Chamber Symphony No.1 (Evick)/
Symmetrical and Structural Features in Sonata No.2, Mvt.1, violin and piano. (Béla Bartók)

by

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Symmetrical and Structural Features in Sonata No.2, Mvt.1, violin and piano. (Béla Bartók)

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ABSTRACT

This thesis examines the musical language of the first movement of Béla Bartók’s Sonata no. 2, for violin and piano (1922). Exploring the use of inversional symmetry, interval cycles, octatonic harmony and the use of Z-cells. It shows how Bartók used symmetry to function analogously to tonal procedures; and examines the form of the movement, its shape, melodic/harmonic content, and climatic structure. Analytic methods are based primarily on the research of Elliott Antokoletz and the theory of twelve tone tonality. The movement’s structure and various developmental procedures are presented. Detailed analysis is provided, showing Bartók’s use of symmetry, and Z-cell interaction with octatonic harmony, inversional symmetry, and free treatment. It also shows, Bartók’s developmental process of cell expansion/contraction and intervallic displacement linking it to the Second Viennese School. The movement epitomizes the extremely experimental nature of Bartóks’ middle period style.
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Chamber Symphony No. 1

Jason Wesley Evick
INSTRUMENTATION

2 Flutes
2 Oboes
2 Clarinets (Bb)
2 Bassoons

Trumpet (Bb)
2 Horns (F)
Trombone

Percussion (2 Players)
   Glockenspiel
   Xylophone

Violins I
Violins II
Violas
Celllos
Basses
Symmetrical and Structural Features
in Sonata no.2, Mvt. 1
Violin and Piano
I. Introduction

Sonata No. 2 for violin and piano was composed in 1922 near the beginning of Béla Bartók’s middle period (early 1920s-mid 30s). This period produced some of his most experimental and difficult works such as the 4th string quartet (1928) and the sonata for piano (1926). It was also during this period that there was an increase in Bartók’s concert career and Bartók performed Sonata no.2 frequently with violinist Jelly D’Aranyi. The focus of this thesis is exclusively on the first movement of Sonata No.2 and the work, itself, is one of Bartók’s most expressionistic and complex. In a letter from December 31st 1925 Bartók states to a concert planner;

“What we must be careful to avoid is any attempt to put such works as my two Sonatas for violin and piano…in places where the level of music appreciation is as low, as in some Hungarian towns.”

This difficulty is not only a product of harmonic experimentation, but, as Halsey Stevens comments, “there is complete independence between the piano and violin, a lack of traditional thematic unity, and a looseness of melody and form making it close to the work of the Viennese expressionist”. Bartók has also been quoted as saying that with these works he; “wanted to show Schoenberg that one can use all twelve tones and still remain tonal.”

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1 Sonata no.1 was composed the previous year.
2 Béla Bartók Letters. (Farber and Farber, London 1971) 168
He even participated in performances with some members of the Schoenberg circle and others for the International Society for Contemporary Music (ISCM).  

Bartók frequently puts each work in a specific tonal center and this sonata is no exception. While the first Sonata is labeled ‘in C# minor,’ the second, “in C major”, this label is frequently ascertained from a works’ final measures, rather than large scale or localized tonal centers. The first movement final measures end with an F-B dyad (piano) and E-F# focus pitches (violin). The second movement ends with a clear C-G fifth (piano) and an E (violin). It is in the final movement where Bartók derives his tonal label, but this is essentially a ruse, for Bartók derives pitch structure from symmetrical treatment. Much of this symmetry evolved from his very earliest works. His 14 Bagatelles op.6 (1908) contains such processes as inversional symmetry and interval cycles derived from intervallic cells. Bagatelle no.7 has intervallic cells replacing triads, representing nothing less than a new harmonic world where symmetrical organization replaces the traditional tonal language. Strict inversional or axial symmetry becomes the main feature of Bagatelle no. 2. The work’s opening section (m.1-8) revolves around an A-Eb axis, resulting in a readily apparent ascending and descending structure:

\[
\begin{align*}
A & \quad Bb & \quad B & \quad C & \quad C# & \quad D & \quad Eb \\
A & \quad Ab & \quad G & \quad Gb & \quad F & \quad E & \quad Eb
\end{align*}
\]

