

On Musical Syntax and the Total Chromatic

In twentieth- and twenty-first -century Western concert music, there is a great variety of compositional styles and traditions. One compositional tradition is based on the resources of the total chromatic, the twelve equal tempered pitch classes. This compositional tradition encompasses musical repertoires that are typically characterized as atonal, non-tonal, aggregate music, or twelve-tone music.¹ In this paper, I discuss ways in which the resources of the total chromatic provide the basis for forming pitch and pitch class relationships. Further, I discuss how the pitch class relationships give rise to further compositional differentiations, such as motivic relations, and gestural and timbral differentiations. My special focus is on questions of musical continuity and formal shaping.

The musical examples include compositions by Arnold Schönberg, Anton Webern, Elliott Carter, and Brian Ferneyhough. In Schönberg's and Webern's compositional practice, I discuss the connections of the total chromatic to motivic composition, and in Carter's work *Remembrance* its timbral processes. Ferneyhough's compositional practice raises the question of the significance of different musical dimensions.

Several authors have noted how Schönberg's twelve-tone practice and his so-called free atonal practice form a continuum. This continuum is formed in two ways. First, Schönberg recognized and utilized the resources of the total chromatic already in his free atonal works. The twelve-tone method was for Schönberg, as noted by Robert Morris (1992, 32), "an elegant way to tie together his undoubtedly vast but probably unruly compositional praxis together with a few deep principles". Second, Schönberg's compositional principles are deeply rooted in the tradition of motivic development. The principle of motivic development was for Schönberg not only a way to move from tonality to atonality but also an all-embracing practice, which was integrated into his twelve-tone composition as well.²

In Schönberg's free atonal compositions, the motif can be considered to expand from its surface properties to include its properties as an unordered collection. The principle of motivic transformation expands to the motif's unordered properties. That is, in the same fashion as a motif can be varied through its transformations on the musical surface, it becomes "varied" through its transformations as an unordered collection of pitch classes.

The expansion of a motif to encompass its unordered properties can be exemplified with Schönberg's *Fünf Klavierstücke*, opus 23.³ The pitch organization of Opus 23/4, for example, is based on members of three hexachordal collection classes. The hexachords are first presented in the opening measure and they are articulated as three motivic figures, as shown in Example 1a. While it is possible to trace ways in which the motifs are developed throughout the work, it is their unordered properties that form the basis for the underlying pitch organization. The motifs as unordered collections and collection classes are shown in Example 1b. The relation between the unordered collections and their surface interpretations is close, because the properties of the collections pose the restrictions, within which they can be realized on the musical surface. In this way, the collection types contribute to defining the pitch class relations within the total chromatic and to providing a framework for the availability of the work's intervallic vocabulary.⁴

Example 1a A. Schönberg: *Fünf Klavierstücke*, Opus 23/4, measure 1

Example 1b

<u>Collections</u>	<u>Collection classes</u>
{D, D#, E, G, Bb, H}	[0,1,2,5,6,9]
{C, Db, D, F, A, Bb}	[0,1,3,4,5,8]
{C, F, Gb, Ab, A, Bb}	[0,1,3,4,5,7]

On the other hand, we may also see the wide variety of aspects that the underlying pitch organization leaves unspecified and that form other sets of relationships within a work. Furthermore, it should be remembered that in a work based on the resources of the total chromatic, the surface articulation functions in two ways: first, it is through the surface articulation that the underlying pitch relationships are brought forth, and second, the surface events form additional sets of relationships.⁵

