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**University of Alberta**

**Béla Bartók's Sonata for Two Pianos and Percussion**

by

Haley A. Simons



An essay submitted to the Faculty of Graduate Studies and Research in partial fulfillment  
of the requirements for the degree of Doctor of Music

*Department of Music*

Edmonton, Alberta

Spring, 2000



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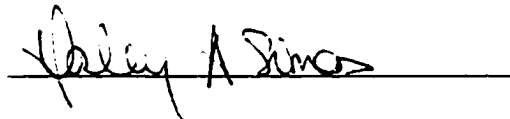
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Jan. 28, 2000

“Let my music speak for itself; I lay no claim to any explanation of my works.”<sup>1</sup>

Béla Bartók

---

<sup>1</sup> Ernó Lendvai, “Duality and Synthesis in the Music of Béla Bartók,” in *Bartók Studies*. ed. Todd Crow (Detroit, Information Coordinators, 1976), 39.


University of Alberta

Faculty of Graduate Studies and Research

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis comprising four recitals and an essay titled "Béla Bartók's Sonata for Two Pianos and Percussion" submitted by Haley A. Simons in partial fulfillment of the requirements for the degree of Doctor of Music.

  
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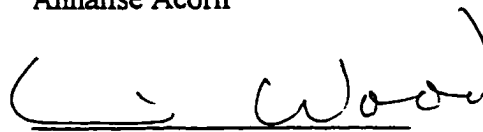
  
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**To Cass**



**Abstract:**

This essay is intended as a comprehensive study of Béla Bartók's 1937 work, the Sonata for Two Pianos and Percussion. The discussion of the work involves three areas of music research: historical, analytical, and aesthetic qualities. An historical profile of the composer includes biographical information, as well as discussion of the chronology of the diverse and eclectic compositional influences to which Bartók was exposed. The effects of the numerous compositional influences are discussed in terms of their impact upon Bartók's mature style in general, and the Sonata for Two Pianos and Percussion in particular.

The discussion of the aesthetic qualities of the work centers around its unique instrumentation, tracing the genesis of the work, from its earliest conception, to its eventual final form. The instrumentation of the ensemble is explored in terms of overall sonority as well as the revolutionary new roles of, and the corresponding relationship between, the individual instruments.

A detailed analysis of the work includes discussion of the work as a whole, as well as each individual movement, with references to specific musical examples. Formal organization is discussed in terms of predetermined architectural control blending Western models with the governing, organic proportions of the Golden Section. The use of a compositional system is addressed, with particular emphasis on the proportions of Golden Section, the Fibonacci series, and the acoustic system.

Throughout the essay, attention is drawn to the element of duality within the work, beginning with the impact of such diverse and seemingly irreconcilable influences, to the simultaneous incorporation of outwardly contradictory formal and stylistic elements. The essay connects and relates these diverse elements, and in so doing, reveals a distinct cyclic relationship within the work, as well as establishing it as a model of Bartók's highest aspiration: the perfect union of nature, art, and science.

## **Acknowledgement**

The completion of this essay would not have been possible without the enduring support of my family: Doug, Cass, Audrey, Hal, and, in memoriam, Arleigh. Enormous gratitude to Marc and the Høk Nik Creative people for their computer wizardry. I would also like to thank Dr. Annabelle Rea for her family's generous support through the William Rea scholarship, and to The Hammerhead Consort, without whom I would not have had the immense pleasure of first encountering, and ultimately performing this brilliant work. Special thanks to Dr. Michael Roeder for his considerable time and inexhaustible patience devoted to helping me realize this goal, and to Marek Jablonski, who was and continues to be a profound influence.

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## CHAPTER ONE: BARTÓK THE COMPOSER

“Every art has the right to stem from a previous art; it not only has the right to but it must so stem.”<sup>2</sup>

Béla Bartók

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<sup>2</sup> Lendvai, “Duality and Synthesis in the Music of Béla Bartók,” in *Bartók Studies*, 39.

## INTRODUCTION

Born in 1881, Béla Bartók lived during a time of enormous musical, political, and social change. During his life, Bartók forged an impressive career as pianist, pedagogue, ethnomusicologist, and editor of a large body of keyboard works spanning the Baroque through Romantic periods, in addition to his role of composer.

From a composing career that spans half a century, Bartók has provided us with a body of work encompassing some of the most innovative compositional techniques in musical history. Bartók, preferring the term “evolutionary” to “revolutionary,” stated emphatically in his own essays that “Every composer, even the greatest, must start from something that already exists . . . .”<sup>3</sup> It is his treatment and transfiguration of previous ideas that led to the creation of some of the most poignant musical legacies of this century. By examining in detail Bartók’s 1937 masterpiece, the Sonata for Two Pianos and Percussion, we may gain an appreciation for, and insight into, the full spectrum of Bartók’s musical language.

In this essay, I will discuss the various historical and eclectic influences impacting Bartók’s compositional style, in general, and the Sonata for Two Pianos and Percussion, in particular. I will present and examine the diverse influences in the approximate chronological order that Bartók experienced them, and demonstrate how they influenced Bartók’s progressive development toward the mature musical language of the Sonata for Two Pianos and Percussion. Each reference has significance in the ultimate analysis of the work, including its inception, its general form, and the smallest compositional detail. In addition, certain revolutionary principles of construction will be explored and credited to none before Bartók.

The investigation into Bartókean theory is not new, and there are many existing writings devoted to this topic. In this essay, theoretical applications will be investigated according to their significance in the Sonata for Two Pianos and Percussion, and I will

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<sup>3</sup> Béla Bartók, “Liszt Problems” [1936], in *Béla Bartók Essays*, ed. Benjamin Suchoff (London: Faber and Faber, 1976), 501.



concentrate primarily on those facets that prove significant to the performer of Bartók's music. For in all, I have come to the belief that the seemingly contrasting properties of science and art are inextricably bound together to form the essence of Bartók's music: that one has, in fact, become the other. It is the goal of this essay to uncover the significance of both the theoretical and the aesthetic qualities individually, and most importantly, demonstrate their combined power in the Sonata for Two Pianos and Percussion.

## **STYLISTIC INFLUENCES**

Bartók's stylistic influences are both numerous and eclectic. There are specific, self-declared influences and sources that characterize Bartók's mature compositions, including the Sonata for Two Pianos and Percussion. Generally speaking, these influences may be categorized into two main bodies of music: Western European art music and Eastern European folk music of Hungary and other regions. Bartók's music may be characterized as a synthesis of elements from both sources. It is precisely this assimilation of distinct and opposing forces that has led to discussions of Bartók's eventual synthesis of East and West in his compositions. What we notice is a division of musical traits into those with more traditional Western roots, and those with identifiable Eastern origins. Together they form a diametric, yet complementary, opposition and synchronicity.

### ***ROMANTIC ROOTS***

Western European art music held influences from virtually every era and affected every stage of Bartók's career. The end of the nineteenth and beginning of the twentieth centuries featured many new diverse musical movements. As a student of the Budapest Academy of Music at the turn of the century, Bartók shared enthusiasm with his generation for the German late-Romantic tradition of Richard Wagner (1813-1883) and his successor Richard Strauss (1864-1949).

As a student, Bartók was deeply affected by the 1902 Hungarian première of Strauss's symphonic tone poem *Also sprach Zarathustra*. For Bartók, Strauss's music held "the seeds of a new life,"<sup>4</sup> with its increased chromaticism and loosening of tonality. Strauss's influence is reflected in Bartók's own dissonant textures, constantly shifting major-minor tonalities and polytonal relations, as well as the creation of a new type of chromatic melody which would become a compositional trademark throughout Bartók's career. The nationalistic qualities of *Zarathustra* stimulated Bartók's own nationalist interests,<sup>5</sup> a characteristic that later was manifested in Bartók's own search for indigenous sources.

The spring of 1903 witnessed a resurgence of patriotic movements throughout Hungary. Naturally, this piqued Bartók's own nationalistic tendencies, and, in protest to the overwhelming presence of the Hapsburg empire, the composer abandoned the German language in favor of Hungarian, adopted the national dress, and dropped the prefix "von" from his name (early compositions were signed "Béla von Bartók"<sup>6</sup>). Bartók's 1903 symphonic poem *Kossuth* was written as a patriotic gesture outlining the life of the Hungarian revolutionary hero.

During these early years of the new century, Bartók was studying piano with István Thomán (1862-1940), one of the most gifted students of Franz Liszt (1811-86). This connection naturally fostered a great interest in the music of this fellow Hungarian. Bartók later wrote:

A really thorough study of Liszt's *oeuvre* . . . after being stripped of their mere external brilliance which I did not like, revealed to me the true essence of composing. I began to understand the significance of the composer's work. For the future development of music his *oeuvre* seemed to me of far greater importance than that of Strauss or even Wagner.<sup>7</sup>

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<sup>4</sup> Bartók, "Autobiography" [1921], in *Béla Bartók Essays*, 409.

<sup>5</sup> David Cooper, *Bartók: Concerto For Orchestra* (Cambridge: Cambridge University Press, 1996), 7.

<sup>6</sup> Elliot Antokoletz, *Béla Bartók: A Guide to Research* (New York and London: Garland Publishing, Inc., 1988), xix.

<sup>7</sup> Bartók, "Autobiography" [1921], in *Béla Bartók Essays*, 409.

Of particular importance to Bartók was Liszt's use of thematic transformation within a large work, a technique that alters the character of a theme without forfeiting its identity. Though Bartók continues to use the more traditional technique of thematic development, the technique of thematic transformation provides an alternative element of unity, while at the same time providing variety through the constant variational treatment of melody.

Continuity is apparent to the listener of Bartók's music through the consistency of melodic contour and rhythmic proportions within a work. For example, the underlying contour of a melody provides a common framework that Bartók may embellish or change intervallically. The effect is one of a continuously moving stream of consciousness, flowing seamlessly from one section to another. The listener may or may not be aware of any relationship among thematic materials due to their subtle metamorphoses. In essence, Bartók expands the idea of thematic transformation toward what may be termed thematic manipulation.

While changing the intervallic span, or reversing the direction of a given melody, thematic transformation differs from standard developmental techniques. Bartók does not rely solely on the extraction and reduction to melodic cells or motives. The theme essentially remains intact through the preservation of the theme's basic melodic contour, while other musical properties of the theme, such as the intervallic motion, change. The following examples demonstrate a subtle intervallic transformation of the theme:

Example 1.1. Bartók, Sonata for Two Pianos and percussion, I, mm. 4-5, piano I.

**Assai lento**



Example 1.2. Bartók, Sonata for Two Pianos and Percussion, I, mm. 18-19, piano II.

**Un poco più mosso**



At first glance the theme retains a similar melodic contour, however, the character is significantly altered. The theme at m. 4 (Ex. 1.1) is presented *pp*, amid a melodically, rhythmically, and harmonically ambiguous background. At its *mf* appearance in m. 18 (Ex. 1.2), the increase in dynamic level is punctuated by simultaneous *fortissimo*, *staccatissimo* eighth-note chords of the first piano. The new character of the theme at m. 18 is rhythmically insistent and dynamically stronger, while retaining the general melodic contour of the theme at m. 4.

While Bartók was impressed by many significant compositional details of Liszt's influence, including the "bold harmonic turns," and "the innumerable modulatory digressions,"<sup>8</sup> Bartók was most impressed by Liszt's innovations in form, as seen in the Piano Sonata and the Faust Symphony. In Bartók's view, Liszt's work represented the first perfect realizations of cyclic sonata form, particularly the E-flat Piano Concerto, with common themes treated in variation principles.<sup>9</sup> Liszt's formal innovation made a considerable impact on Bartók, and is fundamental to the structure of the Sonata for Two

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<sup>8</sup> Bartók, "Liszt Problems" [1936], in *Béla Bartók Essays*, 503.

<sup>9</sup> *Ibid.*, 503.

Pianos and Percussion, since it relates to Bartók's own cyclic formal techniques within this work.

Liszt's influence also included instrumental innovations in orchestral writing, and an innovative, individual piano technique. In addition, Bartók was particularly influenced by Liszt's incorporation of traditional Hungarian gypsy music, specifically the *verbunkos* tradition, in his works. This tradition consisted of the juxtaposition of contrasting elements, including slow (*lassú*) and fast (*friss*) tempos, melodic, rhapsodic sections versus militarily rhythmic sections, and the stylized Hungarian scale with its raised fourth and lowered sixth. Bartók initially thought, as did Liszt and Brahms before him, that this stylized gypsy music was the authentic folk music of his country. This assumption was soon challenged.

### ***FOLK MUSIC DISCOVERIES***

Many nineteenth-century composers were interested in and inspired by what they presumed to be folk music. Bartók declared their folk models erroneous, indicating they were to be attributed instead to popular art music, which lacks "the absolute perfection so very characteristic of pure folk music."<sup>10</sup> Bartók was one of the first persons to undertake the serious study of authentic folk music, initiating a systematic approach to the collection of this ancient genre. His scientific study of folk music resulted in significant contributions to the beginnings of the new field of ethnomusicology. At the same time, Bartók's folk music exploration had a tremendous impact on his own artistic perspective as a composer.

In 1904, Bartók made his first contact with authentic Hungarian folk music rather accidentally. He witnessed a performance by a Transylvanian peasant girl singing an intriguing rendition of a popular art song, with modal inflections and stanza structures

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<sup>10</sup> Bartók, "The Influence of Folk Music on the Art Music of Today" [1920], in *Béla Bartók Essays*, 317.

that were unfamiliar to him.<sup>11</sup> The composer was thereafter compelled to further investigate the repertory of Transylvania as a potential musical source for his own compositions.

Bartók, in 1905, undertook the first of what were to become numerous journeys to collect folk melodies. This initial journey marks the beginning of Bartók's extensive and long-lived study of Eastern European folk music. In July of 1906, Bartók and fellow colleague Zoltán Kodály (1882-1967) undertook the enormous project of collecting and recording the peasant music of rural Hungary. This initiation to authentic folk music not only provided Bartók with a window to the past, as he claimed proof of their 1500 year-old ancestry,<sup>12</sup> it introduced him to a new Eastern idiom, one to which he was closest ancestrally, yet ironically, with which he was least familiar.

In his 1921 autobiography, Bartók stated:

The outcome of these studies was of decisive influence upon my work, because it freed me from the tyrannical rule of the major and minor keys . . . and eventually led to a new conception of the chromatic scale, every tone of which came to be considered of equal value and could be used freely and independently.<sup>13</sup>

Through his study of authentic folk music, Bartók had uncovered a source of enormous potential for compositional inspiration, as some of his discoveries in folk music did ultimately find expression in his own music, including the Sonata for Two Pianos and Percussion.

Bartók admired this folk music for its total "absence of sentimentality and exaggeration of expression,"<sup>14</sup> and adopted these features into his own musical style. Bartók's choice of art music as a creative medium through which he would represent and perpetuate folk music was deliberate. He stated:

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<sup>11</sup> Antokoletz, *Béla Bartók: A Guide to Research*, xx.

<sup>12</sup> Bartók, "Harvard Lectures" [1943], in *Béla Bartók Essays*, 371.

<sup>13</sup> Bartók, "Autobiography" [1921], in *Béla Bartók Essays*, 410.

<sup>14</sup> Bartók, "Hungarian Music" [1944], in *Béla Bartók Essays*, 395.

The pure folk music can be considered as a natural phenomenon influencing higher art music, as bodily properties perceptible with the eye are for the fine arts, or the phenomena of life are for the poet. This influence is most effective for the musician if he acquaints himself with folk music in the form in which it lives, in unbridled strength, amidst the lower people, and not by means of inanimate collections of folk music which anyway lack adequate diatonic symbols capable of restoring their minute nuances and throbbing life.<sup>15</sup>

Bartók categorized three broad types of Eastern European rural music, each classified by a particular rhythm. The first he classified as *parlando rubato*, a free, declamatory style in which accents and rhythms of the spoken language largely shaped the rhythmic patterns in the music. It is without regular meter, and is similar to recitative. The second type, a more rapid, dance-oriented music featuring rigid rhythms and regular meter, he classified as *tempo giusto*. This type is usually in 2/4, but may feature changes of meter, and often includes *ostinato* rhythmic patterns. The final type Bartók called the dotted rhythm, which combines three rhythmic patterns:

1)  2)  3) 

In this dotted rhythm type, the emphasis is placed on the first pattern.<sup>16</sup> One can readily detect these different musical types in Bartók's music, as we will discover in the Sonata for Two Pianos and Percussion.

Along with these particular rhythmic features, Bartók's music developed a distinct harmonic language, influenced by the unique folk-music style. Bartók found in the folk songs a means of establishing new pitch structures as harmonizations for both the Eastern-influenced folk melodies and his own original melodies. He was able to create an entirely new tonality by combining tetrachords from various modes, which would revolve around a principal tone. The effect was a neutralized tonality where each tone is related only to a single principal tone, eliminating both major and minor tonal orientation.

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<sup>15</sup> Bartók, "The Influence of Folk Music on the Art Music of Today" [1920], in *Béla Bartók Essays*, 318.

<sup>16</sup> Bartók, "Harvard Lectures" [1943], in *Béla Bartók Essays*, 383-384.

In addition to these larger-scale stylistic features, Bartók adapted several small-scale characteristics of folk music into his own musical language, such as scale forms, melodic gestures, metric features, such as the *aksak*, or tripping pulse, and rhythms with origins in specific dances. Both large- and small-scale folk music characteristics are present in the Sonata for Two Pianos and Percussion, and will be discussed in detail upon its analysis.

### ***DEBUSSY: BRIDGE BETWEEN EAST AND WEST***

In 1907, Bartók was appointed as piano instructor at the Academy of Music in Budapest, where Kodály held a position as teacher of composition. The appointment was significant because it allowed Bartók to remain in Hungary and continue his study of folk music. Kodály greatly influenced this period in Bartók's life by introducing Bartók to the music of Claude Debussy (1862-1918), and encouraging Bartók to study further Debussy's works. As a result, Bartók became greatly interested in the music of Debussy, describing its pentatonic phrases as "similar in character to those contained in our peasant music."<sup>17</sup> In fact, Bartók later accredited Debussy, along with Ravel, as being the first to be permanently and significantly influenced by the folk music of Eastern Europe and Eastern Asia.<sup>18</sup> Debussy's music became, in essence, a bridge between Western art music and the exotic elements of the East.

A significant influence of Debussy was the dissolution of traditional Western European harmonic progression. With traditional harmonic context now liberated, sonorities themselves gain both independence and significance. Chords are now valued for their intrinsic character and individual flavor. Dissonances may remain unresolved, and such broad harmonic freedom allowed Bartók unlimited approaches for commuting folk music elements into art music.

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<sup>17</sup> Bartók, "Autobiography" [1921], in *Béla Bartók Essays*, 410.

<sup>18</sup> Bartók, "The Influence of Folk Music on the Art Music of Today" [1920], in *Béla Bartók Essays*, 317.



Debussy expanded upon the Romantic composers' fascination with tone color, and became captivated with the idea of sonority for its own sake. This idea offered an entirely new approach to instrumentation. Consideration of the individual chord was extended to encompass a new approach to instrumentation. The recognition of the potential for instrumental color, of great importance to Debussy, became a lifelong fascination for Bartók.

