Allan Pettersson: Symphony No. 8

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Abstract

Most of the material of Pettersson's *8th Symphony* is derived from Mozart's *Symphony No. 41 »Jupiter« and* Nielsen's *Symphony No. 5*. The philosophy of Pettersson's music is determined by Nielsen's vegetatio and organicism. First part of *8th Symphony* describes music history from origin to decline. A cantus firmus extended to a long cantus is followed by a concatenation of different polyphonic and homophonic compositional techniques sorted chronological. Second part is a revolutionary construction of a polyphonic movement in sonata form. The symphony is the composers manifesto.

Part I
Motives *8th Symphony*

1 Motive I - Classical Theme

Pettersson *8th Symphony* (1969)

Motive I in Figure 1[1] is the cohesive and dominating theme of the whole two-part-symphony. It is occurring in the second half of Part I and Part II of the opus.

Bar (I/255), II/394

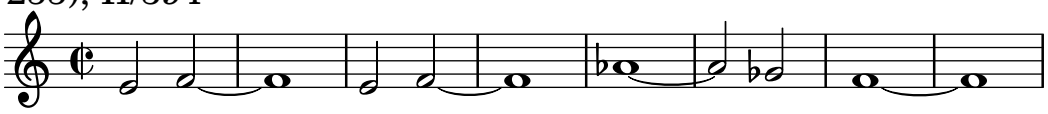

Figure 1: Motive I Pettersson *8th Symphony*

*Initial release of this manuscript: August 2, 2012.

[1] All snippets of *8th Symphony* from Score *NMS 10642* Copyright © 1984 by AB Nordiska Musikförlaget / Edition Wilhelm Hanson, Stockholm.

Part of the theme is the characteristic ascending second E F, building according to KUBE [36, p.30] an independent two-tone-motive. The whole context of the theme in Part I causes the impression of an oriental procession.

Fact. *Form of the Classical theme:* $\mathcal{A} - \mathcal{A} - \mathcal{B}$ *(*$2 + 2 + 4$ *bars).*

Claim. Finalis F.

Citation found: MOZART *Symphony No. 41 K.551* »Jupiter« (1788)

[2]

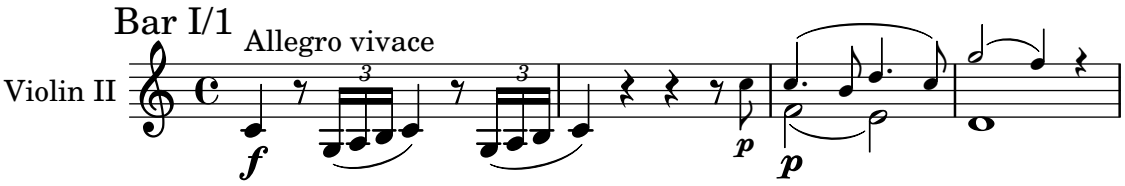

Figure 2: Motive I MOZART Opening *»Jupiter« Symphony*

The main theme[3] (Figure 2)[4] of the 1st Movement of MOZART's[5] *»Jupiter« Symphony* is used by PETTERSSON slightly varied. The two phrases of MOZART's theme symbolizes itself contrary poles by contrasting antithetic phrases. These typical Classical contrasting elements were interpreted as the dualism of »male and female« [39][45] or hard and soft. This contrasting character has been lost partly in PETTERSSON's citation.

[2] Citation found by a melody finder.

[3] The sonata form first movement's main theme begins with contrasting motifs: a threefold tutti outburst on the fundamental tone (respectively, by an ascending motion leading in a triplet from the dominant tone underneath to the fundamental one), followed by a more lyrical response. (Wikipedia)

[4] From Score *Wolfgang Amadeus Mozarts Werke, Serie 8: Symphonien.* Leipzig: Breitkopf & Härtel, 1880. Plate W.A.M. 551. Public Domain.

[5] WOLFGANG AMADEUS MOZART was a prolific and influential composer of the Classical era. (Wikipedia)

Citation found: Dvořák *Symphony No. 4 Op. 13* III. Scherzo (1874)

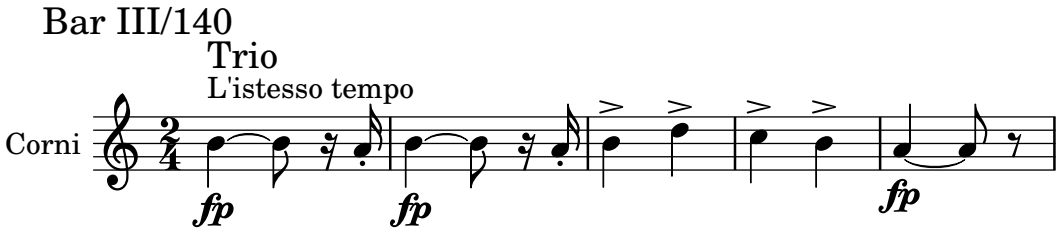

Figure 3: Motive I Dvořák *Symphony No. 4*

This citation (Figure 3)[6] seems to be irrelevant for the analysis of Pettersson's *8th Symphony*, because there are no further corresponding citations. So Pettersson did not necessarily cite or know Dvořák's opus.

Citation found: Nielsen *Symphony No. 5 CNW 29 Op. 50* (1922)

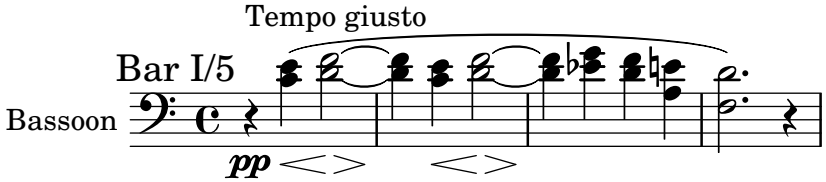

Figure 4: Motive I Nielsen Opening Bassoon *Symphony No. 5*

The citation of the Classical theme reveals the influence of neoclassicism[7]. The melody (Figure 4)[8] unfolds without establishing a clear tonal center.[7, pp.14–15] By instead giving each line a central pitch around which the melody evolves, Nielsen frees the motive from the constraints of tonality. [7, pp.14–15] The context causes an impression of exoticism and orientalism.

Claim. Finalis is D, A-Hypodorian and D-Dorian.[9] Modal Interchange.

[6] From Score Antonín Dvořák *Symphony No. 4, Op. 13*, Berlin: N. Simrock, 1912, Plate 13039. Public Domain.

[7] Neoclassicism in music was a twentieth-century trend, particularly current in the period between the two World Wars, in which composers sought to return to aesthetic precepts associated with the broadly defined concept of »classicism«, namely order, balance, clarity, economy, and emotional restraint. (Wikipedia)

[8] All snippets from Score Carl Nielsen *Symphony No. 5, Op. 50* Copenhagen: Skandinavisk Musikforlag, 1950. Plate SM 4552. Public Domain.

[9] Second voice points to F-Mixolydian (2♭).

Simpson wrote about the opening of *5th Symphony* [48, p.95]:

> The beginning is like the passing of time, a background for events. Under a persistent wavy line on violas, bassoons creep in with cold harmonies.

Rival wrote under *Mobile Pitches & Oscillating Macroharmony* about same opening [46, p.269]:

> Our ears become mesmerized by the relentless pedal over which float clouds of undulating figures that come and go.

A comparison of the Scandinavian composers Nielsen and Pettersson can be found in *Allan Pettersson Jahrbuch* 1989 [21]. Similar are for example the »linear compositional technique« and the »expressionistic emancipation of rhythm«. The latter can be shown exemplary in the 1st Movement of Nielsen's *5th Symphony* in the battle between the orchestra and a renegade snare-drummer.

Variation Pettersson *8th Symphony*

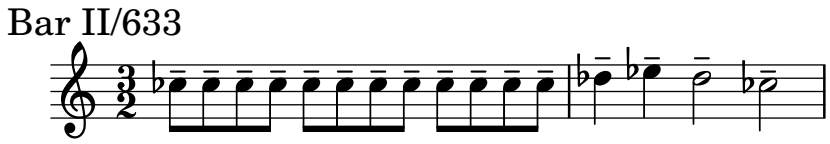

Figure 5: Variation Motive I *8th Symphony*

This Variation of Motive I stamps the finale of the symphony. The impression is like a die away call into the uncertain.

Claim. Finalis C♭, C♭-Lydian (6♭).

2 Motive II

Pettersson *8th Symphony*

Figure 6: Motive II *8th Symphony*

Motive II (Figure 6) begins second movement prominently. It looks like a call for an answer. There is a relationship to the »Ego« Motive of *6th Symphony*.

Claim. Finalis C♭, C♭-Lydian (6♭). Mode commixture.

Citation found: Pettersson *6th Symphony*

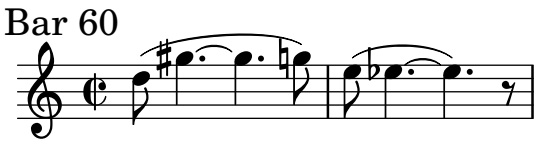

Figure 7: »Ego« Motive *6th Symphony*

The »Ego« or »Birth« Motive dominates the beginning of Pettersson's *6th Symphony* (1963-66) (Figure 7)[10]. Topic of this symphony is »life from birth to death«. The composer refers to his own former work, probably because he wants to indicate, that his own tone language and personal compositional technique is following.

[10] Snippet of *6th Symphony* from Score *NMS 10468* Copyright © 1985 by AB Nordiska Musikförlaget / Edition Wilhelm Hanson, Stockholm.

3 Motive III - Cantus

Pettersson *8th Symphony*

Figure 8: Opening Part I *8th Symphony*

These first 9 bars are part of an »endless melody«[11] [29, p.28][47], »outreaching melody line« [23, p.23] or »floating open cantilena« [50, p.21]. The whole section covers Bar 1 to 59. In total a sacral, elevated and noble theme.

Mozart *Symphony No. 41 K.551* »Jupiter«

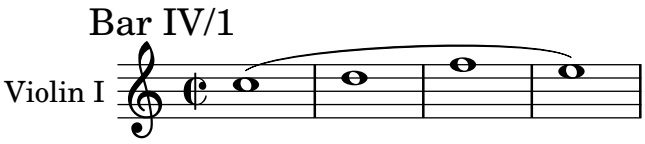

Figure 9: Main Motive in *»Jupiter« Symphony*

Figure 9 shows part of the main theme of the 4th and last movement of the *»Jupiter« Symphony*. The Baroque chorale motive with Gregorian origin is also a center element of the 5-motive-fugato[12] in the Coda. The theme appears first time in the Trio of 3rd movement (Menuetto) (Figure 11). Figure 12 shows the complete original Gregorian cantus firmus[13,14] used by Mozart.[9, p.9] According to the allegation of Johann Nepomuk David the complete material of the *»Jupiter« Symphony* is constructed and derived from that cantus firmus.[9]

[11] The term »unendliche Melodie« is at this place misleading to a certain degree, because Richard Wagner (1813 - 1883) used it for his definition of melodics and polyphony.[56]

[12] A passage in fugal style within another work that is not a fugue. (Wikipedia)

[13] Gregorian chant is the central tradition of Western plainchant, a form of monophonic liturgical music within Western Christianity that accompanied the celebration of Mass and other ritual services. (Wikipedia)

[14] In music, a cantus firmus (c.f.) (»fixed song«) is a pre-existing melody forming the basis of a polyphonic composition. (Wikipedia)

Basis of the first four bars is the third line »Sanguinísque pretiósi, quem in mundi prétium« of *Pange lingua*[15] (Figure 10)[16]. See also *Missa Pange lingua – Kyrie* (1515) composed by Josquin des Prez[17].

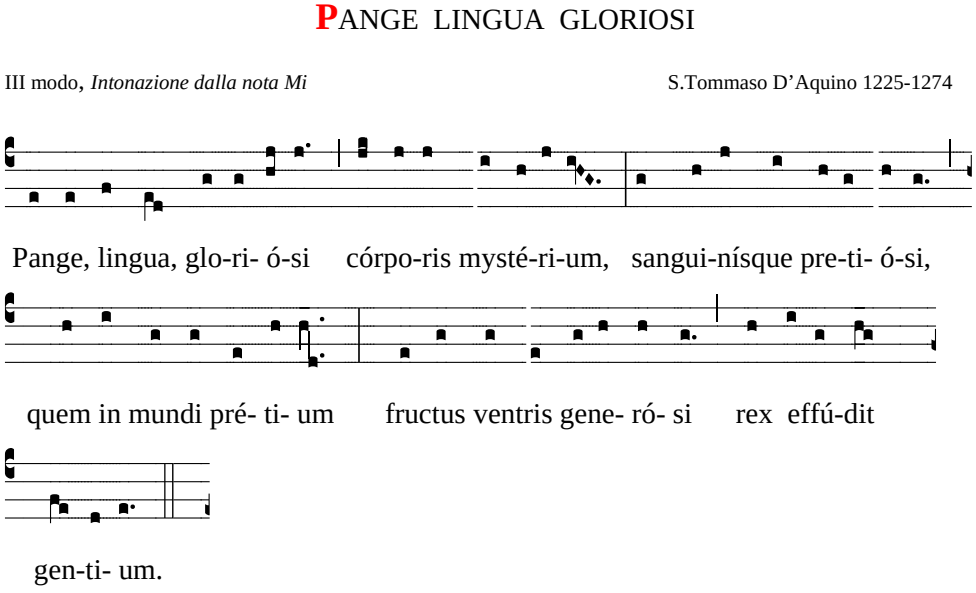

Figure 10: St Thomas Aquinas *Pange lingua*

[15] *Pange Lingua Gloriosi Corporis Mysterium* is a hymn written by St Thomas Aquinas (1225 - 1274) for the Feast of Corpus Christi. (Wikipedia)

[16] Trascrizione di Nicola Amadio, Schola Gregoriana Mediolanensis, direttore Giovanni Vianini Basilica di San Marco, Milano piazza San Marco 2 Italia. CC-BY-NC-SA.

[17] Josquin des Prez [Josquin Lebloitte dit Desprez] (1450/1455 - 1521), often referred to simply as Josquin, was a Franco-Flemish composer of the Renaissance. (Wikipedia)

Mozart *Symphony No. 41 K.551* »Jupiter«

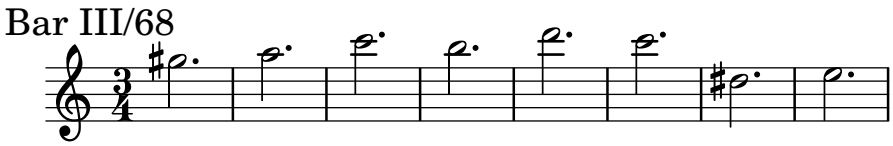

Figure 11: Mozart *»Jupiter« Symphony* Menuetto

Gregorian cantus firmus

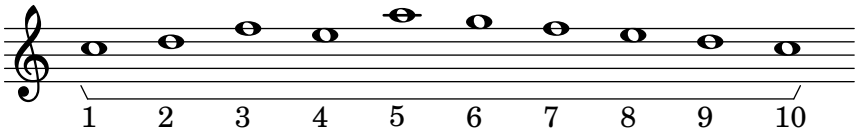

Figure 12: Gregorian Cantus firmus

Fact. *Tonic note 1 and 10 (C), penultimate note 9 (D) a step above the tonic (tenor clausula). C major.*

Pettersson *8th Symphony*

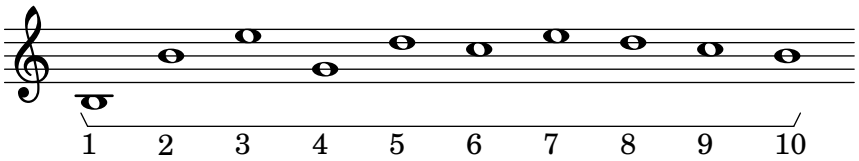

Figure 13: Cantus firmus *8th Symphony* (from Figure 8)

Fact. *Tonic note 1 and 10 (B), note 1 and 2 octavation, penultimate note 9 (C) a step above the tonic (tenor clausula).*

Pettersson's cantus firmus in Figure 13 shows some similarities with the Gregorian cantus firmus in Figure 12. This is partly because of the very rigid historic rules for the creation of such a melody. Cantus firmi are highly specialized melodies. The cantus firmus at the opening of *8th Symphony* does certainly not fully obey the strict requirements for an effective cantus firmus postulated by Johann Joseph Fux[18] in his work *Gradus ad Parnassum* [14].[19]

[18] Johann Joseph Fux (1660 – 13. February 1741) was an Austrian composer, music theorist and pedagogue of the late Baroque era.

[19] For example, some melodic intervals were used that are not permitted, ambitus exceeds octave and all notes don't have equal length.

Pettersson opens the *8th Symphony* with a different version of the original ancient theme used by Mozart (Figure 12). The melody is also different from the original *Pange lingua* by Aquinas (Figure 10). It is less likely, that Pettersson set an own version of *Pange lingua* to music.[20] Another possibility is, that he derived the whole melody from the basic Gregorian cantus firmus in Figure 12, that already Mozart used in *»Jupiter« Symphony*.[21] Third possibility is, that Pettersson created his own cantus firmus independently. This cantus firmus is in a nearly traditional form with 10 notes (Figure 13). The following sequences are derived and developed from that cantus firmus and are in an extended free form, for example with repetition of sequences. He created in total a cantus spanning 59 bars. The typical modern expressionistic tone language of Pettersson contrasts the very old Gregorian hymn.

It is astonishing, but not surprising, that Pettersson opens *8th Symphony* with a cantus firmus similar to the ancient main theme of the *»Jupiter« Symphony*. It is consequent to start with the origin.

[20] Analysis shows, that a cantus or hymn created in this way has several distinct repeating notes of the same pitch. Pettersson's cantus shows only one occurrence between note 10 and 11 at the end of the cantus firmus.
[21] Analysis can't proof this thesis.

3.1 Analysis of Cantus

3.1.1 The Beginning of the Cantus

Claim. The cantus firmus is based on old Glareanian church modes, that are itself derived from ancient Greek scales.[15]

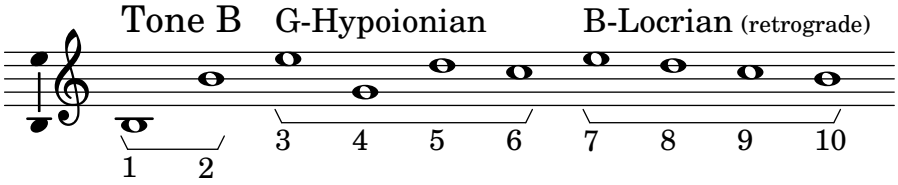

Figure 14: Analysis Cantus firmus *8th Symphony*

The beginning is a B octave leap indicating the ambitus of pure Locrian mode. The ambitus of the three individual parts of the polymodal cantus firmus does not exceed an octave.