The need to coordinate the resources of the total chromatic in order to better handle the formal shaping of music led Schönberg to formulate the twelve-tone idea.⁶ A row class of a particular work, that is, its 48 rows, preliminarily restricts the available pitch class relations. But it is only the further relationships established among the rows of a row class that form the basis for forming musical continuity and motion. Milton Babbitt (1987, 118) has noted how for Schönberg “didn’t seem to be any general way of hierarchizing permutations of the total twelve-tone set [i.e. twelve-tone row], and therefore he turned to identifying these sets [rows] through retained collections.” In Schönberg’s music, the establishment and hierarchization of the relationships among the rows of a row class takes place through the twelve-tone strategies. These strategies include the partitioning strategies of the rows, through which specific collections, collection types and intervals receive their specific roles within the total chromatic.⁷

Example 2a shows a row, from which the row class of Schönberg’s *Variations for Orchestra*, opus 31, is generated.⁸ In this piece, there are two sets of relationships established that become crucial in the large-scale shaping of the work.⁹ First, there is a functional row family that serves as a framing row family and as a point of departure and arrival. The second set of relationships is based on the Bach motif. Example 2b shows the rows of the functional row family and some of the invariances within these rows. The relationships established among the rows of the functional row family are used as points of reference and the invariances among these rows help to establish the relationships before moving to more remote rows of the row class. Further, a return to the members of the functional row family contributes to the sense of closure. For example, among the nine variations of the work, the first three are based on the rows of the functional row family, variations IV-VII explore more remote rows of the row class, and the last two variations return to the rows of the functional row family.

Example 2c shows row structures connected with the second set of relationships, the Bach motif and the semitone collections associated with it. The example demonstrates how the rows of the row class can be partitioned in various ways into semitone collections. The Bach motif is a source of the relationships of the finale of the work both in its motivic and contrapuntal procedures and its underlying pitch organization. As example 3a shows, the tripartite opening part of the finale is framed by the use of the Bach motif, whereas the middle section employs material based on the rows of the functional row family. Example 3b also shows some of the partitionings of the rows in measures 310 to 317. The score of the opening of the finale is given in example 4.

Example 2a

P: <Bb E F# D# F A D C# G G# H C>

Example 2b

Functional row family:

I ₃ P	<G C# H D C G# D# E Bb A F# F>
I ₂ P	<C# G F G# F# D A Bb E D# C H>
T ₃ P	<C# G A F# G# C F E Bb H D D#>
T ₂ P	<G C# D# C D F# H Bb E F G# A>
I ₄ P	<Bb E D F D# H F# G C# C A G#>
I ₂ P	<E Bb G# H A F C C# G F# D# D>
T ₆ P	<E Bb C A H D# G# G C# D F F#>
P	<Bb E F# D# F A D C# G G# H C>

Invariances within the row family

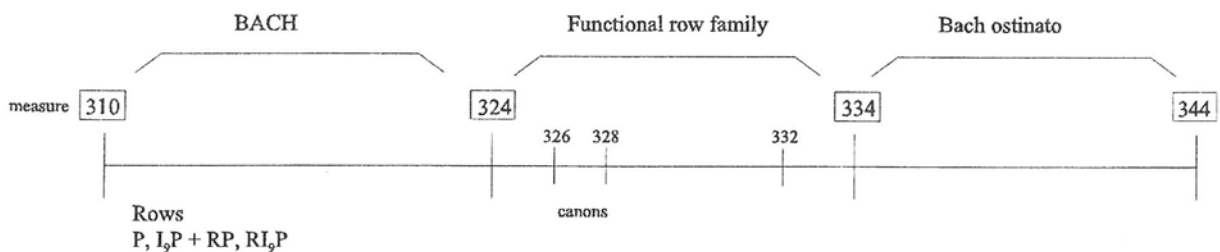
I ₃ P	G C# H D C G# D# E Bb A F# F
I ₂ P	C# G F G# F# D A Bb E D# C H
T ₃ P	C# G A F# G# C F E Bb H D D#
T ₂ P	G C# D# C D F# H Bb E F G# A
I ₄ P	Bb E D F D# H F# G C# C A G#
I ₂ P	E Bb G# H A F C C# G F# D# D
T ₆ P	E Bb C A H D# G# G C# D F F#
P	Bb E F# D# F A D C# G G# H C