Significantly, it was during this time of introduction to and study of Debussy's music that Bartók wrote his first works which incorporated the influences of both folksong and art music. The First String Quartet, Op.7 (1908), and the two orchestral pieces *Két kép* (Two Pictures, Op.10, 1910) were the first pieces to demonstrate this synthesis.<sup>19</sup>

Also credited to Debussy's influence is Bartók's evocation of "Night Music." Here the predominant characteristic is the imitation of the sounds of nature, including insects and birds, rustling leaves, and, more subtly, the idea of stillness and silence. Such musical imagery reflects the influence of Debussy, specifically, the French composer's *Préludes* for piano of 1910 and 1914. The "Night Music" genre is seen in various transformations throughout Bartók's later works, including the Sonata for Two Pianos and Percussion.

### ***CONTINUING DEVELOPMENT: CONTEMPORARY INFLUENCES***

The outbreak of World War I forced Bartók to abandon much of his ethnomusicological fieldwork. Despite his obvious disappointment, one rather positive result was that Bartók was now able devote more time to composing. This period accounts for significant developments in his compositional style. The works of this period include the 1916 ballet *The Wooden Prince*, Op.13, the Op.14 Piano Suite of the same year, and the Second String Quartet, Op.17, of 1915-1917. These works show a greater fusion of Bartók's diverse influences and include noticeable illustrations of both

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<sup>19</sup> Vera Lampert, "Bartók, Béla, §2: Life, 1903-1909," *The New Grove Dictionary of Music and Musicians*, 2:201.

Eastern European and Arabic folk music.<sup>20</sup> Works of this period, especially the Second Quartet, mark Bartók's radical break from the more traditional harmonic language of the early period, for he now abandoned modal models for more abstract pitch collections.

The adverse conditions of post-war Europe did not prevent Bartók from producing several significant works, including the Op.18 Three Studies for piano of 1918, 1919's Op.19 *The Miraculous Mandarin*, and the Op.20 *Improvisations on Hungarian Peasant Songs* of 1920. These works exhibit noticeable developments in Bartók's compositional style, and reflect the many diverse influences to which Bartók was heretofore exposed.

Since Bartók was now devoting his time to concertizing and composing, he came into greater contact with significant international contemporaries and their works. At this time, the idea of tonality was undergoing many changes. At the forefront of a new movement toward atonality, Bartók's works of this period parallel the interests of this movement, for at no other time in his career does Bartók come as close to atonal chromaticism and serialization.

Several of Bartók's works, including the Op.6 Fourteen Bagatelles of 1908, displayed a movement toward the atonality of the "new music" of Arnold Schoenberg (1874-1951) and his contemporaries. Bartók's treatment of tonality, however, was far less radical than those following the path of atonality. His own treatment of tonality retained the influence of such historical precursors as Strauss and Wagner, as well as the unique tonal language of folk music. Eventually, what had begun as an exploration of ways of creating tonal music without the traditional harmonic functions associated with major/minor tonalities ended in extreme chromaticism, almost to the extent of, but never completely, obliterating a tonal center.

The Op.18 Three Studies demonstrate Bartók's most extreme treatment of tonality, although Bartók himself defends that "even in the *Studies* there are firmly held, prominent centers of sound (masses of sound at the same pitch), as a consequence of which, regardless of anything else, an effect of tonality is evoked."<sup>21</sup> Bartók even

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<sup>20</sup> Antokoletz, *Béla Bartók: A Guide to Research*, xxiv.

commented that he “wanted to show Schoenberg that one can use all twelve tones and still remain tonal.”<sup>22</sup> Though the extent and extremes of his treatment of tonality vary through the course of his career, Bartók maintained his fundamental philosophy of tonality through his mature works. Further investigation of Bartók’s tonal language will be detailed in the analysis of the Sonata for Two Pianos and Percussion.

Bartók met Maurice Ravel (1875-1937) and Igor Stravinsky (1882-1971) in 1921. Naturally, these encounters had an impact on Bartók, resulting in his increased study and awareness of both composers’ works, and their influence was continuously shown throughout his career. Beyond the unmistakable French Impressionistic and Russian nationalistic influences, both composers influenced Bartók’s own approach to writing for the piano, combining the new virtuosity of Ravel with the percussive keyboard treatment of Stravinsky, both striking features of the Sonata for Two Pianos and Percussion.

In 1922, Bartók collaborated with Stravinsky, Milhaud (1892-1974), Hindemith (1895-1963), Busoni (1866-1924), and members of the Schoenberg circle to create the International Society for Contemporary Music (ISCM).<sup>23</sup> Affiliated performances exposed Bartók to the fashionable *Neue Sachlichkeit*, or new objectivity, as labeled by Hindemith. Neoclassicism is the defining term for this new style, which features a renaissance of the musical models before the nineteenth century. In addition to such general characteristics as objectivity, restraint, formal balance, clarity, and tonal centricity, certain procedures are imitated. It is especially common that Baroque music techniques, such as counterpoint and ostinato rhythmic patterns, appear in a neutral, non-sentimental style. These elements appear in the Sonata for Two Pianos and Percussion.

During an ISCM event in London the following year, Bartók was introduced to American composer Henry Cowell (1897-1965). A result of this encounter was a request

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<sup>21</sup> *Béla Bartók Briefe*, ed. János Demény (Budapest: Corvina Verlag, 1973), 2:70; quoted in László Somfai, *Béla Bartók: Composition, Concepts, and Autograph Sources* (Berkeley and Los Angeles: University of California Press, 1996), 15.

<sup>22</sup> Yehudi Menuhin, *Unfinished Journey* (New York: Alfred A. Knopf, 1997), 65; quoted in Antokoletz, *Béla Bartók, A Guide to Research*, xxvi.

<sup>23</sup> Antokoletz, *Béla Bartók: A Guide to Research*, xxvi.

by Bartók for permission to use Cowell's impressive tone cluster technique in Bartók's own compositions.<sup>24</sup> Perhaps more significant was the enormous impact Cowell's music had on Bartók's own ideas of orchestration. Bartók followed Cowell's initiative in seeking new sounds and effects for instruments, including a more percussive sound for both piano and violin. The Sonata for Two Pianos and Percussion demonstrates numerous examples of Cowell's influence.

### ***HISTORICAL INFLUENCES AND FINAL SYNTHESIS***

Through discussion of the eclectic and numerous influences of Bartók's earlier years, there is a noticeable absence of traditional models of Western art music in the composer's initial development. It was not until his forties that Bartók went back to historical models, and made them a priority in his own musical investigation and development.

The mid-1920s marked a new stage in Bartók's compositional development, as he attempted to integrate various diverse influences, particularly those of Bach (1685-1750), Beethoven (1770-1827), and Debussy. In a 1939 interview, Bartók stated:

Debussy's great service to music was to awaken among all musicians an awareness of harmony and its possibilities. In that, he was just as important as Beethoven, who revealed to us the meaning of progressive form, and as Bach, who showed us the transcendent significance of counterpoint. Now, what I am always asking myself is this: is it possible to make a synthesis of these three great masters, a living synthesis that will be valid for our own time?<sup>25</sup>

With this statement, Bartók has clearly identified his own musical objectives, and has defined his ultimate stylistic goal as a composite, or "synthesis" of external influences. During the latter half of his career, Bartók's works prove he was most definitely successful in achieving this ambition.

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<sup>24</sup> Antokoletz, *Béla Bartók: A Guide to Research*, xxvi.

<sup>25</sup> Serge Moreaux, *Béla Bartók* (London, 1953), 92.

While Beethoven became Bartók's ideal model for thematic, motivic and organic development, cyclic features, and large-scale formal control, Bartók's attention to Johann Sebastian Bach focused on the art of counterpoint. Bartók's fascination with Bach's music is evident in Bartók's own edition of the complete *Well-Tempered Clavier*, published in 1907.

Baroque polyphony provided Bartók with a compatible setting for the display of newly-found folk materials, since the contrapuntal techniques of Bach, such as canon and fugue, and the accompanying special features of thematic inversion, augmentation, and diminution, could be creatively applied to folk melodies. Bartók ultimately concluded that Bach's strict contrapuntal style would be incompatible with his Hungarian temperament.<sup>26</sup> As a result, Bartók's creative application of these techniques exercised much freedom, rather than observing the strict fugal techniques of Bach.

Though his mastery of polyphony reveals Bach's enormous influence, Bartók initiated a search elsewhere for polyphonic inspiration in his compositions. In the two years prior to 1926, Bartók enjoyed an active concert schedule in addition to his work at the Academy. While this resulted in little compositional production, the increased concertizing offered Bartók an opportunity to satisfy his extended research into polyphony and other aspects of Baroque keyboard techniques. During his concert tours of Italy in 1925, Bartók encountered some unpublished manuscripts of Italian Baroque composers including Girolamo Frescobaldi (1583-1643), Michelangelo Rossi (1600-1739), Bernardino della Ciaja (1671-1755), Benedetto Marcello (1686-1739), and Domenico Zipoli (1688-1726).<sup>27</sup> Bartók became a champion of such early keyboard works and subsequently edited them for publication as piano transcriptions. Bartók became particularly interested in the keyboard music of Frescobaldi and Domenico Scarlatti (1685-1757), and the French clavecinists Jean-Philippe Rameau (1683-1764) and François Couperin (1668-1733), whose works he regularly performed on the piano.<sup>28</sup>

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<sup>26</sup> Benjamin Suchoff, *Bartók Concerto for Orchestra: Understanding Bartók's World* (New York: Schirmer books, 1995), 221.

<sup>27</sup> Suchoff, *Bartók Concerto for Orchestra*, 221.

<sup>28</sup> Cooper, *Bartók: Concerto for Orchestra*, 13.

These Baroque works were enormously influential in the creation of Bartók's own distinctive contrapuntal style with their modal juxtaposition, free counterpoint, and chromatic motifs,<sup>29</sup> all significant stylistic elements in the Sonata for Two Pianos and Percussion.

In a letter dated January 10, 1931 to a Rumanian ethnomusicologist in preparation for a forthcoming radio talk show about the composer, Bartók writes:

My creative work, just because it arises from three sources (Hungarian, Rumanian, Slovakian), might be regarded as the embodiment of the very concept of integration so much emphasized in Hungary today . . . . My own idea, however—of which I have been fully conscious since I found myself as a composer—is the brotherhood of all peoples, brotherhood in spite of all wars and conflicts. I try—to the best of my ability—to serve this idea in my music: therefore I don't reject any influence, be it Slovakian, Rumanian, Arabic or from any other source. The source must only be clean fresh and healthy!<sup>30</sup>

The “brotherhood” of influences is one of the most astounding features in the Sonata for Two Pianos and Percussion. In this work we witness a remarkable collaboration of sources and influences gained throughout Bartók's life and synthesized into what has been called the “Makrokosmos” of his entire career.

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<sup>29</sup> Suchoff, *Bartók Concerto for Orchestra*, 221.

<sup>30</sup> Béla Bartók, *Béla Bartók Letters*, ed. János Demény (New York: St. Martin's Press, 1971), letter to Octavian Beu (1931), 201.

## **CHAPTER TWO: THE WORK - GENERAL OVERVIEW**

“We follow nature in composition.”<sup>31</sup>

Béla Bartók

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<sup>31</sup> Lendvai, “Duality and Synthesis in the Music of Béla Bartók,” in *Bartók Studies*. 57.

## ***GENESIS OF THE WORK***

The years surrounding the creation of the Sonata for Two Pianos and Percussion belong to the most fruitful period of Bartók's life. Other works of this period include the Fifth and Sixth String Quartets of 1934 and 1939 respectively, Music for Strings, Percussion and Celesta of 1936, the Second Violin Concerto, *Contrasts* of 1938, and the 1939 Divertimento for String Orchestra. In this period, ironically situated at one of the most politically precarious times, we see the final culmination of Bartók's mature style: a synthesis of historical and personal influences, and the merging of Eastern and Western cultural idioms, all fulfilled in the Sonata for Two Pianos and Percussion.

The Sonata for Two Pianos and Percussion was the second work commissioned by the Basle Chamber Orchestra, the first being the enormously successful Music for Strings, Percussion, and Celesta of 1936. Both works were designed for the Basle Chamber Orchestra, with the specific instrumentation dictated for the Music for Strings, Percussion, and Celesta. Due to the success of Music for Strings, Percussion, and Celesta, Bartók was now free to choose his own medium for the second commission.

Bartók's letters illuminate the conception of the new work. At first, Bartók was unsure of the medium for which to write the work, yet there is a hint that his ultimate choice was beginning to take shape, as seen in his letter to the Basle Chamber Orchestra's leader, Paul Sacher, of May 24, 1936: "What kind of chamber music can it be? How would a quartet for two pianos and two percussion groups be?"<sup>32</sup> One month later, his choice of medium was essentially solidified, as he writes that "The quartet for two pianos and two percussion groups would naturally be scored for four performers, two of whom could naturally play side drums and other similar instruments."<sup>33</sup>

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<sup>32</sup> Willi Schuh, "Kompositionsaufträge," in *Alte und neue Musik: Das Basler Kammerorchester unter Leitung von Paul Sacher, 1926-1951* (Zurich: Atlantis Verlag 1952) 73; quoted in János Kárpáti, *Bartók's Chamber Music*, trans. Fred MacNicol and Maria Steiner (New York: Pendragon Press, 1976), 393.

<sup>33</sup> Schuh, "Kompositionsaufträge," 73; quoted in Kárpáti, *Bartók's Chamber Music*, 394.



We know that time was a major factor in his decision, as he discussed contingency plans to consider one of two alternate possibilities: a little trio, or a group of songs, should there prove a time restraint.

In his 1938 essay on the Sonata for Two Pianos and Percussion, Bartók recalls the conception of the work:

I already had the intention years ago to compose a work for pianos and percussion. Gradually the conviction grew stronger in me that one piano would not be in satisfactory balance in relation to the often rather penetrating timbre of the percussion instruments. The plan was therefore altered to the extent that two pianos instead of one would oppose the percussion instruments.<sup>34</sup>

There may have been a more subjective influence in Bartók's choice of instrumentation. Bartók's wife Ditta Pásztory (1902-1982), herself a pianist and former student of Bartók had not yet made a public concert appearance. The thought of providing a vehicle for her concert debut undoubtedly appealed to him, and the success of their joint debut did in fact lead to many more duo collaborations.

It is interesting to note that Bartók did not ultimately give this work the title "Quartet." As Bartók explained, "the final title, Sonata for Two Pianos and Percussion, was given in case two percussionists are not enough, a third performer may perhaps also be needed, so that the 'quartet' may turn into a 'quintet'."<sup>35</sup> Though his concern proved unfounded, the title remained Sonata. Bartók himself realized a solution to his worries about the work's performance, and on November 11, 1936, wrote: "Recently I had the opportunity to take a thorough look at a percussion group: It will be easy to solve the performance of the work with only two percussionists, according to my original idea."<sup>36</sup>

The work's première on January 16, 1938, was a great success, and was cited by critics as the most powerful and valuable work yet by Bartók and by modern music

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<sup>34</sup> Bartók, "About the Sonata for Two Pianos and Percussion" [1938], in *Béla Bartók Essays*, 417.

<sup>35</sup> *Ibid.*, 417.

<sup>36</sup> Schuh, "Kompositionsaufträge," 73; quoted in Kárpáti, *Bartók's Chamber Music*, 395.

altogether.<sup>37</sup> Undoubtedly this was due in part to the diligence in preparing it for performance, especially by the two percussion players. We know how crucial these two performers are to the success of the work, for in its Budapest première ten months later, Bartók threatened to cancel the first performance precisely because of the percussion players' inability to keep together.

### ***THE ENSEMBLE AND THE TREATMENT OF INSTRUMENTS***

As chamber music, the Sonata for Two Pianos and Percussion is unique in its choice of instrumentation, and it enjoys the position of being the first piece written specifically for this particular and peculiar ensemble. However, the idea of pitting piano against percussion groups is not without precedent, in Bartók's works and elsewhere.

Bartók's interest in this particular instrumental combination is first hinted at in the slow movement of his First Piano Concerto of 1926, which features the piano and percussion alone in its opening before the entrance of wind instruments. In 1931, Bartók again combines percussion with piano in his Second Piano Concerto, first in combination with wind instruments and then with strings. The significant role of the percussion in Music for Strings, Percussion and Celesta of 1936 was a natural precursor to the similarly challenging role of the percussion in the Sonata for Two Pianos and Percussion.

Bartók may have drawn inspiration from two other works with which he was familiar: Stravinsky's Concerto for Two Pianos of 1935, and the ballet *L'envol d'Icare*, by Igor Markevitch (1912-1983), in its 1933 transcription for two pianos and percussion. His own correspondence with Markevitch and his own participation in a duo-performance of Stravinsky's concerto proves that Bartók was acquainted with both works.

In addition to its peculiar instrumentation, Bartók's Sonata for Two Pianos and Percussion asserts its uniqueness on more subtle levels. In this work Bartók focuses on

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<sup>37</sup> Werner Fuchs, *Béla Bartók und die Schweiz* (Bern: Hallwag, 1973), 74; quoted in Kárpáti, *Bartók's Chamber Music*, 396.

the treatment of unusual sonorities spanning the entire dimension of sound, from pitched to unpitched instruments, resulting in a “new species of chamber music....”<sup>38</sup> The usual intimacy of a traditional “Quartet” is replaced by the exploration of very powerful and unique new timbral elements. As well, the rhythmic element takes on a new fundamental and thematic role, with the result that the percussion is often treated soloistically.

Other models, such as Stravinsky’s *Les Noces* (1923) and Edgar Varèse’s (1885-1965) *Hyperprism* (1923), *Intégrales* (1925) for wind and percussion instruments, and *Ionisation* (1931) for percussion instruments may have influenced the role of percussion. It is probably more likely, however, that Bartók’s real inspiration for the increased prominence of the percussion was his increased attention to the role of percussion in folk music.

The percussion role is multifaceted, with its main functions being to “complement, emphasize, particularize, define, or dramatize something being played or about to be played by the pianos.”<sup>39</sup> Thus, the material played by the percussion is derived from or anticipates that of the pianos, yet the percussion remains strongly individual and independent. Furthermore, the percussion surpasses its traditional, exclusively rhythmic role.

The most innovative use of the percussion is Bartók’s treatment of it as a pitched instrument. Bartók expanded the realm of percussion to at least equal, if not surpass, the musical capabilities of the piano. The dichotomy of the new percussive role of the keyboards versus the more melodic treatment of the percussion instruments is a crucial feature of Bartók’s compositional strategy. The juxtaposition of these new instrumental roles presents an element of irony to the work, emphasizing the dualistic character inherent within each instrumental group.

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<sup>38</sup> Stephen Walsh, *Bartók Chamber Music* (London: British Broadcasting Corporation, 1982), 69.

<sup>39</sup> Walsh, *Bartók Chamber Music*, 71.