The plagal Hypoionian[22] is close to the modern major scale. In our case G-Hypoionian corresponds to C-Ionian or the C major scale starting with G. The shape is a Plagal Mode Figuration.

Locrian[23] is the seventh scale degree of any Ionian, so B-Locrian[24] is the seventh scale degree of C major. This means authentic B-Locrian mode contains the same notes as C-Ionian. It is considered as sinister or anxious and very unstable. The strange sounding is because of the missing perfect fifth. Pettersson avoids in the cantus firmus the unstable diminished F[25] and reciting tone G.[26] Last part of the decreasing scale[27] is presented. The shape is an Authentic Mode Figuration.

Fact. *Polymodal cantus firmus based on »white-note« diatonic plagal and authentic scales (cantus commixtus or modus commixtus, commixture).*

[22] The Hypoionian mode, literally meaning »below Ionian«, is the name assigned by Henricus Glareanus in his *Dodecachordon* (1547) [15] to the plagal mode on C, which uses the diatonic octave species from G to the G an octave higher, divided at its final, C. This is roughly the same as playing all the white notes of a piano from G to G. (Wikipedia)

[23] Glareanus rejects the authentic and plagal Locrian modes.

[24] B-Locrian: Its reciting tone (or tenor) is G, its mediant D, and it has two participants: E and F. (Wikipedia)

[25] Interval B F: Tritonus (TT), $\left[\frac{1}{2}, 1, 1, \frac{1}{2}\right]$.

[26] Contrary to the hexachordal presentation of retrograde C-Ionian scale in the Gregorian cantus firmus in Figure 12.

[27] Retrograde, some literature uses the term reverse.

Example. The identification of the Hypoionian mode is shown in Figure 15.

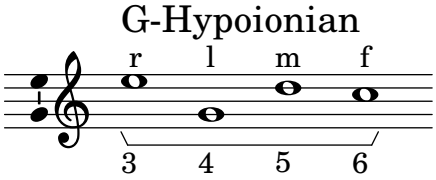

Figure 15: Identification Hypoionian

- r = reciting tone, cofinal, tenor (E) - third over finalis in plagal modes
- l = lowest tone in scale (G) - fourth under finalis (plagal)
- m = mediant (D) - Latin: to be in the middle[28]
- f = finalis, final (C) - last tone of a modal piece

The mode is plagal, because lowest tone is below finalis. These four notes are the shortest form to build and define a complete diatonic melody in that pure mode.

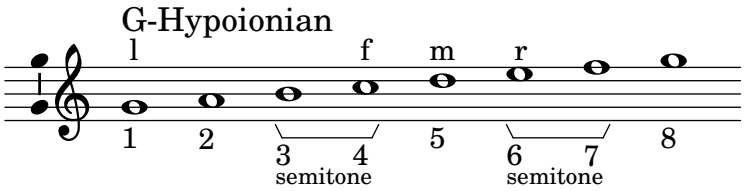

Figure 16: G-Hypoionian Scale

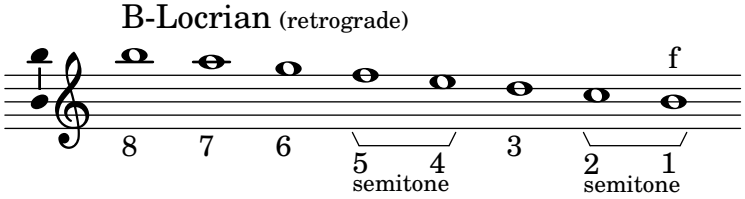

Figure 17: B-Locrian R-Scale

[28] The mediant is named from its position - in the authentic modes - between the final and cofinal. In the plagal modes, its position is somewhat irregular. (Wikipedia)

The continuation of the cantus is shown in Figure 18.

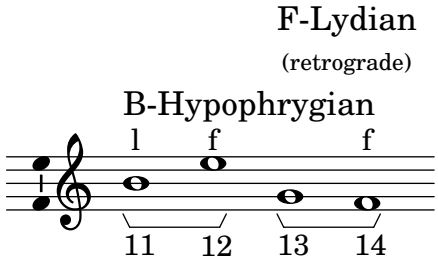

Figure 18: Analysis Cantus *8th Symphony* (I)

Finalis is F, this could be a F-Lydian. Lydian is the fourth scale degree of any Ionian. But ambitus is from F' to E" and the reciting tone B is the fourth of finalis. A corresponding mode is not known. It is likely, that PETTERSSON coded this sequence of his music in another way. The 4 notes unit can be divided in 2 subunits with 2 notes. First subunit has B as lowest note and as finalis E. A fourth under finalis is a plagal mode. This should be a B-Hypophrygian. Second part is a G and a F. This is the combination of a retrograde authentic scale. This points to a retrograde F-Lydian. So it is very likely, that PETTERSSON refers to a transition inside the unit from a Hypophrygian environment at the beginning to a Lydian. The musical terminus is cadence or resolution[29] to retrograde F-Lydian. Retrograde F-Lydian contains the same notes as C-Ionian or C major. The shape is a Resolution Figuration.

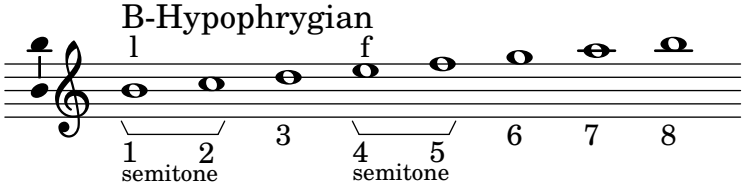

Figure 19: B-Hypophrygian Scale

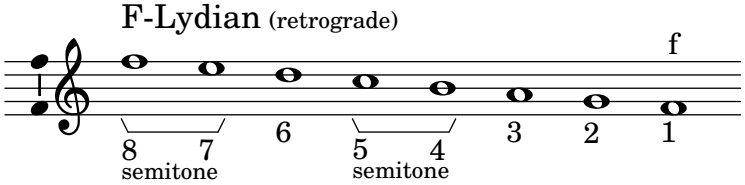

Figure 20: F-Lydian R-Scale

[29] Resolution in western tonal music theory is the move of a note or chord from dissonance (an unstable sound) to a consonance (a more final or stable sounding one). (Wikipedia)

Claim. Only transitions of related modes are allowed (No shift of semitones or shift of one or both semitones by one step, »related commixed modes«).

After these four modes Pettersson leaves the white-note diatonic scales related to C major. Accidentals indicate transposing of several different Glareanian church modes and scales. The cantus is written now note by note. Every note is a finalis. The melodic interval determines the mode.

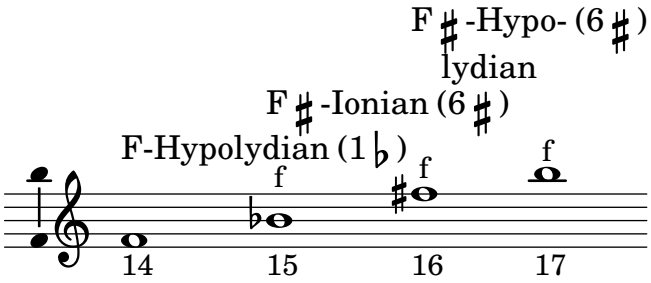

Figure 21: Analysis Cantus *8th Symphony* (II)

Remark. Kube [23, p.25]: »expanding the ambitus«.

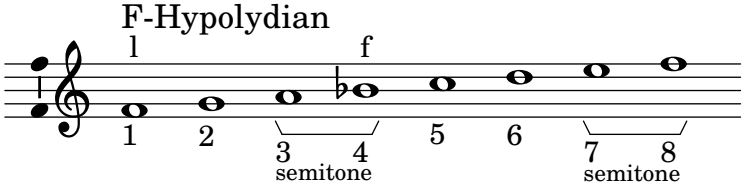

Figure 22: F-Hypolydian Scale

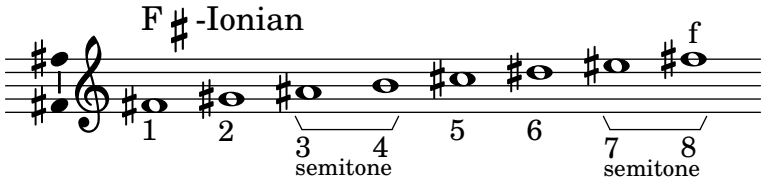

Figure 23: F♯-Ionian Scale

Remark. Enharmonic Equivalent: B♭ = A♯. Melodic interval is minor sixth (m6).

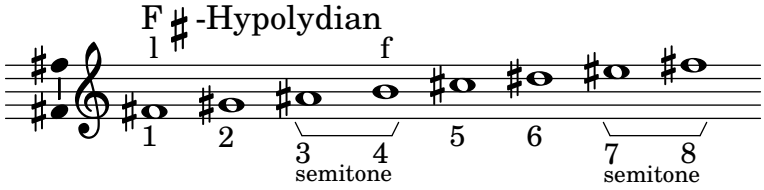

Figure 24: F♯-Hypolydian Scale

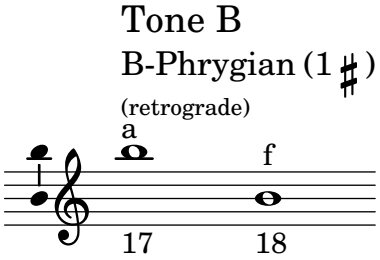

Figure 25: Analysis Cantus *8th Symphony* (III)

Scale is retrograde, finalis B. Retaining the semitone position of preceding tone would result in a B-Phrygian (1♯).

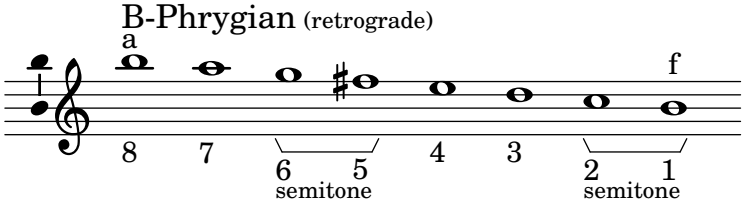

Figure 26: B-Phrygian R-Scale

Remark. Stoïanova describes this expansive melody building as »dissolving the boundaries« and »endless melodic unfolding«.[50, p.22]

3.1.2 The Final of the Cantus

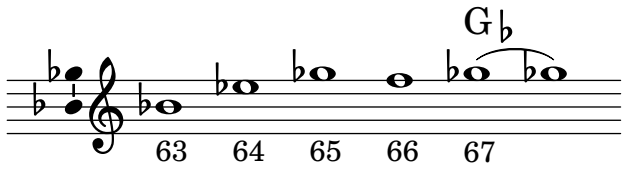

Figure 27: Analysis Cantus in *8th Symphony* (Final I)

There is a G♭ at the end. A second G♭ is added to show, that the cantus ends in an unison. The key of the last bars is maybe partly G♭ major.[23] It is likely, that also the last part of the cantus is written in church modes. The last three notes build a conclusion in form of a discant (soprano) clausula.

Example. The final in GLAREANIAN church mode representation.

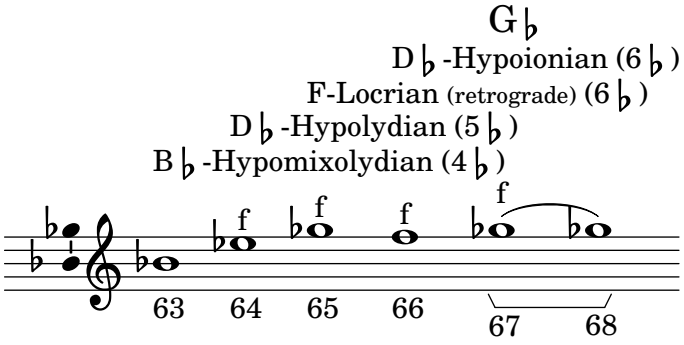

Figure 28: Analysis Cantus in *8th Symphony* (Final II)

Claim. The cantus is completely written in church modes.

Claim. The cantus seems to include a matrix.[30]

3.1.3 Complete Cantus

Figure 29: Complete Cantus *8th Symphony*.

[30] G-Hypoionian (0♭) corresponds to D♭-Hypoionian (6♭), B-Locrian (0♭) corresponds to F-Locrian (6♭) and F-Hypolydian (1♭) corresponds to D♭-Hypolydian (5♭).

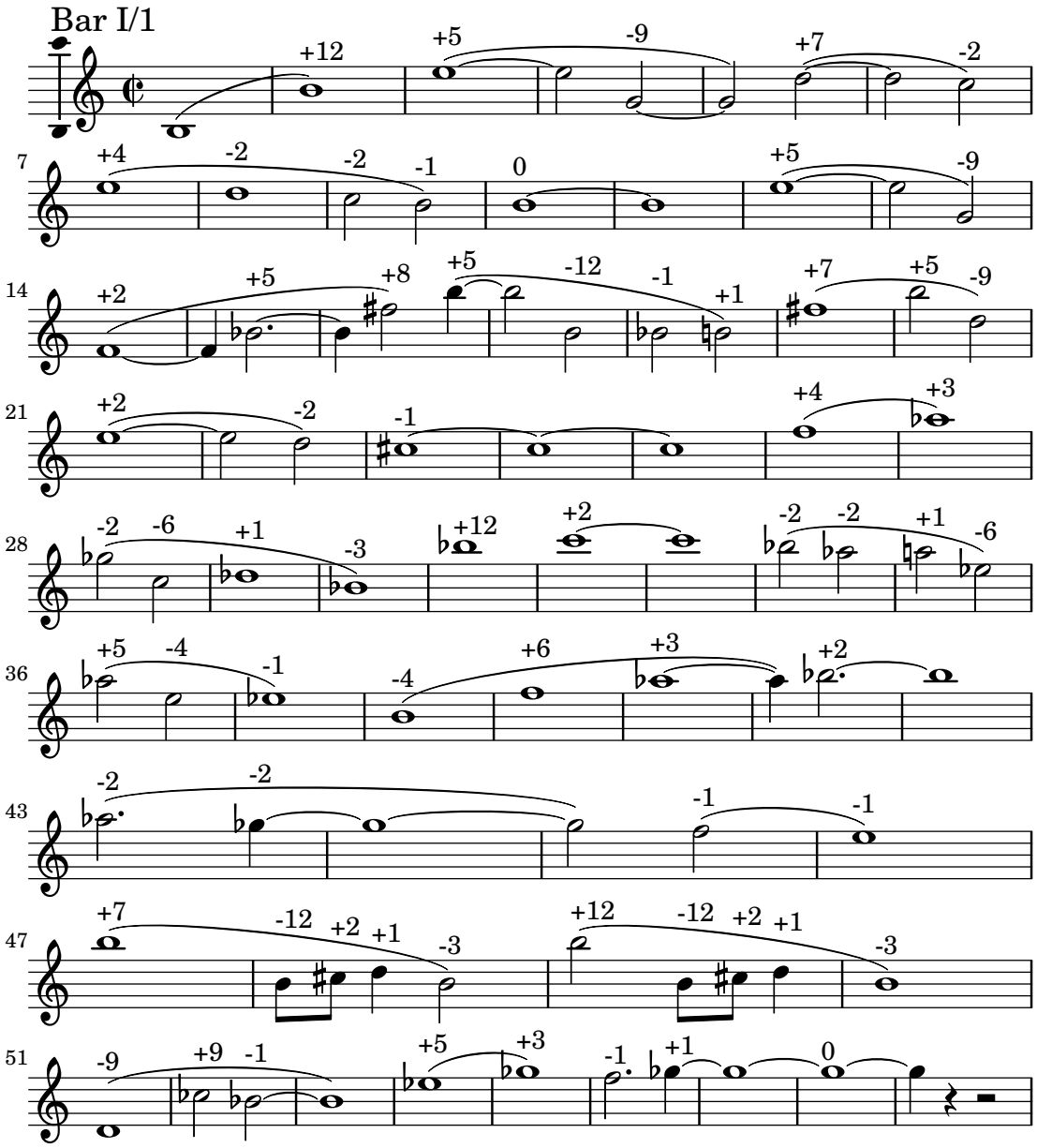

Figure 29: Cantus *8th Symphony*

Figure 29: Melodic interval representation added.[31]

[31] 0: P1, 1: m2, 2: M2, 3: m3, 4: M3, 5: P4, 6: TT, 7: P5, 8: m6, 9: M6, 10: m7, 11: M7, 12: P8.

Example. Ambitus and pitch.

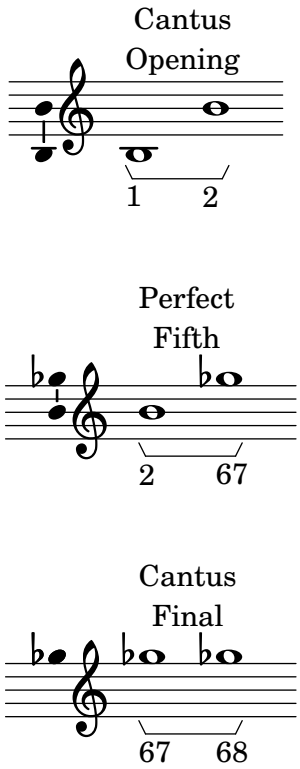

Figure 30: Ambitus and Pitch of Cantus in *8th Symphony*

Fact. *Octave Leap and Perfect Fifth and Unison.*

Example. Long-term mode progress.[32]

$$0\flat \rightarrow 6\flat$$

[32] Stoïanova [50]: Teleology.

3.1.4 Summary

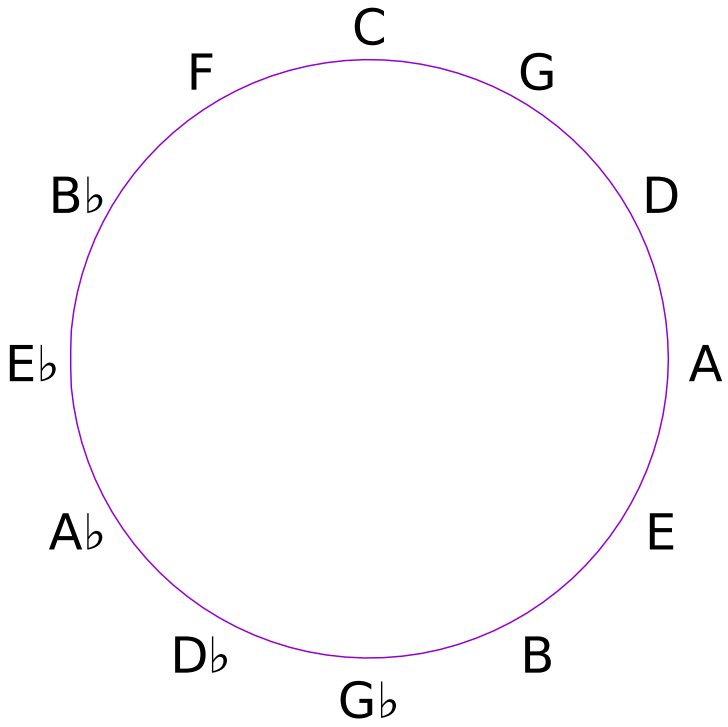

Figure 31: *Circle of fifth*

Pettersson describes in a clever way an ancient-based monophonic compositional technique. In addition he shows systematically and gradually the transition from note B to note G♭. G♭ major is the dominating key in the homophonic parts of the *8th Symphony*. This is done by following the full *circle of fifth* anticlockwise and clockwise. This can be concluded from the rapid change of opposing key signatures. This transition can be compared to the »progressive tonality«[33] in some of the symphonies of Gustav Mahler and in Carl Nielsen's *5th Symphony* or the »modal mixture and modulation« [46, p.265] in Nielsen's late opuses. The cantus follows probably a certain fixed schema, derived from music theoretical considerations concerning Glareanian church modes. Complexity arises, because Pettersson uses different modes. In this cantus he also demonstrates the compositional technique of ancient monophonic masters. These old modes sound partly strange. A more general aspect is, that the mixture of ancient church modes and modern major/minor scales extends the spectrum of expressions. Another important point is, that Pettersson shows exemplary the change from strictly diatonic pure modes to chromatic dominated monophony.

