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Rhythm in the First Movement of Bartók’s *Contrasts*: Performance and Analysis

Daphne Leong
*University of Colorado at Boulder*, trace@utk.edu

Daniel Silver
*University of Colorado at Boulder*, Trace1@utk.edu

Jennifer John
*Aspen Music Festival and School*, trace3@utk.edu

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According to Edward T. Cone, “valid performance depends primarily on the perception and communication of the rhythmic life of a composition.”¹ This rhythmic life encompasses the broadest range of rhythm within the limits of a piece, from overarching formal contours to subtleties of shaping and timing. Although its conveyance underlies convincing performance of music in any style, its “perception and communication” can be especially problematic in the performance of certain works.

Take the first movement of Bartók’s Contrasts for violin, clarinet, and piano, for instance. At times straightforward in its rhythmic construction, at other times quite quirky, the movement presents performers with rhythmic problems ranging from ensemble difficulties to questions of pacing and formal shaping. As in Bartók’s oeuvre in general, rhythm plays a defining role. Yet existing analyses of the piece almost entirely overlook its rhythmic features in favor of its pitch and pitch-class structure. Cynthia Folio, in her performer-targeted analysis, traces five “musical narratives” through the movement, four of which address pitch structure, and the fifth, form. János Kárpáti’s 1981 and 1994 essays focus on form and pitch.² Other literature on the movement touches but briefly on rhythm, if at all.³

¹ Edward T. Cone, Musical Form and Musical Performance (New York: W. W. Norton, 1968), 38.
³ For a different approach to rhythm in this movement, see Daphne Leong, “A Theory of Time-Spaces for the Analysis of Twentieth-Century Music: Applications to the Music of Béla Bartók” (Ph.D. diss., Eastman School of Music, University of Rochester, 2000). The present article adapts some material from this earlier source.
This article examines rhythm in the first movement of Bartók's *Contrasts* to aid performance of the work, and to deepen analytical understanding of its structure and of Bartók’s rhythmic language. Authored by a trio—a theorist-pianist, a clarinetist, and a violinist—that performs the work, the article draws on performance experience and analytical reflection to interpret the rhythmic life of the movement. Without problematizing relations between analysis and performance and between theorists and performers (while acknowledging the complexity of such issues), it presents a rhythmic analysis whose touchstone is performance relevance.

The analysis examines folk influence, particularly that of *verbunkos*, on the movement; the roles of rhythmic motives, hypermetric structure, and formal sections; the use of metric dissonance and contraction/expansion to delineate climactic and transitional passages; and the overall formal shape, pacing, and affect of the movement. It also considers other parameters as they affect rhythmic expression. As it investigates rhythmic components, their interactions, and their dynamic shaping, the article explicates characteristic Bartókian rhythmic strategies and their function in this piece. Ultimately it offers insight into the rhythmic workings of *Contrasts*—into the rhythmic aspects of the life of the composition—through a synthesis of performance and theoretical concerns.

*       *       *

Bartók himself experienced this piece as a performer, for, as József Szigeti recalls, the work originated “when I had a brainwave about suggesting to Benny Goodman that he authorize me to ask Bartók to write a work for three of us—Goodman, Bartók, and myself.”

Goodman and Szigeti commissioned the work in August 1938, requesting a two-movement work with a “brilliant clarinet and violin cadenza,” and Bartók complied in September 1938.

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Leong, Silver, and John: Rhythm in Bartók’s Contrasts

“Dances” consisted of two dances in the slow-fast Hungarian rhapsody format, the first dance featuring a clarinet cadenza, and the second a violin cadenza. Bartók later revealed that he had written a slow middle movement, renamed the three-movement work *Contrasts*, and premiered it with Szigeti and Goodman at the Columbia Recording Studio in New York in April 1940.5

Our discussion of the movement’s rhythm begins with its Hungarian roots. Bartók entitled the movement “Verbunkos,” after a type of Hungarian instrumental music derived from dances used for recruiting during the imperial wars of the eighteenth century. These dances were performed by a dozen soldiers and their sergeant and accompanied by Gypsy musicians who improvised on folk melodies, matching the complexity of their playing to the difficulty of the dancers’ steps.6

Verbunkos features an accompaniment pattern called dűvő, consisting of evenly spaced attacks with accentuation on the second (offbeat) attack of each pair. Dűvő, which is usually played on a stringed instrument using double or triple stops, can occur simultaneously on several metric levels, usually augmented or diminished by a factor of two. As shown in Example 1, from Bartók’s *First Rhapsody for Violin and Orchestra*, a piece that sets Romanian and Hungarian folk melodies,7 dűvő occurs at two metric levels: at the eighth note in the violas, with

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5 Kárpáti, Bartók’s Chamber Music, 433–435. The Szigeti-Goodman-Bartók recording, made in May of that year, has been reissued in Bartók at the Piano-I, Hungaroton HCD 12326-31.
6 John Weissman, The New Grove Dictionary of Music and Musicians, 1st ed., s.v. “verbunkos”; Bálint Sárosi, Gypsy Music, trans. Fred Macnicol (Budapest: Corvina Press, 1978): 85–119. David Schneider’s “Gypsies, Verbunkos, and Bartók’s Debt to the Nineteenth Century” (Paper presented at the International Bartók Congress, University of Texas at Austin, 2000) provides a good explanation of the different uses of the term verbunkos, which can refer variously to actual verbunk dances, instrumental accompaniments to these and other men’s and couples’ dances, the slow portions of such dances linked in a cycle increasing in tempo from slow to fast or the entire cycle, 19th-century art music inspired by the foregoing, or even, broadly, “any characteristically Hungarian dance music of the late 18th and 19th centuries,” often referred to as the style hongrois. For a 1932 transcription of the music and steps of a Kunverbunkos, see Elizabeth Rearick, Dances of the Hungarians (New York: Columbia University Bureau of Publications, 1939): 106–111.
offbeat attacks emphasized by downbows and underlined by syncopated patterns in the first and second violins, and at the quarter note in the cellos and basses. ⁸

