ANALYSIS

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TELEOLOGICAL STRATEGIES OF NONTONAL MUSIC: THE CASE OF MILAN MIHAJLOVIĆ

Abstract: Two basic strategies enable non-tonal music to be goal-oriented. One is to establish a referential sonority that would serve as the goal of musical motion. While both this sonority and the processes that steer the music flow towards it may be created contextually, in many compositions the referential role is performed by chords that approximate the harmonic series. The other strategy establishes as the goal the exhaustion of a given set of entities: most commonly the use of all pitch classes of the chromatic collection, but also other elements, such as all intervals, all possible transpositions of the given tone collection etc. Both strategies are well instantiated in the composition *Eine kleine Trauermusik* by Milan Mihajlović. There is also a teleological aspect of this composition that transcends pure musical analysis and is explicable in terms of music as a metaphorical representation of life processes.

Keywords: nontonal music, teleology, prolongation, pitch hierarchy, completion, Milan Mihajlović

When we think of music as goal-directed motion, we normally have functional tonality in mind. A tonal piece is teleological on various levels. A domi-

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nant can resolve immediately into tonic: such a goal is purely local, and concerns point-to-point connections. Goal-directedness applies to the level of syntactical units: an entity which we call the musical sentence (in Schoenbergian terminology) is a process which strives towards a goal; what that goal will be is something that we can predict with a considerable degree of certainty; moreover, we even have some expectations as to the point in time at which the goal will be reached, and when reached it is recognized as such. This applies also to the level of an entire composition: no matter how the composer may lead us through the piece, he or she will ultimately take us to the tonic. Again, such a goal is given a priori. Not a small number of theorists saw the principal purpose of music analysis exactly in this way: to demonstrate how music progresses towards that goal, how digressions during that process nonetheless contribute to the progress, etc. And as they were conducting analyses in accordance with this aim, they were particularly concerned with the parameter of pitch: after all, dominant and tonic are collections of pitches, are they not?

Some specification of the concept of goal is needed. According to the taxonomy of goals I proposed in an earlier article, the following types of musical events constitute possible goals of musical motion:

a) a point of arrival (e.g., a tonic, a given pitch or pitch collection); b) a segment, broader entity: music can be aimed towards a theme, and especially towards the return of a previously stated (and subsequently fragmented) theme; c) more abstractly, the goal can be the establishing of a certain 'state of affairs', a set of relationships, e.g., establishing symmetry between musical entities, restoring the lost balance, resolving any issues raised by the previous flow of music, etc.

While this taxonomy should ideally apply regardless of the musical language involved, it is obvious that in nontonal repertoire, things become much more complicated. What if we are dealing with Schoenberg's emancipated dissonances that do not need to resolve? What to make of the following statement: "The pitches appear to have lost the sense of linear direction... The pitches don't want to go anywhere... The pitches don't move. They are displaced by other pitches[.]?" This was said of Edgard Varèse[1], but rings true for a great deal of music written over the last hundred years. Could there be any pre-defined goals equivalent to the tonic chord; any recognizable procedures that would steer the listener towards that goal? If not, what contextual means are at the composer's disposal to project

[1] Robert Morgan, "Notes on Varese's Rhythm", in: Sherman van Solkema (ed.), *New Worlds of Edgard Varese: A Symposium,* New York, City University of New York, 1979, 9-25.

goals, and outline paths to these goals? And a particularly vexing question: is there room for larger structural processes, for long-range strategies?

Of course, non-teleological qualities may be a virtue in itself; music is not obliged to be goal-oriented. This is clearly evidenced by a large number of compositions written after World War II, and for that matter a great deal of traditional, ritual and non-Western music. In his discussion on various temporalities in music, Jonathan Kramer identifies *vertical time*, "a single present stretched out into an enormous duration, a potentially infinite 'now'."[2] Compositions such as Eric Satie's *Vexations* or *Bohor I* by Iannis Xenakis are cases in point. Besides, orientation towards a goal is not (only) something that exists *in* music as its intrinsic property: it is also a mode of listening. Even a tonal piece could be listened to with 'non-teleological ears'. However, the mode of thinking in Western civilization is pervaded by teleology: as composers, we more often than not take considerable care to bring the piece to a convincing conclusion; as listeners, we listen in terms of beginnings and ends, expectations and fulfillments, locally and globally. Linearity, defined by Kramer as some characteristics of music "being determined in accordance with implications that arise from earlier events of the piece"[3] is part of our listening strategies, indeed of our culture. Our very language is linear.

This granted, we can safely proceed to examine conditions and criteria of goal-directedness regardless of musical language or style. We can begin by making a preliminary assertion that without background tonal harmonies, "stepwise motion in the foreground is retained as the sole means of achieving continuity."[4] Next, we resort to Charles Morrison's statement, whereby "The ear inevitably connects contiguous (and even non-contiguous) pitches and pitch classes which are in a stepwise relationship to one another".[5] However, Morrison proceeds, "it is important to stress…that not all pitch and pc step successions are significant; rather, inferred contextually directed linear progressions must be comprised of pitch events which are systematically exposed according to stipulated devices".[6] Such a proposal for establishing nontonal teleology may still appear rather modest, but there are three points that could have broader ramifications. First, by mentioning "non-contiguous events", Morrison allows implications that span across stretches of music that are broader than point-to-point connec-

[2] Jonathan Kramer, *The Time of Music*, New York, Schirmer, 1988, 55-56.

[3] Ibid., 20.

[4] Ibid., 38.

[5] Charles Morrison, "Stepwise Continuity as a Structural Determinant in György Ligeti's Ten Pieces for Wind Quintet", *Perspectives of New Music* 24/1, 1985, 158-182, 159.