---

6 An interval cycle is any collection of pitches exclusively based on a single interval. For example such collections can be whole-tone scales built on interval 2, and chromatic scale built on interval 1. This type of treatment is available to all possible intervals from every pitch class.
8 Axis pitches (a pitch class and corresponding tritone) are points in a symmetrical structure about which other pitches revolve. For example the whole tone subset, c-d-e has D as its axis, where c-d and d-e consist of interval 2 and c-e, being interval 4, balancing around D as a converging point of symmetry. It is also possible to have a duel axis of symmetry where the axis consists of a semitone. For example C and Db can function as an axis and includes their respective tritones Gb and G.
The horizontal alignments of pitch classes are inversional complements that always revolve around the two axis pitches A-Eb\(^9\). Inversional complement dyad Ab/Bb (piano right hand) opens the movement before unfolding inversional complement dyads melodically (example 1.1). At measure 5 inversional complement dyads stop and turn into interval cycle 1 fragment.\(^{10}\) Bartók next relies on the tonal cadential archetype, V-I, here a Bb resolving to Eb. Measures 8-10 constitute a transition into a brief development centering around a D-Ab axis followed by a recapitulation (m. 18) focusing on the original axis retrograde, now seen as Eb-A.

Example 1.1 Bagatelle no. 2, piano, measures 1-8

\(^9\) Elliot Antokoletz points out the axis and dyads in his article, “At last something truly new” The Bartók Companion edited by Malcolm Gilles. (Amadeus Press, Portland, Oregon 1993) 116-117

\(^{10}\) See footnote 5.
Octatonic and whole-tone scales appear frequently in all the Bagatelles. It is in Bartók’s middle period where these ideas see their full potential, not only in the second sonata, but also in the 3rd and 4th string quartets (1927 and 1928) which are among his most experimental works. Within these works Bartók expands on a symmetrical configuration known as a Z-Cell. It is a 0,1,6,7 structure that has ties to both octatonic and axis harmony.11

Symmetrical structures perform a vital role in Sonata no. 2, mvt.1. The harmony is often derived from axis structures as in Bagatelle no.2. Bartók often combines inversional complement dyads into tetrachord structures to create larger units not found in the Bagatelles. He frequently “modulates” into new axis areas as well as combines them with related octatonic scales.12 In turn the octatonic collections become a prominent element of the harmony and combines with other interval cycles.

11 A Z-cell can be transformed into an octatonic scale by combining a Z-cell(0,1,6,7) and its minor 3rd transposition(3,4,9,10). The cells’ relation to axial harmony is found through the use of a duel axis (0/1) and their tritones (6, 7). When this occurs a further octatonic relation is found by inversional complements (3.10 and 4.9) as corresponding elements around the 0/1 axis. The Z-cell was first mentioned by Leo Treitler in Harmonic Procedures in the Fourth Quartet of Béla Bartók. Journal of Music Theory (Volume 3, 1959), 292-98

12 The octatonic scale can be viewed as an interval cycle; this is first mentioned by Gary Karpinsky in his PhD. Diss. Interval cycles in the Music of Bartok and Debussy (New York University, 1995).
II. Form

The movement’s design is developed through organic dispersal of small motivic material resulting in a fragmented yet-unified structure. The movement as a whole can be viewed as a monothematic Sonata with only a single recurring thematic element. Sections are separated by changes in texture, new motives, harmonic organization and occasionally clearly defined cadences. Typical of Bartók’s writing is the complexity of form. While each section seems like a new event, there are subtleties that tie the work to traditional formal archetypes. The use of such devices as cluster chords, scalar passages, octaves, and melodic/gestural similarities help aurally to focus the movement without resorting to traditional thematic structure. The rhythm of the work is free from consistent metric pulse as there are a multitude of tempo changes. The 125 measure movement is comprised of a 4 measure introduction and eight sections. Figure 2.1(next page) shows a graph analysis of the movement’s various sections and axis centers. Figure 2.2 (page 7) shows the proportion of each section and at what percentage climaxes occur within the movement. The movement can be bisected at roughly 50% (measure 64), separating the exposition and development as the first half, and the recap, re-development, and coda as the second half. An interesting feature is the outer A sections (1 and 3) flank section B, C, D, A2, E and F with exactly 20 measures each. Both climaxes occur roughly at the same points in their bisection division, the first occurring at roughly 35% and the second at 76% of the total form.