Several rhythmic aspects of *verbunkos*—its improvisatory nature, dotted rhythms such as \( \text{\textrd{\textbullet}} \) \( \text{\textbullet} \) \( \text{\textbullet} \) and the typically Hungarian \( \text{\textbullet} \) \( \text{\textbullet} \) \( \text{\textbullet} \), four-measure phrases, and the offbeat \( \text{\textbullet} \) \( \text{\textbullet} \) \( \text{\textbullet} \) accompaniment—permeate the first movement of *Contrasts*. ⁹ Instruments characteristically found in the gypsy bands that played *verbunkos*—violin, clarinet, and cimbalom—resonate with the work's instrumentation. ¹⁰ (Portions of its piano part—the ornaments and rolled chords in mm. 23–35 and the *glissandi* in mm. 45–53, for example—evoke the cimbalom.) Other folk influences also play a part. For instance, the movement’s second theme closely resembles a Romanian melody that Bartók set in his First Violin Rhapsody, and expresses the structure—four  

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⁸ Schneider posits \( \text{\textbullet} \) \( \text{\textbullet} \) \( \text{\textbullet} \) as a marker for *verbunkos* and gypsy-inspired music, and explores its use in Bartók’s music. Example 1 is adapted from Schneider’s Example 5.


example of rhythm in Bartók’s Contrasts

Example 2: Bartók Contrasts, I: Form

<table>
<thead>
<tr>
<th>Measures</th>
<th>Material</th>
<th>Formal Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sonata Form</td>
</tr>
<tr>
<td>1-2</td>
<td>Framing Motive</td>
<td>Framing Motive</td>
</tr>
<tr>
<td>2-29</td>
<td>Theme 1</td>
<td>Exposition</td>
</tr>
<tr>
<td>30-57</td>
<td>Theme 2</td>
<td></td>
</tr>
<tr>
<td>57-84</td>
<td>Theme 1 developed</td>
<td>Development</td>
</tr>
<tr>
<td>85-88</td>
<td>Theme 1 Cadenza</td>
<td>“Recapitulation”</td>
</tr>
<tr>
<td>88-90</td>
<td>Unmetered</td>
<td></td>
</tr>
<tr>
<td>90-93</td>
<td>Framing Motive</td>
<td>Framing Motive</td>
</tr>
</tbody>
</table>

eight-syllable phrases—of many Romanian parlando folk songs.11 Such intertextual references to genres and performance practices will inform our reading of the work’s rhythmic life.

The form of the movement is unusual, even paradoxical. As shown in Example 2, it combines sonata form, ternary design, and arch form in ways that both confirm and deny standard aspects of all three formal templates. Its sonata form is truncated, with Theme 2 occurring only in the exposition, the development focusing exclusively on Theme 1, and the recapitulation presenting but a four-measure restatement of first-theme material. A framing motive, as occurs in other works by Bartók, flanks the movement.12

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12 Some writers (e.g., Lendvai and Folio) call our development the recapitulation because of its thematic and harmonic return, but the developmental nature of the section, using only the incipit of the first theme in constant imitation, argues against this designation (see Ernő Lendvai, Béla Bartók: An Analysis of His Music [London: Kahn and Averill, 1971], 18; and Folio, “Analysis and Performance,” 5–6).

Several authors have discussed Bartók’s unusual adaptations of Classical forms. See Judit Frigyesi’s “Bartók’s Non-Classical Narrative” (paper presented at the Bartók International Congress, University of Texas at Austin, 2000) on the Sonata No. 2 for Violin and Piano; and, on the Piano Sonata, see Joseph Straus, Remaking the Past:
The ternary design corresponds to thematic material— to Theme 1 (exposition), Theme 2 (exposition), and Theme 1 (development and recapitulation)— rather than to the customary exposition-development-recapitulation parsing. The arch form flouts convention to an even greater extent, articulating the movement’s pivotal moment at the juncture between exposition and development, and matching, around this point, the quasi-developmental Theme 2 with the development of Theme 1, exposition Theme 1 with recapitulation Theme 1 and cadenza, and the opening framing motive with the closing framing motive. Interpretation of this movement’s form, in our opinion, hinges upon one’s understanding of this pivotal moment, a moment to which we will return later.13

A quick overview of the movement’s basic pitch-class materials, shown in Example 3, sets up our subsequent examination of formal, thematic, and rhythmic structure. (This article uses the following labeling conventions: { } for unordered sets, < > for ordered sets, and [ ] for prime forms.) As displayed in Example 3a, A, D#, C, and F# are the four main pitch classes: A is the primary pitch class, A–D# the primary tritone, and C–F# the secondary tritone.14 Motion from A to C frequently delineates related sections. The three most significant of these pitch classes, A, D#, and C, form an enharmonic diminished triad, the upper pitch classes of which, as shown in Example 3b, relate by interval class 1 to C# and E. These ic-1 relationships function as two important oppositions in the movement, C–C# and D#–E, and create two significant sonorities for the work: the A-major triad forming the right branch of the diagram, and the

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13 Both Folio and Kárpáti (Bartók’s Chamber Music) treat the movement’s hybrid ABA and sonata form, but as mentioned earlier Folio considers our development section to be recapitulatory. Neither Folio nor Kárpáti considers this pivotal moment as the apex of an arch form.