[6] Ibid., 159-160

tions. Second, the "stipulated devices" are not necessarily restricted to an individual composition. There is nothing to prevent us from searching for external frames of reference provided by means other than functional tonality. Finally, concerning "stepwise motion", it will be of utmost importance to heed the distinction between the *step* and the *skip,* the boundary between the two, according to experimental research, being somewhere between two and three semitones. Ultimately, it means distinguishing between melody and harmony. Linear, stepwise elaboration of structural harmonies will be crucial for some aspects of our analysis.

One more step prerequisite for an analysis in terms of goal-reaching processes is to establish some general teleological conditions. As I argued in my earlier publication, in order for a musical composition to be goal-oriented, at least some of the following conditions must be fulfilled:

a) Music must be conceived of as motion, a flow, a process;
b) Each event occurring before the end of the composition implies continuation; moreover, the direction of that continuation is relatively predictable;
c) Not only the immediate continuation, but also more distant, long-term goals should be relatively predictable;
d) Once attained, the goal should be recognized as such;
e) Patterns of tension and release should be experienced; in this connection, the release of tension and dissipation of energy are characteristic of concluding processes.[7]

It will transpire that the composition chosen for the analysis in this article, *Eine kleine Trauermusik* by one of the leading Serbian composers Milan Mihajlović, does project goals, give direction to the flow of music and achieve the sense of arrival. It fares very well against the proposed teleological conditions, and the goals it projects involve all the above enumerated types. We also ought to be warned at once that expectations may be raised, but not necessarily fulfilled, goal-reaching process launched but also undermined; some goals are never attained. That is part of the game, especially if the game is identified with a keyword *Trauer*.

The octatonic scale, obsessive ostinato, and at a suitable moment quotation from a classical piece: such a description fits perhaps the majority of works by Milan Mihajlović. If this seems redolent of mannerism, then I hasten to add: when he is at his best, the result can be powerful and deeply moving. This is,

[7] Miloš Zatkalik, "Reconsidering Teleological Aspects of Nontonal Music", in: Denis Collins (ed.), *Music Theory and its Methods: Structures, Challenges, Directions*, Frankfurt am Main, Peter Lang Publishers, 2013, 265–300.

I believe, the case with *Eine kleine Trauermusik* for flute, oboe, clarinet, bassoon and piano. It is easy to conjecture that the quotation will be from Mozart, and this is precisely so: the first theme group from the slow movement from his Piano Concerto in A major, K488.

Of the above mentioned features, the octatonic scale is of particular importance. It governs the entire piece, except the tonal Mozart quotation. This scale does provide an external, well-defined system of pitch organization, but hardly a teleological one. It is highly entropic, apparently offers little possibility for establishing a hierarchy and creating patterns of tension and release, of expectations and realizations. Therefore, in order to uncover the teleological properties of this piece, we must define hierarchical relationships, or at least make functional distinctions between certain pitches or pitch collections. The first step in that direction is obvious. If not functionally tonal, *Trauermusik* clearly displays pitch centricity. This concept is much older and broader than the tonic of functional tonality. Indeed, notions like *tonus finalis*, tonal center or focal intonation, Boris Asaf'ev's *ustoy,* permeate analyses of musics from diverse styles and epochs. Even those twentieth-century composers who count as paramount atonalists, Anton Webern for instance, are not disinclined to establishing tonal centers using various contextual means. Still less surprising is when we regularly find it in Bartók who is anyhow 'guilty' of tonal thinking.

It is easy to see how such intonational footholds can be conceived of as contextually created goals, most visibly so when the composition at its final point returns to its point of origin. Our listening experience favors departure and return. Based on robust empirical evidence, David Huron makes a claim about "statistical learning": we predict the most frequently occurring past event.[8] At the same time, the event we have predicted accurately is a source of pleasure.[9] Consequently, we are highly gratified by those recurring moments that we can accurately predict.

In view of the above, the first rudimentary observation we can make about *Trauermusik* concerns C-sharp, which is the initial melodic note; it is resumed when the piano enters, and it closes the piece melodically. The initial harmony is also identical to the closing one, in the course of the composition it appears at important formal junctions. By reiterating certain pitches, the composer brings them into focus, directs listeners' attention to exactly those pitches and raises their expectations to experience and re-experience them. Centricity, and

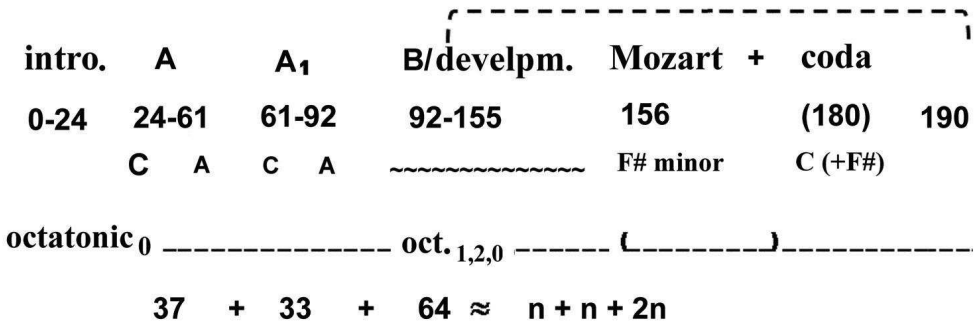
[8] David Huron, *Sweet Anticipation: Music and the Psychology of Expectation*, Cambridge, MIT Press, 2006, 138.

[9] Ibid., 164. Huron, however, does not make the claim that the gratification of listeners' expectations is a value criterion.

the model of departure and return, in that sense implies orientation towards a goal, with the qualification that as long as there is no consistent set of syntactic rules governing how the music will move away from the focal intonation and return to it, it is feebly teleological in comparison to functional tonality. However, Mihajlović has other teleological resources in store.