[33] Progressive tonality is the name given to the compositional practice whereby a piece of music does not finish in the key in which it began, but instead »progresses« to an ending in a different key. (Wikipedia)

Proposition. *Examples for the constituting musical figuration*[34] *of* 8th Symphony.

- Leap Figuration (Octave to Semitone) or Unison
- Plagal Mode Figuration (»Zig-Zag«)
- Authentic Mode Figuration (»Linear«)
- Resolution Figuration

Glareanian Modes

I. Ionian

II. Dorian

III. Phrygian

IV. Lydian

V. Mixolydian

VI. Aeolian

VII. Locrian

Direction

- Standard
- Retrograde

Shape

- Authentic
- Plagal

[34] A musical figure or figuration is the shortest idea in music, a short succession of notes, often recurring. (Wikipedia)

Conjecture. *Matrix for the Cantus in* PETTERSSON*'s* 8th Symphony.

$$\begin{bmatrix} B^8 & 0\sharp & 0\sharp & 0\sharp & 1\sharp & 2\sharp & 2\sharp & 3\sharp \\ 0\flat & C^7 & 0\sharp & 1\sharp & 1\sharp & 2\sharp & 3\sharp & 4\sharp \\ 0\flat & 0\flat & C^6_\sharp & 1\sharp & 2\sharp & 3\sharp & 4\sharp & 4\sharp \\ 0\flat & 1\flat & 1\flat & D^5 & 3\sharp & 4\sharp & 5\sharp & 5\sharp \\ 1\flat & 1\flat & 2\flat & 3\flat & D^4_\sharp & 5\sharp & 5\sharp & 6\sharp \\ 2\flat & 2\flat & 3\flat & 4\flat & 5\flat & E^3 & 6\sharp & 6\sharp \\ 2\flat & 3\flat & 4\flat & 5\flat & 5\flat & 6\flat & F^2 & 6\sharp \\ 3\flat & 4\flat & 4\flat & 5\flat & 6\flat & 6\flat & 6\flat & G^1_\flat \end{bmatrix}$$

Figure 32: Proposed Matrix for the cantus in $8x8$ (64 elements)

Claim. Assuming the cantus is completely written in church modes, each key signature element in the matrix could represent a definite suited mode. (i.e. $0\flat$ = G-Hypoionian)

Example. Comparison to major/minor matrix.

$$\begin{bmatrix} 0\sharp & 0\sharp \\ 1\sharp & 1\sharp \\ 2\sharp & 2\sharp \\ 3\sharp & 3\sharp \\ 4\sharp & 4\sharp \\ 5\sharp & 5\sharp \\ 6\flat/6\sharp & 6\flat/6\sharp \\ 5\flat & 5\flat \\ 4\flat & 4\flat \\ 3\flat & 3\flat \\ 2\flat & 2\flat \\ 1\flat & 1\flat \end{bmatrix} \qquad \begin{bmatrix} C & Am \\ G & Em \\ D & Bm \\ A & F\sharp m \\ E & C\sharp m \\ B & G\sharp m \\ G\flat & E\flat m \\ D\flat & B\flat m \\ A\flat & Fm \\ E\flat & Cm \\ B\flat & Gm \\ F & Dm \end{bmatrix}$$

Figure 33: Major/minor Matrix in $2x12$ (24 elements)

4 Motive IV

Pettersson *8th Symphony*

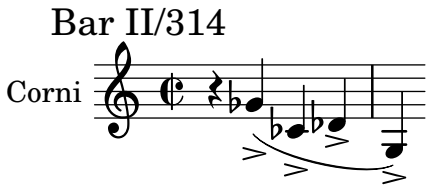

Figure 34: Motive IV *8th Symphony*

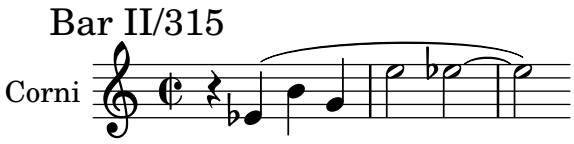

Figure 35: Motive IVa *8th Symphony*

This Motive appears in the middle of Part II of Pettersson's symphony.

Mozart *Symphony No. 41 K.551* »Jupiter«

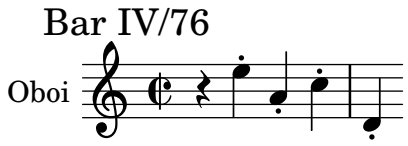

Figure 36: Motive IV *»Jupiter« Symphony*

Figure 36 is a component of the fourth and last movement and one of the five motives of the famous fugato.

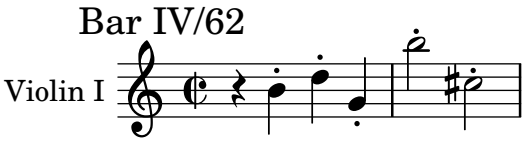

Figure 37: Motive IVa *»Jupiter« Symphony*

Nielsen *Symphony No. 5 CNW 29 Op. 50*

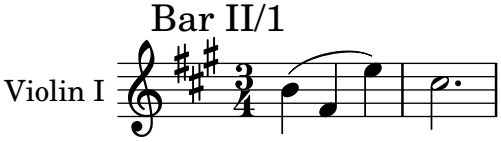

Figure 38: Motive IVb Opening Part II Nielsen *Symphony No. 5*

5 Motive V

Pettersson *8th Symphony*

Figure 39: Motive V *8th Symphony*

Similar to the decreasing retrograde scale in the cantus firmus. Closest match in the *»Jupiter« Symphony* (first movement) is the »female« answer to the »male« statement in Motive I (Figure 2) played by Violin I (Figure 40).

Mozart *Symphony No. 41 K.551* »Jupiter«

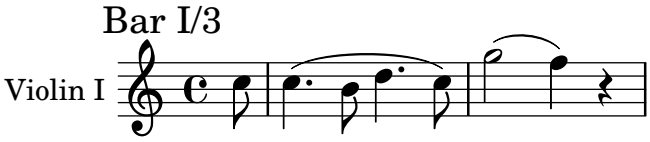

Figure 40: *»Jupiter« Symphony* Opening

Nielsen *Symphony No. 5 CNW 29 Op. 50*

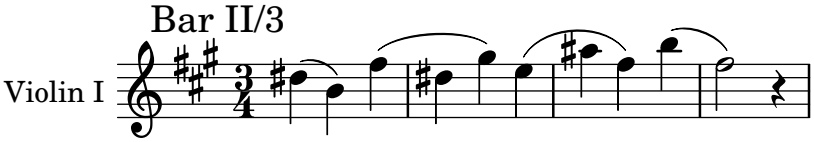

Figure 41: Motive Va Opening Part II Nielsen *Symphony No. 5*

This comparison is not fully satisfying, so it should be also taken into consideration:

Beethoven *9th Symphony in D minor, Op. 125*

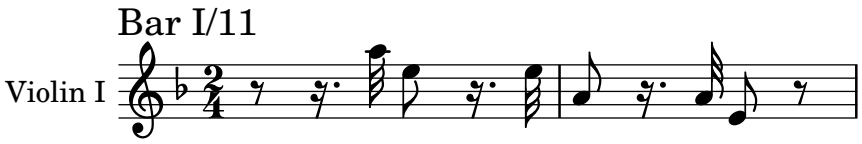

Figure 42: Beethoven *9th Symphony* Movement I Opening

Figure 42[35]

[35] From Score *Ludwig van Beethovens Werke, Serie 1: Symphonien, Nr.9* Leipzig: Breitkopf & Härtel, 1863. Plate B.9. Public Domain.

6 Motive VI

Precursor in Pettersson's *8th Symphony*

Early in second movement there is a precursor of Motive VI. It is more like an accompaniment and has not the rank of a characteristic motive.

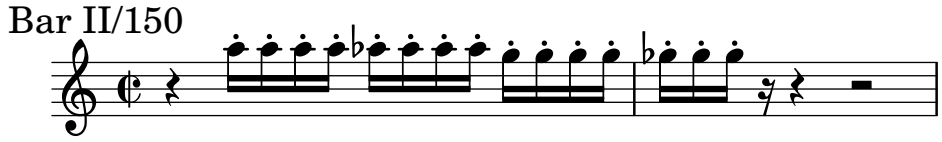

Figure 43: Motive VI Precursor *8th Symphony*

Pettersson *8th Symphony*

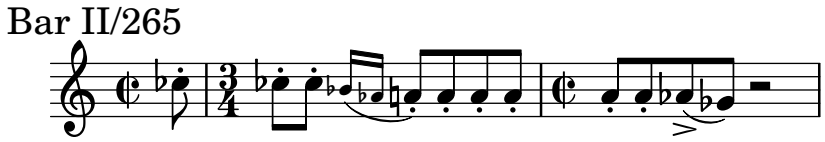

Figure 44: Motive VI *8th Symphony*

Claim. Retrograde Authentic Mode Figuration

Accompaniment Mozart *Symphony No. 41 K.551* »Jupiter«

Only this very unspecific accompaniment can be found in *»Jupiter« Symphony*, a possible citation remains unclear and vague.

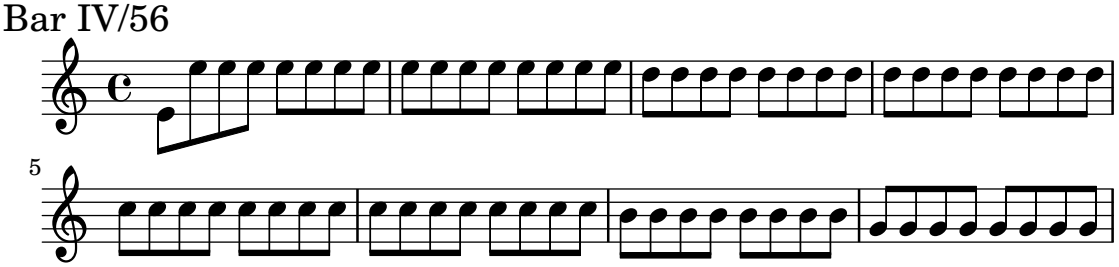

Figure 45: Accompaniment *»Jupiter« Symphony*

MOZART possibly derived from this accompaniment the following prancing staccato 8^{th} notes motive (Ornament: grace, retrograde turn[36]).

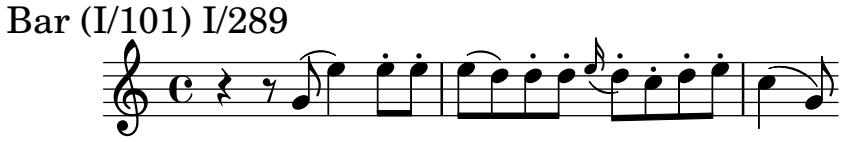

Figure 46: Motive *»Jupiter« Symphony*

[36] Ornament (music): A turn is a short figure consisting of the note above the one indicated, the note itself, the note below the one indicated, and the note itself again. (Wikipedia)

7 Motive VII

Pettersson *8th Symphony*

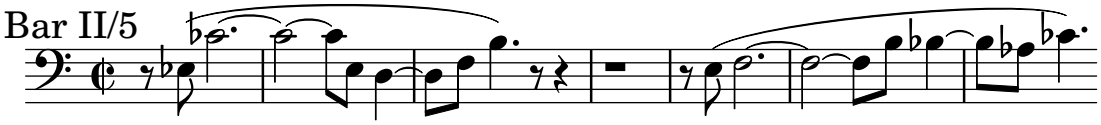

Figure 47: *8th Symphony* Part II Opening

Citation found: Shostakovich *5th Symphony in D minor, Op. 47*

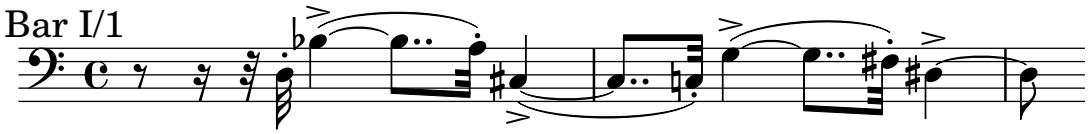

Figure 48: Shostakovich *5th Symphony* Opening Movement I

The upward leaping and falling intervals in Shostakovich's opening (Figure 48)[37] are building a well-structured canon[38].

Precedent

The already mentioned (Figure 42) opening of 1st Movement of Beethoven's *Symphony No. 9 in D minor, Op. 125* is another example of a famous »Tah-dah!« theme.

[37] From Score Dmitri Shostakovich *Symphony No. 5, Op. 47*. New York: Leeds Music Corporation, 1945.
[38] A canon is a contrapuntal compositional technique that employs a melody with one or more imitations of the melody played after a given duration. (Wikipedia)

Variation Pettersson *8th Symphony*

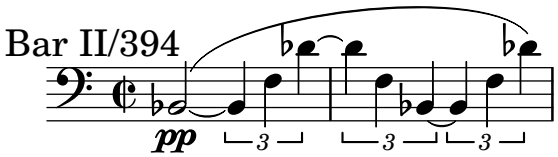

Figure 49: *8th Symphony* Part II

Arpeggiated chord based on B♭ minor (5♭).

Part II
Cited Symphonies

8 Mozart *Symphony No. 41* »Jupiter«

8.1 The Opus

- Wolfgang Amadeus Mozart
  * 27 January 1756 in Salzburg
  † 5 December 1791 in Wien
- Composition date: 1788 in Wien. Last symphony.
- Instrumentation: flute, two oboes, two bassoons, two horns in C, two trumpets in C, timpani in C and G, and strings.
- Climax of Classical symphonic art.
- Composed in the traditional symphonic form of the Classical era (4 Movements, Sonata Form).
- Movement I
  - Contrast, Discontinuity, Juxtaposition.
- Movement IV
  - Synthesis between the Classical and the Baroque compositional technique (Sonata and Fugue).
  - Rudimentary principle of non-repeatability and permanent change.

Remark. Mozart wrote the optimistic symphony in C major, the »key of light«.

8.1.1 Four Movements

I. Allegro vivace

II. Andante cantabile

III. Menuetto: Allegretto

IV. Molto Allegro

Duration: 32'.

8.1.2 Score

Figure 50 (Opening Movement I) and Figure 51 (Opening Movement IV).