New to chamber music is the concern over physical placement of the instruments to enhance the acoustic blending of sonorities. In the earlier *Music for Strings, Percussion, and Celesta*, Bartók described the placement of the instruments on the stage. Similarly, Bartók showed concern over the placement of instruments in the *Sonata for Two Pianos and Percussion*, and, in his 1938 essay, is adamant about the equality of piano and percussion instruments:

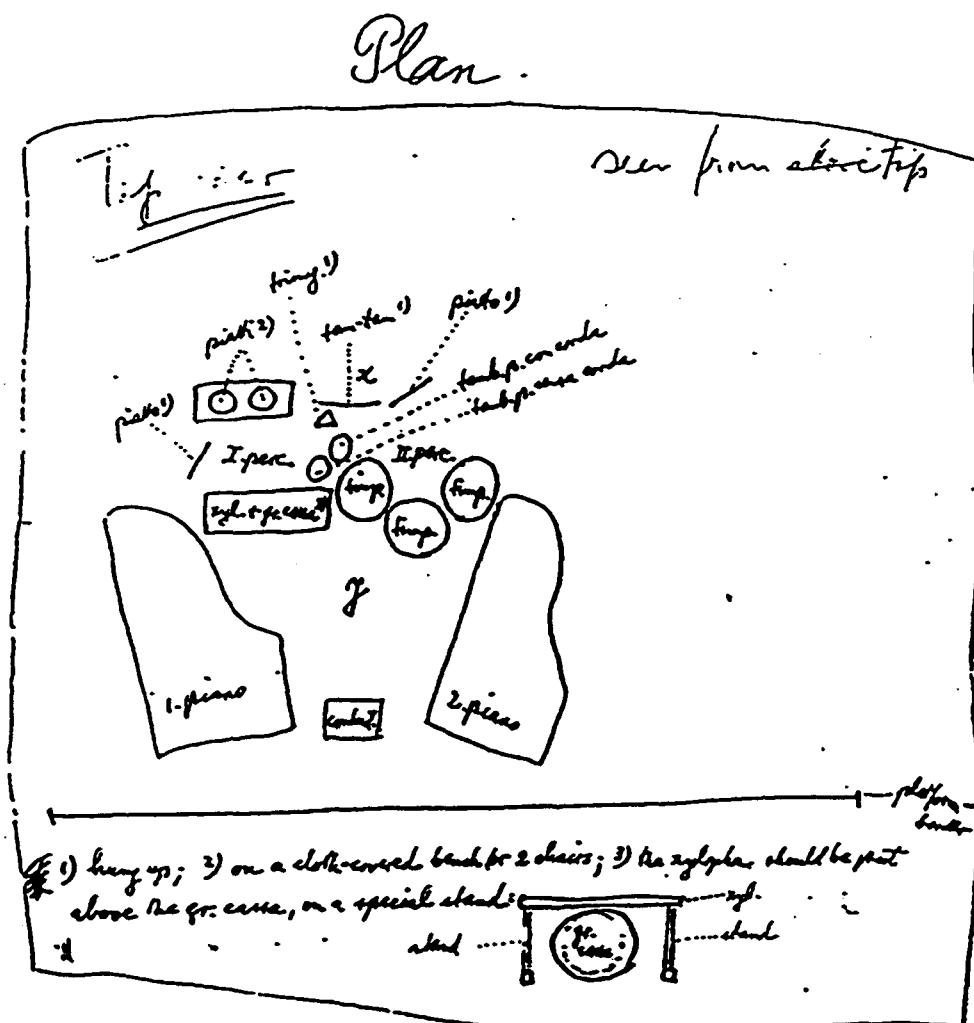
The seven percussion instruments—timpani, bass drum, cymbals, gong, snare drum, tenor drum, xylophone—require only two players, one of them at no time plays the xylophone, the other one never the timpani. These two percussion parts are fully equal in rank to one of the two piano parts. The timbre of the percussion instruments has various roles: in many cases it only colours the piano tone, in others it enhances the more important accents; occasionally the percussion instruments introduce contrapuntal motives against the piano parts, and the timpani and xylophone frequently play themes even as solos.<sup>40</sup>

Such concern resulted in Bartók providing a diagram for the *Sonata for Two Pianos and Percussion*, showing the exact placement of pianos (angled with keyboards facing inward and toward the audience, the players backs to the audience) to enclose the percussion instruments (Fig. 2.1):

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<sup>40</sup> Bartók, “About the Sonata for Two Pianos and Percussion” [1938], in *Béla Bartók Essays*, 417.

Figure 2.1. Sonata for Two Pianos and Percussion; diagram of the staging and instrument placement, including a sketch of the place of the xylophone above the bass drum, in the composer's hand.<sup>41</sup>



According to Bartók's diagram, the pitched percussion is placed closer to the pianos, with the unpitched further back. The physical placement of the instruments is crucial to the acoustic concept of the work. This placement actually imitates the melodic

<sup>41</sup> Somfai, *Béla Bartók: Composition, Concepts, and Autograph Sources*, 273.

hierarchy of instruments, since the base rhythmic percussion form the foundation from which all melodic capabilities extend. With the purely rhythmic instruments supporting the melodic instruments from behind, this staging essentially offers a three-dimensional element new to chamber music.

The roles of the two pianos are complementary and equal. While their material may be varied and individual, their overall treatment is not. They are offered as a unified force capable of competing and sometimes overriding the power of the percussion. The pianos are perfect foils for each other, taking turns presenting and interacting with many of Bartók's signature compositional devices: canons, mirror canons, imitative counterpoint, fugue, and pentatonic harmonies. Each piano is given the opportunity to present thematic melodic material.

Bartók's attention to the detailed timbral and acoustic relationship among instruments is consistent throughout the work. Specific innovative techniques include striking different surface areas of the drum skins or cymbals, such as the rim, center, dome, as well as varying the size and hardness of the sticks. Even the use of previously unexplored implements, such as the blade of a penknife or fingernail to produce the effect of lightness, is directed.

The traditionally melodic role of the piano is expanded to feature its percussive capacities. However, the recordings of Bartók's own piano performances in general reveal him as "a pianist of the lyrical Romantic tradition, with exceptional detail to the nuances of timbre, rhythm, and melody."<sup>42</sup>

## ***GENERAL STRUCTURE***

Though it is particularly interesting and fortunate to have the composer's own thoughts regarding the analysis and genesis of his work, Bartók had the reputation of being somewhat reticent when discussing the formal analysis of his own creations.

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<sup>42</sup> Roy Howat, "Masterworks II: Sonata for Two Pianos and Percussion," in *The Bartók Companion*, ed. Malcolm Gillies (London: Faber and Faber, 1993), 317.

The work itself follows a traditional formal plan. There are three movements, each of which is self-contained. A weighty first movement, akin to typical classical structure, dominates the overall proportion. It differs, however, from the traditional Classical fast-slow-fast sequence by its inclusion of a substantial, slow introduction to the first movement.

The formal plan of the Sonata for Two Pianos and Percussion exhibits an element of dualism, or synthesized opposition, a feature central to the work. While designed in the Classical, symmetrical three-movement formal plan, there is another element at play: the Baroque church sonata practice of the asymmetrical four-part sequence of slow-fast-slow-fast, introduced through the slow introduction to the first movement.

Bartók separates the four distinct sections within the three movements by extreme tempo changes. The slow tempo of the introduction accelerates to the fast, yet fluctuating tempo of the first movement's *Allegro molto* at m.33. This initial pairing of slow-fast sections within a single movement is exceptional, since the faster *Allegro* section is exactly six times the slow tempo of the introduction.

The return of the slow tempo is distinct and independent in the second movement, marked *Lento, ma non troppo*. This tempo then becomes the allegro of the finale through an exact doubling of the pulse: the second movement's quarter note = 66 becomes the third movement's half note = 66. By presenting the two asymmetrical pairs of slow-fast sections, within a formally symmetrical three-movement plan, Bartók is not only sustaining an element of dualism in the form of the work, but is relating the two seemingly disparate formal plans through intentional tempo calculations.

### ***COMPOSITIONAL SYSTEM AND ORGANIZATION***

While many of Bartók's works have become standard in the musical repertoire, there are many aspects of his music which still prove problematic for today's theorists, musicians, and listeners. Difficulties arise in the attempt to either oversimplify or dogmatically systematize the infinite variety of characteristics of his music. These attempts to identify a system in Bartók's work arise in part due to Bartók's reputation for

detailed compositional organization, including the explicit control of form, proportion, rhythm, harmony, and melody, as well as the more detailed aspects of dynamics, tone color, and registral choices. The temptation to systematize and categorize such aspects has proven as irresistible as was Bartók's own crusade to systematically categorize a complete body of folksong, and the idea of "system" in Bartók's works will be illustrated in the Sonata for Two Pianos and Percussion.

The use of a compositional system in Bartók's music has arisen in virtually every discussion about the composer. One of the most influential writers on this topic is the Hungarian musicologist Ernő Lendvai. In *The Workshop of Bartók and Kodály*, Lendvai proclaims that Bartók evolved a harmonic method based on an axial interpretation of the circle of fifths, where each tone is related not only to its axial opposite, but all notes separated by a tritone or minor third are equivalent in tonal function. For instance, in the key of C, E-flat, F-sharp, and A may all act as alternate tonics, and G, B-flat, C-sharp and E may all act as dominants.<sup>43</sup> This "new" relatedness between tonalities which have traditionally been labeled as opposite, asserts itself quite profoundly in Bartók's Sonata for Two Pianos and Percussion, and establishes an element of dualism in the work.

Lendvai discusses the theory that Bartók used the formal principle of the Golden Section (the ratio .618...) both as a regulator for harmonic and melodic intervals as well as a governing formal principle, by way of the Fibonacci series: 0, 1, 1, 2, 3, 5, 8, 13, 21, etc.<sup>44</sup> Further investigation of Lendvai's claims does in fact verify this theory.

The use of Golden Section proportions is demonstrated in detail in the writings of Lendvai. When using the quarter note value as the denominator, the entire first movement lasts exactly .618 of the complete work.<sup>45</sup> Though these observations have been largely dismissed as "fortuitous,"<sup>46</sup> a high rate of significant musical "events" occurs at significant Golden Section moments, geometrically defined in this work.

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<sup>43</sup> Lendvai, *The Workshop of Bartók and Kodály*, 270-276.

<sup>44</sup> Lendvai, *The Workshop of Bartók and Kodály*, 33-71.

<sup>45</sup> Lendvai, "Duality and Synthesis in the Music of Béla Bartók," in *Bartók Studies*, 41.

<sup>46</sup> László Somfai, "Bartók, Béla, §9: Works, 1926-37," *The New Grove Dictionary of Music and Musicians*, 2:215.



Lendvai introduces another system of formal organization employed by Bartók: a symmetrical system, in complete opposition to that of the “asymmetrical” Golden Section, which he refers to as the “acoustic system.” This system sees the harmonic vocabulary consisting of chords drawn directly from the overtone series: major triads with an optional added minor seventh and raised fourth. Together with the major second and major sixth, these pitches make up the “acoustic scale” (C-D-E-F sharp-G-A-B flat). The simultaneous presentation of the two systems in opposition provides a deep-rooted, fundamental duality to Bartók’s music with the dichotomy seen in their corresponding qualities.

To illustrate the juxtaposition of both systems, the principal themes of the first and third movements will be compared. In the first movement, the principal theme exhibits the Golden Section properties with its significant starting pitches of each phrase following the 1-3-5-8 pattern in relation to semitones above the lowest pitch (Ex. 2.1). When translated to semitones, 2 = a major second, 3 = a minor third, 5 = a perfect fourth, 8 = a minor sixth, and 13 = a minor ninth (minor second). Here, the principal theme consists of 13 different pitches, with its range extending thirteen semitones.

*Example 2.1. Bartók Sonata for Two Pianos and Percussion, I, mm. 33-40*

5 (semitones above lowest note)                      8 (semitones above)

13 (semitones above)                                      8+3 (semitones above)

As predicted, the prominent placement of the tones C, E-flat, and A-flat occupy the ‘5’, ‘8’, and ‘13’ positions in this theme. The expected ‘3’ position of the theme, B-flat, does not receive the same prominent position, beginning a phrase. Instead, the F-sharp holds the stronger position at the beginning of the fourth phrase, and may be said to represent the ‘3’ in the Golden Section pattern through its relationship to the strongly-positioned E-flat of the second phrase.

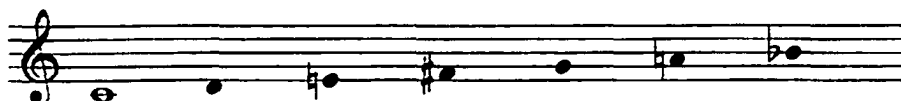


The focus on the element of contrast belies a deep interrelation of the two systems. It is here that the issue of synthesis ascribed to Bartók's compositional style takes on significance, for Bartók surpasses the Classical idea of contrast by taking it full circle: (idea) - contrast - interrelation - (idea). Rather than depend on the inherent interest provided by contrasting material, Bartók expands the relationship by addressing the hidden similarity between the two ideas.

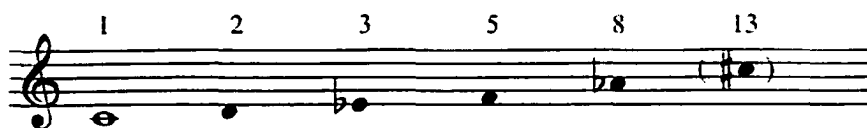
The dual relationship between these systems also extends to the individual intervals. The acoustic scale (Ex. 2.4), following Bartók's diatony, reflects the Golden Section scale (Ex. 2.5). The acoustic scale is the "systematic inversion" of the Golden Section scale (Ex. 2.6),<sup>49</sup> in which the:

major second	(2 semitones)	becomes a minor seventh
minor third	(3 semitones)	becomes a major sixth
perfect fourth	(5 semitones)	becomes a perfect fifth
minor sixth	(8 semitones)	becomes a major third
minor ninth/second	(13 semitones)	becomes a major seventh

*Example 2.4. Overtone (Acoustic) scale.*



*Example 2.5. Golden Section scale.*



<sup>48</sup> Lendvai, *The Workshop of Bartók and Kodály*, 320.

<sup>49</sup> Lendvai, *The Workshop of Bartók and Kodály*, 321.

Through inversion of the intervals particular to each scale, intervals of the opposing scale are obtained. The two systems become inversionally related as mirror images of each other.

*Example 2.6. Inverted intervals*



These systems become representative of the Western “acoustic” (overtone series) scale, with its principal intervals being the perfect fifth, major third, and minor seventh. and Eastern pentatonic (Golden Section) scale, with its principal intervals of a minor third, perfect fourth, and minor sixth. The distinction between the two systems is accentuated by the consonance of the acoustic intervals against the dissonance of those in the Golden Section: static repose opposite tension. The organic nature of the relationship between the two systems, one being the inverse of the other, supports Bartók’s philosophy, which prescribes nature as a fundamental compositional element.

Both the Golden Section and the acoustic system theories of proportion are evident throughout the Sonata for Two Pianos and Percussion in both large- and small-scale applications. Within the piece, Bartók uses many devices to articulate both compositional systems, including large-scale formal applications involving the Fibonacci series, the overtone series, and extending to the smaller-scale elements of counterpoint, rhythm, mode, and motive, and even dynamics, register, and color.

Also found in the Sonata for Two Pianos and Percussion are numerous other kinds and levels of dualities, including the opposition of chromaticism and diatonicism, dissonance and consonance, horizontal and vertical structures, asymmetry and symmetry, as well as Eastern and Western elements. Each device will be explored through an analysis of the individual movements.

## CHAPTER THREE: THE WORK - ANALYSIS BY MOVEMENT

“I never was concerned with general theories to be applied to the works I was going to write.”<sup>50</sup>

Béla Bartók

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<sup>50</sup> Bartók, “Harvard Lectures” [1943], in *Béla Bartók Essays*, 376.

## ***ANALYSIS: FIRST MOVEMENT***

In his 1938 essay on the Sonata for Two Pianos and Percussion, Bartók offers the following description of the first movement:

The first movement begins with a slow introduction in which a motive of the Allegro movement is foreshadowed. The Allegro movement itself is in C and is in sonata form. In the exposition the main theme group is announced, consisting of two themes (of which the second has already been alluded to in the introduction), after which follows the secondary (contrasting) theme. Out of this a codetta develops on rather broad lines, at the end of which a brief reference to the contrasting theme occurs by way of conclusion. The development, after a short transition of superimposed layers of fourths, consists essentially of three parts. The first one, in E, employs the second theme of the main theme group as an ostinato motive, over which the first theme of the main group proceeds in the form of imitatively treated interpolations. The second part is in the nature of a short interlude, after which the first part - with the *ostinato* in *G sharp* and inverted - is repeated in a much altered form. In the recapitulation there is no proper closing section; it is replaced by a rather extensive coda (with a *fugato* beginning) built on the closing theme.<sup>51</sup>

Here Bartók reveals only the basic elements: formal structural divisions, thematic relationships, and general design. When exploring the movement in detail, there is so much more vital to its underlying nature, or the fundamental essence of the piece, that can be discovered.

Bartók alludes to each formal division by describing the general characteristics of each section. With the composer's analysis, a better understanding of the specific location of each division is seen through the following chart:

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<sup>51</sup> Bartók, "About the Sonata for Two Pianos and Percussion" [1938], in *Béla Bartók Essays*, 417.

*Figure 3.1. Chart of formal divisions of first movement.*

## MOVEMENT I: FORMAL OUTLINE

<b>m. 1</b>	<b>Introduction.</b>	Foreshadows the Allegro
<b>m. 32</b>	<b>Allegro/Exposition.</b>	Beginning of the movement proper, in C. First thematic group. Theme I (Principal theme).
m. 43	First thematic group.	Theme II.
m. 84-101	Secondary theme.	
m. 105	Codetta.	
m. 161	Conclusion.	Reference to secondary theme.
<b>m. 175</b>	<b>Transition.</b>	Layers of fourths.
<b>m. 195</b>	<b>Development.</b>	
		(a) In E. Uses second theme of main theme group as ostinato beneath principal theme in imitation.
m. 217		(b) Short interlude.
m. 232		(c) In G-sharp. Inverted ostinato.
<b>m. 274</b>	<b>Recapitulation.</b>	
<b>m. 332</b>	<b>Coda.</b>	Fugato beginning; built on closing theme.
m. 443	End.	

## INTRODUCTION

As mentioned by Bartók, the first movement is in sonata form with the addition of a slow introduction. Although Bartók himself was reticent to describe the subtleties and deeper meanings in his works, he did on several occasions speak about this particular introduction. Bartók is reported to have described the opening in terms of creation





The theme begins as an “incomplete” seven-note statement, expanding with each additional voice until reaching its final nine-note form. Within the opening four measures of piano material, each entrance of the theme occurs on a different beat of the three-eighth-note group, creating a different metrical emphasis with each entrance. Its first appearance occurs in its primary form, on the strongest, first beat. The second entrance falls on the third eighth-note, and the final, nine-note form enters on the second eighth-note beat. With each entrance of the theme, the pulse is shifted, dislocated, and weakened, evoking a general feeling of ambiguity, and perhaps suspense. The complete nine-note form of the theme appears for the first time in its primary metric form at the beginning of measure 5, that is, beginning on the first eighth-note of the three-note grouping, in the second piano part when it imitates at the tritone (Ex. 3.2).

