Bartók Analysis: A Critical Examination and Application

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ABSTRACT

Several types of analysis have been applied to the music of Béla Bartók. This thesis provides a summary of the work of the major Bartók authors, along with a critical examination of their methods. The methods described are then applied to the second movement of Bartók's *Divertimento*, where their appropriateness is tested on a work for which little analysis has been published. After all of the procedures are applied to the movement in isolation, a synthesis of the various methods is postulated, and a comprehensive analysis is presented, combining the most effective facets of the techniques of the featured authors. A final section considers the usefulness of each of the methods for this work, as well as for general analysis of the work of Bartók.

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LIST OF DIAGRAMS

Introduction

Analytical approaches to the music of Béla Bartók have been diverse. Several first-rate analysts have published studies on Bartók's compositions, and yet there is little consensus as to approach. Techniques as different as set theory and Schenkerian analysis have been used to draw equally divergent conclusions. This state of affairs may have arisen from the lack of agreement on the nature of Bartók's music, for while some analysts hear it as atonal, for others it is the epitome of tonal thinking in the first half of the twentieth century; some regard it as rooted in folklore, while others hear the continuing echoes of the Western classical tradition; some hear a clash of elements, while others find synthesis.

This thesis is an investigation of the different approaches to this repertoire. The first section summarizes the contributions of the major authors of Bartók analysis. The methods of each author are presented, with an emphasis on that which is applicable to a variety of works. These methods are utilized next for a specific analysis of the second movement of Bartók's *Divertimento*. The aim of this section is a summary of the techniques used in the examination of this composer's work, along with information about their acceptance by fellow scholars, with an eye towards critical evaluation and comparison of the methods involved. This section illustrates the usage of specific procedures on the same movement, and provides a comparison of the results achieved. While no one piece can be considered representative of Bartók's entire oeuvre, for consistency it was necessary to choose a single movement against which to test all of the methods.

In the second section, an original analysis of the movement is presented, in which the best features of the authors' methods are synthesized into a single more comprehensive method. The goal is to present a coherent picture of the target movement using as many viewpoints as

possible, while always keeping the music in the forefront. Rather than attempting to illustrate a theory, this section tries to explicate the music itself as seen, partially and imperfectly, through the theories presented. Having presented this analysis, the methods are then reconsidered as to their general usefulness in analysis of the music of Bartók.

In general, the application of an author's method follows the methodology of the author. In some cases, however, where a theory has been presented beforehand with a few examples given as proof, the theory itself is tested against the music. Where theories or methods contradict one another, the deciding factor is the sound of the music. It is noted when two or more authors discover the same phenomenon, but describe it in different ways.

The presentation order of the authors follows a simple plan. As Gillies is the only author who presents a concise theory, his work is considered first. Antokoletz's book is the most widely-read of the Bartók theory books, at least in North America, and so his theories are examined in chapter two. Wilson is considered next, because he critiques Antokoletz and presents an alternative to some of Antokoletz's findings. Although Ernö Lendvai has proposed a number of theories of Bartók's compositional technique, which have received a great deal of attention for over two decades, he is no longer as influential as either of these theorists, at least in North America. Both Antokoletz and Wilson criticize his methods, and so his work is presented after theirs. Somfai's findings are of a more general nature, and applicable to all of the others, but they are not part of an analytical theory, and so he is held until after the pure theorists. Kárpáti is presented after Somfai because much of his work amplifies Somfai. A great deal of the information supplied by Kárpáti is rather general, but important enough to be included at length, as is attested to by Gillies, Antokoletz, Wilson, and Somfai. As well, there is his history of debating with Lendvai. Although much of his work is in analysis, some of his most salient ideas could form the basis for a new theory of Bartók's music.

Before attempting to analyze the second movement of the *Divertimento*, it is useful to have some basic concepts delineated. I will describe the form of the movement as A-B-C-A', divided as follows: section A: mm. 1-19; section B: mm. 20-32; section C: mm. 33-55; and

section A': mm. 56-74. Within these sections, two important segments are identified as transitions: mm. 30-32 as a transition from section B to section C; and mm. 50-55 from section C to section A'. Following the recapitulation is an important section, mm. 64-65, for which I will use Somfai's designation as the "Hungarian culmination" (a term explained in Somfai's chapter).

I will also describe the movement as tonal, with a tonic of C#. This is not to imply common practice tonality as used in the period from, say Bach to Brahms, but rather to acknowledge that many features of this tonality are used analogously, or even literally. For example, while the dominant chord of G# is not active in important cadences, the key of G# minor plays an important role in the movement.

In describing the structure of the two phrases of the initial melody (mm. 2-5 in Violin II and mm, 6-9 in Violas) the term "sub-phrase" is used to refer to the motions of individual bars. I feel that this term adequately reflects the self-contained nature of these melodic fragments, moreso than the term "motive". Thus m.3 is referred to as "sub-phrase 2" rather than the more tortuous "second instance of motive 1", while the third measure of the melody is "sub-phrase 3" rather than "motive 2".

The following abbreviations have been used in footnotes:

BBE *Béla Bartók Essays,* Benjamin Suchoff, ed. (New York : St. Martin's Press, 1976).

BBA Budapest Bartók Archive

PBA Peter Bartók's Archive in Homosassa, Florida

PART I - Six Bartók Scholars

Malcolm Gillies - Notational Analysis

Among Bartók scholars, Malcolm Gillies is one of the most versatile, having published books on theory, analysis, and biography. In his work as a musicologist, Gillies has prepared important collections of personal recollections and letters, as well as a biographical study of Bartók's sojourns in Britain. In addition, he has updated a seminal biography of the composer. More salient to this study is his work in theory and analysis. As editor of *The Bartók Companion,*[1] Gillies collected a series of analyses of Bartók's works, with many of the analyses by Gillies himself. In *Notation and Tonal Structure in Bartók's Later Works*[2] Gillies expounds his theory of Notational Analysis.

Gillies' theoretical work focuses on Bartók's use of notation. Pitch, and most particularly tonality, is his prime concern. Gillies believes that Bartók expressed tonal structures, manifest in the music, in his pitch spellings. These spellings allow the analyst to work backward from the notation to discover the tonality active at any time. This theory is based on the objective evidence of the score, although it can also be applied to sketches, drafts, and manuscripts.

Composers give clues to their thought processes via their placement of rehearsal cues, thick- and double-bar lines, slurs, etc. More contemporary composers have augmented the traditional notational signs with commas, vertical lines, section timings, and so forth.

Gillies' theory first appears in his Master's dissertation(1981).[3] Writing in 1982, Gillies put forth the basic theory, stressing its extraction from Bartók's own Harvard Lectures, as well as

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[1]Malcolm Gillies, ed. *The Bartók Companion* (London: Faber and Faber, 1993).

[2]—, *Notation and Tonal Structure in Bartók's Later Works* (New York: Garland Publishing, 1989).

[3]—, M. Mus. dissertation, University of London, September 1981.

his writings on folk music.[4] The next year, he added the importance of examining sketches, as notational analysis proved itself most useful in a detailed study of the *Sonata for Solo Violin*.[5] In this same article, Gillies stressed the importance of notation to Bartók's thinking: "the sexagenarian Bartók who lavished intense care on his ethnomusicological notations took an equal care, with similar objectives, in his lectures and in his compositions."[6] The theory was polished and formalized in Gillies' Ph.D. dissertation, which was published as *Notation and Tonal Structure in Bartók's Later Works.* Here, Gillies consolidates his thoughts on octave structures and incomplete chromatic structures, and considers "impurities" in notation. Finally, an elegant summary of the method and an example of its application appears as a chapter in *Models of Musical Analysis*.[7] This last summation is presented as a technical manual, stressing that Bartók's practice is too complex to be described with a few simple principles.

Gillies notes that Bartók's writings, on which the theory is based, come from late in the composer's life, and so can only be reliably applied to his works of the same period.[8] The composer's principle writings of this period are his three Harvard Lectures,[9] as well as several writings on folk music. Gillies points out that Bartók's folk transcriptions had a major effect on his notational style, especially in his later years. Also interesting is his comment that Bartók's discussions of folk music often contain thinly disguised references to his own compositional practice.

As this analytical method works primarily with melodic structures, it is most suited to the composer's later, more linear style. Examining the Harvard Lectures, Gillies shows that the three types of melody that Bartók claims for different points in his career are evident in an analysis of

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[4]—, "Bartók's Last Works: A Theory of Tonality and Modality" in *Musicology*, vol. 7, (1982) pp. 120-130.

[5]—, "Bartók's Notation: Tonality and Modality", *Tempo,* no. 145 (June 1983), pp. 4-9.

[6]"Bartók's Notation", p. 7.

[7]—, "Pitch Notations and Tonality: Bartók", *Models of Musical Analysis: Early Twentieth-Century Music,* Jonathan Dunsby (ed.) (Oxford: Blackwell, 1993), pp. 42-55.

[8]Gillies' more recent work has extended his concepts over much of the composer's life.

[9]A series of six lectures was planned, but Bartók had to defer the last three due to illness. In addition to the three lectures that were presented, the partial text of a fourth is extant.

the music. These three types of melody are 1) bi-modality, in which two distinct modes are juxtaposed over a common tonic; 2) modal chromaticism, where elements of these different modes are mixed; and 3) new chromatic melodies, in which: "The single tones of these melodies are independent tones having no interrelation between each other. There is in each specimen, however, a decidedly fixed fundamental tone to which the other tones resolve in the end." [10] Bartók rejected the very ideas of atonality and polytonality.

In formalizing his theory, Gillies presents and defends eight hypotheses. First, he states that the notes of a tonal music belong to a tonal structure, in which at least one note acts as a tonal centre. Second, that Bartók's music is tonal. From here, Gillies shows that Bartók strove to represent the tonal structures of his music in his pitch notations, and so Bartók's pitch notations provide a key for the analyst in identifying the tonal structures of his music. Unfortunately, Bartók's use of notation is not so simplistic, and Gillies shows that in a number of situations pitch notations are insufficiently pure to be used as the overriding criterion in the identification of tonal structures, and even that in many situations pitch notations are insufficiently exclusive to be the sole criterion of identification of tonal structures. If notational analysis is not completely self-sufficient, it is shown to be very effective in its own sphere, so that differences in pitch spellings between sections or parts of the music normally reflect differences in tonal structure. Thus, working from a foundation of pitch notations, it is possible to provide a comprehensive account of tonal structures in works by Bartók, and, by using Bartók's analyses of his own works as models, to propose a structural hierarchy.

The typical application of the method involves discovering sections which have a consistent notation, and listing the pitch classes used alongside the instrument that plays them, leaving spaces (often marked by empty parenthesis) where a pitch class is not played. By convention, these pitch-class arrays begin with the primary tonal centre, although this is not necessary for the method to work. Underneath the list of pcs is an aggregate, which shows all of

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[10] *Béla Bartók Essays*, Benjamin Suchoff, ed. (New York : St. Martin's Press, 1976), p. 381.

them in all instruments in the section. If more than one notational system is in use at one time, a separate aggregate is shown for each one. The tonal centres are underlined, and important notes may be set in bold type.

The fundament of Notational Analysis is that Bartók wrote tonal music; a claim which Bartók made repeatedly from the mid-1920's to the end of his life. Although, unfortunately, the composer gave no guidelines for finding tonal centres in his music in his theoretical writings, Gillies has found clues to his method. In his scores, Bartók specified the tonal centres by encircling them with the surrounding notes. That is, a tonal centre is surrounded by two leading tones, one above and the other below, both a minor second from the centre. In keeping with the concept of leading tone, both of these pitches would have letter names that differed from the tonal centre by one degree. Most commonly, there are two tonal centres, one primary and the other secondary. Only one letter name would be used for the pitch class of each centre, while the other notes will normally have at least two forms. In the system of twelve semitones, this works out perfectly when the centres are separated by an odd number of semitones, e.g.:

C-D♭-D-E♭-E-F-F#-G-A♭-A-B♭-B

Where they are an even number of semitones apart, certain adjustments must be made, e.g.:

C-D♭-D-E♭-E-F-G♭-A𝄫-A♭-A-B♭-B

In this case, one pitch-class that is not a tonal centre is represented by three different spellings (A𝄫, A♭, A), while another (F) is represented by just one. This latter may be incorrectly identified as a tonal centre by the unwary; it is just an anomaly of our notational system that uses seven letter names to denote pitches that are not spaced evenly, and must be modified by sharps and flats to produce the aggregate of twelve.

Gillies defines five "rules" of notational analysis. 1) Five letter names will occur twice, while the remaining two occur just once. 2) The two fundamental tones will be defined by encirclement. 3) The alteration of the notation of a tone signifies the alteration of its function. 4) Primary and secondary fundamental tones cannot be distinguished notationally. 5) Notational

consistency must be sought first in the melodic lines, although for various reasons some lines may clash. Thus, this theory is not just pitch-oriented, but melody-oriented. Because the primary tonal centre cannot be determined solely from the notation, other musical factors must be considered as well.

The basic representation covers just the simplest case, in which all twelve semitones are employed, each with a unique letter-name. In Bartók's compositions, several more complex configurations occur. The most common is the directional structure, in which a pitch will change its notational spelling depending on its function within a phrase or section. (This procedure is analogous to the notation of the sixth and seventh degrees of the melodic minor scale when they are raised when ascending and lowered when descending.) In these instances, Bartók seems to be employing two different secondary tonal centres, which either alternate or vie for prominence. These centres are often separated by a tone, for example, F and G in a section with a primary centre of C. In such a case, the notation F# would be used when approaching (emphasizing) G, while the same pitch would be spelled G♭ when F was the secondary centre:

C D♭ D E♭ E F **F♯** **G** A♭ A B♭ B C

C D♭ D E♭ E **F** **G♭** G A♭ A B♭ B C

In either case, the primary tonal centre remains the same.

As this system requires the total chromatic collection to identify tonal centres definitely, partial structures are particularly problematic. Gillies names these collections "defective structures". In general, the fewer notes available, the less reliable the technique is, and the more the analyst must rely on other techniques of tonal identification. There are certain cases where the centre is completely encircled (e.g. F#-G-A♭-A-B♭) even though a very restricted collection of pitches is present. Gillies calls these groupings "sub-octave", indicating that their span is less than one full octave; those that span more than an octave are called "super-octave" structures. The theory can be used successfully even on these larger structures if the encirclements are

intact. In super-octave structures, the pitch names do not repeat in different octaves, but the encirclements often show straightforward patterns, such as a series of fifths as tonal centres.[11]

There are tonal collections for which notational analysis is not of primary pertinence. These include octatonic, seven-note (diatonic), whole-tone, and pentatonic scales. Here notation is of little help as the staff's notational system ensures that letter names are unique, while Bartók himself often attempted to keep letter names unique when using the octatonic scale. In such cases, the collection may operate in the foreground, or at a more background level, but tonality will be established (or denied) by methods other than notation. While this may seem a severe restriction on the method, in actual practice Bartók very rarely bases a piece or movement on just one of these structures.

As with any strict notational usage, situations will arise in which this method of analysis can not be used consistently. Gillies speaks of the purity of the notational system becoming "contaminated" by other musical factors. Such contaminations can obscure notational meaning. These typically arise where notational integrity must give way to more important considerations. Interestingly, Bartók rarely compromises his notation for ease of reading for the player. More common are accommodations to instrumental idiosyncrasies, such as the spelling of open strings, where a violinist, for example, might be confused by a notation of the lowest string as F𝄪 rather than G.[12] Piano-writing is often notated in a more vertically-biased notation, given its ability to play chords.[13] Also common are accommodations to avoid what Gillies calls "over-sharpening" and "over-flattening", that is, the necessity of tending toward double-sharps and -flats in certain configurations. Thus, Bartók might notate a section as C# E♭ F G A, rather than a more notationally correct C# D# E# F𝄪 G𝄪. In polyphonic music, one part might have its notation

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[11]The different spellings for the same pitch in super-octave structures violates the concept of pitch-class structure. The use of pitch-class terminology is not part of Gillies original theory, and this violation does not impinge on the integrity of the theory. These structures are apparent in Bartók's music.

[12]This type of consideration for the player was not completely typical of Bartók. In *Notation and Tonal Structure*, p. 84, Gillies states that Bartók was "not a first-rate orchestrator and clearly found this work rather uninteresting."

[13]Gillies notes that the piano scores are often more reliable, regarding notation, than the orchestral scores.

"contaminated" by that of another part, in order to increase overall legibility. Gillies has also shown that over his mature period, Bartók had an increasing interest in maintaining motivic and intervallic integrity in different tonal contexts, and this sometimes affects his choice of notation. More mundane sources of contamination are publishing compromises, in response to editorial pressure, as well as hasty proof-reading and posthumous editing by others. There is also a "default notation" into which Bartók may lapse, seemingly at times of uncertainty. This is typically the notation of an important section of a work, such as the beginning of a movement or main theme, which shows up in a section whose tonality is not reflected by the notation, possibly because the tonality at the time is vague, and another notation might stress a centre that is not truly active.

There are even sections where Bartók seems to make the notation purposefully vague, such as during modulations. These may be quite jarring. Bartók's notational technique at modulation often follows the sound of the music, with the juxtaposition of notationally different sections effecting a sudden, abrupt change of tonal centre. In more gradual changes, the notation may become very obscure, often combining characteristics of both the centre being left, and the new one being established. The notation becomes vague, and only clears up as the new centre is established. In cases which Gillies calls "pushing back" of notation, Bartók will introduce the notation for a new tonal centre a few measures before that centre has been established. This would appear to be a deliberate ploy, as the sketches show that this notation originally appeared later, and was indeed pushed back a number of measures at the time of a final draft or fair copy. In other cases, if more than one tonal centre is active at a time, one centre may change while the other stays constant. Finally, there is enharmonic modulation, where the spelling changes, while the pitch classes remain constant.

While most of Bartók's notation functions at the foreground level, there are two cases wherein the structures are clearly local and do not affect the reigning tonal centre. The first of these is micro-tonicization, in which a tone becomes a temporary tonic, surrounded by its own notation in a way analogous to secondary dominant functions in common-practice music. Such

micro-tonicizations are typically brief, and in a single part. The second case is ornamentation, where a line is embellished with figures that are spelled with notation that points to the ornamented note as a centre, while another centre remains functional on the foreground of the music. While such procedures might sound precious in theory, during analysis they can be most helpful in separating functional notes from ornaments. Gillies has found that Bartók's practice springs from his transcription of the ornaments in folk music. While earlier manuscripts show Bartók using the smaller notation of folk ornaments in his original compositions, later manuscripts often show the ornaments written at normal size, and so only the pitch spelling points these notes out clearly as embellishments.

To supplement notational analysis in finding tonal centres, Gillies suggests examining range limits, commencing and concluding pitches, symmetries (e.g. *Fifth String Quartet*), pitch reiterations and retentions, metrical and accentual features, voice-leading, and traditional functional harmonic procedures. Bartók's own practice seems to indicate "firstly, commencing and concluding centres (especially of principal formal sections), and, secondly, duration, reiteration and repetition of centres." [14]

One ramification of this study that may not be immediately apparent is Gillies' notion of change over the course of Bartók's compositional career. While Gillies' early work concentrated on Bartók's last period, his more recent study points to three distinct phases in Bartók's notational practice, coinciding with developments in his style. This may well have led Gillies in his current opposition to the mainstream view of Bartók as a fully mature composer with no further important influences after 1908.

Gillies urges "that notation not be used unthinkingly without regard to other forms of tonal determination",[15] warning us that we have to decode it to see Bartók's own 'self-analysis'. "By establishing a complex of constraints on his notational usage he provided a vehicle for the

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[14]*Models of Musical Analysis*, p. 51.
[15]*Notation and Tonal Structure*, p. 91.

conveyance of valuable analytical information."[16] He also notes that Bartók's notation before 1930 is much less reliable for analytical purposes.

Sketch Study

Bartók's sketches are a natural focus of Notational Analysis. It would appear that Bartók often changed the spelling of a pitch so that it coincided more closely with the system currently being used.[17] Of course, we can never know for certain whether Bartók was demonstrating self-analysis or if we are merely witnessing traces of his own working method. However, whether these notations were meant to demonstrate the tonality of his works, or whether they were his own way of keeping track of tonality, it would appear that the notational system posited by Gillies holds for the later works. It is also possible that Bartók used these notations for both purposes, as he was often the performer of his own works, and the notation could have served as a reminder of his compositional process.

One area that is still rich in possibilities is the study of the relation of difficult notation to changes in sketches. In some cases, notation that seems particularly opaque appears in sections where the composer clearly struggled with his own ideas. This shows up as a number of revisions in sketches and fair copies.

Beyond notational analysis, however, Bartók's sketches hold other clues to his compositional thinking, and Gillies recommends study of all relevant source materials as a general practice. He also notes that Bartók usually writes about his own music in generalities that are often too imprecise for serious analytical purposes, and so the sketches are more accurate reflections of his actual musical thinking.

Biography

Although Gillies has presented a well-defined and useful theory, his greatest publishing activity of late has been in biography. His biographical books on Bartók are *Bartók*

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[16]ibid., p. 121.

[17]In Notation and Tonal Structure, page 35, Gillies quotes John Vinton, who points out that Bartók made hundreds of changes in notation from the sketch of the *Sixth String Quartet* to its final version. Vinton notes that these changes are not "the result of a desire for greater notational clarity."

Remembered,[18] *Bartók in Britain,*[19] a new edition of Halsey Stevens' *The Life and Music of Béla Bartók,*[20] the forthcoming collection of *Bartók Letters*: *The Musical Mind.*[21] *Bartók Remembered* presents a rare collection of source documents from Bartók's contemporaries. The geographically-based *Bartók in Britain* is an example of "slice history", in which Gillies restricts his investigation to just this one country, to examine in-depth the circumstances of Bartók's life during his visits. In editing Halsey Stevens' landmark biography, Gillies has updated the Bartók bibliography and his catalogue of works. His new compilation of Bartók's correspondence in the forthcoming *Bartók Letters: The Musical Mind* is an important addition to Bartók scholarship, as the current most-comprehensive volume of letters in English contains less than 10% of all of the composer's correspondence.[22] Much of this material sheds light on the compositional process of specific works, as well as the material aspects of Bartók's life at the time. There are also clues to Bartók's own ideas on the structure of some of his works. Indeed, one of Gillies' most valuable contributions to musical scholarship has been his demonstration of the interdependence of analysis and biography. In the case of Bartók specifically, Gillies has shown that analytical systems attributed to Bartók seem to have held little interest for the composer. He has also shown that semiotic approaches to his music must take careful account of the actual events of his life in order not to founder on the shoals of speculation. Gillies uses this same approach to maintain his own position that Bartók continued to mature and gather influence, not always discretely, for most of his long career.[23]

Chronological consolidation is another of Gillies' musicological projects. This involves the cross-referencing of biographical information as diverse as correspondence and score

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[18]Malcolm Gillies, *Bartók Remembered* (London: W.W. Norton, 1990).

[19]—, *Bartók in Britain: A Guided Tour*(New York : Oxford University Press, 1989).

[20]Halsey Stevens, *The Life and Music of Béla Bartók* 3rd ed. prepared by Malcolm Gillies (New York : Oxford University Press, 1993).

[21]Malcolm Gillies, and Adrienne Gombocz, *Bartók Letters: The Musical Mind* (Oxford: Clarendon Press, forthcoming).

[22]János Demény, ed. *Béla Bartók Letters* (London: Faber and Faber, 1971).

[23]See for instance his essay on 'Bartók and His Music in the 1990's' in *The Bartók Companion.*

purchases, with the goal of providing a more comprehensive context for events in Bartók's life. Bridging the holdings of the two Bartók archives, the collections of private persons, writings in different languages, and scores of articles and books, Gillies is assembling a massive data base of material which will form the basis of his essay on Bartók scheduled for the next edition of the *New Grove Dictionary*. His early research has sketched a portrait of the composer as less opaque and taciturn than he has been characterized; more international, and less consistent on national and ethnic issues; primarily famous as a composer, less so as a pianist, teacher and ethnomusicologist, although he did make fine contributions to each of those fields; not consistently excellent as a composer; more musical and less polymathic than he is currently represented; less bland and private as a man, and more related to music.[24]

Gillies is also active as an analyst. His largest collection of Bartók analyses is in his doctoral dissertation, published as *Notation and Structure in Bartók's Later Works*, and in *The Bartók Companion*. In this latter work, Gillies warns of the pitfalls of half-baked analytical procedure:

> "In what matters most, the understanding and appreciation of his music, the debate has been more intense than that concerning his life, as so many different, sometimes conflicting, theories have been proposed. Although Bartók's mature works have an almost lapidary quality, appearing so firm and purposeful in their construction, the paradox for analysts has lain in their defiance of exact conformity to any one model. The root cause of this defiance is Bartók's ever-present tendency to variation, which can best be attributed to his decades of studying the intricacies of folk music. Any phenomenon is likely to return defective or skewed, extrapolated or mirrored; the proportion apparently so perfect at first occurrence is unexpectedly shortened or lengthened at subsequent hearings."[25]

Gillies demonstrates that Bartók's own analyses are often contradicted at the surface level of the music. For example, in considering Bartók's *Fifth String Quartet*, Gillies shows that while Bartók's self-analysis is valid enough at a large-scale level, the myriad details of the piece

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[24]These points come from a lecture given at McMaster University on October 25, 1995.
[25]*The Bartók Companion*, p. 13.

are much more complex; tonalities are not presented in an unambiguous manner. He notes that it is easy for a theorist to find excerpts from many of Bartók's works to prove almost any theory, but he cautions that "such activity can become a travesty of analytical process. The real challenge lies in providing a comprehensive illumination of the music".[26] Again, most interesting is his integration of biography and analysis, showing the importance of specific biographical information to the work of the analyst. In his article "Stylistic integrity and influence in Bartók's works: the case of Szymanowski", Gillies demonstrates that a lack of awareness of the circumstances under which a work is composed can lead to a misdirected analysis that overlooks fundamental stylistic concerns.[27] The converse of this is that properly understood biography can explain otherwise startling shifts in style and content. (One such case, Bartók's discovery of authentic Hungarian folk music, is well documented and of undisputed importance.) Also of interest here is Gillies' attribution of specific technical methods of writing for the violin to models from Szymanowski, a thesis which he backs up with historical evidence. Rather than demeaning the accomplishment of Bartók, this essay seems to capture a musical mind in the act of realizing an influence.

Gillies continues with this theme in *The Bartók Companion.* Noting that the academic world is most tolerant and supportive of Bartók's borrowing from folk music sources, Gillies points out that Bartók seems to have made similar borrowings from art music. These latter influences are often dismissed or denied, a situation which Gillies feels gives us an incomplete and distorted view of Bartók, both as a man and as a composer.

Critics of Gillies

Elliot Antokoletz gives Gillies a very positive review of *Notation and Tonal Structure in Bartók's Later Works.*[28] He notes Gillies' conclusion that historical context is essential in order to

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[26]ibid.

[27]Malcolm Gillies, "Stylistic integrity and influence in Bartók's works: the case of Szymanowski", *International Journal of Musicology*, vol. 1 (1992), pp. 139-160.

[28]Elliot Antokoletz, review of Gillies, *Notation and Tonal Structure in Bartók's Later Works*, Music & Letters, lxxiv (1993), pp. 326-328.

understand Bartók's notational spellings, and also that Gillies challenges Lendvai's view that Bartók's style did not change after he reached maturity in 1908. In fact, Antokoletz only takes issue with Gillies' "bias" towards asymmetrical structures (and against Antokoletz's own leaning toward symmetrical structures in Bartók's music), and with his dismissal of Antokoletz's view of the importance of octatonic scales. One other issue that Antokoletz does not address directly is Gillies' position that Bartók's notation is not arbitrarily enharmonic, and thus that important information is lost when it is transferred into integer notation. For Gillies, the concept of enharmonic equivalence is not neutral in Bartók's music, as it destroys his tonal patterns.

This issue bears on Gillies' more current research into Bartók's "middle period", where he finds construction in small sections, each of which has its own notation. These sections tend to concentrate on a single interval, a different one for each section. Although there are significant differences between Bartók's early and late periods, such as the predominance of the piano in the early years and its replacement by strings in the late ones, Gillies believes that the early and late periods are more similar with each other than with the middle years. In this middle period Bartók was most interested in motivic and intervallic relationships, where the quantity (e.g. a third) was more important than the intervallic quality (i.e. major, minor, diminished, etc.). This creates a serious problem for the pitch-class analyst, as in this period a diminished third is first and foremost a third, and not at all equivalent to a major second.

More recently, László Somfai has characterized Gillies' findings of the influence of Szymanowski in Bartók's Violin Sonatas as merely looking at the notes on the page, rather than accounting for the sound of the music. More basically, Somfai believes that Bartók received his major compositional influence from other composers when he was a student, and so Somfai denies Gillies' concept of Bartók's continual influence.[29] Specifically, Somfai denies that Bartók was directly influenced by Szymanowski when writing his two Violin Sonatas, as Gillies claims.

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[29]Personal interview, March 18, 1996.

János Kárpáti takes the middle ground, conceding that Bartók was influenced by his contemporaries, but that he mostly incorporated this influence into his personal style. He also feels that the influence of composers such as Schoenberg was mutual.

Analytical Application

As Gillies' Notational Analysis provides the analyst with the only self-contained method for analyzing the tonality of the entire second movement of the *Divertimento*, we will apply that method here. In a meeting at McMaster University, Gillies shared a number of analytical insights which supplement this method. Bartók's habit of marking section timings into the score show what the composer considered to be logical formal divisions or pauses, and this seems true of the *Divertimento* in particular. In addition, the measure numbers of the second movement are Bartók's, written by him into the fair copy of score. They seem to provide his idea of the sectional breakdown of the piece. In keeping with his recent work, Gillies suggests that in general, intervallic integrity is probably important in the piece. Finally, he notes that the first draft appears to have been written out "in one go", and those areas that have numerous corrections probably betray some uncertainty on Bartók's part.[30]

"SECTION A"

Measures 1 - 5

vl II : mm. 3-5						Fx	G#	A	A#	B	B#
m. 2				E#	F#	G					
vle, vc, cb :	C#	D	D#	E	E#	F#	Fx				
			Eb		F		G (m. 5/3)				
AGGREGATE:	**C#**	**D**	**D#**	**E**	**E#**	**F#**	**Fx**	**G#**	**A**	**A#**	**B**	**B#**
							G					

Measures 1 - 5 demonstrate a directional structure. The primary tone of C# is encircled, as we might expect; it is also the first note of the section, and indeed is the first note of each of the first three measures in the lower (accompaniment) instruments. The secondary centres of F# and G# are each encircled. The F# is especially noteworthy as Bartók's first draft of the movement originally approached it from above with Fx, which was overwritten with G♮.

There are two important notational anomalies in this section. The first is the G♮ in Violin II m. 5; here Bartók has written G♮ for the open string, while the upper note is 'correctly' notated

[30]Notes from meeting with Malcolm Gillies October 25, 1995.

as F×, maintaining notational integrity. Of course the open string notation avoids possible confusion for the player. The second anomaly is in the same measure, in the Violas, Cellos and Contrabasses: the notes G♮, F♮, and E♭ do not fit in with the prevailing spellings. Of course, the G is an open string on the Bass, and might be so notated for the same reason as the G in Violin II, with which it sounds. If this is the case, as it seems to be, then the descent to D would most logically be filled in by F and E♭, rather than the E# and D# that we might expect from the previous notation. This would seem a good solution from a musically logical point of view, wherein good musical practice dominates over a pedantic insistence on systematic orthodoxy. (This same problem appears at the descent from the climax as well, where its musical necessity seems more obvious.) However, this explanation is less compelling for the Viola and Cello. This may more likely be a case of breaking the notation before a new section, in this case a repeat of the theme in canon. It is interesting to note that the structure of m. 5, semi-tonal ascent to the apex with descent via two whole-tones and then a semitone, reflects the motion to and from the climax in m. 44 (G-F-E♭ in the lower 'voice').

Encirclement seems to be a fundamental motivic idea for this movement, as the melody in Violin II first encircles F# in sub-phrase 1 (m. 2); then G# in sub-phrase 2 (m. 3); both of which encircle (semi-tonally if not notationally) the goal tone of the next sub-phrase, F×. Sub-phrase 3 can be viewed as an interlocking series of encirclements (B#-A#-B, A-B-A#, with the final G# recalling the end of sub-phrase 2, and so leading to F×). This sub-phrase also has the descending motions B#-A#-A and B-A#-G# which will appear again in m. 10, m. 52 and m. 55.

Why is the F× of the third sub-phrase not encircled by the goal tones of the first two sub-phrases? To do so would have required making the F# at the end of the first sub-phrase into E×, and Bartók does not make double-sharps (or double-flats) tonal centres.

Measures 6 - 10

											A#	B	C
vl	I	C#	D	D#	E	E#	()	()	()	()	()	()	B#
								Fx					
vle						E#	F#	G	G#	A	A#	B	B#
vl	II, vc, cb	C#	D	D#	E	E#	F#	Fx	G#	A	A#	B	B#
AGGREGATE:		**C#**	**D**	**D#**	**E**	**E#**	**F#**	**Fx**	**G#**	**A**	**A#**	**B**	**B#**
								G					**C**

Measures 6-10 seem to have the same directional structure as mm. 1-5, with C# as the primary centre, and secondary centres on F# and G#. These secondary centres are only apparent in the Viola part, as the accompaniment instruments have only G# as a secondary centre. The canon in Violin I presents a secondary centre on B (the canon at the fourth, or more properly the eleventh, thus transposes the F#/G# centres to B/C#, with the C# neatly coinciding with the primary centre). The obvious canon explains this 'extra' centre.

A more important anomaly is the C♮ that ends the Violin I phrase in m. 10; while this note is the obvious conclusion of the phrase, it does undermine notationally the C# primary centre. This could be a purposive move by Bartók, to dissolve the C# centre. It might also be that the C is part of the new notational system to be introduced in m. 11. Most likely is that the measure actually shows the end of the system from mm. 6-9 (with an overlap in the Cellos and Basses) and the start of the system for mm. 10-11. Such 'breaking' of the notational system is common before changes of musical pattern, as we shall see throughout this movement. As mentioned, the numbering of m. 11 is from Bartók's hand in the fair copy (as are all of the measure numbers).

It is interesting to note that the distinctive sound of the canon between the Violas and Violin I was originally between Violins I & II, and was changed after the first draft was written out (by a verbal notation in the score). It is also interesting that the D♭ in the Contrabass in m. 11 was changed from C# (overwritten in the draft); Malcolm Gillies notes that this change makes it more likely that the players will break the phrase here.

m. 10 - m 11 (beat 1)

vl	I												C
vl	II							G	Ab	A	Bb	B	
vle		Db	D	Eb	()	F	()	G					
vc, cb		(C#)											
AGGREGATE:		**Db**	**D**	**Eb**	**()**	**F**	**()**	**G**	**Ab**	**A**	**Bb**	**B**	**C**

This measure, clearly transitional in the movement, is also somewhat more problematic for identifying a tonal centre as it consists of an incomplete chromatic collection. C is the only note completely encircled, and it is clearly the goal of the Violin I. However, the C# in the Contrabass and Cello strongly contradicts C as a tonal centre, by stressing the tone that has been the tonic up to this point. This seeming contradiction is in fact the motive force for the next six measures (a tripartite sequence). The interval of a major seventh also shows up at several other important places in the movement. The assignment of C and G as tonal centres is based on the long notes that sustain these two pitches. In any case, the sense of tonality in this single measure is fleeting at best.

mm. 11 - 12

vl	I				E	F	()	G	()	()	()	B	C	
vl	II	()	()	Eb										
vle, Cb		Db	()	()	()	()	()	()	()	()	Bb	()	C	
Vc	(11-12/2)	Db	()	()	()	()	F#	G	Ab					
	(12/3-12/4)					F	Gb	()	()					
AGGREGATE:		**Db**	**()**	**Eb**	**E**	**F**	**F#**	**G**	**Ab**	**()**	**Bb**	**B**	**C**	
							Gb							

In these two measures, Bartók has kept the same sounding pitch in the Contrabass (an octave lower) but he has changed the notation from C# to D♭. Again, the first draft provides a fascinating insight: the D♭ in the Contrabass was originally a C#, which Bartók over-wrote with D♭. The Viola part, however, still retains a C#, which is changed to a D♭ in the final score.

The structure could be seen as a directional one, with C as the primary centre, and F and G as the secondary centres; alternatively, C and G might be heard as the primary and secondary centres. The determination relies on the G♭ and F♮. These anomalous notes in the Cello on the last two notes of m. 12 seem to result from a purely motivic repetition (down a semitone) which leads (down another semitone) into the next statement of the sequence. This reading is reinforced by

its reoccurrence in the same place in the next statement of the sequence. It may well be an anticipation of the secondary tonal centre in the next statement as well.

mm. 13 - 14

vl	I	()	D	Eb	()	F	Gb	G	()	A	Bb	
vl	II	Db	()	()	()	F	()	()	()	()	()	Cb
vle		()	D	()	()	()	()	()	Ab	()	Bb	
vc	(13-14/2)	()	()	()	E	F	Gb	()	()	()	()	Cb
	(14/3-14/4)	()	()	Eb	Fb	()	()	()	()	()	Bb	
cb											Bb	Cb
AGGREGATE:		**Db**	**D**	**Eb**	**E**	**F**	**Gb**	**G**	**Ab**	**A**	**Bb**	**Cb** **()**
					Fb							

This sequential repeat has tonal centres B♭ and F; if we accept that this is a directional structure, then the E♭ must be considered a secondary centre as well (or again may be an anticipation). Since it is a clear repetition of the previous two measures, the B♭ sounds as the primary tonal centre.