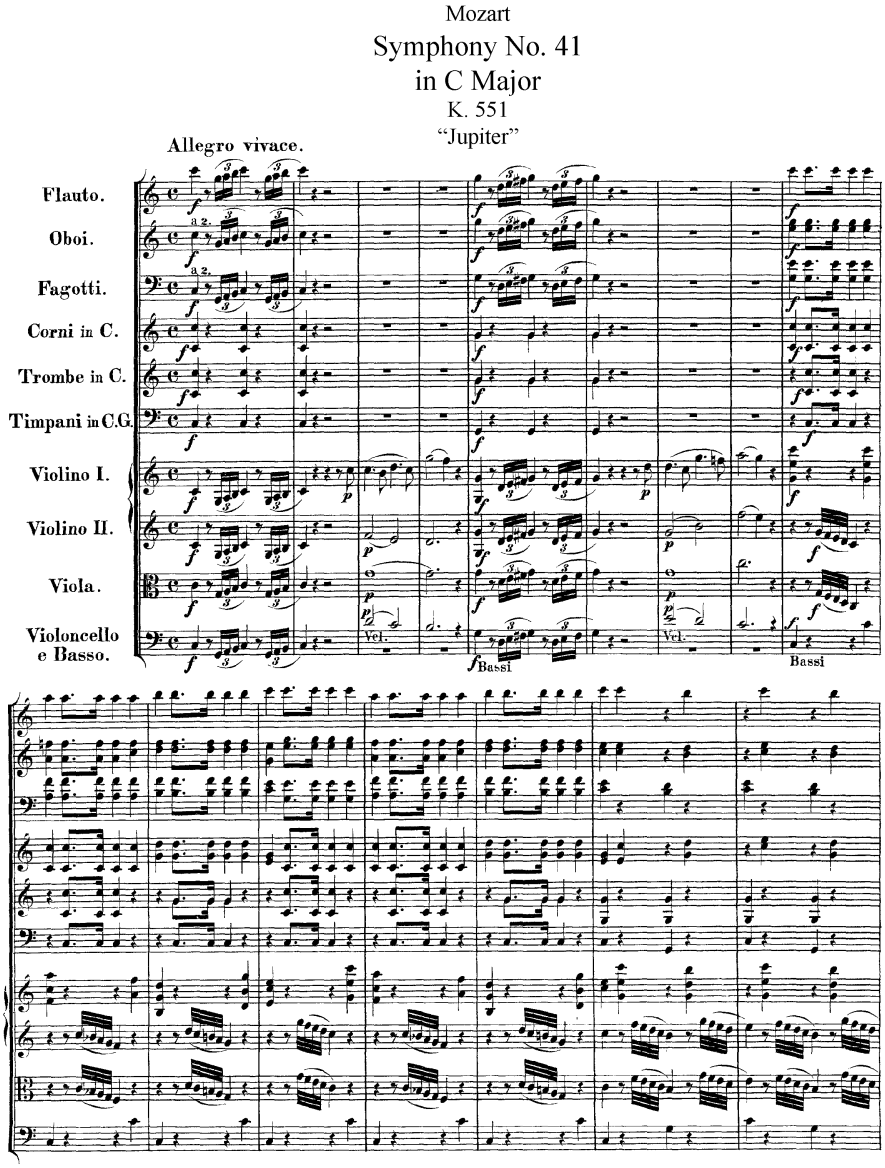

Figure 50: Opening Movement I Score Mozart *»Jupiter« Symphony*

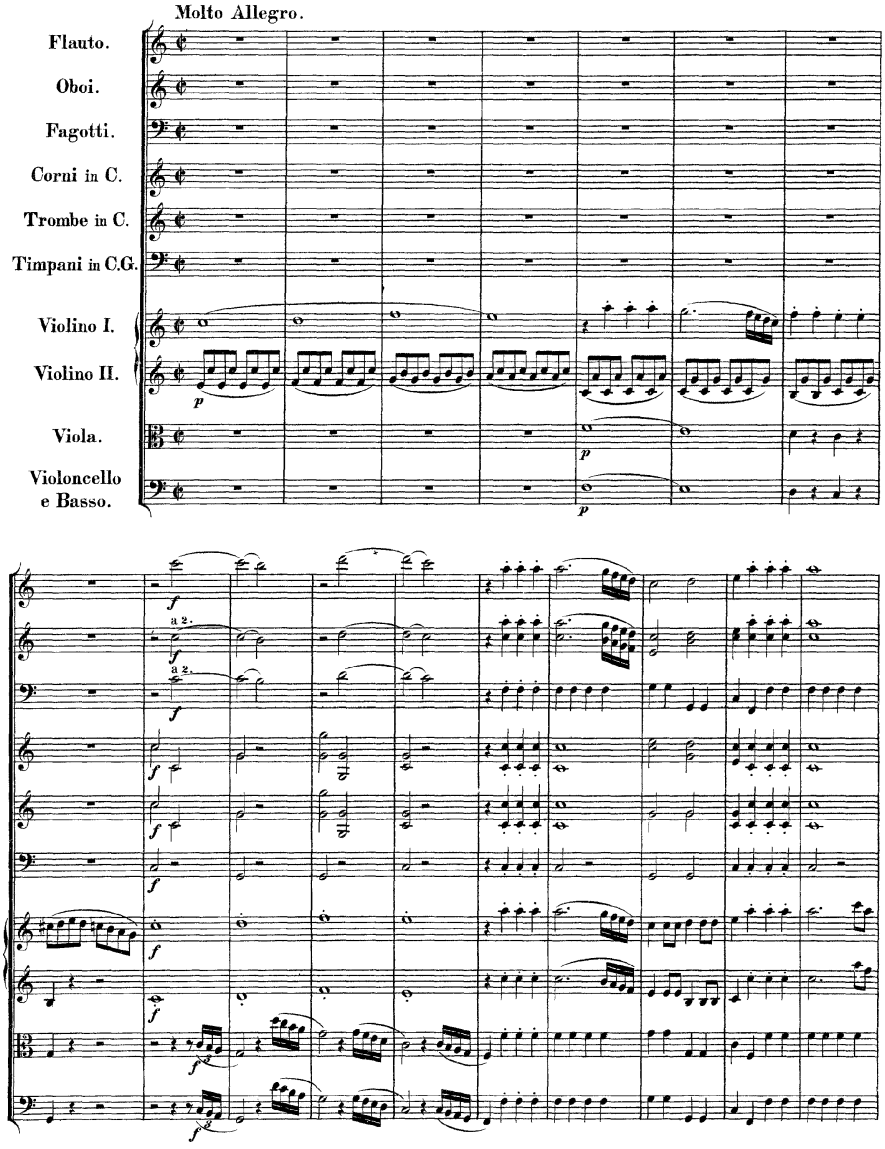

Figure 51: Opening Movement IV Score Mozart *»Jupiter« Symphony*

8.2 Comparison with *8th Symphony*

PETTERSSON's *8th Symphony* Part I contains 2 themes and Part II in summary 5 motives, to be more precise 4 motives and a Classical theme. Here is a parallel to first and last movement of MOZART's *»Jupiter« Symphony*. First movement (Allegro vivace) has 2 main themes. Last movement (Molto Allegro) has also 5 different motives.

8.2.1 Part I

Part I of *8th Symphony* is composed in a conventional, old fashioned technique, but with a modern expressionistic accent and the Principle of non-repeatability. Latter is typical for music of the 20th century. MOZART's opus shows first signs of this composition style. The thematic material is limited. PETTERSSON opposes two very characteristic and dominant themes, causing a strong contrast. For example, PETTERSSON's whole *6th Symphony* is build on a single theme (the 24th barefoot song). The impression of the Part I of PETTERSSON's symphony is that of an old religious ritual, at the beginning a *Catholic Mass* (Motive III, section 3) and later an *Oriental Procession* (Motive I, section 1), maybe a pilgrimage.

8.2.2 Part II

Part II of *8th Symphony* owns a compositional technique inspired by MOZART, especially from his 4th Movement. Completely heterogeneous material is synthesized to archive a intensive and dense matter. MOZART's way to do this is a five-motive-fugato in sonata form.[39] He creates a synthesis of Baroque and Classical elements and summarizes the known symphonic art of that time. The Coda of MOZART's opus has a strong relationship to the Coda[40] of PETTERSSON's opus, with a polyphonic accumulation and synthesis of several different motives and thematic fragments. Later PETTERSSON's *10th Symphony* shows this technique in a condensed and mature perfection. This symphony is based on a mechanical counterpoint, in contrast to the organic counterpoint in *8th Symphony*. The impression of the second part is rather modern. In contrast to the mainly religiously influenced[41] opening of the first part, the second part is more secular and experimental and should probably show PETTERSSON's state of the art.

[39] Wikipedia, 41. Sinfonie (MOZART) (German version).
[40] According to KUBE [36, p.30] the Coda spans 400 bars starting shortly after bar 230.
[41] Ancient Sacred music and Church music.

8.3 Movement I - *Allegro vivace*

Exercise. GLAREANIAN Church mode interpretation.

8.3.1 Exposition

Motive I (section 1, Figure 2) - Classical Theme

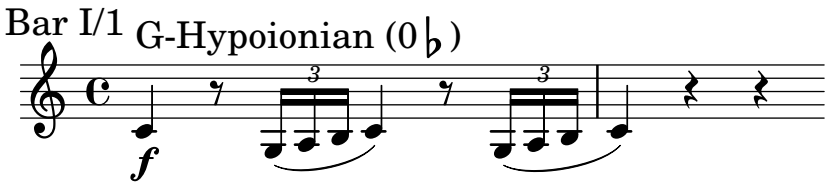

Figure 52: Opening I, Monophony

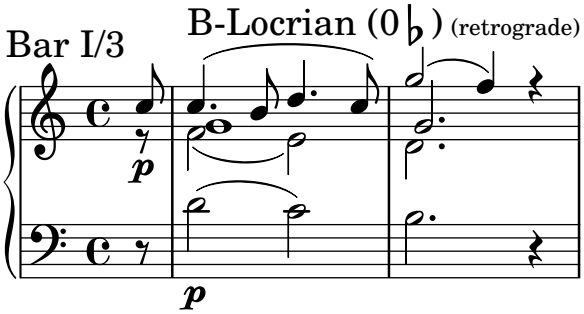

Figure 53: Opening II, Homophony, Cadence

Remark. The B-Locrian triad B D F is established at the end of Figure 53, but the tritonus B F is not emphasized. Reciting tone in B-Locrian is G.[42]

Remark. The same combination of church modes (G-Hypoionian and B-Locrian) can be observed in the cantus firmus at the opening of PETTERSSON's *Symphony No. 8* (Figure 14). MOZART's mode commixture is the starting point and germ for PETTERSSON's *8th Symphony.*

[42] Reciting tone in C major is also G.

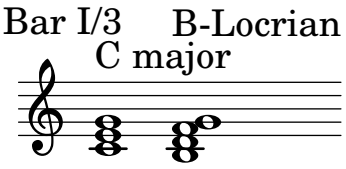

Figure 54: Opening IIa, Cadence

Remark. Figure 54 demonstrates the modal point-of-view of the second part of the Classical theme.

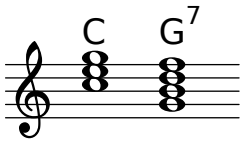

Figure 55: Opening IIb, Harmonic Half Cadence

Remark. Figure 55 shows a more common and traditional Classical interpretation: The C major triad (left) and a dominant 7^{th} chord based on C major (right).

Example. Scale and Chord Duality [Horizontal (linear) and Vertical].

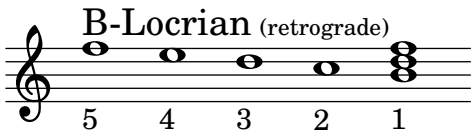

Figure 56: B-Locrian Scale and Chord

Remark. B-Locrian triad is an incomplete dominant 7^{th} chord based on C major (A dominant 7^{th} chord where the root tone is removed, in German: verkürzter Dominantseptakkord).

The corresponding scales are:

Monophony

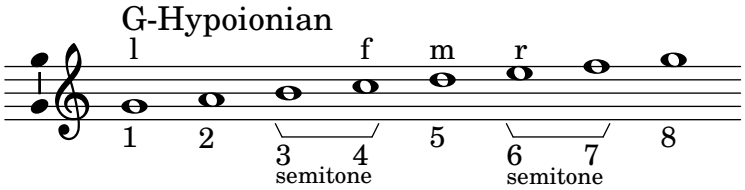

Figure 57: G-Hypoionian Scale

Homophony

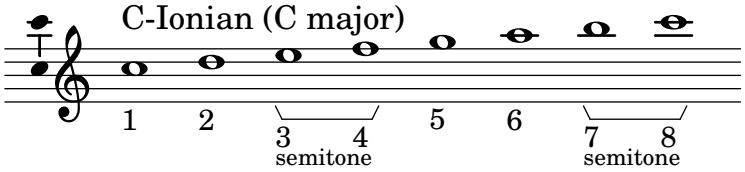

Figure 58: C-Ionian Scale

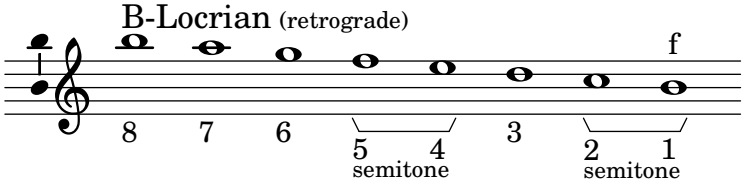

Figure 59: B-Locrian R-Scale

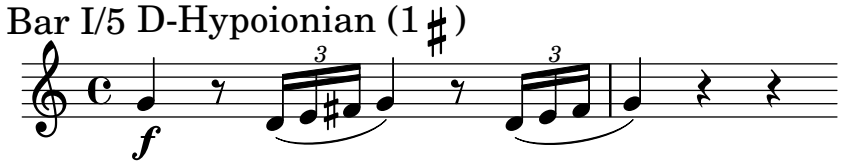

Figure 60: Opening III, Monophony

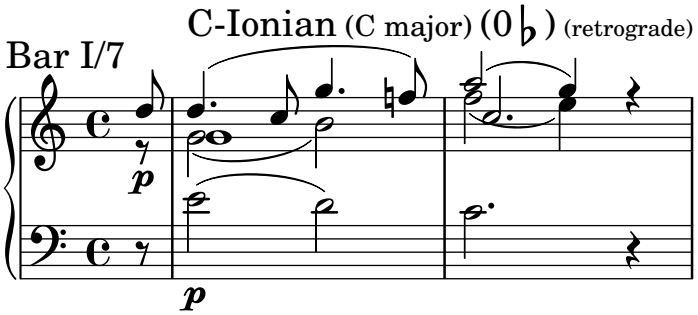

Figure 61: Opening IV, Homophony

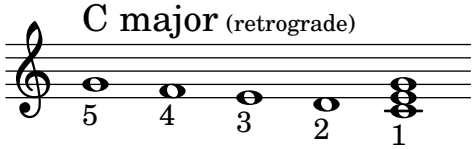

Figure 62: C major, Scale and Chord

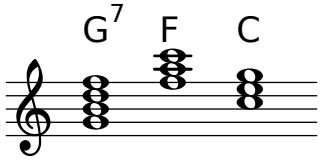

Figure 63: Possible Chords, Harmonic Cadence

8.3.2 Musical Development

Second part of the Musical Development, Bar 161 - 188.

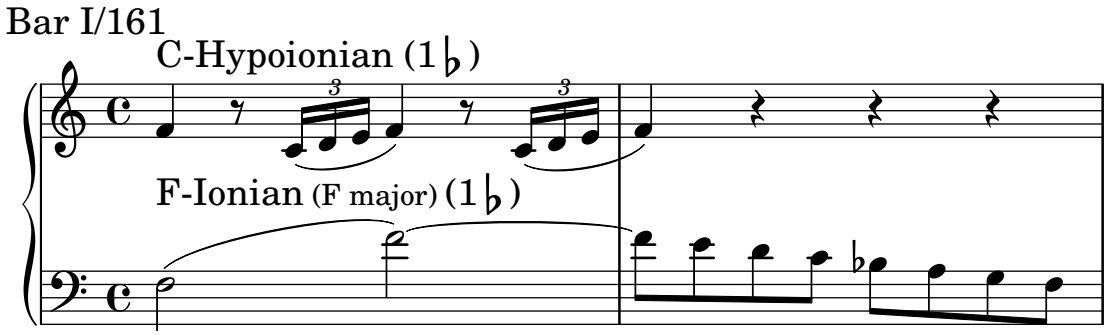

Figure 64: Musical Development I. Bimodality

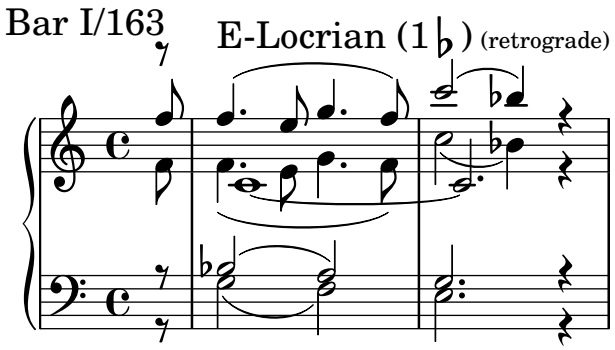

Figure 65: Musical Development II, Homophony, Cadence

Example. Bimodality: C-Hypoionian and F major (Figure 64).[43,44] A closely related pair of plagal and authentic modes with the same finalis F.

[43] Bimodality is the simultaneous use of two distinct pitch collections. (Wikipedia)

[44] Mozart experimented with polytonality one year ago (1787) in *A Musical Joke* (in German: *Ein musikalischer Spaß*) K.522.

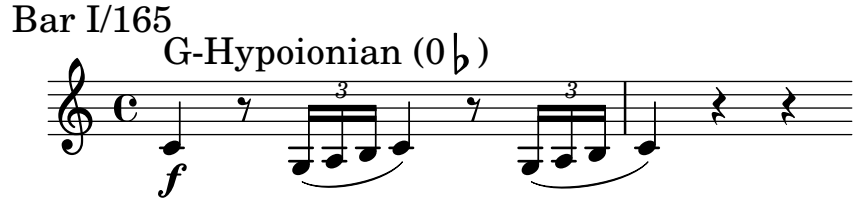

Figure 66: Musical Development III

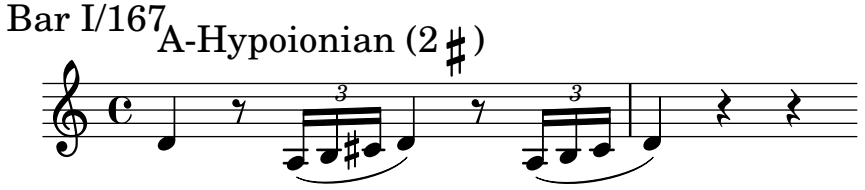

Figure 67: Musical Development IV

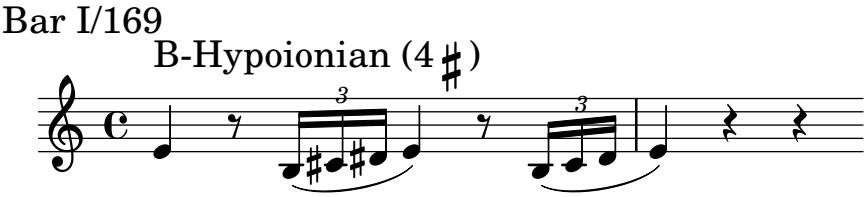

Figure 68: Musical Development V

9 Nielsen *Symphony No. 5* CNW 29

9.1 The Opus

- Carl August Nielsen
  * 9 June 1865 in Sortelung near Nørre Lyndelse, Fyn
  † 3 October 1931 in Copenhagen (København)
- Composition date: 1920-22; Premiere: 24 January 1922 in Copenhagen.
- Modern musical language

Remark. Nielsen described the symphony as »the division of dark and light, the battle between evil and good« and the opposition between »Dreams and Deeds«.[12, p.13]

9.1.1 Two Movements

I. Tempo giusto - Adagio non troppo

II. Allegro - Presto - Andante un poco tranquillo - Allegro

Duration: 35' (20' + 15').

9.1.2 Reception

A Swedish performance[45] on 20 January 1924, under the baton of Georg Schnéevoigt[46], caused quite a scandal; the *Berlingske Tidende* reported that some in the audience could not take the modernism of the work:[47]

> Midway through the first part with its rattling drums and »cacophonous« effects a genuine panic broke out. Around a quarter of the audience rushed for the exits with confusion and anger written over their faces, and those who remained tried to hiss down the »spectacle«, while the conductor Georg Schnéevoigt drove the orchestra to extremes of volume. This whole intermezzo underlined the humoristic-burlesque element in the symphony in such a way that Carl Nielsen could certainly never have dreamed of. His representation of modern life with its confusion, brutality and struggle, all the uncontrolled shouts of pain and ignorance - and behind it all the side drum's harsh rhythm as the only disciplining force - as the public fled, made a touch of almost diabolic humour.

Remark. Pettersson was at that time 12 years old.

9.1.3 Score

Figure 69 (Opening Movement I) and Figure 70 (Opening Movement II).[48]

[45] *Konsertföreningens orkester* in Stockholm.

[46] Principal Conductor, *Konsertföreningens orkester* 1915–1924, since 1959 Stockholm Philharmonic Orchestra, since 1992 *Kungliga Filharmoniska Orkestern*, Royal Stockholm Philharmonic Orchestra.

[47] Wikipedia and [12].

[48] Score: *Carl Nielsen – Værker, Serie II, Bd. 5*, ed. Michael Fjeldsøe, Copenhagen: Carl Nielsen Udgaven, Det Kongelige Bibliotek, Copyright © 1998. CC BY-NC-ND 3.0.