14 Using the terms set out by Lendvai in Béla Bartók: An Analysis of His Music (pp. 3–5 and elsewhere): {A, C, D#, F#} form the “tonic axis,” A a “pole” and D# its “counterpole,” A–D# the “principal branch” and C–F# the “secondary branch.”
Example 3: Bartók *Contrasts*, I: Primary Pitch Classes and Pitch-Class Sets

a)

\[
\begin{array}{c}
\text{D\#} \\
\text{C} \\
\text{A}
\end{array}
\]

b)

\[
\begin{array}{c}
\text{D\#} \\
\text{E} \\
\text{C} \\
\text{C}\#
\end{array}
\]

\[
\text{major/minor triad [0347]}
\]

\[
\text{major triad dim. triad}
\]

c)

\[\text{OCT}_{0,1}: \{A, Bb, C, C\#, D\#, E, F\#, G\}\]

circled major-minor triad or set-class [0347]. All of these sets belong to the octatonic collection \[\text{OCT}_{0,1}\] shown in Example 3c.

Interval cycles, that is, successive transposition by a single interval, pervade the movement. Cycles by perfect fourth \((T_5)\), whole tone \((T_2)\), and semitone \((T_1)\) are particularly prominent. (In this article \(T_n\) indicates transposition in pitch by \(n\) semitones upward if \(n\) is positive, and by \(n\) semitones downward if \(n\) is negative.)

The framing motive that opens the movement (Example 4) sets out many of these basic pitch materials, along with preliminary basic rhythmic materials. The violin articulates the primary ic-1 pairs, spanning B\# to C\# in its opening gesture, and highlighting B\# to C\# and E to

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15 Kárpáti (“Alternative Structures,” 201–202) calls the major-minor triad, as well as the major-minor third pair and the perfect-diminished fifth pair “alternative” or “dual” structures.

E-flat at the beginning and middle contour dip within this gesture.\textsuperscript{17} The piano sets a D\#-major triad against the violin’s E, and then progresses downward by whole-tone cycle to an A-major triad, articulating the primary tritone D\#–A. The momentum of the entire framing motive is fueled by dotted rhythms and the piano’s offbeat quarter-note chordal entrance, both part of the movement’s characteristic rhythmic vocabulary. The \textit{ben ritmato} marking, \textit{pizzicato} and \textit{staccato} articulation, and forthright nature of this opening statement clearly introduce the energetic, colorful, and decisive character of the piece.

Dotted rhythms provide the movement’s primary rhythmic material. As mentioned earlier, rhythms such as \(\frac{\cancel{\text{s}}}{\text{l}}\) and \(\frac{\text{s}}{\cancel{\text{l}}}\), feature prominently in \textit{verbunkos}. Example 5 displays their main realizations in the first movement of \textit{Contrasts}: the left side of the example shows characteristic patterning in terms of short and long durations (s, l) and metric stress (upper-case letters), and the right side displays these patterns’ main incarnations in the movement’s thematic material, labeled A, B, D, and C, in that order. The short–long form of the rhythm predominates, appearing both as s–L (with the metric stress on the long), and as S–l (with the metric stress on

\textsuperscript{17} In general, we treat pitch classes as enharmonically equivalent; Bartók’s spellings in this case suggest intonational inflections. For a discussion of Bartók’s pitch spellings, see Malcolm Gillies, \textit{Notation and Tonal Structure in Bartók’s Later Works} (New York: Garland, 1989).
Example 5: Bartók’s *Contrasts*, I: Basic Rhythmic Material

<table>
<thead>
<tr>
<th>pattern</th>
<th>metric accent (upper-case)</th>
<th>note values</th>
<th>in <em>Contrasts</em>, 1</th>
<th>label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-Long</td>
<td>s-L</td>
<td>s = (\frac{1}{4})</td>
<td>(\frac{1}{4}) (Theme 1)</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(\frac{3}{4}) (Theme 2)</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>s-L (or s-L)</td>
<td>s = (\frac{1}{4})</td>
<td>(Theme 1, Theme 2 climax)</td>
<td>D</td>
</tr>
<tr>
<td>Long-Short</td>
<td>L-s</td>
<td>s = (\frac{1}{4})</td>
<td>(Themes 1 and 2)</td>
<td>C</td>
</tr>
</tbody>
</table>

the short); the long–short pattern plays a less important role, appearing mainly in the guise of motive C.

Example 6 demonstrates how these patterns underlie the two main themes of the movement. Both themes feature the s–l–s–l rhythmic pattern (labeled A in Theme 1, and B in Theme 2), although in Theme 1, metric placement results in s–L–s–L (longs on strong beats, final long on downbeat), while in Theme 2, it results in S–l–S–l (shorts on strong beats, first short on downbeat). In the first theme, the pattern is based on sixteenth notes, while in the second theme, it is built on triplet eighth notes; in the first, the motive is not slurred, while in the second, it is. Both themes also feature the l–s–l–s rhythmic pattern labeled C, and the důvő accompaniment pattern, realized in half notes in the second theme rather than in the more common quarter notes of the first theme. Thus, the two themes share the common elements of
Example 6: Bartók Contrasts, I: Thematic Material

a) Theme 1

Moderato, ben ritmato. \( \dot{=} \text{ca} 100 - 94 \)

b) Theme 2

Meno mosso, \( \dot{=} 75 \)

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s–l–s–l rhythmic pattern, rhythmic pattern C, and \( důvů \) accompaniment, but differ from one another in tempo, metric placement, basic durational unit, articulation, and speed of the \( důvů \) pattern. In this way Bartók manipulates core rhythmic material to create two themes of vastly different affect.\(^{18}\)

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\(^{18}\) See Frigyesi, “The Verbunkos and Bartók’s Modern Style: The Case of Duke Bluebeard’s Castle,” in Bartók Perspectives, ed. Elliott Antokoletz (Oxford: Oxford University Press [2000], 150–151) for her discussion of “rhythmic variation” as the basis for “quasi monothematicism” and its effect on traditional formal archetypes in Bartók’s music.
Example 7: Bartók Contrasts, I: Formal Relations

a) Themes 1 and 2

<table>
<thead>
<tr>
<th>Theme 1</th>
<th>Theme 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsection 1</td>
<td>Subsection 2</td>
</tr>
<tr>
<td>Measure:</td>
<td>4</td>
</tr>
<tr>
<td>Hypermeter:</td>
<td>4-measure</td>
</tr>
<tr>
<td>Dominant melody instrument:</td>
<td>clarinet</td>
</tr>
</tbody>
</table>

b) Development (RH = right hand; LH = left hand)