At this point, an overview of the global form will be helpful.

Table 1. *Trauermusik*, synopsis of form

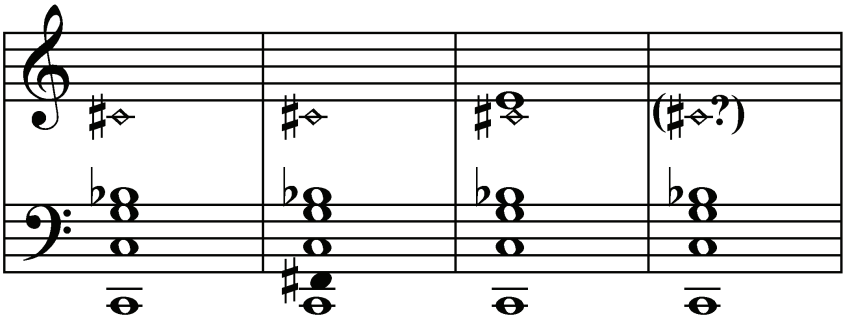


The piece opens with an introductory solo clarinet section, a kind of extended upbeat. The A section beginning in bar 24 is followed by its varied repetition. For reasons that will soon emerge, bars 92-155 can be conceived of as development; the Mozart quotation from b156 could be treated as embedded within the development. Without it, arithmetic says 37+32+64, the last addend being nearly the sum of the previous two. Accordingly, such a structure is sometimes called the structure of summation and it could be expressed in a formula n+n+2n. Let it be mentioned in passing, but pertinent to our present interests, that such a formation may impart some sense of completion and stability: it is very frequently used; on a smaller scale, it is typical of the Schoenbergian musical sentence; on a larger, long spans of music, entire sonata developments, for instance, are sometimes constructed in accordance with this formula. The octatonic scale appears mostly in the original transposition (with index 0), but the other two are also briefly represented.

We have first identified C-sharp as the melodic center and its reiterations as goals, but have also admitted that such an observation is rudimentary. Not only have we deprived it of any harmonic context: we will see that it actually contradicts harmony. We have mentioned harmony only vaguely, and now we can assert the existence of a strongly, indeed obtrusively imposed harmonic reference, a quasi-tonic: we will call it the referential sonority (RS). It is basically the C-G-B-flat chord, sometimes also including E and (tentatively) F-sharp, with varying

registral distributions of tones. Reduced to the harmonic skeleton, the variants of RS can be represented as. (Example 1)

Example 1. Variants of RS



The diamond shape of C-sharp has been arbitrarily chosen to draw attention to its enigmatic role throughout the composition. I have not included it in RS, notwithstanding its persistence in the majority of instances thereof. An attempt will be made to clarify its status, but before that, many other issues need to be addressed.

The question of stability will soon require our utmost attention, but for the time being, let us state that the most stable variant of RS appears where it is generally deemed appropriate: as the closing sonority. RS can also be transposed to other degrees of the octatonic scale. Thus, transposed on F-sharp (RST_6) near the beginning of the A section, it foreshadows the defining tonal relation of this composition, between the focal intonation C and the F-sharp minor of the Mozart quotation. The A section moves from C to the (relatively stable) transposition on A (transposition by nine semitones: RST_9).

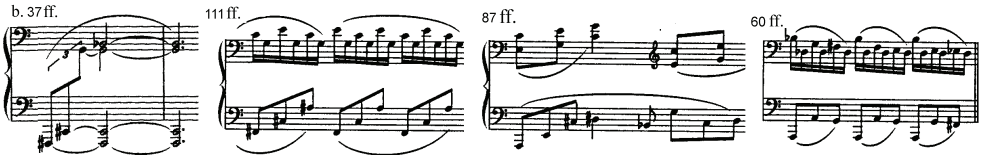
On a higher plane, Mihajlović actually emulates tonal procedures: well into the piece, he uses the initial transposition of the octatonic scale, an equivalent of the home key, let us call it the "home transposition". Near the golden section (just before rehearsal mark H) begins a phase of a heightened frequency of modulation, as would be the case in the development of a tonal piece. The other two possible transpositions rapidly succeed each other. A return to the home transposition follows, in a while enters the tonal Mozart episode, and the final return to the basic form of RS. This scenario defines broader areas of stability and instability, establishing the basic profile of equilibrium – disequilibrium – equilibrium (and this represents a goal of the c) type as specified above). In addition, the pitch organization of the piece allows for distinguishing between the more

and the less stable forms of chords: inversions as opposed to root positions; it enables us to grade the chords according to their stability. (Example 2)

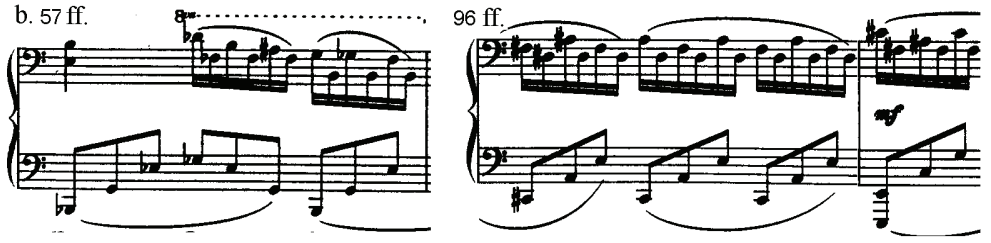
Example 2. Degrees of harmonic stability

a) referential sonority

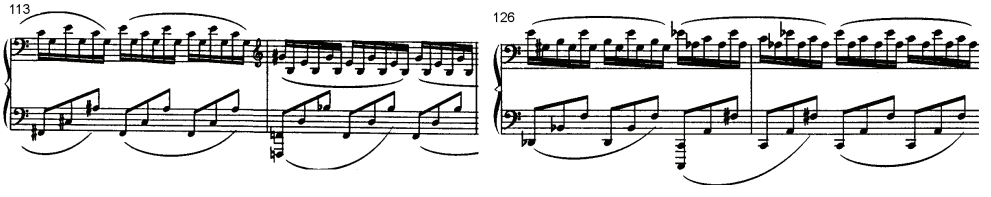
b) stable (consonant)



c) unstable (inversion)