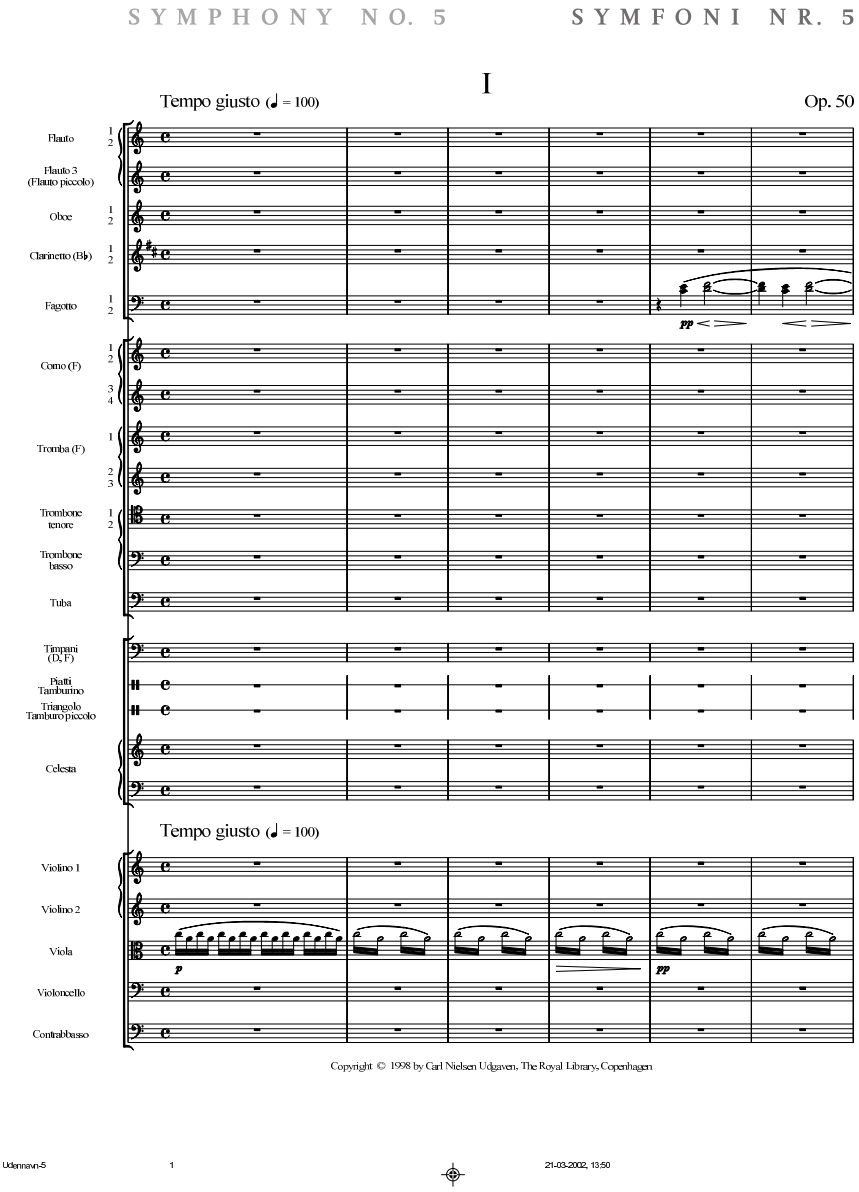

Figure 69: Opening Movement I Score NIELSEN *Symphony No. 5*

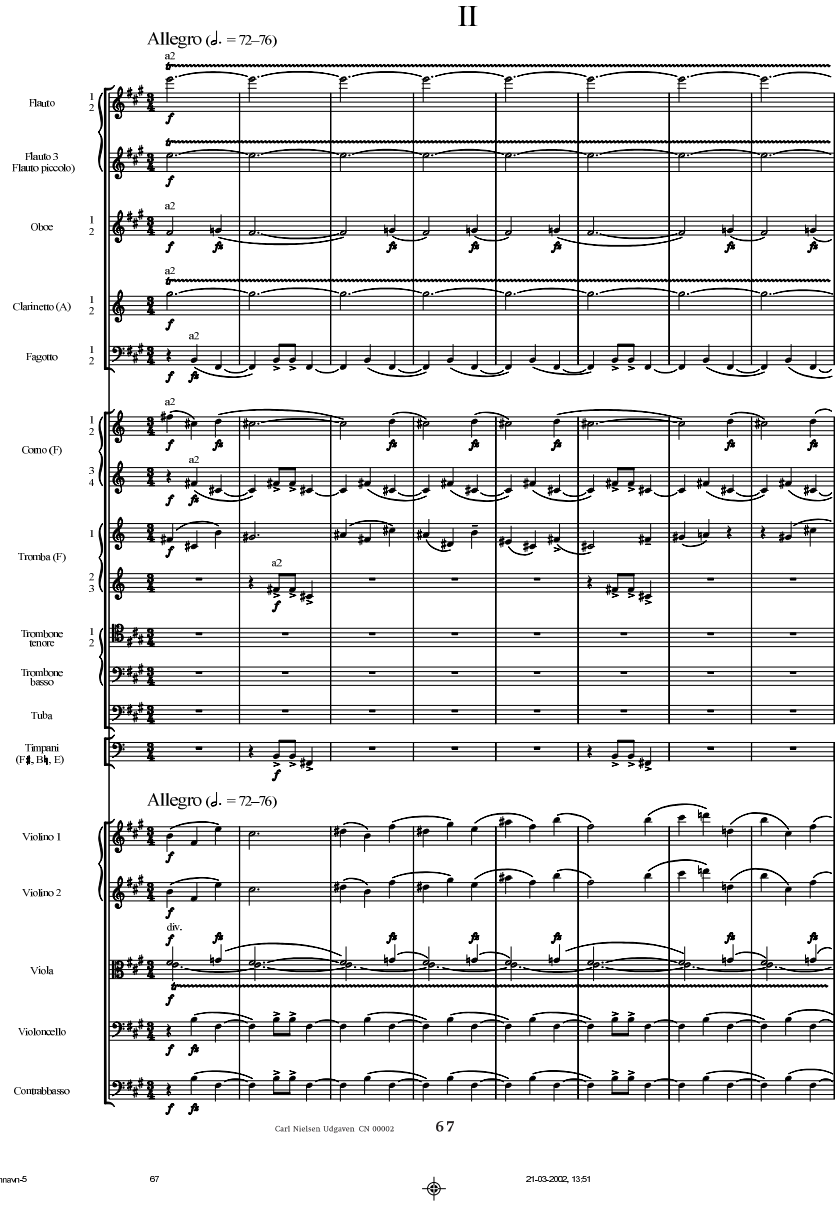

Figure 70: Opening Movement II Score NIELSEN *Symphony No. 5*

9.2 Pettersson and Nielsen

9.2.1 Organicism

In a letter to Ture Rangström written in February 16, 1920 [13, p.19][11, p.190]:

> For what matters now and in the future is certainly to work towards uniting the utmost freedom in terms of individual content and the utmost strictness with regard to organicism: that is to say, coherence.
>
> Carl Nielsen

This could have been the mission statement for Pettersson's *6th Symphony*. A way to archive this mission in music is linear counterpoint or polyphony. The individual voices have nearly unlimited freedom and are free of major/minor tonality. Nielsen's first attempt was the concept of »progressive tonality«.[48] Examples are »modulation to a remote key« [46] or the enhancement »non-functional modulation« [46] and changing modes over a static tonal center, called »modal interchange« [40, p.40]. Nielsen falls back to old Glareanian church modes and the ancient principle of constructing a melody based on finalis (tonic), reciting tone and ambitus to gain this freedom.

Pettersson's development of the concept is more radical. He expanded and developed this ancient principle to »commixed modes«, where in common cases every note is a finalis.[49] (subsection 3.1) This would be the total loss of context. But there is a modal coherence between the individual notes. They are in related modes (»related commixed modes«). Related modes can be defined as scales with same semitone position or shift by one step. Nielsen and Pettersson also use groups of notes in the same mode. They build figuration or motives. Structurally related motives and themes produce motivic thematic coherence. In contrast, Motive II (section 2) is an example of a motive with mode commixture.

Nielsen's ideal of organicism [35] as an »unbroken musical current«[50] [37, p.23] is also realized in Pettersson's symphonic music. Most of Pettersson's symphonies are written in a single movement.[51] Nielsen describes in his music a »natural world that is unpredictable, even capricious« [37, p.23].

[49] Comparable to the dictum »any chord can follow another chord« (Max Reger, cited in [16, p.1]), but without the tonal implications of a chord.

[50] The four movements of *4th Symphony CNW 28 Op. 29* »Det Uudslukkelige« (1914-1916) are played without breaks (*attacca subito*).

[51] Example is the 70 minutes single stream in *9th Symphony*.

9.2.2 Vegetatio

Definition. Literally: Something that grows. The act or process of vegetating, or growing as a plant does; vegetable growth.

In a letter to JULIUS RÖNTGEN at February 15, 1920 [11, p.189]:

> The music should express the manifestation of the most elementary forces of all among human beings, animals, even plants. We can say that if the whole world were destroyed by fire, flood, volcanoes, etc., and all living things were destroyed and died, still Nature would again begin to breed new life, begin to push forward with the strong and fine forces that are in matter itself.
>
> In music as in nature, a small shoot can develop into a large organism, but there are also strong, destructive forces of nature.
>
> CARL NIELSEN

At the top of the first page in the autograph score of *5th Symphony* NIELSEN wrote »Vegetatio«.[52] PETTERSSON's music is »Vegetatio«.[53] STOÏANOVA [50, pp.28–31] uses the terms »organic growth« and »organic, multidimensional kinetic unfolding«.[54] KÄHLER [21, p.60] characterizes PETTERSSON's music as »vegetative« and NIELSEN's music wrongly as »architectural«. Although he differentiates subsequently in »vegetative« individual motivic and melodic progression and »architectural« superior framework. This refers to NIELSEN's organicism.

9.2.3 Two Movements

NIELSEN's *5th Symphony* has a non-customary structure, comprising two movements instead of the common three or four.[55] PETTERSSON's *8th Symphony* is also organized in two parts. NIELSEN's innovative and experimental first movement is divided into the contrasting interconnected sections *Tempo giusto* in common time and *Adagio non troppo* in 3/4 time. This part is possibly an expression of NIELSEN's reflection of the idea of modernism and archaism.[56] The second movement in four sections consists of an »exposition«, a fast fugue, a slow fugue and a brief coda.[57] These fugato-like parts remind at the last movement of MOZART's *»Jupiter« Symphony*.[58] An interpretation is, that second movement is a complete »Classical« symphony partly in »Baroque« fugato style. Quasi a symphony in a symphony. Second part reflects NIELSEN's concern with musical traditionalism.

Remark. ALLAN PETTERSSON can be considered as a scholar of CARL NIELSEN. Precedent is WOLFGANG AMADEUS MOZART.

[52] *Carl Nielsen – Værker, Serie II, Bd. 5*, ed. Michael Fjeldsøe, Copenhagen: Carl Nielsen Udgaven, Det Kongelige Bibliotek , xvi.
[53] Archetype is PETTERSSON's *6th Symphony*.
[54] Influenced by the musical conceptions and models by ERNST KURTH [24] and HANS MERSMANN [32].
[55] Wikipedia.
[56] Might be influenced by IGOR STRAVINSKY's *Le sacre du printemps* (1913).
[57] Wikipedia.
[58] MOZART's *»Jupiter« Symphony* was conducted by NIELSEN at the *Gothenburg Orchestral Society* on April 17, 1922. (*Festskrift* 1915-1925, cited in [17, p.31].)

9.3 Movement I - *Tempo guisto*

9.3.1 Main Theme

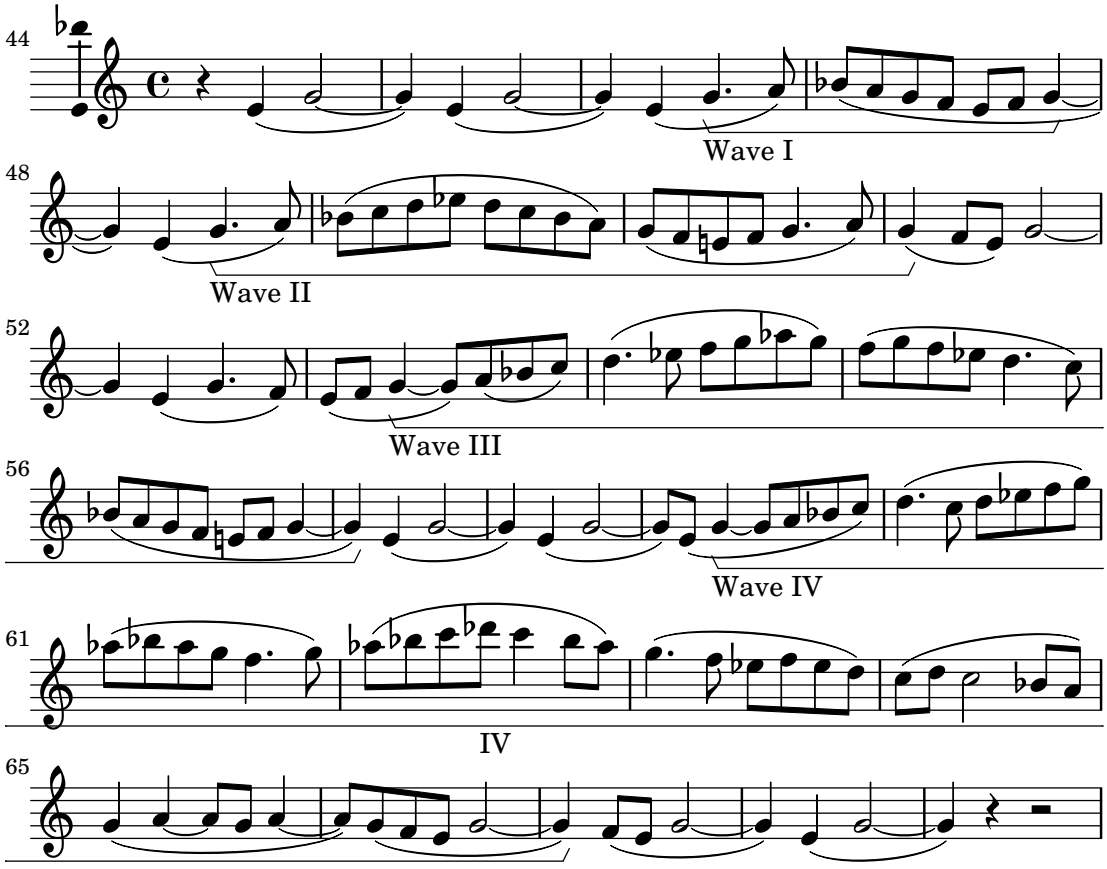

Figure 71: Main Theme in 1st Movement (Bar 44-68)

Melody played by Violin I (Figure 71)[59].

Remark. The organic thematic development is founded on a strictly diatonic principle of construction.[13, p.20] The development of the main motive proceeds in four coherent waves.

Claim. Main finalis is G.

[59] From Score Carl Nielsen *Symphony No. 5, Op. 50* Copenhagen: Skandinavisk Musikforlag, 1950. Plate SM 4552. Public Domain.

Example. Pitch structure of the melody (main theme, Bar 44-68).[60]

Remark. Flatward shift for higher pitches.

Conjecture. *Modulated plagal mode chain.*

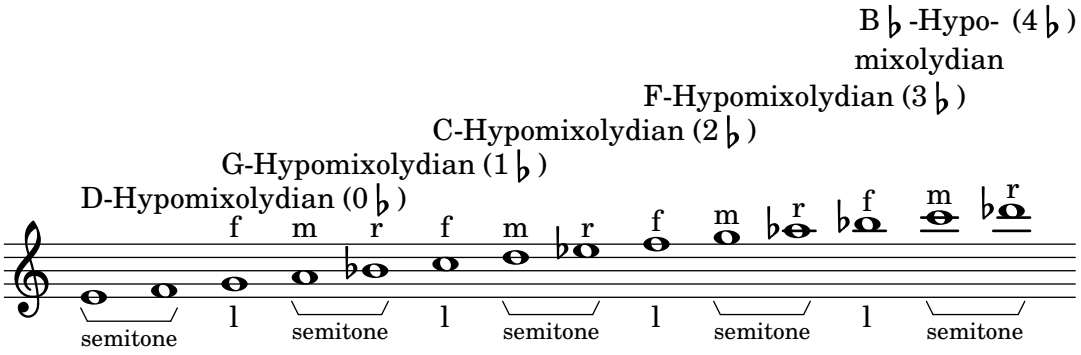

Figure 72: Scale of the Main Theme (Bar 44-68)

- l = lowest tone in scale (G,C,F,B♭) - fourth under finalis (plagal)
- f = finalis (G,C,F,B♭) - last tone of a modal piece
- m = mediant
- r = reciting tone

Remark. Plagal mode chain of transposed Hypomixolydian[61] tetrachords.[62] Finalis is the lowest tone in plagal scale of the next flatward key. Hypomixolydian is the last of the eight Medieval church modes.

Fact. *Diatonic scale based on alternating semitones and two whole tones.*

$$\left[\frac{1}{2}, 1, 1, \frac{1}{2}, 1, 1, \frac{1}{2}, 1, 1, \frac{1}{2}, 1, 1, \frac{1}{2}\right] \tag{1}$$

The tetrachordal structure is: $\left[1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1\right]$ and the heptachordal interpretation is: $\left[1, \frac{1}{2}, 1, 1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1, 1, \frac{1}{2}, 1\right]$.[63] See also *kitmum* in the Babylonian tonal system and the relationship to the Hypodorian mode.[8, p.11]

[60] Compare to [13, p.24].
[61] Ambiguous: Hypomixolydian or Hypodorian.
[62] In Figure 72 the tetrachord of mode D-Hypomixolydian is incomplete. The basic lowest tone in scale D on the left side is missing.
[63] Palindrome.

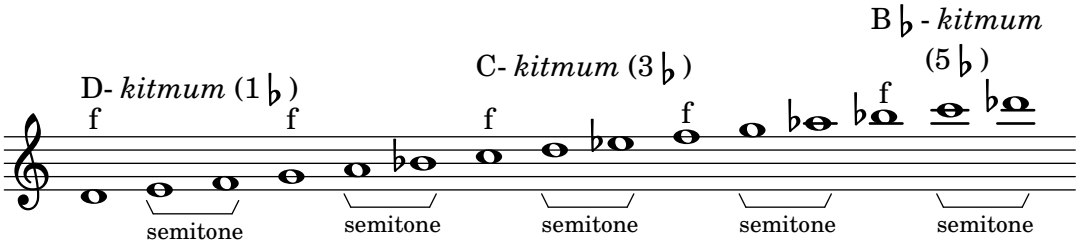

Figure 73: Scale of the Main Theme (Bar 44-68) II

Remark. Figure 73 is an interpretation of the tonal structure of Nielsen's Main theme in consecutive *kitmum* heptachords of the Babylonian tonal system. It is equivalent to the Church mode interpretation in Figure 72.

Claim. The Main theme of Nielsen's *5th Symphony* mimics the Bohr[64] orbital model (Figure 74).