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13 Here the term motive is intended to suggest the smallest level of idea content structure.
Figure 2.1. Formal Divisions of Sonata no. 2, Movement 1
Figure 2.2 Form and Sectional Proportions/Percentages, movement 1.
Exposition

The opening measures introduce a simple textural procedure, two notes held for 4 measures in both piano and violin. This structure consists of a single pitch, sometimes alternating with a 2nd pitch. It occurs throughout the A, B, and D sections, and is the main melodic feature of each. Not only does Bartók use this feature to open the movement, but he also closes several sections with one or two pitch classes in a similar manner.15

Figure 2.3 shows the various cadences where this device occurs. The D section closes with a dissonant collection of tone clusters which doesn’t appear elsewhere as a cadential marker.

<table>
<thead>
<tr>
<th>Section</th>
<th>A m. 19-20</th>
<th>B m. 33</th>
<th>D mm. 61-62</th>
<th>A mm 105</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violin</td>
<td>E</td>
<td>no pitch</td>
<td>E</td>
<td>G#/B</td>
</tr>
<tr>
<td>Piano</td>
<td>F#</td>
<td>B pedal to Bb</td>
<td>tone clusters above G#</td>
<td>G/A#</td>
</tr>
</tbody>
</table>

**Figure 2.3 locations of Textural Cadences**

The main theme enters at measure 4 (violin part) and is complete by the downbeat of measure 7 (See example 2.1). This solitary theme initiates the primary section that ends at measure 20. It returns truncated and varied at the recapitulation (mm. 63-72), and again at the coda (mm.106-125).

---

15 The cadential feature of this motive frequently employs a large range as is found in the opening measures.
The static rhythmic feature of the opening-measure procedure becomes conjoined with the melodic content as early as measure 7, but it is not until the B section that it takes on a primary role. What occurs is the use of the sustained pitch feature (violin) against rapid figurations in the piano, creating a sense of two speeds. Similar treatment can be found throughout various section of the movement, where there is the occurrence of sustained single pitch classes and minor figurations (violin).

**Development**

The character of section C is more developmental and driving against the subdued and languid opening. There is an increased rhythmic activity as the violin plays in 5 eighths against 4 in the piano until m. 39 (see example 3.9 below). Sections C and D replace axial harmony with all 3 possible octatonic scales and a whole tone scale and chromatic scale fragments. Section C elides texturally into section D and is the fastest section of the movement with measures 51-60 at a tempo of \( \frac{d}{c} = 132 \) and then, at mm. 61-63, \( \frac{d}{c} = 144 \). Measure 57 returns to axial harmony in time to prepare for the recapitulation at m. 64.

**Recapitulation**

The recapitulation is signaled by the return of the theme, this time with new accompaniment figures and the F-B axis dyad. This statement of the A section is not punctuated by a clearly defined cadence, but, instead an elision. What follows is further development (E section mm. 73-90)\(^{16}\). The opening static rhythmic feature is now stated

\(^{16}\) Measures 73-78 of this section functions as a transition and the new section (E) is most clearly defined at measure 79. The transition begins after an elided cadence at measure 72, where a new axis harmony begins.
texturally as dyads, with increased rhythmic activity in the piano (as occurred in section C and D), along with octatonic and shifting axis centers. The section ends with a clear cadence and, like the B section, ends on A# prolonged agogically.

The coda (mm. 106 to end) returns the theme (violin) at a new pitch-level and expands the on the triplet rhythm. Much of the harmonic activity revolves around axis centers and octatonic sub-sets. At m. 119 the original axis returns (F-B) and the theme is restated an octave higher (at original pitch content). The theme descends sequentially two octaves to revolve around the pitches E4 and F#4 in the final measures. The piano part is comprised of diatonic 4ths (C major) played on beats 1 and 9, the final chord being the axis F-B dyad.

