METRICAL DISSONANCE IN THE WORKS OF CARL NIELSEN

A Metrical Analysis of *Sinfonia Espansiva*, First Movement

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Brief introduction

Nielsen's music is ambiguous. The music points in one direction, drags in another and then ends in a third. The ambiguity can be found in the harmonic department as well as in the metric. We can identify the ambiguity through different analytic tools and place the results in a context which serves for a better understanding of Nielsen's music. Several articles endeavour the harmonic side, for example writings by Grimley, Hamburger and Krebs, but very little has been done on the metric side. In this paper I will reach into the metric world of Carl Nielsen and approach the task with a technique developed by Harald Krebs. Six years ago Krebs published the book *Fantasy Pieces – Metrical Dissonance in the work of Robert Schumann*; which presents new guidelines to analyze metrical irregularities in music. His system is developed based on the music of Schumann, but can very well be applied to other composers such as Carl Nielsen.

I will begin this paper by introducing some of the basic principles in Krebs' theory, and present some of the important terms I will be using.

Definitions of the most important terms

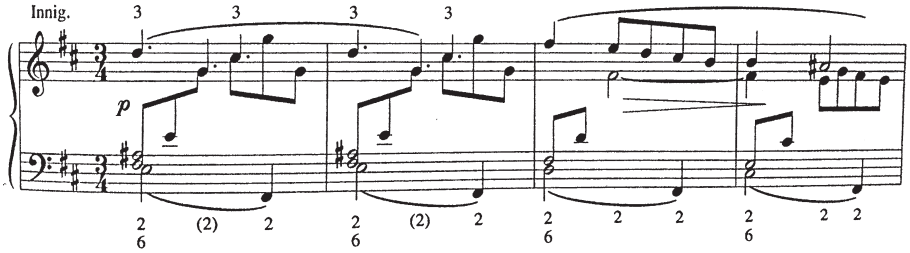
Krebs' theory is a strong tool for identifying the irregular rhythmic structures which can be found underneath a given musical metre. These rhythmic structures are created by interactions between various rhythmic layers which Krebs refers to as layers of motion. Krebs defines layers of motion as follows: 'a series of approximately equally-spaced pulses.'[1] There are several types of layers, but the two most important in this paper are: 1) the primary metrical layer: layers following the notated metre in the work. Krebs says the primary metrical layer is '...the most prominent metrical layer in a work...normally shown by the upper integer of the time signature and indicated by the bar lines.'[2]

1 Harald Krebs, *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann*, New York 1999, 22.

2 *Ibid*., 252.

2) Anti-metrical layers also referred to as interpretive layers. Krebs says interpretive layers are: 'layers that move more slowly than the pulse and allow the listener to interpret the raw data of the pulse layer by organizing its pulses into larger units.'[3] The interpretive layer can be labelled with an integer 'n', which indicates the number of pulses within the layer. 'N' is also the length of the layer and is referred to as the cardinality.

A composition can have several layers working at the same time and it is the interaction between these layers that creates what we call metrical consonance or dissonance. Layers can be formed by several factors. It is mainly various musical accents that form these layers, such as durational-, dynamic-, density-, registral-and harmonic accents, but extended pattern repetition and new events in the music can also activate layers. These musical accents are defined and further exemplified in Joel Lester's article 'Rhythms of Tonal Music'.[4]



Ex. 1. Robert Schumann, Davidsbündler Op. 6 No. 2, bb. 1 – 4.[5]

Above we see an example from Krebs' book and the excerpt illustrates no less than three layers at the same time. Note that Krebs is using 1=1/8 as his unit. The 6-layer, which also coincides with the primary metrical layer, is created by durational accents in the left hand and enforced by density accents on each downbeat. New melodic events in the right hand are suggesting a 3-layer. Finally we have a subtle 2-layer also in the left hand. This layer is made up by half-and quarter notes. Since the 2-layer is not fully established until bar three, and actually lacks some attacks in the two first bars, I apply some parentheses to show where the missing attacks are supposed to be.

We do not necessarily have to use the main pulse of the work to label our layers. We can use whatever unit which fits the music. If we look at the example above we see that the excerpt is in 3/4 time. Based on that, it would be logical to use quarter notes to label the layers. However the time signature is irrelevant in this regard. It would be okay to use eighteenth notes or even sixteenth; the choice is based only on

3 *Ibid*., 254.

