

Zeitschrift: Schweizer Jahrbuch für Musikwissenschaft = Annales suisses de musicologie = Annuario Svizzero di musicologia

Herausgeber: Schweizerische Musikforschende Gesellschaft

Band: 27 (2007)

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DOI: <https://doi.org/10.5169/seals-835207>

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From «Folksong Arrangement» to «Composing with Folk Tunes» in Bartók's *Eight Improvisations on Hungarian Peasant Songs*, Op. 20, and his move toward greater abstraction in the *Three Etudes*, Op. 18

Elliott Antokoletz (Austin, Texas)

Béla Bartók arrived at a new stage in the evolution of his musical language in the years immediately following the First World War. The compositional potential of the authentic Hungarian folk tunes, which Bartók had been investigating since the summer of 1906, was to be fully manifested only after the war had curtailed his collecting tours to the various regions within greater Hungary. As part of the evolution of Bartók's musical language toward increasing synthesis of Eastern European folk modes and the abstract pitch constructions of contemporary art music, the composer pointed to the changing role of Hungarian folk tunes as he used them in his compositions. The intention in this essay is to show how the new relationship between authentic folk tune and more abstract accompaniment in pieces from the *Eight Improvisations on Hungarian Peasant Songs for piano*, Op. 20 (1920), support Bartók's assertion that he had reached the «extreme limit in adding most daring accompaniments to simple folk tunes.» One of the main consequences of this development was that it permitted Bartók to arrive at a kind of twelve-tone language, its formulation based primarily on the principles of polymodal combination and symmetrical transformation of the folk modes.

It should be made clear that Bartók's use of the twelve tones has little or nothing to do with Arnold Schoenberg's twelve-tone *series* conception. Whereas the twelve-tone set in Schoenberg's music «functions in the manner of a motive» and must therefore «be invented anew for every piece,»¹ the use of the twelve-tones in Bartók's music is analogous to the precompositional assumptions of the major and minor scales in traditional tonal music. In Bartók's music, the twelve tones function as scale rather than ostinato

1 Arnold Schoenberg, 1941 essay «Composition with Twelve Tones (I),» in: Leonard Stein, ed., *Style and Idea, Selected Writings of Arnold Schoenberg*, trans. Leo Black (London: Faber and Faber, 1975), p. 219.

twelve-tone motive to form the basis of his nonserial composition. Just as the major and minor scales had served as the basis for deriving major and minor triads in traditional tonal music, the twelve-tone scale serves as the basis for deriving new kinds of harmonic construction in the Bartók idiom.

The significance of Bartók's move toward more daring accompaniments is revealed in the means by which he could radically transform both diatonic and nondiatonic modes into complex polymodal and more abstract symmetrical pitch formations that include octatonic, whole-tone, and other such constructions. Modal and polymodal transformations, which serve to enhance the intrinsic quality of the original folk sources themselves, are essential in the evolution of Bartók's musical language toward his more abstract and highly personal modernistic idiom of the 1920s.

Bartók pointed to the changing role of Hungarian folk tunes in his compositional development. In his lecture, «The Relation Between Contemporary Hungarian Art Music and Folk Music,» which he gave at Columbia University in 1941,² Bartók divided the transcription of folk music into three categories in which (1) «the used folk melody is the more important part of the work» and «the added accompaniment and eventual preludes and postludes may only be considered as the mounting of a jewel»; (2) «the importance of the used melodies and the added parts is almost equal»; and (3) «the added composition-treatment attains the importance of an original work, and the used folk melody is only to be regarded as a kind of motto.» The last is best represented by the Op. 20 *Improvisations*. The *Eighth* and *Third Improvisations* exemplify the means by which he could transform both diatonic and nondiatonic modal structures of Hungarian folk music into abstract symmetrical (that is, octatonic and whole-tone) sets. These modal transformations, which serve to enhance the intrinsic quality of the original folk sources themselves, are essential in the evolution of Bartók's musical language.

In his desire to move away from traditional Western influences, Bartók had to find the means for deriving new pitch structures to harmonize both authentic folk melodies of Eastern origin and his own original inventions, which might include imitations of folk melodies. The folk tunes themselves showed him new ways of harmonization. Following his first investigations into the Hungarian sources, Bartók's expanded research into Slovak sources in the Fall of 1906 and Romanian sources in 1908 increased his possibilities for composition. All of these folk-music sources, which differ in their degrees of modal and rhythmic complexity, contained the seeds for his evolution from folk-song arrangement to the more interesting possibilities of «composing» with folk tunes. According to Bartók,

2 Béla Bartók *Essays*, ed. Benjamin Suchoff (New York: St. Martin's Press, 1976), pp. 350ff.

«The simpler the melody the more complex and strange may be the harmonization and accompaniment that go well with it. [...] It is obvious that we are much freer in the invention of an accompaniment than in the case of a melody of a more complex character. These primitive melodies, moreover, show no trace of the stereotyped joining of triads. [...] It allows us to bring out the melody most clearly by building round it harmonies of the widest range varying along different keynotes.»³

Despite the collapse of the Austro-Hungarian dual Monarchy at the end of the war and severe political and economic deterioration, Bartók was able to produce several significant works between 1918 and 1920, including the *Three Studies*, Op. 18, for piano (1918), his pantomime *The Miraculous Mandarin*, Op. 19 (1919), and the *Eight Improvisations on Hungarian Peasant Songs*, Op. 20, for piano (1920). All three works reveal remarkable developments in style and musical language. The *Improvisations* are best described as *composing with folk song* rather than *folk-song arranging*. The underlying folk tunes themselves, which were collected from various Hungarian districts, are now secondary to the added materials: the elements of the tunes are systematically developed and transformed into highly abstract pitch-sets and interactions.

In the last of the *Eight Improvisations*, a link between each of the four variant statements of a diatonic folk tune⁴ and the octatonic collection is primarily permitted by the intervallic properties of a special double-tritone tetrachord. This symmetrical tetrachord has been referred to in Bartók's music as «cell Z.»⁵ The final folk-tune variant (mm. 69ff.), which linearly

3 Ibid., p. 342. The original publication is «A paraszttzene hatása az újabb műzenére» («The Influence of Peasant Music on Modern Music»), *Új Idők* (Budapest) 37/23 (May 1931): pp. 718–719.

4 This tune, which was collected at Diószád in the district of Szilágy in 1914, is the basis of the following formal outline strain 1 (mm. 5–12); episode 1 (mm. 13–27); strain 2 (mm. 28–38); episode 2 (mm. 38–52); strain 3 (mm. 53–64); episode 3 (mm. 65–68); strain 4 (69–82).