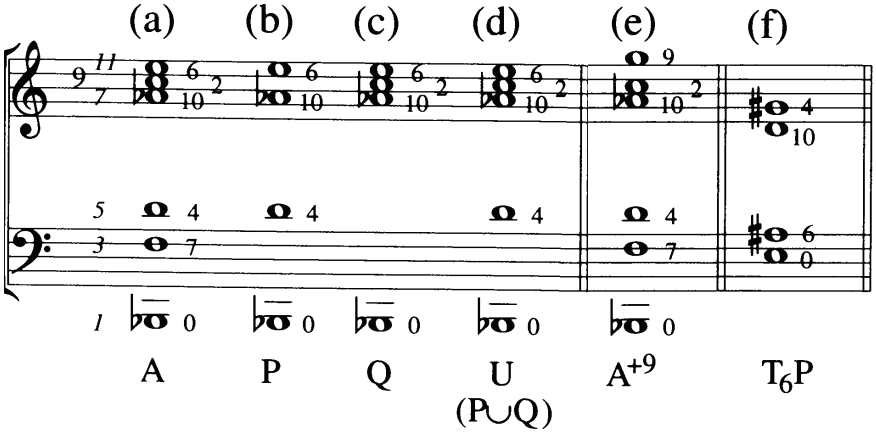
d) other transpositions of the scale



At the top is the most stable RS; less stable but still consonant are the chords that replicate its structure (transpositions), whereas the chords of different structures are contextual dissonances. Thus, a hierarchy is secured, and a stage is set for the establishing of patterns of tension and release. Only the piano part is presented: there is 'division of labor', melody as opposed to harmony, and the harmonic role is assigned to the piano.

This transposition of chords within the home transposition is something that particularly needs clarification. It cannot escape our attention that the referential sonority approximates the harmonic series. Analysis derived from the harmonic series is a well-rehearsed procedure; as the best-known example, the entire theory of Heinrich Schenker hinges on *Urklang,* the chord of nature – major triad; Paul Hindemith's harmonic theory is also largely dependent on such considerations. Most recently – and drawing on extensive psychoacoustic research – Finnish theorist Olli Väisälä demonstrates how chords approximating the harmonic series serve as referential sonorities, provide criteria for distinguishing between consonance and dissonance, and – insofar as the chords may approximate the series more or less closely – the criteria for gauging the degree of stability.[10] (Example 3)

Example 3. Root-supporting chords[11]



[10] Olli Väisälä, "Prolongation of Harmonies Related to the Harmonic Series in Early Post-Tonal Music", *Journal of Music Theory*, Vol. 46, No.1/2, 2002, 207-283; Olli Väisälä, *Prolongation in Early Post-tonal Music*. Studia Musica 23. Helsinki, Sibelius Academy, 2004.

[11] Reproduced from Väisälä 2002, Example 1.

The above example represents variants of this stable, potentially referential chord. The chord under a), arbitrarily labeled A by Väisälä, contains the full spectrum, chords b)-d) are its subsets. Figures to the left of the chords refer to ordinal numbers: only odd-numbered harmonics are relevant, as the even-numbered ones only duplicate the lower part of the spectrum. On the right-hand side are intervals above the fundamental expressed in semitones. The term "root-support" means that the upper partials provide support for the fundamental. In other words, when tones in a chord are arranged as in Example 3, they point to the bass and confirm its role as the harmonic foundation. This is especially noticeable when the fundamental is not present, but owing to its harmonic spectrum, we still perceive it as the fundamental: the phenomenon known as *virtual pitch*[12] or *missing fundamental.*[13] The lower part of the spectrum provides support that is more robust. The octave, perfect fifth, major third: these are strongly supporting intervals; minor seventh also provides significant support. The fact that in the natural system it differs considerably from our usual equal-tempered tuning is of no particular concern: research has shown that there is a margin of tolerance of approximately 3% of the frequency.[14] Further up from the fundamental, the tritone appears as the last relevant pitch, yet somewhat ambiguous: there is evidence that it does provide a degree of support,[15] but the support might also be too weak to be included in this list. It is not necessary that all harmonics be present, and they need not appear exactly in their proper octave. Registral distribution may deviate from the exact harmonic series: in certain contexts, the tritone appears as in Example 3f (typical of Scriabin). Also, an added, non-supporting tone is not necessarily a major destabilizing factor (as the major sixth in 3e), as long as other tones are root-supporting and the dissonant tone is placed above them.

