that, if this conjecture is true, it would imply that Beethoven either A) wrote the movement's introduction *after* the fugue itself, or B) re-notated the introduction after composing the fugue in order to create the ratios he desired.

Small Structure

Within the larger form above, Beethoven introduces many smaller ideas. Many of these are contrapuntal variations of the main fugal theme, which I will hereafter refer to as Theme A. In addition, two other returning themes (Themes B and C) are presented in this movement. Their placement and subsequent treatment create much of the drama and mystery in the work. The complete small-level structure is charted below. Please note that for the purposes of this discussion, I refer to a non-thematic/modulatory passage as a “sequential episode” when it is between two contrasting thematic sections, and as a “transition” when it is between two similar thematic sections.

<i>Measures</i>	<i>Material (Key Area[s])</i>
1-15	Introduction/Transition from Adagio (x → B♭)
16-43	BEGIN LARGE SECTION Y Fugal Exposition, Theme A (B♭ → F → B♭)
44-51	Sequential Episode 1 (B♭ → D♭)
52-60	Thematic Section, Theme A' [Rhythmically Displaced] (D♭)
61-64	Transition (D♭ → A♭)
65-74	Thematic Section, Theme A' [Rhythmically Displaced] (A♭)

75-84	Sequential Episode 2 ($A\flat \rightarrow G\flat$)
85-93	Thematic Section, Theme B ($G\flat \rightarrow D\flat \rightarrow G\flat$)
94-110	Thematic Section, Theme A" [Augmentation] ($e\flat$)
111-129	Sequential Episode 3 ($e\flat \rightarrow A\flat$)
130-136	Theme B' ($A\flat \rightarrow f$)
137-152	Sequential Episode 4 ($f \rightarrow b$)
153-174	Thematic Section, Theme A''' [Retrograde, with new countersubject] ($b \rightarrow D \rightarrow b$)
175-195	Sequential Episode 4 ($b \rightarrow D$)
196-199	Incomplete Thematic Section, Theme A ($D \rightarrow G$)
200-207	Sequential Episode 5 ($G \rightarrow G$)
208-222	Thematic Section, Theme A'''' [Inverted] ($G \rightarrow D \rightarrow G$)
223-228	Transition ($G \rightarrow E\flat$)
229-235	Thematic Section, Theme A'''' [Inverted] ($E\flat \rightarrow f$)
236-249 //	Sequential Episode 6 ($E\flat \rightarrow D$) END LARGE SECTION Y
250-278	BEGIN LARGE SECTION Z Thematic Section, Theme C [derived from countersubject, mm. 153-174] ($D \rightarrow B\flat$)
279-294	False Theme A, Sequential Episode, Theme C Bass ($B\flat \rightarrow F$)
295-307	Thematic Section, Theme A'''' [Inverted and Stretto] ($F \rightarrow B\flat \rightarrow F$)
308-333	Sequential Episode 7 ($F \rightarrow F$)
334-341	Thematic Section, Theme A ($F \rightarrow g$)
342-358	Sequential Episode 8 ($g \rightarrow B\flat$)

359-366 //

Thematic Section, Theme A (B \flat)
END LARGE SECTION Z

367-400

Coda (E \flat → B \flat)

This behemoth is essentially a hybrid of two standard forms - the rondo, and the theme and variations. Standard rondo form, typically diagrammed ABACADA..., consists of recurring thematic statements separated by contrasting material. The fourth movement of the “Hammerklavier” resembles this in the sense that statements of Theme B and Theme C are separated by returns to the primary idea in the piece, Theme A. Theme and variations form, which could be diagrammed AA'A"A"..., typically presents a thematic idea and then proceeds through a series of altered forms of the same idea. This movement certainly resembles a traditional theme and variations. Theme A, first presented during the fugal exposition (measures 16-43), is subjected to increasingly varied and sophisticated treatment as the piece progresses. Rhythmic displacement, augmentation, stretto, and a variety of other techniques are used to create variation with each return of this main idea.

The novelty of the small-level form comes from the way Beethoven combines these two existing forms. The basic rondo outline of ABACA is enlivened by the continuously evolving presentation of Theme A – in essence, each time the main idea within the rondo form returns, it is a variation rather than a restatement. The fugal treatment of the material acts as a glue which lends the piece cohesiveness and fluidity. The constant counterpoint typical of fugue binds the sections together and ensures that any pause or contrast will be perceived as highly meaningful, an idea which seems to have been important to Beethoven (see above). Momentary elisions between thematic areas (for example, measures 286-292) further gel the sections together, as does Beethoven's tendency to create new themes from previous motives (Theme C, for example, is an expansion of the countersubject first presented in measure 153).