The transition takes on the character of the E section through the accompaniment (piano). They are lumped together as on section due to a singular tempo (♩ = 144), similar textures, and a lack of a cadence.
III. Harmony

Axial symmetry can be seen throughout the movement. Clear surface and middle ground statements are found in the A section (m.1-20). The opening pitches E-F# (introduction) are inversional complements around the axis F-B as follows,

\[ \begin{array}{c}
E & F^\# \\
\hline 
F & B \\
\end{array} \]

Example 3.1A. Axis Pitches and Inversional Complements

At measure 5 there is a direct statement in the piano of the axis dyad (F-B) that alternates with dyads\(^17\) C#-G# and C#-F# until the first tri-chord cadence at m. 7.\(^18\) The following figure displays a reductive overview of dyadic movement of measures 5-7,\(^19\)

\[ \begin{array}{c}
F & B \\
\hline 
C^\# & G^\# \\
\end{array} \]

Example 3.1B. Dyadic Movement with Free Material
(Stemmed notes show axis pitches) mm. 5-7

\(^17\) These dyads consist of one or both pitches doubled at the octave and are part of regularly occurring use of free gestural treatment in the harmony and melody.

\(^18\) The tri-chord Eb, F, G is also a subset of the whole-tone scale or interval cycle 2. Any pitch in an interval cycle can function as its axis of symmetry, and in this case F is the axis of symmetry. Eb and G are inversional complements around an F axis.

\(^19\) At m.13 there is an interval 1 tri-chord cadence, that contains the opposite axis pitch B and inversional complement dyad Bb-C.
Three elaborations of axial harmony are shown in example 3.2.

Example 3.2. Basic Harmonic Structures mm. 5-7 (incomplete m.4), 8-11, and 13-14

Measures 21-30 show frequent transformation of axial harmony into new axis areas. The transformation occurs through non-axis pitch material and axis related octatonic
collections. Measure 21 contains tetra-chords (piano) made of inversional complement dyads (inner voices) and freely-treated pitches. The inversional complement dyads alternate between B/D# and C/D (notated as C double sharp), while axis pitch G is stated in the lowest voice. The composite axial pitch collection of m.22-24 (C-D, Eb-B, F-A)\textsuperscript{20} is disrupted by implied major 3rds (Bb-D, C-E), and is then reorganized around the new axis at m. 25. Further axial interchange from this passage can be seen in example 3.3.

Example 3.3. Axis changes. mm. 21-30

\textsuperscript{20} The pitch A of the axis collection is found in the violin shown in the example above measure 23.
Examples 3.4 A and B show a clear instance of axial interchange (mm. 100-104). The music shifts between three axis centers, each containing a duel axis of symmetry. Each move to a new axis center is initiated by tetra-chords made of two pairs of inversional complement dyads in the piano and a different set of dyads in the violin. Axis dyads in the piano are connected in the middle voice and in the outer voice).

Example 3.4A. Combined Axis Dyads as chords. Reduction of mm 100-104.

Example (3.4A and B) clarifies one of the movement’s clearest axial symmetry passages not penetrated by octatonic harmony. An interesting trait of the three axis centers is that each one is Z related to one of the three possible octatonic scales. Axial interchange of this sort is similar to the atonal treatment found in the pre-serial works of the second Viennese school. The mirror grace notes in the piano passages at m. 103-104 consists of two tritone pairs (F/B-E/Bb) preparing the return of the initial axis (ex. 3.4B. next page).

21 See page 4 footnote 9.
22 Schoenberg would consider this a form of “Pan-Tonal” treatment; meaning all keys or an extremely rapid form of modulation.
Example 3.4B. Axial Interchange mm. 100-104
Frequently an axis center will dissolve into an interval cycle collection that is permutated, sometimes with octave displacement. This can be seen in m. 73-78 where a duel axis center dissolves into an interval 1 cycle and then is expanded into two simultaneous whole tone partitions. Combined use of axial statements and interval cycles occur regularly.

