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Bartok: Beyond Bi-modality

BY

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In 1943 Béla Bartók prepared a series of lectures on "the new Hungarian art-music", to be delivered at Harvard University, in which he discussed some of his compositional practices:

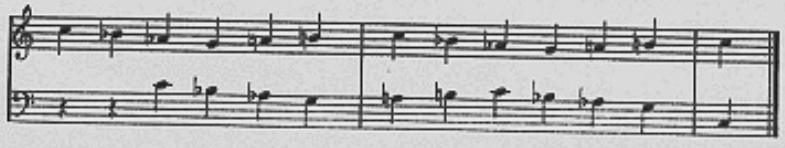
> Now that the greatest part of my work has already been written, certain general tendencies appear—formulas from which theories can be deduced.[1]

There he explained, among various other elements of his music, his evolution of what he called bi- or poly-modality:

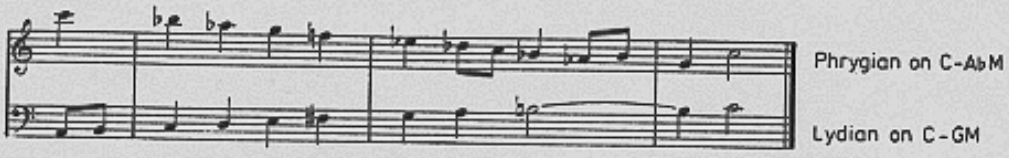
> Now, the frequent use of modal chromaticism quite naturally gave me the idea to try a kind of melodic new chromaticism, developed quite subconsciously and instinctively. By the way, the working out of bi-modality and modal chromaticism happened subconsciously and instinctively, as well. I never created new theories in advance, I hated such ideas.[2]

After showing two types of the minor scale used simultaneously (see Ex. 1), he stated that two different modes can be used at the same time as well, illustrating this with Ex. 2.

Ex. 1



Ex. 2



As the result of superposing a Lydian and Phrygian pentachord with a common fundamental tone, we get a diatonic pentachord filled out with all the possible flat and sharp degrees. These seemingly chromatic degrees, however, are totally different from the altered chord degrees of the chromatic styles of the previous periods. A chromatically-altered note of a chord is in strict relation to its non-altered form; it is a transition leading to the respective tone of the following chord. In our polymodal chromaticism, however, the flat and sharp tones are not altered degrees at all; they are diatonic ingredients of a diatonic modal scale.[3]

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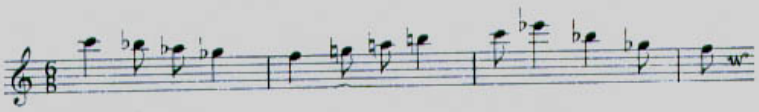
[1] *Béla Bartók Essays*, ed. Benjamin Suchoff (London: Faber & Faber, 1976), p. 376.
[2] *Ibid.*, p. 376.
[3] *Ibid.*, p. 367.

Pointing out that the upper halves of both modes are in exactly the same relation as the upper halves of the two minor scale types, Bartók called his example an extension of the methods of old composers to the scale's lower half.

Bartók must have been consciously aware of this concept at least by 1939, from its literal use as the second theme of the first movement of his sixth string Quartet, written in that year (see Ex. 3), and quite possibly in 1935 as well, when he was writing *Music for Strings, Percussion and Celesta,* since the subject of the opening fugue, as can be seen in Ex. 6, also encompasses a chromatic pentachord.

Ex. 3



However, there are various places in Bartók's music from 1926 on, and extensive passages in at least three works, where a different, non-modal analysis can be made of his simultaneous use of two scales. These are the slow movement of the piano Sonata (1926), the first sixteen measures of *Music for Strings, Percussion and Celesta,* to be examined below, and, in the sixth string Quartet, the introductions to the first three movements and the entire last movement.