*Example 3.2. I, m. 5, piano II.*



This thematic presentation immediately foreshadows the dualistic ambiguity in the piece, juxtaposing the “complete” appearance of the theme at its metrically strongest, but in its harmonically weakest form in imitation at the tritone.

The suggestion of dualism within the introductory theme is reinforced by the content of the three three-note segments of the theme. The first two form a symmetrical pattern (Ex. 3.3) with the second being a retrograde of the first, in terms of general contour.

*Example 3.3. I, theme of introduction.*



Fundamental to Bartók’s melodic style is the element of expansion. With each appearance of the three-note motive, the interval range is expanded, first E-sharp to A, then D-sharp to G-sharp, and finally, C-sharp to G.

As for the derivation of the thematic material of the introduction, there is a basis for comparison in several works with which Bartók was intimately familiar. The first is the fugue subject of J.S. Bach's C-sharp minor Fugue of the *Well-Tempered Klavier*, Book I (1722) (Ex. 3.4):

*Example 3.4. J.S. Bach, WTC I, Fugue in C-sharp minor, mm. 1-3, subject.*



The second source is Liszt's étude *La leggierezza* (1838) (Ex. 3.5):

*Example 3.5. Franz Liszt, La leggierezza, quasi allegretto, mm. 11-12.*



While neither source can be said to be a direct quote, there are obvious and remarkable similarities.

Another Romantic work for keyboard that features similar thematic material is Chopin's F-sharp minor Polonaise, Op.44 (1841) (Ex. 3.6):

*Example 3.6. Frédéric Chopin, Polonaise in F-sharp minor, Op.44, m. 1.*



Though it is impossible to establish an intentional borrowing from any of these sources, their likeness to Bartók's material does demonstrate the composer's affinity for using Western European elements, including pre-existing themes or motives. For example, Bartók would choose a striking theme and transform it into a new, progressive style. The distinct character of the theme of the introduction of the Sonata for Two Pianos and Percussion displays this modernized metamorphosis.

The introduction of the first movement holds many features consistent with Bartók's compositional use of contrast and duality. When looking at the basic three-note motive, the ambiguous nature is apparent in its range, direction, and harmonic implication. The repeated appearance of the minor second interval, within the opening nine-note theme, effectively weakens any melodic adherence to the tonic. The melody itself consists of nine adjacent chromatic pitches, none of which is repeated. This "equality" of notes holds characteristics of atonal serialism, yet, despite its harmonically ambiguous nature, the sense of a fundamental tonality is suggested, in part due to Bartók's use of the harmonically consonant interval of a minor sixth in parallel motion (Ex. 3.7):

*Example 3.7. I, mm. 8-9, piano I.*



The choice of doubling at the sixth is not random. This happens to coincide with the chromatic span of the nine-note theme itself.

The tonal structure of the theme also displays dualistic properties. The chromatic character of the theme is shown in its two-note melodic cells, presented as a sort of division of the chromatic scale (Ex. 3.8):

*Example 3.8. I, pitches of the introductory theme.*



The lower layer outlines a descending chromatic scale, a common type of passacaglia theme in Baroque music. The implied polyphony concealed within a single part is itself a recollection of earlier eras, particularly the music of Bach,<sup>54</sup> and is highlighted by the direction of the note stems in Example 3.8. Variation of the theme is seen in the introduction of the first movement, as the theme makes its numerous

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<sup>54</sup> Kárpáti, *Bartók's Chamber Music*, 403.

appearances, slightly altered through voice doubling, or rhythmic shifts with each appearance.

One of the most compelling features of the introduction exists in the piano parts, between which Bartók distributes all twelve tones. The nine-note chromatic theme is presented, as mentioned earlier, by the first piano, and at the tritone above in the second piano, resulting in a complete presentation of all twelve pitches, six of which are common to both parts (Ex. 3.9):

*Example 3.9. I, mm. 1-5, pianos I & II.*

The canonic appearance of the second piano, a tritone away from the first piano's entrance, is significant. Only through this interval can the tonal and melodic ambiguity be perpetuated. There is no hierarchy of tones; each chromatic line is equal. In this way, Bartók immediately evokes a strong sense of instability through the tonal unpredictability of the introductory theme.

The six notes common to both piano parts are the third, fourth, and fifth tones, and the last three tones of both piano parts, resulting in a similar distribution of the shared tones between parts (Ex. 3.10):

*Example 3.10. (a) I, mm. 4-5, piano I; (b) I, m. 5, piano II.*

By beginning both the (pitched) timpani and piano on F-sharp, the tritone of the tonic, Bartók also accentuates the general tonal ambiguity of the introduction. This

feeling of increasing tension is abruptly and aggressively disrupted at m. 6, and again at m. 10 (Ex. 3. 11):

Example 3.11. (a) I, m. 6, piano I and II, and (b) m. 10, piano I and II.

(a)

Musical score for Example 3.11(a), measures 6 and 10. The score is in 6/8 time and consists of four staves. The top two staves are for piano I and II, and the bottom two are for piano I and II. The key signature has one sharp (F#). The score shows a dynamic shift from *ff* to *sf* in the piano I and II parts. The piano I and II parts feature a melodic line with a crescendo leading to a fortissimo (*ff*) passage in measures 6 and 10, followed by a piano (*p*) section.

(b)

Musical score for Example 3.11(b), measures 18 and 19. The score is in 6/8 time and consists of four staves. The top two staves are for piano I and II, and the bottom two are for piano I and II. The key signature has three sharps (F#, C#, G#). The score shows a dynamic shift from *sfz* to *sf* in the piano I and II parts. The piano I and II parts feature a melodic line with a crescendo leading to a fortissimo (*sfz*) passage in measures 18 and 19, followed by a piano (*p*) section. A bracket labeled '18' spans the bottom two staves.

This *fortissimo* interruption of the unfolding thematic material is an evocation of “night music,” and adds to the suspense of the opening material. It is not a random outburst, but, rather, an intentional disruption of the still darkness of the opening.

The appearance of the introductory theme in parallel, unison (between the hands) sixths in the first piano part is further intensified by the fugal answer at the tritone in the second piano. This buildup is again interrupted by a second, more ferocious, outburst at m. 10 (Ex. 3.11b), more than double the range of the first. This type of extreme contrast of material from the outset of the movement establishes and foreshadows the character of duality in the piece.

The introductory theme appears once again, this time in its retrograde inversion, reinforced by the interval of a third in the first piano and a sixth in the second piano. The second piano imitates at the interval of the tritone (Ex. 3.12):

*Example 3.12. I, mm. 12-14, pianos I & II.*

The image shows a musical score for two pianos, labeled 'Pno. I' and 'Pno. II'. The music is written in 9/8 time and spans measures 12 to 14. Pno. I is written on a grand staff (treble and bass clefs), and Pno. II is written on a single bass clef staff. The score is characterized by dense, dissonant textures with frequent tritones and sixths, and a complex, driving rhythmic pattern. The dynamics are marked as piano.

The use of canon to highlight the tritone relation provides the natural harmonic tension that is to characterize the entire introduction.

The texture of the section thickens with increasing dissonance and louder dynamic level, aided by the addition of parallel intervals. Moving first as octaves, then sixths, then with the added sixth below, coupled with an increase in dynamics, and tempo *accelerando*, the theme sustains an enormous increase in tension. The outline of the

diminished triad of this section also contributes to this building tension. Not only does it reinforce the harmonically ambiguous tritone (in both piano and timpani parts), but the tension is further augmented through the addition of contrapuntal lines—four in total—appearing in *stretti* increasingly closer together. This, along with the progressive rise of each entrance of the motive by a semitone, creates a huge build up of intensity, culminating in a *fff* dynamic level at the section's peak at m. 18, where the piano parts appear simultaneously as mirror inversions of each other.

There are three canonic sections within this seventeen-measure portion of the introduction. The first section lasts through the beginning of measure 8, and involves the opening three-note motive, introduced by the first piano on F-sharp and answered by the second piano at its tritone, C. It is set apart from the next canonic section by the *fortissimo* outburst in the second piano (Ex. 3.11a), followed by a winding down of material and dynamic level to eventual silence (Ex. 3.13):

Example 3.13. I, mm. 6-8, piano I and II.

The musical score for Example 3.13 consists of two systems, Pno. I and Pno. II, in 6/8 time. Pno. I (top system) begins in measure 6 with a treble clef and a bass clef. The treble staff contains a melodic line starting on F#4, moving to G4, A4, and B4. The bass staff contains a bass line starting on C3, moving to D3, E3, and F3. Dynamics include *p* (piano) and *ppp* (pianissimo). Pno. II (bottom system) begins in measure 6 with a treble clef and a bass clef. The treble staff contains a melodic line starting on C4, moving to B3, A3, and G3. The bass staff contains a bass line starting on F#3, moving to E3, D3, and C3. Dynamics include *p* (piano) and *espressivo* (expressive).

The silence at beat 52 separates the first canonic section of the introduction from the second. The second canonic section is brief, spanning not more than three measures. The theme is presented and answered one semitone higher than the first section, on G (in the upper voice of the first piano), and D-flat (in the upper voice of the second piano). The nine-note theme appears in both pianos in sixths, with the second piano imitating the first at the interval of a sixth (Ex. 3.14):

*Example 3.14. I, mm. 8-11, piano I and II.*

The image displays two systems of musical notation for piano I and II. The first system, labeled 'Pno. I' and 'Pno. II', covers measures 8-11. Pno. I begins with a *pp* dynamic and a nine-note theme in sixths. Pno. II enters in measure 9, imitating the first piano at the interval of a sixth. The second system covers measures 12-15. It features a continuation of the theme with dynamic markings including *sfz*, *sf*, and *ppp*. A fermata is placed over measure 13, and a measure rest is shown in measure 14. The notation includes treble and bass clefs, a key signature of three sharps (F#, C#, G#), and a 3/8 time signature.



The third canonic section begins with the appearance of the theme in the upper voice at m. 12, once again, a semitone higher, on A-flat (in the first piano) and D (in the second piano). Here the theme appears in its inverted form in both piano parts, with the following voice at the interval of the tritone (Ex. 3.15):

*Example 3.15. I, mm. 12-13, piano I and II.*

The image displays a musical score for two piano parts, labeled 'Pno. I' and 'Pno. II'. The score is written in 9/8 time and consists of two systems of staves. The first system shows measures 12 and 13. The second system shows measures 14 and 15. The music is characterized by complex rhythmic patterns and chromatic movement. The upper voice of each piano part features a melodic line that is inverted in the second piano part. The lower voice of each piano part provides a harmonic accompaniment with a tritone interval between the two parts. The score includes various musical notations such as notes, rests, and dynamic markings.

The third canonic section continues through the *fff* peak of the section at m. 18.

A fourth canonic section begins at beat two of m. 18, lasting through m. 20, for a total of 26 beats, including the preceding two beats in the timpani (Ex. 3.16):

Example 3.16. I, mm. 18-20, piano I and II.

Un poco più mosso

Musical score for Example 3.16, measures 18-20, piano I and II. The score is written for two pianos, Pno. I and Pno. II. Pno. I is marked *ff* and Pno. II is marked *mf*. The tempo is *Un poco più mosso*. The music features complex chordal textures and melodic lines in both hands of both pianos.

A fifth and final canonic section begins discreetly at m. 21 (Ex. 3.17).

Example 3.17. I, mm. 21-22, piano I and II.

poco a poco accelerando e sempre più agitato

Musical score for Example 3.17, measures 21-22, piano I and II. The score is written for two pianos, Pno. I and Pno. II. The tempo is *poco a poco accelerando e sempre più agitato*. The music features a fifth and final canonic section beginning discreetly at m. 21. The score shows complex rhythmic patterns and melodic lines in both hands of both pianos.

While none of these canonic sections constitutes a “fugue,” each features an imitative presentation of thematic material. Since the thematic material in these sections actually foreshadows motives of themes that appear later in the work, we may witness the careful, predesigned compositional architecture of the work.

The thematic and contrapuntal relationships of the opening material are rich in detail, with enormous potential for variation. It is precisely this capacity for permutation that underlies one of Bartók’s principal compositional devices, the element of motivic development. As the introduction closes in an *accelerando* of the final canonic section, Bartók introduces the rhythmic structure of the main theme (Ex. 3.18).

*Example 3.18. (a) I, m. 26, piano I; Rhythmic outline of fifth contrapuntal section; (b) I, m. 33, piano I; Rhythmic outline of principal theme.*



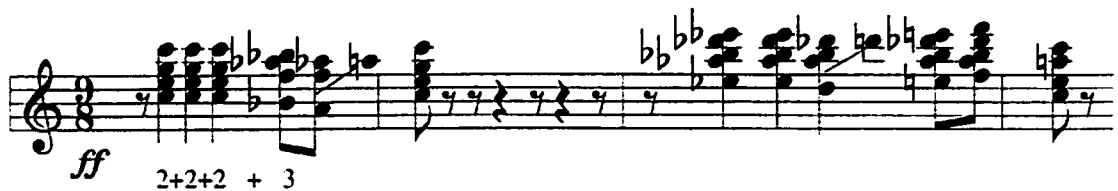
The *accelerando*, with evenly spaced canonic entries, builds in intensity through increases in dynamic level and voice doubling.

## EXPOSITION - ALLEGRO

The principal theme enters boldly at m. 33, in a *fortissimo* unison in the two pianos, articulating the beginning of the Exposition (Ex. 3.19).

Example 3.19. I, mm. 33-36, piano I

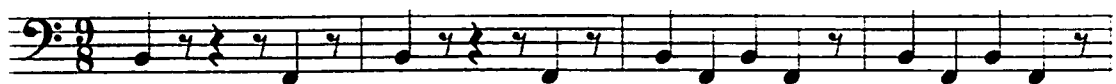
**Allegro molto**



The rhythmic pattern of the principal theme holds some of the most interesting and valuable insights into Bartók's style and craft. The theme provides a perfect example of the incorporation of folk elements in Bartók's music.

The piano parts, together with the timpani, present an ingenious rhythmic combination within the 9/8 meter. While historic practice observes a straight triple division (3+3+3), Bartók applies a 2+2+2+3 grouping, with the eighth-note as pulse. This pattern is typical of the Hungarian *aksak*, or "limping," principle, where, in an even 4/4 meter (2+2+2+2), every fourth beat is longer, simulating a 2+2+2+3 effect, as in hesitating or tripping; thus the "limping"—*aksak*—feeling.<sup>55</sup> It is interesting to observe how Bartók sneaks in this eventual ostinato pattern beginning at m. 26 in the introduction with the timpani part (Ex. 3.20). The rhythm in the timpani from m. 28 adheres to the *aksak* principle perfectly, with the grouping of 2+2+2+3 leaving a naturally elongated "fourth" beat.

Example 3.20. I, mm. 26-29, timpani.



The rhythmic complexities of the principal theme intensify its dual nature by incorporating the symmetrical meter of the introduction within asymmetrical rhythmic groupings. Bartók foreshadows this rhythmic duality through the timpani part beginning

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<sup>55</sup> Kárpáti, *Bartók's Chamber Music*, 409.

at m. 18 where the timpani presents the oscillating tritone figure in three groups of three eighth-notes within the 9/8 meter (Ex. 3.21).

*Example 3.21. I, mm. 18-19, timpani.*



Bartók gradually shifts the groups of three eighth-notes to groups of two, beginning at m. 21, where the timpani's eighth-note groupings are offset by the quarters introduced by the pianos (Ex. 3.22).

*Example 3.22. I, mm. 21-22, timpani and piano II.*



timp m.21-22

The quarter-note figure is gradually adopted by the timpani in the accelerando at m. 26, and by m. 28 is firmly in place (Ex. 3.20).

At the arrival of the principal theme, the timpani outlines the dual rhythmic properties of the movement's 9/8 meter, alternating each measure of triplet groupings with the duple groupings of the quarter notes. The result is an ambiguous rhythmic pattern in the timpani that may be perceived aurally as either duple or triplet groupings (Ex. 3.23):

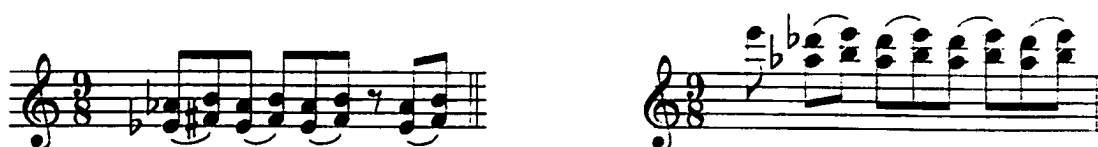
*Example 3.23. I, mm. 32-35, timpani.*



This oscillation between duple and triple groupings within a constant 9/8 meter continues throughout the exposition.

The accompanimental figure shared by both pianos is written in triple groupings, yet marked by slurs into duple division, further emphasizing the dualistic rhythmic qualities (Ex. 3.24):

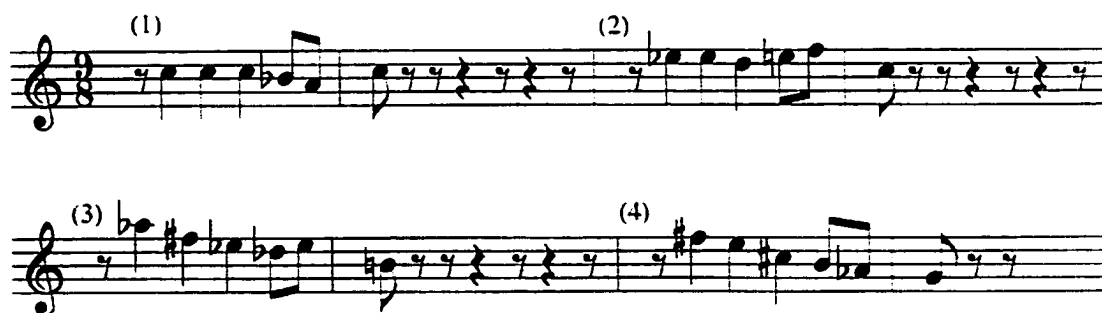
*Example 3.24 (a). I, m. 41, piano II. (b) I, m. 50, piano I.*



This triple/duple duality continues to the appearance of the second theme.

Melodically, the principal theme is based on a combination of modal and pentatonic models. The first two phrases combine to make up the Dorian mode on the pitch C. The third and fourth phrases are clearly pentatonic in character (Ex. 3.25). Together the four phrases contain all twelve notes of the chromatic scale. These four phrases are melodically strengthened through doubled, parallel octaves outlining the *fortissimo* chords in both pianos.