Example 3.5. Axial symmetry dissolving into interval cycle 1 and 2 mm. 73-78

An example of Interval 1 tetra-chords that vary in order (permutated tetra-chords) is found at the recapitulation (section A m.63-65)\textsuperscript{23}. The axis center is created by the melodic use of inversional complement dyad E-F# (violin) and harmonic use of the F-B axis (piano). At m.65 the tetra-chord is expanded with the addition of Bb. Such tetra-

\textsuperscript{23} The tetrachord 0,1,2,3 is reordered and partitioned as major 2nds (0/2, 1/3).
chords are symmetrical, but their permutations are devoid of any possible axial relationship (ex. 3.6).\textsuperscript{24}

\textbf{Example 3.6. Interval 1 Permutated Tetra-chords, F/B axis, mm. 63-65}

The integration of axial, octatonic, and interval cycles becomes a very basic feature of the harmonic fabric. The use of the octatonic is both harmonic and melodic.\textsuperscript{25} Alternation between two different octatonic collections can be seen in m. 51-60. In this passage the octatonic collections function in terms of harmonic rhythm. Every two measures shifts to a new collection (See example 3.7, next page).

\textsuperscript{24} The dyads lack inversional complementation around a single axis of symmetry and are only related to the interval cycle not the F-B axis.

\textsuperscript{25} Exploration of octatonic harmony occurs for the first time at the outset of the movement measure 5. Bartók integrates vertical octatonic tri-chords (piano and violin) of F-B-A and C#-D-G# around whole tone melodic features (the addition of F on beat 7 can be seen as an addition of the octatonic scale). Measure 6 is a continuation and explores the same two octatonic collections from m.5 in retrograde order.
Example 3.7 Octatonic pitch content mm. 51-60
Occasionally multiple octatonic collections will be used at the same time. Measures 92-95 show how two octatonic sub-sets alternate with axial harmony. The chromatic tones are frequently derived from axis harmony (See example 3.8 next page).
Example 3.8. Mixed octatonic collections. mm. 92-95
Measures 34-43, is an earlier example of mixing two different streams of octatonic collections. The violin part is derived from octatonic material and the piano is derived from the whole-tone scale until m.40. This then becomes a linear statements of Z-cells [(C#-G/D-Ab) and (F#-C/F-B)]. The Z-cells are initially stated as perfect 5ths and then reordered intervallically as tritones. The tritone reordering gives a greater sense of connection to the preceding whole-tone passage. At measure 43 the material becomes exclusively octatonic in the piano and the violin plays whole-tone fragments with a few chromatic notes (example 3.9).

Example 3.9. Octatonic, Whole tone, and Axial pitch material. mm. 34-43
IV. Melodic Treatment

Bartók’s Second Sonata first-movement melodic material is based on interval cycles and extensive use of the octatonic scale and its subsets. The melody is developed through octave displacement, cell expansion/contraction and permutation. Structural pitches are defined by the use of agogic accents, and axis pitches. The melodic material is organically derived from the opening statements. The movement begins by developing the opening cell.

The opening measures of the work are seen as the vehicle for intervallic expansion. The first motive and opening two pitches (E-F#) supply an interval 2 cell. The cell 2(found in the theme) contains and aggregate of intervals of 3, 1, and 2(F#-A-G)

followed by an interval 2 expansion into a whole tone scale (example 4.1.).

Example 4.1. Cell Expansion, violin, incomplete m.4-5
After cell 1 expands cell 3 is added. Cell three contains intervals 1, 2, and 3, and adding interval 5 to its collection.\textsuperscript{26} Interval 5 is a subsidiary element of the cell since intervals 3 and 2 are projected motivically (ex. 4.2).

\begin{center}
\textbf{Example 4.2. Cell 3, violin, m.6.}
\end{center}

At measure 8 the melodic line fills a tritone (G-C#) chromatically (ex.4.3).

\begin{center}
\textbf{Example 4.3. Permutated Expansion of Interval 1, m.8.}
\end{center}

Cellular expansion/contraction occurs throughout the work, and at mm. 51-57 a clear example includes both octatonic and chromatic cells (see example 4.4). The contraction occurs around agogically accented pitches that form a chromatic step-progression of interval 1(f-f#-g). This step-progression also provides the impetus for the interval 1 cell at measure 57. This cell consists of pitches Bb-B-C and has a T-5

\textsuperscript{26}This is a form of cellular expansion where, the cell, a subset of the octatonic collection, adds another tone to the existing cell.
relationship to the preceding step-progression. The first cell is a middle-ground formation while the second cell is a foreground structure (example 4.4).