At its core, this hybrid form – which I call “rondo-variation” form - is a study of consistency versus instability. The dependable recurrence of the A theme is undercut by its tendency to appear in altered forms, a trait which satisfies a listener's need for repetition without ever truly permitting him or her to relax.

Makeup of Theme A

The primary theme of the movement, referred to above as Theme A, is the melody around which the fugue is constructed. In its original presentation (measures 16-25), Theme A is ten bars in length and consists of four motives:

motive a : Leap of a tenth, trill figure (measure 16)

motive b : Quarter-note, eighth-rest, sixteenth-note scalar descent (repeats three times, measures 17-19). Each time this motive repeats, it is transposed down a third, a gesture which grows naturally from the descending thirds prominent in the introduction (measures 1-2, 8, 10)

motive c : Sixteenth-notes which alternate ascending/descending groups with groups that change direction. Ultimately, the figure ascends. This motive is two bars in length (repeats twice, measures 20-23)

motive d : (measures 24-25)

However, Beethoven almost immediately obfuscates this seemingly clear presentation. When the second voice enters the fugue (measure 26), the first voice continues in uninterrupted sixteenth-note motion, seeming not to finish its idea until measure 27. This continuation, coupled with the fact that motive *a* begins with a clear dominant to tonic motion, casts doubt in the listener's mind about when,

exactly, the fugal subject begins and ends. Furthermore, the second voice presents an altered version of the last part of Theme A: the repetition of motive *c* is incomplete, and motive *d* has been significantly changed (measures 32-34). Because of the missing measure in the repetition of motive *c*, this second statement of Theme A is only nine measures in length.

The entrance of the third voice in measure 35 further muddles the situation. The third voice, like the second, presents only half of motive *c* when this idea repeats (though it is, interestingly, the complimentary half) and alters motive *d* even further. This third statement, like the second, is nine measures long, and takes the listener to the end of the fugal exposition.


What has emerged over the course of these initial three statements of the subject is a dialectic reminiscent of that discussed above: consistency versus instability. Namely, Part 1 of Theme A (motive *a*, motive *b* and its repetitions, the first statement of motive *c*) are consistent in their presentation, while Part 2 of Theme A (the second statement of motive *c*, motive *d*) are unstable, and may be altered or omitted. Since motive *d* has yet to appear in the same form twice, there is in fact doubt that this material is part of Theme A at all – it may, in hindsight, be free or transitory counterpoint which does not return. These generalization are borne out by subsequent statements of Theme A:


<i>Measure Numbers</i>	<i>Treatment of Theme A, Part 2</i>
52-60	Repetition of motive <i>c</i> altered, motive <i>d</i> absent
65-74	Repetition of motive <i>c</i> presented in different voice, motive <i>d</i> absent
94-110	Repetition of motive <i>c</i> absent, motive <i>d</i> replaced by free material
153-74	Repetition of motive <i>c</i> and motive <i>d</i> both absent

And so on. The consistent instability distinctive of Beethoven's hybrid rondo-variations form (see above) seems to be encoded in his construction of this theme. Much like the predictable

recurrences of Theme A in the rondo structure are rendered unstable by the variation to which Beethoven subjects them, the more regular aspects of the fugal subject are destabilized by the following material. Part 1 of Theme A is constant, regular, and recognizable; Part 2 is changeable, malleable, and elusive. As with many great works, this piece's notable large-scale attributes are, upon inspection, seen to be ripples emanating from its inner design.

Makeup of Themes B and B'

Theme B (measures 85-93) consists of a variety of contrapuntal cells. Most of these cells repeat irregularly. However, one motive – which I will refer to as motive *e* - is consistently present throughout the thematic section. Motive *e* consists of the rhythm , and appears in measures 85-88, 90-91, and 93. This rhythm is intriguing in that it is very nearly the perfect retrograde of the rhythm of motive *b*. This foreshadows neatly the lengthy section beginning in measure 153, during which Theme A will be presented and abstracted in retrograde.

Interspersed with motive *e* during the first Theme B thematic section is a similar motive, consisting of the rhythm  – a re-ordering of the rhythms of motive *e* – which I will refer to as motive *e'*. Motive *e'* appears in measures 89 and 92.

Theme B, in contrast to the material preceding and following, has a noticeable textural clarity. However, it lacks thematic distinctness. Aside from the constant repetition of motives *e* and *e'*, there is little of melodic interest here – just small gestures, typically lasting one or two beats, which Beethoven employs in a variety of metric situations (notice how the falling sixteenth-notes in the upper voice in measure 88 are echoed, in a different metrical position, by the low voice a measure later). This melodic anonymity and rhythmic fluidity combine to ensure that the rhythmic clarity perceived at the beginning of Theme B has, by the time it ends, been replaced by uncertainty and vagueness. Like Theme A and

the larger rondo-variation form in general, consistency once again gives way to instability.