In the first draft, the B♭-E♭ motion of Violin I was notated as A#-D#. In fact, sharps are predominant in the draft until m. 19; these are replaced by flats in the final score. This substitution may have been made to bring the notation of Violin I into concert with the rest of the parts, which use flats, and also to avoid the use of double-sharps (F×, C×) – although it does necessitate the use of F♭ and C♭.

mm. 15-16

vl	I	Db	()	()	Fb	()	()	G	Ab	()		
vl	II	()	()	Eb								
vle		Db	()	()	()	()	()	()	()	()	()	B	C
vc		()	D	Eb	Fb							
cb		()	()	()	()	()	()	()	()	A	Bb	
AGGREGATE:		**Db**	**D**	**Eb**	**Fb**	**()**	**()**	**G**	**Ab**	**A**	**Bb**	**B**	**C**

This is a most curious section. The sequential nature of the Violin I melody suggests a tonal centre on A♭ (in a step-wise pattern of descent C-B♭-A♭ over the six measures). This is doubly contradicted, however, by the A in the bass: both as an unexpected bass note and as a second spelling of A in the section. In fact, the notation encircles E♭ and C. The designation of one of these pitches as a primary tonal centre is problematic, in that neither is strongly presented,

although the C might have a slight edge in that it is the upper note in the major sixth (E♭-C). Later events cast more light on this section.

mm. 17-19

vl I	()	D	Eb	E	F	Gb	()	()	()	Bb	Cb
vle	Db	D	Eb								
vc	Db	()	Eb								
cb	()	()	()	()	()	()	()	()	A		
AGGREGATE:	**Db**	**D**	**Eb**	**E**	**F**	**Gb**	**()**	**()**	**A**	**Bb**	**Cb ()**

This section has tonal centres on B♭ and F, with B♭ more prominent. It is difficult to be certain whether to include m. 19 with the two preceding measures, although its inclusion does not change the assignment of centres. The single D in m. 19 does not exert much tonal influence on its own, although it is revealed in retrospect as the dominant of G minor.

Bartók's score has provided pretty clear indications of the sections of the piece so far. Measures 1-5 sound as a unit, and mm. 6-10 are a mild variant on them, with a cadence into m. 10 reinforced by a decrescendo to pianissimo. The threefold sequential repetition of mm. 11-16 is underscored by the dynamic ***p*** in m. 11, ***piu p*** in m. 13, and a crescendo through mm. 15 and 16, culminating on beat one of m. 17. The timing indication under m. 19 is probably the clearest mark that a larger section has ended. This ties in with the change of tempo in m. 20. Also, the measure numbers reinforce this reading.

As for tonal motion, we began in an unambiguous C# (accompaniment sounds minor, but melody begins on major third!). This C# was complicated, but not abandoned by the canon in m. 6. The sequence in mm. 11-16 seems to waver between C and B♭, with B♭ in mm. 17-19 leading to the high D.

"SECTION B"

mm. 20-25/1

vl	I	C#	D	D#	E	()	F#	G	Ab	A	Bb	B	C
vle		C#	D	()	()	F	()	G	()	()	Bb		
vc	(20-21)	Db	()	()	E	F	F#	()	G#	A	A#		
	(22-25/1)	Db	D	Eb	E	F	Gb	()	Ab	A	Bb	B	C
							F#	G	(m. 24-25/1)				
cb		()	D	()	E	F	Gb	()	Ab	()	Bb	B	C
							F#	G	(m. 24-25/1)				

This section is the most notationally unstable so far, which may be more a reflection of the importance of intervallic relationships than a flaw in the notation. Much of the seemingly contradictory notation has to do with the parallel chords in the accompaniment: parallel major chords in first inversion between the Cellos and Violin I in mm. 20-21 (F#-F-E-D♭); parallel major chords (except for Em) in root position between Violin I, Cello, and Contrabass in mm. 23-24 (Em-F-G♭-A♭-B♭-B-C-D); and parallel minor chords in root position in these same instruments from m. 24 to m. 25/1 (Em-Fm-F#m-Gm).

Violin I encircles G, while the Cellos encircle C as well as F and G directionally. The G in the Cellos appears in m. 24 (as in the Basses). In fact, m. 24 seems to be a transition between mm. 20-23 and mm. 25-29. By examining other musical factors, we could conclude that the tonal centre for this section is actually G. The tune in the Violas does seem to cadence on G; the ascending motions of the Basses and the Cellos (mm. 22-24) culminates on G in m. 25; and the rising figure in Violin I in mm. 22-23 seems to be a modified scale on G. This hypothesis seems to be confirmed (in retrospect) when we reach m. 25, where G is established as a drone bass (along with D).

mm. 25-29

vl	I	()	()	D#	E	()	()	G	()	A	()	()	C
vl	II	()	D	()	()	F	()	()	G#	A	()	()	C
vle		C#	D	()	E	F	()	G	()	()	Bb		
vc		()	()	()	()	()	()	G	()	()	Bb		
cb		()	D	()	()	()	()	G					

This section poses some interesting problems, and provides valuable insight into the proper use of this method of analysis. The tonal centres indicated in the chart result from aggregates of voices; that is, the E is encircled by notes in Violin I and Viola, and the A is

likewise encircled in Violins I and II. These encirclements are valid, however, only if the parts are considered to be part of a larger whole. This is a tempting assessment, as each part has so few notes, but on listening to the music this impression is contradicted. In fact, there are at least four separate strata active during this segment. The tonal centre is most strongly defined by the lowest of these, which might be considered to be comprised of the notes of a G-minor triad that occur in the Contrabass, Cello, and the D drone of the Violas.[31] The upper line of the Violas has an accompaniment figure that is in fact a rhythmically equal (i.e. in 8th notes) variant of the Viola melody of mm. 20-23. This figure is also centred around G. The line in Violin II starting in m. 25 is an imitation of the Viola melody, in the original rhythm, but transposed up a perfect fifth. Although this would appear to introduce a tonal centre on D, in fact it sounds more like a separate stratum, and if anything the D sounds like the fifth of G. When Violin I enters with the same theme transposed up another fifth, it definitely sounds like a separate stratum. While it may be possible to hear another secondary tonal centre on A, it seems much more likely to be an enrichment of the G minor triad. This may be closer to the view of Bartók himself, who denied the possibility of polytonality, and claimed that all of his music was centred around a single tone to which other tones tended to resolve. [32]

mm. 30-32

vl	I	()	D	D#	E	()	()	G	()	A	Bb	B
vl	II	()	D	Eb	()	()	F# Gb	G	()	()	()	B
vle		C#	()	()	E	()	F#	()	()	A	Bb	B
vc		()	D	()	E	()	F#	()	()	A	()	B
cb		()	()	()	()	F	F#	()	()	A	()	B C

This section is transitional, leading from the strong G tonal centre of the previous section to the even stronger G# that is to come. Again, it is set off by a change of tempo, by a crescendo leading into it, and even more so by the designation ***Sostenuto, subito***. While E seems to be suggested as a tonal centre by the notation, it is not strongly felt. It might be most strongly suggested by the sustained B's of m. 32, which could suggest the dominant of E (harking back to

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[31]Kárpáti makes the same point, that only one tonality is dominant at any given time.
[32]BBE, p. 365-66.

the first chord of m. 30). Also, the main (beginning) tones of the motive are B-A-G-E, suggestive of E.

The discrepancy between F# and G♭ in Violin II in mm. 30 and 31 seems to be the result of motivic integrity: the semitonal motion in m. 30 requires that F# proceed to G, whereas the minor third above E♭ is correctly notated as G♭.

This second formal unit seems to have a tonal centre of G that becomes apparent from mm. 20-24, more definite in m. 25, and which dissolves at the end of the section into a vague "sort of" E. It is interesting to note that the end of this section is a single repeated note, quite similar to m. 19.

"SECTION C"

mm. 33-49

```
vl  I    C# D  D# E  F  F# G  G# A  A# B  C
  (ascent: 33-44)   (Cx - m. 40)
vl  I    C# D  Eb E  F  F# G  G# A  Bb B  C
  (descent: 44-49)
vl  II   C# () D# E  () F# () G# A  () B  C
vle      C# D  D# E  () F# () G#
vc       C# () D# E  E# F# G  G# () A# B  C
cb       C# () D# E  () F# Fx G# A  A# B
```

This large section is most instructive. There are three notational areas of interest: the ascent of Violin I, its descent, and the accompaniment. Let us consider the accompaniment first. The entire orchestra, with the exception of Violin I which has the melody, shares the same notation, although no part has the entire chromatic collection. An aggregate collection produces the following:

C# D D# E E# F# Fx G# A A# B C

The one exception here is the G♮ in the Cello in m. 34, which is an open string. (The Bass plays the same line, but has F× for this same note!)

The designation of G# as the primary tonal centre accords well with the sound of this passage, and the heavy emphasis on G#, especially in the bass. B seems reasonable as a secondary tonal centre, especially in light of its introducing the section (m. 32) and the pedal in

Violin II in mm. 33-38. It should be noted that there is only one D♮ in the section, an open string on the Viola, and it would be possible to speculate a centre on D# (Violin I uses both D and C×).

Somewhat more problematic is the ascent of Violin I, and the subsequent descent. The ascent is to the climax of the movement, and rises from F# to a trilled double-stop of G and D. The notation might seem somewhat confusing, as there are a large number of contradictions in spelling. In order to make more sense of this, we will confine our attention to the regular-sized notes, regarding the grace notes as ornamental embellishments, which we have seen do not function on the same notational level as the other notes. Restricting our gaze then, we find the ascent of Violin I using this collection:

C# D D# E F F# G G# A A# B C

A simple look at this collection suggests tonal centres on E and B. This is troublesome, however, since we do not hear these centres, and Violin I does not appear to contradict the prevailing G# tonality. In fact, there is a simple explanation for this seeming anomaly, which is a characteristic of the standard notational system which uses seven different letter names, modified by sharps and flats. Because these letter names specify intervals that are not equidistant (i.e. major and minor seconds), there is an inherent bias in any chromatic scale that uses only sharps, and another in one that uses only flats. In a system that uses only sharps (and no double-sharps) the system will be biased towards the lower two letter names of the naturally-occurring minor seconds (E and B); whereas in a system using flats, it is the upper tones (F and C) that will appear to be tonal centres. No matter where we begin, an ascent of sharps will have the following pattern:

C C# D D# **E** F F# G G# A A# **B** C

The centres on E and B are inevitable, as these notes *must* be encircled due to the nature of the notational system. Similarly, a descent of flats would appear:

C B Bb A Ab G Gb **F** E Eb D Db **C**

Of course, the same issues occur in an ascent using flats, or a descent using sharps.

These encirclements are part of the notational system, and may not represent the intentions of the composer. This is a minor omission in Gillies' theory.[33] In our example, it seems clear that Bartók did not mean to contradict the prevailing G# tonal centre, but rather was negotiating a somewhat complex ascent in the most straightforward way possible. Even though there are many notational inconsistencies, the normal-sized notes progress solely in sharps, which lends consistency to the part and shows the upward thrust of the line.

The anomaly in this case is the C× in m. 40. It is contradicted notationally by D♮'s (in the same register) in mm. 39 and 42. It may be that this note comes directly from D#, and D♮ would not seem clear enough. Also, the major seventh that it forms with Violin II may be motivic; the same interval appears in mm. 10, 11, 13, 15, and 44 where it breaks the parallel fifths. At the climax itself, the printed page may be deceiving, as the actual notes in the Violin are a trill on G and D, producing A♭ and E♭ as the highest notes of the passage. Listening, we would hear these as G# and its upper fifth.

The descent is more problematic, in that it is not a simple use of flats, but rather a combination of sharps and flats as follows:

C C# **D** Eb E F F# G G# **A** Bb B C

Here, it would appear that we have tonal centres on D and A, but again appearances are deceiving. In fact, it seems that Bartók is using the same system of sharps, with two modifications: the E♭ and B♭ in m. 44. Thus, the very pitches that were inadvertently encircled by the tonal system have here been negated. Although it might be tempting to consider this a deliberate notational maneuver, the choice of these two notes is probably coincidental, as a much simpler, more musical explanation can be found for the introduction of these two notes. Measure 44 is the climax of the movement, a climax which has been approached slowly by semitone. It makes eminent musical sense to retreat from this climax at a faster pace, and with wider

[33]In a discussion with Malcolm Gillies on October 25, 1995, he conceded that this bias exists in our notational system. Of course, this is not a flaw in his system, nor does it weaken his argument, but it is meaningful for the analysis of the second movement of the *Divertimento*.

intervals; thus the move from D at the start of m. 44 to A on the third beat. This fourth is filled in with the double thirty-second note motive which has been prominent since m. 41, which allows for two pitches to divide this fourth, and these two pitches would most logically be major seconds. The most natural spelling for the descent is D-C-B♭-A; this is the most likely origin of the B♭. The Violin is proceeding in double-stops, and so the fifth below B♭-E♭ is introduced. From this purely musical change come the apparent new tonal centres, which are yet another manifestation of the bias in our notational system, rather than deliberate attempts by the composer to posit new tonal centres.

mm. 50-55

These measures are the final transition from section C back to a recapitulation of the first idea, varied (as is Bartók's usual practice). The notation does not seem to support a strong tonal centre, which seems appropriate for such a transitional section. Also, other compositional practices come to the fore here, to control the direction of tonal motion.

The previous section ends on the first beat of m. 50 with a move in the Bass to F. This may be a reference to the keys of the outer movements. It ushers in a section of shifting tonality; of contrasting solo and tutti sections.

Measure 50 consists of four encirclements between the two solo Violins. These complete encirclements present four tonal centres, each a minor third distant from the previous:

Gx **A♯** B B♯ **C♯** D D♯ **E** F F♯ **G** Ab

The final G of the first Violin coincides with the start of the tutti on the first beat of m. 51. While the plan of four minor thirds, outlining a diminished seventh chord, may seem obvious, it is interesting to note that in the first draft this section was notated quite differently: G× A# B was originally spelled A B♭ C♭; and B# C# D was originally spelled B# C# C×! Also, in the first draft, the solo sections were in doubled values (quarter-quarter-half notes) lasting two measures rather than just one. Finally, in this draft the sections were not marked solo and tutti; there were no indications that the entire sections did not play at all times in this part.

Measure 51 presents the first tutti statement. It consists of two elements, the half-note G's and F's of the Violins and Violas, and the animated figures of the Cellos and Basses. This latter figure is actually a "dwarf" structure, i.e. it consists of four adjacent semitones, each with its own letter name. [34]

While the notation might suggest a tonal centre of either A or B♭, as both are encircled, B♭ is a much more musical choice, as it is embellished by the other tones, and is sustained longest (it also returns in the Bass of the next tutti section two measures later). As in all defective chromatic collections, definite assignation of a tonal centre is not possible from the notation alone.

```
vl I, vl. II, vle  F  () G
vc, cb                      G# A  Bb Cb
```

Measure 52 is a second solo section, again presenting four minor thirds, but now using all four members of the solo quartet:

```
vl  I:  Bb A G#   vl. II: E# F# G   vle: Cx D# E   vc: B C C#(!)
```

Here we have what begins to sound like a variant of m. 50; transposed down one semitone and proceeding in inversion. However, the Cello entry is problematic in two ways. First, its resolution is not in the same register, but occurs on the low C string. Second, and more confusingly, Bartók has chosen to write C# rather than the D♭ which would encircle C! It is hard to imagine that this might be for the sake of legibility, as the preceding diminished thirds would pose the same problem. Here the first draft does not help us, as in it Bartók did not even include the lower C, but had the Cello B resolve down to A# (over G# in the Bass!). This may be a motivic reference to the end of theme 1 (cf. m. 5, mm. 9-10). The notational meaning of the C#-B seems to be the breaking down of the notation before a change of pattern. This is more of a break

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[34]Susan R. Poynter, 'An Analysis of the Second Movement of Bartók's Divertimento for String Orchestra' (University of Melbourne B.Mus. (Hons) thesis, 1982), p. 35. Poynter writes that Bartók notated a folksong made up of only four semitones as four separate note names, just like the bass of m. 51 (Cb-Bb-A-G#). I am grateful to Malcolm Gillies for sending me a copy of sections of this work.

than the previous tutti, as the tutti is inverted, and the next section will use major thirds instead of minor thirds.

Measure 53 is the second tutti section, and as has been mentioned B♭ returns in the bass. This time the 10/2 interval class (B♭ and C) is in half-notes in the Bass, Cellos, and Violas, while the animated figure is in the Violins. This latter figure has changed, and is no longer a dwarf structure, but rather a diatonic segment E-F#-G#-A. No note is encircled here, although the fourth E-A is filled in chromatically. However, with B♭ in the bass in both tutti sections, and with A# as the first tonal centre of m. 50, we might be justified in positing B♭/A# as a centre for this transitional section.

```
vl I, vl II    E  () F# () G# A
vle, vc, cb                    Bb () C
```

Measures 54-55 contribute a final statement of solo encirclements to lead into the recapitulation of the opening. Here the minor third motions of the two previous solo sections are converted into major thirds. Violin I and Viola present these as a canon a fifth (and one beat) apart. Judging from the erasures and corrections in the draft, Bartók made several revisions of these two measures. The neat plan breaks down in the approach to cadence at the end of m. 55. Thus:

```
vl  I  Cx D# E    A# B C      F# G Ab     D E  F
vla    Fx G# A    D# E F      B  C Db     A A# B
```

Here the neatness of the chart breaks down. The last figure of Violin I is not an encirclement, and the D approaches the C# of the cadence from the semitone above (again, cf. m. 5 and mm. 9-10). In the Viola, the last encirclement has A# instead of B♭ (as well as B instead of C♭), and this note precedes the other two, rather than following, allowing the A to approach the G# of the cadence from the semitone above, in parallel fifths with the Violin. This break in the logic leads into the cadence. Also, the D♭-C-A# of the Viola form major thirds with the F-E-D of the Violin (although the A# does not sound with the D). In any case, this is a very clear case of

the notation breaking before a change of pattern and section, in this case leading into the recapitulation of the opening theme.

"SECTION A' "

This section sounds like a recapitulation. It returns to the opening figure of m. 1 in the Cellos, with a triplet variant in the Basses. As the Basses are pitched an octave higher than m. 1, the Cellos are written one octave lower, appearing in the original bass register; they also play tremolando. The opening measure of this recapitulation is actually the material from m. 2 (wherein the figure of m. 1 is expanded in the second half of the measure).This time the introductory motion lasts two measures, with the Violas entering in m. 57.

mm. 56-61

vl	I&II	C♯	D	()	()	()	()	()	()	Gx	A♯	B	B♯
vle		()	()	()	()	E♯	F♯	Fx	G♯	Gx	A♯	B	
												Ax	
vc		C♯	D	D♯	E	E♯	F♯	Fx	G♯				
cb		C♯	D	D♯	E								
			Cx										
AGGREGATE:		**C♯**	**D**	**D♯**	**E**	**E♯**	**F♯**	**Fx**	**G♯**	**Gx**	**A♯**	**B**	**B♯**

Here the primary tonal centre is again C#, but the secondary centre is now A# (rather than the F#/G# pair of the first 10 measures). The varied melody (now doubled two octaves apart) has sub-phrase cadences on A#, C# and C#, affirming the tonal centres. There are two notational anomalies in this section: the Basses have C× in m. 61 as a lower neighbor of D#, rather than D; and the Violas have A× in m. 60, as a lower neighbor to B#. Both of these notations can be considered microtonicizations, or even ornaments.

mm. 62-65/2

vl	I	()	D	()	E	()	F♯	G	()	A	()	B	C
vl	II	C♯	D	()	E	()	F♯	Fx	G♯	A	()	B	
vle		C♯	D	()	E	F	F♯	Fx	()	A	()	B	C
						E♯							
vc		C♯	D	D♯	E	()	()	()	G♯	A	A♯	B	
cb		C♯	()	D♯	E	()	()	()	G♯	()	A♯	B	
AGGREGATE:		**C♯**	**D**	**D♯**	**E**	**F**	**F♯**	**Fx**	**G♯**	**A**	**A♯**	**B**	**C**

This section seems to present three tonal centres, E-G#-B, the notes of an E major triad. This fits well with the quasi-traditional tonal movements of these measures. The E# in the Violas

in m. 65 is the third of a C# chord that also includes E♮, and thus is a more appropriate spelling than F as it designates the third of the chord (or rather, one of the thirds). In fact, the enharmonic relation of E# and F (the tonic of the outer movements) is important in this movement. Of the three tonal centres, E seems most important. It is the 'tonic' note of the triad formed by the centres, but more importantly it functions as the goal of progressions in m. 63 and m. 65.

mm. 65/3-70

This section is marked by directional motions in the thirty-second note groups. For example, the first figure of Violin I in m. 66 begins on A#. It then moves up to B, from which two different motions continue: the B continues up to C, but it also proceeds down through B♭ to A. Thus, the original A# is part of an A#-B-C motion, whereas the B♭ is part of a B-B♭-A descent. These figures may be considered ornamental figures, forming small local directional structures.[35]

vl	I								A	Bb	B	C	
										A#	Cb		
vl	II	C#	D	D#	()	F	()	()	G#	A	Bb	B	C
												Cb	
vle		C#	D	D#	E	F	()	G	G#	A	Bb	B	C
vc		()	D	Eb	E								
cb					E								
AGGREGATE:		**C#**	**D**	**D#**	**E**	**F**	**()**	**G**	**G#**	**A**	**Bb**	**B**	**C**
				Eb							**A#**	**Cb**	

Given the wide variety of notation, we have a number of choices for tonal centres. Listening to the music, however, we can hear the "quasi-traditional" movements of triads with altered fifths. By taking all of the notes here, we have tonal centres on E, A and B *if* we allow the A and B to be directional centres. This is questionable due to the relative lengths of the A# and B♭, but more so as the passage takes place pretty clearly in A (I^6_4-V_7-I^6_4). This would suggest a primary centre on A with a secondary centre on E, but to accomplish this we must disregard the prominent A# in Violin I in m. 66, or at least relegate it to directional status. (Ignoring the 32nd-

[35]In our meeting, Malcolm Gillies humorously christened these "micro-directional" structures.

note figures altogether results in encirclements of E, D, B, and A all as directional structures. Dividing the section after m. 66 shows a primary centre on E, with directional centres on A and B in the first half, and centres on B♭ and D in the second section.)

At first, it might appear that m. 67 begins a new notational system, with prominent B♭'s in place of this bothersome A#, but in fact it is not so simple. In the first draft, Bartók writes the B♭ as an A#. The change to B♭ accords well with the C dominant seventh chord on beat one of m. 67, as well as the B♭ major chord (first inversion) on beat one of measure 68. This root movement ($C^6{}_5$-$F^4{}_2$-$B♭_6$) makes a strong case for B♭ as tonal centre, which the notation does support (admittedly along with others, but at least it does not refute it). Malcolm Gillies points out that Bartók often "pushes back" his notation, so that the section that uses B♭ in the first draft comes later in that draft than in the fair copy, where Bartók introduces the B♭ early (here eliminating the A# that was in m. 67).

The thirty-second note figures gradually break down into sixteenths, and finally eighth notes to lead into the final section at m. 70, accompanied by a figure using the scale from "Section B"; its tonal centre of D leads down to C#, as the final statement of the motive in Violin I leads up to C# via C♮.

mm. 70-74

The final section returns to C# and brings the movement to a close on a C#-E# diad which (together with the strong G# of the previous measure) suggests a C# major triad.

vl. I	C#	()	()	E								
vl. II	C#	D	()	E	()	F#	()	G#	A	()	B	
vle	C#	()	()	E	E#	F#						
vc	C#	D	()	E	()	F#	()	G#	A	()	B	
cb	C#	D	()	E	()	F#	()	G#	A	()	B	
AGGREGATE:	**C#**	**D**	**()**	**E**	**E#**	**F#**	**()**	**G#**	**A**	**()**	**B**	**()**

This is an incomplete chromatic structure, but the movement clearly ends on C#. Interesting are the E-F# motions in the Cello and Bass, and the F#-E motion in the Viola, both of which surround the final octave E#'s in the Viola, the last sounding note in the movement. This is a wonderful connection to the next movement, which like the first is in F, but unlike it does not start on F.

Elliot Antokoletz - Symmetry

As Gillies has been the most prolific of modern Bartók scholars, so Elliot Antokoletz has been the most influential in music theoretical circles, at least in North America. While conversant with the major trends in theory as applied to Bartók's music, Antokoletz has a unique starting point for his own theory: the work of his teacher, George Perle.

Perle's reputation as a theorist lies in his theories of symmetrical pitch construction in post-tonal music. He has applied this to the works of Bartók, Berg, and others. His theory posits that for some composers, symmetry has taken the place of tonality as an organizational means for pitch. Perle developed a theory and terminology for describing the interval cycles and cyclic collections that he found in the works of the major composers in the first half of the century, including Bartók,[36] and which form the basis of his own compositions as well.

Objections to Perle's theory mostly concern the overarching significance with which he invests the concept of symmetrical structures. In his article on Berg's use of interval cycles, Perle goes so far as to state that "it is impossible to overestimate the role of inversional complementation in the 'attempt to regain a normative procedure.' To whatever extent inversional complementation is employed in post-diatonic music, it totally defines pitch and interval relations within a given context."[37] As several scholars have pointed out, this is a rather extreme position that has not been proven.[38]

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[36]George Perle, 'Symmetrical Formations in the String Quartets of Béla Bartók', *The Music Review*, xvi (1955), pp. 300-312.

[37]—, 'Berg's Master Array of the Interval Cycles', *The Musical Quarterly*, LXIII/1 (January 1977), pp. 1-30.

[38]See the comments of Paul Wilson and Michael Russ below.

In his book *The Music of Béla Bartók*, Elliot Antokoletz develops a theory of Bartók's pre-compositional approach to music based on Perle's theory. He perceives an evolution in Bartók's musical language from a simpler idiom based on the modes of folk music to a much more complex one based on abstract, symmetrical formulations. Pointing out that theorists do not agree on Bartók's means of establishing tonality and musical progression, he states that "there are almost as many theories as there are essays on the subject".[39] Antokoletz believes that his theory is capable of explaining Bartók's compositional practice.

Whereas composers of the common-practice tonal period used an unequal division of the twelve semitones as the basis of their tonal system, Antokoletz posits that Bartók used a system based on an equal subdivision of the octave into interval cycles. Even when non-symmetrical structures, such as diatonic scales, appear in a work, they appear as part of a larger symmetrical collection. Indeed, Antokoletz claims that sketches based on simple diatonic modes are often transformed into symmetrical structures in the final work. Most of Antokoletz's analyses consider the entire pitch collection in circulation over a given span, rather than considering melody and harmony as separate spheres. His reasoning is that the melody-harmony dichotomy is only meaningful in diatonic passages, and that in most of Bartók's work there is little differentiation in tonal structure between the vertical and horizontal dimensions.

Antokoletz finds predecessors to Bartók in Mussorgsky, Debussy and Scriabin, and colleagues in his contemporaries Stravinsky, Berg, and Webern. Although he believes that these composers used similar materials and techniques, Bartók developed his techniques in a unique way, and seemingly to a unique degree. The seeds of Bartók's originality lie in his use and adaptation of folk music materials, from which he derives both melodic and harmonic resources. Even his early work with folk materials treated the pentatonic scale as a type of pitch set, rather than a simple scale. Original folk modes were transformed by Bartók into symmetrical structures. This was accomplished by adding melody notes from outside the mode; by adding harmonies

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[39]Elliot Antokoletz, *The Music of Béla Bartók* (University of California Press: Berkeley, 1984), p.xi.

from outside; and by altering the notes of the mode. Diatonic modes with symmetrical properties were exploited as well.

A key point Antokoletz makes is that Bartók composed using an equal division of the octave. He accomplished this by dividing the octave into segments of one, two, three, four, or six semitones. Since each of these intervals divides a single octave evenly, they are considered to be interval cycles. Thus, there are: one cycle of minor seconds (the chromatic scale); two cycles of major seconds (the whole-tone scale); three cycles of minor thirds ("diminished seventh chords"); four cycles of major thirds ("augmented triads"); and six cycles of tritones. Each of these intervals has an analogous cycle of its complement (albeit over a greater span) and thus the cycles can be considered interval-class cycles as well. The one exception is the perfect fourth and its inversion, the perfect fifth. Neither of these intervals divides the octave exactly, and there is only one cycle of fourths/fifths.

One of the more abstruse points of Antokoletz's theory is the consideration of a diatonic scale as inherently symmetrical. His justification is that such a scale is merely a re-ordering of a portion of a fourth cycle. He does admit, however, that for the symmetrical quality of such a collection to be manifest, it must be made so in context. That is, some presentation within the musical fabric must make the cycle or its symmetrical presentation audible. More interesting is the concept that Bartók was aware of the dual nature of the diatonic scale as both a diatonic and a cyclic collection, and so exploited this duality in his compositions. Since the particular ordering of a diatonic collection may be ambiguous in a given passage, Antokoletz often feels free to consider the whole as a cycle of fifths without further contextualization. A further extension of diatonic materials occurs when Bartók extends a whole-tone, diatonic, or octatonic segment of a scale, thus creating a more complex collection out of a simpler folk scale. For example, given the mode G-A-B♭-C-D♭-E♭-F he might add the tone B, so that the whole-tone segment D♭-E♭-F-G-A is extended into a complete scale.

Bartók's music displays two more characteristics of interval cycles. One is tritone equivalence in transposition, wherein an idea containing a tritone is transposed by a tritone and

so that pitch-class content remains invariant at the new pitch level, although the order of its members is reversed. The second consequence is the combination of cycles. For example, two minor-third cycles a semitone apart are often combined into an octatonic scale. This scale may be further broken down into diatonic subsets, so that the octatonic scale and the interval cycles function only at a background level.

According to Antokoletz's theory, Bartók places greater emphasis on intervallic cells as his use of the traditional dominant-tonic harmonic system wanes. Intervallic cells are used to provide coherence in an idiom that is based on the equalization of the twelve semitones.[40] Early in his compositional career, Bartók appears to use intervallic cells primarily for melody, using other resources for his harmonic structures. For example, writing about *Bagatelle no. VIII*, Antokoletz states that "while these cell expansions and transformations are basic to the organic growth and structural coherence of the piece, a sense of tonality is produced by chordal structures other than those based on the cells."[41] In his later works, both the melodic and harmonic dimensions are integrated with the intervallic cells. In these works, it is the expansion and transformation of the intervallic cells that produce the means of progression. When pitch formations are undifferentiated harmonically and melodically, Antokoletz feels that it is fair to approach them analytically as a collection, i.e. an intervallic cell.

Certain cells are important in Bartók's music. One of the most important for Antokoletz is the "Z-cell", which can be viewed as two adjacent fourths, separated by a semitone, or as two interlocking tritones (e.g. C-F/F#-B, which is equivalent to C-F#/F-B). Other cells which are important to Bartók are also contained in the octatonic scale and in equal subdivisions of the octave.

In his analyses, Antokoletz places great importance on the boundary notes of phrases and cells. In some of his examples, notes are omitted to make them fit symmetrical or intervallic

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[40]In some of his analyses, Antokoletz seems to strain to find these intervallic cells, much as Wilson does in his search for sets. See the section on Paul Wilson below.

[41]Elliot Antokoletz, *The Music of Béla Bartók*, p. 82.

plans, and these omissions are rarely identified or explained. One may wonder whether the listener actually hears a long-range completion of an intervallic pattern, much as we might wonder at hearing the completion of one of Paul Wilson's sets.[42] However, in all fairness, these may be more a symptom of the composer's interest, or even that of the analyst. A more serious question is whether cases such as the opening of the *Concerto for Orchestra* are really examples of symmetry, or rather are results of motivic transformation and transposition. Of course, here we run the risk that Bartók may have chosen his transpositions precisely to bring about the symmetry.[43]

Although symmetry is the key to this theory, tonal centricity and progression are its most important attributes. Antokoletz is careful to point out that symmetrical pitch collections negate those qualities of major and minor scales that establish their sense of tonality, and thus new methods must be employed to establish priority of pitches. He distinguishes two different types of tonal centre. The first is the pitch-class which is of primary importance within a traditional mode. Antokoletz calls this a misnomer since it is not truly at the centre of the mode.[44] His second type of tonal centre is "the establishment of a given sonic area by symmetrical organization of a conglomerate of pitches around an axis of symmetry."[45] Here the term centre is literal. Such a centre is often created by symmetrical intervallic cells. Although the two types of centre are seemingly unrelated, they are often integrated in Bartók's music via interactions and transformations of material.

Crucial to an understanding of this concept is Antokoletz's hearing of the traditional tonal centres often ascribed to Bartók's works.[46] For example, the first movement of the *Fourth String Quartet* is often considered to be "in C", due to its strong cadences on this pitch.

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[42]See discussion of Paul Wilson's *The Music of Béla Bartók* below.

[43]See the views of Richard Cohn, discussed below.

[44] This may be more semantic than real, as a recognized use of the term centre is as just such a primary tone.

[45]Antokoletz, p. 138.

[46]I am indebted to Elliot Antokoletz for his thorough explanation of this concept in a fax to me dated September 1, 1995.

Antokoletz points out that except for cadential articulations of C at prominent points, nothing else seems to be related to C as a traditional tonal centre. However, C is articulated as a centre in an important background way via symmetry, as the "axis of axes". Thus subsidiary axes such as C#/D and B♭/B are symmetrical around the main axis C. In this way, traditional cadential confirmation of the centre is combined with more subtle symmetrical structures at a deeper structural level. This deeper level is active throughout the movement, and is especially important where C is not explicitly emphasized tonally.

Antokoletz finds in all of Bartók's music a definite sense of tonality, most often established symmetrically. "A sense of tonal priority is apparent within every textural fiber and at every cadential turn in [the *First String Quartet*] and, indeed, in all of Bartók's compositions."[47] Even though the harmony may be triadic and the melody modal, the background is a symmetrical structure.[48] Other elements may combine to emphasize the symmetry: an emphasized pitch that becomes an axis later in the piece;[49] a folk mode in the sketches that becomes a symmetrical structure in the final work; or the procedure used in the *Third Piano Concerto*, where tonality is established by using diatonic folk modes, but also by axes of symmetry.

Critics of Antokoletz

There has been strong objection to much of Antokoletz's work. One of his most vocal critics has been Paul Wilson. In his review of the book for *The Journal of Music Theory*,[50] Wilson questions a number of Antokoletz's findings: he claims that significant tonal collections reflecting the rhythm and phrasing are often ignored in a search to find symmetrical formations, often Z-cells; that he strains to find symmetrical connections in clearly modal and tonal sections; and that he is unwilling to let a piece contradict the theory. Beyond this, Wilson questions the

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[47]Antokoletz, p. 142.
[48]ibid., p. 145.
[49]ibid., p. 171.
[50]Paul Wilson, 'Review of The Music of Béla Bartók: A Study of Tonality and Progression in Twentieth-Century Music', *Journal of Music Theory* 30.1 (Spring 1986), pp. 113-121.

very linkage of the concepts of symmetry and interval cycle, stating that they may be related, but this relation is not necessary for the existence of either. He questions calling a mode symmetrical if its manifestation shows no symmetry. Indeed, Wilson points out that traditional tonal procedures are often primary, even if supported by symmetrical constructs. Finally, he criticizes Antokoletz for not analysing complete works.

From his own book on Bartók's music, it seems fair to extrapolate that Wilson would consider that a theoretical analogy between symmetry and a tonal dominant function is not enough, but rather evidence of such a function must be found in the music itself. In general, we would consider that other musical factors must buttress the theoretical constructs, as they did for Gillies' theory. In fact, Gillies has voiced objections to Antokoletz's emphasis on octatonic collections, stating that only segments of this scale are used in Bartók's music, but Antokoletz has countered by stating that the octatonic influence is at a more background level.[51]

Possibly more important than individual criticisms is the idea that the symmetry that Antokoletz finds crucial is merely a by-product of some other controlling process. This is the view of Richard Cohn, who posits that Bartók is more interested in transpositional combination of sets, and that such sets have, as one of their attributes, symmetry.[52] For instance, the Z-cell of Perle and Antokoletz, which is found so often in Bartók, is important not because it is symmetrical, but because it allows for an invariant transposition at the tritone: C-C#-F#-G transposes to F#-G-C-C#(D♭). For Cohn, the symmetry is incidental, a side benefit. In a later article, Cohn questions whether composers use transpositionally invariant sets because of their transpositional properties, or whether such sets arise from purely transpositional processes.[53] Cohn then fits these ideas into a theoretical strategy for Bartók's use of the octatonic scale.[54] The

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[51]The discussion is summarized in Russ, pp. 413-414.

[52]Richard Cohn, "Inversional Symmetry and Transpositional Combination in Bartók", *Music Theory Spectrum*, X (1988), pp. 19-42.

[53]Richard Cohn, "Properties and Generability of Transpositionally Invariant Sets", *Journal of Music Theory*, vol. 35 (Spring-Fall 1991), pp. 1-32.

[54]Richard Cohn, "Bartók's Octatonic Strategies: A Motivic Approach", *Journal of the American Musicological Society* vol. XLIV no. 2 (Summer 1991), pp. 262-300.

octatonic scale is important, he says, because its has eight pitch classes which are axes of symmetry. Since there are only three distinct octatonic sets, there are a very limited number of subsets, each with similar interval content, so that each recurs at a number of levels of transposition. Bartók exploits the particular richness of tonal centres in the octatonic sets, as well as tonal materials such as triads, seventh chords, French sixths, and minor tetrachords. Finally, he also realizes that the octatonic set can be broken into subset dyads of all six interval classes.

In his Review-Article for *Music and Letters,*[55] Michael Russ examines Antokoletz's theory, along with those of Wilson and Cohn (and ostensibly Gillies, although not much is said about notational analysis). Russ praises Antokoletz for providing a theory that attempts to account for the composer's pre-compositional decisions concerning pitch materials. While he admits that composers of Bartók's time did not take up symmetry as a major compositional tool, as claimed by Perle and Antokoletz, Russ still finds value in regarding symmetry as a major factor in Bartók's music. Russ does agree with Gillies that Antokoletz over-emphasizes the importance of octatonic collections in Bartók's early works. He notes that in the Harvard Lectures, Bartók cites an example that uses an octatonic hexachord without specifically labelling it as being special in any way. Russ questions whether the octatonic collection is really a compositional source, or rather is just a convenience for the analyst.