Example 2c

Bach-motif:

	[0,1,2,3] [0,1] [0,1]		{D#, E, F, F#} {C#, D} {G, G#}
P	< (Bb) E F# D# F (A) D C# G G# (H) (C) >		P < (Bb) E F# D# F (A) D C# G G# (H) (C) >
I ₃ P	< (G) C# H D C (G#) D# E Bb A (F#) (F) >		RI ₃ P < (A) (Bb) C# D G# G (C) E F# D# F (H) >
	[0,1,2,3] [0,1] [0,1]		{C#, D} {G, G#} {D#, E, F, F#}

Example 3a A. Schönberg: *Variationen für Orchester*, Opus 31, Finale: opening section



Example 3b

Mm. 310-313

P $\langle \text{Bb E F\# Eb F A} \rangle$ $\langle \text{D C\# G G\# H C} \rangle$ OR $\text{RI}_9\text{P} \langle \text{A Bb C\# D G\# G} \rangle \langle \text{C E F\# Eb F H} \rangle$

Mm. 314-315

RP $\langle \text{C H G\# G C\# D} \rangle$ $\langle \text{A F Eb F\# E Bb} \rangle$

Mm. 316-317

$\text{RI}_9\text{P} \langle \text{A Bb Db D G\# G} \rangle \langle \text{C E F\# Eb F H} \rangle$

Labels: Fl + Gg, Vcl, Fi + Gg, Kbs, Gg, melody, chords.

Example 4 A. Schönberg: *Variationen für Orchester*, Opus 31, measures 310-334

FINALE

Mäßig schnell (♩. 120) rit. . . . etwas frei a tempo

310 311 312 313 314 315 316 317 318

1. Fl

2.3. Fl

Kl 2.

Hr 2.4. o Dpf

Hrf

1. Gg

II. Or

Br

Vcl

Kba

319 320 321 322 323 324 325

Poco pesante Etwas rascher

Fl 1. 2. 3.

Ob 1. 2. 3.

Ea Kl

Kl 1. 2. 3.

1. Hr

2. Hr

Trp 2. 3. o Dpf

Poa 2. o Dpf

Hrf

1. Or

II. Or

Br

Vcl

Kba

Example 5

In the middle section of the opening part of the finale, the explicit statements of the Bach motif are superseded by the *Hauptstimmen* and accompaniments that incorporate the semitonal configurations (see measures 326-333 in example 4). Example 5 illustrates some of the ways in which this melodic material is further developed in the finale. The elaborations and contrapuntal treatment of the Bach motif culminate in a climax of the finale (measures 493-50). The work concludes with an *Adagio*, which synthesizes the events of the work yet on another level, followed by a short *presto*-passage, that returns to the rows of the functional row family.

Schönberg coordinates the resources of the total chromatic through twelve-tone strategies in such ways that the pitch and pitch class relationships contribute to the shaping of the music into departures, arrivals, climaxes and culminations. In Schönberg's practice, the syntactical framework provided by the pitch class relationships is closely connected to the motivic procedures and the principle of developing variation. Although Schönberg abandoned the uniting power of the tonic and tonality, he preserved many aspects of the classic compositional practice. Schönberg (1975, 87) has himself noted how "coherence in classic compositions is based—broadly speaking—on the unifying qualities of such structural factors as rhythms, motifs, phrases, and the constant reference of all melodic and harmonic features to the center of gravitation—the tonic. Renouncement of the unifying power of the tonic still leaves all the other factors in operation."¹⁰ In his compositional practice, Schönberg was able to replace the unifying power of the tonic by the organizational principles arising from the resources of the total chromatic, while he retained several other aspects of the classic compositional practice. While doing this, he pointed the way for further developments of twentieth-century music, not least through his understanding and apprehension of the possibilities inherent in the chromatic universe.