5 This designation was first used by Leo Treitler, in: «Harmonic Procedure in the *Fourth Quartet* of Béla Bartók», in: *Journal of Music Theory* 3/2 (November 1959): pp. 292–298. Cell Z was first shown to be part of a larger system by Elliott Antokoletz, in: «Principles of Pitch Organization in Bartók's *Fourth String Quartet*» (Ph.D. dissertation, City University of New York, 1975). The transposition number of the cell at a given pitch level is determined by the «first» note. If we designate pitch-class C as 0 and assign a corresponding number from 0 to 11 for each of the notes of the semitonal scale (C = 0, C# = 1, D = 2, Eb = 3 ... C = 12 or 0), then, for instance, Eb-Ab-A-D will be designated as Z-3. Since Z-3 maintains its pitch content and intervallic order at its tritone transposition, A-D-Eb-Ab (Z-9), we will refer to it by both T-nos., hence Z-3/9.

unfolds in octaves (ex. 1a), is exclusively accompanied by a harmonic progression based on five of the six transpositions of cell Z (ex. 1b). The missing transposition is *a-d-eb-ab*, which is conveniently identified as Z-9/3. The significance of the double-tritone (cell-Z) tetrachord as a basic source for pitch relations throughout the *Improvisations* is suggested by Bartók's own statement that

«Rumanian and Slovak folk songs show a highly interesting treatment of the tritone (the first, in a sort of Mixolydian mode with minor sixth, the others, in a Lydian mode). [...] These forms brought about the free use of the augmented fourth, diminished fifth, and of [certain] chords. [...] Through inversion, and by placing these chords in juxtaposition one above the other, many different chords are obtained and with them the freest melodic as well as harmonic treatment of the twelve tones of our present day harmonic system.»⁶

The *Improvisations*, Op. 20, is an exemplar of Bartók's assertion. The accompanying Cell-Z tetrachords, which at first appear to be unrelated to the underlying diatonic folk-tune variant in strain 4 (see ex. 1a), actually form a basic structural relationship with the tune. The tune begins in the c-Dorian mode (*c-d-eb-f-g-a-bb-c*), but at m. 74 a lowering of the sixth degree, *a*, to *ab* produces a modal shift to c-Aeolian (*c-d-eb-f-g-ab-bb-c*). As shown in ex. 1c, the c-Dorian mode contains one tritone, *eb-a*, the c-Aeolian another, *d-ab*. These two tritones together imply the presence of the one Z-cell transposition, Z-3/9 (*eb-ab-a-d*), missing from the accompanying chords. Thus, in the present context, an abstract symmetrical pitch set (cell Z) is derived structurally from the double-tritone property of the bimodal variant of the original folk tune. In a certain sense, cell Z is an extreme chromatic compression of the bimodal diatonic theme. Bartók himself stated that his music is based on «diatonic extension» of chromatic themes, or the reverse, «chromatic compression» of diatonic themes.

The specific juxtapositions of these cell-Z statements in this final section (mm. 70ff.) produce both complete and incomplete octatonic collections (ex. 2). The first pairing (m. 70, Z-8/2 and Z-11/5) produces the octatonic collection *g#-bb-b-c#-d-e-f-g*, the last Z tetrachord of the measure (Z-6/0) implying a shift to a new, partial octatonic formation, *f#-[]-[]-b-c-[]-[]-f*. The initial pairing (Z-8/2 and Z-11/5) returns at the second phrase of the tune (m. 72) and the third chord of the measure (Z-7/1) is paired at m. 74 with Z-10/4 to produce the final octatonic collection, *e-gb-g-a-bb-c-db-eb* (see ex. 1a). The remaining chords of the piece then juxtapose these Z cells as incomplete octatonic segments.

6 See Bartók, «The Folk Songs of Hungary,» pp. 28–35.

Example 1a

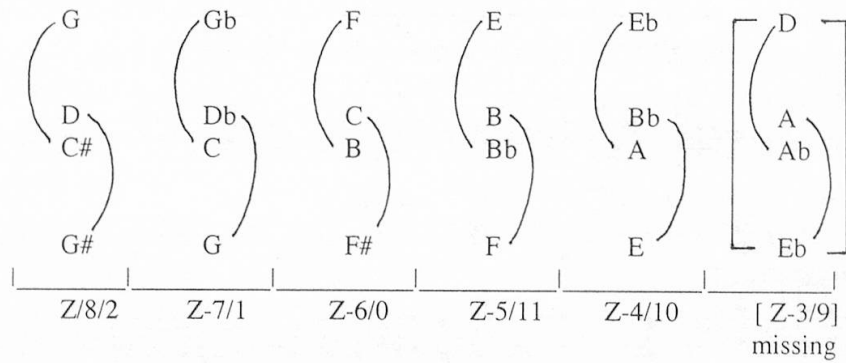
The musical score is divided into three systems, each with a key signature of one flat (B-flat major/C minor) and a 4/4 time signature.

- System 1 (Mezzosoprano):**
 - Tempo: *Maestoso* ($\text{♩} = 80$)
 - Dynamic: *ff*
 - Character: *marcatissimo*
 - Scale: C-Dorian
 - Z-set annotations: $Z-8/2$, $Z-11/5$ (octatonic); $Z-6/0$ (partial octatonic); $Z-11/5$, $Z-2/8$ (octatonic); $Z-7/1$ (octatonic).
 - Tempo change: *poco accelerando*
- System 2 (Allegro):**
 - Tempo: *al Allegro* ($\text{♩} = 116$)
 - Dynamic: *sempre cresc.*
 - Scale: C-Aeolian
 - Z-set annotations: $Z-4/10$, $Z-7/1$, $Z-11/5$ (partial octatonic); $Z-10/4$ (partial octatonic); $Z-11/5$, $Z-4/10$ (allargando).
 - Tempo change: *allargando*
- System 3 (Allegro):**
 - Tempo: *a tempo* ($\text{♩} = 116$)
 - Dynamic: *sff*, *brioso*, *ff*, *sfff*
 - Scale: C-Aeolian
 - Z-set annotations: $Z-10/4$, $Z-11/5$, $Z-4/10$, $Z-10/4$, $Z-11/5$ (octatonic); $Z-8/2$; $Z-4/10$ (partial $Z-6/0$); $Z-4/10$, $Z-6/0$.
 - Tempo change: *a tempo*

No. 8 of *Eight Improvisations on Hungarian Peasant Songs*, Op. 20, for piano, «composing with folk tune»