*Example 3.25. I, mm. 33-40, piano I: Principal theme, melodic line.*



The rhythmic element of the principal theme is continued even after the appearance of theme II of the first thematic group at m. 43. The snare drum in the second percussion presents and perpetuates the distinct rhythmic element of the principal theme.

appearing simultaneously, yet somewhat independently of the first piano's introduction of the new theme (Ex. 3.26):

*Example 3.26. I, mm. 41-46, piano I and percussion II.*

The musical score for Example 3.26 consists of three systems. The first system features Piano I (P.I.) with a treble and bass clef, 9/8 time signature, and a dynamic marking of *f*. The notation includes sixteenth-note patterns and chords. Below the piano part is the Snare Drum (S.D.s.c.) part, also in 9/8 time, with a dynamic marking of *mf*. The second system features Percussion II (Perc. II) in the treble clef and S.D.s.c. in the bass clef, both in 9/8 time with a dynamic marking of *mf*. The third system shows a piano part with a treble and bass clef, 9/8 time, and a dynamic marking of *gliss*. The notation includes a glissando effect and sixteenth-note patterns. Below the piano part is the S.D.s.c. part in the treble clef, 9/8 time, with a dynamic marking of *mf*.

As Bartók states in his essay, theme II of the first thematic group at m. 43 (refer to Fig. 3.1, page 33) consists of material hinted at in the introduction. Harmonically, the material is more ambiguous. The chords themselves serve only to color the melody (Ex. 3.27), thus suggesting Debussy's influence through the principle of non-functional harmony.

Above a harmonically ambiguous second piano part of oscillating fourths, the first piano initiates this staccato, disjointed theme of an entirely different character from that of the introduction. At m. 50, the pianos reverse roles, with the second piano presenting an inverted form of this theme beginning on A-flat, a tritone away from its presentation in the first piano. This perpetuates the section's harmonic ambiguity until the dramatic return of the first subject in the tonic, C, at m. 61(Ex. 3.27).

The return of the first subject has the dual function of closing down and leading on.<sup>56</sup> The return of the principal theme in the first piano begins like its first appearance at m. 33. The third and fourth phrases at the theme's return, however, feature an altered rhythmic pattern. Both are missing the final downbeats, suspending and prolonging any possible conclusion. The third phrase is repeated once identically, and in its inversion in the fourth phrase, before moving on to the fifth phrase.

*Example 3.27. I, mm. 61-68, piano I.*

The subsequent material serves as a winding down of the section. As with the principal theme, this material is presented in four phrases, heard in the first piano part. With each of the first three appearances, the thematic material is progressively and

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<sup>56</sup> Kárpáti, Bartók's Chamber Music, 415.



noticeably lower in pitch. The fourth statement of this phrase, however, is the inversion of the previous three, and, with its rising form, it serves as a bridge leading into the next section (Ex. 3.28):

*Example 3.28. I, mm. 72-80, piano I; Sequential repetitions of phrase marked.*

The musical score for Example 3.28 consists of two staves. The first staff is in the treble clef and contains three repetitions of a phrase, labeled (1), (2), and (3). The second staff is in the bass clef and contains the fourth repetition, labeled (4). The key signature has one flat (B-flat), and the time signature is 3/8. The phrase is marked with a 'p' for piano.

Within the repetitions of this phrase (Ex. 3.28), the scale melody of the upcoming secondary theme at m. 84 is foreshadowed (Ex. 3.29).

*Example 3.29. I, mm. 84-90, piano I; Secondary theme.*

The musical score for Example 3.29 is in the treble clef and shows two phrases of the secondary theme, labeled (3) and (4). The key signature has one flat (B-flat), and the time signature is 3/8. The phrases are marked with a 'p' for piano.

The new melody resembles a transposition of the third and fourth phrases of Ex. 3.28.

The foreshadowing of the scalar secondary theme (Ex. 3.29), within the extensions of the principal theme (Ex. 3.28), suggests a deeper relationship between the principal and secondary themes than is immediately recognized. This demonstrates Bartók's technique of thematic manipulation, as he constructs a completely new theme based upon subtle connections to the previous theme.

As in the principal theme, Bartók displays his penchant for rhythmic manipulation in the secondary theme. The secondary theme's asymmetrical rhythmic grouping of 4+2+3, and its inverse, 3+2+4 blurs the actual meter. The eighth-note rhythmic support of the second piano recalls the rhythmic structure of the principal theme (Ex. 3.30):

Example 3.30. (a) I, mm. 84-85, piano II, accompaniment to secondary theme, and (b) mm. 33-34, piano I, principal theme.

(a)  
m.84  
PII

(b)  
m.33  
PI

Above this pedal point, Bartók presents the secondary theme in successive, alternating groupings of 2, 3, and 4, contrasting duple and triple values.

The secondary theme is an example of “linearly extended bitonal ambiguity.”<sup>57</sup> The melodic descending scale of the first phrase (Ex. 3.31a) is inverted in the second phrase (Ex. 3.31b), beginning one half step lower than the final note of the first phrase. Ultimately this emphasizes the harmonic ambiguity of the theme by connecting one tonality (G-sharp minor) to another built on the former’s seventh degree (G minor). The function of the D pedal point in the second piano is to further heighten this tonal ambiguity: D is the tritone of G-sharp, and the effect is a weakening of the tonality. The section, which begins on the D - G-sharp tritone axis, finishes on the G - D-sharp axis. The inherent duality is unmistakable.

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<sup>57</sup> Kárpáti, *Bartók’s Chamber Music*, 415.

Example 3.31. I, mm. 84-88, pianos I & II; Second theme with phrases marked.

**Un poco tranquillo**

(a) (b)

Pno. I

Pno. II

The codetta of the exposition begins at m. 105. Again, variation of the metric content is featured, revealing the dual nature of the section's rhythmic material (Ex. 3.32):

Example 3.32. I, mm. 105-109, piano II; Closing theme.

**Più tranquillo**                      **poco a poco stringendo**

*p*

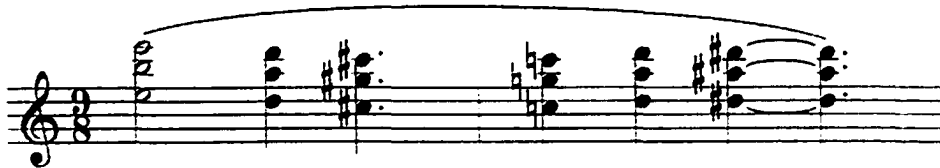
Here Bartók has presented an unequivocal triple grouping of the theme against a background of seemingly coordinated triple meter chords. However, the chords, presented as: ♩ ♩ ♩ are carried through the barline, thus contributing to the aurally

perceived duple meter of the section.

The conclusion of the codetta at m. 161 (Ex. 3.33) features an abbreviated reference to the secondary theme.

*Example 3.33. I, mm. 161-162, piano I.*

**Meno mosso, tranquillo**



The appearance of this abbreviated secondary theme is eerily prophetic of the opening theme of the second movement (Ex. 3.34):

*Example 3.34. II, mm. 5-8, piano I; Opening theme.*

**Lento, ma non troppo**

A trill on E, introduced first by piano I, in opposition to the second piano's *dolce* theme at m. 166, and then exchanged by the two pianos at m. 171, unfolds into a link preparing the entrance of the twenty-measure transition at m. 175 (Fig. 3.1).

This transition features the simultaneous use of contrasting material. Both the introduction and the first subject form the basis of material in this transition. An alteration of the minor second of the introductory material, appearing here as a quick staccato motive in canon (Ex. 3.35), expands to the "layers of fourths" to which Bartók refers in his essay on the work.

Example 3.35. I, mm. 175-178, piano I.



What this material does is act like a bridge to an especially exciting ostinato section at m. 195, indicating the beginning of the development section.

## DEVELOPMENT

The development begins at m. 195 and proceeds in the same staccato character of the transition. Here Bartók uses the nine-note theme of the introduction as the basis for an ostinato, appearing in the second piano (Ex. 3.36):

Example 3.36. I, mm. 195-196, piano II.



What had seemed a meterless and fluid soundscape in the movement's introduction, appears here strongly rhythmic, motoric, and with a firm harmonic foundation. It is precisely this metamorphosis of thematic character that underlines Bartók's connection to the thematic transformation principles of Liszt.

Above the distinct 3+3+3 rhythmic pattern of the second piano's ostinato figure, the first piano features the opening figure of the principal theme in a clear 2+2+2+2 rhythmic pattern (Ex. 3.37).

Example 3.37. I, mm. 198-199, pianos I & II, and timpani.

The image shows a musical score for three instruments: Pno. I, Pno. II, and Timp. The score is written in 3/8 time. Pno. I is in the treble clef, Pno. II is in the bass clef, and Timp. is in the bass clef. The Pno. I part consists of a single melodic line. The Pno. II part consists of two staves, with the upper staff playing a complex, chromatic, and canon-like melodic line, and the lower staff playing a rhythmic accompaniment of eighth notes. The Timp. part consists of a single staff playing a rhythmic pattern of eighth notes, with a shift in pitch from E to F# in the second measure.

What occurs is an intriguing confrontation between the two separate patterns, contributing to the inherent duality of the movement.

The beginning of the development also coincides with an interesting instrumental role change. Here the percussion displays a primarily rhythmic role. The timpani play only the downbeat of each measure, reinforcing the basic pulse. The persistent E pedal point in the timpani creates a strong sense of harmonic or tonal grounding, but this seemingly stable tonality is soon undermined with the shift to the fourth in the timpani. Under an increasingly chromatic, canonic presentation of material in the first piano. The simultaneous appearance of the newly transformed material of the introductory theme and the strongly contrasting material from the principal theme is itself dramatic. Bartók adds to the growing intensity of the section with melodic lines in canon, each entrance progressively higher, coupled with the thickening texture of the second piano, all amid an exciting crescendo. The tension builds to the *fortissimo* climax at m. 217, initiating what Bartók labels a short interlude (Fig. 3.1), where the ostinato ends as suddenly as it began.

When the ostinato returns at m. 232, it appears in the first piano and in its mirror inversion, as the second piano takes on the rhythmic features of the principal subject. The use of symmetrical arch form is noticed at this point as Bartók now reverses the order of appearance of subsequent materials.

As the role of the percussion is relegated to a minimum of rhythmic reinforcement, Bartók is now able to draw attention to the melodic material, which demonstrates a distinct application of Bartók's own twelve-tone procedure. This becomes apparent as the development progresses, when, at m. 239, the second piano presents an unmistakable twelve-tone series built on successive minor seconds (Ex. 3.38).

*Example 3.38. I, mm. 239-241, piano II.*



While the standard twelve-tone techniques of his contemporaries are not adhered to, Bartók adopts the idea of the row and adapts his own method of development. Rather than using a specific tone row for melodic and/or harmonic development, Bartók uses the twelve different pitches in a group to create an equality among the tones and eliminate a tonal hierarchy, thus maximizing the overall tonal ambiguity and tension.

Bartók presents another twelve-tone series at mm. 244 -248; this time, however, the five sets of intervals are decreasing in size by a step, as though using mirror technique to present this twelve-tone series (Ex. 3.39):

*Example 3.39. I, mm. 244-247, Piano II.*



At m. 248, Bartók displays his own style of twelve-tone development. First he presents the initial six notes of a twelve-tone group, expanding to nine notes two measures later, and finally to all twelve tones at m. 256, where he once again presents the twelve tones in a simultaneous mirror.

Bartók's developmental techniques also expand to encompass the different instrumental parts. While at first the appearance of the twelve-tone series is relegated to the second piano, Bartók later introduces a division, or sharing, of the twelve-tone series in the new *tranquillo* section at m. 262 (Ex. 3.40). Here the timpani share two tones of the twelve-tone sequence.

Example 3.40. I, mm. 261-263, piano II and timpani.

P.II                      Un poco tranquillo

Perc. II  
timp.

*sf p*

Bartók then introduces a portion of the twelve-tone group in the first piano part, at which point he presents a form of twelve-tone stretto, with an overlapping appearance of each twelve-tone series between both pianos (Ex. 3.41):



Example 3.41. I, mm. 266-270, pianos I & II.

The image shows a musical score for two pianos, measures 266-270. The score is written in bass clef with a 9/8 time signature. It consists of two systems of staves. The first system has two staves for each piano, with dynamics *p*, *mp*, and *mf* indicated. The second system also has two staves for each piano, with dynamics *piu p*, *p*, *mp*, *mf*, and *f* indicated. The music features complex rhythmic patterns and chromatic movement.

The section builds to the climax of the movement at m. 274, the precise Golden Section of the entire movement. This marks the dramatic return to the principal theme and its original tonality articulating the beginning of the recapitulation.

## RECAPITULATION

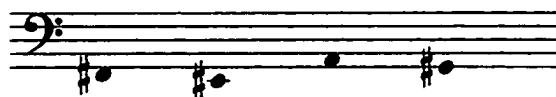
The ambiguous tonal and harmonic foundation characterizing the movement thus far is now, at the recapitulation in m. 274, converted to the unambiguous tonal center of C. The initial eighteen measures of the recapitulation feature thematic material of the principal theme, though the theme is not presented in its original form.

The return of the secondary theme appears at m. 292 in the second piano, in an inverted form of its original appearance at m. 84 (Ex. 3.29). At m. 301, both the inverted and original forms of the secondary theme are presented in canon between the two pianos against an ostinato-like motive in the xylophone (Ex. 3.42). This material is reminiscent of the minor second motive of the introductory theme (Ex. 3.43), transposed here in the xylophone motive up a semitone.

Example 3.42. I, mm. 301-305, xylophone.



Example 3.43. I, m. 2, piano I; Opening pitches.



Bartók refers to the closing material of the movement as a coda (Fig. 3.1), which makes its appearance very distinctly and dramatically at m. 332, in the form of a four-part fugue between the two pianos. The fugal subject continues for four complete appearances and leads directly to a canonic presentation of its mirror, gradually disassembling until it forms the basis for the material of the leaping ostinato in the first piano (Ex. 3.44). Contrast is again at the forefront with the presentation of scalar material in the second piano in direct opposition to the pointedly disjunct ostinato in the first piano.

Example 3.44. I, mm. 386-389, pianos I & II.

**Vivacissimo**

Musical notation for Example 3.44, showing pianos I and II in 9/8 time, marked Vivacissimo. The notation is divided into two systems. The first system shows Pno I (Piano I) in the upper staves and Pno II (Piano II) in the lower staves. Pno I is marked *mf* and Pno II is marked *p*. The notation consists of a series of notes, primarily in the lower register of the instruments, marked with sharp signs (#) and flat signs (b). The second system shows Pno I in the upper staves and Pno II in the lower staves. Pno I is marked *p* and Pno II is marked *mf*. The notation consists of a series of notes, primarily in the lower register of the instruments, marked with sharp signs (#) and flat signs (b).

The close of the movement (Ex. 3.45) features a theme with the combined properties of both the introductory and principal themes.

*Example 3.45. I, mm.440-443, Piano I.*

**poco allarg.**



The initial phrase of this closing theme (Ex. 3.46b) features the chromatic outline of the introduction (Ex. 3.46a), while the final phrase (Ex. 3.46d) uses all the pitches of the principal theme (Ex. 3.46c) with the addition of two.

*Example 3.46. (a) I, m. 2, Piano I; (b) I, m. 440, Piano I, (c) I, m. 33, Piano I; (d) I, m. 440, Piano I.*

a)



b)



c)



d)

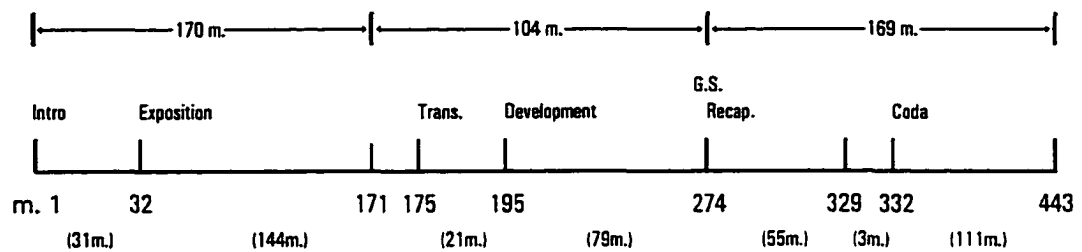


Through their mutual connection to the closing phrase of the movement, we see how closely related the two seemingly diametric introductory and principal themes really are, as Bartók marries them to form a sort of condensed combination of both in the closing phrase. In this way, Bartók demonstrates his penchant for not only combining contrasting materials, but for uncovering and articulating their inherent, hidden similarities.

## GOLDEN SECTION

The first movement's formal divisions, in both larger and smaller portions, follow the principles of Golden Section. To observe Golden Section proportions, the formal divisions within the movement are calculated by their length, and multiplied by the Golden Section ratio of .618, or its reverse Golden Section ratio of .382, as seen in the following graph (Fig. 3.2). The combined lengths of the introduction, from m. 1, and the exposition, to the final measure of thematic material at m. 171, is 170 measures. The combined lengths of the transition, including its preliminary four measures at m. 171, and the development to m. 274, is 104 measures. The Golden Section of the entire movement ( $443 \times .618 = 274$ ), occurs at m. 274, the start of the recapitulation. The remainder of the movement, from the beginning of the recapitulation at m. 274, to the end, is 169 measures. According to Golden Section proportions,  $169 \times .618$  (Golden Section ratio) = 104.44. Thus Bartók's overall formal plan for the movement may be said to be a symmetrical design, closely adhering to asymmetrical Golden Section proportions:

Figure 3.2. Formal divisions of first movement. Top, total number of measures in large sections: bottom, total number of measures in small sections.



Though the basic equation of the Golden Section is asymmetrical, Bartók has incorporated it into an essentially symmetrical first-movement form to achieve a formally dualistic structure.

Smaller-scale Golden Section proportions are also evident within this formal outline. For example, the structural divisions within the introduction alone, featuring the five individual canonic sections, show many structural relationships adhering to principles of the Golden Section.

The initial seventeen measures of the introduction, featuring the first three canonic sections, demonstrate Bartók's adherence to Golden Section principles. When using the eighth-note as the denominator, with a total of 150 in this division of the introduction, significant musical events occur at Golden Section proportions (Fig. 3.3).

The Golden Section proportion of the opening 55-beats in the first canonic section is punctuated by the appearance of the *fortissimo* outburst at m. 6, or, beat 34 ( $55 \times .618 = 33.99$ ; Ex. 3.11a). The silence at m. 8, beginning at beat 52 through 55 of the introduction, separates the first and second canonic sections, and corresponds with the Golden Section proportion of the combined length of the first two canonic sections: Total 84 beats  $\times .618 = 51.912$ . Interestingly, this also coincides with the *reverse* Golden Section proportion of the combined length of the first three complete canonic sections: 141 total beats  $\times .382 = 53.862$  in its reverse. This *reverse* Golden Section proportion corresponds with the silence during beats 52 through 55 (m. 8), the first occurrence in the work where Bartók momentarily suspends all motion.