<table>
<thead>
<tr>
<th>Section 1</th>
<th>Section 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure:</td>
<td>57</td>
</tr>
<tr>
<td>Accompaniment:</td>
<td>vn</td>
</tr>
<tr>
<td>Primary voices: (in imitation)</td>
<td>cl, vn, &amp; pn; cl - vn - pn, vn - cl - pn</td>
</tr>
</tbody>
</table>

Understanding these relations between the two themes can help performers, on the one hand, knit together the thematic sections and, on the other, profile the two themes distinctly. Both the cohesiveness and the differences in character are necessary for conveying the rhythmic life of the work. A small detail further illustrates similarities and differences between the themes. Bartók marks the long note in both themes with a tenuto marking, but given the thematic context, performers might interpret the marking as indicating subtle weight in the first case, and melodic direction in the second.

The two main thematic areas also share rhythmic structure on a larger scale. As shown in Example 7a, the exposition presents each theme in paired subsections, switching dominant
melody instrument from clarinet to violin, or vice versa, between subsections. The first subsection in each pair expresses regular four-measure hypermeter, while the second displays irregular hypermeter; this hypermetric progression helps build tension leading to climactic points in the second subsections. The extension in the second theme to four subsections from two further heightens intensity and eventually builds to the climax of the movement as a whole.

Example 8 demonstrates the subsection structure in the first theme. The first subsection (Example 8a) features the clarinet articulating the theme on pitch-class A in four-measure hypermeter. The second subsection (Example 8b) spotlights the violin playing the theme on pitch-class C, beginning as if it will continue the four-measure hypermeter, but upsetting this pattern in m. 21. (The reader is reminded that pitch-classes A and C frequently define related sections in the movement.) The breakdown of the regular hypermeter leads quickly to the climax of the first-theme area, at the end of m. 23.

We pause here to relate our findings thus far to verbunkos. As demonstrated, dotted rhythms, dăvő accompaniment patterns, and four-measure hypermeter characterize the movement. The improvisatory nature of verbunkos, structured by the repetition and elaboration of folk tunes, also permeates the movement, evidenced by the repetition of sections of melodic material, by subsequent statements becoming freer and building momentum, by the practice of leading instruments taking turns, and by the sense of spontaneity created by the frequent and fluid tempo changes and shifts in musical character. The volatility of the movement’s form—its “wild ride” character—stems from its verbunkos roots.

Bartók heightens the sense of rhythmic movement and improvisatory freedom, while playing off clear metric constraints, through characteristically Bartókian uses of two rhythmic

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19 “Hypermeter” refers to the patterning of measures as if they were metrical beats (William Rothstein, Phrase Rhythm in Tonal Music [New York: Schirmer, 1989], 8, 12). In four-measure hypermeter, for example, one can conduct units of four measures as if they were four beats in a “hypermeasure.”
techniques: metric dissonance and contraction/expansion. The first technique, metric dissonance, has been categorized by Harald Krebs into two types: grouping dissonance and displacement dissonance.\textsuperscript{20} Grouping dissonance occurs when two concurrent pulse levels have frequencies that do not relate to one another by integer factors or divisors; hemiola, as illustrated

Example 9: Metric Dissonance

a) Grouping Dissonance
Brahms Violin Sonata Op. 78 in G, I, m. 11

![Example 9a: Metric Dissonance](image)

b) Displacement Dissonance
Beethoven Cello Sonata Op. 69 in A, II, mm. 1-4

![Example 9b: Metric Dissonance](image)

in Example 9a, is a common manifestation of this type of dissonance. Displacement dissonance results when two concurrent pulse levels of equal frequency do not align with one another; the two non-aligned levels of dotted-half note pulses in Example 9b illustrate this type of metric dissonance. Bartók’s second technique, contraction/expansion, combines successive deletion or shortening (an accelerating process) with successive addition or lengthening (a decelerating one).

Schumann’s *Papillons, Carnaval* and *Davidsbündlertänze* (Ph.D. diss., Eastman School of Music, University of Rochester, 1989), 27.
Bartók uses metric dissonance and contraction/expansion to mark climactic moments and sectional boundaries. To illustrate this usage we will examine three passages in detail: the climax of the first-theme area, the transition between the two large second-theme sections, and the climax of the movement as a whole.

The first-theme climax provides an excellent example of Bartók’s use of grouping and displacement dissonance intertwined with contraction/expansion. After beginning the subsection in regular 4/4 meter and four-measure hypermeter (Example 8b, mm. 18–21), the violin begins, as shown above the score in Example 10, m. 20, to articulate a 3/4 meter by repetition of pitch-rhythmic motives C’ and D. These motives, C’ serving as anacrusis to D, ascend in perfect 4ths (T₅), and attain their peak in m. 22. Meanwhile the piano continues its 4/4 meter and düvő-accentuated offbeats, creating a grouping dissonance with the violin’s 3/4 meter.

As the violin reaches its peak (marked by the single downward arrow above m. 22), all three instruments stretch out their musical events. The violin greatly lengthens the long note (E) of its repeating pattern. The piano, which has been changing harmonies every quarter note, sustains a single harmony (bracketed) for several beats. The clarinet stretches its preceding sextuplets to quintuplets and its short gestures to an ongoing perfect-fourth (T₅) chain. The allargando indication in m. 23 intensifies the stretch, even as the violin contradicts the expansion by contracting its long pitch E with the figure \( \text{\textfrac{3}{\text{n}}} \). The expansion/contraction process reaches its goal on the last beat of m. 23 (marked by a double arrow), when the original tempo returns, all three instruments attain their dynamic peaks, and all three instruments begin new repeating patterns, with the violin and clarinet at the peak of their new patterns, and the piano at the bottom of its new pattern.
Example 10: Bartók *Contrasts*, I: Theme 1 Climax
This climactic moment, oddly, arrives on a notated weak beat, and displays an upbow marking, the expected downbow arriving only a beat later on the notated downbeat of m. 24. These rhetorical anomalies—the distinctly non-climactic upbow and weak-beat placement—find a structural explanation in the concepts of metric dissonance. After the double arrow all three instruments articulate 3/4 meter, but as shown by counts above the score for the violin, and below the score for the clarinet and piano, the 3/4 of the clarinet and piano falls one beat behind that of the violin. This displacement dissonance creates two downbeats in the climactic area: one at the double arrow, and one on the notated downbeat of m. 24.