Väisälä thus allows the referential status of certain sonorities, and sets up stability criteria by means other than harmonic functions. He demonstrates this in his prolongational analyses (and I draw attention to this "prolongational", as it will soon become important for our purpose) of pieces by Debussy, Scriabin, Berg and Webern. I am not going to speculate on how widely Väisälä's ideas can be applied outside the scope of his analytical sample, but they come ready-made for Mihajlović's composition. (Example 4)

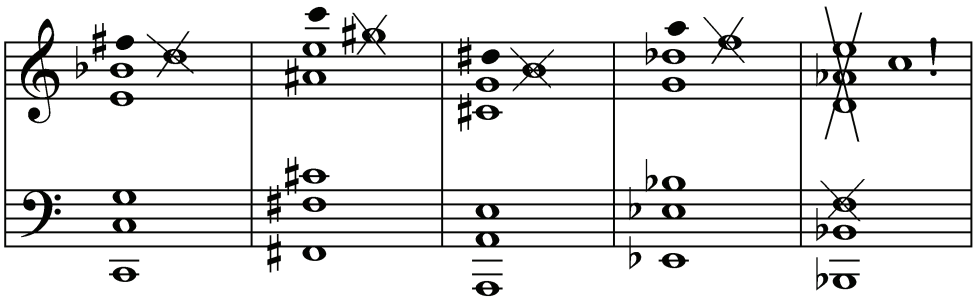
[12] Ernst Terhardt, "The Concept of Musical Consonance: A Link between Music and Psychoacoustics", *Music Percpetion*, Vol. 1, No. 3, 1984, 276-295, 287–8.

[13] Richard Parncutt, "Revision of Terhardt's Model of the Root(s) of a Musical Chord", *Music Perception*, Vol. 6, No. 1, 1988– 65-93, 70.

[14] Ibid., 70.

[15] No lesser authority than Olivier Messiaen claims that in the resononace of the deep C, a very sensitive ear can hear F-sharp (Olivier Messiaen, *The Technique of My Musical Language*, Paris, Alphonse Leduc, 1956, 47.

Example 4. Root-supporting chords in *Trauermusik*



In our referential sonority, only the ninth partial is absolutely missing, as it does not belong to the home transposition of the scale. Within that scale-transposition, the referential sonority can be transposed from C to A, F-sharp and E-flat; therefore, I interpret these chords as consonant, but subsidiary to C. The remaining four degrees in the scale receive practically no support at all. This approach enables us to distinguish between consonance and dissonance, the stable and the unstable, to form patterns of tension and release, and it gives direction to the flow of music. Referring back to Table 1 and Example 2, we can confirm that formal processes unfold in accordance with the stability conditions.

To sum up our observations so far, in *Trauermusik*:

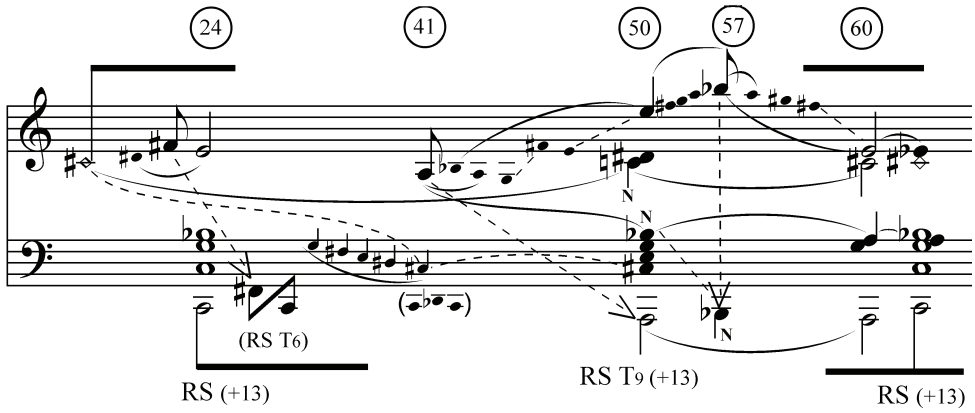
a) we can distinguish between harmonic and non-harmonic tones; between the structural and the embellishing;
b) more broadly, we can distinguish between harmony and voice-leading;
c) there exists a hierarchy of scale degrees.

I particularly emphasize these points, because they prove that this composition largely fulfills the conditions of prolongation as set forth by Joseph Straus in his famous article.[16] Post-tonal prolongation is a hotly debated subject, and even a cursory survey of arguments and counterarguments would fall outside the scope of this paper. Sufficient for my purpose is that given the above conditions, a prolongational, more or less post-Schenkerian approach is at least plausible, and by taking recourse to it, I hope to shed light on some important aspects of our present topic. Namely, a prolongational graph shows how the composition progresses towards referential points: goals of musical motion. In accordance with the structural layer, we are presented with short-, medium- or long-term connections. At lower levels, the goals thus attained are usually points of arrival

[16] Joseph Straus, "The Problem of Prolongation in Post-Tonal Music", *Journal of Music Theory* 31/1, 1987, 1–21; reputedly the most frequently quoted text published in this journal.

(our goal type a). In deeper structural layers, where a larger stretch of music can be represented with a single event, we are effectively dealing with extended musical events, as goals of type b). From the graph, we can also read how the composer introduces and releases tension, and when we identify the latter, this constitutes the type c) goal. (Example 5)