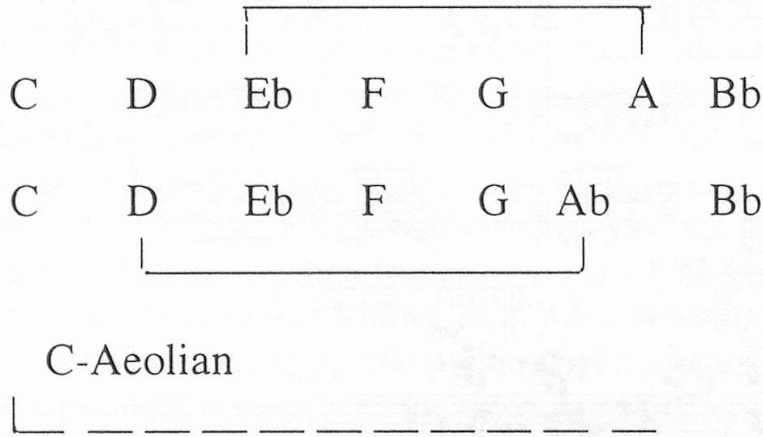
(a) Closing bimodal folk-tune variant (mm. 69ff.) harmonized by five of six transpositions of «cell Z», with cadential extension of tune to partial «Zcell», *f-c-[]-gb* (m. 80)

Example 1b



(b) Double-tritone property of each of six «cell-Z» transpositions

Example 1c



(c) Modal tritones of *c*-Dorian/*c*-Aeolian tune (*eb-a/d-ab*) implying presence of missing «cell Z-3/9» (*eb-ab-a-d*) from accompaniment

Example 2

G	Bb	F	[Ab]	Eb	Gb
D	F	C	[Eb]	Bb	Db
C#	E	B	[D]	A	C
<u>G#</u>	<u>B</u>	<u>F#</u>	<u>[A]</u>	<u>E</u>	<u>G</u>
Z-8/2	Z-11/5	Z-6/0	[Z-9/3]	Z-4/10	Z-7/1
(=G#-Bb-B-C#-D-E-F-G) octatonic scale		(=F#-Ab-A-B-C-D-Eb-F) octatonic scale		(=E-Gb-G-A-Bb-C-Db-Eb) octatonic scale	

Eighth Improvisation, Op. 20, Octatonic significance of paired «Z cells» in chordal accompaniment of ex. 1a, above

The complementary relationship between the diatonic bimodal folk-tune variant and the octatonic accompaniment is melodically implied in the structure of the tune. While the bimodal melody, from m. 69 through m. 80, beat 2, is exclusively based on the pitch content outlined in ex. 1c, a codetta (m. 80., beat 3) is initiated by a new, chromatically altered note, *gb* (see ex. 1a). This linearly produces a partial statement of Z-6/0 (*gb-[]-c-f*) with the preceding two notes. The latter Z cell and its octatonic complement, Z-3/9 (*eb-ab-a-d*), which is implied by the tritones of the bimodal theme (see ex. 1c), together form seven notes of the octatonic collection, *gb-ab-a-[]-c-d-eb-f*, that remained incomplete in the accompaniment. Thus, the tritone properties of cell Z link the bimodal folk-tune variant with the octatonic chords.

As shown in ex. 3a, the *c*-Dorian/Aeolian bimodality of the folk-tune variant is foreshadowed in the pitch content of the opening chordal accompaniment of this *Improvisation*. The introductory measures are based on a tetrachord, *c-eb-ab-d*, that implies the presence of a partial statement of Z-3/9 (*eb-ab-[]-d*).⁷ This transposition of Z is precisely the one missing from the final Z tetrachords of the piece (see ex. 1b) and is supplied by the tritones (*eb-a* and *ab-d*) of the final *c*-Dorian/*c*-Aeolian statement of the tune (see ex. 1c). One chromatic alteration, from *ab* to *a* (at m. 6, accompaniment), completes Z-3/9 (*eb-ab-a-d*) (see ex. 3a); *a* and *ab* also represent the chromatic difference between the final *c*-Dorian and *c*-Aeolian mixture in strain 4 (see ex. 1c). Furthermore, these two diatonic modes are foreshadowed in the pitch content (*c-d-eb-[]-[]-ab-a-[]*) of the opening chordal accompaniment (mm. 1-6). This also implies an octatonic segment, and this is confirmed by the entry (mm. 5-6) of the first two notes (*b* and *f#*) of the diatonic folk tune (see ex. 3a). While all four notes of Z-3/9 (*eb-ab-a-d*) are present, these two notes, *b-f#*, and the remaining held note, *c*, together form a partial occurrence of Z-6/0 (*c-[]-f#-b*). The thematic entry, therefore, expands the ambiguous bimodal-octatonic accompaniment to a seven-note octatonic segment, *c-d-eb-[]-f#-ab-a-b*. In strain 3 (ex. 3b), pairs of complementary Z cells produce complete octatonic collections in the combined canonic lines of the modal folk-tune variant. Thus, we may say that the modal-diatonic folk-tune statements in the *Eighth Improvisation* serve to extend the octatonic color of cell Z in the third and final strains and that of the chordal accompaniment in the opening strain.

7 The significance of the remaining note, C, will be discussed below.

Example 3a

octatonic segment (C-D-E^b-(-)-F[#]-A^b-A-B)

Allegro (♩=120) *strepitoso* *ff* *sf*

Largamente (♩=108) *ff*

Strain 1

partial Z-0/6

Z-3/9

left-hand diatonic (C-Dorian/C-Aeolian) segment (C-D-E^b-(-)-(-)-A^b-A)

Eighth Improvisation, Op. 20

(a) Opening, Final c-Dorian/Aeolian modes of folk-tune variant foreshadowed in pitch content (c-d-eb-[]-[]-ab-a-[]) of opening chordal accompaniment (mm. 1–6). This also implies octatonic segment, expanded to seven notes by entry (mm. 5–6) of first two notes (b and f#) of diatonic folk tune to produce c-d-eb-[]-f#-ab-a-b.