The two displaced meters are articulated as follows. Beginning at the double arrow, the violin’s faster-moving voice expresses a <down, down, up> pattern that continues the preceding T₅ chain in a downward direction (T₇). The greatest pitch gap occurs after the “up” of the pattern, lending greater metric weight to these points, which we have circled and labeled as the violin’s downbeats. (We have grouped the latter portion of our posited beat 2 and beat 3 in the violin with the following downbeat to continue the preceding anacrusic groupings.) Meanwhile the clarinet repeats an octatonic scale fragment, transposing it downward by the pattern <whole tone, semitone, semitone>. The greatest weight in this pattern occurs after the greatest gap, the whole-tone transposition, so we identify the clarinet’s downbeat in this position. At the same time the piano begins a series of chromatically ascending chords, prefaced by ornamental slides in the pattern <left-hand slide, right-hand slide, right-hand slide>. The bass register of the left-hand slide lends it greater weight, and we label the piano’s downbeat in this location, coinciding

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21 According to László Somfai, “the majority of Bartók’s authentic bowing signs must be understood not as technical aids but as primarily musical suggestions for the accentuation of unusual or ambiguous places…” (Somfai, Béla Bartók—Composition, Concepts, and Autograph Sources [Berkeley, University of California Press, 1996], 270). The upbow marking in question is Bartók’s: it does not occur in the draft 77FSS1, but it does occur in the tissue fair copy PB 77 FSFC1, along with downbow markings on the six preceding violin E’s. (The six downbow markings are not retained in the printed edition, but Szigeti does use separate downbows on these six E’s in the Szigeti-Goodman-Bartók recording [Hungaroton HCD 12326-31].) (László Somfai, e-mail message to Leong, March 28, 2004.)
with the downbeat of the clarinet. The passage thus contains two 3/4 meters, creating a
displacement dissonance between the 3/4 in the violin and that in the clarinet and piano. The
violin further complicates the situation with double-stopped quarter notes that articulate 2/4 by
pitch repetition, producing grouping dissonance with the two 3/4 meters.  

At the *più tranquillo* in m. 26, Bartók simply continues the displacement dissonance, now
expanding it from 3/4 to 4/4. The violin articulates the notated 4/4 by emphasizing the downbeat
with long open-string G’s, while the clarinet and piano articulate a 4/4 meter one beat later,
emphasizing the second beat of the measure with the concert <B-flat, A> pitch-rhythmic motives
in the clarinet and agogic accents in the piano.

To summarize our discussion of this passage, we describe what happens from m. 18 to m.
30 (Examples 8b and 10) in terms of momentum. At m. 18, the violin begins its statement of the
first theme by carrying on the established 4/4 meter and, apparently, the 4-measure hypermeter.
At m. 21, however, it pushes forward with an ascending sequence and a shortening of its meter
from 4/4 to 3/4. This push forward is held back palpably by the stretching in mm. 22–23,
creating a sense of tension or “struggle” before the arrival at the climactic point in m. 23, a
struggle heightened by the contraction of the violin’s E’s. From the end of m. 23 to the
downbeat in m. 26, the “double downbeat” (beginning with the last beat of m. 23 and the
downbeat of m. 24), the various metric dissonances (two displaced 3/4’s, and a 2/4 in the violin’s
double-stopped quarter notes), and the downward direction of the melodic pitch motion all
contribute to a sense of “tumbling down” from the climax. At the *più tranquillo* (mm. 26–29),
displacement dissonance (two displaced 4/4’s) continues, but the lessening of activity in tempo,
texture, and harmonic rhythm, the lengthening of the meter from 3/4 and 2/4 back to 4/4, and the

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22 Bartók added these double stops later; they appear in the fair copy PB 77 FSFC1, but not in the draft 77FSS1.
gradual pitch descent create a sense of “settling” that leads to the second theme (m. 30, not shown) with its clear 4/4 meter and 4-measure hypermeter.\textsuperscript{23}

The movement’s basic ingredients permeate this passage as follows. Basic rhythmic motives C’ and D make up the leading melodic voice in the violin, accompanied by důvô-style chords in the piano. When the piano shifts to 3/4 meter after the climax, the violin’s double-stopped quarter notes take up the důvô’s implied 2/4, shifting it by a quarter note; the upbow-downbow indication can be heard as a manifestation of this folk-accompaniment figure. Pitch cycles, particularly T\textsubscript{5} or T\textsubscript{7}, are prominent throughout. The improvisatory character of the movement’s namesake appears in different ways: at m. 20ff. in the texture of melody instrument over rhythmic accompaniment filled in with “spontaneous” clarinet gestures; at the climax with the rhythmic elasticity produced by various small note values, elongation, and the violin’s contracting E’s in conflict with this elongation; and, particularly, at the piú tranquillo, with its many different short note values, arpeggiated figures, and fluid motivic transformations.