Together, the opening four canonic sections form two equal divisions, each consisting of a 55-beat section followed by a 26-beat section of thematic material. The reverse Golden Section proportion of the 55 beats of sections one and three equates as 26.01, which coincides with the 26 total beats of thematic material in the second and fourth canonic sections:

*Figure 3.3. Golden Section proportions of movement I, introduction to m.32. Top, canonic sections by number; middle, total number of beats per section; bottom, beats.*



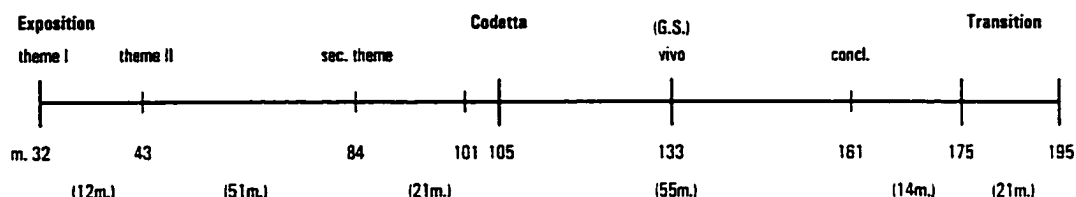
The fifth canonic section of the introduction, at m. 21, or beat 166, also observes Golden Section principles in its relation to the previous four canonic sections. Since the material of m. 21 is essentially repeated in m. 22 (Ex. 3.17), it could be said that this fifth canonic section contains 89 beats of thematic material, beginning at beat 176, and lasting to beat 265. The Golden Section proportion of 89 is 55.002, the individual length of both canonic sections one and three. Also, the Golden Section proportion of the combined lengths of canonic sections three and five (144 measures) is 88.99, virtually the precise length of canonic section five.

Other Golden Section proportions may be observed within the exposition. The material of the exposition and codetta has a symmetrical structure, with similar individual lengths. The total combined length of exposition, codetta, and transition is 163 measures. Thus the Golden Section proportion of the entire exposition (100.734) would occur at 132.734. This precise point coincides with the *vivo* section featuring the fugue, beginning at m. 133. There is also an interesting musical occurrence coinciding with the Golden proportion figure itself (100.734), as m. 101 marks the end of the secondary theme with the return to Tempo I, and initiates the link to the codetta.

The beginning of the exposition, at m. 32, *through* the end of the secondary theme, in m. 101, is 70 measures. This is followed by a three-measure link from mm. 102 to 105, to the codetta, which itself lasts 70 measures. The Golden Section proportion

of 70 ( $\times .618$ ) is 43.2. This figure coincides numerically with the beginning of theme II of the first thematic group at m. 43 (Fig. 3.4):

*Figure 3.4. Golden Section proportions of movement I, exposition through transition; bottom. total measures per section.*



Other small-scale Golden Section proportions are observed within the above divisions. For example, the Golden Section ratio of the length of the first thematic group of the exposition ( $52 \times .618 = 32.13$ ) corresponds numerically with the beginning measure number of the exposition. Also, the length of the codetta to the *vivo* section (28 measures), when calculated by the Golden Section ratio, is 17.34, the virtual length of the preceding secondary theme section.

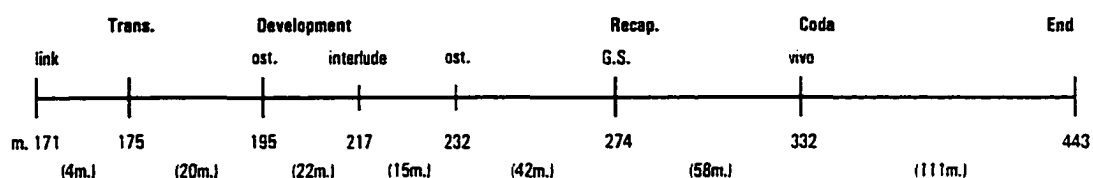
The beginning of the *vivo* section at m. 133, features a measure of material similar to the opening measure of the movement. This measure within the codetta, since it is absent of thematic material, will not be calculated in the Golden Section proportions. The Golden Section ratio of the length of the codetta to the conclusion ( $55 \text{ measures} \times .618 = 33.99$ ) is in correlation with the length of the conclusion and transition, 34 measures. Thus the Golden Section of the combined codetta and transition sections ( $89 \text{ measures} \times .618 = 55.02$ ) is articulated by the beginning of the conclusion section at m. 161. These figures are closely related to the Golden Section calculations of the movement's introduction.

Within an even smaller division, the combined length of the conclusion and transition (34 measures) has as its Golden Section ratio 21.01, very closely relating to the length of the transition alone, and articulated as a *reverse* Golden Section proportion.

Together, the remaining sections of the movement also observe Golden Section ratios (Fig. 3.5). The total length of the sections from the link to the transition to the end of the movement is 273 measures, numerically very similar to the beginning measure

number of the recapitulation. The Golden Section ratio of the length is 168.71, which, when calculated from the end of the movement in a *reverse* Golden Section proportion, is 274.28, corresponding to the exact measure of the beginning of the recapitulation. The combined lengths of the transition and development sections (99 measures) have as a Golden Section proportion 67.362, correlating with the length from the interlude to the end of the development (67 measures).

Figure 3.5. Golden Section proportions of movement I; transition to end.



### MOVEMENT II - *Lento, ma non troppo*

The formal outline of the second movement is both simple and complex. In his own essay, Bartók understatedly describes the movement as “in F, in simple song form. A B A,”<sup>58</sup> an overly simple description of which one automatically becomes suspect. Upon a closer look, a more complex covert structure is revealed within this overtly “simple song form” (Fig. 3.6).

Figure 3.6. Structural divisions and subsections of movement II.



<sup>58</sup> Bartók, “About the Sonata for Two Pianos and Percussion” [1938], in *Béla Bartók Essays*, 419.



Within the asymmetrical slow-fast-slow-fast design of the whole work is the symmetrical ABA form of the second movement. Into this symmetrical form of the second movement, Bartók incorporates asymmetrical subsections. It is precisely this dualistic presentation of symmetrical and asymmetrical forms within small- and large-scale applications that adds to the complexity of the structure.

The subsections of A and B are clearly noted. Section A begins with a brief, four-measure introduction, with the appearance of the principal theme at m. 5. There is a new tempo indication at m. 28, *Un poco più andante*, which marks the three-measure link to division B at m. 31. A return to Tempo I at m. 66 marks the return of section A.

The three divisions are presented symmetrically; sections A and A1 each lasts 27 measures. The length of B from the link at m. 28 to m. 66 is 38 measures. Within the symmetrically placed B section of the movement are three asymmetrical internal subsections, a, b, and c. Subsection a, mm. 30 to 48, is the combined length of subsection b, from mm. 48 to 56, and subsection c, from mm. 56 to 66. In other words, the three asymmetrical subsections of Section B are presented symmetrically through their separation into two equal halves:  $a = b + c$ .

In stark contrast to the energetic rhythmic drive of the first movement's *Allegro molto*, the second movement offers a fluid, calm, and rhythmically ambiguous background characteristic of Bartók's "Night Music." The four-measure introduction features alternating measures of duple and triple meters, as imparted by hushed percussion. Typical features of "Night Music" include a tonally and rhythmically ambiguous setting for the many distinctive sound effects of the night, as evoked by the percussion instruments. Bartók explores the great variety of sounds possible, as expressed through many specific performance indications: *with a thin wooden stick . . . on the extreme edge . . . on the dome . . . in the center . . . with a soft headed stick*. Bartók delegates the role of sound effect production at the beginning of the movement to the unpitched percussion instruments, thus freeing the pianos to explore the melodic capacities evocative of "Night Music."

The fluidity of the theme gives the effect of being meterless, and tonal orientation is obscured through the stepwise chromatic movement of the theme (Ex. 3.47):



becomes the tonal center at m. 31, then, shifting up a minor second, B-flat becomes the tonal center at m. 45.

This brief, “tonal” subsection ‘a’ closes at m. 48. Here Bartók introduces a conjunct chordal theme (Ex. 3.49) in canon between the two pianos that is based upon the chromatic shape of the principal theme. Despite the continuation of the quintuplet motive in the timpani, and a clear, stepwise melodic motion, the melodic and harmonic chromaticism in the chordal clusters contributes to the lack of a clear tonal orientation.

*Example 3.49. II, mm. 48-51, Piano I.*



Following the principles of thematic development, the chromatic material of the movement thus far takes on several incarnations. First, it appears as vertical chords in a chorale-like presentation (mm. 48-56), then as slow, linear cascades appearing in imitation between the pianos (mm. 56-60). It then appears as a frantic undercurrent for wild night-calls (mm. 60-66), and as a landscape of chromatic glissandi beneath the main theme itself (mm. 66-70 and mm. 70-74).

The pianos share in the performance of sound effects evocative of the night, and, from m. 56 to m. 67, tremolos, glissandi, fast-repeated chromatic scale figures, and percussive explosions of bird-like figures are presented by the pianos, amidst a still, seemingly meterless background, devoid of percussion.

The return of section A, marked by a return to Tempo I at m. 66, is unique because of its dual function. While it does adhere to the traditional structural constraints of A B A form by restating the movement’s initial material, it also functions quasi-developmentally by simultaneously presenting material from the movement’s middle section. The elements of the opening A division are featured against the chromatic runs from division B, which then evolve into chromatic glissandi. The glissandi accompany the final complete statement of the theme, until their cessation in m. 73.

The original form of the theme (Ex. 3.47) is transformed in the *Un poco mosso* section beginning at m. 74. Here the theme appears in a condensed, inverted form (Ex. 3.50), which, in effect, functions as a winding down of the movement.

*Example 3.50. II, mm. 74-76, piano I.*

Un poco mosso



Even the alternating measures of 4/4 and 3/2 are condensed to alternating 4/4 and 3/4 measures. The theme is then further abbreviated into groups of three pitches set within the 4/4 meter, and appearing in counterpoint between the pianos at m. 81 (Ex. 3.51):

*Example 3.51. II, mm. 81-84, pianos I & II; Groups of three pitches bracketed.*

Tempo I



What follows at m. 85 is, in essence, a coda, set apart by another tempo change. *Più andante*. Here Bartók restates the quintuplet motive from section B, and rather than condensing or reducing, as was done with the theme, Bartók augments it rhythmically, moving through the timpani, piano, and xylophone (Ex. 3.52):

*Example 3.52. II, mm. 85-90, piano II, timpani, xylophone.*

The musical score for Example 3.52 consists of three staves. The top staff is for Piano II (Pno. II), the middle for Timpani (timp.), and the bottom for Xylophone (xylo.). The tempo is marked 'Più andante' and the time signature is 3/4. The piano part begins with a quintuplet of eighth notes in the right hand, followed by a similar quintuplet in the left hand. The timpani part plays a similar quintuplet pattern. The xylophone part plays a similar quintuplet pattern. Dynamics are marked as *p* (piano), *mf* (mezzo-forte), and *ff* (fortissimo). The score ends with a fermata over the final notes.

The final four measures of the movement feature a unique and original technique in piano sound production. Here Bartók demonstrates what is referred to as a pitch bend. In the pitch bend the two pianos participate sympathetically; the first piano provides the tonic foundation, F, with which the second piano's dissonant chords clash, and then seemingly melt into the first piano's tonic chord (Ex. 3.53). This illusory aural merging of the two chords accentuates both the distance and the closeness of two chords, the pitches of which are separated only by minor seconds. The effect simulates the instrumental tuning, or rather *mistuning*, techniques of folk music.

Example 3.53. II, mm. 89-92, pianos I & II.

Tempo I

Pno I *ff*

Pno II *ff* *mf* *p* *pp*

## GOLDEN SECTION

The entire structure of the second movement is constructed according to the principles of the Golden Section. On a large scale, the total number of measures (92) can be applied to the Golden Section ratio resulting in a calculation of 56.85. Though there is a significant change in musical materials at this point (m. 56), it is perhaps not one of *the* most significant in the movement. Difficulties arise in this movement when calculating Golden Section proportions according to the measure numbers due to the frequent fluctuations in time signature. For a more precise calculation of Golden Section proportions, therefore, the various divisions must be calculated according to the quarter-note beat.

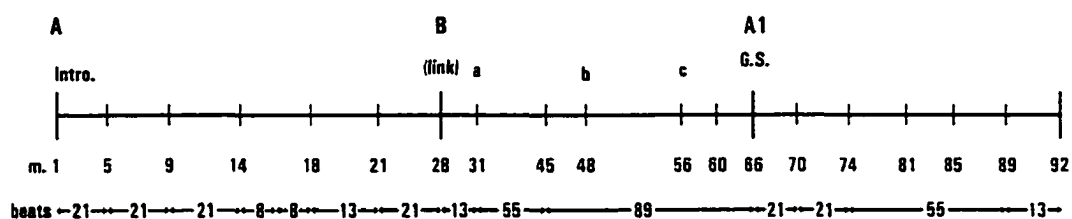
A review of the significant integers of the Fibonacci series is given in the following chart:

Figure 3.7. Fibonacci series integers, rounded to nearest whole number.

2 3 5 8 13 21 34 55 89 144 233 377 610

Another look at the chart of the formal outline of the second movement reveals the significance of these numbers when including the calculation of quarter-note beats between the formal divisions (Fig. 3.6). Each division on the graph represents a significant musical event, and the number of beats within each event adheres to the significant integers of the Fibonacci series.

Figure 3.8. Golden Section proportions of movement II: bottom, number of beats in section.



There are 377 total beats in this movement, which, when multiplied by Golden Section ratio, result in the number 233. Perhaps the most significant large-scale musical event occurs precisely at beat 233, the return of section A in m. 66. This would constitute the true Golden Section of the movement, both mathematically and musically.

When looking at the three main sections of this movement, the strong adherence to Golden Section proportions is obvious. The precise length of section A is 126 quarter-note beats. Section B holds 144 beats, and there are 107 beats in section A1. The total combined beats of both A sections is 233, the Golden Section proportion of the movement's total 377 beats.

Golden Section proportions may also be observed on a smaller scale, within the sections themselves. Since the total number of quarter-note beats in this movement is 377, a number belonging to the Fibonacci series, it is not surprising that between each musical event are a number of beats corresponding to those significant numerals of the Fibonacci series. Since there is not always a clear dividing line between sections, some events actually share a common note as a form of elision. For this reason, there is a discrepancy of three beats between the total number of beats in the movement and the

total number of beats of the individual musical events. The very existence of this slight discrepancy, in my opinion, reveals the priority Bartók held for the musical craft rather than a rigid mathematical formula.

The groupings within section A include a four-measure introduction, mm. 1 to 5, and five phrase groupings: mm. 5 to 9, mm. 9 to 14, mm. 14 to 18, mm. 18 to 21, and mm. 21 to 28. There is also a three-measure link to the thematic material of section B, mm. 28 to 31. The melodic material, a salient feature throughout division A, corresponds with small-scale Golden Section proportions. Within this section's 100 beats of melodic material (m. 5-28), the dynamic peak, and climax of the section occurs precisely at beat 61, the Golden Section proportion, on the first beat of m. 19 (Ex. 3.54):

*Example 3.54. II, m. 18-20, piano II.*



As mentioned in the movement's analysis, the melodic material of section A is founded entirely upon the intervals of a second and third. Even on this smallest scale of intervallic relations between melodic tones, Golden Section proportions may be observed. While both major and minor seconds are used to connect subsequent melodic tones, the interval of a third is used only in its minor form to connect subsequent tones. Thus the entire melodic material of section A may be said to consist of the Fibonacci integers 0, 1, 2, and 3, with each number representing the semitone relation between a tone (0) and its neighboring tone (1, 2, or 3).

The internal subsections of B also conform to Golden Section proportions. Section B contains three main subsections, a, b, and c, with a brief *agitato* section linking a and b at mm. 45 to 48. Within subsection b, the total 144 beats may be divided into the Golden Section proportions 89, and its reverse, or negative proportion, 55. The *agitato*



section serves as a divider between the two proportions, marking the exact *reverse* Golden Section at beat 55, and is highlighted by its *fortissimo* dynamic, the dynamic peak of the movement.

As with section A, section A1 consists of six smaller sections, each articulated by a new tempo indication. The beginning of A1 at m. 66 is marked by a return to Tempo I. In addition to marking the large-scale Golden Section proportion of the movement, m. 66 also coincides numerically with the individual Golden Section proportion of section A1 ( $107 \times .618 = 66.126$ ). The actual Golden Section proportion of section A1 occurs at m. 81, and is articulated by a return to Tempo I, along with a significant change in musical material.

### ***MOVEMENT III - Allegro non troppo***

The third movement, in C, presents a combination of rondo with sonata form. Between the exposition and the recapitulation a new thematic group appears, wrought of two parts of the first theme treated in imitation. A coda falling away pianissimo brings the movement and the work to a close.<sup>59</sup>

The above is Bartók's own complete description of the third movement of the Sonata for Two Pianos and Percussion, from his 1938 essay on the work. In his usual reticent fashion, Bartók has simultaneously provided clues and piqued our curiosity, through his negligible mention of significant musical elements.

The formal outline of the third movement is rather enigmatic, since the sonata-rondo is itself a hybrid form employing both sonata and rondo principles in varying degrees.<sup>60</sup> Bartók's nontraditional tonal scheme further compounds the difficulties of traditional analysis. The following chart outlines the overall structure of the movement, for reference during further analysis. The far left column shows the sections in upper-case letters, according to thematic material. The far right column represents the sections

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<sup>59</sup> Bartók, "About the Sonata for Two Pianos and Percussion" [1938], in *Béla Bartók Essays*, 418.

<sup>60</sup> *The New Harvard Dictionary of Music*, 1986, s.v. "Rondo, II."

corresponding to the typical ABACABA sonata-rondo plan. The middle column includes beginning measure numbers, section label, and tonality.

*Figure 3. 9. Movement III, overall structure: left, formal sections; right, sonata-rondo divisions.*

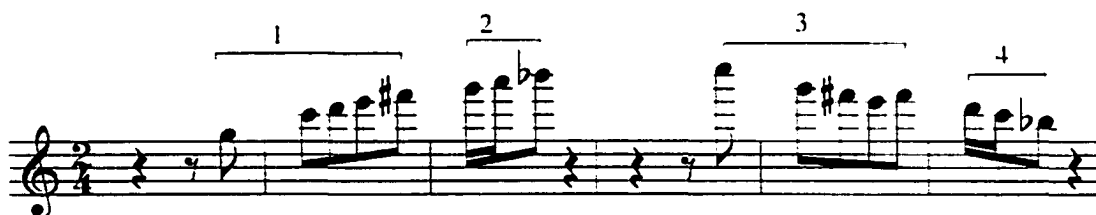
### MOVEMENT III: FORMAL OUTLINE

A	m. 1 - Principal Theme (I)	- (C)	A
A <sup>1</sup>	m. 18 - Theme I (variation)	- (C)	
	m. 28 - Transition	- (C)	
B	m. 44 - Second Theme (II)	- (E)	B
B <sup>1</sup>	m. 56 - Theme II (variation)	- (F-sharp)	
	m. 91 - Transition	- (C-sharp)	
C	m. 103 - First Episode (I)	- (B)	
A	m. 134 - Refrain, Theme I	- (G)	A
D	m. 140 - Development	- (E-flat)	C
A	m. 229 - Refrain, Theme I	- (B-flat)	A
A	m. 248 - Recapitulation	- (C)	
	m. 260 - Retransition	- (G)	
B	m. 269 - Theme II	- (E-flat)	B
	m. 287 - Retransition	- (B-flat)	
C	m. 301 - Second Episode	- (E)	
A	m. 351 - Refrain, Theme I (variation)	- (E-flat)	A
A <sup>1</sup>	m. 365 - Refrain, Theme I (variation)	- (F)	
	m. 379 - Coda	- (C)	(Coda)
	(m. 420 - end)	- (C)	

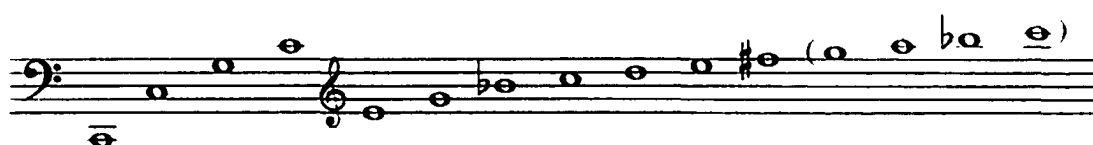
According to the tonal centers of each of the refrain sections, the rondo aspect of this form actually corresponds to ritornello form since each of its refrains appears in a tonality other than the tonic, C.