While Russ' article seems to favour the position of Antokoletz, he retrenches to some degree in a discussion in the *Correspondence* section of *Music Analysis*.[56] Antokoletz here responds to a prior article by Russ, pointing out the importance of the work of George Perle, and in particular the concept of twelve-tone tonality. In his response, Russ characterizes Perle's system by saying "at times the whole system seems contrived and unnatural. I am also concerned by a theory that takes various well-known symmetrical passages in Bartók and Berg as its starting point and then interprets them as being part of an evolution towards a system which only

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[55]Michael Russ, "Review-Article" in *Music and Letters* vol. 75.
[56]*Music Analysis* 8:1-2, 1988, pp. 205-208.

becomes fully operational in the music of Perle and his circle".[57] Russ concedes theoretical elegance to Antokoletz's method, and even its fit to Bartók's *Improvisation, Op. 20, No. 8.* However, he continues that "despite this elegance one wonders whether these manipulations reveal the true nature of Bartók's tonality or, in fact, only present a symptom of underlying tonal processes. It often strikes me that Ernö Lendvai ... while taking an intuitive and theoretically undisciplined approach to Bartók's chromatic harmony, comes closer to describing the tonality I hear in this composer's work than that revealed by operations performed on interval cycles and symmetrical formations and symmetrical transformations of diatonic material".[58]

In "Symmetry and Dynamism in Bartók",[59] Christopher Mark points out the paradox of the stasis of symmetry versus the audible dynamism of Bartók's music. Mark decries the analysis of excerpts, rather than complete works. (He concedes that Roy Howat does account for complete works in his investigation of golden section, but claims that Howat does not account for progression.) Mark's harshest criticism is of Antokoletz's book, "in which a highly abstract notion of symmetry, unrelated to how the music unfolds in time, is held to be the ultimate unifying factor in Bartók's music."[60] Mark then sets out to prove that Bartók used symmetry "to dynamic ends, across complete spans".[61] In his examples, Mark shows that Bartók, at least on three occasions, generates long-term progression by extending symmetrical structures over time, and that the surface manifestation of this symmetry is the final, culminating goal of the previous background symmetry. Thus, what begins as a latent symmetry becomes apparent at the end of the piece.

Finally, Pieter van den Toorn agrees that Antokoletz examines fragments where larger examples are preferable, that he ignores rhythm and scoring, and that his approach is rather one-

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[57]p. 208.
[58]ibid.
[59]Christopher Mark, "Symmetry and Dynamism in Bartók", *Tempo* no. 183 (December 1992), pp. 2-5.
[60]ibid., p. 2.
[61]ibid.

dimensional.[62] He disagrees with his bimodal analysis of the *Third Piano Concerto*, and with several of his conjectured octatonic backgrounds. Still, he agrees that symmetry is "a crucial element in Bartók's music",[63] and that this study is a useful guide.

[62]Pieter van den Toorn, 'Review of The Music of Béla Bartók: A Study of Tonality and Progression in Twentieth-Century Music' in *Music Theory Spectrum*, vol. 9 (1987), pp. 215-222.

[63]ibid., p. 216.

Analytical Application

Symmetry is the most important aspect of Antokoletz's investigation into Bartók's music, and it seems a likely starting point for an analysis of the second movement of the *Divertimento*. This is particularly true since there are very clear instances of symmetrical patterns throughout the movement, and yet symmetry is not readily apparent to the ear as a structural device.

The first obviously symmetrical structure is the first motive in Violin I, measure 2. Here the symmetrical centre F# is converged upon from both directions via semitone. This use of symmetry is obviously related to Gillies' concept of encirclement. This encirclement continues in the next sub-phrase, where G# is encircled. The next six notes present three major seconds, symmetrical around the middle pair, A/B. The same encircling symmetry is active over the entire first statement, mm. 2-5, wherein the first two centres encircle the final note F×/G. Additional symmetrical features are found in the accompaniment, which rises from C# to F× in mm. 1-5, and then rises the octave C#-C# in mm. 6-10, again stopping only at the symmetrical half-way point F×, in m.8.

After the cadence in m. 10, the symmetry becomes somewhat more apparent. The Cello figure in m. 11 is completely symmetrical around G, and this figure is repeated in sequence around F in m. 13, and begins around E♭ in m. 15. Each of these statements, a whole-tone apart, is joined by an incomplete motive in the semitone between them (on G♭ in m. 12 beats 3 & 4, on E in m. 14, beats 3 & 4). The symmetry in Violin I is less apparent, although the outline is readily audible: the reaching up and down of a perfect fourth. To the symmetrical fourths G-C-F are added semitone neighbours: B and D♭ (Cello) to C, F# and A♭ to G, and E to F. This pitch pattern is symmetrical around C, although the melodic presentation itself is not symmetrical:

F#-**G**-A♭-B-**C**-D♭-E-**F**-(F#)

The one note needed in the upper octave to complete the pattern, F#/G♭, has already occurred in the Cello; as the tritone it is the only note equidistant from the centre in both directions. It is interesting that the two centres of symmetry, G and C, were emphasized as the

cadential tones of m. 10, as Antokoletz claims that Bartók often emphasizes tones that will become centres.[64] The same pattern occurs in the following two measures, transposed down a whole-tone. As we have seen, this sequential motion is also reflected in the notation.

In the third statement, this pattern begins to break down. This is more than a mere surface variant, as Bartók stems the downward motion, keeping the bass on A and avoiding A♭. Violin I appears at first to present the same symmetrical pattern down yet another whole-tone, as does the Cello. Together they present the fourth symmetry E♭-A♭-D♭, which seems normal enough in m. 15. However, when semitones are added to this outline in mm. 15-16, the pattern breaks down:

D-**E♭**-F♭-G-**A♭**-A-B♭-B-C-**D♭**

The number of semitones in this example shows that the simple symmetrical pattern of fourths is no longer operative as an organization for the pitches in this statement. However, this pattern can be symmetrically arranged – around C:

G-A♭-A-B♭-B-**C**-D♭-D-E♭-E-(**F**)

The problem with this arrangement is that the F does not appear until m. 17. In fact, the prominent F♭'s seem to emphasize E♭, especially in the Cello where they encircle E♭ along with D. There is support for this view from Notational Analysis, which shows C/E♭ as the tonal centres for this section. The breakdown in the symmetrical structure would seem to confirm these centres, as well as the general change in material in the third statement of the sequence. It is interesting to note that the two outer voices (G/A) encircle A♭, the pitch that we are led to expect but is avoided.

The seemingly innocuous measures 17 and 18 may sound unrelated to the sequence at first, possibly even "filler". It is interesting to note from the sketches that this is one of the first ideas notated by Bartók, at the same pitch and with the accompanying chord. Violin I presents another symmetrical fourth structure, F-B♭-E♭, the same one used in mm. 13-14. The initial note is

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[64]Antokoletz, *The Music of Béla Bartók*, p. 171.

a semitone neighbour of the centre. The accompanimental chord has interesting connections here. The A of the Bass has been held over from the previous two measures, and it is the other encircling semitone of the B♭ centre. Likewise, the E♭ and D♭ are suspended as well. More semitones are added in m. 18, creating the following pattern:

(D)-E-**F**-A-**B♭**-**C♭**-**E♭**-(E)-**G♭**

Thus in mm. 17-18, another symmetrical structure is established on B♭. If we allow the E to function on both sides of the centre, the only note missing is the low D. Interestingly enough, D is the climactic pitch of the phrase, played in a tense unison in m. 19, and becoming (retrospectively) the dominant of the coming G minor tonality.

In all of this, we have had to play a little fast and loose with the notes. Sometimes the melody seems to provide a symmetrical structure, while at other times we have had to consider all of the notes in the accompaniment as well. Also, in some cases we have had to include the same note on both sides of an axis, even when it appeared only in one octave, and we have had to change octaves at times. In general, Antokoletz's suggestion that the boundary notes of motions be given tonal priority seems sound, but primarily because the encirclements place their goal tones last. This filling-in of a leap with chromatic tones is common in Bartók, although the final note is not always the goal of the entire motion.[65]

Moving to the next section, the odd mode of the new theme (G-B♭-C#-D-F) is not symmetrical, but it does have a symmetrical segment (B♭-C#-D-F). This segment is presented in the Violas in mm. 24-26, where the symmetrical nature is clear. When the tonic is added in m. 26, though, the symmetry disappears. The rise-and-fall of this motion is an intervallic expansion of the accompaniment from the first five measures. An interesting feature of this "odd mode" is that it is an incomplete subset of the octatonic scale : G-(A♭)-B♭-(B)-C#-D-(E)-F. The "missing" notes are those of an E-major triad.

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[65]See footnote no. 3 in Antokoletz, p. 140. This is especially audible in the first phrase of the melody of *Music for Strings, Percussion and Celesta.*

Returning to symmetry, when the imitations at the fifth in Violin II and Violin I are added in, the range is extended in this way:

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G-Bb-C#-D-F
        D-F-G#-A-C
                A-C-D#-D-G
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While the centre point of G# is probably fortuitous, the total span from G to G seems planned, especially over the G drone.

The next section is not overtly symmetrical, although some features bear mention. The entire compass of the ostinato, from Bass to high point of Violin II, is again an octave, from G# to G#. Also, fourths are very prominent in the doublings, especially toward the climax. The retreat from the climax, in mm. 46-48, outlines the G#-D-G# descent, as kind of counterbalance to the C#-F×-C# rise in mm. 6-10.

The solo parts in mm. 50, 52, and 54-55 show encircling symmetry. The first two also demonstrate equal division of the octave into minor third cycles, while the last one shows two divisions into major thirds, a perfect fifth apart. There is also a loose type of symmetry in that the rising minor thirds in m. 50 (A#-C#-E-G) are answered by descending minor thirds in m. 52 (A-F#-D#-C).

This same type of symmetry, or motion inversion, is found in the two *Agitato* sections, m. 51 and m. 53. In fact, the solo bars are paired with the *Agitato* tutti bars to form doubly balanced motions. Thus the first solo section in m. 50 ascends, and the tutti section stresses static, then downward motion, while the second solo section in m. 52 descends, and again its following tutti stresses the opposite: stasis and then ascent. A further consideration regarding the tutti measures is that the first has major seconds in the upper parts, with a trill figure below, while the second has major seconds below a trill figure. This seems to be a prime candidate for a symmetrical construction, if it is used at all in this movement.

If we compare first the two solo measures 50 and 52, we find that the two diminished seventh chords are symmetrical about an axis of A/B♭ (the starting pitches of the two measures):

(m. 50) (m. 52)

A#-C#-E-G---**A**/**B♭**---C-D#-F#-A

As for the *Agitato* bars, there is some complication due to the different trill figures: m. 51 features a trill on the upper semitone, which trails off down two semitones, while m. 52 has a two semitone anacrusis to a trill on the upper semitone before trailing off two more semitones upward. If we ignore the two lead-in notes to the second trill, the figures are similar, but reversed. It is interesting to note that they both end with the same two semitones A/G# and G#/A, and fascinating when we discover that these two notes form the axis of symmetry between the two figures:

(m. 51) (m. 53)

F-G-G#-A-B♭-C♭---**G#**/**A**---F#-G-G#-A-B♭-C

We may suspect that there is a single axis of symmetry around which the pairs of measures (50-51 and 52-53) are arranged, and they do almost fit a G#/A axis:

(mm. 50-51) (mm. 52-53)

(D)-C#-(C)-C♭-B♭-A-G#-G-F---**G#**/**A**---C-B♭-A-G#-G-F#-F-E-D#

In this case, we have included the E from the lead-in to the trill in m. 53, but if we also include the F from this anacrusis (which seems to make sense) then we need a corresponding C which does not appear in m. 15. Likewise, the D# in m. 52 is not balanced by a D in m. 50. Still, this is very near to a symmetrical structure, and the missing notes are of very short duration. The question, however, is whether finding axes around G#/A and A/B♭ tells us anything about either the piece or its composition. Certainly the B♭ in the bass is more important as a tonal determinant, and while G# may be the tonality of the preceding section, neither G# nor A plays a prominent role in these transitional bars that head towards the recapitulation. Measures 54-55 offer a subtle change, as major thirds are substituted for the previous solo sections' minor thirds. The imitation here makes the structure obvious: descending thirds in Violin I, imitated at the perfect fifth by the Viola. The question here is whether this is an example of symmetry, or whether it is just a type of melodic and textural inversion that aims at ending on G#/A from two different directions.

The recapitulation begins with a variant of the original figure in the accompaniment, using the same pitch set. Violin I begins the melody with a variant that has both a different initial note and different goals than the original, doubled two octaves lower by Violin II. (It is interesting to note that the first two sub-phrases of this variant are similar to the first two motives of m. 50, the first one exactly, and in retrospect m. 50 might be heard as a false recapitulation.) The same circling symmetry applies. The melody has been altered to stress A# and the tonic C#. The encircling symmetry of the original breaks off in the third sub-phrase. Where the note E occurred in the original melody, a new note has been added in m. 61 – G# – the dominant of C#, thus denying the possible F#-E/E#-D#/E-D symmetry. The resultant motion to the cadence, G#-D-C#, is a partial Z-cell.

The thirty-second note figures also show a loose type of symmetry, expanding outward as opposed to the original melody's contracting inward. The symmetry is not perfect, however, as the figures expand a whole-tone upward, and only a half-tone downward.

Thus, while we have found some strong suggestions of symmetry, and some undeniable symmetrical constructs, there is more than a little doubt that this movement is structured on symmetrical principles. Certainly symmetry gives a sense of organic growth, but just as certainly the sense of tonality is due more to the triadic, and even functional harmonic structures, than to the symmetrical constructs. Antokoletz himself could have been speaking of this piece, when he wrote of the eighth of Bartók's *Fourteen Bagatelles for Piano, op. 6*, that "while these cell expansions and transformations are basic to the organic growth and structural coherence of the piece, a sense of tonality is produced by chordal structures other than those based on the cells."[66] As for the second movement of the *Divertimento*, with the possible exception of Section B, the harmonies cannot be considered as vertical realizations of melodic events, although Antokoletz claims that this is a feature of Bartók's later works. Even when Lendvai's alpha-chords appear after the recapitulation, their presentation is not symmetrical.

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[66]Antokoletz, p. 82.

One other approach to symmetry has been applied to this movement. Ilkka Oramo[67] cites it as an example of Bartók's polymodal chromaticism. He envisions the melodic structure as composed of two modes on C#: an ascending Lydian mode and a descending Phrygian. These two structures are symmetrical:

C# D# E# Fx G# A# B#

C# B A G F# E D

While this may be an alternative method for explaining the pitch spellings, it does not appear to add much to the understanding of the progression or tonal motion. Certainly neither mode is used literally, although this was rarely Bartók's practice in any case. Still, both Lydian and Phrygian modes are played at the same time in m. 586 of the third movement.[68] More to the point is that Bartók was more likely writing an example of his "new chromatic melody", a point which Gillies makes about both the *Second Violin Concerto* (written the year before) and the *Sixth String Quartet*, written immediately after the *Divertimento*.[69] Bartók himself makes this distinction in his third Harvard Lecture, where he uses the theme of this movement as an example of the new chromatic melody that supplanted polymodal chromaticism in his practice.[70]

Other concepts put forward by Antokoletz are useful in examining this movement. Intervallic cells are evident. The first melodic sub-phrase (Violin I, m. 2) presents a cell of a diminished third, contracting into the note encircled by it. This is repeated up a whole tone, before being extended in sub-phrase three, by the addition of one more semitone. This extends the range to a minor third. The next sub-phrase returns to the three note structure of the first two sub-phrases, but retains the minor third ambitus of the third sub-phrase. These semitonal motions pervade the piece, although again it is difficult to imagine that they are responsible for its architectural structure. It is quite possible, though, to hear the climactic section (mm. 33-48) as a

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[67]Ilkka Oramo, *Modaalinen Symmetria* (Helsinki, 1977), pp. 137-139.
[68]Poynter, p. 31.
[69]Gillies, *Notation and Structure*, p. 135 and p. 161.
[70]See BBE, p. 381.

huge expansion of this tiny cell. Similarly, the thirty-second note motions of mm. 65-70 sound like outward expansions of this motion.

Equal subdivision of the octave into interval cycles is not a strategy that is overtly important to this movement. Although the scale of the lament melody has been shown as a fragment of the octatonic scale, that derivation is not certain. Bartók uses almost this very mode as an example in his Harvard Lectures,[71] and yet he does not identify it as octatonic, but rather as a folk mode. Indeed, the mode as presented by Bartók (G-A-B♭-C#-D-E-F) includes more of the octatonic notes than the lament melody, so we might consider it unusual that Bartók would not mention its octatonic basis if he so used it. Susan Poynter has written that this scale is common in Rumanian folk music, as noted by Bartók himself.[72] Still, a number of octatonic fragments can be found in this movement.

There are three distinct octatonic collections. Two can be arranged over a common tonic, while the third must start a semitone above that tonic. For the purpose of analysing this movement, we have numbered them arbitrarily as o1, o2, and o3, starting on C#, C#, and D respectively. The first two start on the movement's tonic, C#, as they reflect the tonal functions in this movement; the third is placed on D, as its first and last pitches encircle C#.

o1 = C# D E F G G# A# B

o2 = C# D# E F# G A Bb C

o3 = D D# F F# G# A B C

The actual pitch spellings may be different depending on the context. These scales have a number of interesting properties: o1 contains both the major and minor thirds, as well as the diminished and augmented fifth of C#; o2 contains the mistuned[73] fifth and octave; and o3 does not contain C#, but does encircle it with its two outer notes.

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[71]BBE, p. 363.

[72]See Poynter.

[73]Mistuning is the substitution of a diminished or augmented fifth or octave for its perfect counterpart. See the section on Kárpáti below for a more complete discussion of the term.

The degree to which octatonic scales are architecturally important in this movement is not clear. The opening accompaniment is chromatic, but the melody betrays traces of octatonic scales. The goal notes of the first two sub-phrases, as well as the two outer notes of the third sub-phrase are all contained in o3, while sub-phrase four is a segment of o1. (It is interesting to note that the variant of sub-phrase four in the recapitulation is also a segment of o1.) For the repeat of the melody, the canonic voice in Violin I has the same pattern in o1. When the repeated melody cadences in m. 10, the motion is continued by the motives in Violin II and Viola, both of which are octatonic. Violin II has a variant of its own melody in m. 5, an interlocking of two minor thirds B-B♭-A♭ / B♭-A♭-G, forming a major third. The segment is octatonic, from o1. The Viola F-E♭-D is from o3 (the D♭ of m. 11 belongs to the next structure).

The sequential transition in mm. 11-19 demonstrates a novel use of the scale, which does not coincide with the phrasing. While the Cellos play a symmetrical figure which is not octatonic, Violin I rotates through all three scales: o3 from m. 11 to the first beat of m. 12; o2 from 12/2 to 14/1; and o1 from 14/2 to 17/1. In fact, o1 accounts for all notes except E♭ from 17/1 to 18/3. While the semitones in the Cello figure, as well as the Bass descent, preclude the octatonic scale, Violin II and the Violas play octatonic scales built from segments of the whole-tone scale.

Violin II (mm. 11-15) = C♭-D♭-E♭-F-G
Viola (mm. 12-15) = A♭-B♭-C-D
mm. 11- 12 = G-()-B♭-C-D♭-E♭ (o2)
mm. 13-14 = A♭-B♭-C♭-D♭-D-()-F (o1)
m. 15 = C-()-E♭ (o3)

Of course, Bartók creates these octatonic scales from whole-tone segments by placing these two parts a minor third apart consistently. We cannot say which of these features were meaningful to him. In any case, the pattern breaks down in m. 15, when Violin II drops out and the Violas take up an encircling pattern of semitones. Finally, the accompaniment chord in m. 17, A-D♭-E♭, comes from o2.

The lament melody of the B section is a segment of o1: G-(A♭)-B♭-(B)-C#-D-(E)-F; the canonic entries on D and A are segments of o3 and o2 respectively. The transition in mm. 30-31

can be broken down into octatonic segments, if not very elegantly. The upper line of Violin I is o1; the lower o2. The upper line of Violin II is from o2 in m. 30, and from o3 in m. 31; the lower line is all from o3. The Viola part is from o2, while the Cello reverses the ordering of octatonic scales from the upper line of Violin II: the Cello has o3 in m. 30 and o2 in m. 31. The Bass is from o3. The final B is a member of both o1 and o3.

In section C, the accompaniment is not octatonic, but the melody can be heard as such. Taking only the notes that Bartók notated in normal size, Violin I ascends with notes of o2 from mm. 35-39: F#-G-A-A#-C. After the C the melody falls back for the first time, to B. When it resumes its ascent, it is with o1: C#-D-E-F-G.[74] From the G in m. 41 the ascent is by semitone, again precluding octatonic involvement. The descent returns to octatonicism, however. After the high D of m. 44, the descent is a segment of o2: C-B♭-A-G-F#-E. If we discount the thirty-second notes in m. 44 we can retain o2 for this measure as well; if we include them we get a segment of o1 (E-D-C#) followed by a segment of o3 (C-B-A). Either reading is possible in light of the next three measures, 46-48. Here the thirty-second notes are quasi glissando passing tones in m. 46; the rest of the notes are all from o3: G#-A-B-C-D-()-F.

The prominent minor third cycle in these bars leads in to the third cycles in mm. 50-55. These measures are also octatonic. Measure 50 is all o1; m. 51 is o1 (except for the thirty-second note A); m. 52 is o2; m. 53 is o2 (except for the thirty-second notes F and G). Measures 54-55 do not seem to be octatonic because they outline augmented triads. However, the second to fifth goal tones are all in o1: (D#)-G#-B-E-G-(C). Also, o3 contains most of the tones of the last two beats of m. 55: A-B-C-D-()-F. The E does contradict this reading, but there is more going on here from a motivic point of view than merely presenting a scale, and so motivic factors dominate.

In the recapitulation, the encircled tones of the melody, and the fourth sub-phrase, are all contained in o1, as are the bass notes from mm. 62-64 (these notes are also a partial Z-cell). In fact, with the exception of the encircling semitones, all notes in mm. 62-64 are contained in o1.

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[74]A plausible explanation for this shift may be the avoidance of D#, the perfect fifth, and the substitution of the mistuned fifth. See the section on Kárpáti.

(These two measures also emphasize the three notes missing from the lament scale's octatonic superset.) A similar use of octatonic scales is made in the following measures, where an octatonic collection is used in conjunction with semitonal encirclements. The scale changes every two beats:

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m. 64 - beats 1/2 = o2, beats 3/4 = o3 (including the 32nd notes!)
m. 65 - 1/2 = o1, 3/4 (+ D# of second beat) = o2
m. 66 - 1/2 = o1, 3/4 = o2 (except for 32nd note encirclements)
m. 67 - 1/2 = o2, 3/4 = o3
m. 68 = o1
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In m. 69, Violin I plays an augmentation of the 32nd-note figure, whose main notes suggest o2 (B♭-C-C#), while Violin II plays a final statement of the lament scale from o3. While the final five bars play out an obviously motivic encirclement of E#, they can be octatonically derived as well. The C#-E-F# of mm. 70-71 comes from o2. Likewise, the C#-E-E# of mm. 71-72 is from o1. Although the final accompanying figure is audibly a C# Phrygian scale, its main notes, along with the held E#, come from o1: C#-D-E-E#-()-G#-A-B. Of course, this leaves out the E and F# of the mode, but they have just (mm. 70-71) been heard as encirclements of E#, and can be heard to function as such here; the E# sounds with them.

Having discovered these many instances of octatonic collections and subsets, it would be irresponsible to declare that "Bartók uses octatonic scales" without first asking what, if anything, this discovery means. The collection is not presented overtly as a scale, in the manner that Lendvai finds his 1:3 and 1:5 models explicitly presented in the *Concerto for Orchestra*, say. Where segments are presented overtly, other explanations seem very plausible. Thus the lament melody's scale seems most likely derived from peasant sources; the Hungarian culmination melody sounds modal, as does the ending Phrygian gesture. Even the harmonies of the sequence (mm. 11-17) and the Hungarian culmination, which seem to clearly alternate the different octatonic scales, would be viewed by Lendvai's theory as alpha chord types. With this in mind, we may re-visit the disagreement between Gillies and Antokoletz on the role of octatonic materials in Bartók's music. Both appear to be correct, but only as they are arguing different points. Gillies is correct that the octatonic scale per se is not present on the surface of the music,

nor is it necessary to describe the constructs of the music. Antokoletz is correct in stating that these materials are in the background, although explanations of why they are there tend toward the speculative.

These considerations also suggest another of Antokoletz's ideas, combination of cycles. For example, two minor-third cycles a semitone apart are often combined into an octatonic scale. This scale may be further broken down into diatonic subsets, so that the octatonic scale and the interval cycles function only at a background level. This would appear to be the use of the octatonic scale in this movement.

Another subset of the octatonic scale is the construct that Antokoletz (and others) call a Z-cell. This structure has been shown to be common in Bartók's music.[75] It may be expressed as two tritones a semitone apart (e.g. C-F#/C#-G) or as a perfect fourth contained inside a perfect fifth (C-D♭-G♭-G). This structure can appear as a melodic unit or as a harmony. While there are many partial Z-cells in the movement, occurring as early as m. 11 (Violin I: B-C-F-()), there are also several complete ones, but these are often problematic. In this same sequence, there are Z-cells between the sequential motives. In mm. 12-13, the outer notes of the motion form a Z-cell with the centre: E-A-B♭-E♭. Similarly, mm, 14-15 present the cell D-G-A♭-D♭. This would lead us to expect C-F-G♭-C♭, but the Z-cell in mm. 16-17, as well as m. 18 is F♭-F-B♭-C♭. The problem is that these cells contradict the sequential statements, but this might just be subtlety on Bartók's part. In m. 17 there is the additional problem of the troublesome E♭ which is so prominent. The Bass in mm. 30-32 presents the Z-cell F#-F-C-B, but we must ignore the A (admittedly a very short duration). In the recapitulation, m. 61, Violin I presents a partial Z-cell (G#-D-C#) which is completed by the lowest note of the Viola (F×), although we seem to be straining here. Possibly the most compelling example is in m. 67, where the two outer voices form the Z-cell E-B♭-E♭-A. Even here it is not the sound of this cell, but its use as a boundary that we have found.

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[75]In addition to Treitler, Perle and Antokoletz, Benjamin Suchoff has discovered a large number of Z-cells in Bartók's music. Scholars in general appear to accept this as a feature of Bartók's style. It is interesting to note that the first section of Lutoslawski's *Musique Funèbre*, written as a memorial to Bartók, consists entirely of Z-cells.

Octatonic segments are troublesome because we can find them easily, but are unable to explain what they mean. The same is true of whole-tone segments. While the combination of whole-tone subsets forms an octatonic section in mm. 11-15, the appearance of an apparent whole-tone segment in m. 17 is more problematic. Here the underlying whole-tone scale of A-C♭-D♭-E♭-F is inflected with semitones, so that the sound is more complex. It is doubtful that Bartók meant this to sound like a whole-tone scale, and thus we may have unearthed something of his compositional thinking, though we cannot be sure.

While intervallic cells are not immediately obvious, they might be an underlying source of compositional material. The melody begins in m. 2 with a three-note cell that spans a diminished third. In m. 4 this is expanded to a four-note cell that covers a minor third, and when the cell reverts to three notes in the next measure, the span of a minor third is retained. The span of a minor third is replaced by a perfect fourth in the sequence beginning in m. 11, although here it is more difficult to hear a three- or four-note grouping. There is a stronger three-note group in this section, however. This is the descending augmented chord, heard in Violin I in mm. 11-12 (C-A♭-E), mm. 13-14 (B♭-G♭-D), and started in m. 15 (A♭-F♭). The expansion from a minor third to a major third may stem from the figure in Violin II in m. 10. Major thirds continue throughout mm. 17-20 (C♭-E♭, G♭-B♭-D), and they are succeeded by the lament melody, with its strong emphasis on minor thirds. The transition in mm. 30-32 stresses minor thirds. This play of major versus minor thirds comes back again in mm. 50-55. Bartók anticipates the minor third cycles of the solo instruments in m. 46, where Violin I recedes from the climax with its own minor third cycle G#-F-D-B-G#. (This contraction of the descent from the fourths of mm. 44-45 to these minor thirds can be heard as a reversal of the expansion from thirds to fourths between mm. 10-11.) He even foreshadows the return of minor third by his "deceptive" cadence on Em in m. 49, where the G that takes over from G# is the minor third of the chord. We have already examined the minor third patterns in the solo instruments, versus the agitato sections' major third and minor third. The minor thirds of m. 50 are answered by the major third in the bass of m. 51; the minor

thirds of m. 52 are answered by a minor third in the treble of m. 53. We have also mentioned that m. 55 consists of a major-third cycle imitated at the fifth. This bar bears closer scrutiny.

Measure 55 might at first glance appear unremarkable; the two soloists complete their major third cycles and descend to the fifth and root of the tonic to begin the recapitulation. Here we are witness to the organic consistency and formal integrity that one should expect from the highest calibre of musical thinking, for these descents are no mere filler. Our first clue can be gleaned from the draft, where we see that both of these lines were erased and then written over, and the bottom line re-written yet a third time. Another sketch of the Viola part, in Violin II, is crossed out as well. All of this musical reconsideration results in a double minor third descent in Violin I after the completion of the encirclement of G on beat 2. The first third, G-F-E, is a transposition of the fourth sub-phrase of the opening melody (m. 5); the interlocking third F-E-D is a second minor third (minor thirds will be very important in the recapitulation), but combined with the first third it also outlines a fourth, an important interval in the exposition. This reading might be speculative, but it is reinforced by an examination of the Viola part. Here, after the encircled C on beat 3, the figure expands from C to form first a minor third with A, and then a major third / diminished fourth with C#, joining the sound of the minor and major thirds at this crucial point in the form. This figure is more significant, however, as it is also the third sub-phrase of the melody (m. 4) and not transposed but in shorter note values. The order of the last two notes is reversed, and this same reversal recurs in the recapitulation, m. 60. The shortening is also significant, as this same figure will appear, inverted, as the thirty-second note expanding figure in the coda, mm. 65-70. Considering that the first two sub-phrases of the melody are encirclements identical to those that begin the measure for both instruments, we have in this one bar a compression of the entire four sub-phrases of the original melody, used as a bridge for the return to the recapitulation.

This summarizing of the melody may have led Bartók to vary its return in mm. 56-61. Here the first two encirclements outline a minor third, A#-C#, with emphasis on the tonic. The third sub-phrase is altered to a clear pattern of two descending whole-steps, which together

outline a minor third. In the fourth sub-phrase, the original minor third is enlarged to a perfect fifth, its outer notes each a whole-tone from the outer notes of the third from sub-phrase three. The change of the first note in the fourth sub-phrase from the expected E to G# provides a new tone, so that the melody is constituted from eleven of the twelve semitones[76] (G, tellingly, is omitted). This sub-phrase is also a straight line downward, with the tritone both stressing the drop, and also looking back to the original tritone emphasis of the melody.

Other of Antokoletz's ideas about Bartók's music are also demonstrated by this movement. One is tritone equivalence in transposition. Although Bartók does not employ transposition of an entire segment at the tritone, as Antokoletz demonstrates in his book, he does use it in two critical spots. Most obvious is the transposition of the pitches of the last two bars of the melody in the recapitulation. Although the order of the notes in m. 60 is changed, and one note in m. 61 is altered, the transposition is obvious. However, the technique is not just a slavish transposition, for Bartók transposes the first sub-phrase of the melody (m. 58) up a major third; the second up a perfect fourth; and the last two up a tritone. Thus the shape is subtly changed, the range is expanded (from perfect fifth to a diminished octave), and the tonic becomes the goal.

The other tritone transposition is more a deceptive resolution: in m. 64, the beginning of the Hungarian culmination, the E dominant seventh chord of the previous measure resolves onto D# minor, rather than the expected A. This, we will argue later, has a more programmatic meaning than merely a deceptive resolution.

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[76]Malcolm Gillies makes this same point in *The Bartók Companion.*

Paul Wilson - Schenkerian Analysis and Set Theory

Paul Wilson's theory[77] is derived from the aural experience of Bartók's music and its representation in the score; he does not speculate on pre-compositional materials. Wilson's theory combines aspects of Schenkerian analysis with a simplified set theory. He only addresses symmetry where context requires it.

Wilson stresses the importance of context as an explanatory idea, and relates this to certain core objects or events. These core objects are original concepts which may be varied to create content in a work. They are placed there by fiat of the composer, and they may reflect a source external to any particular work, such as a composer's pre-compositional ideas or inspirations. For Bartók in particular, Wilson suggests investigating core objects that are central to several works, as well as examining processes of derivation that are common to a number of works. These derivative processes are divided into formal relations (equivalence, likeness, and inclusion) and variational tactics, which have a freer organization.

Set Theory

Set theory is used to identify these core objects, and to describe formal relations. Set terminology is used as a convenient and concise method of naming and manipulating pitches and pitch-class structures. Wilson is careful to point out that the use of some concepts from atonal set theory does not imply that Bartók's music is in any way atonal.

Wilson uses set terminology mostly for naming, employing Forte's set-numbering system. He does not, however, use set constructs for the large-scale framework, as he does not believe that such a framework is meaningful in Bartók's music. Rather, large-scale relations are more meaningfully described by tonal centres and harmonic motion. Perhaps even more

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[77]Paul Wilson, *The Music of Béla Bartók* (New Haven: Yale University Press, 1992).

importantly, he points out that Bartók's music "seldom exhibits the consistent vocabulary of set types or inclusion and complementation relationships that render a large-scale set-theoretic approach fruitful."[78] Wilson lists the most important set types for this music. Many are familiar from the work of other analysts: the "X-cell", "Y-cell" and "Z-cell" of Treitler[79] and Antokoletz; the "alpha chord" of Ernö Lendvai; and the various subsets of the octatonic scale. Wilson also notes that "all twenty-nine of the tetrachords possible under Forte's view of equivalence relations among set types appear in Bartók's work."[80]

These basic sets are used for derivation in three ways: standard equivalence relations; motivic developmental variation; and projection of sets. Projected sets are "the emphasized simultaneous statement of a particular pc set, followed or preceded by the emphasized separated statement of each of its members in turn."[81] The projected set members can appear in many guises, as cadential points, starting notes of phrases, sequential motives, etc.

While the basic sets used for derivation are small (five or fewer notes, with four-note sets the most common), Wilson does recognize that Bartók uses larger collections. These he views as being more important for the larger context of a work, even though a single large set rarely determines a work's entire context. Such sets include the twelve-tone aggregate and the octatonic scale, both of which are most often segmented into contextually important aggregate collections.[82] Other large collections are the diatonic collection, and the heptatonia secunda (identical to the ascending melodic-minor scale). Smaller 'large' collections are the whole-tone scale and the primary pentatonic (black-note keys) scale.

Much of this seems like casting old scales in new names, but Wilson has found some interesting facts. Investigating common subsets of octatonic and diatonic / heptatonia secunda

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[78]Wilson, p. 20.

[79]Leo Treitler, "Re: Harmonic Procedure in the Fourth Quartet of Béla Bartók," in *Journal of Music Theory* 3 (1959), pp. 292-298.

[80]Wilson, p.23. cf. the views of Richard Cohn below.

[81]Wilson, p. 23.

[82]The segmenting of the twelve-tone aggregate at the beginning of the Third String Quartet resembles the beginning of the second movement of the Divertimento. See p. 25. Also, his discussion of subsets of the octatonic scale include Lendvai's 1:5 and 1:2 models.

scales, Wilson discovered that 6-Z23 is the largest subset of the octatonic and heptatonia secunda, while 5-25 is the largest subset of both octatonic and diatonic collections. One fact that Wilson missed may be even more interesting: 5-25 (02358) is made up entirely and exclusively of Golden Section numbers, and this intersection of the octatonic and diatonic realms might be a more logical reason for the importance of these intervals to Bartók than abstract ideas of Golden Section.[83]

Another argument for set theory put forward by Wilson is that it allows the analyst to see the underlying structure of a section clearly. Thus if Bartók combines subsets of different modes, the surface might multiply pitches up to the entire chromatic, while set theory would see it all as a manifestation of set 7-35. In any case, Wilson issues a warning that it is pointless to identify pitches as belonging to different modes where there is no strong modal sound to the music, justifying the analyst's lack of understanding with a vague appeal to "polymodal chromaticism".[84]

Symmetry

In discussing symmetry, Wilson reviews Perle's writing on this topic. He points out that whereas Perle was cautionary about overvaluing the structural role of symmetry and its definition of context in his early work, his later writing reverses this stance in the extreme.[85] Wilson finds this explanation unsatisfactory for Bartók's music, and suggests that his own approach is more in touch with the music than that of Perle and his student Antokoletz. In fact, Wilson finds more challenge in discovering how Bartók overcomes the tendency towards stasis in symmetrical forms such as the *Fifth String Quartet*, where his analysis is more concerned with the differences between the "symmetrical" second and fourth movements.

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[83]See the section on Lendvai for his view on Golden Section intervals.

[84]Wilson, p. 28. In particular, Wilson criticizes Colin Mason's analysis of the Fourth String Quartet. This same argument applies to Ilkka Oramo's appeal to polymodal chromaticism concerning this movement, which is discussed in the analysis section of the chapter on Antokoletz.

[85]Perle is quoted on pp. 30-31.

Harmonic Function

Although Bartók's attitude toward tonality evolved over time, becoming more traditional, Wilson argues that his use of structural overlays remains constant. That is, several layers of different structure are superimposed to form the work's overall background. This overlaying of different strata, and different types, to form a single structure, is what has confounded other theorists searching for a background in this music.

Wilson identifies the problem of harmonic function as finding analogies to the common-practice tonal period. Bartók's music is subtler, with a reduced range of harmonic events. The central feature of his theory is the divorcing of harmonic function from placement or pre-set relation to a tonic. Harmonic function is rarely based on the position of chords on steps within a pre-defined gamut, and Wilson argues that Bartók's practice is "insufficiently consistent to serve as a the basis for a precompositional system of harmonic function."[86] The greatest difficulty is recognizing and describing functions, which, says Wilson, is not as simple as Ernö Lendvai would make it seem – we need corroboration from other musical parameters to validate any theory. Ascribing functionality to harmonies is inherently problematic, as listeners' responses vary, and there is little chance of obtaining consensus about harmonic function, and so some type of external, objective evidence is required. For example, a postulated tonic would need some type of non-pitch confirmation, such as being a goal point of a clear cadence, punctuated by rest, or even reinforced by the orchestration. Although superficial analysis may uncover some of Bartók's compositional habits, these are not sufficient to form a precompositional system. Following this line of thinking, Wilson finds that the large-scale "dominant" is often a tritone from the tonic, in contradiction of Lendvai's theory of axis relationships. The variability of listener response is conceded, and he requires simplicity and corroborative evidence in his finding of function.