Bartók's mingling of two scales goes back to the *Bagatelles* of 1908; the first of these piano pieces has the right-hand part in four sharps and the left-hand in four flats, representing scales a major 3rd apart—E major and A♭ major (throughout this paper diatonic scales will be named by their major versions). Incidentally, this is the same relation as that of G♭ and B♭ found in Richard Strauss's *Heldenleben* (critics' section). Bartók wrote that he had been reactivated as a composer in 1902—following a two-year deviation from that career when he was preparing to be a virtuoso pianist—after hearing Strauss's music for the first time:

> From this stagnation I was aroused as by a lightning stroke . . . At last there was a way of composing which seemed to hold the seeds of a new life. At once I threw myself into the study of all Strauss's scores and began again to write music myself.[4]

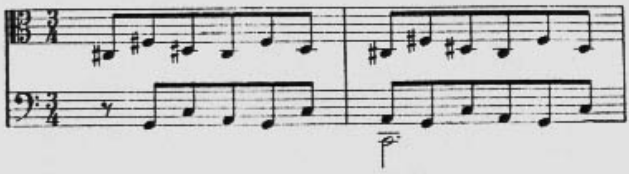
He made a piano transcription of *Heldenleben,* which he performed at a concert in Vienna in 1903, and the first *Bagatelle* might represent a lingering influence of the early example of bitonality in the Strauss score.

In the lectures mentioned above Bartók spoke disparagingly of the *Petrushka*-chord type of bitonality, in which harmonic shapes in two distantly related keys sound dichotomously against each other.[5] But passages involving two scales combined in various different ways proliferate throughout his works

[4] *Ibid.*, p. 409.
[5] *Ibid.*, pp. 365–366.

from the time of the *Bagatelles* onward. To select an example at random: beginning at measure 35 in the first movement of the third string Quartet (1927), two scales, apparently C and F♯, run against each other in identical *ostinato* figures (see Ex. 4).

Ex. 4



To return to Ex. 2. Since the church modes simply represent different final notes on the diatonic scale common to all of them, the Lydian pentachord from C to G can be viewed, as well, as a segment of G major, and the Phrygian as one of A♭ major, each with its unique definitive tritone: hence, two diatonic major scales a semitone apart. Because of the high incidence of chromaticism and the occasional harmonic density, there is no hint of modality in the extended passages mentioned above. Moreover, each of these passages yields to analysis as consisting of two concurrent tonal harmonic systems, in diatonic scales either a semitone or a tritone apart, the two intervals of scale-relationship involving the least number of shared pitches (2), thus giving maximum separation of the scales from each other. Furthermore, each of these harmonic systems exhibits the organization of tonal-functional music, both in root progressions and in the handling of dissonances, which are resolved by step exactly as in tonal practice. The result is not, however, a dichotomy of the *Petrushka*-chord type: on the contrary, the two harmonic systems with their individual melodies, chords and chord-progressions are not perceived in their own right but, instead, disappear, remarkably, in fusing into a new and entirely different perceptible surface with its own melodies and harmonies.

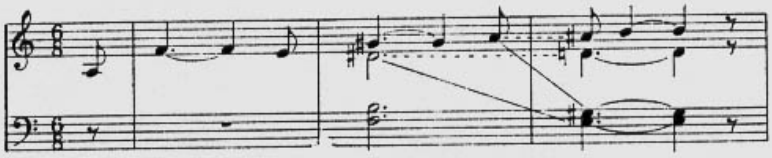
Passages combining two scales in the works of most twentieth-century composers, including those in most of Bartók's music up to the piano Sonata, generally have all the pitches of each scale confined to its own set of chords or melodic voices, contributing to the dichotomy mentioned above; but in the passages under discussion the notes of the different scales are now freely intermingled, apparently aiding their perceptual fusion: for example, the theme of the opening fugue of *Music for Strings, Percussion and Celesta* steps back and forth almost alternately from one scale to the other.

In the following analysis, the two confluent harmonic systems are shown on separate staves. For simplicity's sake a Rameau *basse fondamentale* type of analysis is used, although the actual fundamental bass notes are not shown: instead, the name of the major version of each scale is given by a capital letter and continues in force until changed by the next such capital, and the roots in each scale are then indicated by the usual Roman numerals. Dissonances and their resolutions are shown by Arabic numbers as though all chords were in root position, *e.g.*, C, V^7–I^3, regardless of inversions. This makes it easier to

follow dissonant voice-leadings, particularly where resolutions are upward, and limits the numbering of dissonant intervals to the four numerals 7, 9, 11 and 13 above the roots, instead of the multiplicity found in figured real bass. Hence the only Arabic numbers shown will be those of dissonances and their resolutions.