4 Joel Lester, 'Factors that Gives Rise to Accent' in *The Rhythms of Tonal Music*, Carbondale 1986, 18-41.

5 *Ibid*.,, 25.

the desire to avoid fractions in the labels. However, it is important to remain consistent with the choice of unit throughout the piece.

As we can see in Krebs' example the interpretive layers create specific rhythmic structures when they interact. The numbers above the staves clearly indicate a kind of polyphonic rhythm; sometimes there are alignments between layers and at other times non-alignments. What this alignment non-alignment business means will be explained below.

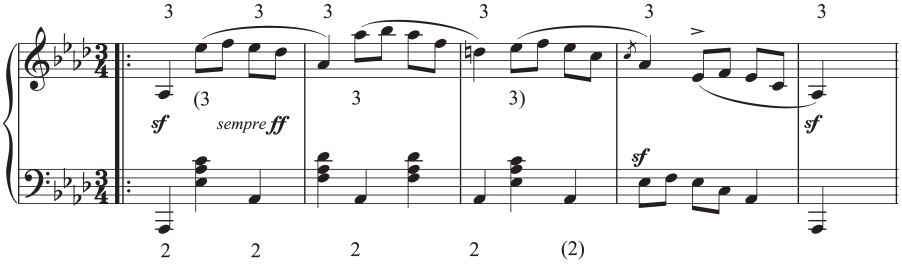
Metrical consonance

Metrical consonance occurs when there is an alignment between layers. This will happen when the implicated layers are multiples of each other. Consonance can be written as a formula like this: x/y, where x and y are the two layers. For example 6/3 will be a consonant state (see Krebs' example above). Metrical consonance created by the primary metrical layer and interaction with the pulse layer is called the primary consonance. A state of consonance sounds familiar to our ears, while this rhythmicity is the norm in much pre-twentieth-century tonal music.[6]

Metrical dissonance

When layers not align they create a state of metrical dissonance. Metrical dissonance can be divided into two main types: 1) grouping dissonance and 2) displacement dissonance.

Grouping dissonance is induced when two layers, whose cardinalities are not multiples of each other, conflict. Grouping dissonance can be written as the formula Gx/y, where x and y are the cardinalities of the layers and x is also the largest. The layers of a grouping dissonance will at some point share a common pulse and create some sort of short-lived consonance. Even though we have this brief consonant coincidence, we still perceive the overall interaction as dissonant. The example below will explain the grouping dissonance in practice and with more detail.



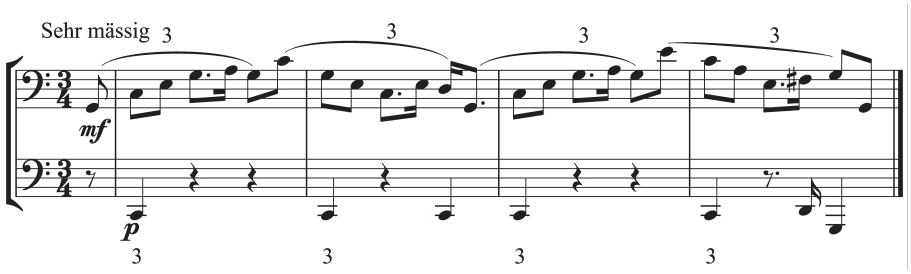
Ex. 2. Robert Schumann, 'Préambule' from Carnaval, bb. 28-32.[7]

6 *Ibid.*, 30.

7 *Ibid.*, 33.

The upper voice in the piano suggests a three layer accentuated by a durational accent and pattern repetition. This 3-layer is also the metrical layer, because the composition is notated in a triple metre. The left hand suggests a 2-layer enforced by registral -and density accents. The superposition of these two layers establishes the grouping dissonance G3/2, where 1 = ¼. Note the periodic consonance on the first beat of bar three.

Displacement dissonance occurs when two layers with a shared cardinality interact, but are displaced with a certain number of pulses. Normally a displacement dissonance is created by the metrical layer and one anti-metrical one, but it can also be two anti-metrical layers alone. The number of pulses which separates the two layers is called the displacement index. Displacement dissonances can be written as the formula Dx+a, where 'x' is the shared cardinality and 'a' the displacement index.