Example 3b

Tranquillo (♩=84) poco a poco accelerando

pp p

(Z-5/11) (Z-8/2)

octatonic-2

Vivo (♩=126) *cresc.* sempre più accelerando (♩=144)

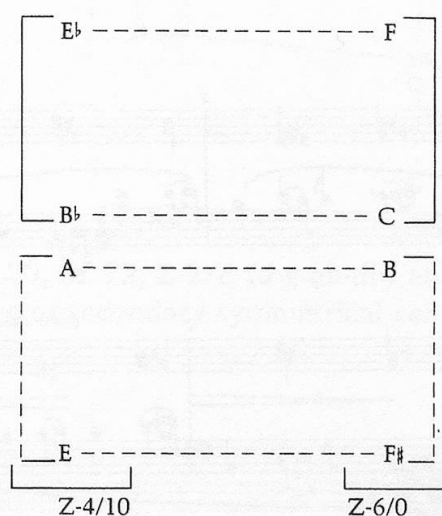
Z-10/4 Z-1/7 Z-10/4

octatonic-1

(b) Strain 3 of four folk-tune statements, mm. 53–56 and 61–64, complementary pairs of Z cells, each pair forming octatonic intersection (Z-5/11 and Z-8/2 = octatonic-2, F-g-ab-B^b-B-c[#]-d-E; Z-10/4 and Z-1/7 = octatonic-1, B^b-c-db-E^b-E-f[#]-g-A) between canonic modal lines of folk-tune variant.

Although each of the *Eight Improvisations* is a complete and individual entity, the eight pieces share a set of common cell properties. The closing passage of the *Eighth Improvisation* (see ex. 1a) is also a focal point for cell development throughout the entire work. The final chord of this passage vertically joins two transpositions of cell Z a whole-tone apart (ex. 4). The upper tetrachord is Z-4/10 ($e-a-bb-eb$), its interval-2 transposition below it, Z-6/0 ($f\#-b-c-f$). The corresponding upper perfect-fourth dyads ($bb-eb$ and $c-f$) of these two Z cells also imply the presence of a pair of whole-tone dyads ($eb-f$ and $bb-c$), precisely the pair of whole tones that unfold in the very opening harmony and in the melodic structure of the *First Improvisation* (ex. 5).

Example 4



Eighth Improvisation, Op. 20, last chord, combining two «Z cells», Z-4/10 ($e-a-bb-eb$) and Z-6/0 ($f\#-b-c-f$) a whole-tone apart

Example 5

First Improvisation, Op. 20, mm. 1-4, whole-tone dyads, $eb-f$ and $bb-c$ (from Z-cell combination in ex. 4, above) as harmonic basis and as local derivation from respective tetrachords of the c-Dorian folk tune ($c-d-[eb-f]/g-a-[bb-c]$)

This symmetrical harmonic collection, $eb-f/bb-c$, is also locally derived from a reordering of certain elements of the modal folk tune of this *Improvisation*.⁸ The melody, which is repeated three times, is in the c -Dorian mode. The Dorian mode is the only permutation of the diatonic scale that has a symmetrical construction: in its scalar order ($c-d-eb-f-g-a-bb-c$), it can be partitioned into two equivalent tetrachords ($c-d-eb-f$ and $g-a-bb-c$) a perfect fifth apart. Strain 1 (mm. 1–4) of the tune is accompanied by the two whole-tone dyads, $eb-f$ and $bb-c$, which are verticalizations of the corresponding upper segments of the two tetrachords. In Strain 2 (mm. 5–8), these whole-tone dyads are reordered in the initial two grace-note figures to form perfect-fifth dyads ($f-c$ and $eb-bb$) (ex. 6).

Example 6

First Improvisation, Op. 20, mm. 5–8, whole-tone dyads ($eb-f$ and $bb-c$) reinterpreted as grace-note perfect-fifth dyads ($f-c$ and $eb-bb$)

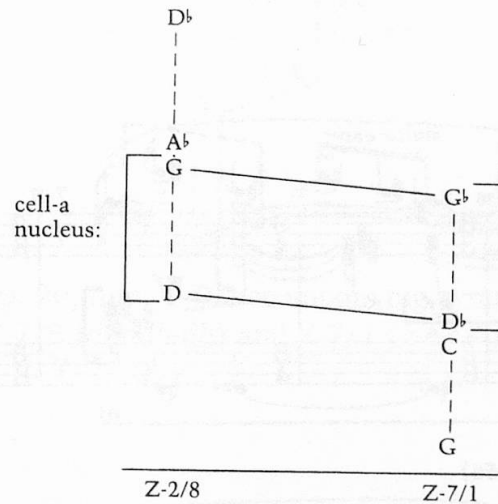
One other type of combination occurs between a pair of Z cells in the final passage of the *Eighth Improvisation* (see ex. 1a). The succession of Z tetrachords in the allegro (mm. 76–80) is based on alternations between Z-10/4 ($a\#-d\#-e-a$, or $e-a-a\#-d\#$) and its interval-1 transposition, Z-11/5 ($b-e-f-bb$). The same relationship exists between Z-11/5 and Z-6/0 (m. 70, last two chords) and Z-2/8 and Z-1/7 (m. 72, last two chords), with the two Z tetrachords in each pair explicitly separated by the perfect fourth. The combination of Z-2/8 and Z-7/1 (m. 72), for instance, implies the presence of a significant secondary symmetrical cell, $db-d-gb-g$ (ex. 7). The latter opens the *Third Improvisation* (see ex. 8a) as the harmonic basis of the first phrase (mm. 1–9) of the folk tune.⁹ This cell ($c\#-d-f\#-g$) may be shown as the nucleus of an implied Z-2/8 and Z-1/7 combination (ex. 9). This function is expli-

8 Collected in 1907 in Felsőiregh, Tolna.

9 From the Kórógy collection.

citly confirmed at the end of the coda (ex. 10), where the original chord ($c\#-d-f\#-g$) is joined with two new notes, ab and c ; while ab (in enharmonic spelling, $g\#$) completes $Z-8/2$ ($g\#-c\#-d-g$), c completes $Z-1/7$ ($c\#-f\#-g-c$) (see ex. 9).