At its most obvious, the third movement offers a complete contrast to the first and second movements. To begin with, the overt diatonicism of the third movement's principal theme is converse to the modal chromaticism of the earlier movements. The principal theme of this movement is comprised of four units (Ex. 3.55a); the upward rising diatonic scale figure (1), a near inversion as a descending scale figure (3), and the more rapid three-note figure, first ascending (2), then descending (4). Unlike the relationship of the previous movements' themes to the Fibonacci series, the third movement's principal theme is closely related to the overtone series (Ex. 3.55b). The ascending units (1 and 2) of the xylophone's theme are virtually identical to the upward rising scale of the overtone series (bracketed in Ex. 3.55b). The last two units (3 and 4) also contain notes of the overtone series, and the final note of both the second and fourth units (B-flat), supplies the only tone missing in the theme's initial ascent.

*Example 3.55a. III, mm. 4-9, xylophone.*



*Example 3.55b. Overtone series.*



In contrast to the metric ambiguity in the first two movements, the meter of the third movement's principal theme is unmistakably duple. The third movement's principal theme offers the strongest allusion to folk music. However, to describe the third movement's material as the antithesis of earlier musical elements would deny any connection or relationship to the preceding movements—a far less obvious, yet crucial relationship to the work as a whole.

There are covert, yet undeniable, similarities between this seemingly new theme of the third movement and those of the first two movements, similarities that may suggest a distinct cyclic connection. For example, a resemblance in shape between the third movement's principal theme (Ex. 3.55a) and the secondary theme of the first movement is seen in their similar movement (Ex. 3.56):

*Example 3.56. I, mm. 296-299, piano II.*



Though the principal theme of the third movement strongly suggests the key of C, it is actually a composite of Lydian and Mixolydian modes, in a scale incorporating the Lydian raised fourth and major third, with the lowered seventh of the Mixolydian mode. This particular modality, familiar to Indian music, is seen in the music of Fauré, Debussy, and Ravel,<sup>61</sup> composers who greatly influenced Bartók. Thus an element of dualism is expressed through the appearance of this Eastern mixed-mode within Western formal and rhythmic contexts.

As with the previous movements, Bartók employs thematic development in the third movement. The technique of thematic transformation is also observed when following the principal theme and its metamorphoses throughout the movement.

After the complete statement of the principal theme by the second piano in m. 18, the theme is then reduced to a series of points of imitation between the pianos, based solely on the opening interval of a fourth (Ex. 3.57).

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<sup>61</sup> Howat, "Masterworks II: Sonata for Two Pianos and Percussion," in *The Bartók Companion*, 325.

*Example 3.57. III, mm. 24-27, piano II.*



Though presented in disjunct fourths, the material in this bridge is akin to a pentatonic scale (Ex. 3.58).

*Example 3.58. Pentatonic material.*



This brief section leads to a transition (Ex. 3.59) based on a more chromatic, yet rhythmically intact, presentation of the tail, or second and fourth units, of the principal theme (Ex. 3.55a), appearing here in half steps.

*Example 3.59. III, mm. 28-31, piano I.*



This extracted motive is suspended over a contrasting accompaniment of chromatically moving major chords, developed as a rhythmic expansion of the tail of the principal theme. Amid a dissimilar rhythmic and harmonic setting, the shape of this seemingly new material in the transition resembles the shape of the principal theme of the second movement, as well as the closing material of the first movement (Ex. 3.60). All three phrases feature a descending, then ascending, chromatic melodic contour:

Example 3.60(a) III, mm. 28-29, piano I; (b) II, mm. 5-6, piano I; (c) I, mm. 442-443, piano I.

(a)

(b)

(c)

Since these similarities are also displayed and sustained within the same instrumental part, it further suggests a cyclic connection within the work.

Toward the conclusion of the initial forty-three-measure A section, the accompaniment of the transition becomes the focus, and leads to the second thematic statement at m. 44, the B section, of the sonata-rondo form. The second thematic statement (Ex. 3.61a) is a metamorphosis of the principal theme (Ex. 3.55a), and displays thematic development techniques. This statement undergoes a change at m. 58 (Ex. 3.61b) where the material resembles a mirror inversion of the thematic statement of m. 44, not note-for-note, but rather in contour.

Example 3.61(a) III, mm. 44-48, piano II; and (b) III, mm. 58-61, piano I.

(a)

(b)

The effect is a change in complexion of the second theme. This new B theme (Fig. 3.8, second theme) proceeds in the second piano for nearly thirty measures, accompanied by tremolos in the first piano, until the *Più mosso* section at m. 74. Here,

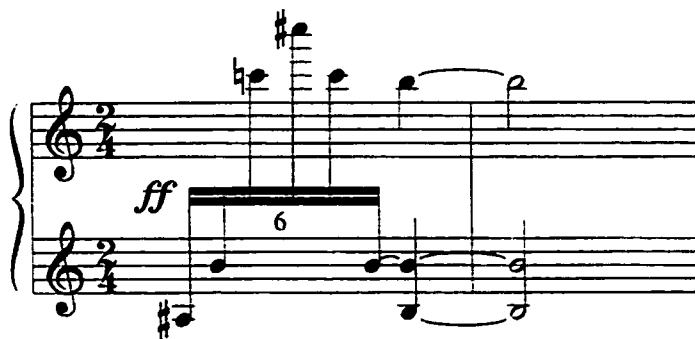
the pianos compete in a canonic display of both the original (piano I) and inverted (piano II) form of the second thematic material (Ex. 3.62):

Example 3.62. III, mm. 74-82, piano I and II.

The musical score for Example 3.62 consists of two systems of staves. The first system is labeled 'Pno. I' and 'Pno. II'. Pno. I is written in two staves (treble and bass clefs), and Pno. II is written in two staves (bass and treble clefs). The time signature is 2/4. The key signature has one sharp (F#). The first system shows Pno. I starting with a melodic line in the treble clef, marked *mf*, which then moves to the bass clef. Pno. II starts with a melodic line in the bass clef, marked *mf*, which then moves to the treble clef. The second system continues the melodic lines for both pianos, showing a clear canonic relationship between the two parts. Dynamics include *mf* and *p*.

There is a sudden interruption of the canonic movement by the first piano at m. 83 (Ex. 3.63), reminiscent of the *fortissimo* interjections of the first movement (Ex. 3.11).

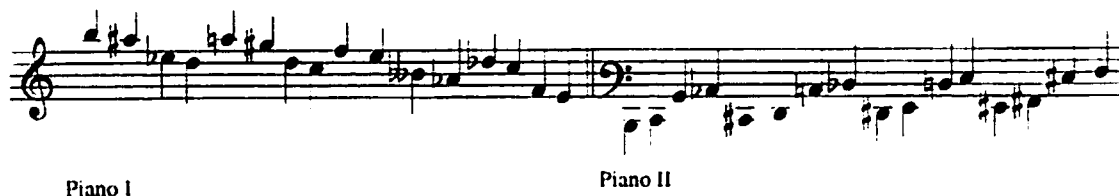
Example 3.63. III, mm. 83-84, piano I.



Following the outburst, the two pianos lead to a second transition at m. 91, featuring the condensed, opening three-note figure of the previous canonic material, here in points of imitation. This transition leads to the first episode of the movement at m. 103, based on the three-note tail of the principal theme.

This episode also features a compositional element found in the theme of the introduction to the first movement; there is a division of the chromatic scale into two levels, obscured by the simultaneous descending lines (Ex. 3.64):

Example 3.64. III, mm. 127-129, pianos I & II.



As is customary in rondo form, there is a return to the principal theme, or refrain, at m. 134, following the first episode. This is the precise point to which Lendvai refers as the beginning of the development.<sup>62</sup> However, it is a complete restatement of the theme, entering clearly in G, and leading to the lengthy E-flat section at m. 140. Though this restatement of the theme lasts a surprisingly brief seven measures (mm. 134 to 140), labeling this seven-measure section a “refrain” constitutes a return to ‘A’, and follows more precisely the sonata-rondo formal plan. For this reason, I have labeled m. 140 the beginning of the development.

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<sup>62</sup> Lendvai, *The Workshop of Bartók and Kodály*, 42.



The first (Ex. 3.55a: 1 and 2) and second (Ex. 3.55a: 3 and 4) phrases of the theme are separated by a dramatic pause of three full measures, with the second phrase serving a dual function of concluding the theme, and initiating the movement's development.

The development begins with four measures of accompanimental material in the pianos at m. 140. The underlying ostinato pattern of the accompanimental material in the second piano (Ex. 3.65) is based on the third unit of the principal theme (Ex. 3.55a).

*Example 3.65(a). III, mm. 140-143, piano II, and (b) III, mm. 20-21, piano II.*

**a tempo**

(a)

(b)

Since the character change of the above thematic material is displayed within the same part, in this case the second piano, the changes from their original forms are especially observable. Above the second piano's ostinato figure, the first piano part enters with a theme "wrought," as Bartók described, of the closing figure, or fourth unit, of the principal theme (Ex. 3.66):

Example 3.66. III, mm. 144-147, piano I.



This material is presented in points of imitation within the first piano part, and, beginning at m. 160, broadens to an eight-part canonic texture between the two pianos in which the complete form of the principal theme is featured. It is interesting to note that Bartók does label the combination of the two thematic elements as a “new thematic group,”<sup>63</sup> and not developmental material. This shows that Bartók regards as new the change in character of the developed thematic material. In the development, material from each unit of the principal theme is developed, appearing as melody, accompaniment, and as the basis for a canonic section.

Toward the end of this passage, the theme becomes more and more condensed, with the sixteenth-note unit of the theme appearing more frequently, and increasingly closer together. This perpetuates an effect of quickening movement, and coincides with a dramatic crescendo. This exciting buildup leads to a dynamic new section of a strongly contrasting character at m. 177 (Ex. 3.67). The material at this point is derived from the accompanimental material of m. 28, and appears here antiphonally between the two pianos.

Example 3.67. III, mm. 174-180, pianos I & II.

<sup>63</sup> Bartók, “About the Sonata for Two Pianos and Percussion” [1938], in *Béla Bartók Essays*, 418.

The effect is one of a simulated, primitive hurdy-gurdy. The constant drone of the raucous, F-sharp chords in the first piano is surrounded by equally insistent chords at the upper and lower half-step in the second piano.

This passage leads to a hocket-like section beginning at m. 199, lasting thirty measures. Here the somewhat sparse interjections among all four parts seem random, misplaced, or even lost. This makes the section especially formidable for the ensemble, due to the obscuring of the originally strong, clear 2/4 meter. Even the Bartóks were not immune to such treacherous passages, for in their only recorded performance of this work, it is in this particular section that the ensemble fumbles.<sup>64</sup>

The role of the percussion changes dramatically in the development section. Moving away from a primarily rhythmic role, both percussionists now employ pitched instruments, making their role more equitable to the melodic capacities of the pianos. In fact, the xylophone is the sole representative of the thematic material during the thirty-measure antiphonal hurdy-gurdy section, and both percussion parts equal those of the piano during the hocket material. Since Bartók is using pitched percussion, the resultant melodic effect is somewhat obvious. What is unique, however, is the percussive effects taken on by the pianos. The pianos actually take turns imitating the low-register *glissandi* of the timpani, seen in m. 210 (Ex. 3.68), as well as the bell-like high register of the xylophone, in the piano's representation of the xylophone's theme (Ex. 3.69).

Example 3.68. III, mm. 206-210, piano I and timpani.

The image shows a musical score for Piano I and Timpani. The Piano I part is written in the bass clef with a 2/4 time signature. It begins with a whole rest, followed by a series of eighth notes and quarter notes, ending with a triplet of eighth notes. The Timpani part is also in the bass clef with a 2/4 time signature. It features a rhythmic pattern of eighth notes and quarter notes, with some notes beamed together. The two parts are arranged in a hocket-like fashion, with the Piano I part playing notes that the Timpani part is silent on, and vice versa.

<sup>64</sup> Howat, "Masterworks II: Sonata for Two Pianos and Percussion," in *The Bartók Companion*, 327.

Example 3.69(a) III, mm. 217-220, xylophone; and (b) mm. 223-227, piano I.

The image displays two musical staves. Staff (a) is for xylophone, showing four measures of eighth-note patterns in a 2/4 time signature with a key signature of one sharp (F#). Staff (b) is for piano I, showing five measures of eighth-note patterns in a 2/4 time signature with a key signature of one sharp (F#). The final measure of staff (b) features a triplet of eighth notes marked '8va' and '3'.

This innovative treatment of the pianos illustrates Bartók's penchant for exploring the unknown, unexpected capacity of the keyboard instruments.

The hocket section leads directly to another canonic section at m. 229, in six-part texture, with the two pianos featuring the main units in a variation of the movement's principal theme. This canonic section represents the second return of the refrain, or A section of the work. Since the return to the principal theme at this point is not in the movement's tonal center, C (See Fig. 3.8, p. 73), it does not constitute an official recapitulation.

The section builds, with both an *accelerando* and *crescendo*, to the official recapitulation at m. 248, *fortissimo*, and *Più mosso*. The material of the recapitulation features a variation of the principal theme, no longer in canon, but united in an incisive three-part octave texture in the first piano. This theme is set atop an aggressive chordal accompaniment, both oscillating and rising in half-steps, in the second piano, based on the material of the previous antiphonal section of the development.

The *Più mosso* section of the recapitulation leads directly to the climax of the movement, at m. 260. Powerful chords in the second piano feature thematic material against a strident, three-part ostinato in the first piano, strongly rooted in G. The entire nine-measure section forms a retransition to the second thematic group at m. 269 (Fig. 3.8).

The return of the second subject at m. 269 is tonally anchored in E-flat, rather than its original tonality of A. This thematic appearance is actually a variation of the second theme due to its inverted final interval (Ex. 3.70):

*Example 3.70. III, mm. 268-270, piano II.*



There is a striking similarity between the shape and direction of the theme here (Ex. 3.71a), and that of the introduction of the first movement (Ex. 3.71b).

*Example 3.71(a) III, mm. 268-270, piano II.*



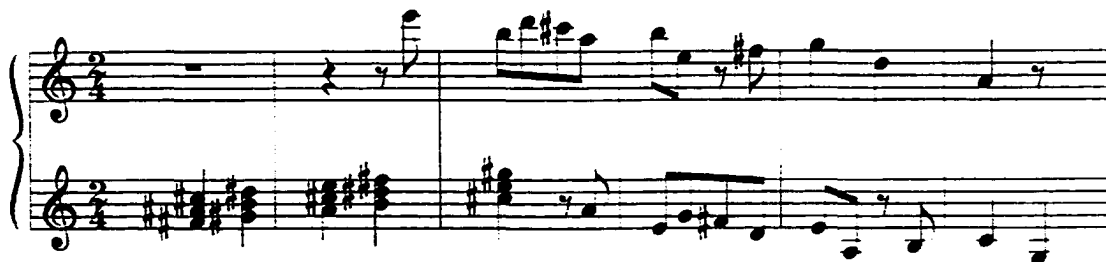
*Example 3.71(b). I, m. 2, piano I.*



In effect, this variation on the third movement's second theme is a diatonic expansion of that of the first movement's introduction, further attesting to the work's cyclic nature.

The recapitulation is further established by the return of the second theme in its original form, and, original tonality, A (Ex. 3.72):

*Example 3.72. III, mm. 277-282, piano I.*



This canonic section of the recapitulation lasts ten measures, and leads to another retransition at m. 287, Tempo I (Fig. 3.8). The material of this transition is based on the second unit of the second thematic group (Ex. 3.72), now in the second piano, coupled with the chromatic presentation of the sixteenth-note rhythmic motive of the first theme as developed in the first transition in the first piano (Ex. 3.59).

The retransition leads into the second episode, in the same character as the first episode, and extends fifty measures. The final three measures of the second episode have the dual function of ending the second episode, as well as stating a rhythmically augmented version of the first unit of the principal theme (Ex. 3.73):

*Example 3.73. III, mm. 349-351, piano I.*

rallent. . . . . al **Tempo I**



The above augmented variation of the theme initiates the return of the refrain, or A section at m. 351, and leads to the appearance of the movement's principal theme in its entirety, in E-flat, shared by the pianos in canon. Succeeding appearances of the principal theme are altered rhythmically and harmonically, moving through the circle of fifths: E-flat - B-flat - F - C.

Through its tonal descent to the tonic, the theme undergoes slight variation with each appearance, until it appears closest to its original structure and tonic orientation at the Coda at m. 379 (Ex. 3.74). Here, the percussion is responsible for presenting and maintaining the sixteenth-note rhythmic figure of the principal theme, while the second piano features the slightly altered melody of the principal theme. This thematic appearance is an example of Bartók's technique of thematic manipulation, where the character and general shape of the melody is maintained, with subtle changes to the internal intervallic structure of the melody.

Example 3.74. III, mm.379-382, piano II and percussion II.

**poco rit.**      **a tempo**

The musical score for Example 3.74 consists of two staves. The upper staff is for Piano II (Pno. II) and the lower staff is for Percussion II (Perc. II). Both are in 2/4 time. The Piano II part begins with a *poco rit.* marking and transitions to *a tempo*. It features dense chordal textures and melodic fragments. The Percussion II part includes a section labeled 'S.D. C.c.' with a rhythmic pattern of eighth notes.

The principal theme is extended in its final appearance at m. 387 (Ex. 3.75). Here Bartók reverses one interval of its original form (in parentheses in Ex. 3.75), and adds an inverted form of the new motive (bracketed in Ex. 3.75). The inversion acts as an elongated tail, providing symmetry to the thematic statement. This elongated tail is continued in a descending sequence, based on the inversion of this new motive.

Example 3.75. III, mm. 387-389, piano I.

The musical score for Example 3.75 is a single melodic line for Piano I in 2/4 time. It shows a sequence of notes with annotations: a bracketed interval is marked with a circled sharp sign, and a subsequent descending sequence is marked with 'inv.'.

This final appearance of the theme gives the dual effect of both opening the form (through expansion) and closing it (through the symmetry-providing tail).