Ex. 3. Robert Schumann, Symphony No. 3, second movement, bb. 1 – 4.[8]

The example above is also from Krebs' book. The violoncello and the viola are suggesting a 3-layer by durational accents and pattern-repetition. The layer is displaced by one quarter note from the metrical 3-layer, creating the displacement dissonance D3+1, where 1 = ¼.

Metrical dissonance in *Sinfonia Espansiva*

The following paragraph is a thorough metrical analysis of the 1st. movement of *Sinfonia Espansiva*. I will attempt to cover every metrical deviation in the movement and add detailed examples in order to show the specific layer structure. I will recommend readers to have a copy of the score at hand while reading this paper. In some cases I refer only to the bar number without presenting a specific example. This is due to limitations of space.

I am using 'sonata form' proposed by Daniel Grimley in *Carl Nielsen and the Idea of Modernism* on p. 104 when I refer to the different sections in the music. Later in the

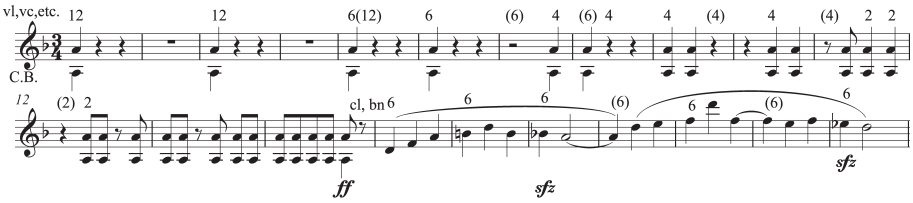
8 *Ibid.*, 39.

paper I will show how the metrical conflicts either support this model or maybe suggest something else.

When I first listened to the work I was surprised by the large number of metrical irregularities. Audibly they occur as small movements back and forth on the surface of the music. Without the score it is difficult to comprehend the actual dissonances, but as soon as you dive into the music, rhythmic patterns appear.

A short musical introduction

If we look at the very first bars we learn that the movement begins with a metrically interesting feature (look at *Ex. 4* below). At the beginning of the introduction Nielsen accentuates the primary metrical layer with strong accents on the downbeats in bars 1, 3, 5 and 6 (note that I am using 1=1/8 as the unit). By this he gives us a hint that the music we are hearing is in a triple meter. Already on bar 7 he destroys the dawning triple metre pattern. Instead of accentuating the downbeat he moves the pulse attack to the third beat and then again to the downbeat in bar 8. The next two pulse attacks appear only two metrical beats later: on beat 1 and 2 in bar 9. This manoeuvre is a very subtle way of changing the feeling of a triple metre to a duple metre. I admit the whole thing is happening fast, and we probably have too little time to really get the sense of new established metres, but it is in fact what is happening. If we continue, Nielsen constricts the pulse attacks even further; so when we reach the end of the introduction he accentuates almost every eighteenth-note in the now unstable metre. He charges the metrical system and makes the energy go on a huge outburst on bar 15, now in a clear triple metre. This relatively short passage is of course not long enough to prove a clear metrical conflict with several distinct layers in play, but it foreshadows the manipulation of the notated metre we will discover in the music ahead of us. Metric ambiguity is also suggested in Simpson's analysis of the third symphony, where he talks about a sense of timelessness in the introduction.[9]



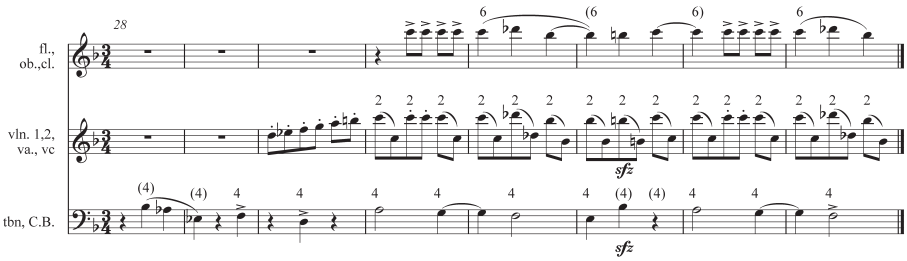
Ex. 4

9 Robert Simpson, *Carl Nielsen: Symphonist*, New York 1986, 58.

Exposition

The primary theme (main subject) in the exposition is a metrically consonant passage. The rising triad which is the cornerstone of the primary theme is without any severe deviations, suggesting the notated 3/4 metre. The upbeat in b. 14 contains a rising fourth from A to D (a classic Nielsen gesture); a strong harmonic indication that we have reached the downbeat (see *Ex. 4*, b. 15) and that we are back in a familiar metre.