Example 7



Eighth Improvisation, Op. 20, m. 72, Z-2/8 ($d-g-ab-db$) and Z-7/1 ($g-c-db-gb$) combination implying presence of secondary symmetrical cell, $db-d-gb-g$

Example 8a

Lento, rubato. (♩. cca. 98)

pp senza colore *mf quasi parlando* *sempre pp*

mf *p dolce* *pp* *poco espr.*

Third Improvisation, Op. 20: symmetrical transformation of opening nondiatonic folk mode

(a) MM. 1–14, authentic old Hungarian folk tune in nondiatonic mode ($d-e-f\#-g-ab-b-c-d$), a sort of mixolydian mode with flat-sixth degree resulting from sharpening of third degree of pentatonic substructure in peasant performance

Example 8b



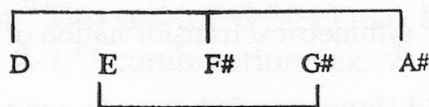
(b) Symmetrical structure of mode with basic symmetrical substructure (augmented triad, *d-f#-a#*)

Example 8c

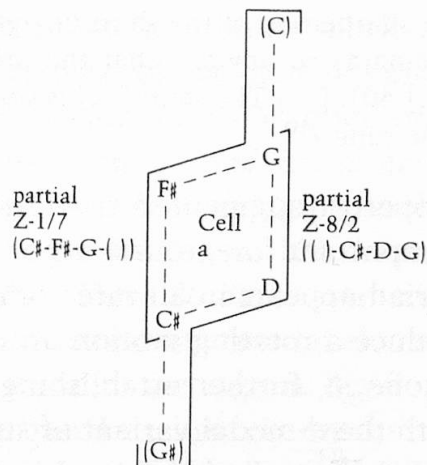
(c) Episode 2 (mm. 25–30), based on foreground projection of symmetrical augmented triad into accompaniment

Example 8d

(d) Accompaniment to strain 2 of tune (mm. 18–21) based on symmetrical expansion of augmented triad to five-note whole-tone segment (*d-e-f#-g#-a#*)



Example 9



Third Improvisation, Op. 20, mm. 1–9, accompanying symmetrical cell, $c\#-d-f\#-g$, implying presence of $Z-2/8$ ($d-g-ab-db$) and $Z-7/1$ ($g-c-c\#-f\#$) combination

Example 10

Third Improvisation, Op. 20, end of coda, mm. 42–45, original chord ($c\#-d-f\#-g$) joined with two new notes, ab and c ; ab (in enharmonic spelling, $g\#$) completes $Z-8/2$ ($g\#-c\#-d-g$), c completes $Z-1/7$ ($c\#-f\#-g-c$)

The structure of the old Hungarian *parlando-rubato* folk melody in *Improvisation No. 3* (see ex. 8a) is also the basis for the derivation and transformation of abstract symmetrical formations that unfold in the accompaniment. The nondiatonic tune itself, which forms (ex. 8b) a kind of «mixolydian» variant with flat-sixth degree, $d-e-f\#-g-a-bb-c-d$, outlines major and minor (lower and upper) tetrachords, $d-e-f\#-g$ and $a-bb-c-d$, which together form a symmetrical scale. In reference to this tune, Bartók stated that

«Another kind of alteration of the pentatonic scale [*d-f-g-a-c*] crops up now and then [...]. It is the sharpening of the third degree [...]. But even then the pentatonic structure remains so obvious that the origin of all such scales is unmistakable (Nos. [...] 40). [...] The third [...] is sometimes raised and lowered in the course of one tune.»¹⁰

A basic symmetrical property (augmented triad, *d-f#-a#*) of this modal variant emerges as an important foreground event in Episode 2 (ex. 8c), where this augmented triad appears in all three of its harmonic positions. These permutations produce a rotating motion around the registrally stable (or invariant) axis tone, *d*, further establishing the symmetrical connection of this chord with the *d*-modal variant of strain 1 (see ex. 8a,b)

The augmented-triad *d-f#-a#* is anticipated in the accompaniment of the first phrase of strain 2 (ex. 8d). The succession of major thirds outlines a five-note segment (*d-e-f#-g#-a#*) of one of the whole-tone cycles exclusively. The pitch content of the latter is constructed symmetrically around *d-f#-a#*, which appears as a local foreground event, for the first time, by the adjacency of the two major thirds, *f#-a#* and *d-f#*. Both the whole-tone scale and the augmented triad represent abstract transformations of the modal tune.

Three Studies, Op. 18

In nineteenth-century chromatic music, composers often employed symmetrical or cyclic-interval constructions as the basis for triadic root progression. Triadic motion by way of the chromatic, whole-tone, minor-third, or major-third cycles, as well as compound cyclic-interval structures like the octatonic scale (formed by joining any two of the three diminished-seventh chords, or minor-third cycles), had appeared extensively in the works of Franz Schubert, Hector Berlioz, Franz Liszt, Frédéric Chopin, and others. This tendency led in many twentieth-century compositions to pervasive use of the interval cycles as the primary means of integrating the harmonic and melodic levels. Claude Debussy, Bartók, Igor Stravinsky, and others transformed the pentatonic and modal scales of folk music into whole-tone, octatonic, and other types of symmetrical/cyclic-interval collections. In their compositions, the interval cycles and the folk modes were joined to replace the traditional major and minor scales as the background source for deriving new kinds of harmonic and melodic formations.

10 See Bartók, *The Hungarian Folk Song*, ed. Benjamin Suchoff, trans. M.D. Calvocoressi (Albany: State University of New York Press, 1981), p. 18.

The total complex of interval cycles (ex. 11),¹¹ which serves as the basic source for the harmonic and linear fabric in the *Three Studies* and other works of Bartók, consists of one cycle of minor seconds, two of whole tones, three of minor thirds, four of major thirds, only one of perfect fourths, and six of tritones.¹² The harmonic and linear material of the *Three Studies* also belongs to a more complex unifying principle based on a systematic interlocking of the cyclic partitions (ex. 12). As part of this special twelve-tone language in Bartók's *Three Studies*, interaction between cyclic-interval constructions and the pentatonic/modal elements of Eastern European folk music¹³ is fundamental to the organic development. Traditional tonal functions, which were based exclusively on the triadic harmonies of the major-minor scale system and had been essential in the structural articulation of Classical music, are replaced in Bartók's music by these interactions between modal and cyclic-interval pitch constructions.

Example 11

1/ 11	2/10	3/9	4/8	5/ 7	6/6	7/ 5	8/4	9/3	10/2	11 /1	12 /0	1/ 11
C				F \sharp		B \sharp				E	D	C
B				C \flat		E \sharp				F	D	B
B \flat				G \flat		A \sharp				F \sharp	D	B \flat
A				D \flat		D \sharp				G	D	A
G \sharp				A \sharp		G \sharp				G \sharp	D	G \sharp
G				E \sharp		C \sharp				A	D	G
F \sharp	B \flat B			B \flat		F \sharp		F \sharp G		B \flat D	F \sharp	
F	G \sharp A			F		B		A \flat A		A \flat B	D	F
E	F \sharp G	A \flat A B \flat		C		E		B \flat B C		B \flat C	D	E
E \flat	E F	F F \sharp G		G		A	B \flat B C C \sharp	B C C \sharp		C C \sharp	C \sharp	D E
D	D E \flat	D E \flat E	F \sharp G G \sharp A	D	D E \flat E F F \sharp G	D	D E \flat E F	D E \flat E	D E \flat	D	D	D
C \sharp	C C \sharp	B C C \sharp	B \flat B C C \sharp	A	G \sharp A B \flat B C C \sharp	G	F \sharp G G \sharp A	F F \sharp G	E F	E \flat	D	C \sharp
C	B \flat B	A \flat A B \flat	F \sharp G G \sharp A	E	D E \flat E F F \sharp G	C	B \flat B C C \sharp	A \flat A B \flat	F \sharp G	E	D	C