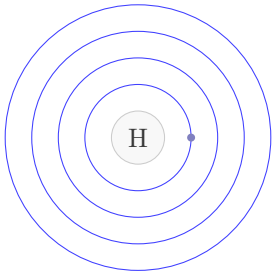

Figure 74: Bohr Model for Hydrogen

[64] Niels Henrik David Bohr (7 October 1885 – 18 November 1962) was a Danish physicist, philosopher and footballer, who made foundational contributions to understanding atomic structure and quantum mechanics, for which he received the Nobel Prize in Physics in 1922. (Wikipedia)

Conjecture. *Heptachord* kitmum *can have different finalis. The result is an Authentic heptachord and a Plagal heptachord.*

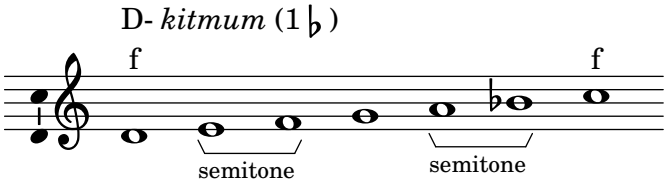

Figure 75: Authentic D-*kitmum*, Finalis D (retrograde) and Finalis C

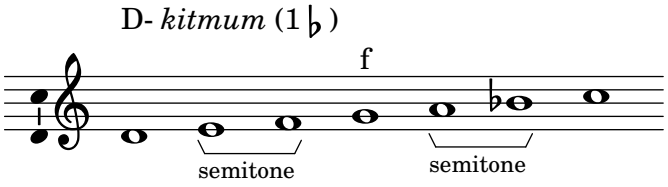

Figure 76: Plagal D-*kitmum*, Finalis G

Remark. Babylonian plagal heptachord is absolutely symmetric in contrary to the unsymmetrical Glareanian plagal mode, that has a fifth above the finalis and a fourth below.

9.3.2 Theme Variation I

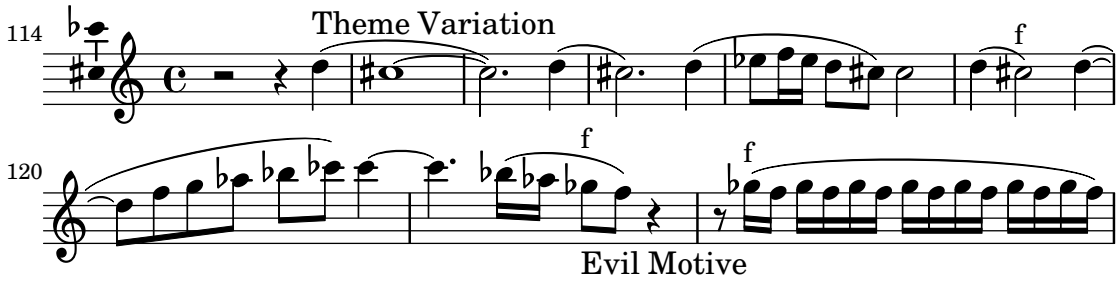

Figure 77: Theme Variation in 1st Movement (Bar 114-121)

Remark. Transition from Theme variation to Evil Motive.

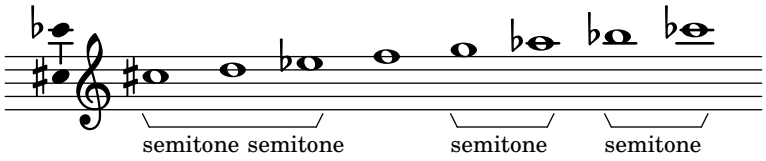

Figure 78: Scale of the Theme Variation (Bar 114-121)

Remark. Diatonic asymmetrical »octatonic« scale.

$$\left[\frac{1}{2}, \frac{1}{2}, 1, 1, \frac{1}{2}, 1, \frac{1}{2}\right] \tag{2}$$

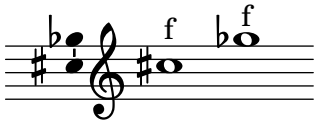

Figure 79: Finalis, Theme Variation and Evil Motive

Remark. Theme variation is a tetrachord (fourth) lower than the Evil Motive in Bar 122 (See also Figure 89).

9.3.3 Theme Variation II

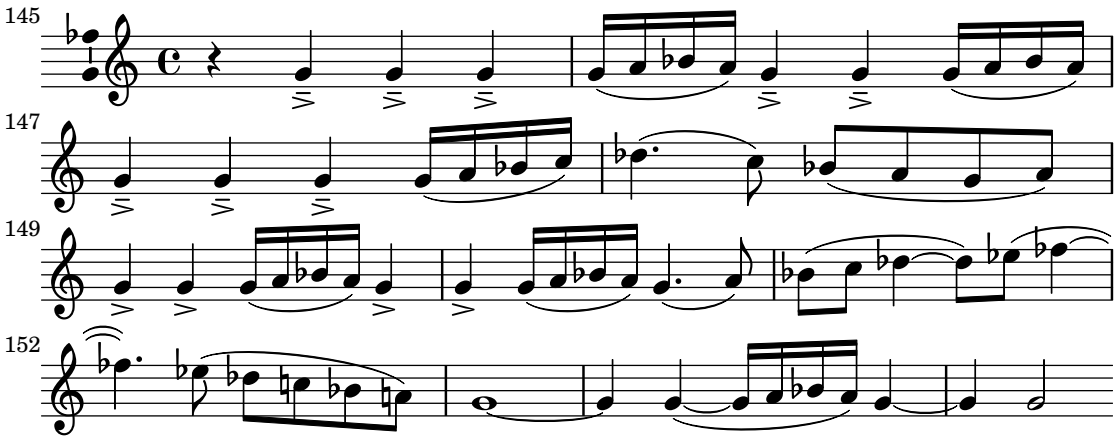

Figure 80: Theme Variation in 1st Movement (Bar 145-154)

Claim. Finalis is G.

Example. Pitch structure of the melody (Bar 145-154).

Remark. Flatward shift for higher pitches.

Conjecture. *Modulation Chain.*

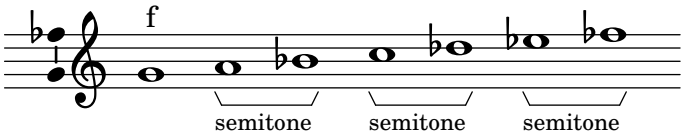

Figure 81: Scale of the Theme Variation (Bar 145-154)

Remark. Diatonic heptachord[65] scale based on alternating semitones and whole tones. Octatonic scale, first mode.[66,67,68,69]

$$\left[1, \frac{1}{2}, 1, \frac{1}{2}, 1, \frac{1}{2}\right] \tag{3}$$

[65] Compare to the Babylonian tonal system.[8, p.13]
[66] Each octatonic scale has exactly two modes. (Wikipedia)
[67] Second mode see Pattern 5.
[68] This mode is not part of the Babylonian tonal system.
[69] Messiaen's second mode of limited transposition.

9.3.4 Theme Variation III

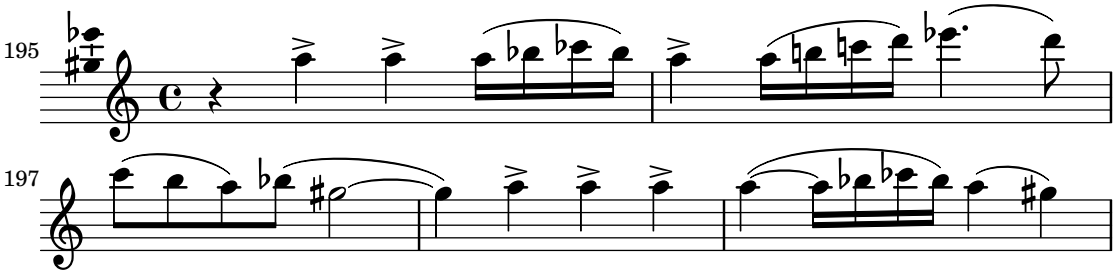

Figure 82: Theme Variation in 1st Movement (Bar 195-212)

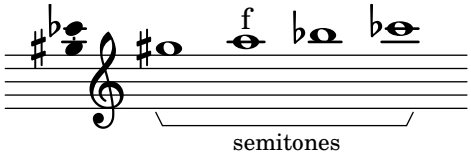

Figure 83: Scale I of the Theme Variation (Bar 195-212)

Remark. Diatonic semitone scale. Ambitus is a minor third.

$$\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}\right] \tag{4}$$

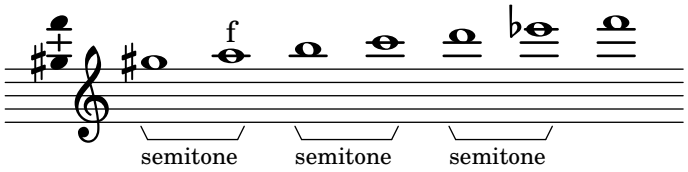

Figure 84: Scale II of the Theme Variation (Bar 195-212)

Remark. Octatonic scale, second mode.[70,71]

$$\left[\frac{1}{2}, 1, \frac{1}{2}, 1, \frac{1}{2}, 1\right] \tag{5}$$

[70] Each octatonic scale has exactly two modes. (Wikipedia)
[71] First mode see Pattern 3.

Claim. Finalis is A. Interchange.

Remark. The lack of whole tones leads to chromaticism:

$$\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}\right] \tag{6}$$

9.3.5 The Evil Motive

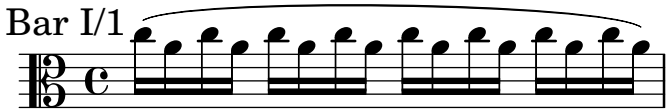

Figure 85: Opening Viola tremolo

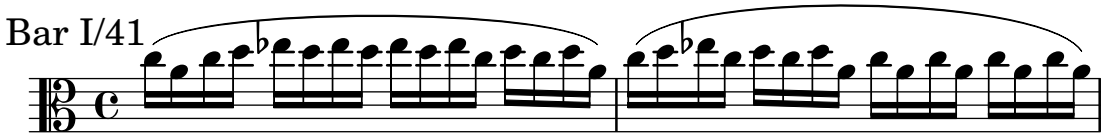

Figure 86: Evil Motive (Bar 41-42)

Remark. Evil Motive in Figure 86 has Finalis C (Plagal mode). Since Evil Motive is the logical continuation of Opening Viola in Figure 85, it can be assumed, that Opening Viola has also Finalis C, although the finalis or mode is not established.

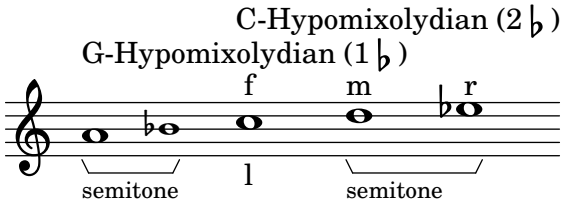

Figure 87: Pitch Structure of the Evil Motive (Bar 41-42)

9.3.6 Main Theme and Evil Motive

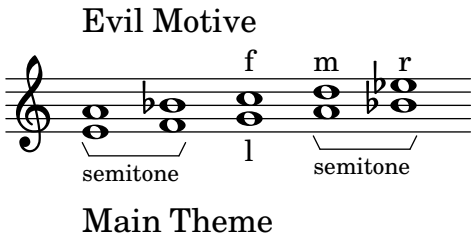

Figure 88: Pitch Structure of the Evil Motive (Bar 41-42) and the Main Theme (Bar 44-68)

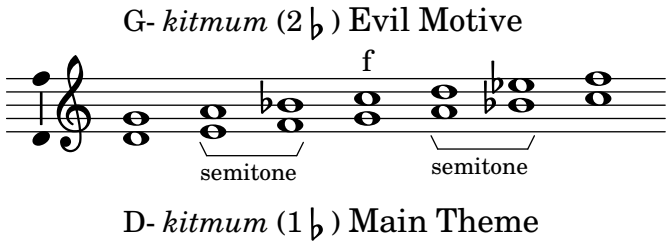

Figure 89: Babylonian mode *kitmum* Scales I

Remark. Main Theme (Figure 71) is a Tetrachord (fourth) lower than the Evil Motive (Figure 86).

9.3.7 Opening Bassoon and Evil Motive

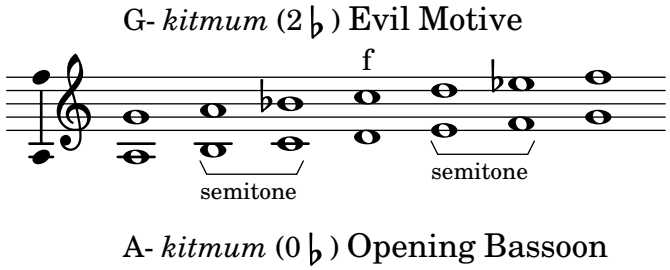

Figure 90: Babylonian mode *kitmum* Scales II

Remark. Opening Bassoon (Figure 4) is a Heptachord lower than the Evil Motive (Figure 86) and Opening Viola[72] (Figure 85).

[72] Dyad (A C), mode not established.

9.3.8 Opening Bassoon

Example. Why does NIELSEN prefer Dorian and Hypomixolydian mode (See Figure 4)?

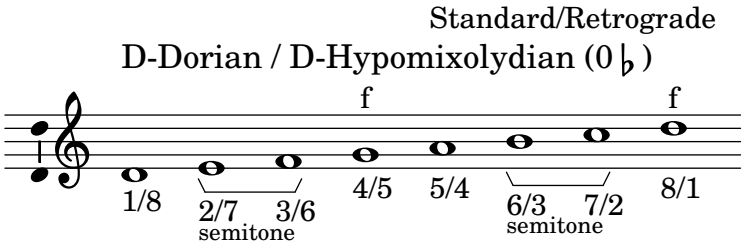

Figure 91: D-Dorian and D-Hypomixolydian

Remark. GLAREANIAN mode. Symmetry of semitone position.[73]

$$\left[1, \frac{1}{2}, 1, 1, 1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1, 1, 1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1, 1, 1, \frac{1}{2}, 1\right] \tag{7}$$

Remark. The modulated plagal mode chain in Figure 72 and the modulation chain in Figure 81 show also perfect symmetry of semitone position.

Opening Viola[74] (Figure 85), Evil Motive (Figure 86) and Main Theme (Figure 71) can be classified as transposed Hypomixolydian tetrachords (or *kitmum* mode), but Opening Bassoon (Figure 4) is in D-Dorian (0♭)[75]. D-Hypomixolydian and D-Dorian are related and coherent. Both have the same lowest tone in scale (D) and therefore same semitone position, but different finalis (D and G) [19, p.63] (Figure 91). This might be the reason for the ambiguous, but organic character of the opening.

[73] Palindrome.
[74] Dyad (A C), mode not established.
[75] A-Hypodorian and D-Dorian, Modal Interchange on finalis D.

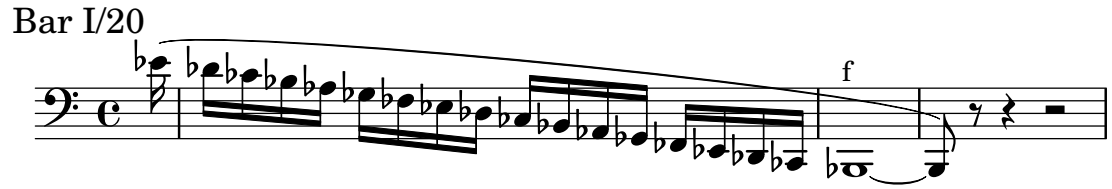

Figure 92: Opening Bassoon Descent (Bar 20-21)

Remark. Glareanian mode. Finalis B♭.

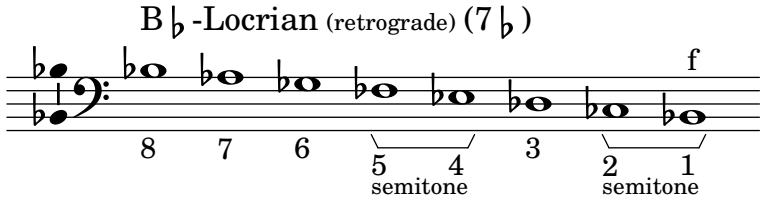

Figure 93: Scale Opening Bassoon Descent (Bar 20-21)

Example. Long-term mode progress.

$$0\flat \to 7\flat$$

9.3.9 Summary

Table 1: Diatonic Pattern

Bar		Pattern	Mode
5	Opening Bassoon	$\left[1, \frac{1}{2}, 1, 1, 1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1, 1, 1, \frac{1}{2}, 1\right]$	Dorian
1/41	Evil Motive	$\left[1, \frac{1}{2}, 1, 1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1, 1, \frac{1}{2}, 1\right]$	*kitmum*
44	Main Theme	$\left[1, \frac{1}{2}, 1, 1, \frac{1}{2}, 1\right], \left[1, \frac{1}{2}, 1, 1, \frac{1}{2}, 1\right]$	*kitmum*
114	Theme Variation I	$\left[\frac{1}{2}, \frac{1}{2}, 1, 1, \frac{1}{2}, 1, \frac{1}{2}\right]$	asymmetrical »Octatonic«
145	Theme Variation II	$\left[1, \frac{1}{2}, 1, \frac{1}{2}, 1, \frac{1}{2}\right]$	Octatonic 1
195	Theme Variation III	$\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}\right]$ and $\left[\frac{1}{2}, 1, \frac{1}{2}, 1, \frac{1}{2}, 1\right]$	Semitones and Octatonic 2

Part III
Structure

10 Scope of Motives

10.1 Part I - Analysis

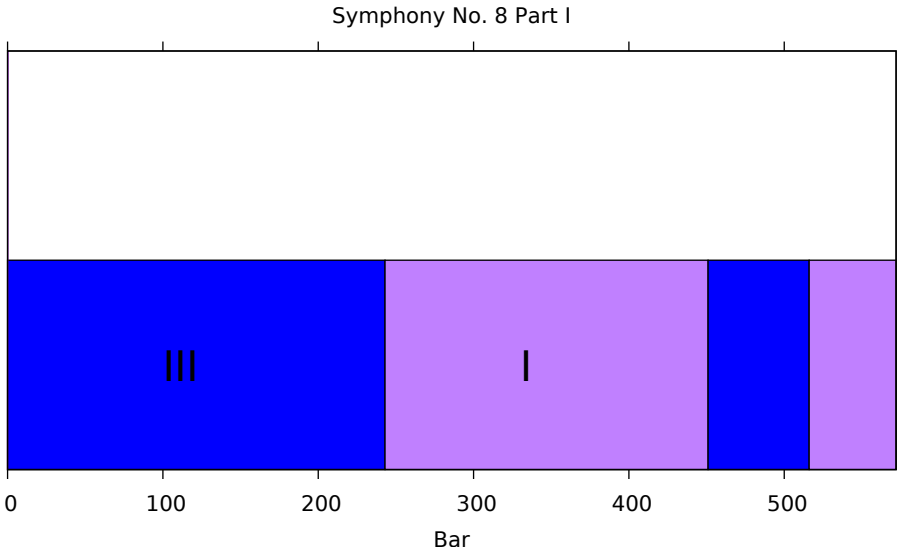

Figure 94: *8th Symphony* Part I - Scope of Motives

10.2 Part II (Movement) - Synthesis

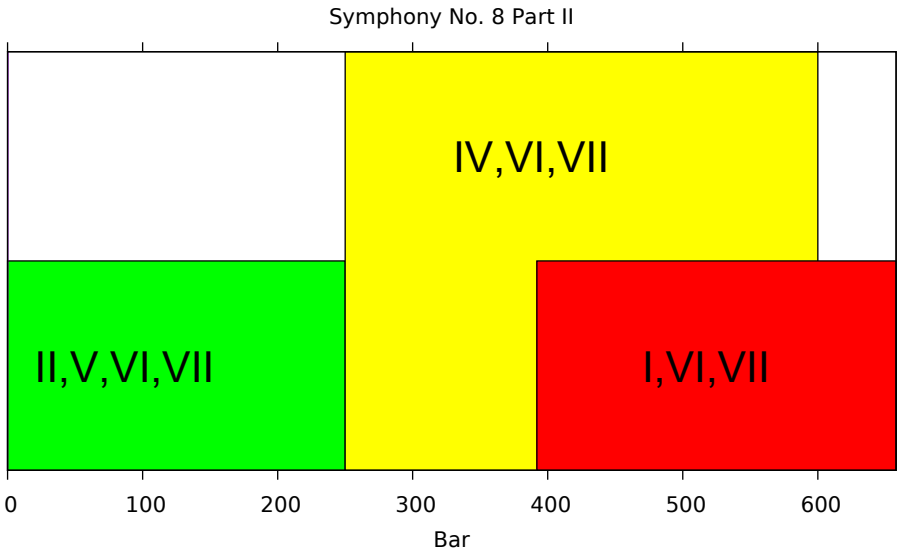

Figure 95: *8th Symphony* Part II - Scope of Motives

11 Texture

Pettersson's *8th Symphony* seems to have also the character of a music theoretical work. Following compositional techniques at the beginning of each of the 2 parts are exemplary.