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[86]ibid., p. 34.

Wilson identifies the basic functions in tonal music, and then relates these to Bartók's practice. Wilson considers the functions to be: tonic, dominant, subdominant, dominant preparation, and tonic substitution or extension. He finds no analogue for subdominant in Bartók's music, stating even that the term is meaningless without the concept of position (i.e. an equal distance from the tonic as the dominant). The term tonic is used to describe "a goal event".[87] Initiating tones are also given special status, but are not considered tonics. A tonic need not be, and is not usually, a triad within a small stable group of triads; it may have only temporary, local meaning, or may be global for movements and pieces. There can also be substitutes for the tonics, and extensions of them. On the other hand, dominants have just one function, to lead to a tonic. Finally, there are local dominant preparation harmonies.[88] His list of functions for Bartók's music contains seven categories: goal event, initiating event, local dominant, interior tonal center, local dominant preparation, tonic substitution, and extension.

Wilson does postulate two precompositional resources. We have seen his stipulation that certain large pc collections seem to interest Bartók. He calls the other tendency 'privileged patterns'. Thus, certain patterns, often sequential, are part of Bartók's compositional toolkit, just as the pitch collections that seem to have interested the composer. These patterns are groups of pitches repeated at a set interval such as a fourth or fifth (forming an in interval cycle), or just proceeding by step. Privileged patterns are motions that Bartók uses repeatedly in different compositions. Wilson criticizes Antokoletz's view of modal collections as symmetrical for Bartók, since "they come into play here only when a specific cycle is presented directly as a sequential series of transpositions of essentially unaltered material."[89] The transpositions by fourth or fifth are heard by Wilson as echoes of tonal procedure.

Harmonic functions, on the other hand, are contextually defined, rather than defined in a precompositional theory or scheme (such as Antokoletz's idea of symmetry). Wilson rejects

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[87]ibid., p. 35.

[88]Russ notes that there is no sub-dominant function, but this may be a result of Wilson's Schenkerian training; he has a pre-dominant function but not a Riemannesque sub-dominant function.

[89]Wilson, p. 40.

Babbitt's view that Bartók uses highly attenuated functional tonal relationships, and claims that all relationships must be viewed in context of the individual piece; he does not assume that tonal relationships exist prior to composition.

Schenkerian Theory

Application of Schenkerian analysis to post-tonal music is problematic, and has been the subject of intense criticism (and even invective) from both stolid Schenkerians, and anti-Schenkerians. Even so respectable a disciple of Schenker as Felix Salzer has been castigated for his attempts to extend the theory to pre-Baroque and post-Romantic music, while the attempts of Roy Travis to apply the theory to modern music (and particularly to Bartók's *Fourth String Quartet*) have met with scorn and derision. Joseph Straus has given an excellent summary of the orthodox Schenkerian position, as well as a list of what he deems to be necessary conditions for prolongation in post-tonal (or really any) music.[90] There are four: 1) a way of distinguishing consonance from dissonance, to determine relative structural weight; 2) a consistent hierarchy of consonant harmonies based on scale degrees of some sort; 3) embellishment that is recognizable through consistent relationships of greater and lesser structural weight; and, 4) a clear distinction between the vertical dimension of harmony, and the horizontal one of voice leading. Straus points out that noting mere departures from, and returns to, a musical event cannot lead reliably to identification of deeper structural levels. Meaningful assertions can, however, be made about the middleground if it is viewed as an associative structure. "Associational claims differ significantly from prolongational claims. Given three musical events, X, Y and Z, an associational model is content merely to assert some kind of connection between X and Z without commenting one way or another about Y. Assertions of this type are relatively easy to justify and provide the only reliable basis for describing post-tonal middlegrounds."[91] Whereas true prolongation may exist in an overtly tonal work, most modern music is not constructed this

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[90]Joseph N. Straus, "The Problem of Prolongation in Post-Tonal Music," in *Journal of Music Theory* 31.1 (Spring 1987), pp. 1-21.

[91]Straus, p. 13.

way. In fact, some post-tonal music mimics the middleground structure of tonal music, in a procedure that Straus dubs "middleground punning". The analyst must be careful not to be fooled.

In considering long-range motion, Wilson adapts the ideas of Schenker. Mindful of the pitfalls of applying a system of analysis that is intrinsically tonal to post-tonal music, Wilson calls upon Straus' associational model as a "crucial source". He claims that Bartók retains at least some rudimentary tonal centres and functions, and that these can be characterized as hierarchical structures, stronger than associations, but weaker than true prolongations. He even states that "any attempt to find complete and convincing analogies to prolongation in post-tonal music is doomed to failure."[92] Thus analytic findings must be aurally identifiable, and most of Wilson's are. Sufficient conditions for hierarchical structures are defined; often these are overlaid patterns. Multiple structures are in tension with powerful forces for integration at the surface, and Wilson feels that this tension gives Bartók's music its vitality.

Context is all important to Wilson. The music is his justification for postulating stronger relationships than those provided by association. These are explained, at least partially, by his core objects – elements, processes, or compositional procedures used in a number of works. He uses set theory to identify pitch collections, whether melodic, harmonic, or both. Projected sets are those that extend throughout a texture in various ways, such as forming the first notes of a succession of melodic entries, or the goal tones of a series of motions, etc. within a defined formal unit. Larger sets may form a context, a background from which themes and accompaniment are chosen, analogous to the common practice tonal system. Symmetry is important for some works, but most important is the context in which it is used. Rather than concentrating merely on the structural role of symmetry, Wilson stresses the need to examine the forces of progression and direction as well. "But a symmetrical center often requires

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[92]Wilson, p. 42.

corroboration through more conventional means before a listener is willing to give it weight as a true tonal center."[93]

In outlining his "details of the requirements for hierarchical structures", [94] Wilson proposes that the differentiation of structural weight within his harmonic functions fulfills Straus' "consonance-dissonance condition". In decreasing order of structural significance these are: initiating and goal events; local dominants and secondary tonics; and, tonic extensions and substitutes. However, we do not know in advance which musical events will perform which functions in a given piece.

The next criterion is a design in which the hierarchical structures act. "These are the projected set, the privileged pattern, and the symmetrical pitch or pc structure."[95] Projected sets must be obvious as a single element in the context, and the pcs must be presented in a clear-cut manner. For Wilson, function is primary for the association of projected sets, and, unlike Straus, other factors such as duration, timbre, register, etc., are purely secondary. Stepwise motion is so familiar that it "does not depend on uniformity of transformational process for its clarity."[96] Symmetry is the third type of design; "where it is important, – and it is not important in every work – its chief roles are at the very smallest levels and over the largest spans of time. But one cannot disregard symmetry as a possible organizing principle on any level of a Bartók work."[97] One should not expect both outer voices to take part in the same structure, although it is possible. Wilson argues that Bartók's music, "at least in works of any size and complexity, does not display the kind or degree of structural integration that tonal music has led us to regard as normative".[98] His structures are more likely to contain nested hierarchies of overlaid structures.

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[93]Wilson, p. 37.
[94]ibid., p. 46.
[95]ibid., p. 47.
[96]ibid., p. 48.
[97]ibid., p. 49.
[98]ibid., p. 51.

Wilson's Critics

The very specificity of Wilson's theory has made it a lightning rod for criticism. In a scathing review, László Somfai takes Wilson to task for producing "a superfluous, a misleading, a truly parochial book".[99] Somfai is clearly not interested in a theoretical tour de force, nor in a combination of set theory and post-Schenkerianism. While granting Wilson fine musicianship and an excellent grasp of form, Somfai finds his research wanting: all of his sources are in English, thus neglecting many important Hungarian and German sources; aside from specialist theoretical articles, the bibliography is from the early 1980's, when Wilson wrote his doctoral dissertation on which this book is based; and Wilson appears to be unaware of sketches and facsimiles of the works he discusses. Finally, Somfai chides Wilson for dwelling on the written notes, as opposed to the sounding music and its effect, both harmonically and rhythmically.

This review has a well-taken point regarding the neglect of other work in this field that Wilson does not acknowledge. In particular, the work of Ivan Waldbauer on Schenkerian-type analysis of Bartók deserves mention.[100] Waldbauer explores the interaction between traditional tonal structures, and specifically modern techniques of structure, which he calls "artifices". Waldbauer is careful to confine his use of Schenkerian techniques to those structures that appear to represent traditional tonality, annotating his choices. He also includes motivic structures in his graphs, building on the work of Salzer and Travis to present a coherent, logical approach to Bartók's music, without Wilson's appeal to set theory.

One other writer who has tackled a Schenkerian approach is Charles Morrison, who uses Schenkerian ideas to find prolongational structures in Bartók's String Quartets.[101] Morrison investigates Bartók's modifications of traditional tonal patterns, and using his own definition of tonality, extends the Schenkerian approach to cover Bartók's establishment of tonal centricity.

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[99]Somfai, p. 151.

[100]Ivan Waldbauer, 'Interplay of Tonality and Nontonal Constructs in Three Pieces from the Mikrokosmos of Bartók' in *Music and Context: Essays for John M. Ward* Anne Dhu Shapiro, ed. (Cambridge: Harvard University Press, 1985), pp. 418-440.

[101]Charles Morrison, "Interactions of Conventional and Nonconventional Tonal Determinants in the String Quartets of Béla Bartók", Ph.D. dissertation, University of British Columbia, 1987.

Basic to his approach are conventional tonicizing motions, including fifth progressions, and non-conventional "tonicizing agents". Morrison sets out to prove that true prolongation does exist in Bartók's quartets.

Morrison summarizes his thinking with a compact analysis of the first 148 measures of the final movement of Bartók's *String Quartet No. 4.*[102] In this article, Morrison challenges Straus' position that his four criteria represent the only possible type of prolongation in non-tonal music. He finds true prolongation in the melodic structures, complemented by a simple minor-third cycle (C-A-F#) in the harmonic background. While Morrison argues that the background could be heard as a different type of prolongation, this structure might also be regarded as one of Wilson's privileged patterns, or even as a pre-compositional core object, so often does it appear in Bartók's music.

Although Somfai has been extremely critical of Wilson's approach, he does approve of some of his results. In a recent interview,[103] Somfai praised Wilson for his musicality, and especially for analysing whole works or movements.

Another vehement critic of Wilson is Michael Russ. Regarding harmonic function, Russ says that Wilson's concept that tonal relationships do not exist prior to composition is "needlessly austere" and causes Wilson "to undervalue the play between external references to the 'common practice' tonal system"[104] as well as ignoring references to folk material. Russ also points out that some of Bartók's tonal formulations do "carry a burden of history and do have a precompositionally privileged status".[105] Russ argues that Wilson puts aside notions of symmetry where they might be fruitfully applied and undervalues investigation into the nature of the materials for a more superficial type of cataloguing of the deployment of pc sets. He does seem to agree with Wilson that Antokoletz must strain his theory to accommodate modal and diatonic

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[102]Charles Morrison, "Prolongation in the Final Movement of Bartók's String Quartet No. 4" in *Music Theory Spectrum*, Volume 13, Number 2 (Fall 1991), pp. 179-196.

[103]Professor Somfai made this comment in an interview at the Bartók Archivum that he granted me March 18, 1996.

[104]Russ, p. 402.

[105]Russ, p. 406.

materials, and he invokes Cohn's critique that symmetrical analysis is incapable of dealing with more than a single level of structure. However, Russ then questions Wilson's deeper layers of structure, and whether a listener can actually perceive them.

Russ points out that Wilson is not consistent with his location of projected sets, and that sometimes he does not choose the most appropriate notes, seeming to search for his sets. Thus, in an example from the *Fifth String Quartet*, Wilson concentrates mostly on pitches that initiate phrases (although he does use some ending pitches), but he ignores the crucial high points in the middle of each phrase.[106] Even here, Russ argues that it is not the set itself that is important, since he sees it as merely the result of other processes of interaction (between diatonic and octatonic materials).

Russ claims that Bartók's music often has two or more dimensions and that different material used in each dimension develops in opposition, for example diatonic material on the surface unfolding over an octatonic structure. Continuing his questioning of the usefulness of octatonic structures, Russ opines that Wilson may have accepted them too quickly as external frames of reference. He asks whether a listener is supposed to mentally re-construct an octatonic scale whose completion Wilson uses as a structural event. He claims that "in general, Bartók's music responds less well to an approach based on partition and comparison of collections".[107] In fact, he feels that at several points, Wilson has rather arbitrarily chosen an octatonic collection for a primary role that is no more important than others, or even less so. Wilson's contention that interval cycles are important at the middleground level may have merit, but he fails to show how these cycles could be used to generate basic material. Finally, Russ is not convinced that Wilson has proven the existence of hierarchical structures, or even the need for their existence. He feels that his overriding concern for context misses important references such as those to folk music. Also, he finds the concept that all functions must be justified and verified contextually to be too restrictive.

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[106]Russ, p. 410.
[107]Russ, p. 415.

In his review for *The Musical Times*, Anthony Pople calls Wilson's combination of post-Schenkerian theory and set theory "impressive", adding that he "appropriates from Forte a way of labelling non-tonal configurations of pitch without bothering with the more esoteric and counter-intuitive aspects of the theory."[108] Pople finds the conclusions about hermeneutics interesting, but so general as to be out of place in a book on Bartók.

Craig Cummings issues some mild objections to Wilson in his review in the *Indiana Theory Review*. He points out the almost exclusive concentration on pitch, but also acknowledges Wilson's excellent ideas about form and harmonic vocabulary. He asks several specific questions about accounting for notes that do not 'fit' his analysis (e.g. when Wilson resorts to invoking "voice leading"), and questions calling lack of stepwise structural line a "failure" rather than just "a fact". He also questions the selection of some structural notes that seem less important than others which are ignored,[109] as well as pointing out that his desire for stepwise lines makes him under-emphasize important notes. "Perhaps the most important points Wilson makes about his theory are that structural overlay is not the same as the neo-Schenkerian view of prolongation and that the various types of structural overlay frequently include multi-level integration of structure".[110] Cummings says that he hears what Wilson does, but questions whether this means that they are right; he suggests that multiple interpretations are possible "and hierarchy remains a thorny, unanswered issue".[111] A most interesting observation is that "Wilson's point that the first theme group exhibits a complexity which drives towards its own simplification is particularly well taken."[112] "The book emphasizes pitch to the exclusion of other parameters. The combination of atonal and tonal theory could easily lead the analyst to use the methodology which 'works' the best rather than be internally consistent. Wilson almost always avoids this temptation, though one very occasionally has the feeling that the music is forced to fit the theory,

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[108]Anthony Pople, *The Musical Times*, November 1993, p. 651.

[109]This objection has been levelled against Schenker as well.

[110]Craig Cummings, "Book Review" in *Indiana Theory Review*, Volume 14, Number 2 (Fall 1993), p. 126.

[111]ibid., p. 124.

[112]ibid.

most especially in the search for large-scale stepwise lines and privileged patterns. The problem of hierarchy in twentieth-century music remains unsolved."[113]

Finally, this theory has an inherent disagreement with Gillies about tonal centres, in that lengthy sustained notes are unimportant to Wilson, but often indicative of tonal importance to Gillies.

Joseph Straus, in *Remaking the Past*, presents an alternative use of sets and association in Bartók analysis.[114] His approach stresses the relationship of Bartók's formal practice with music of the past, as the composer "remakes" the forms of common-practice period music over into his own versions. Straus stresses sets as functional and formal units, and uses association to find middleground "puns" on Schenkerian tonal motions. He shows that such a use of sets and middleground motion can produce a lucid case for regarding Bartók's music as a re-interpretation of the tonal forms of the past.

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[113]ibid., p. 127.

[114]Joseph Straus, *Remaking the Past* (Cambridge, Mass.: Harvard University Press, 1990). Straus examines a number of works by Bartók, as well as other contemporary composers.

Analytical Application

Paul Wilson's theory offers the hope of discovering the large-scale logic behind tonal and harmonic motions as well as pitch collections. Having amassed a number of tantalizing details about the *Divertimento*, this is both logical and desirable. Since the movement is clearly tonal, we might reasonably hope that Schenkerian-type graphing would elucidate the structure. Certainly Wilson's concepts of harmonic function seem to be in evidence, along with clear compositional signals as to their specific function, at least locally. Still in the domain of harmony, patterns of seconds and fifths appear, seeming to confirm Wilson's view that they are privileged in Bartók's style. Also, since we have found recurrent semitonal motives as well as octatonic segments, set theory may help us to understand their ordering and manipulation.

Regarding sets, many of those mentioned by Wilson as characteristic of Bartók's style do not appear in this movement, and most are not structurally important. There are appearances of the more famous ones. The X-cell of Treitler, Perle, Antokoletz, et al. can be discerned in the opening sub-phrase of the melody, if somewhat adapted. The Y-cell is less noticeable, but does appear in Violin II and Violas in mm. 11-15. The famous Z-cell is found in m. 18 (C♭-B♭-F-E), in the bass of mm. 30-32 (F#-F-C-B), in the Violins of m. 61 (F𝄪-G#-C#-D), and between Violin I and Cellos in m. 67 (E♭-E-A-B♭). There are also the alpha chords of mm. 64-66, and all of the octatonic subsets mentioned in the previous chapter.

The whole issue of using set theory on this movement is clouded by Bartók's pervasive use of encirclement. While this can of course be described as groupings of sets 3-1, 4-1, 5-1, etc. it is more straightforward to call them larger or smaller spans of the chromatic scale, which are often used for more obvious purposes than set manipulation (and often with a tonal bent as well). In fact, when the sets themselves are all semitones, or semitones with a single break, the point of using set theory for this music becomes questionable. More problematic are the spots at which an interval cycle or other set is presented along with encirclement, so that the structure appears on the surface again as a chromatic scale. Are the minor-third cycles of mm. 50 and 52 really heard

as transpositions of set 12-1, or even as chromatic scales, or as encirclements presenting a minor-third cycle? Musically, the last seems the most plausible and audible. Still, in cases such as mm. 51 and 53, set theory can help to manifest the underlying symmetry.

Of course, Wilson does not advocate blind use of set theory, and he is not alone in this stance. Allen Forte states that "the selection of particular subsets to describe a set usually must involve additional considerations."[115] In his previous example, Forte criticizes a selection of triadic subsets from a given set because there is no evidence that these particular subsets are more musically relevant to the piece in question than any other subsets. The reverse also holds.

Forte identifies a subtle conflict between set theory and Gillies' Notational Analysis when he states that his argument "does not imply that notation is arbitrary in an atonal composition, but merely that the notion of pitch-class set is independent of any particular notational forms."[116] The assumption here is the equivalence of enharmonically notated pitches, for while the theorist can acknowledge different spellings, the integral basis of set theory levels each actual pitch into a single number.

For these reasons, we can see the wisdom in Wilson's decision to use only that portion of set theory that is relevant to Bartók's music. While much must inevitably be left out of such an approach, many set concepts are important to Bartók, including invariance between pitch structures, complementary structures, inversion, and combinations of these. Wilson's decision to study small pitch sets, of cardinalities 3, 4 and 5, makes sense when searching for smaller units of melody and harmony, as the larger collections are often diatonic, heptatonia secunda, or octatonic. Even 5- and 6-note sets are often the intersections of these structures. Unfortunately, the smaller cells of the second movement of the *Divertimento* are often conjunct semitones, due to encircling motives.

In the second movement of the *Divertimento* specifically, set theory is most useful as a naming convention, and for the identification of certain types of manipulation. However, due to

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[115]Allen Forte, *The Structure of Atonal Music* (New Haven: Yale University Press, 1973), p. 29.
[116]ibid., p. 2.

its inherent indifference to tonal structures, much of the logic of the piece is lost in a purely set-theoretic analysis. For example, the first four measures of the melody present set 8-1, conjunct semitones that span a perfect fifth, or interval class 7. In the next sub-phrase, both the melody and its accompanying canonic imitation present the same set, but surely the point here is that this is a canon, and that the two occurrences span the entire twelve-tone spectrum, overlapping in the centre, and with the major third of the tonic triad as the outermost sonorities. Also, the accompaniment in these same first ten measures consists of the total chromatic, but it is the dividing points of this chromatic motion that seem most interesting.

When the strictly chromatic motion is abandoned in m. 11, set theory would seem to be more viable. Here we encounter the concerns of choosing the notes to include in the sets, and choosing the unit size of the set. While it may be obvious that all three notes of m. 11 (B-C-F) should be included, even though B is a lower embellishment of C, it is not so obvious whether to include the A of m. 12, which might be a passing sonority. Do we have two 3-note sets, or one 3- and one 4-note set? This leads us further into the second point, as we must decide whether they combine into a 6- or 7-note larger grouping, or whether we should stay at the level of smaller sets, as Wilson suggests. If we take each measure as a group, which follows Bartók's phrasing marks, we get:

m. 11: **3-5** m. 12: **4-4** m. 13: **3-5** m. 14: **4-4** m. 15: **3-5** m. 16: **3-3**

Grouped into pairs of measures:

mm. 11-12: **7-Z37** mm. 13-14: **7-Z37** mm. 15-16: **4-18**

So far we have labels, which do not tell us much. We can see common structures in mm. 11-12 and mm. 13-14, but this is of course the sequence that is very apparent in the music. Also obvious is the change in m. 16. At this point, we are not certain whether 7-Z37 or 4-18 are relevant. Returning to our point about selecting pitches to include, we note that 3-3 is not a subset of 4-4, and yet if we exclude the "passing" notes (A in m. 12 and G in m. 14) the second measure of each unit is 3-3. Surely this ties in with Bartók's love of interval expansion and

motivic variation. Excluding these same notes from the two 7-Z37 collections gives 6-14 in both cases.

Measure 17 is an instance of set 4-16, normalized to pitches 0,1,5,7. As such, it is not related to set 3-5, which has pitches 0,1,6. Despite this theoretical difference, the two measures sound related. Examination shows that the gesture with which 3-5 is associated presents a perfect fourth with the lower note embellished by a lower semitone. The gesture with 4-16 may be heard as two trichords, the lower of which (F-B♭-C♭) presents a perfect fourth plus an upper semitone; and the upper of which (B♭-C♭-E♭) presents a perfect fourth with the lower note embellished with an upper semitone. In his recent work, Malcolm Gillies has shown that Bartók was concerned with preservation of intervallic relationships for much of his life, and this seems to be such a case. However, set theory is not so useful in determining these relationships. Even examination of the interval vectors for the two sets can be ambiguous, missing the relationship that is audible in the music:

3-5 interval vector: **100011** 4-16 interval vector: **110121**

Here it is true that the two outer entries are the same, and in this case are the meaningful intervals, but these are obscured by the other four entries, three of which differ. The interval vector of 3-5 is a subset of that of 4-16, which explains the common intervals.

In determining which to use for mm. 17-19, it is possible to wander through a maze of sets. Since mm. 15-16 present only a 4-note set, we might wish to combine them with m. 17. The result is set 8-27. This set contains the complete heptatonia secunda, along with one extra note (here F♭). Violin I presents set 4-16; with the accompaniment included, we arrive at set 6-22. Adding in the E and G♭ of m. 18 we get 8-25; and with the D of m. 19, 9-9. So far, we are not seeing a lot of consistent usage of set forms.

Section B, mm. 20-29 in particular, is built around the lament melody, the notes of which make up 5-32, although as a melody and a scale this collection has a very clear tonal centre. Of course, the melodic imitations at the fifth present the same set, while the accompaniment presents

all twelve chromatic notes. The transition, mm. 30-31, seem to present different groups every two measures:

m. 31 beats 1&2: **6-Z36**; beats 3&4: **4-17**; m. 32 beats 1 & 2: **6-Z19**; beats 3&4: **4-17**

Again, we can hear that the second halves of both measures present the same sonorities, a minor triad inflected with the major third. Taking the entire measures is no more useful, as m. 30 consists of **8-11**, and m. 31 of **9-10**.

Section C seems a rather pointless segment to analyze by sets, as it is very strongly tonal, and the rise is either semitonal, if all notes are considered, or octatonic.

The transition from mm. 50-55 presents an interesting challenge. As mentioned, m. 50 and m. 52 are both minor-third cycles using encirclement. Labelling these measures set 12-1 seems rather pointless, and obscures the minor-third foundation. Possibly more interesting is m. 51, consisting of 6-2, and m. 53, of 8-2. We have seen that m. 53 is some type of inversion of m. 51 with two extra notes leading into and out of the trill figure. Set theory bears this out, as 6-2 is a subset of 8-2. This is a rather obvious point, however, and one that does not require set theory. More salient is the fact that the notes of the original (m. 51: F-G-G#-A-B♭-C♭) and those which make up the common subset (m. 53: E-F#-G-G#-A-B♭) are a semitone apart. In the draft, m. 53 is written a whole-tone lower, and thus the subsets would be a minor third apart, which ties in with the minor third cycles of the intervening solo measures. We can only speculate on Bartók's motives for transposing m. 53, but he may have wanted to keep the bass static on B♭, and also he may have wanted to avoid the obvious V-I bass motion from G# in m. 53 to C# at the start of the recapitulation in m. 56.

Perhaps mm. 54-55 sum up best the problems with sets. Both soloists present 10-note collections (Violin I omits C# and A, while Viola omits F# and D), but again these are very clearly major third cycles encased in encircling motions. If we take only the encircled notes D#-B-G and G#-E-C, we have set 6-20, a set which does not occur elsewhere in the movement. Examining this set's interval vector, we discover that it maximizes interval 4, but this is hardly surprising in a major-third cycle. Again, the more salient points might be that the tonic note is

omitted in the top part, and that the interval of the minor third, so important to the previous eight measures, has been expanded here to a major third. A more subtle point is that the sonority that bridges sections A and B is an augmented triad (m. 19: G♭-B♭-D) and leading into the recapitulation are two interlocked augmented triads.

The recapitulation has several interesting variants from the exposition, but these are not made more apparent through the use of set theory. Thus, mm. 58 and 59 both use the same pitches as the exposition, but at different transposition levels m. 60 reorders the original pitches; and m. 61 alters the highest pitch. Measures 62-63 use 10 of the 12 pitches; excluding the encirclements, one can discover an underlying octatonic scale (E-F-G-G#-A#-B-C#-D), but not useful sets. Measures 64-65 are strongly tonal, and again each of these measures produce 10-note aggregates, while they combine with each other to present all twelve pitch classes. The final section is a continuation of the methods of mm. 62-65, that is, they present strongly motivic motions over a triadic, if non-standard, tonal structure.

If set theory is not so helpful in analysing this piece, Schenkerian-type techniques most certainly are. Let us begin with a Schenkerian-type voice-leading graph of the piece (see diagram 1a).

Schenkerian-type analysis provides much of what we might reasonably expect in this movement, which is based in somewhat non-standard, triadic tonality. Voice-leading graphs can help to explicate both small-scale motions and large-scale movements. Middleground motions that prolong specific harmonic structures are missing in this movement. We will see that where these exist, their prolongations are handled in somewhat different ways.

Our first graph (diagram 1a) shows the large-scale motion of the entire movement. The exposition shows two distinct motions. The first is a two-part unfolding of the main melody, rising first to the tritone G, and then in a parallel rise attaining the tonic C# in the bass, while presenting the mistuned octave and fifth in the upper parts. The graph (diagram 1b) shows a number of interesting details. In the first sub-phrase, the upper line encircles the final note of the phrase, G, with the notes F# and G#. These two encircling notes are also part of the passing

Diagram 1a

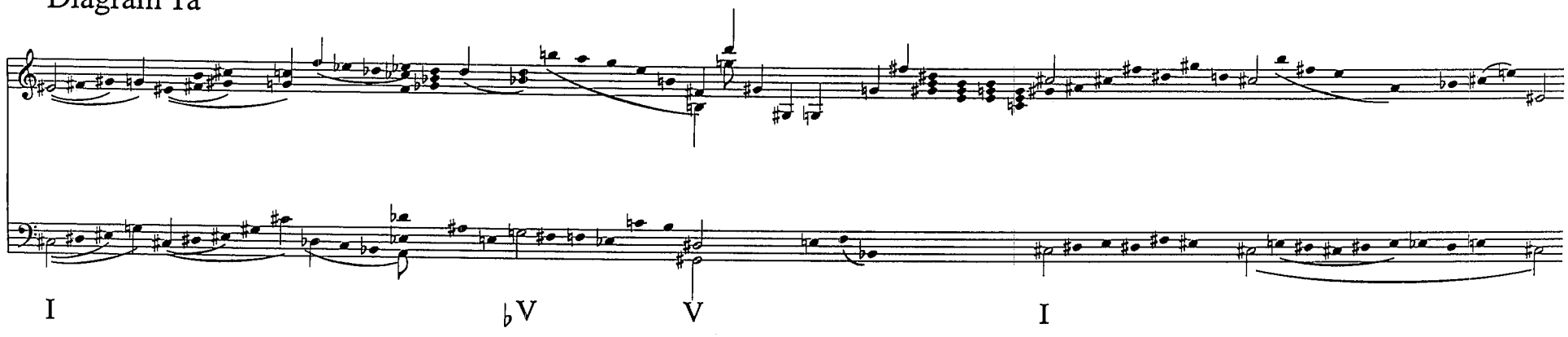
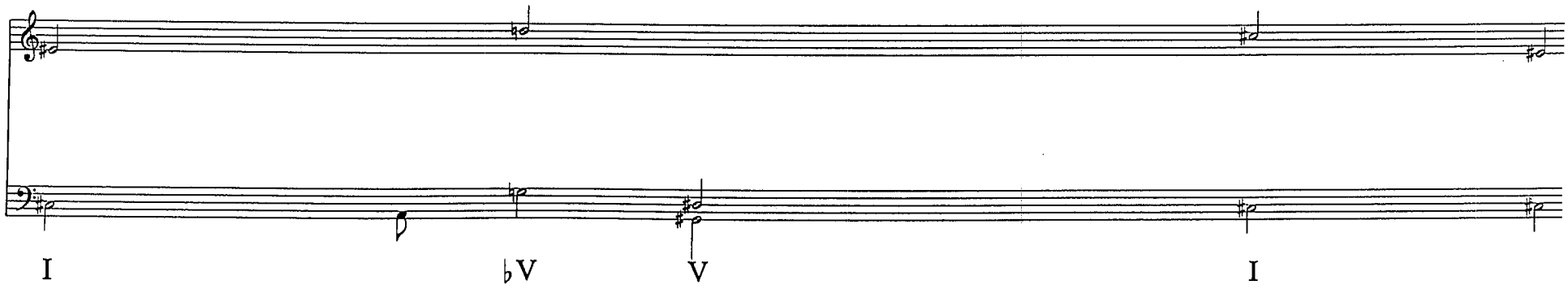


Diagram 1b

Diagram 1c



motion, moving in thirds with the bass, which goes from C# to E#, before both parts converge on G. The second phrase (mm. 6-10) repeats this motion, but the bass continues to G# and then to C#, providing a type of harmonic closure on the tonic. This attainment of the tonic coincides with the original melody reaching G (Viola). The canonic imitation reinforces the passing motion, and encircles the mistuned octave, on which it arrives at this same cadence.

The second motion of the exposition takes the bass from C# down to A. The graph shows that the D♭ is merely a re-spelling of C#, and that the chromatic movement and the suspensions on the surface cover an underlying bass motion of D♭-C-B♭-A. The top voice accompanies the bass in thirds, until the A is reached. The D♭-E♭ of the upper voice provide an encirclement of the D that is so prominent from m. 20 onward in section B.

In section B, the upper D is introduced immediately, but the bass G is withheld. The graph shows how it is approached from a minor third both above and below. The prolongation of the G minor sonority is achieved by the constant presence of the notes of G minor, both in the accompaniment and in the lament melody. The canonic imitations at the fifth at mm. 25 and 27 add interest, but do not have the strength to counteract the harmonic dominance of G minor. The transition at m. 30 shows a bass descent from G that mirrors the descent in mm. 11-17. In fact, this descent would be an exact transposition of the earlier motion if the final E♭ (shown in brackets in the graph) were present as the lowest note. Of course, Bartók wrote the E♭ triad of m. 31 in second inversion, with B♭ in the bass. We might speculate, however, that the reason that he chose to place B♭ in the lowest voice, or at least to omit the low E♭, was to avoid the sound of the traditional V-I cadence onto G# in m. 33. The spelling of the note (as E♭ or D#) would not affect the sound of the cadence, of course. There may even be some suggestion of this in the draft, for here Bartók wrote the viola part of this measure as A#, while the violins present an E♭ major triad. There is also a parallel, which we have already mentioned, with the transition before the recapitulation, where Bartók also changed the bass note (and indeed all of the parts) transposing it up a whole-tone and again avoiding the sound of V-I before an important formal marker.

The upper voice meanwhile shows a prolongation of the note B, transferring it down an octave to become the third of the following G# minor section. The arrival on G# at the start of section C leads us to re-evaluate the meaning of the descent to the bass note A in m. 15, at the end of Section A. While it appeared to be a dead end for the sequence, leading into the G (a seventh above) of section B (rather than to the expected A♭), here we can see that together with that G, the A encircles the G# of section C. Whether or not this encirclement is audible, one can readily perceive the return to the lower octave, which seems to join the A to the G# of m. 33. The G# minor of section C is a contrast to the G minor of section B, and it also provides the true dominant of the tonic C#. A tonal ostinato prolongs the G# minor sonority, while a chromatic surface, over an octatonic skeleton, leads to a climax that juxtaposes the mistuned octave and fifth with the correct versions in a trill that leaves the climax strangely unfulfilling. After the descent from the climax, the graph shows an encirclement of G, which appears over an E minor triad, which then retreats by semitone, over the bass B♭, to a C major chord that leads into the C# minor of the recapitulation.

The recapitulation is similar to the exposition on the surface, but the graph shows that it is much more insistent on C# major. From m. 62 to m. 70 there is a bass motion to E, another manifestation of the contrast between the two thirds of the tonic. An interesting point is that the upper voice in these measures oscillates between A and A# or B♭, the notes that formed the centres of symmetry in mm. 50-55. The larger-scale motion, however, shows that two motions to E are countered by the final strong motion to the E#, which is held over into (and past) the final cadence.

One question that arises is whether Bartók fulfilled motions within a register over long spans of time. For example, does the F# at the start of the Hungarian culmination come from the G-A♭ figure at the climax in m. 44? If so, the register is an octave too low in m. 44. There is a line of progression from the D in m. 19, through the E in m 27, (and the G in m. 28 and 29?), to the F# in m. 64, but this leaves out both the climax, and the high A in solo Violin I in m. 52! As well, the high B♭ in m. 68 is left hanging, registrally speaking. In the lowest voice, the F of m. 30

seems an isolated event, introduced suddenly and seemingly abandoned (unless one hears it leading to G# in m. 33). Similarly, the low E in m. 70 is isolated. We might wonder whether it is coincidental that these two isolated low notes are the two thirds of the tonic that have been vying for prominence throughout this movement. If not, should we include the low E in measure 22 (beginning the parallel triadic motion upward) in an E-F-E large-scale neighbour formation? From another viewpoint, it is interesting that F appears prominently in both of the transitions, as the isolated low note in m. 30, and as the unexpected resolution in m. 50. These could well be anticipations both of the final note (E#) and the tonality of the final (as well as the first) movement.

How well does this type of analysis fulfill Joseph Straus' conditions? There is certainly a clear distinction between consonance and dissonance, even though the tolerance for dissonance is higher than in common practice tonality. As well, the overtly tonal basis provides a strong indication of structural weight. This extends to both the tritone- and traditional-dominant structures, as parts of a consistent hierarchy of consonant structures, wherein each of these types of "dominant" have a greater weight than other stable sonorities. The tonic and dominant structures are even prolonged by basic motions analogous to tonal procedures. Embellishment is certainly clear, especially via encircling motions, but also through more standard trills, appogiaturas, and passing motions. Finally, the vertical and horizontal dimensions are clearly differentiated; so clearly, in fact, that many of the vertical configurations are obviously connected linearly, and we might question whether the concept of association is required in this context at all.

The large-scale motions are an interesting blend of Wilson's concept of a dominant a tritone from the tonic, and the traditional dominant a perfect fifth away (see diagram 1c). In this movement, Bartók contrasts the two by a simple juxtaposition of sections based clearly, and almost exclusively, on the two sonorities. The fact that they are both minor may in fact strengthen this case, as the tonic C# sounds much more minor than major. It is interesting to consider whether these two sections are to be heard sequentially, i.e. as G# replacing or taking

over from G, or as separate entities in two overlaid patterns. The first pattern would be a symmetrical C#-G-C# motion from A to B to A'; the second would be a more traditional C#-G#-C# from A to C to A'.

The overlay of patterns is an interesting idea. For example, we might suspect some relationship between the transition to part C in mm. 30-32 and the transition from C back to the recapitulation in mm. 50-55. Looking at the downbeats of mm. 29-32 we find a pattern of major-third root movements: G-B-E♭-B. The next harmony to appear is not the expected G, but rather G#. The transition in mm. 50-55 ends with a similar major third cycle based now on G#: G#-E-C. So far we have a complementary formation, but we have left out several chords in mm. 30-32. Returning to this point, we might hear an overlay of fifth motions on the third and fourth beats of mm. 30-31. If we again take the G of m. 29 as our starting point, this cycle is: G-D-A. The next fifth, E, does in fact appear rather unexpectedly in m. 49 to lead into the next transition. When this transition ends, the new major-third cycle is presented in imitation, at the fifth. The top line, Violin I, presents the same sequence of major thirds as mm. 29-31 (reversed), while the Viola presents the new cycle G#-E-C. The voices are arranged so that the members of this second cycle appear as chord roots.

The question here is whether this has any relevance to the music. Certainly Bartók re-worked m. 55 a number of times, but it is also a clever combination of the third and fourth sub-phrases of the original melody, so we cannot be certain that these apparent parallels were meant to be heard, or whether they are meaningless artifacts or the products of an overheated analytical brain. Both transitions appear to fit well, but it does not seem possible to prove why Bartók chose the notes that he did.