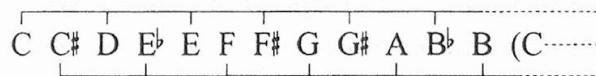
Total complex of interval cycles

One of the more general principles underlying Bartók's transformational processes is also reflected in ex 12. The system of the interval cycles, which may be described in terms of both single and combined cyclic partitions, provides the framework for the organic development of Bartók's music. More specifically, successive cyclic-interval interlockings generate a scheme

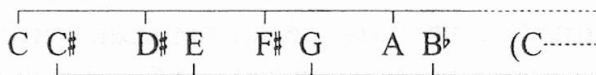
11 Outlined in Elliott Antokoletz, *The Music of Béla Bartók: A Study of Tonality and Progression in Twentieth-Century Music* (Berkeley: University of California Press, 1984), ex. 70.
 12 Intervals larger than the tritone are the harmonic inversions of the corresponding smaller intervals (perfect fifth/perfect fourth, minor sixth/major third, etc.), i.e., they form the intervallic complements of the smaller ones in the same interval class.
 13 Within the more abstract idiom of these pieces the folk-like quality is still suggested not only by modal elements, but the prominent manifestation of the «tempo giusto» and «parlando rubato» styles of Bartók's native folk music.

Example 12

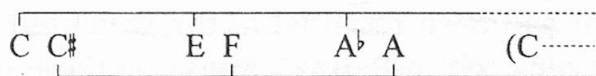
2 times interval-cycle 2 (ratio 1:1, C-C#/D-E^b etc.) — chromatic scale (implied cell X):



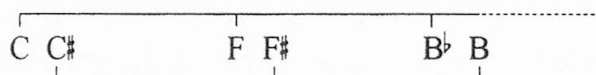
2 times interval-cycle 3 (ratio 1:2, C-C#/D#-E etc.) — octatonic scale:



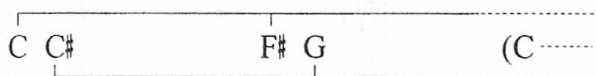
2 times interval-cycle 4 (ratio 1:3, C-C#/E-F etc.):



2 times interval-cycle 5 (ratio 1:4, C-C#/F-F# etc.):



2 times interval-cycle 6 (ratio 1:5, C-C#/F#-G etc.):



Three Studies, Op. 18, interval-ratio 1:1 system as background unifying principle based on systematic interlocking of interval cycles and expanding interval ratios between pairs of semitones

of expanding interval ratios – 1:1, 1:2, 1:3, etc.¹⁴ The organic process of the music itself, which is linked directly to this abstract scheme (as outlined in ex. 12), has been described by Bartók as «extension in range,» in which chromatic material is expanded into diatonic themes, or the reverse, which he referred to as «chromatic compression.» Through these processes, Bartók stated that «we will get variety on the one hand, but the unity will remain undestroyed because of the hidden relation between the two forms.»¹⁵

The main theme of *Study No. 1* (mm. 11ff.), which forms a pentatonic segment, *a-b-cx* (ex. 13a), based on an interval ratio of 2:3 (see ex. 12), is the first focal point of intervallic expansion. The *Study* opens with a chromatic

14 These intervallic indications have no relation to Ernő Lendvai's terminology for his interval «Models», since he refers to Golden Section significance, while I interpret these intervallic relations only in terms of the interval cycles.

15 See «Harvard Lectures,» in: *Béla Bartók Essays*, ed. Benjamin Suchoff (New York: St. Martin's Press, 1976), pp. 379–381.

Example 13a

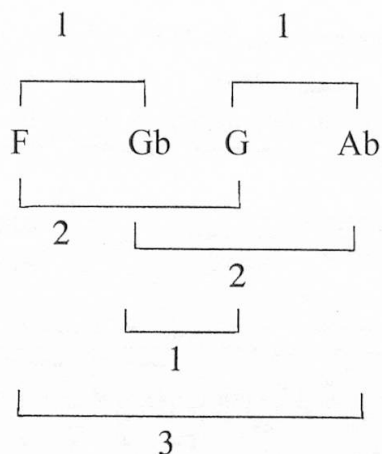
The image shows a musical score for Example 13a, consisting of four systems of piano music. The first system is divided into four measures. The first measure is labeled 'X-5', the second 'X-1', the third 'X-0', and the fourth 'WTS'. The second system is divided into four measures, with the first measure labeled 'X-8'. The third system is divided into four measures, with the first measure labeled 'PS'. The fourth system is divided into four measures, with the first measure labeled '2:1' and the second '1:2'. The score is in 2/2 time and features a pentatonic scale in the right hand and a chromatic tetrachord in the left hand.

First Study, Op. 18, opening interval expansion based on interval cycles

(a) First thematic focal point for interval expansion (mm. 11ff.), pentatonic segment, *a-b-cx*, based on interval-ratio 2:3; opening measures based on chromatic tetrachord (cell X), partitioned into three discrete interval couples

tetrachord, *f-gb-g-ab*, which we will call «cell X.» Given that $c=0$, $c\#=1$, $d=2$, $eb=3$, etc., this transposition of X, on F, is designated as X-5. As shown in ex. 13b, any symmetrical tetrachord can be partitioned into three discrete interval couples – in this case, two semitones (*f-gb/g-ab*), two whole tones (*f-g/gb-ab*), and an axial interval couple of semitone and minor third (*gb-g/f-ab*). At the opening, cell X-5 is partitioned registally into its semitonal interval-couple at ratio 1:1 (*f-gb/g-ab*), i.e., two semitones separated by a semitone, but the linear ordering is based on the axial interval couple of intervals 1 and 3 (*gb-g* and *ab-f*). After a brief occurrence of X-1, *db-d-eb-e* (m. 2), which is based on the same partitioning as X-5, an accented statement

Example 13b



(b) Three interval couples of cell X-5 (*f-gb-g-ab*)

of X-0, *c-db-d-eb* (m. 3) provides us with a new interpretation of the interval couples of cell X. The registral partitioning now suggests an expansion to the whole-tone interval couple (*c-d* and *db-eb*), the latter extended in the continuation of alternate notes to *c-d-e-f#* and *db-eb-f*. This foreshadows the interlocking of both complete whole-tone scales (mm. 110–114) toward the end of the piece (ex. 14).