Example 4.4. Pitch Content, violin, mm 51-57

Octave displacement is a key procedure for melodic and motivic development, occurring throughout. The second section (m.20-34) explores the octave displacement of a single pitch class and intervals 1, and 2. Example 4.5 from m.28 shows how interval 2 becomes displaced by an octave through grace notes. The displacement results in an interval of a major 9th between the pitches G4 and A4.

Example 4. 5. Octave displacement of measure 28, violin.

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27 The use of T/n typically indicates a transposition of a pitch or cell. In this case there is a T-5, which indicates transposition of 5 semitones between the cells f-f#-g and a#-b-c.

28 The number beside the pitch class refers to the Acoustical Society of America’s (ASA) system of pitch class ordering where C4 equals middle C.
The agogic pitches beginning at m.21 (horizontal projection of E, F# motive) become displaced by as much as 2 octaves. This same technique is echoed in the accompaniment figures at m. 21-23. Even though the pitches differ from violin to piano, the agogic accents and disjunct procedure unify the passage. The piano twitterings act as a foil to this unification as shown in example 4.6.

Example 4.6. Measures 21-23 Octave displacement

The violin line in measures 34-42 shows an example of gradual octave displacement that occurs with cell and pitch permutation. The line is filled with various intervals, intermittently increasing and shrinking. The largest interval is a minor 9th.
Example 4.7. Free expansion of melodic contour, mm 37-42.

At measures 80-90 the violin plays various vertical dyads. The dyads begin as interval 2 and then expand and contract into intervals 3 and 4. At measure 88 further expansions occur, displacing normally used interval 1 into a major 7th (interval 11). The expanding and contracting happens rapidly and intermittently (m. 90).

Example 4.8. Violin. Displaced interval 1 dyads mm. 88-90

At measure 96 the harmonic dyads return to linear cells. This section also employs octave displacement and contains the largest interval expansion in the movement expanding to 3 octaves.

Example 4.9. Octave Displacement of measures 96-99

The following measures show the most expansive use of interval 3 dyads displaced harmonically as 10ths, and interval 1 dyads as 9ths. This section (m.100-104) utilizes the same wide range (violin) as the preceding section, resulting in a registral climax just before the coda at m.106. The dyad collection focus is primarily on A-Bb from m.103-
104, where it is shifted up various octaves and then suddenly returns to its normal interval 1 position (after the fermata in m. 104).

Example 4.10. Displaced dyads of intervals 1, 2, and 3. mm. 100-104

Agogic pitches that appear as diatonic elements on the surface are often the result of symmetrical organization that works in tandem with the harmony. The focus of the opening motive is the pitch class E and remains a priority throughout the movement. Secondary agogic pitches help form a symmetrical structure of a minor pentatonic scale (e-g-a-d-b). This scheme is varied only slightly in the second section m.20-34 where pitch class A replaces B and D as agogic focus. At the recapitulation (measure 64) pitches E, G, and D return dominating the melody until m.80. These pitches serve only as a foreground structure and do not delineate a large scale tonal center. Bartók spoke of the

29 The pentatonic scale can be seen as a symmetrical structure when ordered as perfect 4ths (b-e-a-d-g) are symmetrical around a single pitch class. In this case A is the axis while e-g and b-d are inversionsal complements. This is, of course, a minor pentatonic which is already symmetrical.
work as being in C major, though at the onset of the recap this pitch is absent. Example 4.11 shows a reductive analysis starting from the final beat of measure 63 to 79.