Example 5. Section A, middleground graph



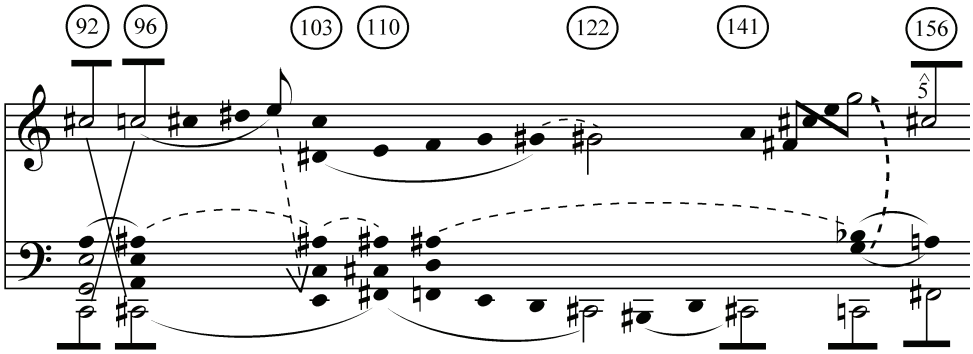
Thus, Milan Mihajlović and I have some post-Schenkerian tricks up our sleeves, but on this occasion, I cannot dwell on many details, and will offer only a few remarks.[17] We are already aware of the ambiguity of the eleventh partial, F-sharp, plausibly supporting (consonant), but if so, then weakly. In the clarinet introduction, it feels rather like an appoggiatura on E, and accordingly, in this particular instance I am treating it as non-supporting. Clearly non-supporting is the A of the alto flute and B-flat within the transposed version of the referential chord (RST_9). We can observe that these tones are systematically 'pacified', displaced from their dissonant positions into the bass, where F-sharp and A can bear the burden of relative consonances. The point of crisis is reached by the appearance of this last tone in the bass: no stable chord is possible above B-flat, so it can only be a neighbor-note, a reflex of many neighbor-note figures that are important for middle-range connections (only a few are indicated in the graph).

[17] More details can be found in Miloš Zatkalik, „*Eine kleine...Auskomponierung* Milana Mihajlovića", *Zbornik radova sa skupa "Dani Vlade Miloševića"*, Banjaluka: Akademija umjetnosti, 2015. An extensive prolongational analysis of this composition will appear in my forthcoming book: Miloš Zatkalik, *Prolongacija i strukturni slojevi u posttonalnoj muzici* [Structural Layers and Prolongation in Post-tonal Music].

This least stable moment so far resolves into the relatively stable RST_9 at the end of section A. The untransposed version of RS is then regained. It is encumbered with some non-supporting pitches, the discussion of which will be deferred until the last portion of this article. The A_1 section traverses a very similar path, and the possibilities that some events may be reinterpreted in that process is not of our present concern.

Proceeding to the development, we can construct the following graph (Example 6):

Example 6. Section B, middleground graph (simplified)

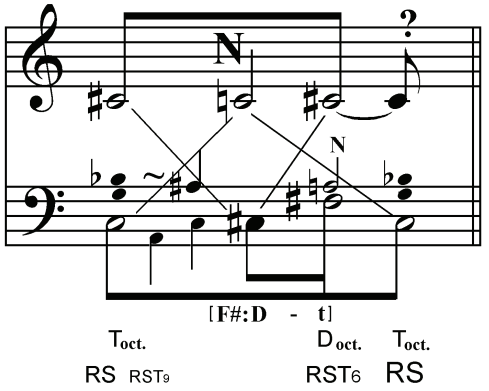


The voice exchange between bars 92 and 96 is a stock prolongational procedure in tonal music. How analytically relevant it is for a nontonal piece may be debatable, but in this case – I will allow myself a grossly self-reinforcing statement – it fits very well into the overall analytical picture. The instability mentioned earlier (the use of inverted chords and later other transpositions of the scale) is ushered with this voice exchange; in particular, RS will not reappear until b151. Furthermore, the presence of C-sharp in the bass proves to be a remarkable feature with far-reaching consequences. Before I address this issue, I will discuss the possible fundamental structure, *Ursatz* of this composition. (Example 7)

There exists a referential sonority that is prolonged. The inner voices as presented in the graph constitute the most typical RS forms. The principal motion in the bass, arpeggiation (*Bassbrechung*), involves C – F-sharp – C, which, following the Russian musicologist Leo Mazel',[18] I treat as the octatonic equivalent of the T-D-T motion. Embedded within it is the 'regular' tonal *Bassbrechung*. Atypically, the fundamental line consists of a neighbor-note figure, rather than

[18] Л. А. Мазель [L. A. Mazel'], *Проблемы классической гармонии* [Problems of Classical Harmony], Москва, Музыка, 1972, 493.

Example 7. Fundamental structure



a descent from the *Kopfton* to the final tonic. If this appears counterintuitive, let us be reminded that throughout the piece, the composer rarely lets the C-sharp out of our sight. The inner voice motion B-flat/A-sharp – A – B-flat has a double meaning. From the octatonic perspective, it is a neighbor-note figure, a replica of the *Urlinie*. Within the framework of tonal logic, we recognize it as Schenkerian *mixture*, an important device for incorporating chromaticism into the fundamentally diatonic system (the Neapolitan chord, such as found in the quotation, is an instance of it). The victory of RS on the fundamental C may be realized in the end, but it comes at a price: the non-supporting C-sharp weighs down on that chord both at the beginning and at the end (while, on the other hand, in the context of F-sharp it plays a strongly root-supporting role, and constitutes the *Kopfton* of the quotation).

Remarkably, even at the deepest level, a degree of ambiguity and possibilities of double interpretation remain. Indeed, music often creates ambiguities for the sake of resolving them, but sometimes also stopping short of the resolution: either case can be an effective teleological strategy. In that regard, there is an aspect of the development + quotation that merits further discussion. As the development advances towards the quotation, ambiguity between harmonic-functional and octatonic principles emerges. Let us consider how the advent of the F-sharp minor is motivated. Even as the octatonic scale rules, there is a tonal undercurrent suggesting the dominant-tonic relationship: a long-drawn pedal on the dominant C-sharp/D-flat, introduced in b122, later regained and afterwards running without interruption from the point when the home transposition returns (just before rehearsal I) to two bars before rehearsal J. Once we recognize this as dominant preparation, then the C/B-sharp and D in the bass (bb126-136) are easily understood as leading notes surrounding the dominant, and the F-sharp of bb106 and 148 as foreshadowing the tonic. In keeping with this, the linear

unit between F-sharp and C in the bass – Schenkerian *Quartzug* – is a partially chromaticized Phrygian descent (see Example 6). The dominant pedal point has already been strongly heralded in b96 with the voice exchange, and once we accept this line of thinking, we may see it to be hinted at already in b35. Throughout the piece, the note C-sharp/D-flat is very well represented in the bass: of all twelve pitch classes only the referential C is longer and more frequent. Yet it concerns only the bass: other voices are not involved in the dominant preparation: the composer takes good care not to enforce tonality too strongly.