Two elements, which occur throughout all the extended passages mentioned, should be noted in the analysis below. One is that a leading-note or dissonance sometimes resolves in another voice, provided that in its own voice it is followed by a conjunct note from either harmonic system. This appears to be an extension of the tonal practice illustrated in Ex. 5 and is traced in Ex. 6 by solid lines showing resolutions, with dotted lines for the conjunct motion.

Ex. 5



The other element is the very frequent occurrence of the subdominant chord plus the 6th over its root—the familiar "chord of the added 6th"—and the same shape transferred to the tonic, typical of later tonal practice. These "added 6ths" appear in the analysis as 13ths in relation to the *basse fondamentale*. These chords often appear without roots, as E-G-A in the C scale. It is interesting that this form is what Stuckenschmidt calls the pentatonic kernel found throughout the folk-music of many areas[6] and which, following Bartók's involvement in the study of this music, began to proliferate overtly in his works from about 1908 on—as, in Ex. 4, C♯-F♯-D♯ and G-C-A. What is remarkable in the passages under discussion is its constant occurrence covertly, showing up only when the scales are separated in analysis. Some of these forms are marked by brackets in Ex. 6. Apparently Bartók came upon a musical universal here, the implications of which went beyond his stated goals of the preservation of folk-music and the incorporation of its elements into a new Hungarian art-music (see Ex. 6).

This analysis was tentatively begun in the scales of A and E♭, because of the prominence of these notes in the first four measures, and continued with the same relationships throughout the subsequent shifts of pitch of the voices, and this turned out to be a fortunate choice, for no other would have carried on successfully through measures 13–16, where the analysis ends. Considering only tritone and semitone relationships, and eliminating enharmonics, there are eighteen possible ways of combining two scales from the twelve of the circle of 5ths—twelve at the semitone and six at the tritone—and all eighteen ways were subsequently applied to the example, with the following results. The

[6] H. H. Stuckenschmidt, *Twentieth Century Music*, tr. Richard Deveson (New York: McGraw-Hill, 1969), p. 154.

fugue theme (first four measures) is peculiar in that it consists of nothing beyond major and minor 2nds and minor 3rds; through various enharmonic interpretations and/or conjunct resolutions of dissonances it can be analysed in all eighteen possible ways, although some seem more natural and spontaneous than others. In measures 5–8 there are two horizontal leaps of the potentially structural interval of the perfect 4th, but these rotate concordantly through various scales in all eighteen versions, so that again all are possible. The resultant harmonic flexibility is suggestive of what happens, in a much more limited way, with pivot chords and enharmonic relationships in tonal music.

In measures 9–12, however, a strikingly different situation emerges. The addition of the third voice here suddenly stiffens the harmony so that only two analyses are possible—in D/A♭ as a continuation from the beginning in A/E♭, or in D/E♭. In these measures there are now seven horizontal and five vertical perfect 4th or 5ths. This decisive stabilization of the harmony by a third voice seems analogous to that brought about by the development of triadic harmony in the Renaissance.

With the advent of the fourth voice in measures 13–16 only one analysis will now work, that in B/F. Here there are three horizontal and twenty-two vertical perfect 4th or 5ths. Incidentally, if Bartók's system from Ex. 2 were used here, the major scales would have been F♯ and G, which will not combine so as to yield this type of analysis.

There is only one place in Ex. 6 where tonal practice is transgressed, and that is the unresolved 4th F♯–B in the B scale in measure 16. This may, however, be a mistake in the score, for the F♯ represents the only alteration in theme or counter-subject from their original statements in measures 1–8, and if the F♯ is changed to G♯ to conform to the C♯ in the E scale in measure 8, the problem vanishes. (There are a number of mistakes in the printed score.)