The coda progresses through a sequence of thematic statements based on the theme. After the thematic statement in C at m. 387, the tonality descends by whole tones, until its return to the tonic: A-flat - G-flat - E - D - C.

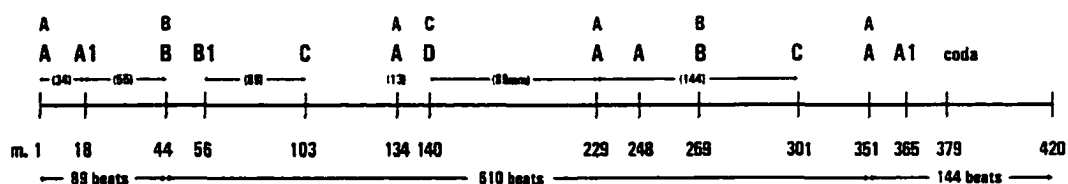
The work ends extremely quietly (*pppp*), with no activity from the pianos after their final cadence in C at m. 411. The only sound is from the dying sustain of the

pianos' ultimate chord. However, the movement of the percussion does not subside: rather, it accelerates to the movement's original tempo, and resolutely maintains it through the final measure. The effect is one of indefinite continuation, and, lacking a clear resolution, creates the illusion that the work has not ended at all.

## GOLDEN SECTION

The third movement is no exception to the principles of Golden Section. Within the context of the formal outline, a linear graph of the movement's divisions displays a noticeable connection between total lengths of sections and Fibonacci numbers (Fig. 3.10).

*Figure 3.10. Linear graph of third movement divisions; top (bold), sonata-rondo divisions: second line, thematic sections: in parentheses, numbers of beats or measures in section.*



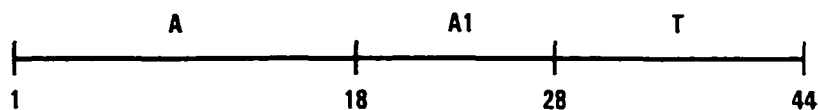
The movement contains a total of 843 quarter-note beats. The three large divisions of the graph are shown in the bottom line calculations of quarter-note beats. In parentheses in the above graph, Fibonacci numerals are shown within many of the smaller divisions of the formal outline, corresponding to both the total quarter-note beats and the total measure numbers.

The large-scale sections, A, B, and C of the sonata-rondo plan, correspond to Golden Section proportions. The combined total number of measures among all A divisions is 161, virtually the exact Golden Section of the combined total number of measures of sections B and C (261 mm. x .618 = 161.298), thus A is the Golden Section of B + C.



Golden Section proportions are also observed within smaller divisions of the formal outline. Within the initial forty-four-measure section of the movement, there is evidence of Golden Section applications.<sup>65</sup> For example, if this section is articulated as A (statement) + A1 (re-statement) + T (transition), each section relates to the other within Golden Section proportions:

*Figure 3.11. Movement III, mm. 1-44.*



The Golden Section of the total 43.5 measures ( $43.5 \times .618$ ) is 26.88. Correspondingly, this is virtually the exact sum of the two A sections, which total 27 measures. The length of A1 (10.5 measures) is the precise Golden Section proportion of the length of A ( $17 \times .618 = 10.506$ ), with a slight overlap of material occurring between measures 17 and 18. The transition, or T, begins immediately following the 27 measure Golden Section division. T also correlates with Golden Section divisions since its length, which is slightly less than 17 measures, is the Golden Section equivalent of A + A1:  $27.5 \times .618 = 16.995$ .

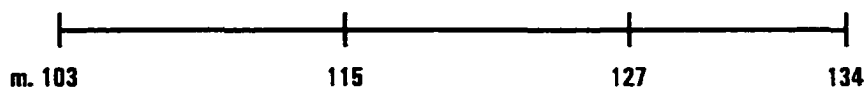
The first episode at m. 103 also follows Golden Section proportions<sup>66</sup> (Fig. 3.12), with the total number of measures (31) divided at its reverse Golden Section ratio at m. 115 ( $134 - 19.15 = 114.85$ ). An increase in sixteenth-note motion and a stringendo articulate this division. The remaining division of the first episode, m. 115-134, is further divided at m. 127, the Golden Section of mm. 115-134. A forte peak and a break in the continuous sixteenth-note momentum articulate this division. Here Bartók initiates a series of points of imitation between the pianos of an abbreviated, four-note motive from the theme of the episode.

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<sup>65</sup> Lendvai, "Duality and Synthesis in the Music of Béla Bartók," in *Bartók Studies*, 41.

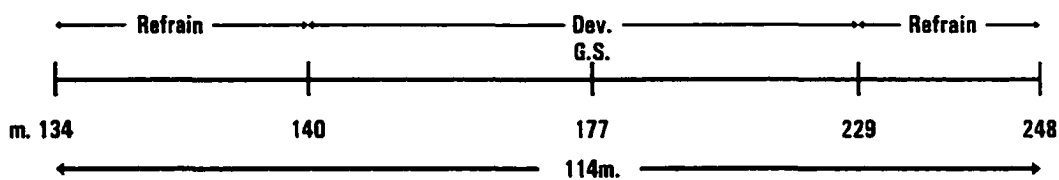
<sup>66</sup> Lendvai, *The Workshop of Bartók and Kodály*, 42.

Figure 3.12. Movement III, mm. 103-134.



Interestingly, the length of the development to the second refrain at m. 229 (89 measures) coincides with the Golden Section proportion of the total length of the material preceding the first thematic appearance in the development, mm. 1 -144 (144 measures x .618 = 88.99) (Fig. 3.13). Within the development, there is a dynamic new character introduced at m. 177 which coincides with the *reverse* Golden Section ratio of the combined refrains and development<sup>67</sup> (114 x .382 = 43.54.) 134 measures added to the reverse Golden Section ratio, 43.54, is 177.54:

Figure 3.13. Movement III, mm. 134-229.



The climactic point of the movement, as mentioned, occurs at m. 260. with a return to Tempo I. As expected, this climactic moment coincides with the Golden Section proportion of the entire movement with remarkable accuracy: 420.5 measures x .618 = 259.869.

The length of the first episode at m. 103 (30.75 measures) is virtually the exact Golden Section proportion of the length of the second episode at m. 301 (49.75 measures x .618 = 30.745).

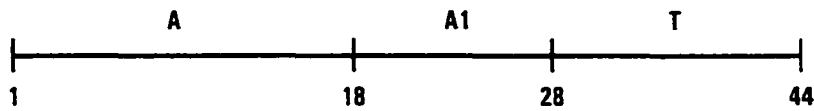
Finally, the theme's entrance in A-flat at m. 394 of the coda coincides with the reverse Golden Section ratio of the coda (394.66). The positive Golden Section ratio is

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<sup>67</sup> Lendvai, *The Workshop of Bartók and Kodály*, 42.

articulated by the theme's final appearance, in D, at m. 404 (404.3),<sup>68</sup> shown in the following graph (Fig. 3.14):

*Figure 3.14. Movement III, coda.*



The proportions of the Golden Section are overwhelmingly present throughout all three movements. While such proportions do not govern the work exclusively, their presence is significant and conspicuous. Ultimately, the strong adherence to such proportions does illuminate Bartók's tremendous concern with formal plan. Using the principles of the Golden Section, Bartók not only has a consistent scientific formula, but one that is at its root based upon the fundamental mathematical concept found in all of nature. Above all, it must be emphasized that Bartók's musical creativity shines throughout such strict formulaic dictates, at times overriding, or at least manipulating the ratio to serve the greater musical need.

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<sup>68</sup> Lendvai, *The Workshop of Bartók and Kodály*, 44.

## CHAPTER FOUR: CONCLUSION

“...one composer—the innovator—gradually reaches new points which hardly remind us at all of the starting point.”<sup>69</sup>

Béla Bartók

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<sup>69</sup> Bartók, “Liszt Problems” [1936], in *Béla Bartók Essays*, 502.

## ***FINAL SYNTHESIS***

“Let my music speak for itself; I lay no claim to any explanation of my works.”<sup>70</sup> Despite Bartók’s words, his works do indeed inspire a thorough investigation of not only his compositional technique, but also the reason behind their eminence and longevity. What, in fact, makes Bartók’s musical language so unique, is a universal assimilation of styles and influences, compounded by a reverence for natural elements. Ironically, Bartók’s words about the genius of Liszt were prophetic in their posthumous application to himself, with such epitaphs as: “. . . among all the greater composers of his time and before him, there was not one who submitted to so many different influences”; and “. . . whatever he touched, he so transformed and so stamped with his own individuality that it became like something of his own”; and finally, “. . . he mixed with these foreign elements so many more that were genuinely drawn from himself that there is no work in which we can doubt the greatness of his creative power. We can say that he was eclectic in the best sense of the word; one who took from all foreign sources, but gave still more of himself.”<sup>71</sup>

What Bartók has achieved in the Sonata for Two Pianos and Percussion is a complete universality of style, a composite of the most diverse elements, illuminating their subsequent relatedness through their reduction to the most fundamental and universal laws of nature, as demonstrated through the application of the Golden Section.

The idea of dualism as a feature of Bartók’s mature compositional style has been recognized by many. The inherent dualism of Bartók’s works manifests as what Ernő Lendvai referred to as a “dual way of thinking” which “seemed to be the sole framework for Bartók through which the existence of things could be justified.”<sup>72</sup> Like Liszt before him, Bartók sought to merge seemingly incompatible and unrelated material into a comprehensive style, and as such, his works possess a considerable element of dualistic

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<sup>70</sup> Lendvai, “Duality and Synthesis in the Music of Béla Bartók,” in *Bartók Studies*, 39.

<sup>71</sup> Bartók, “Liszt Problems” [1936], in *Béla Bartók Essays*, 502.

<sup>72</sup> Lendvai, *The Workshop of Bartók and Kodály*, 320.

accord. Such dualism extends through the work's most general formal organization, to the most detailed analytical practices. The Sonata for Two Pianos and Percussion remains an example of Bartók's self-declared life-work objective: the synthesis of eastern European folk music, and Western art music; a Brotherhood of styles.

The Sonata for Two Pianos and Percussion is a perfect representation and manifestation of Bartók's compositional ideals. In it is found the compendium, and synthesis, of his entire career. Through the exploration of Bartók's eclectic, yet individual idiom as seen in the Sonata for Two Pianos and Percussion, we are first-hand witnesses to the affirmation of his self-invoked trinity, "In the name of Nature, Art, and Science. . . ."<sup>73</sup>

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<sup>73</sup> *Béla Bartók Letters* (To Stefi Geyer, 6 September 1907), 82.

## POSTSCRIPT

In December, 1940, Bartók undertook a transcription of his Sonata for Two Pianos and Percussion into the Concerto for Two Pianos and Orchestra. The decision to transform this chamber work into an orchestral work was a difficult one. Bartók was originally hesitant to undertake the transcription project, but, upon the urging of his publisher Ralph Hawkes, Bartók ultimately submitted. Though we can only speculate as to the reasons for Bartók's initial apprehension, the reasons were overridden by his more immediate financial concerns. During this time, Bartók's health was rapidly deteriorating, and he was greatly concerned for his wife's future security following his imminent death. The existence of an orchestral version of the Sonata for Two Pianos and Percussion had the potential to become a performance vehicle for his wife to secure American performances and fees, a motive Bartók also pursued in the composition of his Third Piano Concerto of 1945.

Though the basic structural elements of the Concerto for Two Pianos and Orchestra remain intact, and the compositional principles already discussed are maintained, it is my opinion that, ultimately, the essence of the initial chamber group was compromised. The initial, unique role of the two percussionists is basically eliminated, as the orchestra assimilates the original percussion parts. It is interesting to note, however, that the specified title Concerto for Two Pianos and Orchestra expresses Bartók's intention of treating the orchestra, as was done with the original percussion role, as an equal, rather than subservient member of a considerably enlarged chamber group.

In January of 1943, Béla Bartók gave his last concert, in which he and his wife Ditta performed the American première of the Concerto for Two Pianos and Orchestra. For the next two years his health continued to deteriorate, and on September 22, 1945, two years and eight months after his final performance, Bartók was taken to hospital where he died four days later.

Despite a number of compositional successes during his lifetime, Bartók never received the recognition and stature he is granted today. Only posthumously did his reputation enjoy significant popularity and respect. The distinctive complexion of creative synthesis, as witnessed in the Sonata for Two Pianos and Percussion, contributes

to our assessment of Bartók as one of the leading figures of Western music in his time. The legacy left us in this masterpiece conforms to Bartók's ideal that "modern man might create deeply personal art by turning to some pure and precious source."<sup>74</sup> and justifies our continuing reverence for this truly extraordinary composer.

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<sup>74</sup> Somfai, "Bartók, Béla, §10: Works, 1938-1945", in *The New Grove Dictionary*, 2:218.



“I am only sorry that I have to leave with my baggage full.”<sup>75</sup>

Béla Bartók

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<sup>75</sup> Somfai, “Bartók Béla, §10: Works, 1938-45”, in *The New Grove Dictionary*, 2:218.  
Bartók’s final words to his doctor before the composer’s death.

## SELECTED BIBLIOGRAPHY

Antokoletz, Elliot. *Béla Bartók: A Guide to Research*. New York and London: Garland Publishing, Inc., 1988.

\_\_\_\_\_. *The Music of Béla Bartók: A Study of Tonality and Progression in Twentieth-Century Music*. Berkeley, California: University of California Press, 1984.

Bachmann, Tibor and Peter J. Bachmann. "An Analysis of Béla Bartók's Music through Fibonacci Numbers and the Golden Mean." *Musical Quarterly* (January 1979): 72-82.

Bartók, Béla. *Essays*. Edited by Benjamin Suchoff. London: Faber and Faber, 1976.

\_\_\_\_\_. "About the Sonata for Two Pianos and Percussion" [1938]. In *Essays*, 417-418.

\_\_\_\_\_. "Autobiography" [1921]. In *Essays*, 408-411.

\_\_\_\_\_. "Harvard Lectures" [1943]. In *Essays*, 354-392.

\_\_\_\_\_. "Hungarian Music" [1944]. In *Essays*, 393-396.

\_\_\_\_\_. "The Influence of Folk Music on the Art Music of Today" [1920]. In *Essays*, 316-319.

\_\_\_\_\_. "Liszt Problems" [1936]. In *Essays*, 501-510.

\_\_\_\_\_. *Béla Bartók Letters*. Edited by Janós Demény. Translated by Péter Balabán and István Farkas. Revised translation by Elisabeth West and Colin Mason. London: Faber and Faber Ltd., 1971.

\_\_\_\_\_. Bartók Béla: *Piano Works*. Hungaroton LPX 11338. Sound Recording.

\_\_\_\_\_. *Sonata for Two Pianos and Percussion*. London: Boosey and Hawkes Music Publishers Limited, 1942.

Berry, Wallace. *Form In Music*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966.

Cooper, David. *Bartók: Concerto For Orchestra*. Cambridge: Cambridge University Press, 1996.

Fink, Ronald. "Bartók's Sonata for Two Pianos and Percussion: The Percussion Part." *Percussive Notes* 32: 6 (1994), 53-57.

- Gillies, Malcolm. *Bartók Remembered*. New York and London: W. W. Norton and Company, Inc., 1990.
- Green, Douglass M. *Form in Tonal Music: An Introduction to Analysis*. 3d ed., New York: Holt, Rinehart and Winston, 1979.
- Griffiths, Paul. *Bartók*. London and Melbourne: J. M. Dent and Sons Ltd., 1984.
- Howat, Roy. "Debussy, Ravel and Bartók: Towards Some New Concepts of Form." *Music and Letters* 58 (1977): 285-293.
- \_\_\_\_\_. "Masterworks (II): Sonata for Two Pianos and Percussion." In *The Bartók Companion*, ed. Malcolm Gillies, 315-330. London: Faber and Faber, 1993. p. 315-330.
- Jasionowski, P. "An Interview with Saul Goodman about the Bartók Sonata." *Percussive Notes* 32: 2(1994), 53-56.
- Johnson, L.M. *Wordsworth's Metaphysical Verse: Geometry, Nature, and Form*. Toronto: University of Toronto Press, 1982.
- Kárpáti, János. *Bartók's Chamber Music*. Translated by Fred MacNicol and Maria Steiner. Revised translation by Paul Merrick. Stuyvesant, New York: Pendragon Press, 1976.
- Kramer, Jonathan. "Fibonacci Series in 20th Century Music." *Journal of Music Theory* 17 (1973): 110-148.
- Kroó, György. *A Guide To Bartók*. Translated by Ruth Pataki and Maria Steiner. Revised translation by Elisabeth West. Budapest: Corvina Press, 1971.
- Lampert, Vera and László Somfai. "Bartók, Béla." *The New Grove Dictionary of Musicians*, ed. Stanley Sadie, 2:197-225. London: Macmillan, 1980.
- Lendvai, Ernó. *Béla Bartók: An Analysis of His Music*. London: Kahn and Averill, 1971.
- \_\_\_\_\_. "Duality and Synthesis in the Music of Béla Bartók." In *Bartók Studies*, ed. Todd Crow. Detroit: Information Coordinators, 1976.
- \_\_\_\_\_. *The Workshop of Bartók and Kodály*. Budapest: Editio Musica, 1983.
- Milne, Hamish. *Bartók: His Life and Times*. New York and Tunbridge Wells: Midas Books and Hippocrene Books Inc., 1982.

- Roeder, Michael Thomas. *A History Of The Concerto*. Portland, Oregon: Amadeus Press, 1994.
- Somfai, László. *Béla Bartók: Composition, Concepts, and Autograph Sources*. Berkeley and Los Angeles: University of California Press, 1996.
- Stevens, Halsey. *The Life and Music of Béla Bartók*. 3d. rev. ed. Oxford: Oxford University Press, 1993.
- Suchoff, Benjamin. *Bartók: Concerto for Orchestra; Understanding Bartók's World*. New York: Schirmer Books, 1995.
- \_\_\_\_\_. "Synthesis of East and West: Mikrokosmos." In *The Bartók Companion*, ed. Malcolm Gillies (London: Faber and Faber, 1993); 189-211.
- Szabolcsi, Bence. "Bartók's Principles of Composition." In *Bartók Studies*, ed. Todd Crow. Detroit: Information Coordinators, 1976.
- Ujfalussy, József. *Béla Bartók*. Trans. Ruth Pataki. Rev. Elisabeth West. Budapest: Corvina Press; Boston: Crescendo, 1971.
- Walsh, Stephen. *Bartók Chamber Music*. London: British Broadcasting Corporation, 1982.
- Watkins, Glenn. *Soundings: Music In The Twentieth Century*. New York: Schirmer Books, 1988.
- Webster, J. H. Douglas. "Golden-Mean Form in Music." *Music and Letters* 31 (1950). 238-248.
- Williams, J. Kent. "A Survey of Writings on Bartók's Sonata For Two Pianos and Percussion," *Percussive Notes Research Edition* 17, no. 1 (1979), 3-22.
- Wilson, Paul. *The Music of Béla Bartók*. New Haven and London: Yale University Press, 1992.