The most direct clash between the two principles of pitch organization, tonal and octatonic, takes place immediately before the quotation. After a rather long absence, RS returns in the original C-transposition, and with greatest emphasis; the melodic climax of the entire composition is reached at that point, with G in the flute. We are witnessing dramatic peripeteias: at the critical point when we may expect the implied dominant-tonic relationship to be confirmed, the whole construction seems to collapse and the original RS prevails. And the next moment, it retreats again and yields to F-sharp minor. This twofold preparation of the tonal quotation may carry the message "all roads lead to Rome". To Mozart, that is. Tonal path, modal path, we end up with Mozart. Or do we? Even as Mozart reigns, the octatonic figures lurk in the background. There are two parallel processes, and they dissolve – not resolve! – together. Perhaps the ultimate statement is: tonal or nontonal, Mozart or Milan Mihajlovic, we are doomed to fade into nothingness. The outcome is unquestionable and inexorable, as befitting a *Trauermusik*.

Our prolongational reductions impose a tonal model, albeit adapted to the pitch organization herein applied. I hope to have provided (with some help from Väisälä and Straus) convincing reasons why such a model is viable in this situation. What I would like to discuss now is a strategy that is more peculiar to posttonality. Some theoretical clarifications will be necessary, and to that end, I will invoke the "completion model" I proposed in my earlier publication. I start from a well-rehearsed subject in analytical literature, the completion of the twelve-tone aggregate. Namely, the European equally-tempered tonal system basically counts on twelve chromatic pitch classes, which are felt to constitute a whole. The absence of a pitch class may be conceived of as a tension-generating gap in the system, the release being the completion of the full chromatic collection. The appearance of the last pitch is obviously the goal, and is sometimes highlighted in some way; among countless examples let us mention only the first of György Ligeti's Ten Pieces for Wind Quintet, where the general unison and the climax of the piece introduce C-sharp, until that point withheld from the music flow.[19]

[19] Although this can be related to Gestalt laws of perception, the law of closure in particular, I am not making any claims as to how the listener actually experiences such situations.

My proposition was to generalize from this procedure to include other musical parameters. The strategy would be to establish an (implicit) set of elements; as the music unfolds, the elements are used until the whole set is exhausted. Apart from the obvious examples of pitch, many other types of elements can be used: intervals/interval classes, pitch-class sets with a given property, all possible permutations of a given collection of notes, all possible transpositions of a given collections of notes etc. In a more formalized version, I presented the model in the following (shall we say Euclidian) manner:

- "let 'musical entity' mean any musical event or a set of relationships between musical events, such as a single pitch class, a chord, an interval, a pitch collection possessing a certain characteristic, a type of texture, a structural function, etc.;
- let 'a family of entities'[20] mean a set of the aforementioned entities that is in some way conceived of as complete and exhaustive (i.e., the twelve pcs; the three possible transpositions of the octatonic scale);
- let, furthermore, the 'unfolding of the family of entities' mean the process whereby the entities belonging to the family occur over the span of a given composition or a portion thereof, whether simultaneously or consecutively, with or without repetitions; the unfolding is complete when all the entities have occurred;
- then, the 'goal-defining family of entities' is a family of entities whose complete unfolding lies entirely within the span of the given composition or a defined portion thereof (meaning a section, subsection, syntactic unit…), and which, moreover, is recognized as having a special role in the establishing of the sense of arrival or closure;
- and, 'completion' means the point of arrival or closure."[21]

Thus, if the "musical entity" is the pitch class, and the "family of entities" the total chromatic, then the family will be goal-defining in the instances of aggregate completion. In Ligeti's *Passacaglia ungherese*, the family of entities consists of all major thirds/minor sixths available in the mean-tone temperament, and it can be shown to be goal-defining.[22]

[20] I am borrowing this term and the form of the definition from David Lewin's transformational theory, but not his ideas.

[21] Zatkalik 2013, op. cit., 287.

[22] Striking examples of completion processes in many different domains can be found in Messiaen's *Le merle noir* (see Zatkalik, op. cit., 289-292).

Completion in *Trauermusik* is effected in various domains. I will begin with two instances that are perhaps analytically less inspiring. First, the completion of the octatonic collection. Its final tone A, though inconspicuous when introduced in b33, would later become the new focal intonation that ends the section A. Second, the exhaustion of all pitch classes from the chromatic collection marks a turning point, the shift to the next transposition of the scale. There is also an 'added value' to aggregate completion. The striking Neapolitan cadence just before rehearsal L ends the first of the quoted Mozart theme group, and that is the point of the golden section of the quotation. The four pitch classes absent from the home octatonic transposition occur in the harmonic progression $bII_6 – V_7$.