Example 4.11 Reductive analysis of agogic pitches (violin) mm.63-79
V. Rhythm, Texture, and Shape

The rhythmic perception of the movement is almost non-metric and free. It is guided by a free eighth note pulse that allows both piano and violin to align when needed. The tempo is constantly shifting through changing meters, metronome markings, and various uses of rubato and accelerando.\(^{30}\) The violin and piano parts both contain this same sense of rhythmic freedom liberating the music from the metric pulse.\(^{31}\) Each section is characterized by different rhythmic types from brief flutters against long notes, rhythmic unisons, and various polyrhythmic activities. Much of Bartók’s musical exploration in this movement centers in separating the piano from the violin. Examples of polyrhythms occur frequently throughout the work, but rarely occur over more than the span of a few beats or measures. An example of the latter puts 5 eights against 4 (notated as 2 quarter notes) in mm. 34-38.

Example 5.1. Polyrhythmic features between Violin and Piano mm. 34-36

\(^{30}\) The rhythm of the movement is best summed up by Andras Szentkiralyi in his Ph.d. dissertation *Bartók’s Second Sonata for Violin and Piano* where he makes the comparison to the Hungarian language. He states that Bartók’s rhythmic influence is derived from the natural rhythms and accents of the Hungarian language and its ties to folk music.

\(^{31}\) This approach results in similar rhythmic features found to those in the pre-serial/ atonal works of the Second Viennese School.
While the above example is rare, Bartók does frequently create polyrhythms within a single beat as in the next example where there are 12 against 14.

Example 5.2. 12 against 14 polyrhythm. m. 92 (Exactly as notated in piano)

Textural elements of the work align themselves with the instruments’ independence. It is rare when both parts act together, and even this is disguised in brief gestural imitation. Texture changes are reflected in the number of horizontal elements at any one time, rather than independent lines. This is employed in the piano where range plays a secondary role to the number of pitches. The opposite is true for the violin. In both cases dynamics affect the intensity of the texture. Frequently dense texture is paired with soft dynamics before erupting into climatic episodes. Figures 5.1 and 5.2 (next 2 pages) show the relative textural features of the individual instruments throughout the movement.

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32 This is due to, the nature of the instruments. The violin is a more linear instrument.
Figure 5.1. Textural Reduction of Movement. (piano)
Figure 5.2. Melodic Gesture and Range of Movement 1 (violin).
Textural interaction throughout much of the movement is homophonic. There is frequent use of inversionsal counterpoint (contrary motion) through both chord movement and individual voice strains. Example 5.3 is an instance where free inversionsal counterpoint occurs without exact intervallic relationships between the lines.

Example 5.3. Free Inversional Counterpoint. mm. 79-81

All the elements of a work amount to little, if there are no special musical achievements. In the sonata’s first movement each section has its climatic peaks; there are a select few that stand out above the rest. It is documented that Bartók frequently organized his music around structural symmetrical processes, and this movement is no exception.

The first major climax occurs around mm. 44-48 in the development. There is an accumulation of density in the piano and an increase in range in both violin and piano. At this point both instruments are at forte. This is followed by sforzando, and a decrease in tempo from $\frac{\text{♩}}{\text{♩}} = 108$ to 98. The climax is suddenly reached from pianissimo, and a

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33 The use of inversionsal counterpoint can, at times involve axial symmetry.
34 Proportional structure has been discussed at length in Andras Szentkíraly’s Ph.D thesis. (Princeton University 1976) Here he discusses three possible types of proportions. The first is Golden Mean, the second is Bisectonal, and the last, a combination of Golden mean and bi-sectional (bi-sectional referring to equal divisions). His approach is to combine all three types and to delineate both the first and second movements of the sonata as a single musical entity. Many of the structural climaxes coincide with bisectonal proportion (as do the ones in following paragraphs). The whole movement is part of the golden mean/bisectonal proportion combination. According to Andras the golden mean itself contains little significance in the first movement beyond localized foreground structure.
35 In the previous section the violin uses harmonics. This is more a feature of timbral change, notwithstanding the high register.
fairly narrow violin range increases measure by measure through progressively widening range (mm.35-45). Syncopated rhythmic activity begins in the piano at m.38, and the violin at m. 42. The climatic measures are shown in example 5.4; the peak of the violins range is seen in m. 44 while the range of the piano narrows and converges at m. 49.