Webern's twelve-tone practice shares many aspects with Schönberg's twelve-tone practice. Also for Webern the twelve-tone method offered a way to coordinate the pitch relationships within the chromatic universe, and this coordination served the formal shaping of the music, often following a classical dramaturgy.¹¹ On the other hand, Webern's compositional practice opened new compositional dimensions. These include Webern's precise and richly detailed articulation of musical elements. This detailed micro-articulation becomes a significant part in defining the connections and associations in his music. It also becomes an important aspect of the influence of Webern's music on future generations.

Webern's compositional practice is here exemplified with a short excerpt from the second movement of his *Variations for Piano*, opus 27.¹² In this piece, in the same fashion as in Schönberg's work, there is established a closely related row family among the rows of the row class. These closely related rows act as points of arrival and departure, and as a basis for defining further relationships in the work. In the *Variations*, one set of relationships inherent in this row family arises from its chromatic hexachords and their particular properties.¹³ These properties offer possibilities for hierarchizing pitch class relations in much the same fashion as the diatonic collection in tonality does, because it allows the highest degree of differentiation among the hexachordal areas.¹⁴

The organization of the total chromatic through the hexachordal areas, together with their ordered properties, forms the basis of the moves taken in the movement. These moves shape the movement into a classical *scherzo* design. In the following, I briefly illustrate this by showing how the sense of return and closure is accomplished at the conclusion of the movement.

Example 6 shows the opening and concluding phrases. The opening phrase introduces the basic elements of the phrases, as indicated in example 6. These elements form the basis for the rest of the phrases. The variations and elaborations of the phrasal elements entail the association field of their pitch and pitch class content, rhythmic detail, shape, dynamics and articulation.

Example 6 A. Webern: *Variationen für Klavier*, Opus 27, second movement, measures 1–3 and 18–22

opening phrase

B^b - G[#] A - A C[#] - F D - E

opening elements middle elements concluding elements

concluding phrase

B^b - G[#] A - A C[#] - F[#] D - E upbeat/stinger

Opening phrase	RP RI ₆ P	<G [#] A F G E F [#] C C [#] D B ^b H D [#] > <B ^b A C [#] H D [#] C F [#] F E G [#] G E ^b >
Concluding phrase	RI ₁ P RT ₅ P	<F E G [#] F [#] A G C [#] C H D [#] D ^b > <C [#] D ^b B ^b C A H F F [#] G E ^b E G [#] >

In the concluding phrase, the sense of closure arises first, from the way in which, after more remote hexachordal areas, the conclusion returns to the hexachordal areas of the beginning, although not to the same rows. Second, the ordered properties of the rows make it possible for the concluding phrase to resemble closely the opening phrase. As example 6 indicates, in the concluding phrase, the row structures allow the dyads of the opening to return in the same order, but with an intervening dyad between them. Thus, the row structure makes possible to return to the shape of the opening phrase and to reflect the elaborations and variations of the phrasal elements heard in the preceding phrases.

Both in Schönberg's *Variations* and Webern's *Variations*, the relationships established within the total chromatic provide the restrictions within which the moves of the works are accomplished. Morris (1995, 330) has described such abstract out-of-time pitch class structures as compositional spaces.¹⁵ In Morris's (1995, 336) view, already a row class, the forty-eight rows of a row matrix, forms a simple compositional space. Further relationships established among the rows of the row class form more specific compositional spaces. The notion of a compositional space helps to illustrate the hierarchization of the pitch class relations within the total chromatic and to describe the restrictions within which the moves of a work take place. David Lewin's (1987

and 1993) transformation theory offers one way to describe the moves taken within a compositional space.¹⁶ As Morris (1995, 356) has noted, by using Lewin's transformational networks, it is possible to show how "musical form arises out of the way a composer dances, as it were, through the space."¹⁷