The completion process with the power to organize the composition globally is the exhaustion of all three octatonic transpositions. And when the home transposition returns, the completion strategy yields to the higher authority of departure and return, a model that – referring back to David Huron – seems to be more deeply ingrained in our experience and conception of music. Admittedly, to use the entire family of transpositions in these circumstances is an obvious and straightforward device; perhaps too much so. Some of its consequences are not so straightforward, though. This composition is extremely saturated with the referential sonority (it accounts for about one third of the piece); then it is also saturated with the home transposition (about 75%), and with the octatonic sound in general (virtually throughout the composition). Composers often find the octatonic scale to be extremely seductive: once you succumb to its charms, you are somehow held hostage. Finding the way out may be a compositional problem (the present author's compositional experience confirms this). And from the listeners' point of view: as we are immersed in this inexorably octatonic sound, the atmosphere becomes suffocating, and we begin to yearn for the disentanglement from our octatonic trap. Through Mozart comes salvation. Sublimely tragic, of course – there is no escape from tragedy – yet there is almost elation in that tragedy. This pure, celestial sound, translucent after the opacity of the preceding course: we could hardly imagine any other music with such redemptive qualities.

Another completion process that will entail some interesting further observations concerns the exhaustion of all root-supporting chords. In the home transposition of the scale, chords that are root-supporting can be and are constructed on C – the referential chord; on F-sharp – first briefly but importantly, as soon as the referential C is clearly established, and then quite forcefully in the quotation. It can be and is constructed on A – the two A sections move towards that sonority. But where is E-flat? We should be waiting for the appearance of that last remaining consonance. Here is another goal to be reached.

Around the destiny of D-sharp/E-flat, whether it be a melodic tone or a chord, we could construct a narrative, "The adventures of E-flat". It will involve analytical considerations richer than those provided by 'mere' completion. The introductory solo of the clarinet suggests C-sharp minor or possibly E minor as tonal centers, and it is in this context that we first encounter D-sharp. With the entrance of the piano in its harmonic role, the initial tonal assumptions are disproved, but a new perspective is opened for this tone to function as RST_3. The first attempt to establish that chord as referential fails, as it leads to an unstable $^6_4$ chord, and the only role it can perform is a neighbor to the structural A. E-flat asserts itself at important structural junctions, the ends of sections A and A_1, but in the upper voice: not the proper place to be, given its non-supporting quality. The bassoon solo begins with a few bars of an arpeggiated E-flat major, but its potential referentiality is undermined by the piano harmony in the lower register. This pitch is, let us say, *eloquently avoided* in the bass: even the chromatic descent towards the C-sharp in b122 omits that particular tone. Only once does it appear in the bass in the quotation, but there, being the sixth degree of the melodic minor, it serves as a foreground detail. It is offered one last chance in the concluding ten bars of the composition: it is again part of an octatonic context, it is given some prominence in the bass, it attempts to establish itself across three octaves, but it dismally fails, and through voice exchange, once more ends up in the wrong place, where it simply fades away. There is at least one goal that remains unattained.

Other exciting stories could be woven around various events. The 'career' pursued by F-sharp is conveniently summed up in the following manner:

Table 2. Progress of F-sharp

introduction	melodic climax
A	transfer to bass; brief appearance of RST_6
A_1	composed out in the upper voice as F# minor
development I	upper layer of dual harmony
development II	exchange of layers: RST_6 as harmonic basis
development III	'tactical retreat' to inner voices; later RST_6 inversion
quotation	**F# minor**

F-sharp persistently wants to impose itself as a rival of C. We can see how F-sharp strategically advances towards the peak of its career: taking over the control over an entire section. The major-minor duality reflects in its roles: with the major third its role is RST_6, with minor, it is a tonal-functional tonic. This automatically directs our attention to the tone A. In the bass, its carries the har-

mony of RST_9, but when it appears within the untransposed RS it is a dissonance that moreover does not resolve either locally or over a longer span. It is only in the deep structure that the resolution is achieved within the neighbor-note figure (see Example 7) that spans practically the entire composition.[23]

Throughout this article, I have assumed the existence of a referential sonority, the criteria for establishing degrees of stability and the need for instabilities to proceed to stabilities. Yet, I have not been able to account for a number of unresolved dissonances, such as the tones A and E-flat at rehearsals D and F, where the original RS is regained and stability expected. I performed a conjuring trick to make C-sharp disappear from RS whenever I felt that Väisälä's (and mine by adoption) concept of root-supporting chords was endangered. Now, the attempt to negotiate these dissonances cannot be postponed any longer. The easiest way to deal with the C-sharp is to explain it away as a contextual consonance, or a root detractor in Väisälä's terms, which adds specific color to the overall sound, but considering the well-defined harmonic basis, the fact that it is generally placed above supporting pitches and that these pitches do provide substantial support – it does not significantly destabilize it. Somehow, this explanation sounds too much like sweeping it under the carpet. This pitch is too obtrusive to be regarded as a garden variety ingredient of the referential chord. It pre-exists RS, extinguishes when RS is only an echo, and throughout the composition it follows it like Moira, or Nemesis. Analysis is traditionally expected to demonstrate coherence and integrity of the work, which includes showing how structurally inferior dissonances resolve into superior consonances. But when they don't, our need to find a rational explanation may lead us beyond 'pure' analysis conducted solely in technical analytic terms. Therefore, I propose the following: dissonances, such as those at the beginning of sections A_1 and B_1 do not resolve: they slowly fade out. The most persistent C-sharp remains to the last moment. And I speculate: this music is *Trauermusik*. Under this tragic aura unfold all these perplexing, dissonant events. So it may be with dissonances in our lives. Even as these A's and E-flats often have no resolution, so our life's dissonances often have no resolution; they can only gradually subside and fade away. For the most tragic of them, for our C-sharps, even that remedy may not help. They stay with us, endure with us and perish only with us.

Translated by the author

[23] Note that the transformation from the background to middleground involves a reversal of roles: at the deepest layer, A is considered a neighbor to B-flat, whereas at the middleground level B-flat was treated as a neighbor.