It is interesting to note that in his analyses, Wilson often uses sets to describe upper middleground motion, and Schenkerian-type graphs to trace the background and lower middleground. This is particularly successful with Bartók, as it is the tonal basis which often controls set succession. Indeed, references to common-practice tonality and folk music are integral parts of Bartók's vocabulary. It is noteworthy that both upper and lower voices take part

in the prolongational structures of this movement, a condition which Wilson does not find to be common in Bartók's music. While the bass leads the motion, the upper voice progresses along with it. One might be tempted to consider this as a true Urlinie. That is, the upper voice descends from the third (E#) to the tonic (C#), with the passing D# represented by the fifth over the bass note G#. This motion is embellished by the G minor sonority of Section B. Might then this G minor be a type of mistuned sub-dominant, or pre-dominant, that leads to the structural V chord? Certainly this is a highly speculative position, and one that Wilson avoids. He does not find an Urlinie in the works that he analyses, and it could be dangerous to speculate on the meaning of what may be an isolated, and even a fortuitous, occurrence. The tonal motion definitely moves from the C# tonic, away to the G minor sonority, from there to the dominant G#, and back to the tonic. The opening tonic appears with the major third in the uppermost voice, while the final tonic also has the third in the uppermost voice. A Schenkerian reading would deny that this last E# was structural. If one has strong enough "structural hearing", then no doubt one will hear a structural D# over the G# bass as well.

In examining voice-leading, a number of phenomena appear that could be considered sets, at least in Wilson's use of the term. Projected sets can be found quite easily. The first four measures of the melody project the encircling motive F#-G#-F×. The question is whether it is the set that is being projected, or the motivic motion. Given the prominence of encirclement in this movement, the latter seems most likely.

Wilson identifies a common subset of the octatonic scale: the triad with both major and minor thirds. He points out that this subset is often voiced as two minor thirds, and he gives an example of this from the *Sonata for Two Pianos and Percussion.*[117] This same usage is found in mm. 30-31 of the second movement of the *Divertimento*. The first two beats of m. 30, in tutti, present B major-minor. The collection is octatonic except for the E in Violin I. The second two beats of this measure present D major-minor, and this time the structure is completely octatonic.

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[117]Wilson, *The Music of Béla Bartók*, p. 163.

The first two beats of m. 31 present E♭ major-minor, and the other notes are octatonic except for the D. The last two beats present the octatonic A major-minor. Thus the collections are octatonic except for some of the embellishing notes. Wilson's examples also show these "impure" octatonic formations.

One question which cannot be definitively answered is that of the core objects of this movement. We might speculate that Bartók came to this work with references to common-practice tonality, variational technique, octatonic collections, folk scales, the Hungarian culmination, and a technique for generating related themes, but a real answer would require in-depth study of a large number of Bartók's works.

One virtue of Wilson's book that has been overlooked by some is his precise and musical descriptions of form in his analyses. László Somfai has also praised these. It is informative that so precise a student of form notes that Bartók is often evasive as a commentator on his own music, for example when describing the first movement of the Concerto for Orchestra as being in sonata form "more or less".[118]

Some of Russ' comments are confirmed by this movement. His contention that at least a part of Bartók's harmonic functionality is pre-compositional because of its reference to common practice tonality seems beyond doubt. From the large scale tonic-dominant polarity, to the clear fifth-cycle of the Hungarian culmination, there are many references to earlier tonal practice. Even the tension between the major and minor thirds, and the diminished and perfect fifths, is just an interesting trope on older practice. Diatonic modes are used in the same way, such as the Phrygian scale that closes the movement.

Another of Russ' observations, that diatonic material is often manifested over an octatonic structure, has already been explored.

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[118]Wilson, p. 168.

Ernö Lendvai - The Axis System

The Workshop Of Bartók and Kodály

The theories of Ernö Lendvai are most controversial. Several analysts make use of his constructs, although other Bartók scholars are often dismissive of, or hostile toward, his work. For the former, the appeal would seem to be his presentation of a comprehensible system that seems to explain Bartók's compositional method, for Lendvai does present a putative working method for the composer, or at least a viable system for classifying Bartók's music. He covers most aspects of music: melody, harmony, rhythm, form, and even extra-musical associations. While his theories were outlined in *Béla Bartók: An Analysis of His Music,*[119] his most comprehensive work in English is *The Workshop of Bartók and Kodály.*[120]

For the critical analyst, it is apparent that Lendvai's system is unsystematic and flawed. So flawed, in fact, that his very real original insights are often disregarded prematurely. Possibly this is a case of building a poor edifice from excellent bricks. While the appeal of his theory seems to be the promise of comprehensibility within a simple system for understanding the complex constructs of Bartók's music, many experienced analysts hold that these constructs are not so easily extracted. In spite of this, Lendvai's theories have spread, and continue to extend influence over much writing on Bartók, leading to some decidedly blunt denunciations by other theorists.

Golden Section

Possibly the most influential, and controversial, aspect of Lendvai's system is Bartók's use of Golden Section in his work. Golden Section is really just a mathematical ratio, in which two parts of some object are related in such a way that the size of the larger part has the same

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[119]Ernö Lendvai, *Béla Bartók: An Analysis of His Music* (London: Kahn & Averill, 1971).
[120]Ernö Lendvai, *The Workshop of Bartók and Kodály* (Budapest : Editio Musica Budapest, 1983).

relation to the smaller part as the whole does to the larger. Thus if the two parts are, say, A (larger) and B (smaller), then the ratio A:B is the same as (A+B):A. The Golden Section of 1 is 0.618. Since fractions are difficult to deal with when discussing intervals made up of discrete semitones, Lendvai notes that the Fibonacci series is built on the same principle. In this series, each term is the sum of the two previous terms: 1,1,2,3,5,8,13,21,34,55,89,... As the numbers in the series increase, the ratio of the last two terms approaches the Golden Section more closely.

Lendvai applies this concept to all sorts of musical parameters: the number of semitones in intervals, the intervals within chords, the number of beats in a movement, the number of eighth-notes in phrases, and so forth. These are used to find details of form, harmony, and melodic organization. Lendvai maintains that this is a timeless principle in great art, governing the proportions of the Parthenon and the Pyramids. While it has been established that some of Bartók's work does use fragments of Golden Section, it is debatable whether it is *the* major organizing factor in Bartók's music. Certainly Lendvai's work does not prove this.

Axis system

In Lendvai's axis system, he attempts to find Tonic, Dominant, or Sub-Dominant functions for all twelve tones of the total chromatic collection, as well as for harmonies based on these tones. To accomplish this, he extends the relative major-minor relationship around the entire circle of fifths, so that, for example, C is related to A, but also to F# and E♭ as well. To accomplish this, he is forced to regard each scale as a complex of both major and minor, and see each relative as such a scale as well. Thus, C is related to both A and E♭, in that A is the relative (minor) of C (major), while E♭ is also the relative (major) of C (minor). The same logic extends the relationship from E♭ and A to F#, and thus (if somewhat indirectly) from C to F# as well. The functional designation of the entire axis derives from the most obvious function. For example, in a piece centred on C, C-E♭-F#-A is the tonic axis; F-A♭-B-D is the sub-dominant axis; and G-B♭-D♭-E is the dominant axis.

In Lendvai's theory, prolonging motions move around individual axes, while long-range structure tends to depart from and return to the tonic axis. Any chord from an axis may be used

when its function is called for, and so in C, for example, whenever a sub-dominant is required, a chord on B or A♭ might just as well be used as one on F or D. In fact, Lendvai claims that Bartók often sub-divides the octave into major thirds with a chord progression on the roots C-A♭-E-C, which represents a tonic-subdominant-dominant-tonic motion. He cites Bartók's own analysis of the *Fifth String Quartet* as moving B♭-E-B♭. He also notes that the movements of the *Music for Strings, Percussion and Celesta* follow the tonality pattern A-C-F#-A.

Scalar Systems

In much of his work, Lendvai prefers to identify binary oppositions. Thus he finds that Bartók employs two different scalar systems: a chromatic system based firmly on the concept of Golden Section, and an acoustic or diatonic system that is based on the overtone series.

The chromatic system that Lendvai outlines consists of Golden Section intervals: major seconds (2 semitones), minor thirds (3), perfect fourths (5), minor sixths (8), and augmented octaves (13). Lendvai claims that these are the fundamental intervals of this system, and as well the basic intervals of the pentatonic scale. For this reason, he identifies pentatonicism with Golden Section and his chromatic system. The intervals of this chromatic system are used to create melodic materials, and are used for the construction of harmonic materials as well. In the formation of melodies, these intervals form the chief intervals of a line, or the compass of phrases, or even the distance between parts. When used harmonically, these intervals form various chord structures. The most important to Lendvai is the alpha chord, a structure which consists of two diminished-seventh chords whose roots are one semitone apart. As a number of theorists have pointed out, the aggregate presented in an alpha chord is a full octatonic scale. Lendvai considers the alpha chord to be an important link between pentatony and the axis system. As well, he notes that it often occurs in a small number of characteristic configurations which do not use all eight tones. Most characteristic is a form of major-minor chord, in which the major third is in the bass and the minor third is in the treble, e.g. on C:

chord tones:	E-G-B♭-C-E♭	or	E-G-C-E♭
semitones:	3-3-2-3		3-5-3

Again revealing its Golden Section roots, Lendvai maintains, this configuration places the chord in a formation displaying only Golden Section intervals (between each adjacent member).

In this same system, Lendvai includes alpha chords and their derivatives; his models of interval cycles; and chords of equal intervals. Interval cycles for Lendvai are scalar models of repeating proportions (1:2, 1:3, and 1:5, where each number represents a number of semitones), but their function is the same as in Antokoletz's model. Lendvai stresses their Golden Section derivation. Chords of equal intervals (diminished sevenths, augmented triads, tritone dyads, or second clusters) are considered vertical manifestations of the Golden Section intervals.

Diatonic-Overtone

In contrast to the pentatonic system, Bartók often uses the overtone scale, which Lendvai believes to have been derived from the overtone series. This scale is like the major scale but with a raised fourth degree and a flattened seventh. In one of his flights of conjecture, Lendvai proposes that Bartók reconciles the overtone and chromatic systems in his work as a way of synthesizing the artistic worlds of East and West.[121] While the pentatonic system is characterized by a minor third, perfect fourth, and minor sixth (all based on GS intervals), the acoustic system is based on a major third, an augmented fourth, and a major sixth, all from the overtone series. It is typical of Lendvai's practice that these two scales are considered mutually exclusive and, furthermore, opposed in some way. He pairs them in a semiotic way with other binary oppositions such as light/darkness, good/evil, urban/rural, growth/death, and so on.

Scattered throughout Lendvai's writings are insights into Bartók's semiotics. These suggest that certain gestures had meaning for Bartók, and although Lendvai is obviously unable to prove these connections, they are generally thought-provoking.

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[121]Lendvai, *Workshop*, p. 393.

Lendvai's Critics

Roy Howat has been one of Lendvai's most vocal critics, especially where Golden Section is concerned. Howat has shown that Lendvai's calculations are often in error.[122] In addition, he has shown that those instances of true Golden Section in Bartók's works are rare, and where they may have occurred, they are far from precise. The most plausible examples are a few short piano works. Where Golden Section does appear to function in a larger work, such as in the *Sonata for Two Pianos and Percussion*, Howat points out that it is more a local occurrence than one that defines the entire form. He writes that we can never know whether such proportions were deliberate or fortuitous, but that there is no evidence that they were planned.[123] (It is interesting that Howat has found strong evidence of Golden Section in the music of Debussy.[124])

Paul Wilson has questioned the whole concept of the axis system. His critique denies that we hear diminished-seventh patterns in Bartók's music as representing the same axis or function. He also denies that we hear a pattern of descending major thirds as tonic, subdominant, dominant, tonic; or that we *need* to in order to make sense of the pattern. Wilson calls it idiosyncratic and says that it is a "very selective and uncontextual treatment of the music."[125] In his article on Bartók's *Violin Sonatas* in the *Bartók Companion*, Wilson notes that there is a long-range connection between F# and C, which harks back to Lendvai's theory. However, he goes on to state that "in my view the connection between tritone-related pitches is real and important in Bartók's music, but it is difficult to regard such pitches as functionally equivalent."[126] Wilson also points out that both the alpha chord and the 1:2 model are the same object: the octatonic scale. He notes that the acoustic chord, far from being the antithesis of the chromatic system, is in fact a subset of the Golden Section intervals.

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[122]For example, see Roy Howat, "Review-Article: Bartók, Lendvai and the Principles of Proportional Analysis" in *Music Analysis* 2:1, (1983).

[123]'Sonata for Two Pianos and Percussion' in *Bartók Companion*, pp. 320-322.

[124]Roy Howat, *Debussy in Proportion: A Musical Analysis* (Cambridge: Cambridge University Press, 1983).

[125]Wilson, *The Music of Béla Bartók*, p. 206.

[126]Wilson, "Violin Sonatas" in *Bartók Companion*, p. 255.

Russ defends Lendvai to some degree against Wilson's attack, pointing out that Wilson sometimes finds evidence of, for example, F#, E♭ and A substituting for C, but denies any axis relation, although he gives no alternative. However, he does agree that it is difficult to apply the axis theory to Bartók's music in any rigorous way, and that the mere attribution of the labels tonic, dominant, and sub-dominant do not add substantially to the understanding of either patterns or substitutions. He also notes that Bartók himself refers to the tritone E (from the tonic B♭) in the *Fifth String Quartet* as "dominant-like",[127] and the E♭ of the first movement of the *Music for Strings, Percussion and Celesta* as the "remotest key".[128] In short, Russ lauds Lendvai for taking as his starting point "important and recognizable characteristics in Bartók's music" but adds that he "fails to use these to build a proper theory."[129] Lendvai attempts to explain Bartók's compositional process, and yet he has no evidence, documentary or otherwise, to prove his contention.

László Somfai points out that there is no evidence that Bartók calculated a Golden Section on any of his manuscripts,[130] even though we have most of the sketches and drafts from the later works on which Lendvai bases his theory. He states that there are no occasions on which Bartók changed his music to better fit a Golden Section ratio, although there are cases where he made changes the other way. Finally, while it is true that Bartók did use key structures that accord with Lendvai's axis system, there is no evidence that he ascribed Lendvai's meaning to those structures. Interestingly, Somfai sees Lendvai's major contribution (beyond his brilliant isolated insights) as his seminal work in semiotics in Bartók studies.[131]

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[127]BBE, p. 414.

[128]BBE, p. 416.

[129]Russ p. 403.

[130]In fact, Somfai also disputes Howat's claim in his Review-Article that Bartók wrote out the Lucas series (4-7-11-18) on a page in his Turkish sketch book.

[131]Interview in Budapest Bartók Archivum, March 18, 1995.

János Kárpáti makes similar comments regarding Lendvai, pointing out the strengths of his observations and the weaknesses of his system. He also suggests alternative explanations for the phenomena that Lendvai discovered.[132]

Malcolm Gillies criticizes Lendvai specifically for the "normalizing" aspect of his theories. "Although many of the terms in Lendvai's inventory are useful in describing particular phenomena, the on-off twinned nature of his approach limited its usefulness and, more seriously, encouraged a crass normalization which distorted the interpretation of a work's more intricate – but sometimes crucial – features, so as to fit the limited range of sanctioned models. The essence of the piece so frequently slipped between those standard prototypes by which it was meant to be illuminated."[133] Other criticisms involve unjustified conclusions regarding Fibonacci numbers and Golden Section (often due to poor arithmetic).[134] Perhaps Gillies summed up the frustrated admiration that many feel for Lendvai in his review of *The Workshop of Bartók and Kodály*: "Brilliance there is, but so often next door to inconsistencies, factual errors and ill-explained assumptions."[135]

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[132]See the section on Kárpáti below.

[133]*Bartók Companion*, pp. 13-14.

[134]ibid., p. 306.

[135]Malcolm Gillies, "Ernö Lendvai: *The Workshop of Bartók and Kodály*" review in *Music Analysis* 5:2-3, 1986, p. 286.

Analytical Application

Despite a wealth of examples and analyses in *The Workshop of Bartók and Kodály*, Lendvai makes only two direct observations about the second movement of the *Divertimento*.

His first is a reference to what he calls "subminor" chords.[136] The "chord" that he refers to is actually a vertical realization of the mode used in the lament melody (mm. 20-29). Lendvai's contention is that this chord is an intense version of the normal minor. The mode is said to combine both the parallel minor and relative minor of an implied tonic. Taking the pitches in the initial melody (Lendvai transposes this up a whole tone in his example) the mode G-B♭-C#-D-F is said to combine B♭ minor (B♭-C#(D♭)-F) with G minor (G-B♭-D). The tonality of B♭ is here supposed to be buttressed by the minor seventh on the relative minor chord (i.e. G-B♭-D-F), and the system extends to an even more important chord, the subminor chord that would in this case be constituted E-G-B♭-D. This chord does not appear in this movement, and when E does appear as the root of a chord it is always accompanied by a B♮. In fact, this entire system is subverted by the obvious tonality of G minor for the entire section, including a held G minor chord in the accompaniment from mm. 25-29. Finally, the obvious folk-inflected lament makes the search for a new tonal system appear rather far-fetched.

The only other reference to this movement is to the "Hungarian flare-up" in m. 64, a topic that Somfai explores in more depth. Lendvai merely notes that the chords progress in descending fifths, and "accompany moments of emotional culmination and lyrical melting."[137] It is interesting to note that Lendvai misses the alpha chords underlying this section.

One reason that Lendvai makes so little mention of this movement may be that it does not work with his theories particularly well. In general, Lendvai's tonal explanations do not agree with the actual sound of the piece. Axis tonal relations are dubious at best. True, the first section (mm. 1-11) establishes a strong tonality of C#, while the next part (mm. 20-29) clearly

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[136]Lendvai, p. 279.
[137]ibid., p. 660.

establishes G minor. While Lendvai would regard this as a clear vindication of his axis theory, the actual sound of these two sections is that of highly differentiated tonalities; the G minor sounds remote from C#, rather than functionally related. Even more troublesome for the theory is the appearance of G# minor next (mm. 33-49), the traditional dominant of C# minor. This move from G to G# sounds rather stark and ominous, and not like a tonic to dominant motion.

Distance scales are not in evidence in this movement. We have noted the equivalence of the 1:5 model with the Z-cell, but this does not play an obvious structural role in the movement, even though isolated and partial Z-cells do occur. The best evidence for possible Z-cell control of large-scale events is the linking of the initial C# centre, via the high D of m. 19 which is the dominant of the G from mm. 20-29, with the G# of mm. 33-49. These four pitches do form a Z-cell (C#-D-G-G#), which is audible – if one is listening for it. Whether the D is of the same structural importance as the other three notes is doubtful. There are also Z-cells in the sequence of mm. 11-16, although they run contrary to the sequential patterns, and do not seem structurally important.

The 1:2 model, again better known as the octatonic scale, does play a part in this movement, although we have seen that its meaning is unclear. In any case, Lendvai's typical example of an entire scale based on this model appearing verbatim is missing from this movement. Likewise missing is the 1:3 model. It is interesting to note that the lament melody, which Lendvai calls a subminor chord, contains the component intervals of the 1:3 model (minor seconds and minor thirds), but not in the strict alternation that Lendvai prescribes. It is, however, an incomplete octatonic collection.

While this movement is highly chromatic, the Golden Section intervals are no more prominent than any others. There is no appearance of the acoustic scale. Alpha chords, and their variants, are present, although what this label tells us is somewhat dubious. The name seems to indicate merely a segment of the octatonic scale, but as we see from Kárpáti,[138] even the

[138]See section on Kárpáti below.

derivation of the root of such a chord can be successfully challenged. In fact, one such contradiction to the alpha theory appears in this movement. On the downbeat of m. 65, an alpha-type harmony (C# major/minor chord) appears, but with the root in the bass, and the two clashing thirds as the two uppermost parts.

Does Bartók base his form on Golden Section proportions? In his article in *Music Teacher*, John Fenton claims that he does.[139] In a somewhat elaborate graph, Fenton discloses his findings that the central climax occurs at the Golden Section point of the movement, and that the other sections are likewise built around Golden Section proportions. His sole explanation is : "As in the first, Golden Section principles can also be found in this movement, the climax of which occurs at 44, approximately the dividing point. Sub-dividing each of these sections gives rise to four main sections, the turning points of which coincide approximately with those obtainable mathematically."[140] The key here is the word "approximately", one that is often forgotten when looking at graphs that present nice, exact whole numbers.

In considering proportions in this movement, it is most convenient that it is entirely in 4/4 time; since we are dealing with a ratio we can just as well count bars as beats. To begin with the climax, it is striking that although Fenton notes, correctly, that it occurs in m. 44, his diagram presents the climax as spanning mm. 44-46. The rationale for this becomes apparent when we calculate the actual Golden Section of the 74 measures of the movement: 74 x 0.618 = 45.7. More specifically, this locates the actual GS point almost exactly at the third beat of measure 46! It is somewhat difficult to consider this still the climax, as at this point the melody has fallen 18 semitones from its peak, the dynamic has lowered to *piano*, and Violin II has dropped out entirely. It is a quaint notion that Bartók would consider this approximation, missing the climax by almost two full bars to be "close enough", when his timing for the section is a considerably

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[139]John Fenton, "Bartók's Divertimento", *Music Teacher*, (April, 1980), pp. 14-18.
[140]ibid., p. 15.

more exact 1' 47".[141] (Even Lendvai's trick of adding an empty bar of rest to the movement only moves the GS point back further, into m. 47.)

To continue with the graph, the 44 bars up to the climax are divided 18/26, somewhat incomprehensible as the dividing point is shown as m. 19. In any case, the GS of 44 is 27.2 (or 16.8 if, as here, the shorter section comes first). Thus GS would move the division even further from m. 19, although Bartók's own timing mark, plus his own bar number in m. 20, would indicate a formal break between mm. 19 and 20. Again, it does not help to consider only the 43 measures before the actual climactic downbeat of m. 44.

Sections 2 and 3 are difficult to decipher from the diagram. It would appear that these two sections (mm. 19-33 and mm. 33-56) are to be seen as divided according to GS, with the shorter section first, while the whole of this part (mm. 19-56) is divided at m. 44-46 when the longer section is placed first. The first of these is at least close. The smaller GS interval of 38 (38 x .382) is 14.5, or just after the second beat of m. 33, the beginning of section 3. Unfortunately, m. 44 is only 12 measures from m. 56, and again we are over two full bars off here.

The very last section, mm. 56-74, is correctly calculated to be 18 measures, and yet this is inexplicably divided into 8 + 11. In any case, the 8 should in fact be 6.88 according to GS, while the 11 is almost correct.

Thus with all of these calculations, Golden Section misses both the climax and the recapitulation. We have two close misses, in the division of the two middle sections, and the division of the recapitulation from the coda. This last is most tempting, since it comes just after the start of the Hungarian culmination. Still, we are asked to believe that so exacting and detailed a mind as Bartók used Golden Section, but was willing to allow errors of up to two and a half measures. More compelling mathematically is that the recapitulation comes at almost exactly three-quarters of the way into the movement, as if that were meaningful. (Incidentally, although the first 19 measures are not shown as being divided by GS, there is good reason: the numbers

[141] Bartók's own notation in the printed score at the end of m. 49.

point to structurally meaningless points. This would be somewhat surprising as well, given the importance of exposition to Bartók.)

This rather lengthy digression points up the problem with theories such as Lendvai's which are not rigorously formulated. Other writers adopt and spread them, and new generations of students take them as proven. Bartók's fine ear for proportion and compelling development is reduced to a not-too-clever trick with numbers.

László Somfai - Sketch Studies

László Somfai, the Director of the Bartók Archivum in Budapest, has written a great deal about Bartók, on a wide range of topics. His writing emanates from his work at the Archive, and especially from his labour on the Complete Critical Edition of Bartók's work that has been underway for decades. Much of Somfai's work is concerned with the compositional history of Bartók's oeuvre.

He has also done standard analysis, as well as some semiotic analysis. At the International Musicological Conference in Commemoration of Béla Bartók in Budapest in 1971, Somfai spoke on a characteristically Hungarian culmination point in several of Bartók's works. His point was that Bartók, being primarily a Hungarian composer, had so absorbed the Hungarian musical idiom that he transformed it for use in his compositions in the same way that he transformed the major-minor tonal system. He points out that the culmination of the second movement of the *Divertimento* uses just this culmination technique.[142] The uniqueness of this type of culmination is two-fold. First, Bartók uses it to interrupt the flow of a movement at a penultimate stage, just as it seems that the music is about to drive to a finish. This interruption is in a different harmonic idiom, mostly tonal, and in a much more personal, expressive style. The second feature is that this music is obviously Hungarian in origin, as evinced by its rhythm and melodic content. Somfai seems to feel that this is an important semiotic gesture, although its exact meaning is unknown, and may change from piece to piece.

Important as his work on stylistic analysis undoubtedly is, Somfai's most crucial contribution to Bartók studies is his work on compositional history. His book *Béla Bartók:*

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[142]László Somfai, "A Characteristic Culmination Point in Bartók's Instrumental Forms" in Jozsef Ujfalussy, and János Bruer, ed. *International Musicological Conference in Commemoration of Béla Bartók 1971* (Budapest: Editio Musica Budapest, 1972), p. 55.

Composition, Concepts, and Autographs[143] summarizes his work in this field over the last thirty years. With unprecedented access to the primary source documents in the field, at both the Budapest and the American Bartók Archives, Somfai has traced the genesis of a great number of Bartók's pieces, while shedding light on the composer's working methods as well as his stylistic development. This is extremely valuable, as Bartók rarely spoke in public about his method of composition, and he refused all requests to teach composition.

Somfai delineates several types of sketch in Bartók's work. The simplest are just memos jotting down a basic idea, or perhaps a few variants. These might later be elaborated into larger sketches, or even full-blown drafts of a piece or a movement. A complication arises here in that Bartók liked to improvise on such ideas at the piano, and would often work them up into a high degree of sophistication in this way, leaving no documentation of the process. Indeed, working in a virtually soundproof room, not even his family could witness the genesis of a new piece.

Another complication is that Bartók was not systematically organized in his sketching, so that certain details are worked out on separate pieces of paper. This type of sketch is usually the solution to a knotty problem in composition, a scoring difficulty or a contrapuntal working-out. The completed solution is them transcribed onto the original sketch. A similar type of sketch is what Somfai terms a "side sketch", in which Bartók would sketch ideas for later developments in the movement, or even in later movements, while working on earlier music. These sketches were then done at the side or bottom of the page on which he was working when they came to him.

More sophisticated sketches include the continuity sketch, which was essentially an outline of the piece in progress, with the major themes and transitional episodes in place. Bartók would use such a sketch to play through the piece to judge its form and its effect. Next, there are drafts, which are preliminary versions of a piece, complete except for tempi, expression markings, and other nuances. Finally, there are fair copy drafts and manuscripts of completed pieces.

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[143]László Somfai, *Béla Bartók: Composition, Concepts, and Autographs* (Berkeley: University of California Press, 1996).

Problems with the sketches include Bartók's apparent destruction of a large number of them at the end of the First World War, when moving back to Budapest in some haste. Also, in his earlier years, Bartók was not convinced of the value of keeping sketches, and so many were given away or lost. Simple chronology is not a reliable guide to an authoritative version of Bartók's works, as he made conflicting changes in some of the works just before, and then during, World War Two. He also made many minor changes in order to re-assign the copyright to Boosey and Hawkes from the Nazi-controlled Universal Edition. Finally, he left out many performance instructions which were originally in Hungarian which would not readily translate into English or Italian.

Some facts about Bartók's method of composition have emerged from Somfai's research. Each piece had to be unique, from Bartók's personal experience. This applies to both form and content. Somfai sees Bartók as a Romantic type of composer, actively waiting for inspiration by improvising and playing with music. The opening measures of the piece were always crucial. As for the form, Somfai discovered that in his notes for the Harvard Lectures, for a planned fifth lecture on "Form", Bartók made a note to himself: "Every piece creates its own form."[144] Whereas the beginning was crucial for the compositional process to get underway, the ending was crucial for a work's reception, and Bartók would not hesitate to change the ending if he felt that he had not achieved the required effect. For example, he changed the endings to the *Violin Concerto*, the *Concerto for Orchestra*, *Bluebeard's Castle*, and *The Miraculous Mandarin*, as well as providing alternate endings for the *First* and *Second Rhapsodies for Violin and Piano*. In any event, it was the acoustic sound of the work that was important to Bartók; the printed music was secondary.

Another interesting facet of Bartók's personality shown in these lectures is his preference for composing new works over codifying his compositional procedure into a system. Somfai believes that this stems from Bartók's interest in the experience of composing without wishing to

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[144]ibid., p. 15.

fully understand his own process. Also, Bartók was not interested in teaching composition, and so would have no need (other than a strictly personal one) for a systematization of his methods. Indeed, Somfai feels that no system could be developed from Bartók's music, and that if an attempt were made to develop such a system it would not be worth teaching as it would of necessity be over-simplified.[145]

Bartók was influenced by a number of composers, but in Somfai's view the influence was strongest from the slightly older generation. He sees the most important influence as coming when a composer is developing a personal style, and for Bartók the composers would be Strauss and Debussy. Also important, from Bartók's own words, is Wagner. Somfai refutes the importance of other composers in later life, such as Reger and Szymanowski,[146] although he admits that Bartók had a strong interest in Stravinsky and Schoenberg all of his life. Another strong influence that Somfai feels is neglected is the advice of Bartók's friend and colleague Zoltan Kodály, who critiqued a number of his compositional drafts.

Somfai rejects the notion that Bartók might have consciously applied concepts from a number of analytical schools. Most of them, he notes, are post-World War Two, that is, after Bartók's death. He claims that Bartók had no known interest in set theory, and that if he used anything akin to Schenkerian technique it must have been purely sub-conscious (Schenker would probably agree!). He also disputes Lendvai's idea that Bartók adjusted his forms to fit Golden Section, or any other system of proportion; Somfai says that Bartók worked by musical instinct alone. While there are many calculations to be found in Bartók's manuscripts and sketches, none contain Golden Section numbers. One concession to Lendvai that he makes is that the key relations used by Bartók often follow those of Lendvai's axis system, although that alone does not prove that he uses them with the meaning that Lendvai assigns to them.

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[145]Professor Somfai made this comment in an interview at the Bartók Archivum that he granted me March 18, 1996.

[146]Malcolm Gillies argues the strong influence of Szymanowski in his article "Stylistic integrity and influence in Bartók's works: the case of Szymanowski" in *International Journal of Musicology*, vol. 1, 1992.

Another of Bartók's important influences is folk music. This also intersects with Somfai's belief that Bartók employs narrative structures, embedding private narratives into pieces that only the composer would know about. One successfully identified by Somfai is that of the hora lunga, a Rumanian type of melody (more a shape or skeleton) which Bartók seems to have used as the background narrative in his *Sonata for Violin and Piano no. 2*.

Somfai points out that Bartók's forms are based on the classical set of forms: sonata, rondo, etc. Although he experimented with them, these were his basic language. Again, because Bartók felt that each piece created its own form, he would adjust these forms to fit his musical content, sometimes to the point where it is difficult for the analyst to follow Bartók's own claim as to the form of a given piece. Indeed, in his own analysis of the *Fifth String Quartet* Bartók gives two possible points for the recapitulation and coda.

Somfai feels that it is important for analysis to deal with whole works, or whole movements, and so to account for all notes in a piece. In this respect, he praises Paul Wilson for analysing complete movements and complete works. As well, he is adamant that the analyst must account for the acoustic sound of the piece, not just "notes on the page", since it was the sound that concerned Bartók.

Somfai feels that a semiotic analysis of Bartók "is an absolute must", but he points out that this is much easier said than done. It is impossible for anyone, even a Hungarian, to know all that Bartók knew, and *only* what Bartók knew, and so to understand his thinking. He points out that Bartók was Hungarian, and that it is difficult for a non-Hungarian to understand his cultural environment, although much of this can be overcome with diligent work and by learning to speak Hungarian, as well as listening to the folk music of Hungary and its surrounding lands. While it is impossible to ever completely recover the meanings that Bartók assigned to his themes and ideas, we may be able to uncover them by a careful study of the way he sets suggestive words in his vocal music, especially *Bluebeard's Castle* and the *Twenty-Seven Choruses*.

Critics of Somfai

Somfai has few critics. His scholarship is of the highest order, and his familiarity with primary sources is unparalleled. Kárpáti covers many of the same points, with few, minor differences of opinion.

The only disputes with Somfai's work appear related to his view of Bartók's professional development. Somfai believes that Bartók had no major external influence on his compositional style after 1908 (a position shared by Lendvai and Kárpáti). After this time, he developed his style from his own inner reserves, immediately transforming his experiences within his own mind and adapting them to his own uses. Of the scholars that feel that Bartók continued to be influenced well into his mature life, none has been as forthright as Malcolm Gillies. In both the *Bartók Companion* and his article on Szymanowski, Gillies propounds the notion that Bartók absorbed stylistic ideas as well as idiomatic instrumental techniques from his contemporaries. Further, Gillies claims that Bartók's stylistic progress was not always smooth, having distinct "bumps" when new techniques were learned. Perhaps most controversial is the idea that Bartók did not always borrow his new techniques discretely, causing discord with Szymanowski and some ambivalence about publishing in Bartók's own mind.[147]

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[147]ibid.

Analytical Application

While Somfai has not presented a single theory from within which a piece may be analyzed, he has presented important considerations that must be taken into account in any approach. These include studying the source documents, weighing the relevance of biographical information, and considering semiotic interpretations.

Somfai has pointed out that Bartók's typical Hungarian culmination point occurs in the second movement of the *Divertimento*, at measure 64.[148] The "Hungarian" characteristics are the dotted rhythm in the violins and the major-minor chords. (Similar features are mentioned by Kárpáti.) Somfai also notes such a culmination point in the first movement, beginning in m. 197. While we are unable to ascribe a definite meaning to these spots, they are compelling gestures which strongly imply some external meaning. In addition, there is a remarkable passage in the final movement, beginning with the solo Cello in m. 236 and heightened with the solo Violin from m. 248 through the *quasi cadenza*. Here the romantic character of the theme is so overblown as to suggest parody. Somfai has referred to such passages (and this passage in particular) as embedded scenes, which have a specific meaning to the composer, although unknown to us.[149]

As for sources, all that we have for the *Divertimento* are a draft and a fair copy, plus Bartók's corrected copy of the score. Somfai suspects that there might be more sketches for the *Divertimento* unaccounted for.[150] An examination of the draft of the *Divertimento*[151] shows that Bartók composed the movements in the order I-III-II. Somfai points out that on the first page of this draft, Bartók sketched ideas for the second movement, but not in the final key. This was unusual for Bartók. Memo sketches included here for the second movements became measures

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[148] "A Characteristic Culmination Point in Bartók's Instrumental Forms" in Jozsef Ujfalussy, and János Bruer, ed. *International Musicological Conference in Commemoration of Béla Bartók 1971* (Budapest: Editio Musica Budapest, 1972).

[149]Interview March 18, 1996.

[150]Somfai, p. 36.

[151]I am grateful to Peter Bartók for providing me with a photocopy of this draft and of the fair copy. (PBA 78FSS1)

33-34, 11-12, and 20-21. On the draft, when working on the third movement, Bartók sketched more ideas for the second movement on page 19. These are for measures 17-18 and 22-24.

Incidentally, sketches for the *Sixth String Quartet* appear on the last page of the *Divertimento* draft, and Somfai speculates that "we might well wonder whether the typical Bartókean polymodal chromaticism (his term in the Harvard Lectures) of the motto theme was not directly inspired by the chromatic motive in the last measures of the Divertimento draft".[152] This would seem to agree with Oramo's view that the movement is an example of polymodal chromaticism, and yet in the third Harvard Lecture, Bartók specifically mentions this movement as an example of his "new chromaticism".[153] In fact, Bartók lists three methods: "First, a kind of restricted bi-modality or polymodality"; second, "this modal chromaticism (as we will call this phenomenon henceforward, to discriminate it from the chordal chromaticism of the nineteenth century)";[154] and finally, the new chromatic melodies, wherein "the single tones of these melodies are independent tones having no interrelation between each other. There is in each specimen, however, a decidedly fixed fundamental tone to which the other tones resolve in the end."[155] Thus, it would appear that Bartók is speaking of a different procedure from polymodal chromaticism regarding this movement.

Somfai states that it is rare for Bartók to sketch in a key different from the final version. This implies that Bartók had a strong sense of the tonal relationships by the time he wrote down specific ideas. Is it meaningful that Bartók sketched some of these preliminary ideas in E? It is interesting to speculate that since the third movement begins with a strong G♭ sonority (accompanied by E), these two tonalities might have been designed to converge on F, the tonality of the final movement. Indeed, these two notes do resolve to F in m. 14 in the third movement. Possibly more evidence for this conjecture is the sketching of the theme from m. 33 of the second movement in C#, the relative minor of E, with the third prominently held in the upper part. This

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[152]Somfai, p. 60.
[153]BBE, p. 380.
[154]BBE, p. 376.
[155]BBE, p. 381.

stresses E, whereas in the final version this passage is in G minor, the dominant of the tonic C# minor.