11.1 Texture Part I

11.1.1 Cantus

Example. »Medieval Style«, intended Monophony (See also [29, p.28]).

Melody

Figure 96: Cantus - Opening

See Motive III, section 3 (Figure 8).

Accompaniment

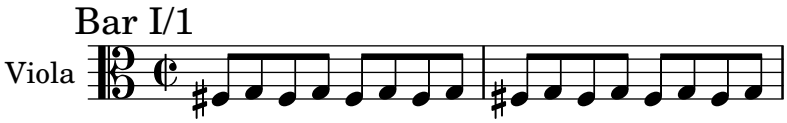

Figure 97: Accompaniment I - Opening

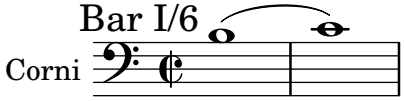

Figure 98: Accompaniment II - Opening

As KUBE stated, there is only little harmonic connection between the melody and the accompaniment: »ambivalent relation between melody and accompaniment« or »(melody) ... not always congruent to grounding harmony«.[23, pp.24–25]

Ambiguous bimodal coloring of the melody.[76] So this might be a reason, to consider the opening of Part I as a special case of polyphony, nearby intended monophony. PETTERSSON adds a harmonically unconnected, highly fragmented accompaniment to the cantus. This presentation emphasizes the plainsong[77].

[76] Comparable to NIELSEN *Symphony No. 5 CNW 29 Op. 50*, Opening. See also *Mobile Pitches & Oscillating Macroharmony* in [46, pp.268–272].

[77] Plainsong (also plainchant; Latin: cantus planus) is a body of chants used in the liturgies of the Catholic Church. (Wikipedia)

11.1.2 Medieval

900-1400

Example. »Medieval Style«, Early Polyphony, Organum[78], Cantus played unisono by Viola and Clarinet, 3 Voices. Bar 62-97, Bar 78ff Phrygian mode.[23, p.29]

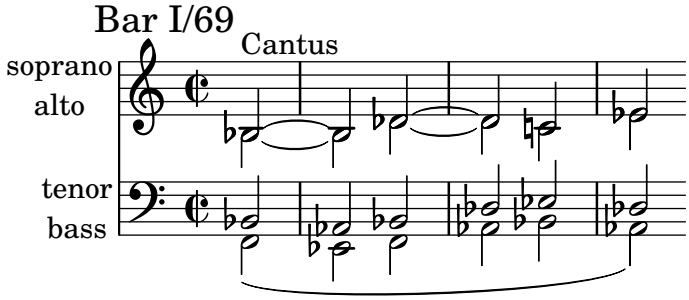

Figure 99: Medieval, Organum

The typical intervals in organum are perfect unison (P1), fourth (P4), fifth (P5) and octaves (P8).[79] Figure 99 shows a perfect fourth parallel organum in the lower voices (vox organalis). The voice leading of the cantus (upper voice in tenor, vox principalis) is independent, but usually at a perfect fifth. So it is a combination between rigid Early Organum and Free Organum. A three voice organum is called »Organum Triplum«. The organum is structured by an Ostinato in the two lower voices (Figure 100). All voices are transposed to dark modes.

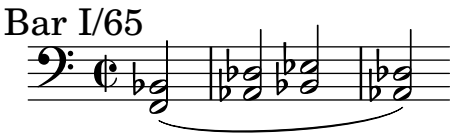

Figure 100: Ostinato

[78] In its earliest stages, organum involved two musical voices: a Gregorian chant melody, and the same melody transposed by a consonant interval, usually a perfect fifth or fourth. Over time, composers began to write added parts that were not just simple transpositions, thus creating true polyphony. (Wikipedia)

[79] Frequency ratios of consonant intervals: 1:1 (unison), 4:3 (perfect fourth), 3:2 (perfect fifth), 2:1 (octave).

11.1.3 Renaissance

1400-1600

Example. »Renaissance Style«[80,81], Polyphony, Counterpoint[82,83], 5 Voices, Tutti, First Climax.

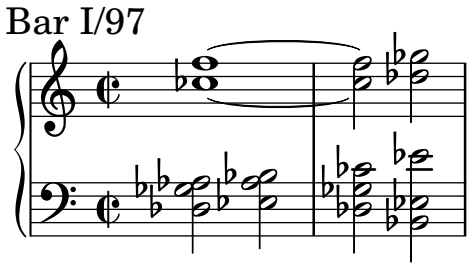

Figure 101: Renaissance, Counterpoint

From the early Renaissance era (Bar 97, Figure 101) to the late Renaissance era (Bar 113) a transition from quartal and quintal harmony to tertian constructions can be observed. The voices are transposed to dark modes.

[80] Renaissance music is European music written from about the year 1400 to 1600. This section of time is called the Renaissance, a word which means »rebirth«. The Renaissance comes between the Middle Ages and the Baroque times. (Wikipedia)

[81] *Stile antico*, Palestrina Style, Giovanni Pierluigi da Palestrina (3. February 1525 or 2. February 1526 – 2. February 1594) was an Italian Renaissance composer of sacred music and the best-known 16^{th} century representative of the Roman School of musical composition. He has had a lasting influence on the development of church music, and his work has often been seen as the culmination of Renaissance polyphony. (Wikipedia)

[82] In music, counterpoint is the relationship between voices that are harmonically interdependent (polyphony), but independent in rhythm and contour. . . . , developing strongly during the Renaissance. (Wikipedia)

[83] Species Counterpoint in [14].

11.1.4 Baroque

1600-1750

At Bar 115 follows a half note basso continuo. Figure 102 shows tertian triads and quartal triads in the thoroughbass. The perfect fourth was considered in the late Renaissance era and the Baroque era as dissonance, that needs resolution.

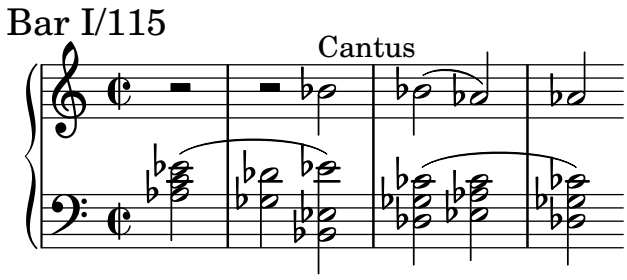

Figure 102: Basso continuo

The first half of Part I is closed by an imitation[84] passage. The thematic material is still the cantus (Motive III, section 3). An example of the treatment of the thematic material is shown in [44, p.59].[85]

At Bar 220 (Figure 103) there is for the first time a conventional harmonic and tonal structure in major/minor with harmonic cadences and modulations (Since 1700). The key is partly around G♭ major and corresponding minor ([23, p.30]: »triads based on B♭ minor scale«). These simple chords were interpreted as shocking pureness or naivity (of the composer).[5, p.41]

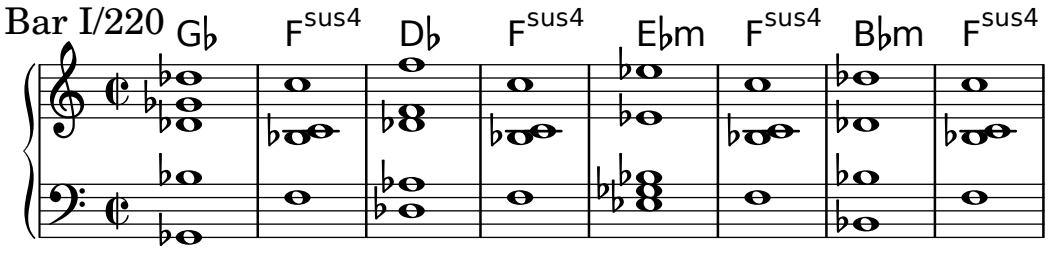

Figure 103: Baroque, Tonal structure, Major/minor

[84] In music, imitation is the repetition of a melody in a polyphonic texture shortly after its first appearance in a different voice, usually at a different pitch. (Wikipedia)
[85] Remarkable are the shortcuts in the voice leading.

11.1.5 Classical

1750-1820

In the second half of Part I of the symphony homophony and then heterophony[86] (climax) is appearing. Periodic repetition of contrasting motives in sonata form.

Exercise. Motive I - Classical theme (section 1) in church mode representation.

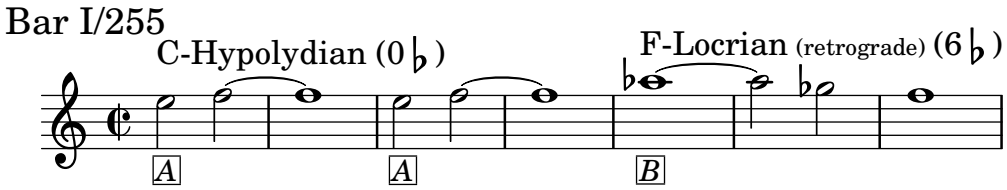

Figure 104: Motive I *8th Symphony*

The Classical theme Motive I (Figure 1) is dominating the second half of Part I. Figure 104 shows the Exposition of the theme in Glareanian church mode representation.[87] The modal contrast and polarization from the opening of *8th Symphony*, beginning and final of the cantus (subsection 3.1), is again established in shorter form. The Classical theme is build by two antithetic modal phrases with finalis F (»modal interchange«, subsubsection 9.2.1).

Table 2: Relationship Modal Interchange with finalis F

brightest	0♭	(Hypo-)Lydian
	1♭	Ionian (major)
	2♭	Mixolydian
	3♭	Dorian
	4♭	Aeolian (minor)
	5♭	Phrygian
darkest	6♭	Locrian

[86] In music, heterophony is a type of texture characterized by the simultaneous variation of a single melodic line. The term was initially introduced into systematic musicology to denote a subcategory of polyphonic music, though is now regarded as a textural category in its own right. (Wikipedia)

[87] The determination of the exact mode is to a certain degree ambiguous: 0♭ or 1♭, 5♭ or 6♭.

Remark. Another example of a modal interchange is given in the opening of Carl Nielsen's *Clarinet Concerto CNW 43 Op. 57* (1928).[88][46, p.267]

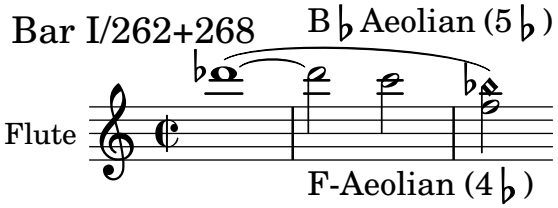

Figure 105: Third phrase in church mode representation

The following echoing third phrase (Figure 105) points to dark F-Aeolian[89] (See Table 2) confirming the modal interchange.

An underlying tonal center is in B♭ minor (5♭). Kube [23, p.36] speaks about a »B♭ minor surface«. The texture is thus Homophony.

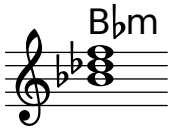

Figure 106: B♭ minor

Heterophony is characterized by a rich, extravagant ornamentation around the dominating basic theme of Motive I, partly reminding at unconventional and free improvisation. This could be the reason, why this part sounds special, reminding at an exotic oriental procession. See also Carl Nielsen *Aladdin CNW 17 Op. 34* (1918-19) and *Symphony No. 5 CNW 29 Op. 50* (1920-22). Contrary to Nielsen, Pettersson never wrote down a Cadenza in his symphonies.[90,91,92] The leading voice theme (Motive I, $\mathcal{A}-\mathcal{A}-\mathcal{B}$) is split in its components $\mathcal{A}$ and $\mathcal{B}$. The ascending line $\mathcal{A}$ and the descending line $\mathcal{B}$ are appearing independently in several free ornamentations. Interesting is the combination of a Classical theme with heterophony. This passage shows signs of a sonata form Musical Development.

[88] Also finalis F. Modes are: F major - F-Locrian - F major - F-Phrygian.
[89] Ambiguous: F-Phrygian or F-Aeolian.
[90] In music, a cadenza (from Italian: cadenza, meaning cadence) is, generically, an improvised or written-out ornamental passage played or sung by a soloist or soloists, usually in a »free« rhythmic style, and often allowing for virtuosic display. (Wikipedia)
[91] Nielsen *Symphony No. 5* I/367: side drummer *cadenza ad libitum*, I/398: clarinet I *solo cadenza*.
[92] Pettersson's usual notation in *alla breve* allows a precise representation of virtuosity or rhythmic distortion.

11.1.6 Summary

The first part of the symphony is a concatenation of different historic composition styles. Strictly speaking, it can't be called a movement. »Music history from origin to decline« is a typical discourse of a narrative organicist.

11.2 Texture Part II

Example. »Symphonic Polyphony«, Introduction, Ostinato.

11.2.1 Opening

Voice A

Figure 107: Motive II, Voice A - Opening

Reminiscence to *6th Symphony* (See also Figure 6) at the beginning of the slow introduction.
Remark. Finalis C♭.

Duration: $2\frac{1}{2}$, Period: 4 bars. Clarinet Basso.

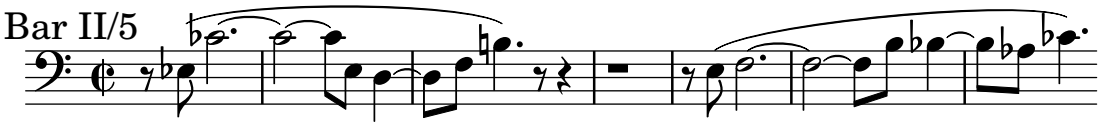

Figure 108: Motive VII, Voice A - Opening

Remark. Finalis C♭ or enharmonic B.

Voice B

Duration: 1, Period: $1\frac{1}{2}$ bars. Bassoon.

Figure 109: Voice B - Opening

Remark. Finalis E♭.

Voice C

Duration: $1\frac{1}{2}$ bars, Period: $1\frac{1}{2}$ bars. Contra Bassoon.

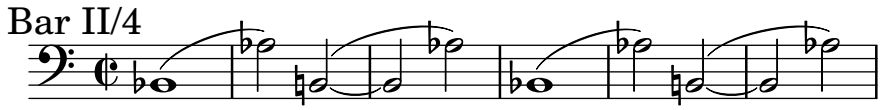

Figure 110: Voice C - Opening

Remark. Finalis A♭.

Voice D

Duration: 1 bar, Period: $1\frac{1}{2}$ bars. Cello.

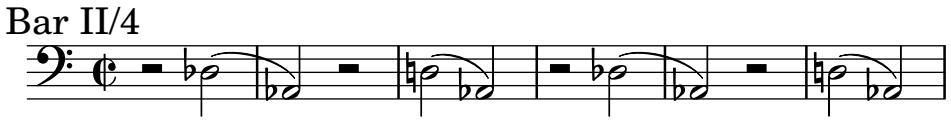

Figure 111: Voice D - Opening

Remark. Finalis A♭.

Voice E

Duration: $\frac{1}{2}$ bar, Period: 3 bars. Tamburo rullante.

Figure 112: Voice E - Opening

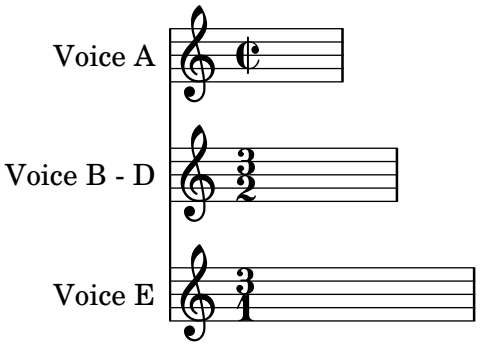

Figure 113: Hidden Metrics

Table 3: Three Finalis

Voice	Finalis
A	C♭
B	E♭
C	A♭
D	A♭

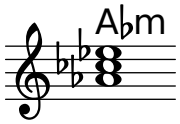

Figure 114: Three Finalis, A♭ minor

A simple ascending and/or descending interval (Leap Figuration) is the basic material for the opening of the second movement. In this passage PETTERSSON leads 5 voices parallel in different duration's and periods. The texture is Polyphony[93] or Counterpoint[94] [1][95] with high density and higher degree of complexity. All voices have different structure, from a relatively complex combination of the basic motives to a very simple rhythmic motive. Nevertheless all 5 voices seem to be equal in status or slightly graduated. The symmetric individual layers in an accentuated multilayer architecture produce a spatial effect. Individual layers temporarily step out and gain focus, avoiding a monotonous continuum.

Later in this movement, further motives were interlaced in the polyphonic structure. The polyphonic texture is sometimes compact or reduced to few voices and sometimes more expanded. The climax is the insertion of a complete Classical theme (Motive I, section 1) and the texture becomes partly and limited homophonic at the end of the movement. Predominant are the keys B♭ minor and A♭ minor.[23][96,97] The framework remains sonata form. KUBE [23, p.55] reports a similar construction principle for the *6th Symphony*.

The second movement is PETTERSSON's presentation and postulate of an own revolutionary construction of a polyphonic movement in sonata form. A remarkable conceptional work.

[93] In music, polyphony is a texture consisting of two or more independent melodic voices, as opposed to music with just one voice (monophony) or music with one dominant melodic voice accompanied by chords (homophony). (Wikipedia)

[94] To be more precise: a motivic and rhythmic determined polyphony or counterpoint in contrast to the »melodic« polyphony based on a cantus firmus in the Renaissance and Baroque era.