Theme B' (measures 130-36) is very like Theme B in construction, but is in the new key of A \flat -major and lasts just seven bars as opposed to nine. Either motive *e* or motive *e'* is again present in every measure (in the pattern *e e e e' e e'*), and again, the counterpoint is clear but not distinctive. The first time a direct repetition of any kind occurs (measure 137), it is indicative not of a solidifying of the material, but of the beginning of a sequential episode which takes the listener away from Theme B, never to return.

Makeup of Theme C

The placement of Theme C ensures its prominence within the form. Theme C begins immediately after the silent measure marking the end of Large Section Y. As is discussed above, Beethoven seems to have taken great pains to place this silent measure precisely at the golden ratio within the work. Therefore, there can be little doubt that he intended Theme C to be perceived as very meaningful. Furthermore, Large Section Y ends with the most basic distillation of Theme A found anywhere in the piece – simply leaps of a tenth in eighth-notes, the last carrying a trill (measures 243-45). This point of greatest possible abstraction demands both a halt to the music and contrasting new material.

Theme C itself begins in the key of D major (this means that the interval between the beginning of Large Section Y and the beginning of Large Section Z is a third, echoing the prominence of this interval both in the movement's introduction and in motive *b*), and grows out of the countersubject first presented in measure 153. Theme C is related to this countersubject by key area, rhythmic figuration, articulation, and Beethoven's own expressive marking (*cantabile*). The melody begins with motive *f* – three quarter-notes descending by step, followed by two quarter-notes ascending by step, the leap of a fifth down, and another series of ascending steps. After this beginning, the remainder of each phrase

seems to be variable, changing with each iteration – in this sense, Theme C resembles Theme A.

There are only two complete presentations of Theme C in the piece, both of which are stated first in the upper voice and then echoed in the lower voices. The first begins in measure 250, and the second in measure 259. Because there are no strong cadences in this section (the closest we come is a near-cadence in A-major, measure 275), these entrances therefore serve as formal markers within the thematic section, splitting into 9+20 measures. This is an approximate 1:2 ratio, mirroring the 2:1 ratio of the fugue as a whole.

Conclusion

As with any great work, the more one examines this movement of “Hammerklavier,” the more one finds to discuss. I have limited myself to analysis of the form of the piece and that form's roots in the thematic materials present, but this naturally represents just a small portion of worthwhile points of discussion. I would be particularly interested in further examining the relationships between the introduction, coda, and main section of the piece. What makes them work as a unit? What attributes, if any, do they share? But alas, this will have to wait for another day.

While naturally not as rigid as a fugue by J.S. Bach, this movement is planned and executed with precision. Taking a page from the book of the contrapuntal master, Beethoven appears to have based his composition around clear ratios, and then reflected those ratios in miniature in the construction of his three main themes. He then combined this contrapuntal planning with his own unique conception of architecture, using the fugal materials to create a rondo-variation form. While most would agree that the end result is intimidating, research reveals it to be at least logical, and this renders the piece as a whole more accessible. It is my sincere hope that my work on the subject has been helpful, and perhaps introduced – or endeared – someone heretofore unconvinced to a magnificent work of art.

Themes and Motives

THEME A (mm. 16-25)

musical score for Theme A (mm. 16-25) in 3/4 time, key of B-flat major. The score consists of three systems of two staves each. The first system shows a trill in the right hand, followed by 'motive b' (a quarter note followed by a dotted eighth and sixteenth note eighth-note triplet), which is then repeated. 'motive a' is indicated in the bass line. The second system shows 'motive c' (a descending eighth-note scale) and its repetition. The third system shows 'motive d (variable)' (a descending eighth-note scale with chromatic alterations).

THEME B (mm. 85-93)

musical score for Theme B (mm. 85-93) in 3/4 time, key of B-flat major. The score consists of two systems of two staves each. The first system starts with a piano (*p*) dynamic and features 'motive e' (a descending eighth-note scale). The second system features 'motive e'' (a descending eighth-note scale with chromatic alterations) and ends with 'etc.'.

THEME C (mm. 250-78)

musical score for Theme C (mm. 250-78) in 3/4 time, key of D major. The score consists of one system of two staves. The first staff is marked 'una corda' and the second staff is marked 'sempre dolce e cantabile'. The score features 'motive f' (a descending eighth-note scale).