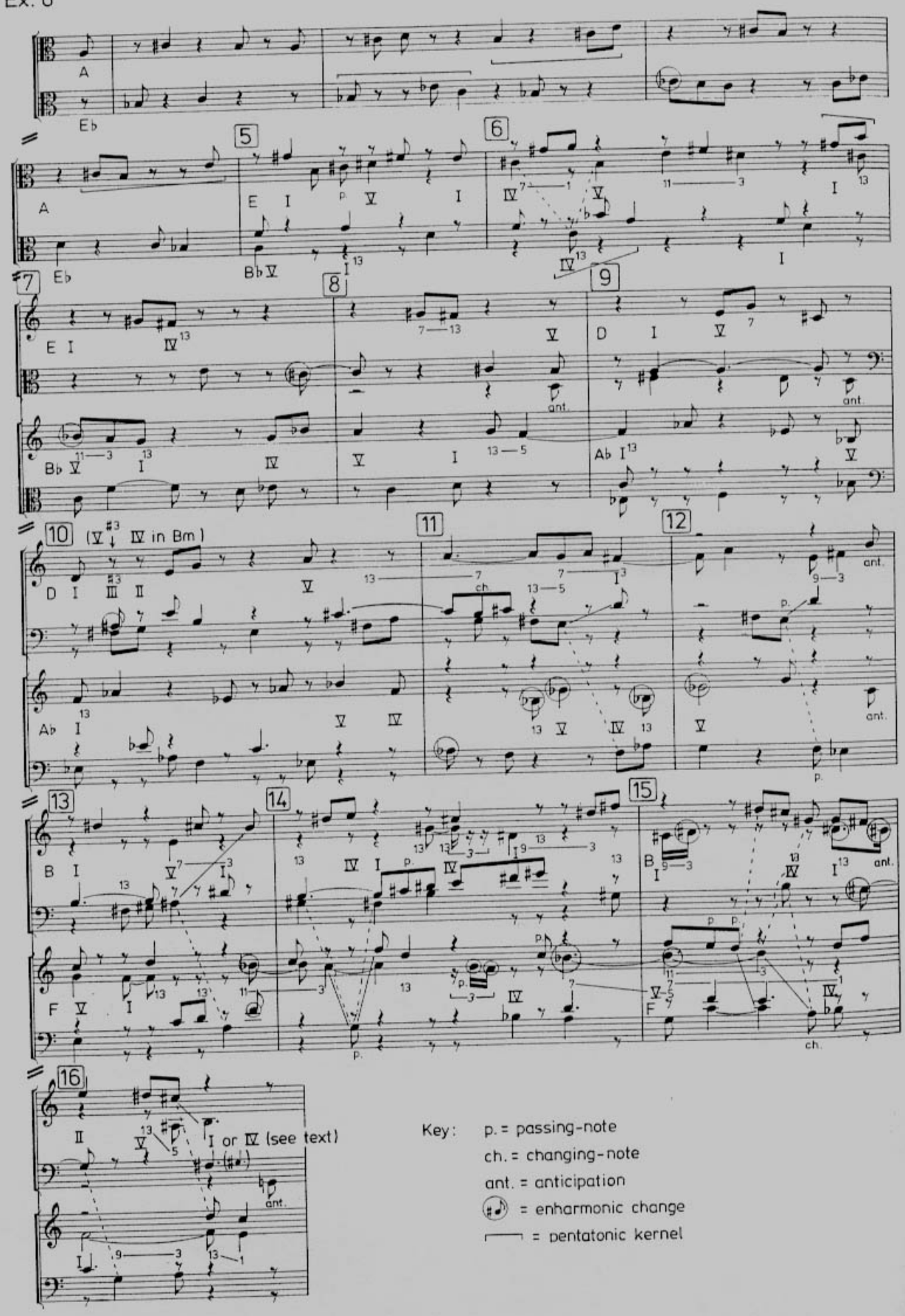
As the voices in each of the separate scales progress at times by octave displacement and are necessarily interrupted by many rests caused by the alternation of notes between the two scales, for greater ease in hearing a version of measures 13–16 is offered with the voices moving in their own octaves and with the rests removed (see Ex. 7).

With the entrance of the fifth voice at measure 17 the texture changes. There are still two scales, G and D♭, but now each of them maintains a static bifunctional mix of I^{13} and V^7, continuing through the fugue theme and a divertimento until the development begins at measure 27 with the scales of C and F♯. The rest of the fugue and the other three movements exhibit various types of writing with two scales, including several places similar to Ex. 6,[7] and others where the same analysis would apply save for a few notes.