Knowing that the second movement was actually written last suggests that Bartók may have incorporated ideas from both of the outer movements into the middle one. The first theme of the first movement demonstrates the play of major versus minor thirds, a tension which is also important in the second movement. Encirclement is important from the start of the first movement, appearing in Violin I in m. 2, Violin II in m 6, Bass in m. 21, and other places; it also forms the ostinato in the third movement, starting in m. 403. The third movement also presents diatonic versions of these encircling motions. Fourth motions are important in all three movements, appearing in m. 138 of the first movement, and m. 133 and mm. 424-426 in the third (this last in mirror motion). The shape of the sequence theme in m. 11 is certainly suggested by the Violin I part in m. 11 of the first movement, although they have different continuations. (This motive can be traced back to the first melodic motion in Violin I, m.2.) The Hungarian culmination of the first movement is even more overtly fourth-based. The opening melodic gesture of the first movement also spans a fourth with two minor-third motions (F-E♮-D/E♭-D-C), while presenting the conflict of E♮ versus E♭. A similar motion, inverted in Violin I in m. 188, is found in the accompaniment in the second movement in mm. 9-10. Major-minor chords feature in mm. 65-66 of the first movement, and the figures of mm. 107-108, 114-115 and 131-132 in the third movement. Block chords moving up a minor third are found in the first movement, m. 60 and m. 172, while the same motion up a minor second is found starting in m. 98; these motions are combined in the transition of mm. 30-32 in the second movement. The oscillating motion of the first measure is a contracted and inverted version of the buoyant accompaniment of the third movement, from m. 264 onward. The fourths of the connecting passage in mm. 17-18 might harken back to the fourths in Violin I mm. 137-144 in the first movement. While this last passage might seem inconsequential, it is interesting to note that it appears among the very first sketches

for the movement, apparently written down during composition of the development of the first movement.[156]

Letters are also important source documents. Bartók's letters offer numerous insights into the composition, drafting, and editing of the *Divertimento*. A famous birthday letter to his son Béla Junior outlines his working conditions, as well as his finishing of the composition in just over two weeks. His correspondence with Boosey and Hawkes gives a rough outline of the entire project, from conception to engraving. On April 17, 1939 Bartók writes to Ralph Hawkes that "I don't know if I can or will write it. It will be much easier than Music for Strings...".[157] By July, he has decided to undertake the commission.[158] Bartók kept in touch with Hawkes, notifying him that he was almost two-thirds done (August 10); that he was leaving immediately for Budapest (August 24); that he would send printer copies (September 28); that he *did* send printer copies (October 12); and numerous notes about corrections. An interesting detail of performance is explained in depth by Bartók: the difference between a staccato mark on the last note of a group that is *under* the slur, versus the same dot *over top* of the slur. Bartók is insistent that the former "means an interruption before the last quaver" while the latter "means a shorter sound of the last note, without any interruption."[159]

Other interesting points from the letters include the precision with which Bartók specified the exact placement of crescendi, decrescendi and other dynamic markings. In general he was very precise in details of notation and engraving. Regarding the *Divertimento*, the pressures of engraving during wartime caused the process to become rather protracted. This situation was exacerbated by Bartók's trip to the United States in March, 1940, which may have rushed the proofing of the score. For example, there was a sharp sign for F# in the Violas in m. 46 that was omitted by the composer in his draft and in the fair copy, and was missed again by

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[156]See Somfai, pp. 58-60.
[157]Budapest Bartók Archive letter 20.040.
[158]BBA 20.075.
[159]BBA 20.105. Somfai also discusses this on p. 266.

the engraver and the editor. Also, the corrections that were to have been made in the pocket score still have not been made.

Somfai has given us valuable hints regarding Bartók's music. He notes that the draft plan for Bartók's Harvard Lectures includes a lecture on form, beside which Bartók has noted that "every piece creates its own form".[160] Somfai has also voiced his opinion that behind the standard form there is a personal, narrative form that the composer uses to shape the work.[161] He also notes that the general spirit of the work was very important to Bartók, determining the form as much as the mood.

The title *Divertimento* stands in contrast to the rather stark titles of Bartók's preceding works: *Music for Strings, Percussion, and Celesta*; *Sonata for Two Pianos and Percussion*; and *Violin Concerto*. Even *Contrasts* is less seemingly specific. *The New Grove Dictionary* describes a divertimento as being primarily designed for the entertainment of listeners, as well as the players, and adds that "it presupposes on the composer's part a certain lightness of approach, although without excluding the possibility of high artistic achievement".[162] Similarly, the *New Oxford Companion* defines the divertimento as "diversion" or "recreation", describing the form as "light in approach and intended to serve as entertainment pieces."[163] While this title may seem to apply to the outer movements, the contrast provided by this middle movement gives the title a somewhat ironic overtone. Of course, after this movement, the mood returns to one of seeming carefree happiness.

From these hints we can speculate that there is some external significance to the second movement of the *Divertimento*. Placed between two happy, "life-affirming" movements based on folk-like themes, the second movement is dark and ominous. Given the situation that the composer was in at the time, this is hardly surprising. The piece was written in a quiet chalet in

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[160]Somfai, p. 15.

[161]Interview March 18, 1996.

[162]Stanley Sadie, ed. *The New Grove Dictionary of Music and Musicians* (London: Macmillan Publishers, 1980), vol. 5, p. 504.

[163]Denis Arnold, ed. *The New Oxford Companion to Music* (Oxford: Oxford University Press, 1983), vol. 1, p. 561.

rural Switzerland just as the Second World War began to sweep across all of Europe. The opening chromatic murmuring of low strings con sordino sets a foreboding tone, affirmed by Violin II with small circling motions that rise a little, only to fall back immediately. After this opening motion comes to some sort of rest in m. 11, there is a gradual (sequential) spiraling down that suddenly rises to the unison shriek of the Violins and Violas in m. 19. A lament melody unfolds in the Violas, to a chordal accompaniment that inches downward, then crawls slowly upward to a sustained G minor chord. Sequential imitations of the lament, each a fifth higher, lead to another outburst in m. 30. A bare B leads into the next section, becoming the third of a G# minor triad. While the lament of the previous section seems to embody human suffering and torment, the new section presents the on-rolling of some inexorable doom. Indeed, Malcolm Gillies has characterized this section as moving from an image of lament to the more concrete one of a funeral procession, all leading up to "a granite-like statement of doom".[164] The G# minor ostinato is intensified as Violin I slowly rises, chromatically, from F# up an octave and a semitone to climax on G, over the same G# minor triad, thus denying the relief of achieving the perfect octave. The falling back from this climax is more a collapse into exhaustion. Orderly imitative entries of the soloists are crushed under the *Agitato* outbreaks of the full ensemble. Finally the soloists fall back to a variant of the opening figure, and the first idea is recapitulated, reconsidered. An imitation in Violin II leads to the "Hungarian" culmination in mm. 64-65. This peters out to the dissipating motions of mm. 65-70, with a final reference to the lament in Violin II in m. 69. Just as the tonality seems to be settling on C#, there is a confrontation of the two thirds E/E#, with E# "winning" by sustaining until the movement ends. Under this note, the undulating bass motion rises before falling back to C#. The lingering major third, E#, may be one last ray of hope, a ray that can not be extinguished even by the downward drag of the final descent. This E# is to re-appear as F, the tonic of the final movement, the joyful finale.

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[164]Gillies, *The Bartók Companion*, p. 339.

Considering Bartók's deep feeling for peasant life, and our knowledge of its virtual eradication by the two wars of this century, it is difficult not to hear this piece as a lament for this lost way of life, as well as a depiction of the inhuman face of war. Certainly this is mere speculation, as Bartók never wrote about programmatic content in this work. It works as a piece of absolute music, and if there is a programme behind the notes, it does not interfere with the careful construction of the work.

Considering the gloomy semiotic reading of this movement, which does not seem at all far-fetched, it must be kept in mind that this is a middle movement between two rather carefree and life-affirming outer movements. No semiotic reading of this work could be complete without considering the entire piece as a whole. One might speculate that the composer found it aesthetically inappropriate to end a work with a slow or sombre movement. In this respect, it is interesting to note that in his very next composition, the *Sixth Quartet*, begun immediately after the completion of the *Divertimento*, the composer did end with such a slow, sad movement.

The form of this movement is not completely straightforward. As Somfai has noted, Bartók felt that each piece must generate its own unique form, rather than follow a set template. While Bartók has written that the movement is "roughly ABA",[165] we cannot be certain as to how roughly the composer viewed the movement as ABA. There is a definite recapitulation at measure 56, and between the exposition and recapitulation there is certainly different thematic material. This suggests the ABA frame is valid, and yet closer inspection reveals that the lament melody (mm. 20-29) and the climactic rise and fall (mm. 33-49) are quite distinct, both melodically and tonally. The former utilizes a characteristic scale (G-B♭-C#-D-F) over a strong G minor tonality; while the latter consists of a semitonal rise through all twelve semitones, over a strong G# minor ostinato. In addition, each of these sections is followed by a linking episode to the next section. These two episodes are similar, however, in that both are tonally static, and that both revolve around important minor seventh sonorities.

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[165]Gillies and Gombocz, *The Musical Mind.*

It is somewhat pedantic to argue whether the form should be described as A-B-C-A' or rather A-B-B'-A'. More to the point is that there are two strongly characteristic sections between the initial statement and its varied recapitulation. These sections both produce strong, unified impressions, enough that each might be labelled a "scene", in Somfai's parlance. The recapitulation, a modified and truncated version of the first theme, is also followed by a Hungarian culmination, another scene, which appears to link it to a coda. The sense of thematic and tonal return is unmistakable, and so the label ABA is fully justified. Bartók has adapted the general form to his specific purpose.

The idea that Bartók was innovative in form is hardly new. In 1946, Adolfo Salazar discussed Bartók's style. "Finally, his so-called insensitiveness is another symptom, no less characteristic of his age. His emotional coldness is combined with an objective severity which, indifferent to the idea of symphonic development, determines a form appropriate to the motive and to the treatment it suggests to a composer unhampered by preconceived ideas. The resulting form is powerfully logical in its freedom, and so robust and satisfying that it is perhaps this which the listener perceives with the greatest conviction on the very first hearing of one of Bartók's works". [166]

[166]Adolfo Salazar, *Music In Our Time* (New York: W.W. Norton, 1946).

János Kárpáti - Monothematicism and Mistuning

The major work of János Kárpáti on Bartók in English is on chamber music, but his stylistic analysis applies to Bartók's complete oeuvre.[167] While cautioning that biography is not always a reliable key to the understanding of the meaning of individual works or their genesis, he continues that one must still be cognizant of relevant events. He makes this same point in his chapter on the early string quartets in *The Bartók Companion*, where he writes: "Although in the case of great artists it may be misleading to look for direct links between the external world and a work of art, it cannot be overlooked that these compositions were born in the troubled years of the First World War. Their tone of crisis and their dark and sombre mood are due not only to their tempos but also to the painful and resigned gestures and disturbing harmonies."[168] In *Bartók's Chamber Music*, he states: "To seek a direct reflection of the events of life and the world in the works would be to grossly simplify the mechanism of Bartók's creative art." He goes on to qualify this by saying that "in the case of the *Sixth String Quartet*, however, it is impossible to disregard these interrelationships".[169] This telling comment is the more appropriate since this quartet was begun by Bartók immediately upon finishing the *Divertimento*. In fact, the first sketches for the motto theme are recorded on the last page of the *Divertimento* draft. Kárpáti even goes so far as to state that "the Sixth Quartet is par excellence the work of the wartime creative period, and something of a foreboding of the tragedies which actually did come to pass".[170] While dividing Bartók's work into periods, Kárpáti warns that this cannot hope to "create an artificial 'tidiness' out of the 'untidiness' of spontaneous development",[171] a concept that could as well be applied to music analysis in general.

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[167]János Kárpáti, *Bartók's Chamber Music* (Stuyvestant, NY: Pendragon Press, 1994).
[168]*Bartók Companion*, p. 234.
[169]ibid., p.12.
[170]ibid.
[171]ibid., p. 13.

Kárpáti identifies a number of influences on Bartók. Not surprisingly these influences are the greatest masters of musical history. An entire chapter of the book documents the influence of Beethoven, especially on the string quartets. In moving towards more contemporary composers, Kárpáti qualifies his investigation. "One of the principal methods of style analysis is the demonstration of conscious relationships and unconscious parallels, at the same time making fine distinctions between them. In examining Bartók's art this is especially important since it has at once both a pioneering and a summarizing role in twentieth-century music...when we investigate the inner significance of Bartók's oeuvre, and the logic of its development, through analysis of the various influences, borrowings and parallels, we are in no way degrading him."[172]

Indeed, a number of influences are identified: Richard Strauss in Bartók's youth; Liszt on the orchestral and piano music; Wagner for his tonal ambiguity;[173] and Reger for shifting patches which are tonally ambiguous. Bartók had absorbed these influences by the time of his early mature compositions, at which time he came under the influence of Debussy, and then Ravel. Finally, Kodály, who was his colleague and friend, had a large influence on Bartók. Kárpáti points out that Bartók developed certain elements of what was to become a style associated with Kodály, who used it long after Bartók had abandoned it.

More complex are the interactions with the music of Stravinsky and Schoenberg. Kárpáti points out features that Bartók appears to have discovered in parallel with the other two masters, while still unaware of their music, and vice versa. In the case of Schoenberg, the route to these features is the common tradition of (Germanic) classical music. On the other hand, "one of the most important 'common' achievements of Bartók's and Schoenberg's early, still unconscious, progress together was the breaking up of tonality."[174]

The early parallelisms did become outright influence, however. "In the interval between the *First* [1908] and *Second* [1917] *String Quartets*, however there was an important change of

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[172]ibid., p. 31.

[173]Kárpáti agrees with Somfai that Wagner is an important early influence, and finds the first theme of the First Quartet to be a sort of "answer" to Tristan in *The Bartók Companion.*

[174]ibid., p. 38.

direction: becoming familiar with several of Schoenberg's works Bartók began quite consciously to borrow elements from the Viennese master."[175] Kárpáti avoids a potential minefield of criticism by quoting at length from Bartók's own essay, published in 1920 in the Viennese *Musikblätter des Anbruch*, entitled "Schoenberg's Music in Hungary". In this article, Bartók outlines his introduction to Schoenberg's music and its subsequent influence on the composers of Hungary. He himself qualifies his use of this term: "I use the word 'influence' in its best sense: in this there is no question of slavish imitation".[176] In 1921, in a letter to Cecil Gray, Bartók expresses his admiration for Schoenberg's music. Kárpáti notes that "clearly, at this time Schoenberg symbolized the new aspirations in music for Bartók, and the criterion for musical life was whether Schoenberg's music was performed or not."[177] Kárpáti sees Bartók as searching at this time, investigating all paths for music without prejudice.

A concrete example of influence was the increasing use of chromaticism in Bartók's music. A particular technique employed by both Schoenberg and Bartók was "distance phenomena", or division of the octave into equal intervals. (These are the interval cycles of Antokoletz, and encompass the 1:2, 1:3 and 1:5 models of Lendvai.) Kárpáti claims that all distance phenomena appear in Liszt's music, and this could have been the origin for Bartók. He also notes that Debussy used these same equal divisions, although he quotes George Perle's idea that whereas Debussy uses them to neutralize motion and motivic development, Bartók uses them for the opposite purposes.[178] However, Kárpáti does not believe that Bartók took the idea of distance phenomena from Schoenberg. "Bartók arrived at twelve-note chromaticism as an inevitable consequence of late Romantic development, and quite independently of Schoenberg, he may also have discovered the distance scales which go with it in the same way. It is very

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[175]ibid., p. 39.
[176]ibid., Bartók is quoted on p. 40.
[177]ibid., p. 41.
[178]Perle is quoted on pp. 42-43.

probable, however, that after the first unconscious effort and having come to know Schoenberg's music, he took more decisive steps towards these new implements of musical language."[179]

Another common feature of their music is the use of fourth chords. Although Bartók later claimed to have discovered these chords from the example of peasant music, Kárpáti calls this explanation for their occurrence in the *Fourteen Bagatelles* "extremely doubtful",[180] preferring to view his acquaintance with folk music as just one factor, along with his own art music experiences and his knowledge of Schoenberg's work. He points to the *Second Quartet*, in which a fourth is something of a parent cell, and the two fourths a semitone apart form the Z-cell of Perle and Antokoletz. Further, while peasant music might have suggested a piling up of perfect fourths, much more prevalent in the music of Bartók, and Schoenberg, is a perfect fourth plus an augmented fourth. This structure, much more interesting aurally, is also a subset of the Z-cell.

A famous feature of Schoenberg's music is his building both melody and harmony from the same materials. Bartók did the same, although again claiming folk music as the justification and inspiration for the practice.

Another feature is complementary melody writing, wherein simultaneous or successive melodies are created from mutually exclusive subsets of the total chromatic, thus ensuring the constant circulation of all twelve semitones.[181] In fact, Kárpáti identifies two separate types of complementarity: that wherein the melody and harmony use different, mutually exclusive pitches, and the second where a single melody avoids note repetition, and turns back on itself to fill in larger leaps. While such melodies waned in importance for Schoenberg with the development of twelve-tone technique, they retained their interest for Bartók. The first type of complementarity is contained in the opening notes of the *Third Quartet*; the second is evident in the first theme of the *Divertimento*, second movement, in both the exposition and its recapitulation, as well as in the opening theme to *Music for Strings, Percussion and Celesta.*

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[179]ibid., p. 43.

[180]ibid., p. 46.

[181]In *The Bartók Companion*, p. 236 Kárpáti states that as far back as *The Second String Quartet*, Bartók was playing with introducing 11 of the 12 semitones at the start of a theme.

Bartók shared with Schoenberg and Berg a predilection for "geometric-graphic" melodic lines, in which this element "was always of some significance in linear thinking, usually organically related to the emotional-conceptual content of the work."[182] In this case, the common influence is carried back at least as far as J. S. Bach. Such linear motions include both "straight lines" as well as "circular motions", contractions and expansions. (For Kárpáti, a "straight line" is a continuously rising or falling melodic line, while a "circle" is a series of straight lines alternately rising and falling to approximately the same high and low notes.) This regular, symmetrical type of construction was counter-balanced by a tendency towards decomposition, as when a symmetrical formation opens out into a very wide line that appears disorderly or confused, even though it is the result of a regular motion, gone astray as it were. These motions, as well as the use of wide intervals in creating melodies in Schoenberg, may have been a reaction to the small-interval melodic motions of Wagnerian chromaticism. These large intervals also loosened the feeling of tonality.

The breaking up of the melody with large intervals is often mirrored in rhythmic breaks within the melody, which no longer are mere resting or breathing spots regularly placed. These rests now aid in the air of decomposition. Such broken structures in Schoenberg's *Five Pieces for Orchestra* are heard later in Bartók's *The Miraculous Mandarin*, "above all the use of melodic fragments, fragment melodies, and ostinato technique".[183] In this same vein, the short motives of Richard Strauss seem to have had an effect on Bartók as well.

This is not to say that these effects were blatant in Bartók, probably due to his folk music influence. It may have been the example of peasant music that kept him from fragmenting melodies, and using extremely wide intervals, in the manner of Schoenberg et al. It is informative to note that the work that does incorporate a number of these features, *The Miraculous Mandarin*, is set in the city and shows the sordid underside of urban life. From rural life, a similar sort of detached melodic fragment is used to denote the night and its "music", in a

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[182]ibid., p. 51.
[183]ibid., p. 54.

technique that Kárpáti dubs "micro-melodics".[184] Here we find an overlap of Bartók's style with the coloristic effects found in Berg's *Lyric Suite* (especially in the *Third Quartet*), as well as the music of Webern. The grating use of semitones for colour is also reminiscent of Stravinsky, but the consistent use of semitones and major sevenths harks back to the Second Viennese School. Kárpáti claims that the accumulation of these minor seconds evolve into "the first note bundles and clusters in music history".[185] Advances in string writing also appear, with more frequent use of known techniques such as pizzicato, sul tasto, and sul ponticello, and the introduction of the "snap" or "Bartók" pizzicato.

Kárpáti also finds common ground between Schoenberg and Bartók in the importance attached to the distribution of a chord, as opposed to its structure in a normalized, closed position. The literal intervallic structure becomes paramount, and often dependent upon specific register as well. For example, the fourth chord, made up of one perfect and one augmented fourth, also outlines a major seventh, a sonority which gains increased importance in this idiom. Indeed, Kárpáti compares it to the perfect fifth that is the span of the one major and one minor third in tonal triads. He finds two chord types most typical in Bartók's style between 1920 and 1925: the fourth chord and the four note chord based on thirds. Both of these outline a major seventh, providing a constant tension. So ubiquitous is this sound that Kárpáti notes that the avoidance of parallel major sevenths is analogous to the earlier prohibition of parallel fifths.

Turning to rhythm, Kárpáti notes that Bartók was experimenting with changing metres and so-called Bulgarian-style rhythms before he was even acquainted with folk music. In his later music, simple arithmetic patterns are often overlaid on top of such rhythms. For example, in the *Fourth String Quartet*, there is an augmentation wherein the underlying beats are grouped into 5, 6, 7, and then 8 quarter notes. Such rhythmic innovations were common to both Schoenberg and Bartók, and derive from their quest to break up tonality by disrupting old patterns. To this end, both composers used various means: melodic, harmonic, and rhythmic. Although Bartók set out

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[184]ibid., p. 56.
[185]ibid., p. 57.

on this path independently, when he did become aware of Schoenberg's music he consciously merged some features into his own music, while rejecting others. While Kárpáti believes that Bartók and Schoenberg both aimed at abolishing tonality in the late 1910's and 1920's, Bartók did not continue on this same course. He adopted the highly chromatic idiom, and yet retained tonality "as a guarantee of structural unity and tonal stability in a work."[186] He also retained a number of folk rhythms, although usually the most complex, and even these he transformed for his own purposes.

Kárpáti states that Bartók remained faithful to these common achievements for the rest of his career, well after diverging from Schoenberg. His example is the twelve-tone theme in the *Second Violin Concerto*, which is clearly tonal. He also feels that Bartók exerted a lasting influence on Schoenberg, especially on his use of distance models, which are active in so late a work as the *Ode to Napoleon.*

Kárpáti has relatively little to say about the influence of Stravinsky, although he does say that in the most important of Bartók's theoretical writings "reference to Stravinsky is virtually indispensable".[187] The importance of Stravinsky to Bartók was in his reconciling of folk music with art music, and in particular with atonality. Although Stravinsky rarely used folk music directly, and had some disdain for the practice, Bartók was highly impressed with the early ballets, the *Pribaoutki Songs*, and *Les Noces*. The harsh tone and dry accompanimental style of the latter show up in *Village Scenes*, while the small-scale motifs and colour dissonances of the songs show up in the *Third String Quartet*, along with neo-Baroque elements such as motor-rhythm and large filled-in chords. While Kárpáti shows some influence of Stravinsky on Bartók's first two piano concertos, this work is taken much further by David Schneider.[188]

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[186]ibid., p. 68.

[187]ibid., p. 72.

[188]David E. Schneider, "Bartók and Stravinsky: Respect, Competition, Influence, and the Hungarian Reaction to Modernism in the 1920s" in Peter Laki, ed. *Bartók and his World* (Princeton, NJ: Princeton University Press, 1995).

The influence of Stravinsky disappears in the 1930s, and when Baroque-style elements reappear in the last works, the influence is from J. S. Bach. In fact, Kárpáti hears a section of The *Sixth String Quartet* which is reminiscent of *The Soldier's Tale* as "the same sort of 'waving goodbye' to Stravinsky as the twelve-note theme of the *Violin Concerto* was a 'farewell' to Schoenberg."[189]

The reconciliation of folk music with modern art music was a life-long concern of Bartók. Kárpáti shows that although he had strong feelings about it, Bartók did not maintain a consistent position over the course of his life. Even though he claimed that an art based on folk music could never be atonal in one of his Harvard Lectures, he contradicted this position in an article published in 1920, where he states that Stravinsky's use of motifs derived from folk music in an atonal idiom seems to be the way that the two can be reconciled.[190] While Bartók's later statement might be seen as a repudiation of this earlier stance, Kárpáti feels that the earlier article was "a much more serious conceptual study".[191]

In summing up the influence of his contemporaries on Bartók, Kárpáti notes that Schoenberg vigorously decried both the use of folk music materials and neo-classicism as the avoidance of the real problems in contemporary music, while Stravinsky and Bartók availed themselves of both of these styles. Kárpáti feels that the former was an appeal to "the great impersonal community, and the other to the great tradition, after the experience of the terrifying crisis of the age."[192] He also feels that folk music had a refreshing effect on art music, whereas neo-classicism had the danger of becoming a stylistic game. In spite of their differences, Stravinsky and Schoenberg were Bartók's most important contemporary influences. "Bartók, standing between them, does not vacillate between progression and regression, but takes over and

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[189]Kárpáti, p. 76.

[190]Béla Bartók, "Der Einfluss der Volksmusik auf die heutige Kunstmusik," *Melos* I/17 (16 October 1920) quoted in Kárpáti, p. 77.

[191]Kárpáti, p. 77.

[192]ibid., p. 78.

filters certain elements from the art of each in order to merge these in a sovereign way into his own art. Bartók therefore made no compromise: he brought about a synthesis."[193]

Bartók's interest in folk music is well-known, and Kárpáti touches on the different aspects of this fascination for the composer: artistic, political, scientific, philosophical, social, historical, and moral. His aim in this chapter of his book is to integrate these into one portrait of the man. Bartók himself spoke of three separate stages of using folk material: literal quotation, imitation, and assimilation into an idiomatic personal style. Of this last type, Bartók himself stated "In this case we may say he has completely absorbed the idiom of peasant music which has become his musical mother tongue."[194] Unique for the period was Bartók's widespread interest in the folk music of many countries, not just his own, which Kárpáti feels makes him more than a "mere folklorist".

In his original compositions, as opposed to his folksong arrangements, Bartók seems to have extracted what was unusual and exceptional in folk music. He did retain some recognizable folk features, but transformed others. For example, he might keep the four line structure of a folk stanza, but borrow (or adapt) lines from several folk songs, and from a different position (e.g. folk line two becomes line three). At other times the fifth-relationship of the first two lines (i.e. the second line answers a fifth lower) might be changed, or even extended to the other lines, or the last two lines might be composed to form a variant of AAB bar form (with the second A as the fifth answer). Other characteristics of folksong imported into Bartók's style are domed melodic motions and imitations at the third (as well as the fifth). Of particular importance is the use of fourths, both harmonically and melodically. Such structures are much more common in Bartók's music than in folk music, where they are rarely the basis of an entire melody.

Again this influence is not one of slavish imitation, and Bartók uses many techniques atypical of folksong. His fourths are not only more common, but are often in relations never found in peasant music, such as the common arrangement C/F-F#/B (a Z-cell), in which the

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[193]ibid., p. 79.

[194]Béla Bartók, BBE, pp. 343-344, quoted in Kárpáti p. 105.

upper interval is contracted, or "mis-tuned" as Kárpáti names it. As well, structures are often compressed so that several lines of a folk structure are contained in one of Bartók's; at other times a single line is used and elaborated. Set types are sometimes used, such as the lament, where folk characteristics are combined with the artistic conventions of Western music such as the sound of sobbing and other imitative sound effects.

While Bartók is regarded as interested in Eastern European folk music, Kárpáti shows that Arab[195] folk music was a major influence on him as well, whether imitated directly as in the *Duos for Two Violins*, the *Suite for Piano*, or the *Dance Suite*; or crystallized and assimilated as in the string quartets. He states that "we may also conclude that we ought to seek the origin of other kinds of barbaric ostinato minor third motifs by Bartók primarily in primitive folk music, and not in popular art songs".[196] Another characteristic of Arab peasant music is drum accompaniment, which Bartók often includes in a stylized way. Since Arab drummers can produce two or three different pitches, Bartók often includes these in addition to the sometimes complex polymetric structures they can create, whether with the melody or within the drum part alone.

At a more detailed level, Kárpáti examines Bartók's famous use of the pentatonic scale. He notes a standard folksong cadence type used in the *String Quartet no. 2*, in his example the notes D-G-E. "This tiny melodic germ of three notes plays a large role in Bartók's melodic world, being, so to speak, one of the main means of reconciling art music and folk music melodics; or, to put it another way, a means of idiomatic use of folk music elements."[197] This germ may be used as a set, in all of its permutations (O, R, I, IR) or with its members rotated (e.g. D-G-E, G-E-D, E-D-G). Two of these motives may be combined, to form what Kárpáti calls "tetratony", which he says can be found in folk music as well. This combination (e.g. C-D-F-G) forms a

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[195]Bartók collected folk songs in the Biskra district of Algeria in 1913, and attended the Congress for Arab Music in Cairo in 1932. Kárpáti summarizes the Biskra trip on p.98. Bartók's synopsis of the Congress appears in BBE, pp. 38-39; and a letter from Bartók to his wife Ditta from the Congress is published in Laki, pp. 213-216.

[196]Kárpáti, p. 99.

[197]ibid., p. 107.

common type of material found in Bartók's work, and Kárpáti goes so far as to assert that Bartók's pentatony arises from the three-note motive and tetratony. In this regard, Kárpáti makes a remarkable statement: "minute analysis meets with the abstraction of tonal systems and scales. It is common, however, to find in Bartók's music that the actual musical material contains, purely and in exemplary fashion, the abstraction."[198]

Unless qualified, Kárpáti uses pentatonic to refer to the standard "black-note" pentatonic scale. Similarly, pentatony is the use of such a scale. Tetratony is the use of the particular four-note scale just mentioned, and he uses tetratonic as its adjectival form.

Kárpáti notes an interesting thematic evolution in the *Third String Quartet*, which he finds characteristic of Bartók's music. In one instance, a tetratonic theme from the exposition becomes pentatonic in the development, during a relatively static section with strong tonality; similarly, a three-note theme that is developed chromatically in the exposition becomes pentatonic in the calmer, more static recapitulation. Both of these illustrate that pentatony is static compared to chromaticism, and that Bartók tends to employ it in calmer sections, as well as to slow motion or bring about resolution. Even in chromatic sections, such as the trio of the Burletta in the *Sixth String Quartet*, or the Bulgarian rhythm section of the *Fifth String Quartet*, Kárpáti discovers "hidden pentatony" as a background structure. "This points decidedly to Bartók's feeling that the pentatonic framework is limited from tonal and melodic aspects alike, and his seeking immediately to broaden it."[199] The simultaneous use of two different pentatonic systems in different parts is called "a peculiar kind of bitonality",[200] and Kárpáti notes that this vertical pairing usually occurs in conjunction with imitation, although it can occur within a single line.

In investigating Bartók's use of pentatony, Kárpáti finds considerable sophistication. He terms the use of hemitonic pentatony, that is pentatony using semitones, to be the most

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[198]ibid., p. 111.
[199]ibid., p. 113.
[200]ibid.

significant new feature in Bartók's later works (such as the *Concerto for Orchestra*). This "new" type of pentatonic scale might be considered merely a five-note scale with variable intervallic content, but Kárpáti hears it as a logical extension of Bartók's previous pentatonic usage, coloured by influence from the Far East.[201] Bound up with the use of this scale type is the whole gamut of distance models found in the music, for in addition to Lendvai's 1:2, 1:3, and 1:5 models, Kárpáti also finds 1:4 and 1:6, although he stresses that these are less common. "These models and the scales evolved from them have a double role in Bartók's music: on the one hand, in association with other elements, they are apt to give a particular work or part of a work its folk character, or add colour to it; on the other hand, changing to an idiomatic element, they secure at virtually every point the communal background to Bartók's music, its natural and popular roots."[202] As Antokoletz has already pointed out, the most common of these (1:2, 1:3, and 1:5 models) evenly divide the octave within a single octave, and this may be why they are so prevalent in Bartók, both as surface details and structural pillars.[203]

On a more speculative note, Kárpáti opines that the use of these distance models is a major part of Bartók's synthesis of the music of both East and West, where various features of Eastern music are fitted into the twelve-note chromatic system of modern Western art music. Bartók is the first European composer to effect such a synthesis, rather than using Eastern elements merely for coloristic effect.

Kárpáti mentions several features of Bartók's compositional development. His style did not develop continuously, but rather he returned to earlier ideas and re-composed at a higher level, in a sort of spiral progression. He notes that Bartók was not so concerned with originality, especially of thematic material, even seeming to sanction "borrowing", as his concern was mainly with the form into which it was cast.[204] While Bartók did use folk music elements a great

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[201]ibid., p. 116.

[202]ibid., p. 120.

[203]Antokoletz is thanked in the Preface for his assistance with the English version of this book, which may explain the numerous references to the work of George Perle, as well as to that of Antokoletz.

[204]The original essay is in BBE, p. 346.

deal, his ultimate aim, which he achieved, was to absorb them into a personal idiom that would be suitable for a "universal" musical style. Kárpáti is careful to note that no one style can hope to be truly universal, and yet Bartók's achievement certainly has very wide currency and application, as much as even a spoken language can be hoped to attain. He notes that in regarding peasant music as a "pure spring" from which to imbibe, Bartók usually manages to avoid a romanticizing of the peasant way of life.

When he states that "monothematic structure is to be found in virtually every one of Bartók's composite musical constructions",[205] Kárpáti refers to a very specific, somewhat loosened definition of monothematicism. While noting the dramaturgical aspect of the concept in Bartók's art, he also mentions that variation is intrinsic to it as well, not as a set form (i.e. Theme and Variations), but as a constant compositional process.[206] With this in mind, he cites Réti as proof of the monothematic art of the Classical and Romantic masters, from whom Bartók learned it. He makes much of the expansions of the cambiata after Palestrina, although some analysts might see this as a single line expressing multiple voices. His meaning becomes clear through his examples, where for example in the *Second String Quartet* the concept is of an arch that diminishes in scope in each new theme. Speaking of the *Third String Quartet*, he says "there is no question of a single musical idea weaving its way through the whole composition: it is a case of two basic principles of melody writing which, in correlation with one another, create a unit."[207]

One might criticize the examples for leaving out notes, or ignoring slurs, but there is no reason to believe that Bartók would not obscure his pattern to make it more musical, or even less perceptible. What Kárpáti does claim is that this monothematicism gives Bartók's work unity, and likens it to serial technique in that all themes and motifs are related by certain intervals, both

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[205]Kárpáti, p. 129.

[206]This is not to imply homogeneity in texture. In The *Bartók Companion*, Kárpáti notes Bartók's love of sharp contrasts within a movement, and even states that "In the middle section of the second movement [of the *Second Quartet*] two typical motifs of Bartók's instrumental dramaturgy can be discerned. One is the crude clashing of materials of different, even opposed, characters.", p. 239.

[207]Kárpáti, p. 148.

vertical and horizontal. Of course, the ordering is free, and all twelve tones need not be in circulation at any given time.

In fact, Kárpáti finds four different methods of monothematicism used by Bartók. The first is based on cyclic principles of the variation of a single complete theme, whose fundamental structure remains unchanged, although surface elements may be widely varied. (Bartók uses this almost exclusively for its dramaturgical significance, as in the *Two Portraits* or *The Wooden Prince*.) The second type of monothematicism is the variation of small motifs of three or four notes, rather than a complete theme, saturating the composition with the motifs and their development. Here everything is dynamic and changeable except for the motif as a melodic structural element. The third "maqam" principle keeps constant only the abstract line or melodic shape, within which the quantitative qualities of the intervals are of secondary importance and may be widely varied. Finally, the fourth type is interval consistency, which Kárpáti likens to a kind of serial technique. All elements are free except for the relationships between certain intervals. As Bartók developed his technique, the newer types were added in amongst the older ones, rather than replacing them, leading to a richness of technique. Kárpáti goes so far as to say than no single work uses only one type.

Tonality in Bartók's music has attracted the most analytical scrutiny, although it has produced the least consensus. Kárpáti points out that Bartók retains a number of elements from tonal harmonic practice, and that virtually his entire oeuvre stresses identity of first and closing pitches. Indeed, he quotes Bartók's remark that eliminating all traces of older practice would amount to disclaiming a considerable part of musical art.[208]

Kárpáti is the only major theorist to state that Bartók was not reluctant to use atonality, and even that he regarded it as an inevitable historical development. He defines atonality, however, as the free use of all twelve chromatic degrees. Within this definition he allows that Bartók created a new type of tonality, recognizable but different from common-practice tonality

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[208]BBE, pp. 457-458.

up to the beginning of this century. Thus, his "atonality" is really the free use of all twelve semitones in a modified tonal context. He criticizes Edwin von der Nüll for forcing Bartók's harmonic procedure into the molds of an outdated tonal function, and states that Lendvai's discovery of the axis system is a far more important starting point, even though this latter must be expanded into a complete system from the isolated individual phenomena it now presents.

For Kárpáti, the most important concept in understanding Bartók's harmonic world is "mistuning", a term coined by Bence Szabolsci in his study of *The Miraculous Mandarin.*[209] Present in virtually all of Bartók's major works, this practice is the substitution of semitone neighbours for key harmonic notes, such as a raised or lowered fifth degree substituting for the perfect fifth in a chord or melody. Similarly, diminished and augmented octaves are mistuned substitutes. Although such mistunings had been used in Bartók's works since his youth, the earliest mistunings were used for ironic or satirical purposes, as in *Kossuth* or the second of the *Two Portraits.* (In *The Bartók Companion* Kárpáti notes that Bartók's early mature compositions are often sarcastic, parodic, witty, grotesque, ironic, with even a cruel sense of humour. This is often related to overt biographical content, such as his aborted romance with Stefi Geyer and the *Two Portraits*, as well as the *First String Quartet.* In the latter, a "pure" folk melody is contrasted to a debased urban song.) In later works, this technique became an expressive device, often applied to folk materials as well as original ideas. As reconciling folk and art music came to the fore for Bartók, he would mistune a section of a pentatonic gamut to fit it into his harmonic scheme for the piece, often to avoid the tonal implications of stress on the perfect fifth. Indeed, Bartók was attracted to certain scales in peasant music because they also avoided the perfect fifth- and octave-relationships, and included diminished or augmented fifths and octaves instead.

This is not to say that Bartók never used perfect fifths and octaves. These appear in most of his works as well, often imitating classical procedures in fugal passages and other such comes-

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[209]Bence Szabolsci, "A csodálatos mandarin" ["The Miraculous Mandarin"] *Zenetudományi Tanulmányok III*, Bence Szabolsci and Dénes Bartha, ed. (Budapest: Akadémiai Kiadó, 1955).

dux structures. In addition, he often imitated the procedures of folk music, wherein a later phrase is a repetition at the fifth. Both of these procedures might also be mistuned.

When dealing with folk-like melodies, Bartók may present only his composed variant, or he may present the mistuned variant as well as the "original" version. In such cases, it is usually the so-called mistuned version that is the thematically important statement, while the version with perfect fifths and octaves is considered inferior, and is often mocked or presented ironically, as in the *Allegretto con indifferenza* section of the last movement of the *Fifth String Quartet.* Bartók finds the mistuned version more interesting, as well as more artistically viable. In such cases Bartók seems to work with tetrachords, mistuning either the upper or lower tetrachord of a scale or mode. In these spots, the tetrachords themselves are obvious in the musical structure.[210]

Some mistuned tetrachordal structures have interesting characteristics. Mistuning the tetrachords of the Dorian mode produces the octatonic scale:

Dorian : D-E-F-G / A-B-C-D

Octatonic: D-E-F-G / A♭-B♭-B-C#

In contrapuntal writing, Bartók often retains fugal characteristics from Bach, such as the perfect-fifth answers in the hunter's fugue from the *Cantata Profana.* Often as well, he will transform this tradition through mistuning, and so answering at a diminished, or even augmented fifth. Kárpáti points out that this is no more an example of bitonality than is a real answer in a fugue by Bach. Rather, in the case of a diminished fifth, it is a transformation of the unequal distance of the fifth-fourth tonal system into an equal system of two tritones. Often, themes constructed with mistuned fifths are imitated at the perfect fifth, and vice versa. Finally, Bartók often mistunes the scales in two lines to provide the complete twelve-tone chromatic system between them.