Example 5.4. Structural Climax at mm.43-47

The second major climactic point occurs at about the middle of the movement around mm. 63-64. Bartók builds up the section gradually (mm.51-63) with dynamics at pianissimo until the climactic forte at m. 61. The violin opens the section with long held notes and brief flutters. A gradual increase in range and rhythmic motion continues until the E harmonic in m 61. Both hands of the piano play in a homorhythmic unison of chords derived from free inversional counterpoint. The climactic measures themselves

36 See example 4.7.
push the tempo from $\frac{\text{d}}{\text{m}} = 132$, to 144, with the piano playing a low G# and containing a
set of gapped interval 1 tone clusters above it.\(^{37}\) This climax functions as a cadence
allowing a return to the A section.

Example 5.5. Structural/Cadential Climax. mm. 61-63

The third and final structural climax appears in two parts, the first (m.98) acting
as a prelude to the second (mm.103-105 see example 5.6 below). The measures in
between function as a build up to the second climax. The first contains a sizable
difference in range between the piano and violin-the piano playing an Fb\(^1\) an octave
below the bass clef and the violin (downbeat m. 99) plays a G6 an octave above the staff.
The G in the violin occurs as a goal in the melodic line\(^{38}\). The same occurs in the piano as
the bass descends from Bb-Gb to Fb (as seen in example 5.6), resulting in a range

\(^{37}\) The clusters being derived from pitches C,C#,D, F,F#,G, and A.
\(^{38}\) Cf. Compare similar displacement in example 4.9.
exceeding 5 octaves. The final structural climax begins at m. 103 until the cadence at 105. This initiates the final return to the A section and subsequent coda. Yet this is all built up from m.100, where the violin has its most dissonant dyadic figures and vertical range expansion. The dynamics in the section shift rapidly from loud to soft and back again until the *sforzando* in the violin at m. 105.

Example 5.6. Climax 1 and 2 of Measures 98-105.

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39 See also example 3.4B. and 4.10.
Viewing a single work of a composer whose output is as expansive and varied as Bartók’s, can often result in a distorted perspective of that composer’s musical language.\textsuperscript{40} Consideration must be taken as to the time, place, and intention of the composer. As stated earlier, Bartók’s intentions was to compose “12-tone tonal music”. This idea should not be confused with the twelve-tone system, where ordered pitch classes function as both thematic and pre-composition material. Bartók, instead, allows symmetry to function as the pre-compositional language of the work, without it necessarily projecting into the foreground of the music. Symmetry functions in a similar manner to the tonal system’s pre-compositional and syntactic elements. Triads, functional voice-leading, root movement, and key centered relationships are replaced with the chromatic scale and all its symmetrical permutations, resulting in new scale types, and, as was shown, new methods of creating harmonies through inversional complementation.

The syntax of a language is the result of many individuals, but, in accordance with Charles Rosen in his text *The Classical Style*, the language of art takes a more individualistic approach.\textsuperscript{41} It is the great composers that set the standard for linguistic phenomenon rather than the individual. Bartók is one of the few to set this standard and actually to use this symmetrical language with the intention of hierarchal organization. With that in mind it becomes easier to assess all the peculiar ideas of the work’s structure, and axis center organization, as well as the relationship of non-axis material such as the octatonic collection.

The fact that Bartók brings back the final A section with a related axis key for prolongational purposes shows that his thinking is still rooted in tonal music and formal

\textsuperscript{40} This is especially true of any post-tonal composer’s work.

organization. In fact the use of a specific axis areas for the A section as well as frequent
shifts to new axes during the development recalls traditional tonal practices. Furthermore
the process of continual development found within the form and in motivic/thematic
elements can be viewed as a common link between this and the work of the Second
Viennese School. Obviously Bartók’s personal musical language drives this movement.
Many of the Bartókian folk elements are subdued for this early “atonal” experiment,
though his use of shifting rhythmic accents and changing meters fits well within the
atonal language, as does his fragmented and gestural use of motivic material. Bartók tries
and succeeds at assimilating both elements of his personal musical language and that of
the Second Viennese School without giving up the elements of his previous music.
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