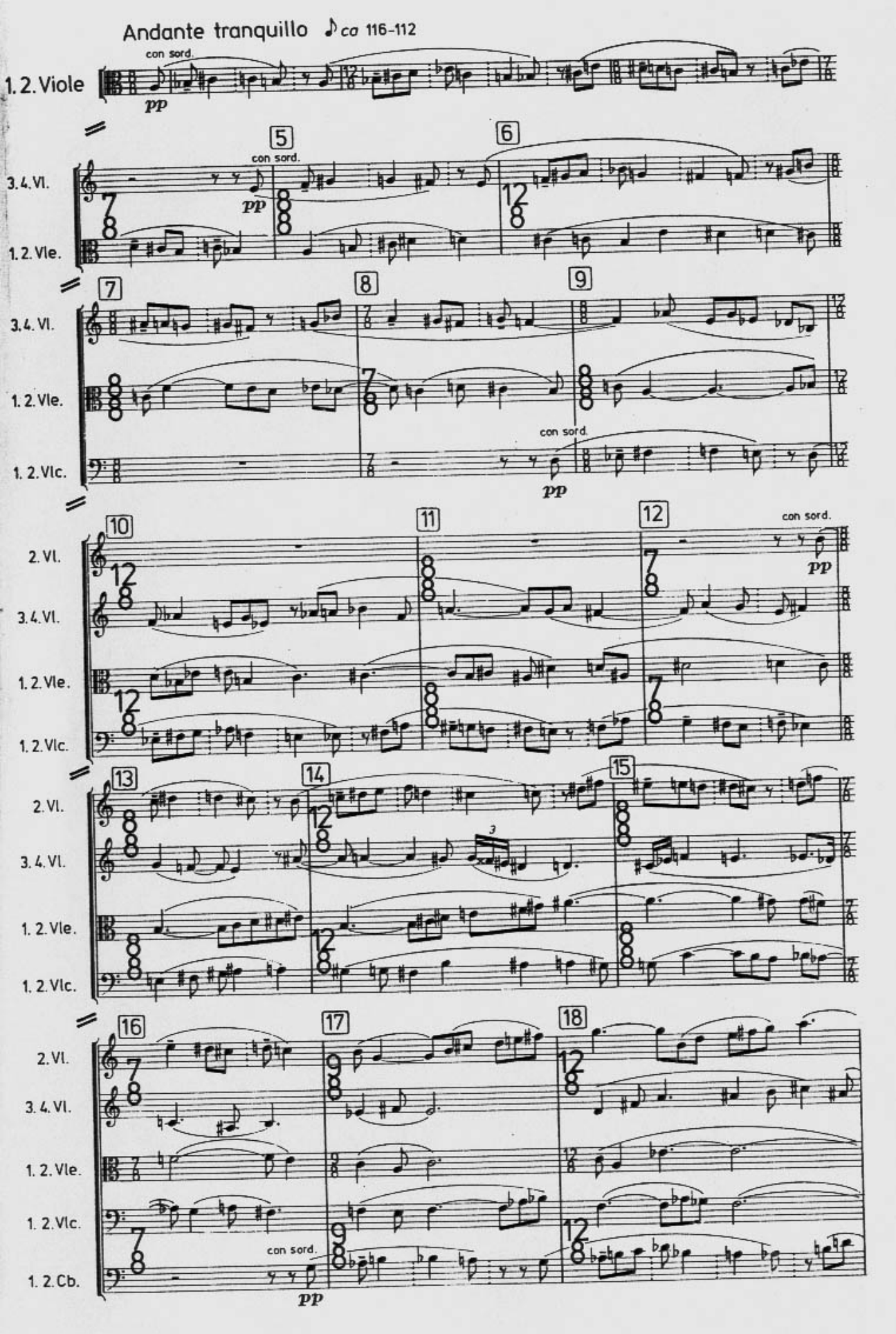
It can be assumed that Bartók was not consciously aware of the presence of two tonal systems in Ex. 6 and the similar passages mentioned above, both from the partial divergence of this from his concept of bi-modality and because of occasional enharmonic changes necessary to the analysis, noted in Ex. 6.

[7] Examples containing several such measures occur in I, measures 65–68 (C/F♯); III, 6–15 (C/F♯) and 65–72 (B♭/C♭); IV, 204–209 (D/E♭) and 244–247 (B/C. F, B♭).