Harmonically, Bartók began to mistune degrees in functional chords early as well, as in the satirical waltz of the second of the *Two Portraits*, where both the dominant note and its

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[210]In *The Bartók Companion*, p. 233, Kárpáti extends the idea of encirclement by showing two mistuned tetrachords lead in opposite directions to an octave A (D-C-Bb-A / E-F#-G#-A).

seventh are mistuned within a dominant-seventh chord. In fact, Bartók often included adjacent chromatic notes with the actual chord tones, to cloud the tonality. In some cases this seems merely to be to add colour from the friction of minor seconds, and in others to imitate percussion instruments; as such these are not strictly harmonic phenomena. However, these colouring notes sometimes do become chord tones, and structures are built up of chords with mistuned elements, with or without the original versions as well.

At this point Kárpáti pauses to consider the alpha chord of Lendvai, e.g. E-G-B♭-C-E♭. This structure is usually considered, as per Lendvai, a C-major chord with both major and minor third. What if, Kárpáti asks, we consider it in root position, with G as a mistuned major third; B♭ and C as mistuned perfect fifths, and E♭ as a mistuned octave? This is more than a witch hunt with notes, as Kárpáti points out a number of tonal contexts in which such a chord is actually heard as being in root position, and resolves clearly as such. He continues to point out that several variants of this chord, as well as the distance scales, can be heard as major chords and their mistuned variants, rather than as such exotica as Golden Section proportions.

Continuing with Bartók's harmonic system, Kárpáti points out that although chords made up of seconds, fourths, and fifths are important, chords made of thirds never lose their importance. As in most areas, Bartók's newer techniques add to his older ones, rather than displacing them. The two basic types of third-structure chords have already been identified by Lendvai: the "hyper-major" chord (major seventh above a major triad), and the alpha chord. The major seventh chord is hardly a new phenomenon with Bartók. At this point Kárpáti concedes that the alpha chord is indeed often a major-minor blend, but he notes that the span of both chords is a major seventh (or diminished octave), and speculates that this interval aided in the evolution of the pairing of these structures in Bartók's work. Once again he contradicts von der Nüll, denying that the alpha chord is a neutral type (neither major nor minor), and going so far as to call it "hyper-minor". Thus he postulates a system in which two chordal entities are analogous to major and minor, both bounded by a major seventh (as is the mixed fourth chord) in the same way that major and minor chords are bounded by perfect fifths.

Although intervals must be heard in context, Kárpáti does demonstrate that mistuning the lower ("acoustic") intervals in the overtone series produces more remote harmonics. He is careful to separate these physical acoustic phenomena from considerations of consonance and dissonance, as the latter pair are dependent upon the compositional conventions of the period. Rather, the perfect fifth, major third, minor seventh, and major second are acoustic intervals, "naturally occurring", whereas their mistuned counterparts are artificial, "anti-acoustic" phenomena. Thus the major seventh chord is comprised of acoustic intervals; the alpha chord and fourth chords are comprised of anti-acoustic intervals. Thus Bartók retains the acoustic intervals of earlier music, placing them within a system containing their opposites, with acoustic/anti-acoustic as an analogue to major/minor. Kárpáti calls the two types of chord "Bartók major" and "Bartók minor".[211]

Once again Kárpáti digresses to consider Lendvai's ideas. He notes that the dichotomy postulated by Lendvai is between acoustic and golden section types, but that these two do not oppose one another in Bartók's musical practice. He criticizes Lendvai for considering only one type of pentatony, which gives the false impression that it is opposed to the diatonic acoustic system. Kárpáti agrees that pentatony is wedded to chromaticism in Bartók's music, but only because it has been transformed in a particular way by the composer. He also demonstrates that the intervals of the alpha chord, as calculated from the lowest note, are not golden section intervals. Unfortunately, Kárpáti uses some arithmetic sleight of hand here, calculating from the bottom note. Lendvai's argument is that the distances *between* the members are governed by golden section, which is still true in Kárpáti's example. Kárpáti summarizes that "the real duality behind Bartók's music is the dialectics of the acceptance and denial of the acoustic world."[212]

Polytonality is the final theoretical consideration, and again Kárpáti surprises the reader by seemingly finding it in Bartók's music, although the composer denied even the possibility of real polytonality. Beginning with the idea that a chord that has both major and minor third is

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[211]Kárpáti, p. 213.
[212]ibid., p. 214.

implicitly bi-modal, Kárpáti points out that a line of two mistuned tetrachords is also implicitly bi-tonal. Such bi-tonal motions, often at the diminished fifth, fill out the complete chromatic within a single (bi-tonal) structure. Indeed, these combinations are most usually of complete structures, such as the C-major scale and the G♭ pentatonic scale. This technique often results not in true bi-tonality, but in a negating of both tonalities. Here Kárpáti denies Lendvai's idea that it is the tritone-polar tendencies in Bartók that are crucial; he states that the semitone relation is more important, or at least more fraught with bitonal implications, as it is a mistuning of the closest relationship possible, the unison or octave. Thus in tonalities, the same mistunings (perfect fifth and octave) assume the greatest importance. Again, Bartók's "tonal system is built on the coexistence of *perfect* and *non-perfect* fifth relationships."[213]

The secret of Bartók's use of bitonality is that one tonality is always dominant, at least as far as the structure of the piece is concerned; the other performs a mistuning function. Often this mistuned tonality contributes notes that are missing from the dominant tonal structure, and thus "flavour" it in a certain way. Another common practice is for the melody and harmony to be tonally divergent. In any case, although individual sections or even idioms may be polytonal, the piece itself will always be monotonal, what Kárpáti terms "the special dialectics of *idiomatic polytonality and structural monotonality*."[214] The single tonality of the work is secured "not only by the framework tonality but also by the complex of different tonalities which appear in the various formal sections of the work."[215]

The axis relation of tonic to diminished fifth, associated most often with Lendvai, is here shown to be a mistuned tonic-dominant relationship. Kárpáti notes that in an unpublished draft of his famous self-analysis of the *Fifth String Quartet*, written in French, Bartók states that in relation to the tonic B♭, the tonal centre of E is "jouant le rôle de la dominante".[216] This contradicts Lendvai's idea that these are both tonic poles. The tension between the perfect fifth

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[213]ibid., p. 228.
[214]ibid., p. 231.
[215]ibid., p. 232.
[216]ibid., p. 232. Kárpáti notes further that the translation in BBE was made from the German draft.

and mistuned fifth in this quartet is also apparent in a number of other works, and even between the harmony and melody in many cases. Bartók also experiments with mistuned tonics as well as dominants.

Critics of Kárpáti

There are few critics of Kárpáti's work, possibly due to its limited availability until this time. Somfai has given it a glowing review in the Hungarian Quarterly,[217] and Antokoletz has given it an implicit stamp of approval by participating in the publishing of the book.

In his review, Somfai notes that Kárpáti does not offer "sensational theories", but rather provides a series of profound insights and "highly significant analytical observations", in contrast with the strained systematizing of Lendvai. Somfai uses this review as a platform to launch a not-unjustified attack on the English-speaking analytical school's ignorance of work on Bartók in other languages.

One rather annoying aspect of Kárpáti's style is his initial adoption of a radical stance, which is then mollified by a sweeping, idiosyncratic definition. For example, after stating that Bartók's music is sometimes atonal, we are told that atonality can amount to free use of the chromatic degrees within a new type of tonal system. Similarly, the music is monothematic only because the concept of monothematicism can apply to several different themes if the contours are the same, or certain intervals are constant. In these cases, it is the presentation that is at fault; the ideas themselves are valid and stimulating.

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[217]László Somfai, "A Classic on Bartók Revised" in *New Hungarian Quarterly*, Volume 36 (Spring 1991), pp. 141-3.

Analytical Application

Like Somfai, Kárpáti does not offer a monolithic theory, but rather more general insights into Bartók's compositional practice. A number of these are very specific, and can be applied to the *Divertimento*.

Kárpáti's concept of mistuning can be applied to the harmonic structure of the movement. Many of the harmonic structures in this movement are based on thirds. As Kárpáti states, chords of thirds never lose their importance for Bartók, and the whole concept of mistuning requires this implicit norm of thirds for mistuned fifths and thirds to be heard as "mistuned". The first example occurs in measure 5, where the first phrase cadences on G in Violin I. This G is a tritone from the tonic, and can be heard as a mistuned dominant, especially since the accompaniment outlines the motion from D-G. In fact, the whole first statement of the melody, mm. 2-5, can be heard as mistuned as well, as it rises to climax on B# and never attains the tonic C#. With the second, imitative phrase raised a perfect fourth, the second cadence, in measure 10, is on C♮, a diminished octave above the bass C#. This is an even clearer example of a mistuned interval, and the mistuned octave plays a large role from here to the end of the movement.

The sequence that follows is punctuated at the end of the two-measure groupings by resolution of these diminished octaves, which are treated as major-seventh suspensions. Thus the C#/C of m. 10 is re-spelled D♭/C in m. 11, and resolved to C/C on the final beat of m. 12; the C♭/B♭ of m. 13 is resolved to B♭/B♭ on the last beat of m. 14; and the A/A♭ of m. 15 is unresolved. It is important to realize that the sound of this section is determined by the mistuned octaves, as the resolutions are almost perfunctory, clouded by the Cello motion, and certainly not emphasized. The harmonic structures on the downbeats of each of the sequential entries are based on the unequal fourth chords, with an augmented fourth below a perfect fourth. This is most obvious in m. 11, since a minor third above the bass is added to the downbeats of m. 13 and m. 15, but the derivation from the fourth chord is apparent. As Kárpáti notes, this sonority is important to Bartók, and the major seventh can also be heard as a mistuned octave.

Mistuning does not account for all of the harmonic structures in this movement, but it does play a role in many of them. In Section B, the drone chord is the tonic G minor, but the lament scale played over it consists of a G minor seventh chord, with the addition of a mistuned fifth. While the C# might be considered just another modal tone, its close connection with the drone triad, as well as its position following a section based on mistuned octaves, makes such a reading at least plausible.

Other important mistuned octaves occur at key places. While Section C begins with a G# minor seventh sonority that connects this section with the previous one, the climax in m. 44 outlines a G#/G mistuned octave, along with the mistuned fifth G#/D. Indeed, the climax presents a number of interesting examples of mistuning. After presenting both the mistuned octave and fifth tantalizingly close to resolution due to the trill, which includes (in enharmonic spelling) the perfect fifth and octave, Bartók begins the descent by fourths. As has been mentioned already, after this long slow ascent, a more rapid descent is musically satisfying. It is interesting to note that the upper line of the descent does not quite reach the fourth perfect fourth: D-A-E-C. We can speculate that the perfect fourth here would land on the third of the G# minor triad that is being sounded, and that Bartók found the mistuned major third more interesting. The retreat from the climax also outlines a mistuned fifth, G#-D-G# in mm. 46-48, along with the minor third, as part of a minor-third cycle. A final observation on the climax is that if such mistuned octaves and fifths represent partial Z-cells (here G-G#-D) then in this case we also have the missing note, C#, as the very next note in the bass.

This clash of G# and G is carried over to the "deceptive" cadence on an E minor triad in m. 49, where the G# of the Violin I cedes to the G of the Viola. The Viola is marked ***pp*** while the other chord tones are ***ppp***. The *Agitato* section in m. 51 outlines the same diminished octave G#/G. The next *Agitato* section outlines B♭/A in m. 53.

On a more speculative tack, there may be some subtle variants of mistuning here as well. Considering the importance of the minor seventh sonorities to both Section B and Section C, it is possible to hear the minor third, or diminished seventh, patterns at the end of Section C as

mistuned minor sevenths, wherein the fifths and sevenths have been lowered. This would reveal another interaction between the ***solo*** and ***tutti*** sections in mm. 50-55, as the ***tutti*** section in m. 51 could be considered a minor seventh (lacking a fifth), occurring between two mistuned minor sevenths. The ***tutti*** chord in m. 53 can also be heard as a mistuned major chord: F#-B♭(A#)-C. While we do not have a solid foundation for interpreting Bartók's harmonic usage, it would appear that the mistuning of common harmonic entities might provide some clue.

The resolution of tension in the recapitulation is due in part to the resolution of the initial theme on perfect octave C#'s in m. 61, as opposed to the mistuned cadences of the exposition. This leads into the "Hungarian" outburst in m. 62, which is quite tonal. Kárpáti has noted that Bartók favours chords with both major and minor thirds, and here the characteristic sound is created by placing the minor third in the top voice, over alternating dominant- and minor-seventh chords (the minor seventh including the minor ninth, or mistuned octave). Tension resumes in m. 66 with the tritones, mistuned fifths, in the outer voices for the next two measures (E/A#, E/B♭, E♭/A). This last tritone resolves, to D/B♭. In fact, mm. 65-69 are built on quite standard progressions, with an E dominant seventh (♭5) between two A six-four chords in mm. 65-66, and two dominant sevenths resolving normally in mm. 67-68. From the B♭ triad, contrary melodic motions move to a tonic octave in m. 70. Before the movement ends, however, there is a direct confrontation of the two thirds of the tonic, E#/E, which again present a diminished octave. The E# holds over into the final chord, which is really just a major third consisting of the E# and perfect octave C#'s.

The overall tonal structure shows mistuning at the highest level. Allowing that the movement follows a pattern of A-B-C-A' (or A-B-B'-A'), the tonalities are C#-G-G#-C#. This outline contrasts the mistuned dominant G with the true dominant G#, by juxtaposition. This may be related to the rivalry between the minor third E and major third E# throughout the movement. In any case, the move from C# to G is so strong as to deny any idea that they share a "tonic axis". Kárpáti himself notes that the lament mode of section B is similar to the Cello melody in the Trio of the *Sixth String Quartet*. He calls this mode "a good example not only of the double third [i.e.

both major and minor] but of the 'double fifth' as well".[218] He goes on to note that in the *Divertimento* this mode is joined to an ascending and descending lament melody similar to the Trio.

While we have made some objection to Kárpáti's concept of monothematicism on the grounds that it is not completely theoretically rigorous, the point that Bartók often uses a similar motion in themes in a movement seems to be valid in this case. It also explains some of the power of the climax, and even the dissipation of energy after such a huge build-up.

If Kárpáti is correct, we should find our first clues in the opening gestures. (This accords with Somfai's idea that the opening of a work was crucially important for Bartók.) In the case of the second movement of the *Divertimento*, the opening accompaniment and the opening theme share the "circular" shape of a line that rises and immediately falls back. The ever-widening circle of the accompaniment is contrasted to the small, tight circles of the Violin II. Even the final rise of the accompaniment to C# in m. 11 is answered by a descent to A in m. 15 before the music rises again to D in m. 19. As the circular motion widens in Violin I in sequence (mm. 11-16), the Cellos take up their own small circles which again employ semitonal encirclements of the main tone. The lament melody of the Violas in mm. 19-29 begins as a straight descent, but it becomes circular as it is taken over by the Violins. Even more compelling is the continuation in the Violas, where the line becomes even more obviously circular, growing from a perfect fifth (B♭-F) to a minor seventh (G-F) in range. Indeed, even when the Violas first sound this melody, the accompanying triads descend, only to rise again in counterpoint to the descending line in mm. 22-25. After these widening circles, the accompaniment begins in m. 33, with the ostinato that will lead to the climax. The circling motion in the bass alternates between outlining a G# minor triad and a diatonic variant of the opening accompanimental figure. The Violas present a smaller circle. Over top of this, Violin I presents one huge circle that reaches its apogee at the climax before falling back to the tonic in measure 48.

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[218]Kárpáti, *Bartók's Chamber Music*, p. 483.

After such a strong climactic gesture, this short descent has not dissipated the energy engendered. The section from mm. 50-55 loosens the tension while leading back to the first theme, again with circular motions. Thus the solo instruments present a gentle rising line, which is answered by a brutal falling one; then the directions of both are reversed. A final descending line for the solo instruments leads to the recapitulation in m. 56. The scoring is changed, and the Cellos and Violas have circular motions in tenths. The Basses, scored above the Cellos, have the tightest circle yet, triplet-eighth notes on C# and D. In m. 62 an extension provides imitative circling in the Violas and Violin II, leading to the Hungarian culmination in m. 64.

This culmination uses circling motions in its melody, but only as ornamentation. The main line descends, mostly by perfect fourths (E-B, A-E, D-A). This series of descending fourths appears to be related to the fourth motive of the sequence beginning in m. 11, to the underlying rising fourths of m. 17, and to the descending fourth retreat from the climax in m. 44. Ultimately these fourths may be related to the first movement, where fourths are prominent, and the Violin I line of m. 138 is a series of descending perfect fourths. Also noteworthy is that this straight-line descent introduces a new section, which we might consider a coda. Descending lines lead to the cadences in m. 5 and m. 11; end the sequence in m. 17; accompany the first appearance of the lament melody in m. 20 (as well as forming the first line of the melody); and lead to the recapitulation in m. 55.

The thirty-second note figure that begins in measure 65, beat 4, can be considered the inverse of the original diminished third that contracts to a unison, for here the unison expands out to a minor third, via an ascending major second motion paired with a descending minor second one. This figure of three thirty-second notes seems to spring from Violin I in m. 64, which in turn can be heard as an echo of the ascent and descent in Section C. (The thirty-second note triplets on the second half of beat 1, m. 65, are also a variant of this motion.) Also interesting is the succession of final notes: the lower part outlines D-C-B♭, while the Violin I holds A until resolving to an octave with the lower part on B♭. This section ends with the final Violin II figure extending its C-A motion into one last statement of the lament melody, again a straight-line

descent which here leads to the final section. At the same time, Violin I expands outward to join Violin II on C# at m. 70. Final statements of E and F# appear to be encircling motions of the E# of the Violas in m. 72. A final circling motion in the accompaniment, again a variant of the opening, leads to a close on C#.

In this movement, we can hear the straight-line melodic motion which Kárpáti finds as a common feature in Bartók's music. This motion underlies the melody in Section A, while the Section C melody is a variant that goes straight up, then straight back down. This same type of variation can be found at the end of the *Music for Strings, Percussion and Celesta*, and at the end of the *Fifth String Quartet*. It is interesting that Kárpáti does not see mirror motion as a variation, since he claims that rising or falling motion is the same to Bartók.[219]

While it might be stretching a point to call this movement monothematic, there is little doubt that Bartók used similar means, and shapes, in constructing his themes. This type of construction is also apparent between movements. While it is beyond our scope to consider the other movements in depth, it is interesting to note that the initial minor second oscillation of the accompaniment, which gives the lugubrious and ominous character to this movement, is related to the heavier A-B-A motion that opens the first movement; when expanded to a major second and played staccato beginning on the upper note, it forms the light accompaniment to the carefree theme in m. 264 of the third movement. It is also interesting to note that the circling idea comes out of exactly the type of encirclement that Gillies has found to be so important in Bartók's notation.

The opening chromatic section presents motion, albeit a slow one. This contrasts with the rather static presentations of Sections B and C. Kárpáti has noted that Bartók seems to have considered pentatony as static compared with chromaticism. In this movement, the static sections are based over modal sections. The mode of Section B could be considered a kind of pentatony, while Section C is organized around the modal ostinato. The initial presentation of the circular

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[219]Kárpáti, p. 150.

ostinati in m. 33 presents a foreboding stasis, not least due to the static B in Violin II and F# in Violin I. It is interesting to note that Bartók initiates motion in Violin II with upper and lower grace notes, which seem to pass on their impetus to Violin I. The F# then responds with semitonal versions of these same neighbours, and obvious reference to the opening melody, before continuing with a continuous rise. This rise seems to concur with the notion of chromatic motion versus modal stasis.

As for the mood of the piece, Kárpáti could have been writing about this movement, rather than the first two quartets, when he spoke of their "dark and sombre mood" as well as their "painful and resigned gestures and disturbing harmonies".[220] He also says that the *Divertimento* is built on a "firm, traditional model".[221] In fact, Kárpáti refers to works of this time, including the *Divertimento* as looking back to the past; specifically, to the Baroque concept of form, but more Romantic in expression.[222]

Kárpáti notes that Bartók often incorporates characteristics of lament melody directly from folk practice: sobbing motifs, a lonely monologue tone, declamatory note repetition and quick, jerky rhythm with accented iambics.[223] Referring to the *Divertimento* (but not specifying which movement), Kárpáti points out the similarity to the *Sixth String Quartet*'s lament melody characteristics: "an anapaestic rhythm beginning with an accent, drawn from Hungarian folksong, heightening its effect with extreme rhythmic contrast and a marcato mode of performance."[224] These characteristics can be found in Section B, in the lament melody, as well as in the Hungarian culmination. The section immediately after the culmination juxtaposes a motive from this outburst over a tonal harmonic structure, which gradually dissipates and normalizes the energy of this movement until it fades into resolution on the tonic. The minor third flare up in the Violins in mm. 71-72 is a last gasp for this motion.

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[220]*The Bartók Companion*, p. 234
[221]Kárpáti, p. 448.
[222]Kárpáti, p. 11.
[223]Kárpáti, p. 97.
[224]Kárpáti, p. 303.

Complementarity is shown in the first measures, where the melody contains all of the semitones from E# to B#, while the opening notes of the accompaniment supply C#-E. This procedure has also been noted by Gillies, in this same movement, and by Wilson, in the opening of the *Third String Quartet.* The other type of complementarity found by Kárpáti is not demonstrated in its pure form, with all twelve tones presented in the melody without repetition. However, the melodic imitation that begins in m. 6 combines both melodies to produce all twelve tones, with the minimum overlap (two semitones, A# and B). Another example is the melody in the recapitulation, which presents eleven different tones in its first twelve notes, omitting G and utilizing two D's.

A number of general stylistic features mentioned by Kárpáti are found in this movement. They include prominent fourths, circular motions, melodic fragments, ostinati, triadic chords, and folk influences. There are no innovations in string writing, but this is most likely due to the necessary ease of playing specified in the commission. The folk influence shows up in the strong tonality of the piece; the importance of fourths; the lament melody with its stylized sobbing; and the imitations at the fifth. It is fascinating to note that in the original sketch, on the first page of the draft, Bartók notated the imitation (in m. 6 in the final version) as a fifth-lower, rather than the final fourth-higher. This answer at the lower fifth is common in Hungarian folk music. As for the fifth-layering of the canonic imitations of the lament melody in section B, we might wonder whether these stem from folk music, or rather from classical fugal practice, which Kárpáti also finds in Bartók's music.[225]

The sound of fourths is prominent in this movement, used both for their elemental power as well as transformed subtly. The raw power of the perfect fourth can be seen in the ostinato of mm. 30-48, especially with the piling up of fourth doublings toward the climax, from mm. 41 onward. Such overt uses are contrasted by more subtle variations, such as the melody in m. 11. Here the melody of the first Violin presents a decorated descent of two fourths. The lower note

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[225]Kárpáti, p. 202.

of the first fourth, C-F, is embellished by its lower neighbour. In m. 12, the A♭ is an upper neighbour to the lower note of the next perfect fourth, G-C. The E is the semitone below the initial fourth's top note, F. The importance of the original fourth is stressed by its position as the head of a sequential feature, while the lower note of the second is the resolution of the suspension in the bass. Subtle indeed.

It is possible to hear the opening figure of the melody in Section A as an extreme concentration of the cambiata figure or motion, where both outer notes resolve to same inner note. In this way we could also hear the third sub-phrase as a chain of cambiate. The concept of cambiata motion is debatable, but Kárpáti does identify a type of melodic direction that Bartók uses a great deal, the filling in of leaps by turning backward immediately with small intervals. What he identifies as a derivative motion often gives the impression of balancing extremes of motion, rather than a true cambiata figure. His example of a derivative motion from the first movement of the *Divertimento* shows this motion in reverse, with two lines emanating from an F/F# cluster.[226] Another similar variation of this motion is found in the second movement, mm. 65-68, where a single note engenders two contrary motions: up a major second and down a minor second.

There does seem to be a definite folk influence in this movement. As Kárpáti has noted that Bartók went through the stages of literal quotation, imitation, and assimilation, we might consider which appears in this movement. Literal quotation seems unlikely at this point in Bartók's career, as well as due to the scalar nature of the lament melody, and the short, fourth-derived melody of the Hungarian culmination. Are we then to consider these two spots as imitations of folk music, or its assimilation into Bartók's style? The question might be simpler if we had more insight into Bartók's own semiotic view of the piece, since he seems to be evoking the world of peasant life in the lament, and Hungarian life in general in the second. Still, the integration of these materials into the work, as well as their reconciliation and interweaving with

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[226]Kárpáti, p. 139.

Bartók's own harmonic world, suggest that he has assimilated these influences into his personal style. As another example, the fifth imitations of mm. 25-29 seem to have their origins in folk music, and yet this piling up of fifths over a static harmony is more characteristic of Bartók's own style than of the folk music that he studied. Kárpáti notes that, for Bartók, one tonality always dominates, and this is certainly true in this section.

While Kárpáti finds Bartók "waving goodbye" to Schoenberg in the *Violin Concerto*, there may still be vestiges of that influence in this later piece. If Kárpáti is correct that Bartók followed Schoenberg in becoming interested in ostinati, then we might note the crucial role of the ostinato in Section C. Of course, Bartók's strongly tonal ostinato differs greatly from Schoenberg's usage of the device. More direct might be the influence of Schoenberg's use of "melodic fragments", as in the thirty-second note figures of the Coda, which are also examples of Kárpáti's "micro-melodics".

Part II - An Analytic Synthesis

Preface

Before we begin an analysis, we should consider the words of Bartók himself. Bartók refrained from in-depth analysis of both his works and his working method, but he did leave a number of documents that give a few analytical details of certain pieces, as well as a few comments on his method of composition. These may be helpful in forming a clearer picture of the accuracy of other analysts' views.

As Gillies has pointed out,[227] Bartók was part of a generation of composers who were more amenable to speaking about their works than the previous generation, at least in certain contexts. Bartók gave interviews on music in general, wrote articles and programme notes, and gave public lectures. John Vinton has assembled a number of quotations from Bartók's writings under five categories: "Melodic Economy", "Melodic and Rhythmic Variability", "Tonality and Modality", "Harmonic Mannerisms", and "The Use of Percussion Instruments".[228] Vinton shows that although Bartók's topic is often folk music, he frequently points to its influence on his compositional style, giving direct examples from his own works. Wilson has commented that Bartók often seems to have been reticent in describing his forms, and that he usually wrote in broad, general terms. Gillies has also noted that Bartók wrote at a very general level, and that detailed analysis often shows up a great deal more than Bartók offered in his own analyses, although such detail does not directly contradict Bartók's writing.

For concerts of his own works, Bartók wrote programme notes which sometimes included cursory analyses of the pieces. These were not in-depth delvings for a professional

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[227]Malcolm Gillies, *Notation and Structure in Bartók's Later Works.*

[228]John Vinton, "Bartók on his own Music", *Journal of the American Musicological Society* xix (1966), pp. 232-243.

audience, but rather simple overviews for the curious amateur. It is interesting that his first essays as programme notes are quite detailed. Those for *Kossuth* describe the character of each of the ten sections of the work, and include musical examples for all of the themes. The notes for the *Rhapsody for Piano and Orchestra, Op. 1* contain a rather detailed account of the form, again including thematic examples in music notation. In contrast, his essay on *The Wooden Prince* gives merely a broad overview of the form of the "pantomime", including comments on the genesis of the work and an appreciation of those that brought it to the stage. The analyses of the *Fourth* and *Fifth String Quartets* were created for prosaic reasons, and as Gillies has shown they are greatly simplified representations of the tonal movement in the pieces.[229] The *Music for Strings, Percussion and Celesta* is a more interesting case. It had been thought for decades that Bartók published only one small, general essay on this work, until Somfai discovered that the analysis printed in the Universal Edition pocket score was from the pen of Bartók himself. Here Bartók gives an unusually lengthy description of tonal motion, motivic inter-relationship between movements, and more detailed account of the form. It is here that the term *Bruckenform* is first used, and it is most significant that it was Bartók himself who coined it. For the *Sonata for Two Pianos and Percussion*, Bartók returns to the format of the prose essay, with general comments on the form and tonality, including some comments on the themes. Again in contrast, he gives a much more detailed description of his *Second Piano Concerto*, including seventeen musical examples and mentioning the major events in its performance history. His final set of programme notes is for the *Concerto for Orchestra*. After a general explanation of the title and the use of the instruments in this work, Bartók gives some comments on the form of the work, the use of the themes, and the relation of themes in different movements. While these notes and analyses are neither complete nor in-depth, they do serve a valuable purpose. In addition to showing us some of Bartók's less-guarded thinking about his music, they give us some guideposts that a good analysis should encounter – or else should have compelling reasons to avoid.

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[229]See Gillies' in-depth analysis in *Notation and Tonal Structure in Bartók's Later Works.*

Bartók's Harvard Lectures give us a little insight into Bartók's compositional procedures. Bartók was to give a series of eight lectures at Harvard University, from February to July, 1943 as Visiting Lecturer in Music under the Horatio Appleton Lamb Fund. We can only lament that Bartók was unable to complete more than three lectures, as his plan for the remaining ones contains some tantalizing subjects.[230] (In fact, Elliot Forbes notes that Bartók had agreed to complete the series in 1946, a plan thwarted by his untimely death.[231]) Somfai identifies the projected lectures as including rhythm, form, scoring, and educational works. Perhaps most interesting, though, are proposed lectures on the "Trend Toward Simplicity", and "General Spirit".

A final source of information on a composition, often overlooked, is Bartók's correspondence with family, friends, and business associates. These letters contain valuable insights into Bartók's compositional thinking at the time, specific techniques that he was trying (or avoiding), his personal circumstances at the time, and the publishing history of a work. At present, the vast majority[232] of Bartók's correspondence is unpublished in English.

The recollections of others are an indirect source of Bartók's thoughts, and can not be counted on to be totally reliable. A most intriguing example is given by Benjamin Suchoff in his study of the Mikrokosmos.[233] Here a former pupil of Bartók recounts what she claims are the composer's own words about these pieces. While they are often fascinating, Gillies has shown that several of the comments seem to be in contradiction of Bartók's beliefs at the time, and may have been mis-remembered, or may even be simplifications made on-the-spot to aid a struggling student in understanding a difficult piece.

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[230] Somfai, *Composition*, p. 15.

[231] Elliot Forbes, *A History of Music at Harvard to 1972* (Cambridge: Harvard University Press, 1972), p. 95. Forbes points out that Bartók accepted in June 1945, and stated that his wife Ditta would accompany him. He also states that Bartók was originally to give six lectures in 1943.

[232] Malcolm Gillies has estimated that less than 10% of Bartók's correspondence is currently available in English.

[233] Benjamin Suchoff, *Guide to Bartók's 'Mikrokosmos'*, 2nd edn, reprint, (New York: Da Capo, 1983).

Synthesizing Analysis

Each of the analysts considered in Part I has studied Bartók's music from his own theoretical stance. We can safely say that none of them has produced an exhaustive method, pointing to the diversity of approach and result. In this section, we will consider a synthesis of some of the most useful features from the different authors, and then attempt an analysis of the same movement using this methodological mixture. There is a precedent for such an undertaking in the analyses of all of these scholars, for every one of them avails himself of techniques not strictly part of his own method. Gillies' writing on the *Divertimento* drifts into semiotics; Antokoletz uses many techniques of standard tonal and atonal analysis; Wilson provides intricate details of motivic and formal design; Lendvai touches on semiotics as well as mathematical and acoustic phenomena; Somfai considers the composer's educational and cultural background; and Kárpáti freely considers influences from many different sources and traditions. They all share the viewpoint that Bartók is part of the Western art music tradition, an inheritor of the legacy of Bach, Mozart, Haydn, Beethoven, and Brahms.

There is no doubt that no one theory covers all aspects of Bartók's practice, and we might go so far as to say that the more specific and limited a theory, the more definite its application. Thus a truly comprehensive analysis of Bartók, using the methods examined in this paper, must employ a number of approaches. This works in our case since the theories interlock well, covering different musical spheres, and also because the analysts often find different explanations for the same phenomenon. At this stage of Bartók analysis, without a comprehensive theory, gathering of phenomena is a necessary first step.

In the following analysis, I will provide an analysis of the movement based on the analytical applications of all six authors. I will use Gillies' Notational Analysis to consider tonal centres, as well as some of his specific insights into this movement. From Antokoletz, I will be noting areas of symmetry and tritone equivalence, as well as interval cycles when they occur.

Wilson's adaptation of Schenkerian analysis will be used to study the long-range motion of the piece, as well as some of his comments on Z-cells and tritone harmonic motions. Lendvai's structures will be noted where they occur. Somfai's comments on the sketches will be used, as well as his thoughts on semiotic analysis. Kárpáti's concepts of mistuning and thematic derivation will also be incorporated.

Bartók's Comments on the second movement of the *Divertimento*

Bartók mentioned the second movement of the *Divertimento* a few times, and these remarks give an overview of the issues which an analysis must address. Specific reference is made in his letters as well as in his Harvard Lectures. We also have some sketches for this movement, made on the draft of earlier movements.

Bartók comments in a letter that "the form [of the second movement] is roughly A-B-A",[234] a terse and very general description. In fact, all that can be discerned from this remark is that the opening material returns toward the end. Given Bartók's predilection for variation[235] we should not expect that this will be a literal repetition. In fact, this comment may be more of a hindrance than an aid, as one might feel obliged to fit the movement into an A-B-A form. Given the size of the A sections, this "B" section would then comprise half of the work, the same size as both of the A sections together. The analyst might well take his cue from Somfai's work and investigate how Bartók's form compares to a traditional A-B-A form.

Other letters to his publishers give some details of the compositional process. For example, he writes to Ralph Hawkes on July 8, 1939 that "In August I have to write a kind of suite for string orchestra for Mr. Sacher (first performance in April): heavy task, for it has to be easy to play!"[236] Subsequent correspondence shows that the printer's copy of the Divertimento was sent to Boosey and Hawkes in October 1939 (Bartók kept the manuscript), and that engraving was underway in early November. In a letter to Erwin Stein, who was overseeing the

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[234]Gillies and Gombocz, *The Musical Mind.* I am indebted to Malcolm Gillies for faxing me a copy of this letter.

[235]For example, see *The Bartók Companion*, p. 13.

[236]BBA 20.075.

engraving, on December 7, 1939, Bartók wrote "There are probably some faults of writing (I have been in hurry when copying the work) you will probably be able to correct them."[237] Letters from Stein indicate that the engraving was finished in January 1940, and he asks Bartók to proofread them before leaving for America, if possible. Bartók did proofread the *Divertimento*, and sent back a letter full of detailed corrections.[238]

It would appear that Bartók's rather hurried departure for America interrupted the proofreading process, and subsequent corrections were necessary. In addition, one minor error persisted from the first draft, through the fair copy, and into the printed version. This error is in the Viola part, measure 46, where a sharp sign should be inserted before the first F.[239]

Bartók himself noted three other corrections to the printed score in his own copy of the *Divertimento*,[240] with the notation that they should be corrected in the pocket score. At present, the pocket score does not contain these corrections. They are: 1) the insertion of ***con sord.*** between the Viola and Cello staves in measure 33; 2) inserting ***tutti*** in Violin I in measure 35; and 3) the insertion of ***(non div.)*** under Violin I's staff in measure 41.

As far as analysis of this movement, Bartók did not publish any writing on it directly. However, in his third Harvard Lecture, on "The New Chromaticism", Bartók uses the second movement of the *Divertimento* as an example of his use of chromaticism. He begins by stating that modern Hungarian composers began by using two simultaneous modes on a common tonic, which he labels "bi-modality". This led them to experiment with filling in the spaces of these bi-modal constructs with chromatic degrees, in a sort of modality with chromatic inflection. The next step was free use of all twelve tones, without relation to modes or to major/minor tonality. He mentions these as three phases in his own development: bi-modality (where both modes can be heard to be present), polymodal chromaticism, and "new" chromaticism. In speaking of his

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[237]BBA 20.105.

[238]BBA 20.038.

[239]When in Budapest in March, 1996, I pointed out this spot to László Somfai, who agreed that although it was a small point, unlikely to cause players confusion, it should be corrected.

[240]PBA 78FSFC1.

"new" chromatic melodies, he writes "the single tones of these melodies are independent tones having no interrelation between each other. There is in each specimen, however, a decidedly fixed fundamental tone to which the other tones resolve in the end."[241] As we mentioned earlier, Bartók uses the second movement of the *Divertimento* as an example of this "new" chromaticism.[242] The second sentence confirms Bartók's other statements that his music was always tonal.

Regarding a semiotic interpretation of his music, Bartók seems to feel that this is natural in most music. For example, in an interview with Dezsó Kosztolányi he says: "Bach also expresses something, a few moments of life. We can see that in his compositions with text he tries to express this. If I write a low note and then a higher one, that is rising; if I strike a high note and then a lower one, that is sinking: the one undoubtedly merriment, the other despair."[243]

In another interview he states that "Let me repeat: all peasant music deeply interests me, and my goal is to extract the essence from it. Modern music is not following the road of folk music. Two of its outstanding figures, Stravinsky and Schoenberg, are taking divergent paths. Of the two, Stravinsky stands closer to me. I barely know the younger generation".[244]

Finally, Bartók's draft of the composition shows that he sketched some ideas in the key of E, rather than C#. Somfai points out that it is unusual for Bartók to sketch an idea in a different key than the final version, and this may betray some ambivalence about his placement of this movement in C#. It may also provide some insight into the interplay of E and E# in this movement, and even the start of the third movement, in which he approaches the tonic F with an encirclement of G♭ and E (in the soprano).

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[241]BBE, p. 381.

[242]BBE, p. 380.

[243]"An Interview with Dezsó Kosztolányi" in Peter Laki, *Bartók and His World* (Princeton: Princeton University Press, 1995), p. 232.

[244]"A Conversation with Béla Bartók" by a journalist identified only as "M.O." in Laki.

General Comments

The movement is tonal, in C#. There are four sections, each set off by a transition. Although Bartók has labelled the form "roughly ABA", I maintain that it is heard more as A-B-C-A'. The A sections are quite chromatic, while the B and C sections are built on static triads.