The first structural arrival (m. 7), which marks the end of what might be considered an antecedent phrase, is articulated by an ostinato based simply on the boundary of X-8 (*g#-b*). This emphasizes the largest interval of cell X (minor third), which was manifested locally in the axial-interval partitioning in the opening measures (*ab-f*, etc.). The X-8 boundary introduces a pentatonic segment (*b-a-b-cx-b*) in the upper thematic line (mm. 11ff.), which marks the beginning of the consequent phrase and what might be considered the main thematic idea of Study no. 1.¹⁶ This suggests yet another interval expansion, i.e., we now have intervals 2 and 3 combined, while the primary interval couple (semitones of X is replaced by two whole tones (*f#-g#* and *a-b*).

A new passage at mm. 39ff. (ex. 15), which anticipates the last ten measures of the piece (ex. 16), juxtaposes a held segment (*g/a#-c#-f#*) of the final G-major/F#-major chord and X-11, the latter partitioned registally into its axial interval couple (boundary *b-d*, and axis *c-c#*). Cell X-11 provides the first explicit connection between the chromatic and diatonic extremes of the movement. While the G-major triad of the final bichordal construction (G-major/F#-major triads) appears incomplete in the held chord at this point (mm. 38ff.), the boundary minor third of X-11 (*b-d*) supplies the triadic

16 This thematic idea is strikingly reminiscent of the opening theme of *Allegro barbaro*.

Example 14

First Study, Op. 18, mm. 110–114, interlocking of both complete whole-tone scales in canonic inversion intersecting at interval 1 of cell X ($a-bb$) followed by expanded interval-ratio 1:3 ($a-bb:c\#-d$)

third and fifth degrees. Then (mm. 42ff.), X-11, reinterpreted registrally as two whole tones ($b-c\#$ and $c-d$), moves to an interval-ratio of 2:2 ($eb-f:g-a$), which we will call «cell Y.» Local reinterpretations and expansions from cell X to both cell Y and pentatonic segments (i.e., ratios from 1:1, 1:2, 2:2, and 2:3) are further articulated in the ensuing passages (e.g., mm. 54–56).

The chromatic intervallic interlockings of Study no. 1 are transformed organically in Study no. 2 by more expanded interval ratios, which now unfold scale structures based on interlocking minor and major thirds. The entire interval-expansion process from cells X and Y to ratio 3:4 is illustrated in ex. 17. Study no. 3 opens with larger intervals that eventually focus on three-note segments of the special double-tritone cell, i.e., cell Z, that was shown so prominently in the Op. 20 *Improvisations* as the primary transformational link between diatonic-modality and the more abstract sphere of symmetrical pitch formations.

Example 15

First Study, Op. 18, new passage (m. 39) based on held segment $g/a\#-c\#-f\#$ (in anticipation of final combined G-major/F#-major triads, ex. 16, below) and X-11 ($b-c\#-d$) in axial interval-couple partitioning; X boundary, $b-d$, provides third and fifth degrees of G-major triad

Conclusion

In Bartók's works of the 1920s, the transformation of his musical language from *folk-song arrangement* to *composition with folk tunes* into further abstractions or fusions of the modal elements of folk music may have been given some direction toward extreme systematization by his contact with his contemporaries and their works: In 1921 he met Ravel and Stravinsky in Paris and in 1922 he participated with members of the Vienna Schoenberg circle, as well as Stravinsky, Milhaud, Hindemith, and others in the first performances of the International Society for Contemporary Music (ISCM). Already, in his two *Sonatas for Violin and Piano*, composed in 1921 and 1922, shortly after the *Improvisations*, Bartók came closer than in any of his other works to a kind of twelve-tone language typical of the expressionistic works of the Schoenberg School. However, Bartók commented that he «wanted to show Schoenberg that one can use all twelve tones and

Example 16

G/ A#-C#-F# (see Ex. 5, below)

X-11 (see Ex. 15, above)

X-11 and Y-3
(see Ex. 15, above)