Contraction and expansion contribute to the climax just discussed. But they play a more fundamental role in the transition from the first large second-theme section to the second, shown in Example 11. In this passage contraction occurs in several parameters: the tempo gradually increases, the composite rhythm of violin and clarinet accelerates, and the pulse (articulated first by the piano’s harmonic rhythm, then by the clarinet’s groupings) speeds up. Meanwhile, the violin expresses expansion. Its pitch-rhythmic motive, labeled E’, expands— lengthening its durations and extending the motive itself—to form motive E”. These transitional processes of contraction and expansion bridge to an intensified presentation of the second theme (m. 45), a thematic section (not shown) whose intensity results from its forte and piú forte dynamics, its

\textsuperscript{23}“Struggle, tumble, and settle” are three of Austin Patty’s four terms for “pacing scenarios” in Brahms. (The fourth is “surge.”) See Patty, “A Theory of Pacing Scenarios with Application to the Violin Sonatas of Brahms” (Ph.D. diss., Eastman School of Music, 2006), ch. 2.
consistent rhythmic unison for the first time between violin and clarinet, its use of second-theme triplet material for the first time without accompanimental sixteenth notes, and its multi-octave glissandi in the piano. The mounting tension of this section culminates in the climax of the movement.

The climax exhibits expansion and contraction at work in remarkable ways. Example 12 shows the passage; the climax occurs at m. 53, where the movement’s registral extremes and loudest dynamic are reached, and its basic materials presented in their most condensed form. The lowest pitches (piano D# and F#), and the highest pitches (violin C and A) articulate the movement's primary pitch classes. The highest pitches (C and A), which occur at the loudest point and are emphasized by downbows, represent the two pitch classes used in the movement to differentiate related sections. The piano articulates the major-minor triad on D#, violin and
clarinet play the major-minor triad on A, and the combination of all three instruments produces the movement’s main octatonic collection $\text{OCT}_{0.1}$.

After their notable absence in the passage building up to this moment, sixteenth notes reappear, recalling first-theme material and foreshadowing its reappearance. The movement’s main rhythmic motive, s–l, labeled D, occurs 3 times, both as S–l (representative of Theme 2), and as s–L (representative of Theme 1). Motive D contracts: each statement is shorter than the last. This contraction in violin and clarinet is countered by expansion in the piano, whose bass pulse slows from twice per measure to once per measure.

The build-up to this climactic moment has been long and slow, spanning the entire second-theme area. Once the climax is reached, however, the intensity subsides rapidly, with a quick dwindling of registral height, dynamics, and rhythmic activity. Measures 55–57 expand in

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various ways to contribute to this unwinding of tension: the tempo slows with the marking *tornando*; the violin C’s (in the repeated pitch segment <C, A>) elongate; and the duration between piano attacks doubles, from quarter to half notes. (Characteristically for Bartók, a slight contraction counterbalances this expansion: the clarinet’s repeated pattern, labeled X, suggests 3/4 meter, shortened from the established 4/4.)

The passage also expands in the realm of pitch. Whereas m. 53 combines D# and A major-minor triads to produce OCT\(_{0,1}\), mm. 55–57 recombine the same building blocks—minor thirds and major-minor triads (the latter circled)—to produce two complete hexatonic collections (HEX\(_{0,1}\) in the violin and clarinet, and HEX\(_{2,3}\) in the piano) and eventually the complete aggregate.\(^{25}\) Pitch-classes B and D, arriving at the end of the passage on the downbeat of m. 57, complete the piano’s hexatonic collection and the passage’s pitch-class aggregate.\(^{26}\)

The apparent effect is of a climax attained in m. 53, followed by an unexpectedly rapid dispersal of the climactic intensity aided by expansion in the realms of time and pitch. But why the accents on the final {B, D}? It seems odd to dwindle into an accented moment. Folio views this moment as a cadence, as the conclusion of a retransition leading to recapitulatory material in m. 57.\(^{27}\) But we argue that, far from acting as relaxation and stopping point, or retransition and cadence, mm. 55–57 overshoot the climax’s goal of completion. The condensation of basic materials in the climactic m. 53 is so tight that instead of dispersing, the materials recombine and expand to produce yet another “conclusive” structure, one that lies outside the main material of the movement. In technical terms, whereas m. 53 comprises the transpositional combination of [03] at T\(_4\) to form set class [0347], and the combination of [0347] at T\(_6\) to provide the complete

\(^{25}\) We use Joseph Straus’s method of labeling the four distinct hexatonic collections (see his *Introduction to Post-Tonal Theory*, 149).


octatonic, maximizing the most prevalent interval in the octatonic collection, [03]; measures 55–57 transpositionally combine [03] at $T_4$ and $T_8$ to form set class [014589] (and [0347] along the way), and [014589] at $T_3$ (or $T_6$ or $T_{10}$) to complete the aggregate, emphasizing the most prevalent interval of the hexatonic, [04]. Thus, the movement’s [03] premise expands to [04], its octatonic substrate fills out into a complete aggregate, and the passage and formal section conclude with tones—B and D—foreign to the primary vocabulary of the movement.

B and D cap the “overshoot” into foreign harmonic territory. The combinatorial process can go no further, and its energy spills over into the brief silence in the middle of m. 57. This rest, which we identify as the apex of the movement, the pivotal point around which the movement revolves, falls at the movement’s Golden Section if counting measure numbers, and at its approximate midpoint if including the unmetered cadenza. It is laden with suspense: now that the movement has achieved the combinatorial potential of its basic materials, how will it proceed?

The entrance of the clarinet answers the question by completing, with its first note A, the <C, A> repeating pitch segment that had petered out in the violin. With this one stroke the narrative returns to its moorings: the A major triad, the first-theme motive, and the transparent texture. But, rather than supplying the expected stability of a return to Theme 1 material, an expectation created by the tension of the preceding climax, Bartók develops this material in a way that reverses the structure of the preceding section.

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28 Richard Cohn developed the notion of “transpositional combination”—a property of pitch-class sets that can be generated by the combination of two transpositionally related subsets—as an alternate explanation for many of Bartók’s preferred (inversionally symmetric) pitch-class sets. See Cohn, “Inversional Symmetry and Transpositional Combination in Bartók,” *Music Theory Spectrum* 10 (1988): 19–42.