Section A – mm. 1-10

The internal unity of this movement is noteworthy. Several motives are variants of others, and many of the key harmonic structures are related. The particular tonal plan mirrors the form of the movement, and the primary tonal centres are presented unambiguously.

Bartók begins the work with an undulating semitone which results in a tense and uncertain mood. This mood is increased with the scoring of the lowest instruments over three octaves; by the dynamic ***pp***; and by the use of mutes. The tonality of C# is stressed by having the tonic as the first note of each of the first three measures of the accompaniment; the motion starts at C# and returns to it. C# is the goal of both local and long-term movement. The accompaniment to the first melodic statement moves almost exclusively by semitone, before falling back at the end of the phrase after reaching the tritone. We have already noted that the opening C#-D oscillation is related to both the opening measures of the first movement, as well as the lighter figure at m. 264 of the third.

The melody, also ***pp*** and ***con sordino***, begins with an encircling motive, a diminished third that resolves to the note in the middle from a semitone above and below. Modal ambiguity is presented with the first melody note E#, the major third of C#, while the accompaniment presents E♮. The first two motivic motions (mm. 2 and 3) present F# and G# via encirclement, with the compass of a diminished third in each sub-phrase. The third measure leaps to the leading tone[245] and falls back with a more convoluted motion that presents two major seconds a semitone apart. The fourth measure completes the encirclement of both the centre notes A and B, and presents a descent of a minor third to F𝄪, the tritone, and mistuned fifth of the tonic triad. This

[245]This note might also be considered a "mistuned octave", although there is less evidence for such a view. The important point is the lack of resolution in the high point of the melody.

tone, the goal of the melody, is also encircled by the two goal tones of the first two sub-phrases, F# and G#. The goal sonority containing the mistuned fifth sets the stage for later mistuned harmonies. The minor third of this fourth measure is also meaningful, as it will become important in sections B and C, and will also be the initial gesture of the first two sub-phrases of the melody in the recapitulation.

The circling gesture of the first sub-phrase, m. 2, is also the motion of the entire melody. Thus, the first four bars of melody begin low (on the major third), reach up (to the leading tone), and then fall back to a note in the middle (the mistuned fifth) to cadence. The sense of deliberate and inevitable motion that this melody imparts stems at least partially from the overall melodic progression from E# to G/F×, a diminished third that echoes the opening gesture (and in fact is present as the first two notes of the melody). In this mistuned harmonic world, the progression is from the major third of the tonic, to its mistuned fifth, a variation on a standard common-practice formula.[246] The texture of the accompaniment reinforces this type of motion, as well as its effect, with semitonal movement in the accompaniment spanning the distance from the C# tonic to the mistuned fifth. This motion only breaks at the end of the melody, to allow the instruments to move smoothly back to the tonic. The bass motion from C# to E# (through a passing D#) to G outlines a sonority that will re-appear in m. 17, and elsewhere.

The melody is repeated in mm. 6-10. Here the accompaniment resumes its semitonal motion (after a short move to consecutive whole tones at the end of m. 5) to rise now to the true dominant, G#, and then up to the tonic C#, outlining a tonal motion of C#-D#-G#-C#. The melody is the same, though now in the Viola, but is imitated at the eleventh by Violin I. The result is a cadence on the mistuned octave and fifth in the two upper parts, over the tonic in the bass. The bass line also suggests other possibilities. The span of m. 6 is C#-E#, suggesting a tonic major chord. Measure 7 expands this range to C#-F×, introducing the sound (if not the notation) of the mistuned fifth as an upper bound, as it was in mm. 1-5. In m. 9, the C# has

[246]These same two notes might also be heard to join the apex of the melody, as the mistuned octave, as a sort of mistuned tonic arpeggio.

moved to D#, but the F𝄪 remains on top, and it is possible to hear the E# on beat 4 as coming from the D# (now heard as a passing tone). After this E# is attained, F𝄪 moves to G#, the true fifth, and on up to the tonic C# in m. 10. Thus, we can postulate an arpeggiation of the tonic triad in the bass motion.

This sinuous bass motion holds other motivic germs as well. In mm. 6 and 7, on beats 3 and 4, the bass contains a figure that anticipates the 32nd-note figure in the coda. Also, the bass rise to C# in m. 9 is a variant of the third sub-phrase of the melody, and a true retrograde of that sub-phrase as it appears in the recapitulation. The supporting bass notes for the last three notes of the melody in Violin II in m. 9 (A#-G#-G) are tritone transpositions of the bass of m. 5 (G#-B-C#), although the final bass note is delayed two beats. This transposition allows the bass to reach the tonic at the cadence, and is initiated by a reversal of the figure of mm. 6 and 7 (beats 3 and 4), this time expanding upward. The mistuned cadence gives the line a logical resting place without halting forward motion, and additional tension results from the "in-tune" arpeggiation of C# major in the bass. For the listener, it is a disturbing variant of a familiar cadential motion. Motion is maintained via octatonic fragments in Violin II and Viola, in economical figures which combine minor and major thirds. This same motion spans the last two measures of the melody (m. 4 beat 4 and m. 5), and the figure in Violin II in m. 10 is exactly these pitches, twice as fast and spelled differently.

This first section presents a simple melody, repeated with canonic imitation, in an analogous form to a classical two-part melodic construction, with a first phrase that cadences on a mistuned dominant, and a second closing on a mistuned tonic. Both of these mistuned intervals appear in the cadence in m. 10, and it is interesting to note that the mistuned tonic C𝄲 is a re-spelling of the climactic B# of the first phrase, while G𝄲 reflects the F𝄪 cadential tone of that phrase.

Sequence – mm. 11-16

Having presented the melody as well as the tonic harmony, the music continues through a sequence away from C#. The diminished thirds of the initial melody, which expanded to minor

thirds at the end of that melody, are here expanded again to perfect fourths. Coming in Violin I, the fourth C-F still has the sound of the E#-C that form the boundaries of the descent of the last two sub-phrases of the canon in Violin I (mm. 8-10). This reminder of the unfulfilled apex with the mistuned tonic gives the passage an air of plaintive yearning. The chord on the downbeat is Kárpáti's fourth chord, consisting of an augmented fourth under a perfect fourth. The diminished octave of the mistuned cadence is retained (until it is re-interpreted briefly as a major seventh at the end of the first two-measure units). The circling motion of the melody is extended in the sequence, over each two-measure phrase. The first measure reaches up a fourth before returning to the embellishing semitone at its centre, while the second measure descends before rising back toward the middle. Here the symmetry of motion gives a static air to the section, and motion is only provided by sequential repetition. This section is more contrapuntal, its texture marking a break from the exposition of the main theme in mm. 1-10. The Cello keeps a vestige of the original semitonal motion for consistency.

The initial statement of mm. 11-12 over D♭, is revealed as a long suspension, resolving to C minor on the last beat of m. 12, as the Cello moves through a passing chromatic figure leading to the next statement a whole-tone lower. This resolution is fleeting, and the sound of the section relies more on mistuning and the Kárpáti fourth-chord. The next repetition is almost an exact replica, a whole-tone lower, and resolves to B♭ minor on the last beat of m. 14. The resolutions seem to reveal the underlying meaning of the mistunings as major seventh suspensions, but the short duration of the resolutions, and their position on weak beats, give the listener little relief from the weight of the suspension. Also, by resolving the suspensions in a lower octave, Bartók makes their use less obvious and also adds momentum to the sequence. The effect is more reliant on the sound of the diminished octave than on its perfect octave resolution.

The third statement begins normally, but the bass stubbornly stays on A, even when the expected upper note, E♭, appears over it. The second measure here (m. 16) is a recomposition of m. 12, using the same pitches, and leading into the transitional bars of mm. 17-19. Over m.17 the A of the bass fades. The result of this sequence has been to move the listener away from C#,

down to A in the bass accompanied by an ambiguous motion in the soprano. While the bass motion seems clear from a voice-leading graph, or just from reading the score, the centres of the soprano oscillate between B♭ and C according to Notational Analysis. Voice-leading in the soprano (F-E♭-D♭-C♭) shows a descent in parallel tenths with the bass (D♭-C-B♭-A).

Transition - mm. 17-19

This section settles on C♭, and it is interesting to note that as C# was prominent in m. 1, C♮ was prominent in m. 10 and now C♭ in m. 17. (If these three are combined with the D of m. 19 we again have the 32nd-note figure of m. 65.) The motion in mm. 17-18 is a variant of the fourth motion begun in m. 11, with fourths both above and below B♭, while what would have been the embellishing tone, C♭, is the principal melodic tone. As the intervals had grown from diminished third to minor third to major third[247] to perfect fourth, here the major third becomes dominant again, first as the repeated E♭-C♭, and next as the augmented triad that leads to the high D. (The semitone embellishments are retained, and these link the major thirds to the fourths.) The texture thins gradually in m. 17, until only a single, bare unison remains in m. 19. This high D can be heard as an octave displacement encircled by the E♭ of mm. 13, the D♭ of m. 15, and E♭ again in mm. 17-18. The A bass, the somewhat frustrated last note of the sequence, is left hanging.

The accompaniment in m. 17 is a transposition of the sonority outlined by the bass in mm. 1-5 (C#-E#-G). Here the notes are A-D♭-E♭. The sound, if not the spelling, is a major triad with a diminished (or mistuned) fifth. However, there is another reading of this sonority which may be closer to the function of this chord: that it is the root that is mistuned. At this point, we expect to hear A♭ as the logical continuation of the sequence. While the bass remains on A, we do get the expected top voice E♭, along with D♭, which we would expect as the suspension over the A♭. We would expect this suspension to resolve to C♭, which is the destination of the middle voice in m. 32, the measure before the G# tonality begins. Again, this G# can be heard as the delayed, enharmonic resolution of the A, and it is interesting that it is accompanied by the

[247]In m. 10.

apparent resolution of the suspended D♭. It all works rather nicely if the B section is excised. That the B section is not a later interpolation seems certain, as it is among the very first sketches for this movement, and a tritone from the original melody as well. Rather, it would seem that this sonority takes part of a large-scale encirclement of G#, which might be regarded as the encircling motive projected over a large time span.

Section B – mm. 20-29

The core of section B is the lament melody, which uses a scale with folk connotations. It may be incidental that this scale is also a partial octatonic collection, but there is a deliberate shift from chromatic movement to a more modal one. Minor thirds are prominent. This scale also has strong tonal connotations, and Bartók stresses them. In particular, the scale used outlines a G minor-seventh chord, plus a mistuned fifth. The folk character is emphasized by the double-dotted rhythm, while the harmony is stressed by the use of drones. The tonality is a strong G minor, and this G is heard as a continuation of the A in m. 17, albeit not the A♭ that we would have expected. The section begins with the lament melody, accompanied by moving lines of parallel triads. These lines end up approaching the tonic from both directions by minor third, although by the time they reach the tonic, it has already been established by the melody. The arrival on G minor in m. 25 is strong, not weakened by the imitation of the melody at the fifth, because the original melody is still sounding as an accompanimental figure in the Viola, and also because of the drone G minor chord. The second imitative line merely reinforces the effect of imitation as embellishment and intensification. This intensification leads to the transition.

Again, the motion of the lament melody is somewhat circular. From the initial D, the melody moves up to F, and then down to G, when it begins the circle again. Indeed, this circling is made more obvious in the Viola when the rhythm changes to straight eighth-notes. This change in rhythm makes the function of the Viola part somewhat obscure, as it may be heard as an arpeggiation, an ostinato, or a variant of the theme. Since this variant is in the same register on the same instrument, I hear it as a variant of the theme, with the new even rhythm as a contrast to the fifth-imitation that begins in m. 25. Here the parallel with the accompaniment of the opening

is obvious, as is the expansion of the intervals from minor seconds to the inclusion of minor thirds as well. The texture here is different again. Parallel triads appear for the first time, as does the long held G minor chord. Static circling imitations are presented as well, and this section is remarkable for the swirling feeling of motion over an essentially static harmony. The emphasis on the symmetrical segment of the theme in the Viola after m. 24 adds to the inert impression. Much of the motion is achieved via textural variation: parallel triads, the circling Viola melody, and the imitative fifth entries. This section provides a contrast to the opening with its more open melodic structures and static harmonic basis.

Transition – mm. 30-32

This transition effects a motion from the G minor of section B to the G# minor of section C. It also serves to stop the relentless circling of the lament melody, although it starts up again in the next section. This is not a gradual slowing, as in mm. 17-19, but rather an abrupt shock of sudden homophony. The big chords break in on the swirling folk mode with the first full homophonic segment in the movement. In spite of the rude shock of the chords, Bartók has carefully set up the break in m. 30. The F#'s in the lower instruments are all approached from the G above. The imitations in the Violins break their patterns, and although Violin I and II both leap downward, the second note of each of their figures (m. 30 beat 2) is the step-wise continuation of the end of m. 29. The harmony is triadic, and although the section can be heard with a tonic of E, it is the note B which receives the most attention. It links the previous G tonality (as its major third) to the coming G# section (as its minor third), bridging the G/G# gap even as it presents another major/minor dichotomy in G.

The bass descends from G through F# and stops at F, although E♭ might be thought implied in m. 31. Its literal presence would result in a standard V-I cadential bass motion, which Bartók avoids. The sudden block chords are an arresting gesture, a terrific use of texture to stop motion and gather attention. The alternation of second inversion major chords and first inversion minor avoids a clichéd effect which could result from root position triads. The reduction to unison in m. 32 also rhymes with m. 19, here at the end of a lowering of volume. With B so far

removed from the bass F, it sounds like an inner voice, perhaps the resolution of the D♭ from m. 17.

Even here the balanced motion rhymes with the circular theme. Thus, the tutti sections reach up a third, while the solo sections compensate by reaching downward the same distance, before they both settle on a static B. This B is interesting as it can be heard as the major third of G minor, and this whole transition is built on the idea of minor chords inflected with their major thirds. The surprise comes when it is revealed in m. 33 as the minor third of G# minor, the dominant key. Each of the authors mentions Bartók's fondness for major-minor chords, and this use of the minor third to inflect a major triad is common in Bartók's music. The soprano voice in mm. 30-31 outlines a G major-minor chord, of which the first note sounded is B, which also ends the transition.

Section C – mm. 33-49

This section is the climax of the movement. It occurs in the dominant tonality, G#, which is heard as a contrast to the previous G, and also as the fulfillment of the missing A♭ of the sequence in mm. 11-16. Any suspicion that Bartók might have originally planned a C#-G#-C# motion, into which he inserted a section in G, must be dismissed immediately. Bartók's earliest sketches (in E) clearly show the lament melody a tritone distant (on B♭); the later sketches already show the shift to G.

Over a leaden, G# minor ostinato accompaniment, a long rise to the climax is effected. The ponderous, almost archaic sound of the ostinato is due to the thick texture in the low register, as well as the reliance on fourths and fifths, both melodically and harmonically. Whereas Section B presented a minor seventh chord with its "folk" mode, Section C begins with a minor seventh chord emphasizing its fifths. After the previous modal section, chromatic motion returns. The texture gets denser as the climax is approached, and then thins again afterward.[248] We have already seen similar thinning in mm. 17-19, and mm. 30-32, as well as a build-up in

[248]Wallace Berry, *Structural Functions in Music* (Englewood Cliffs, NJ: Prentice Hall, 1976), p. 234-236. Berry comments on Bartók's use of texture to heighten the climax.

mm. 6-10 and mm. 25-29. Texture and register must be used to achieve climax here, as the harmony remains static, and the ostinato almost unchanged. This is a similar procedure to section B, and so different from section A that there is some justification for considering both sections B and C as complementary contrasts to the original material.

The primitive feel of this ostinato derives from its reliance on fourths and fifths. The Bass outlines G#-C# and G#-D# over and over, and the Cello has an accompaniment full of doubled fifths. The initial B of Violin II is answered by the F# of Violin I, and the interdependence of these two parts is established by the impetus in Violin II (the grace notes C and A) leading to similar motion in Violin I. Here the motion takes root, and the semitones lead to a long ascending line. Although this line is actually semitonal, the structural notes (which Bartók wrote in normal size, as opposed to the grace notes) are two subsets of different octatonic collections. The different collections might be employed for mistuning, or just for a more varied ascent, as the notes of the upper octave differ from many in the first octave of Violin I's ascent. The texture thickens abruptly in m. 41, wherein Violin I, Violin II and Violas all add a second voice to their parts, and in addition to the slow crescendo (from m. 37) the instruments slowly remove their mutes, and the tempo increases from ♪= 76 to ♪= 88. The climax itself is both ambiguous and somewhat unsatisfying, as it is a trill on the mistuned octave and fifth, G and D, with the trilled notes as the true octave and fifth; the notes of true resolution are touched on but not held. Compounding the impression of denial of climax is the relatively short duration of the climactic pitches, and the rest on the actual downbeat (albeit just a sixteenth-note). The retreat from this slow climax is rapid. Violin I retreats by larger intervals, groups of major seconds grouped into fourths, and the texture thins from 9 notes in m. 44, to 7 in m. 45, to 5 in m. 46, to 4 in m. 47, and 3 in m. 48.

In an unexpected move, the bass rises in parallel perfect fifths to a "deceptive cadence" on E minor in m. 49. This motion supports the upper voice's change from G# to G, and it is notable that while the two lower voices are ***ppp***, the G in the Viola is ***pp***. This motion is not

entirely new, as it seems to arise from the Cello figure in m. 34. Even there, the E appears with G.

The whole overall motion of section C is again a circle, only this time a much larger one over a longer time span. Nonetheless, it is present, and it extends even into the next transition. Thus, the initial F# of Violin I rises to the climax, then recedes to the G# of m. 46, then down an octave to G# again, and then rises from the G below this up an octave to G again in m. 50. The final three bars of the descent from the climax, mm. 46-48, present a minor-third cycle on G#: G#-F-D-B-G#. This cycle is encircled by the two minor third cycles of the next section, on G and A. These minor-third cycles might be considered remnants of the octatonic fragments used in the climactic rise and descent. Here the predominant fifths and fourths of Section C give way to minor thirds, moving into the next transition.

Transition – mm. 50-55

This transition was considerably altered during the notation of the first draft. The original version may give us an idea as to Bartók's process of composition of this section, and might also shed some light on other sections of the movement. The entry to this transition is via the rather unexpected E minor triad of m. 49. We had earlier speculated that this triad was more a support for the G in the top voice, and the draft seems to confirm this, for there both G# and G♮ are in Violin I. As G♮ is attained, the dotted rhythm of the preceding G# evens out, the motion of the accompaniment slows to homophonic half-notes, and the ostinato stops. Once again we see the opposition of G/G# that occurred in the first 11 measures, and between sections B and C. This time, however, it is G# that cedes to G for the first time. This is even more obvious in the draft, where the durations of all notes of the solo instruments in mm. 50-55 are twice those of the printed score (Bartók shortened them in the fair copy, as well as specifying their performance by the soloists). While Bartók obviously found this drastic reduction in motion unsatisfying, he also changed several pitches. At the slower tempo, with the G in Violin I, this pitch is very apparently the genitor of the ascending minor-third cycle (G-A#-C#-E-G), as well as its goal at the top of the first ***agitato*** measure. The next minor third cycle begins on A, completing the sequence of minor-

cycles on G#-G♮-A, and as in the final version its final note is subsumed into the second ***agitato*** outburst. The difference in the draft is the bass note of this second outburst: G#. The G of the first cycle and the A at the start of the second encircle this G#. The juxtaposition also opposes G and G#, as does the G# bass and the G of the top voice. However, before we congratulate ourselves on discovering a 'secret' of Bartók's working method, we have to confront the fact that Bartók notated the first bass note of the second outburst as A♭, and to make matters worse, the second as G#! True, he does mark the correction of A♭ to G# in the draft with the notation "#!", but this does not explain the initial notational anomaly. This is all, of course, somewhat redundant, since another verbal notation, in Hungarian, instructs that this measure is to be transposed a whole-tone higher.[249]

These qualms about the notation of the first G#, and its subsequent transposition to B♭, are not sufficient to convince us that the G/G# dichotomy is a mere chimera. The G# minor-third cycle sees its final G# lowered to G♮ in m. 49, and this G♮ is heard as the start of the next minor-third cycle. In the draft, the major third cycle of mm. 54-55 begins on G# (the addition of the D# and the notes encircling G# are in the margin, added to the previous stave); the final encirclement in the top voice is of G; and the downbeat of m. 56 is the tonic chord, with C# in the accompaniment and top voice and F in the middle. It is interesting both that G# is omitted from this sonority, and that the E# of the tonic major is notated as F. Bartók's revisions led the Viola part to G# in the finished version. Finally, this section began with the shift from G# to G, and Bartók begins the recapitulation with the perfect fifth of this tonic.

This transition is an alternation between the somewhat static minor-third cycles, of which all tones are presented encircled, with the agitated ***ff*** chords with trills. The circular motion of the minor third cycles is matched by the symmetrical motions of the tutti sections, the first descending and the second ascending. While there is inherent symmetry in these motions, it does not establish a strong tonal centre, but rather seems to act as a balance for the strong

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[249]I am grateful to Malcolm Gillies for his translation of the original, as well as the deciphering of Bartók's handwriting.

motions of the tutti. Again, the surface motions spring from octatonic fragments. The minor third cycles could well be considered mistuned minor seventh chords, as the tutti sections present first an incomplete minor seventh chord (in first inversion) and next a mistuned major chord (with the enharmonic spelling for the major third in the bass, and the mistuned fifth in the middle). Again, the texture here both sets this transition off from the previous and subsequent sections, while tying together both the solo third cycles and the tutti sections. The agitato trill figure is really a restatement of the trill figure from Violin I that leads up to the climax in m. 40, and also that which retreats from the climax in m. 44. The first is the ascending form, the second the descending. In mm. 54-55, the minor thirds that have been so prominent cede temporarily to major thirds, and these lead back into the recapitulation of the original material, just as major thirds led away from it in mm. 17-19. The two soloists in m. 55 present a counterpoint that cleverly encapsulates the motives from the original melody.

Section A' – mm. 56-61

Bartók loved variation, and it would be naive to expect a literal recapitulation in so mature a work. Although there is no doubt that we have returned to the first theme and the tonic at m. 56, the descent in the solo instruments does not lead one necessarily to expect the recapitulation at this point. Also, there are several signs that things are different this time. Upon arriving on the tonic at Tempo I, Bartók rescores the original accompaniment so that the Cellos play below the Basses, the Basses have a new triplet motion in a C#-D pedal, and the Violas appear a measure later but now in parallel major thirds with the Cellos, with both Cellos and Violas playing tremolando. The Cellos have an E♮ at the upper limit of their range in m. 56, stressing the minor third, but this is counteracted by the entry of the Violas in m. 57 on the major third. In addition, the time span is compressed, so that wider motion is introduced earlier in the accompaniment.

The melody is also altered, although the encircling diminished third confirms that this is the original melody. It is now introduced in Violin I and Violin II playing two octaves apart, ***con sordino*** (as is the accompaniment). The opening two sub-phrases now encircle A# and C#, thus

emphasizing the tonic, while also picking up the minor third motive that has been so strong in section B and the transition in mm. 50-55, and that was also the final gesture of the original melody. The third sub-phrase of the melody rearranges its pitches slightly (beats 3 and 4 reversed), emphasizing the two whole steps F#-E and E#-D#. The fourth sub-phrase alters one note, its uppermost, to G#. This single change does a number of things. As Gillies has mentioned,[250] it is a new chromatic element, the eleventh of the twelve pitches (the missing one being G), the goal of the original first statement of the melody. This omission is especially important here, where there is only this one statement of the melody. This G# is the dominant, and it introduces a tritone into the melody. More important, Bartók presents the perfect fifth here, and denies even the mention of the mistuned tonic, providing a strong sense of melodic closure (and another implicit G/G# clash). The G# also emphasizes the leap to D, which then resolves to the tonic C#. This motion from D to C# may be more satisfying as the centres of the melody in this recapitulation, A#-C#-C#, emphasize the tonic through repetition, rather than encirclement, as so the D seems a last vestige of the original encirclement. As well, the beginning and ending pitches of the last two sub-phrases outline a very tonal pattern (F#-D#-G#-C#), the last three notes of which were the tonal underpinning of the accompaniment in mm. 8 (D#), 9 (G#) and 10 (C#).

The sub-phrases of the melody are transposed from the exposition at increasing distances: the first up four semitones, the second up five, and the last two up a tritone. Of course, this last transposition allows the cadence on C#, and a strong reinforcement of the tonic. As well, the accompaniment again strongly emphasizes the tonic.

Culmination – mm. 62-65

This section moves rather suddenly to E. Measures 62 and 63 are a transition based on the encircling motion, heard in the inner voices, combined with homophonic chordal sonorities based on E. This leads to the Hungarian culmination identified by Somfai, a last outburst before

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[250]Gillies, *The Bartók Companion*, p. 341.

the music breaks into motivic fragments. Again, the texture of large chords accompanying an embellished solo melody sets this section off, as does it rather jazzy harmonization. The harmony here is a clear mixture of major, minor, and major-minor chords, including sevenths and ninths. While the actual culmination in mm. 64-65/2 has chords with both major and minor thirds on both downbeats, the placement of the minor third in the treble gives a characteristic sound, removing the some of the folk connotations. Its bass movement, however, does not stray far from E. The imitation between Violin II and Violas in m. 62, leading into the Hungarian culmination, comes from the canon that begins in m. 6, and it is interesting to note that the interval of imitation changes from a perfect fourth to a minor third. In the first instance, the goal is the total chromatic, and so the fourth is appropriate. In m. 62, however, the point is to conform to the harmony, and the minor third provides the necessary notes.

The E major chord prolonged in mm. 62-64 is interesting in that it is the only strong statement of E major in the movement. We might have expected this key for two reasons. First, it is the relative major of C# minor, and with the number of tonal references it would seem natural for this relationship to be exploited to some degree. (This expectation is raised further by the knowledge of the original sketch of the opening in E!) The second reason is that the notes of the E major triad are those left out of the octatonic scale in the formation of the lament melody: G-(G#)-B♭-(B)-C#-D-(E)-F. We have also seen other motions that suggested an E major might appear, but these were denied.

The deceptive resolution in m. 64, from the E dominant seventh of m. 63 to D# minor, seems to be more than a mere tritone transposition. Bartók proved himself capable of making this transition smoothly, as he does in the fourth movement of the *Music for Strings, Percussion and Celesta*. In this movement, though, the resolution is rather crude. All of the accompaniment instruments descend, and the melody instruments leap up. Compounding this effect, the Violas and Cellos leap down to open fifths. This jarring change seems to emphasize the difference in character, accentuating the "Hungarian" feel of these measures, and setting them off from the preceding recapitulation. The open fifths add to the "peasant" feeling of the music that erupts.

The "outburst" nature of this section is accomplished through a number of sophisticated technical maneuvers. The climactic growth from ***pp*** to ***ff*** over just two measures, the tightly imitated encirclements and the sudden homophony all draw the listener strongly to the downbeat of m. 64. The resolution onto this downbeat is emphasized by the deliberate, rough voice-leading and the double-stopped fifths of the Viola and Cello, as well as the leap of Violin I. As this outburst evens out into the coda, the voice-leading becomes more regular.

Coda – mm. 65 - 74

With Bartók, sections are not often so clearly defined as they seem to be in this movement, and the coda, if there is one, is most difficult to place accurately. It could well include the culmination just discussed. This section comes after the recapitulation of the first theme, after a strong statement of new material (the Hungarian culmination), is not clearly derived from the exposition, and leads to the final tonic cadence. As such, it might be considered a coda.

In m. 65, just as we return to E, the first thirty-second note figure appears in the Viola. This figure is almost an antithesis to the original encircling motion, for here it moves outward in two directions by semitone. Since it typically moves upward two semitones, and downward only one, its scope is a minor third. The predominant motion of the upper voices is from A to A# or B♭ while the bass keeps returning to E. In m. 69, the thirty-second motion slows to eighths, as Violin II intones the lament melody one last time, and the two motions coincide on C# in m. 70, with an encircling motion that pushes out to the octave. Around this C#, one final encirclement occurs, E and F#, resulting in the E# of m. 72. An additional point to this encirclement is the opposition of E and E# contained within it. The E# is then held, while the accompaniment moves through a Phrygian scale, and descends from G# to C#, with one final grating of E♮ against the held E#, which holds on through the cadence as the last sound heard.

The texture here is still sustained chords, changing every two beats, under fragmented motives, until these too give way at the appearance of E#. After a brief presentation of E in the

bass from mm. 62-67, C# re-appears in the top voice, only confirmed as the final bass note in the last descending gesture. Even so, the impression of C# as a tonic remains firm.

Tonal Motion

The tonalities of the four sections are quite clear. The A-B-C-A' formal scheme is reflected in the tonal pattern C#-G-G#-C#. This same pattern shows up within details of the movement as well. The first theme moves from C#-G, while its repetition completes the motion with a G#-C# cadence. This same motion appears in the bass in the recapitulation, where the Cello spans C#-G in m. 59, moves upward to G# in m. 60, and cadences on C# in m. 61. The next two measures repeat this same tonal motion in the bass on E: E-A#-B-E.

Semiotic Considerations

While it is impossible to say with any certainty what this movement meant to Bartók, it is very possible to speculate on the impressions that one may receive while listening to it, and why. Firstly, there is little doubt about the ominous beginning. This may well have extra-musical connotations, as the work was written in the middle of Europe, days before the onset of World War II, by a composer who was an avid reader of newspapers. After the appearance of the ominous theme, and its sinking to the depth of the low A, a peasant or folk-type lament appears. A lament for a lost way of life perhaps? This theme, imitated urgently a fifth and then another fifth higher, is stopped only by the eradicating motion of the full chords in m. 30; it does not cadence. From this rather brutal stop comes the inexorable advance of the climax, which again seems to reach its peak almost pointlessly, and which sinks back unfulfilled to flare up in the ***agitato*** sections of the tutti, before sinking again into the recapitulation. The destruction of war? Personal crisis or abhorrence? When the recapitulation occurs, the melody is all the more mysterious, varied but curtailed, leading to an urgent build-up to the Hungarian culmination. Something dear to Bartók's heart here, but what? One last desperate hope that this cup shall pass? Or one last, melancholic memory? Then all scatters to fragments, before sinking into silence.

Of course, some analysts would deny any semiotic meaning in music, but it is interesting to note that Gillies, Lendvai, Somfai, and Kárpáti all feel that it is important. More precise

semiotic analysis would require a great deal of research into Bartók's music, including investigation of his verbal settings, as well as his relationship with Western art music. There appears to be a much broader literature on Bartók's use of folk music and related semiotic applications in Hungarian than in English.

Conclusions

In conclusion, we will consider the analytical methods of the scholars and their usefulness in examining this movement. We would do well to keep in mind the words of László Somfai that "No single work represents the 'typical' Bartók and no single Bartók draft demonstrates all the significant features of his compositional process".[251] There are also Bartók's own thoughts on theories of analysis :

> "I must state that my entire music...is determined by instinct and sensibility; useless to ask me why did I write this or that, why so and why not so. I could not give an explanation, except that I felt this way, I wrote it down this way."[252]

None of the analysts has provided a comprehensive system that has worked to the exclusion of other methods. In fact, it has been necessary to combine all of the methods in order to achieve a balanced investigation of even this one movement. This is not surprising, as the theories themselves are either not meant as comprehensive, or attempt to be so comprehensive that they lose the precision that makes them useful.

One pitfall of analysis is its almost unspoken propensity to iconoclasm. Too easily explained, a composer's work can be characterized as simple or "mathematical"; too recondite, and the composer is obtuse or obscure, or even "inept". There is also more than a grain of truth in the statement that many analysts are composers "manqué". In any case, a great work of music cannot be made less great through analysis, and in cases that attempt this, it is the analysis which is suspect.

With this in mind, we acknowledge the impossibility of comprehending, or even approaching, Bartók's working method. His output speaks for itself. In attempting to understand some few facets, the work of the scholars examined here has proven helpful in diverse ways.

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[251]Somfai, p. 144.

[252]Interview with Denijs Dille, quoted in Somfai, p. 10.

Gillies

The work of Malcolm Gillies covers a great deal of territory. Notational Analysis proved to be a most useful tool in this analysis, one that is unambiguous in its application and in its results. It is limited to identification of tonal centres, and may simply confirm what the ear hears, but it does seem to offer insight into Bartók's compositional thinking and mode of expression. It is particularly valuable in conjunction with sketch study, as it often points out difficult spots that show up in the sketches as well. It is possible that it could be combined with other methods to provide insight into Bartók's harmonic usage, but this would require a great deal more research. Gillies' combination of biography and analysis promises much for the future. As biographical data is cross-referenced to analytical detail, theorists can check their ideas against the facts of Bartók's life.

Antokoletz

Antokoletz presents many valuable ideas and concepts in analysing Bartók's music, but there is some doubt as to his central thesis, as well as to some of his methods. He does not provide a monolithic theoretical technique to apply to Bartók, but rather views works from several angles to prove his thesis that symmetry is at the heart of an evolving tonal practice.

The central idea of axes of symmetry as tonal progression does not seem to work with this movement. Although there are many examples of symmetrical structures, it seems unlikely that the movement is organized on symmetrical principles. For example, while one might note that the major tonal centres present a partial Z-cell (C#-G-G#), this phenomenon might more fruitfully be described as the clash of G and G# as mistuned and traditional dominants. Where axes of symmetry can be found, as in mm. 50-55, the meaning of these axes is most unclear, and seemingly unrelated to the governing tonality. This is especially worrisome in so mature a piece. At the same time, the references to common practice tonality are very clear, as is their role in defining the tonality of the movement. There is reason to doubt his statement that "Bartók

himself was keenly aware that he was composing within the equal-division system."[253] While it is true that Bartók did express a desire for a system of notation with twelve equal notational symbols, the work of Gillies and Kárpáti seems to have proven that Bartók managed to adapt the standard system of notation to his own purposes in a coherent way.

Regarding analytical method, Antokoletz deals with the facts of the notes on the page, but his choice of notes to include or ignore is not always comprehensible. Antokoletz places great importance on the boundary notes of phrases and cells, and this is appropriate in some situations, but not all. Finally, his insistence on the priority of Z-cells seems rooted in Bartók's actual practice, although the prominence of this construct may have a different meaning or derivation.

In the final analysis, a number of the constructs that Antokoletz claims to find in Bartók's music can be found there. If his explanation is not accepted, then another remains to be found.

Wilson

While Wilson does not attempt to provide a comprehensive set of the core objects in Bartók's music, it is entirely possible that some of the discoveries of other analysts constitute just these objects. These might include Bartók's tonal usage, references to the musical past, certain scales, folk materials and performance practices, octatonicism, and semiotic meanings. More work is needed to identify these properly. It may prove useful to examine these objects with reference to different periods in Bartók's life, as Gillies has done with Notational Analysis.

Sets are both helpful and troublesome in analysing Bartók's music. Certainly they can be useful in revealing underlying similarities that may be disguised on the surface by transposition and inversions. Indeed, a certain personal reluctance regarding the equivalence of inverted sets has been put aside due to the obvious interest of Bartók in symmetrical structures at the time of composition of the movement in question. The problem lies in the choice of notes. As with any method of analysis, we must be careful to choose notes that reflect the musical reality, and not

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[253]Antokoletz, p. 326.

those that support our theories. This, of course, is easier written than done. A more subtle problem is that the basis of many of Bartók's motives, or sets, is usually tonal, and thus the concept of a set is reduced to being a different, more specific name for the tonal entity.

Schenkerian-type graphical analysis proved to be quite useful in identifying long-range tonal and contrapuntal motions in this movement, and it would seem to be an appropriate tool for other overtly tonal movements as well.

There is no evidence, nor is there reason to believe, that Bartók was interested in set theories or Schenkerian analysis. Of course, this does not mean that he could not have used such procedures, consciously or unconsciously.

Lendvai

Lendvai had the advantage of being one of the first with a comprehensive theory on Bartók, and it might then not be so surprising that there are very contentious aspects to it. We have seen that a number of later theorists have found more logically consistent explanations of the phenomena that Lendvai first found. His continued appeal may be in that he seems to provide an understandable (if incorrect) system for explaining rhythm, harmony, tonality, and form as well as scalar forms and motivic derivation. This would indeed be wonderful, if only it were correct. Perhaps he will be better remembered for his semiotic contributions.

Somfai

László Somfai has provided generations of musicologists with material for work on Bartók. Although not primarily an analyst, Somfai's efforts at cataloguing and collating have made the analyst's job much easier, and more importantly his musicological efforts have provided a context within which Bartók's music can be heard more clearly. Somfai's insistence on the importance of source documents proved very useful in our analysis, with a number of interesting points coming from both the draft and the fair copy. Additionally, his work on semiotics is most suggestive for future directions. Lastly, and most important, the Béla Bartók Complete Critical Edition, on which Somfai has laboured for years, will be a boon to all Bartók scholars when it is finally completed.

Kárpáti

Kárpáti provides us with a number of excellent constructs with which to approach Bartók's music. Again, he does not present a complete, ready-made theory, but his concepts of mistuning and consistency of melodic shape are very useful keys. In particular, mistuning might help form the basis of a more complete understanding of Bartók's harmonic language. In this movement, it provided the insight into cadential progressions, as well the underlying harmonies of the sequence in mm. 11-16, the transition to the recapitulation, and the Hungarian culmination and Coda. Although his system of "Bartók major" and "Bartók minor" chords was not found completely in this movement, it is certainly worth investigation in other pieces. While the presentation of his concept of monothematicism seemed overly sweeping, its application to this movement showed similarities of shape underlying all of the major themes. Finally, along with László Somfai, Kárpáti demonstrates the power possible in a well-considered semiotic analysis.

The Future

A number of issues remain unsolved in Bartók analysis. Possibly the most fundamental is the lack of a rigorous theory of his harmonic vocabulary. Since Bartók was taught both standard harmony and counterpoint, it is not unreasonable to search for a theory which would explain his harmonic and contrapuntal kosmos, as well as the forms he used and their relation to the structures of the past. There is no authoritative source on semiotic meaning, however that might be structured. In fact, there is considerable disagreement on such fundamentals as the form of a piece. This is only exacerbated by the analyses of the composer, wherein he chooses terminology that others do not use, or even gives alternate labels to very different sections.

We still await comprehensive theories.

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