[95] Although PETTERSSON had been student of RENÉ LEIBOWITZ in PARIS 1951, he was in fundamental opposition to the Second Viennese School.

[96] PETTERSSON generally favors in this rare cases minor triads.

[97] *»Jupiter« Symphony* is in opposite C major, the »key of light«.

12 Construction: A Hypothesis

12.1 Part I

Table 4: Construction of *8th Symphony* Part I

Bar 1	(Monophony)	Gregorian Chant	Presentation Cantus	Medieval
Bar 62	Polyphony	Gregorian Chant	Organum	Medieval
Bar 97	Polyphony	Gregorian Chant	Contrapunctus, Tutti	Renaissance
Bar 115	Monody	Gregorian Chant	Basso continuo	Baroque
Bar 151	Polyphony	Gregorian Chant	Imitation	Baroque
Bar 243	Homophony	Classical Theme	Sonata, Period, Motive	Classical
Bar 279	Heterophony	Classical Theme	Sonata, Period, Motive	Classical
Bar 451	Polyphony	Gregorian Chant	Endless Melody [56]	Romantic
Bar 515	Homophony	Classical Theme	Neoclassicism	20^{th} Century

12.2 Part II (Movement)

Table 5: Construction of *8th Symphony* Part II (Movement)

Introduction	Polyphony	Single Motive	20^{th} Century
Exposition	Polyphony	Two Motives interlaced	20^{th} Century
Development	Polyphony	Two Motives interlaced	20^{th} Century
Recapitulation	Polyphony	Two Motives interlaced	20^{th} Century
Coda, Bar 251	Polyphony	Three Motives interlaced	20^{th} Century
Coda, Bar 394	Homophony	Classical Theme	20^{th} Century
Coda, Bar 419	Polyphony	Two Motives and Classical Theme interlaced	20^{th} Century
Coda, Bar 600	Homophony	Classical Theme (Synthesis with Motive)	20^{th} Century

Part IV
Summary

From a conversation with Bo Teddy Ladberg [41]:

> No one in the 50's noticed, that I am always breaking up the structures, that I was creating a whole new symphonic form.
>
> Allan Pettersson

Most of the material of Pettersson's *8th Symphony* is derived from Mozart's *Symphony No. 41 »Jupiter«*. The opus has the character of a music theoretical work.

Part I of *8th Symphony* is a concatenation of different, mainly polyphonic, compositional techniques, sorted chronological from Medieval to 20th Century. This part of the opus is influenced by the »stylistic melting pot« in Nielsen's late opuses, especially the *5th Symphony*.

Mozart's 4th Movement of *»Jupiter« Symphony* is an early precursor of Pettersson's Part II (Movement) of *8th Symphony*. The music can be called in both cases »Polyphony in Sonata Form« or more significantly »Symphonic Polyphony«.

- Part I: Historic Discourse of Monophony, Polyphony and Homophony (»Old Style«)
- Part II (Movement): Contemporary State of the Art of »Symphonic Polyphony«

Pettersson stresses in this symphony the influence of polyphony and counterpoint on his music. He refers to several different historic polyphonic styles, that he integrates organically in his work. In contrast, Mozart focuses in his opus only to a special kind of polyphony, the Baroque fugue. The *»Jupiter« Symphony* is in C major, the detectable keys in *8th Symphony* are predominately opposite G♭ major and B♭ minor. As Pettersson uses also homophonic and heterophonic styles, he can be considered as a stylistic generalist. The philosophy of Pettersson's music is determined by Nielsen's vegetatio and organicism.

Pettersson gives in *8th Symphony* not only examples of different polyphonic and homophonic compositional techniques, but also a brief trip through music history. It is the composers manifesto.

Table 6: Character of the Symphonies

Mozart	*Symphony No. 41*	1788	light
Nielsen	*Symphony No. 5*	1922	light and dark
Pettersson	*Symphony No. 8*	1969	dark

Part V
The Opus

13 About the Opus

- *Symphony No. 8*
  - Allan Pettersson
    * 19 September 1911 in Västra Ryds församling, Upplands-Bro
    † 20 June 1980 in Stockholm
  - Composition date: 1968-69
  - Premiere: 23 February 1972, Stockholm Philharmonic Orchestra, Antal Doráti
  - Dedication: to the Stockholm Philharmonic Orchestra
  - Staff: 3*/2/3*/3* 4/3/3/1 1/4/0 strings
  - Score: NMS 10452
  - Duration: 45' (20' + 25') (Score)
  - Two Parts
  - Work group 5-9

Discography

[A] Sergiu Comissiona and Baltimore Symphony Orchestra. Pettersson Symphony No. 8 (1968/69). *Polar POLS289 (LP), (1978), Deutsche Grammophon (DG) 2531-176 (LP), (1980)*, 1977-10-27 and 1977-10-31:Baltimore, Maryland, Lyric Theatre, October 1977. 51'14 (21'09 + 30'24).

[B] Thomas Sanderling and Radio-Symphonie-Orchester Berlin. Pettersson Symphony No. 8 (1968/69). *cpo 999 085-2 (1992)*, 1984-04-30:Berlin, Großer Sendesaal SFB (live), April 1984. 50'24 (21'52 + 28'33).

[C] Gerd Albrecht and Philharmonisches Staatsorchester Hamburg. Pettersson Symphony No. 8 (1968/69). *Orfeo C 377 941 A (1994)*, 1994-05-16:Hamburg, Musikhalle (live), May 1994. 52'18 (21'04 + 30'52).

[D] Leif Segerstam and Norrköping Symphony Orchestra. Pettersson Symphony No. 8 (1968/69). *BIS-CD-880 (1998-04-25)*, 1997-03:Norrköping, Sweden, Louis de Geer Concert Hall, March 1997. 46'31 (19'52 + 26'40).

[A] ★★★★
[B] ★★★
[C] ★★
[D] ★★★★★

Broadcast

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Appendix

A Waveforms

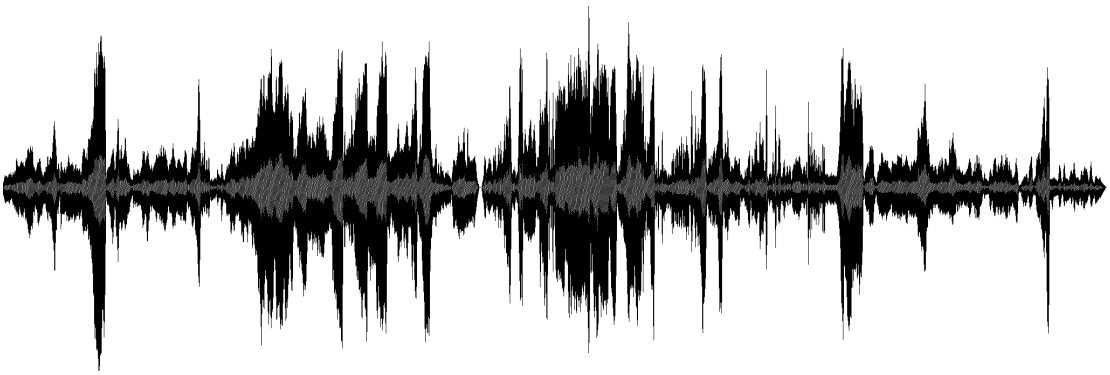

Figure 115: Waveform Pettersson *8th Symphony*

Figure 116: Waveform Mozart *»Jupiter« Symphony*

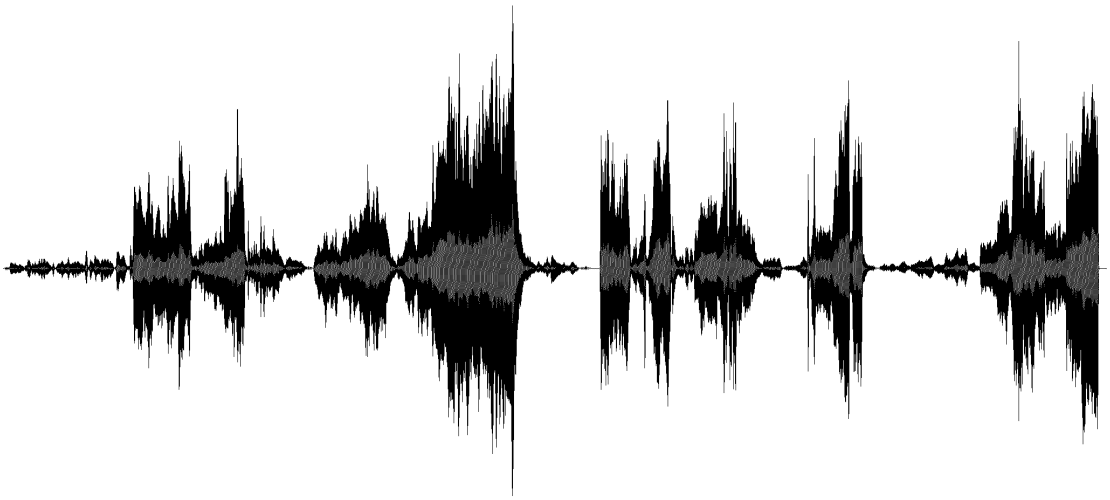

Figure 117: Waveform Nielsen *Symphony No. 5*

B Glareanus *Dodecachordon*

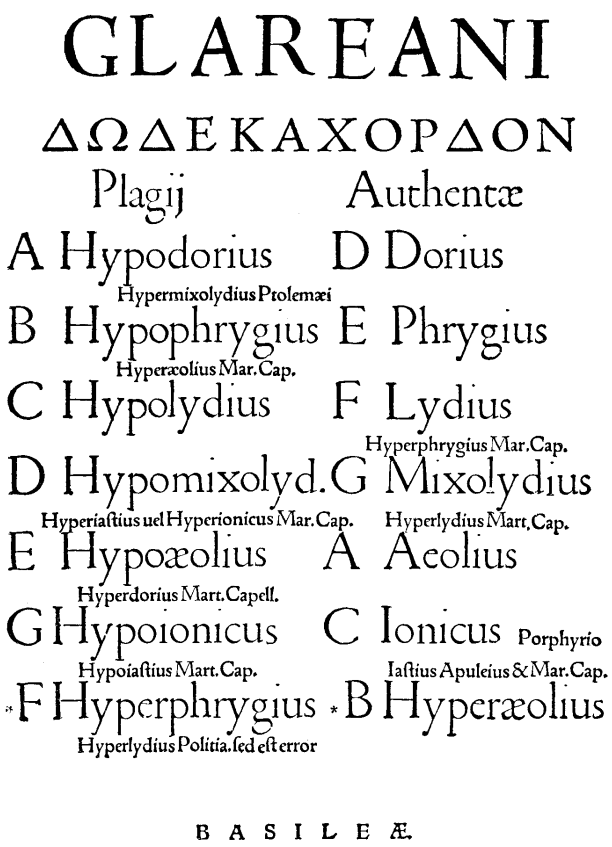

Figure 118: Title Page Henricus Glareanus *Dodecachordon*

Figure 118[98]

[98] Excerpt [15], Public Domain.

C Nielsen *Symphony No. 5* (main theme)

C.1 Babylonian Tonal System

Heptachord *kitmum* $\left[1, \frac{1}{2}, 1, 1, \frac{1}{2}, 1\right]$. Center note D.

C.1.1 *kitmum* Scale 1

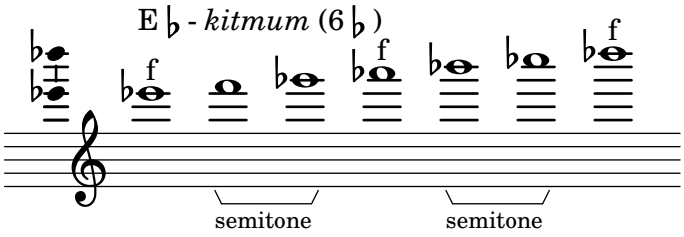

Figure 119: Scale I

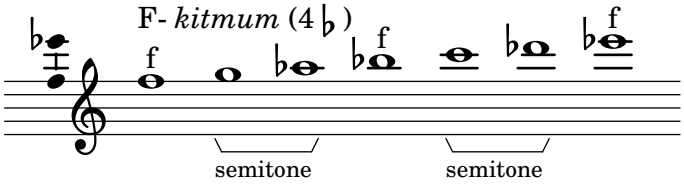

Figure 120: Scale II

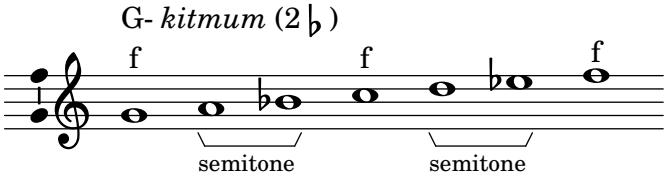

Figure 121: Scale III

Figure 121 taken from Figure 89 and Figure 90.

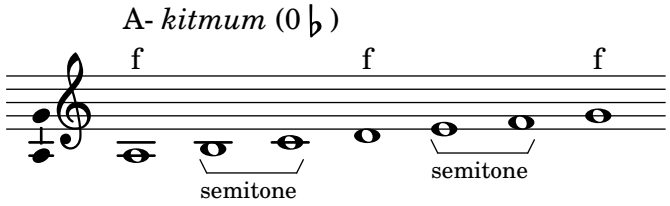

Figure 122: Scale IV

Figure 122 taken from Figure 90.

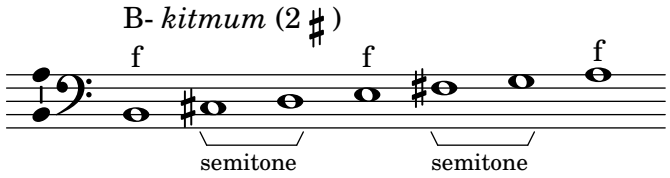

Figure 123: Scale V

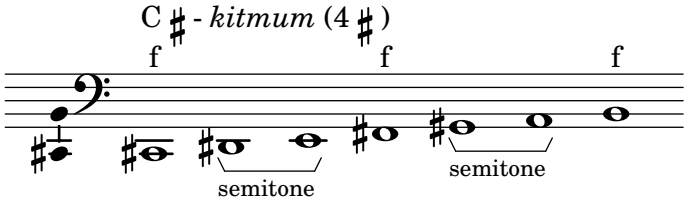

Figure 124: Scale VI

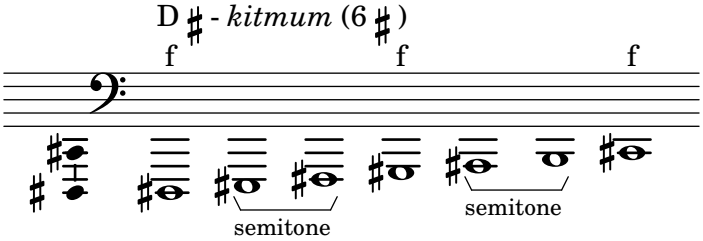

Figure 125: Scale VII (6♯ = 6♭)

Remark. Seven Heptachord sub-scales in mode *kitmum*. The key of the mode *kitmum* depends on the pitch. The »*Circle of fifth*« is identical to that of Minor (Aeolian) or Hypodorian.

C.1.2 *kitmum* Scale 2

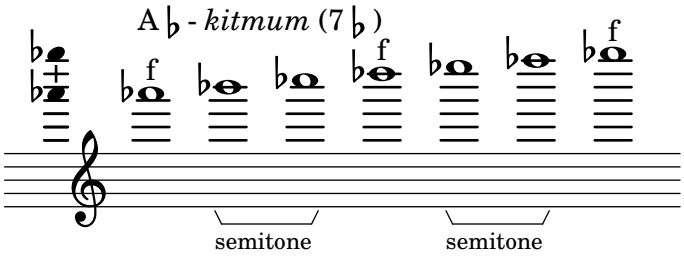

Figure 126: Scale I

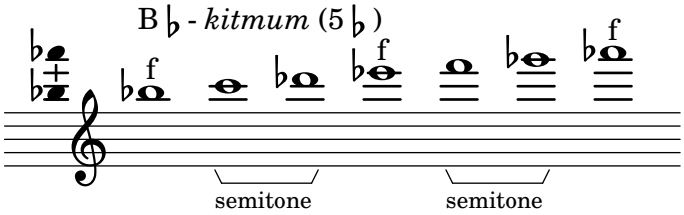

Figure 127: Scale II

Figure 127 partly taken from Figure 73.

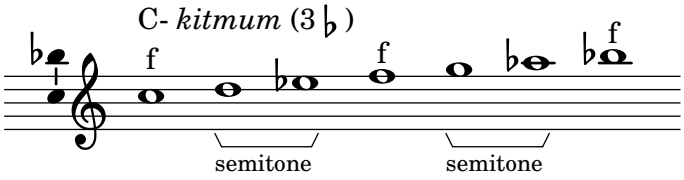

Figure 128: Scale III

Figure 128 taken from Figure 73.

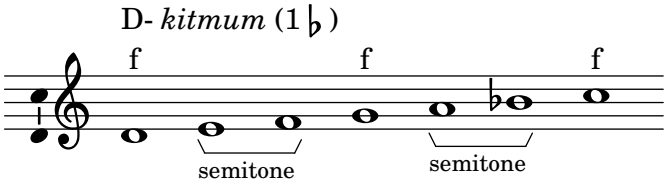

Figure 129: Scale IV

Figure 129 taken from Figure 73.

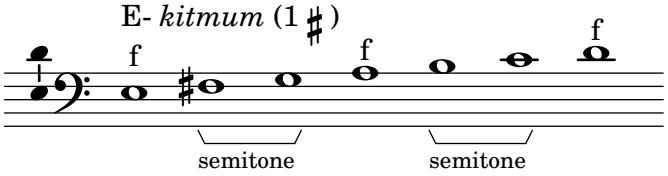

Figure 130: Scale V

Figure 130 taken from [8, p.11].

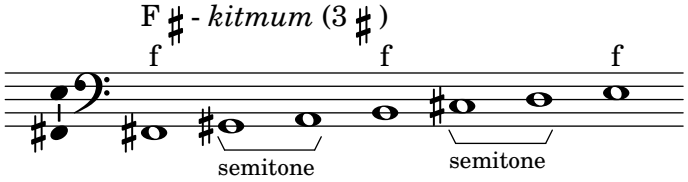

Figure 131: Scale VI

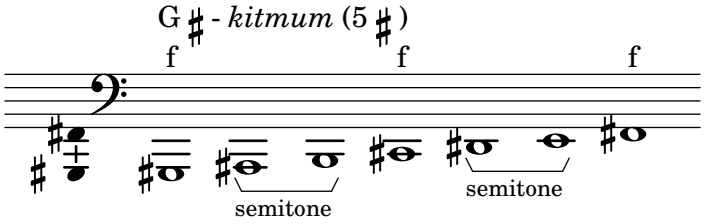

Figure 132: Scale VII ($5\sharp = 7\flat$)