The compositional spaces based on the resources of the total chromatic can be compared, at least to some extent, to the restrictions and possibilities provided by the tonal syntax.¹⁸ The grammar of tonality can be interpreted as one type of compositional space, because it can be considered to illustrate the restrictions within which the moves, such as harmonic progressions, take place. Of course, tonality involves an elaborated set of additional criteria and rules. Further, as discussed by Babbitt (1987, 170), the tonal syntax is communal, that is, its relationships are shared by a wide range of music. In contrast, the compositional spaces established within the total chromatic are more piece specific and thus each work establishes its own network of relationships already at a deeper level. It should be noted, however, that the compositional spaces modeling either the relationships within the total chromatic or within tonality, and the moves taken within these spaces, do not determine the events on the musical surface; they merely model the restrictions, within which the surface events are composed out.

In the rest of the paper I provide some examples of compositions of the latter part of the twentieth century. In these examples, the possibilities of the chromatic universe are extended. The first example is Elliott Carter's orchestral work *Remembrance* of the year 1988. The harmonic and contrapuntal vocabulary of this work, as well as Carter's works after the late 1940s, is based on the resources of the total chromatic.¹⁹ Carter's harmonic vocabulary is based on collections of different sizes, and *Remembrance* is from the period when Carter employed all-interval twelve-tone rows in his compositions.²⁰ In this essay, I do not discuss the work's pitch organization as such, but rather suggest briefly the ways in which this organization provides a basis for timbral processes.²¹ In *Remembrance*, we hear a succession of 29 twelve-tone chords. These chords are all-interval chords, thus they all have all the eleven intervals. The total chromatic is organized by the use of these chords, and their structure determines further chordal formations, as well as the forming of the melodic lines. Importantly, the chord progressions of the work provide the basis for the work's timbral processes. These timbral processes can be examined in terms of the twelve-tone chords' registral placement, density and instrumentation.

We may follow the work's timbral processes and the ways in which they contribute to the shaping of the work. Example 7 illustrates this with a short extract from the work's closing section. The example suggests how the timbral process of this section is based on the total effect arising from the ascending register of the chords, the changes of the dense part of the chords—the smaller intervals move from the lower register to the higher one, and from the gradual changes of the instrumentation from a *tutti* orchestration into a string sound.

Example 7 E. Carter: *Three Occassions: Remembrance*: closing section

measure

• = TBN

Instrumentation	TUTTI	Part of ww	Part of ww	Cl, BsCl, Cbsn	--	--
		Brass	Hrns	Hrns, Tuba	Hrns	--
		Strings	Strings	Strings	Strings	Strings Celesta

Remembrance may be considered representative of the emphasis on timbre shared by many twentieth-century compositions. However, in Carter's compositional language, the timbral solutions are subtle and do not override his concern for pitch and pitch class organization. In this sense, Carter's compositional practice shares compositional principles with the non-tonal music of Schönberg and Webern: they all are representatives of such compositional traditions in which the syntactical aspects formed through the pitch and pitch class relations within the total chromatic become an important aspect of their sense of coherence and continuity. Accordingly, it is reasonable to describe the syntactical aspects of such compositions through their pitch organization. The associations, connections and processes created through other musical dimensions and the surface events form further relationships that interact with the pitch syntax.

Brian Ferneyhough's music is an example of such compositional practice in which the fundamental compositional resources are radically expanded. An important aspect of Ferneyhough's compositional practice becomes the notion of a gesture. The defining features of a gesture may contain such aspects as contour and shape, timbre and the way of playing, dynamics, articulation and rhythmic shaping. Also the pitch organization expands beyond the chromatic universe by employing microtonal inflections. These different properties of gestures act in Ferneyhough's music as sources of development and continuity. In such practice, any feature of a gesture may become an independent agent of variation and a part of a new gestural form.²² The energetic force of the music arises from the directed musical processes of the properties of the gestures. Modeling the syntactical aspects of such practice, that is to describing the restrictions within which the moves of the music take place, requires a model that goes beyond the pitch organization.