29 The Golden Section of the movement's length, 93.25 measures, falls at 57.6 measures. (In terms of notated measure numbers, however, this point actually occurs at m. 58.6.)
In the remainder of the article, we will show how the material after the pivotal rest reverses and answers that which precedes it. We will demonstrate how the development section relates to the second-theme area, the recapitulation to the first-theme area, and the closing framing motive to the opening framing motive.

The development section answers the second-theme area in the following fashion. (Compare Example 7b to the second-theme portion of Example 7a.) Like the second-theme area, the development consists of two large sections, each subdivided into two smaller subsections. But whereas the string of second-theme subsections increased in intensity to lead to the climax, the sequence of development subsections decreases in strength to lead away from the climax. Whereas the second theme’s sections featured violin and clarinet in melodic roles accompanied by the piano, the development’s sections feature first all three instruments in imitation (mm. 57–71), then the piano in a dominant role accompanied by the violin and clarinet (mm. 72–84). (The alternation of clarinet and violin as the leading canonic voice [in boldface] in the development's first section, followed by the alternation of violin and clarinet as the upper accompanying voice in its second section, echo their alternation as the primary melody instrument in the first- and second-theme areas.) Finally, whereas the second theme’s melodic line expressed a melancholic intensity, the development’s dance-like first-theme imitation articulates an ironic wit.

Although the development reverses the structure of the second-theme area’s sections, that is, functions as part of an arch form around the pivotal rest, it also displays features that mark it as the development section in a sonata form. It treats the first theme motivically, using only its incipit, and explores this motive extensively through imitation. It arises primarily through large processes of contraction and expansion, processes that lend it an air of instability, and that, for
Bartók, usually serve on a smaller scale to mark climaxes and sectional boundaries. Here contraction and expansion unfold the movement's primary materials.

Contraction dominates the development’s first large section (not shown), through successively shorter intervals of imitation, motivic contraction, and textural thinning. Expansion, with contraction, regulates the development’s second section, through ever-lengthening $T_5$ chains of the first-theme incipit in the piano. Examples 13a and 13b show these chains for the two subsections involved. In the first subsection, chains begin on pitch-class A, extend through D to G, then, beginning again, arrive at C, and finally F. In the second
subsection, chains extend a step further, from A to B-flat, but stop short of spanning the movement’s primary tritone, A to E-flat. To reach E-flat, Bartók inverts the direction of the chain from up to down, enlarges the pitch interval between its components from T₅ to T₁₃, and descends chromatically across more than five octaves from A₆ to E-flat₂ to conclude the development. This final descending chain amplifies the pitch-class elements of the subject of the development, the first-theme incipit <A, C#, E, E-flat>: it stretches its spanning A–E-flat tritone across four and a half octaves, elaborates its closing E–to–E-flat motion, expands its descending semitone to T₁₃ transpositions, and extends its triadic structure to seventh chords or, more precisely, to a repeating string of the descending segment <minor third, major third, minor third, minor third>. The development as a whole, including the section shown in Example 13, explores the implications of the first theme and brings the theme from its central pitch A to its polar tritone E-flat. (As a side note, unison violin and clarinet, not shown, accompany Example 13, and once again mark the juncture between two subsections by changing their focus from pitch-class A to pitch-class C.)

As always in Bartók, expansion does not stand alone but also incorporates contraction. The number of motivic statements in each chain expands but the motive itself contracts, from \(\underline{\text{\textbackslash{}textbackslash{}textbackslash{}}\text{\textbackslash{}textbackslash{}textbackslash{}}\text{\textbackslash{}textbackslash{}textbackslash{}}}\) in subsection 1 to \(\underline{\text{\textbackslash{}textbackslash{}textbackslash{}}\text{\textbackslash{}textbackslash{}textbackslash{}}\text{\textbackslash{}textbackslash{}textbackslash{}}}\) in subsection 2. The re-expansion at the end of the concluding chain signals the arrival on E-flat and the end of the development.

The juncture between these two subsections—the moment when \(\underline{\text{\textbackslash{}textbackslash{}textbackslash{}}\text{\textbackslash{}textbackslash{}textbackslash{}}\text{\textbackslash{}textbackslash{}textbackslash{}}}\) contracts to \(\underline{\text{\textbackslash{}textbackslash{}textbackslash{}}\text{\textbackslash{}textbackslash{}textbackslash{}}\text{\textbackslash{}textbackslash{}textbackslash{}}}\) (shown in Example 14)—creates a practical concern. Since the contraction causes the piano’s motive to begin earlier, on the second rather than the fourth sixteenth of the beat; since the tempo changes subtly at this point; and since these changes are obscured by the pianissimo dynamic and bass register; the violinist and clarinetist may have difficulty finding their bearings.
Understanding the second sixteenth of m. 80 as the beginning of a new subsection helps the pianist to articulate it clearly, and thereby to orient the violinist and clarinetist to the new tempo and rhythmic patterning.

The “recapitulation” (Example 15) is so in design only, for while it brings back the first theme, it does so over a dominant prolongation: a typical cadential 6/4 in the piano, followed by a preponderance of melodic D#’s and harmonic E-flat-major triads. Thus, whereas the
corresponding spot in the exposition emphasized the centricity of A through A-major pizzicato triads (see Example 6a), here the effect is of a “sitting on the dominant,” where E and E-flat, the tritone pole of A, represent that harmonic function. The metric placement of the theme further argues for this interpretation since, just as the theme’s harmonic setting has shifted half an octave from A to E-flat between exposition and recapitulation, its metric setting has shifted half a measure, with the clarinet’s arrival on its long note D# occurring mid-bar rather than on the downbeat. (This shift allows the cadential 6/4 to fall on the downbeat, and its “resolution” to the E-flat “dominant” to occur at the weaker mid-bar location.)