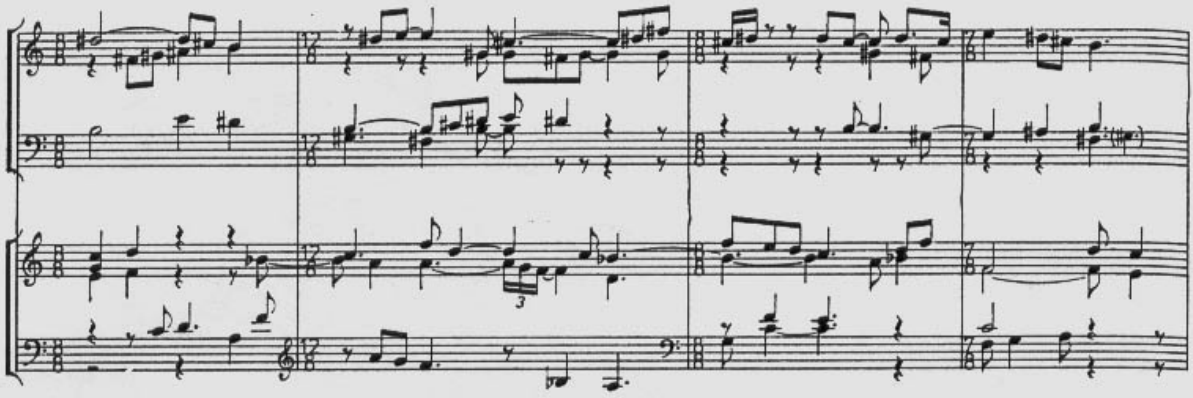
Ex. 6



Key: p. = passing-note
ch. = changing-note
ant. = anticipation
(♯♮) = enharmonic change
⌐¬ = pentatonic kernel


Andante tranquillo ♪ca 116-112
con sord.
pp
1. 2. Viole
5
6
3. 4. Vl.
1. 2. Vle.
con sord.
pp
7
8
9
3. 4. Vl.
1. 2. Vle.
con sord.
1. 2. Vlc.
pp
10
11
12
con sord.
pp
2. Vl.
3. 4. Vl.
1. 2. Vle.
1. 2. Vlc.
13
14
15
3
2. Vl.
3. 4. Vl.
1. 2. Vle.
1. 2. Vlc.
16
17
18
2. Vl.
3. 4. Vl.
1. 2. Vle.
1. 2. Vlc.
con sord.
pp
1. 2. Cb.

Ex. 7



The latter seem in keeping with the changes that must be made at times in *Tristan,* which Wagner said he did not know how he wrote, in order to make tonal analysis work. In like manner, these Bartók passages appear to be the intuitive products of an advanced level of hearing, rather than adherence to an *a priori* scheme.

One may wonder if many chromatic twentieth-century works would yield to similar analysis, but experiment will show that this is not the case. In three or more parts, these structures are the result of a rigorous and demanding organization, and the Bartók examples are rare occurrences in the literature; they are also the most extensive that the writer has found in the analysis of a great deal of twentieth-century music. He had, incidentally, outlined the possibility of such an organization in an earlier article[8] and only later found that it existed, in precise agreement, in these passages.

Some of the characteristics of these examples can be summarized as follows. There are no notes shared by the two scales, so that there are no enharmonics, and the music need not be tied to equal temperament. The chromaticism of the composite texture results entirely from the combination of the scales: the harmony in each of them is always diatonic and mostly major. The perceptible surface, however, is free from what Busoni called "the bifurcated garment" of major-minor;[9] in a larger sense it is free from all the familiar, time-worn features of tonality. Nevertheless, the syntax that is the life-blood of tonal music persists, with its powerful combination of interdependent parameters, more complex only in that there are two scales as points of reference instead of one. There is no arbitrary discord, as every note is functional in a continuum of viable root-progressions and resolutions of dissonances, resulting in a clear, uncluttered message free from noise: one that the test of considerable time has shown to communicate with audiences. As listeners can subjectively trace

[8] C. Vauclain, "An Experiment in Musical Texture", *The Musical Quarterly,* LI, No. 2 (1965), pp. 318–335.

[9] F. Busoni, "Sketch of a New Aesthetic of Music", tr. R. Ley, *The Essence of Music* (London, 1957), pp. 20–22.

the paths of pitch relationships through tonal passages of considerable complexity, they apparently can extend this ability to textures thus combining two scales. There is an indication here that tonality is a special case, or part, of a potential system of wider relationships that similarly is capable of creating a meaningful continuity but one that opens the door to entirely new expressive possibilities.

Acknowledgements

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