The differentiations and relationships based on pitch and pitch class organization have a long tradition in Western music. Twentieth- and twenty-first-century Western concert music has, however, considerably expanded the musical resources and showed ways in which continuity, coherence and process may arise from a wider range of musical dimensions. Both Morris's (1995) model of compositional spaces and Lewin's (1987 and 1993) transformational networks allow and suggest the use of various musical dimensions as the basis for constructing such models. However, to describe compositional spaces based on other musical dimensions, such as timbral relations, is challenging, because it requires a sensible and accurate description of the functional differentiations and relationships established within the dimension. This imposes a challenge to music theory and analysis, because it raises the fundamental questions of the conceptualization and the hearing process of music, as well as the interaction of various dimensions in that process.

References

- ¹ Other types of post-tonal compositional traditions include those in which pitch centrality has a structural role. See, for example, Joseph Straus (2000, 112-135).
- ² Stephen Peles (2001) discusses the significance of the Austro-German compositional principle of varied repetition to Schönberg's twelve-tone music and to his free atonal music.
- ³ Discussions on the movements of the composition include Allen Forte (1972), Martha Hyde (1985), Tiina Koivisto (1990), Robert Morris (1992), Peles (2001), and David Lewin (2003).
- ⁴ Andrew Mead (1995, 101) has suggested—in connection with Elliott Carter's music—how the interaction and distribution of specific collection types create differentiations that are “roughly analogous to the functional distribution of intervals of various classes by difference of scale degree in the diatonic system.”
- ⁵ See discussions on the relations between the surface articulation and the underlying relationships in, for example, Mead (1985 and 1993), Joseph Dubiel (1990, 1991, and 1992), Peles (2001) and Lewin (1993a).
- ⁶ Milton Babbitt (1987, 168) has emphasized, that Schönberg's remarks on the difficulty to create structure of sufficient length and complexity in his free atonal works (Schoenberg 1975, 217) meant structural length and complexity, and a degree of structural determination and richness.
- ⁷ Mead (1985) discusses large-scale strategies in Schönberg's twelve-tone music. See also Peles (2001).
- ⁸ Schönberg's *Variations for Orchestra* is described as a compendium of his twelve-tone technique. Studies on this work include René Leibowitz (1949) Carl Dahlhaus (1968), Graham Phipps (1976), and Koivisto (1995).
- ⁹ The relationships and their functioning in the formal shaping of the work are discussed in more detail in Koivisto (1995).
- ¹⁰ Peles (2001, 30) suggests how Schönberg, in renouncing the unifying power of the tonic, replaced it by motivic relations. This “also entailed the abandonment for all practical purposes of any principled distinction between ‘syntactic’ relations and ‘motivic’ relations; the twelve-tone system qua system just is a set of musical entities and transformations of them” (2001, 30).
- ¹¹ Mead (1993) discusses the relation between the twelve-tone composition and the classical formal layout in Webern's music.
- ¹² The numerous studies on this movement include Babbitt (1987), Lewin (1993b), Peter Westergaard (1963), Mead (1993) and Koivisto (1997).
- ¹³ Mead (1993) and Koivisto (1997) discuss the hexachordal structure and its implications to the formal shaping of the work.
- ¹⁴ Discussions on the properties of the diatonic collection, see, for example, Richmond Browne (1981) and Mead (1994).
- ¹⁵ Morris (1995, 336) states that a definition of a compositional space “might run: a compositional space is a set of musical objects related and/or connected in at least one specific way. But most importantly, compositional spaces are nontemporally interpreted—that is, they are out-of-time.”
- ¹⁶ Lewin (1987) provides the theoretical basis for the transformation theory and Lewin (1993a) offers examples of their use in modeling formal aspects in non-tonal music.
- ¹⁷ Morris's (1987) compositional design is another way to model such moves within a compositional space.
- ¹⁸ Mead (1994, 9-16) discusses the functioning of the twelve-tone system and tonality. Morris (1995) discusses the compositional spaces based on the resources of the total chromatic and on diatonicism. Morris (1995, 338-340) defines musical grammars, including the tonal grammar, as one type of compositional space.
- ¹⁹ Carter's compositional manual, which contains Carter's chordal vocabulary, is published as the *Harmony Book* (2002). David Schiff (1998) provides an overview of Carter's music and includes a bibliography of the studies of Carter's music.
- ²⁰ Mead (1995) discusses Carter's compositional strategies.
- ²¹ The work's pitch organization is discussed in Schiff (1998) and Koivisto (forthcoming).
- ²² Brian Ferneyhough (1993, 37) notes himself, how the defining features of a gesture have a tendency towards escaping from that specific context in order to become independently signifying radicals, free to combine into further gestural or figural entities.