This short recapitulation passage introduces the clarinet cadenza, which further elaborates the D# and works out material heard in the first-theme area. In this way the recapitulation and cadenza balance the first-theme area of the exposition, answering it with equivalent bulk and thematic content, but contrasting it with their focus on D#. The recapitulation therefore expresses a sense not of return per se, but of “being on the way back”—a sense of formal place more appropriate to an arch form than to a sonata-form recapitulation.

The cadenza’s conclusion and the closing framing motive, shown in Example 16, complete the arch form. In answer to the exposition's first-theme motion from pitch-class A to C, the recapitulation/cadenza moves from D# to F#, the tritone poles of A and C. After its long elaboration of D# (not shown), the clarinet climbs to the peak of its cadenza, F#6, shown in Example 16, and then descends to close on D#. The piano responds with a G-flat-major triad, then slides down to F in order to resume the framing motive’s whole-tone descent from D# to A. Thus the first-theme motion from A to C in the exposition is answered by a corresponding yet polar motion from D# to F# and back to D# in the recapitulation/cadenza.

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30 Thus the G-flat-major triad, rather than suggesting the “wrong key” as Folio (17) posits, emerges naturally from the D# and forms part of the {A, C, D#, F#} primary collection of the movement.
A dominant-to-tonic bass gesture in the piano, pianissimo and staccato, ends the movement, set off by the recall of A-major pizzicato triads, pianissimo, in the violin, and a fading D# in the clarinet. This ending crystallizes a reminiscence of the first-theme incipit—its pitch materials abstracted from their rhythmic clothing—and provides an apt close to a movement full of surprising turns and twists.

With regard to the rhythmic life of the movement, a great deal that appears at first to be odd or puzzling in sonata form makes sense in an arch form cum sonata form. The strange climactic placement and its odd tapering off, the unusual sectional structure of the development, and the brevity and harmonic content of the recapitulation all make sense when understood in the context of a quasi-palindromic form. Other aspects of structure and surface—sectional thematic presentation, improvisatory character, dotted rhythms, and accompaniment patterns—acquire meaning when viewed in the context of the movement’s folk roots. Performance problems such
Example 17: Bartók Contrasts, I: Symmetry and Asymmetry

a) Primary Pitch-Class Material

\[
\begin{array}{c|c}
\text{Transpositional Combination} & \text{Inversional Symmetry} \\
F\# & F\# \\
D\# & D\# \\
C & C \\
A & A \\
T_3 & T_3 \\
T_1 & T_1 \\
D\# & E \\
C & C# \\
E & C \\
C\# & C \\
A & A \\
\end{array}
\]

major triad    dim. triad    major/minor triad [0347]

b) Rhythmic Motives

Theme 1: \[S \ L \ S \ L\]
Theme 2: \[S \ L \ S \ L\]

c) Metric Structure

standard 4/4 meter: \[1 \ 2 \ 3 \ 4\]
\[d\bar{o}\bar{\nu}\ddot{e}:\] \[1 \ 2 \ 3 \ 4\]

as the bowing at the first-theme climax and the chaotic textures in the same area gain clarity when understood in the context of Bartók’s rhythmic strategies of metric dissonance and contraction/expansion.

Another viewpoint further elucidates Bartók’s rhythmic style. This movement achieves its effect through a constant counterbalancing of symmetry and asymmetry, a counterpoising that occurs in many aspects of the work, from pitch and rhythm to motive and form. As shown in Example 17, the work’s primary pitch-class materials can be understood in terms either of
transpositional combination or inversional symmetry; their realization in the movement exploits their transpositional and asymmetric relationships rather than their inversionally symmetric ones. The metric structures of the work’s primary themes, while individually asymmetric, retrograde one another, as do the relative weights of beats in the prevailing meter and pervasive dûvô accompaniment. Rhythmic processes of expansion and contraction tend to accompany one another, with one predominating but the other counterbalancing. Finally, the asymmetric alignments of sonata form, ternary design, and arch form, and the resulting reinterpretation of these familiar templates, each symmetric in its own design, structures the rhythmic life of the movement as a whole, supplying surprises at every turn. Thus Bartók brings out asymmetrical features of apparently symmetrical materials such as pitch-class materials and form, and balances apparently asymmetrical processes—contraction and expansion, sLsL and SlsL, 4/4 meter and dûvô offbeats—to create a weak symmetry.

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Whereas valid analysis does not necessarily depend primarily on the perception and communication of the rhythmic life of the composition, an analysis bound up with performers and performance cannot avoid this crucial topic. Particularly when dealing with composers such as Bartók, in whose compositions rhythm features so prominently, analysis related to performance must address the rhythmic ramifications of the piece under study. Examination of the work’s rhythmic life may illuminate its other aspects, whether they be harmonic, affective, or stylistic. It will certainly bear upon performance in matters both interpretive and practical.

Maury Yeston once called for a “rhythm-to-pitch” analytical approach, to complement a “pitch-to-rhythm” methodology. With this article, we advocate a “performance-to-analysis”

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approach, one that incorporates the insights of performance, considers its components, and sympathizes with its aims, thereby balancing an “analysis-to-performance” approach.\textsuperscript{32}

Literature that informs analysis by performance—study of recordings, examination of performers’ movements, and work with performers—represents a growing body of music-theoretic research. But work that brings this examination full circle, speaking not only to theorists but also to performers—is still scarce. If rhythm is indeed paramount to performance, such work must face the temporal implications of its analyses, while contributing the benefits of more synoptic viewpoints. The result is a different genre of analysis, one that enriches the understanding of both theorists and performers, by facilitating “the perception and communication of the rhythmic life of a composition.”

\textsuperscript{32} Even though Folio explicitly addresses performing concerns, her addressing of performers in her analysis of the first movement of \textit{Contrasts} is prescriptive, moving from her analytical findings to specific performance instructions.
Leong, Silver, and John: Rhythm in Bartók’s Contrasts

Works Cited