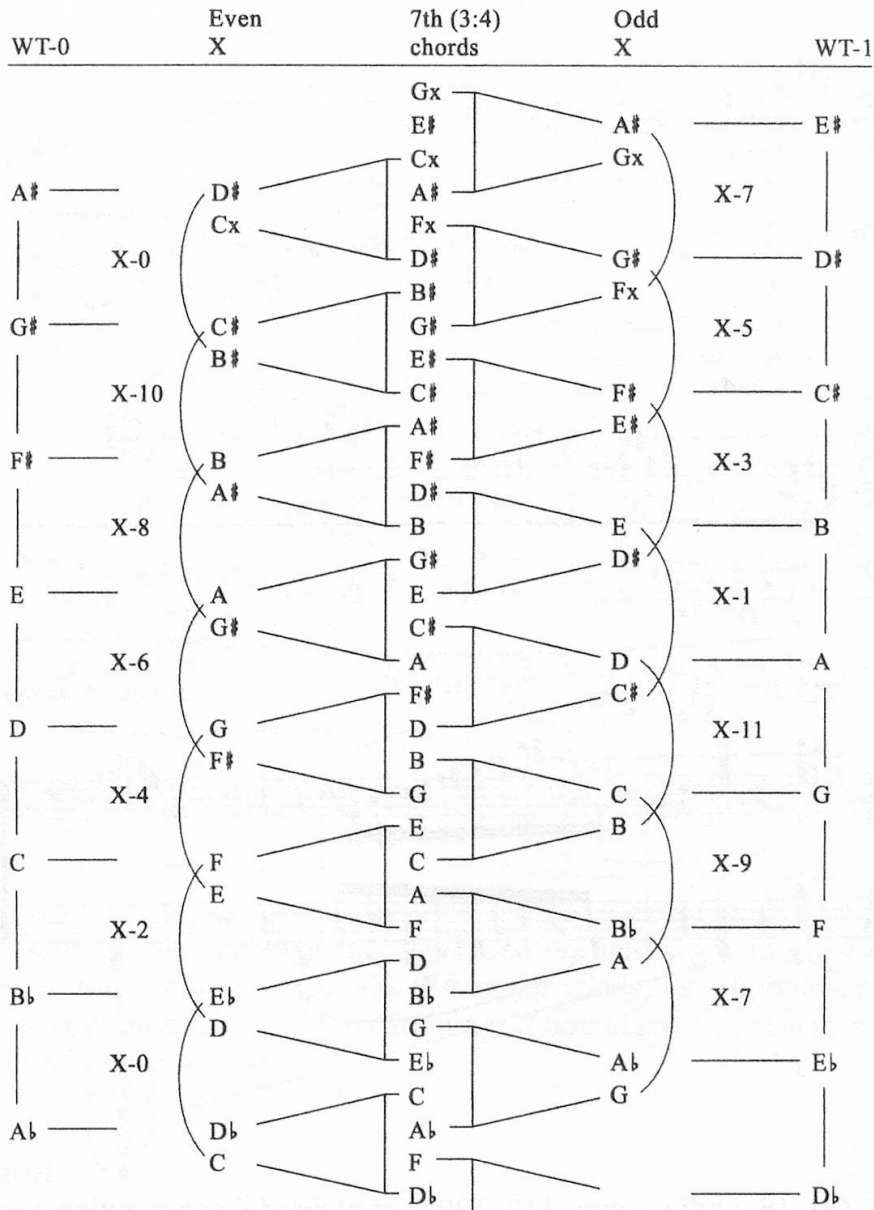
↑
F:
C:
A#:
F:
B:
G:
D:
B

First Study, Op. 18, ending, mm. 119–128, last bichordal construction consisting of two triads: G-major/F#-major

still remain tonal.»¹⁷ Thus, Bartók's shift from the principle of *folk-song arranging* to that of *composing with folk tunes* is essential in understanding the evolution of his musical idiom from the folk modes to a kind of twelve-tone language.

17 See Yehudi Menuhin, *Unfinished Journey* (New York: Alfred A. Knopf, 1977), p. 165.

Example 17



Second Study, Op. 18, interval-ratio 3:4 system outlining sequence of major and minor thirds in interlocking compound cycles; shows systematic relation to complete whole-tone cycles and all cell-X transpositions

Abstract

Bartók arrived at a new stage in the evolution of his musical language in the years immediately following World War I. The compositional potential of the authentic Hungarian folk tunes, which Bartók had been investigating since the summer of 1906, was to be fully manifested only after the war had curtailed his collecting tours to the various regions within greater Hungary. As part of the evolution of Bartók's musical language toward increasing synthesis of Eastern European folk modes and the abstract pitch constructions of contemporary art music, the composer pointed to the changing role of Hungarian folk tunes as he used them in his compositions. He divided the transcription of folk music into three categories in which (1) «the used folk melody is the more important part of the work» and «the added accompaniment and eventual preludes and postludes may only be considered as the mounting of a jewel»; (2) «the importance of the used melodies and the added parts is almost equal»; and (3) «the added composition-treatment attains the importance of an original work, and the used folk melody is only to be regarded as a kind of motto.» The last stage is exemplified by the more complex, abstract accompanimental elaborations of the tunes themselves. The intention in this essay is to show how the new relationship between authentic folk tune and more abstract accompaniment in pieces from the *Eight Improvisations on Hungarian Peasant Songs for piano*, Op. 20 (1920), support Bartók's assertion that he had reached the «extreme limit in adding most daring accompaniments to simple folk tunes.» The significance of his assertion is revealed in the means by which he could radically transform both diatonic and nondiatonic modal structures of folk music into more complex polymodal combinations and, beyond that, into more abstract symmetrical pitch formations that include octatonic, whole-tone, and other cyclic-interval constructions. These modal and polymodal transformations, which serve to enhance the intrinsic quality of the original folk sources themselves, are essential in the evolution of Bartók's musical language toward his more abstract modernistic idiom of the 1920s. Bartók's move toward extreme abstraction, in which only the essence of folk music remains, was already achieved by 1918 in his virtuosic *Three Etudes for Piano*, Op. 18.

Zusammenfassung

Bartók erreichte in der Entwicklung seiner musikalischen Sprache eine neue Stufe in den Jahren unmittelbar nach dem Ersten Weltkrieg. Das kompositorische Potential echter ungarischer Volksmelodien, das Bartók seit dem Sommer 1906 erforschte, sollte sich in vollem Umfang erst erweisen, nach-

dem der Krieg seine Feldforschungen auf verschiedene Regionen innerhalb Grossungarns beschränkt hatte. Als Teil der Entwicklung von Bartóks musikalischer Sprache hin zu einer stärkeren Synthese von Osteuropäischen Volksweisen und der abstrakten Tonhöhenorganisation zeitgenössischer Kunstmusik hob der Komponist die wechselnde Rolle hervor, welche ungarische Volksmelodien in seinen Kompositionen spielen konnten. Er unterteilte die Transkription von Volksmusik in drei Kategorien: (1) «die verwendete Volksmelodie macht den wichtigeren Anteil des Werks aus» und «die hinzugefügte Begleitung und allfällige Vor- und Nachspiele können gleichsam als Fassung eines Edelsteins betrachtet werden»; (2) «die Bedeutung der verwendeten Melodien und der hinzugefügten Anteile ist ziemlich ausgewogen»; und (3) «die zusätzliche kompositorische Verarbeitung führt zur Bedeutung eines originalen Werks und die verwendete Volksmelodie kann lediglich als eine Art Motto verstanden werden.» Die letzte Stufe ist verdeutlicht durch komplexere, abstrakte Ausarbeitungen der Begleitungen solcher Melodien.

Der Beitrag zeigt, wie die neue Beziehung zwischen ursprünglicher Volksweise und abstrakterer Begleitung in Stücken aus *Acht Improvisationen über Ungarische Bauernlieder* op. 20 (1920) Bartóks Feststellung bestätigen, er hätte das «Extrem der Verbindung von höchst gewagten Begleitungen mit einfachen Volksweisen» erreicht. Der Stellenwert seiner Feststellung wird deutlich durch die Tatsache, wie radikal er sowohl diatonische wie nicht-diatonische modale Strukturen von Volksmusik in komplexere polymodale Verbindungen transformieren konnte und noch darüberhinaus in abstraktere symmetrische Tonhöhen-Organisationen, einschliesslich oktatonische, ganztönige und andere zyklisch-intervallische Konstruktionen. Diese modalen und polymodalen Transformationen, welche der Verdeutlichung der immanenten Qualität der ursprünglichen Volksweisen dienen, sind wesentlich für die Entwicklung von Bartóks musikalischer Sprache hin zu seinem abstrakteren modernen Idiom der 1920er Jahre. Bartóks Schritt zur extremen Abstraktion, bei der nur noch die Essenz der volksmusikalischen Vorlage erhalten bleibt, war schon 1918 in seinen virtuosen *Drei Etüden für Klavier* op. 18 vollzogen.