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On Musical Syntaxes and the Total Chromatic

Summary

In the twentieth-century music, the total chromatic is a source for a variety of compositional principles. This paper examines aspects of these principles in the works of the composers of the second Viennese school and of Elliott Carter and Brian Ferneyhough. The focus is in examining ways in which the total chromatic offers possibilities for forming musical syntaxes and how these syntaxes contribute to the formal shaping of the music. As suggested by Robert Morris (1995), musical syntaxes can be interpreted as compositional spaces. Compositional spaces show the constraints within which a work's pitch and pitch class organization may be accomplished. Furthermore, the moves taken within such spaces describe a work's underlying formal design. The paper discusses, how the underlying designs, in providing a framework for the composing out the music's surface detail, also offer possibilities for forming new compositional differentiations, such as timbral differentiations and gestural vocabularies.

The paper applies Morris' (1995) and Lewin's (1987 and 1993) theories of musical spaces. The notion of the compositional design (Morris 1987) and the transformational theory (Lewin 1987) are employed to describe the moves within syntactical spaces. In concluding, compositional spaces based on the total chromatic are compared to other types of syntactical spaces.

Apie muzikinę sintaksę ir totaliąją chromatiką

Santrauka

XX amžiaus muzikoje totalioji chromatika yra įvairių komponavimo principų šaltinis. Šiame straipsnyje nagrinėjami šių principų aspektai antrosios Vienos kompozitorių mokyklos bei Elliotto Carterio ir Briano Ferneyhough darbuose. Pagrindinis straipsnio tikslas – išnagrinėti, kokių būdu totalioji chromatika sudaro galimybę suformuoti muzikinę sintaksę ir kaip ji prisideda prie formalaus muzikos struktūrinimo. Pasak Roberto Morriso, muzikinę sintaksę galima interpretuoti kaip komponavimo erdvės. Šios erdvės atveria konstrukta, kurio terpėje gali būti išstobulinta tono aukštumo ir aukštumo klasių organizacija, juolab kad kaita tokiose erdvėse apibrėžia pagrindinį formalų kūrinio piešinį. Straipsnyje aptariama, kaip pagrindinis piešinys, suteikiantis kompozicijai struktūrą, be išorinių muzikinių detalių taip pat gali pasiūlyti galimybes formuoti naujas komponavimo diferenciacijas, kaip pavyzdžiui, tembrines diferenciacijas ir gestikuliacijos žodyną.

Straipsnis panaudoja R. Morriso (1995) ir D. Lewino (1987 ir 1993 metų) muzikos erdvių teorijas. Kompozicinio dizaino (Morris, 1987) ir transformacijos teorijos (Lewin, 1987) samprata yra panaudota, nusakant kaitą sintaktinėse erdvėse. Apibendrinant kas buvo pasakyta, reikia pridurti, kad komponavimo erdvės, paremtos totaliaja chromatika, lyginamos su kitų tipų sintaktinėmis erdvėmis.