On bar 30 something interesting happens (*Ex. 5*). The material from the primary theme has morphed into a quicker moving figure, where the characteristic appoggiatura (*Ex. 4*, b. 17) is the direct link. Not only has the melody changed, so has the metrical state. Nielsen has already prepared this new rhythmic platform in bar 28. The brass section and double basses attack beats which are not logical in terms of the notated metre (beat 2 and 3 in b. 28, beat 1 and 3 in b. 29 and beat 2 in b. 30). When Nielsen reaches b. 30 the new idea is established and he inserts a 4-layer made up by dynamic-and durational accents. But this is not all that is happening here. Simultaneously with the concretization of the 4-layer, a 2-layer is popping up out of nowhere, created by the strings on b. 30. The layer is suggested by registral accents (the octave leaps) and enhanced by slurs. Both the 4-layer and the 2-layer are played up against the metrical 6-layer in the woodwind section. The whole situation results in a grouping dissonance G6/4 and a state of consonance between the 6, 4 and 2 layers. On b. 33 the 4-layer displaces itself by two units. A strong dynamic accent in all instruments, hence a density accent too, moves the metric dissonance by one metrical beat. This of course creates a sudden movement in the flow, but the dissonance remains the same. According to Krebs' theory, an indirect displacement dissonance D4+2 very briefly occurs due to the juxtaposition of the two 4-layers. This is more a theoretical phenomenon than a practical one; hence we apply the term indirect dissonance.[10]



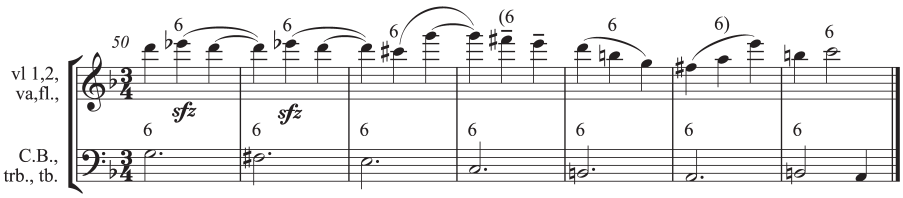
Ex. 5

In the following 16 bars the music suggests the primary metrical consonance, meaning that the primary metrical layer aligns with the pulse layer. This makes good sense

10 Krebs, *op. cit.*, 45.

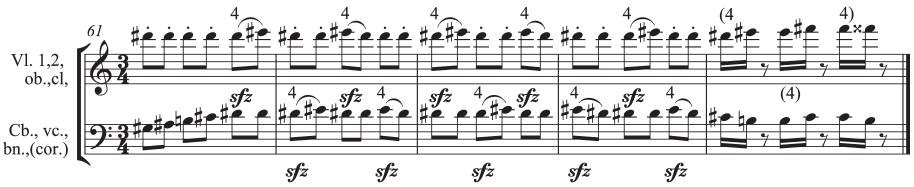
since the primary theme returns in these bars. We are back to familiar secure metrical ground, so to speak.

At b. 50 the woodwind, the horns and the strings (but not the double basses) suggest a 6-layer beginning on the second beat, created by dynamic-and durational accents (*Ex. 6*). In the meantime the low brass and double basses hold on to the primary metrical 6-layer. These two conflicting layers result in the displacement dissonance: D6+2. The dissonance is audible all the way to bar 57.



Ex. 6

At b. 61 he once more establishes two displaced layers (*Ex. 7*). This dissonance is created by two 4-layers displaced by two pulses, resulting in a D4+2. The two 4-layers are identical and are made up by a dynamic accent, the *sforzando* and the little harmonic twist to E-sharp, and finally enhanced by the slurs. The effect this type of dissonance creates will be discussed later, when two other duple layers occur and are viewed in a Vitalistic context.

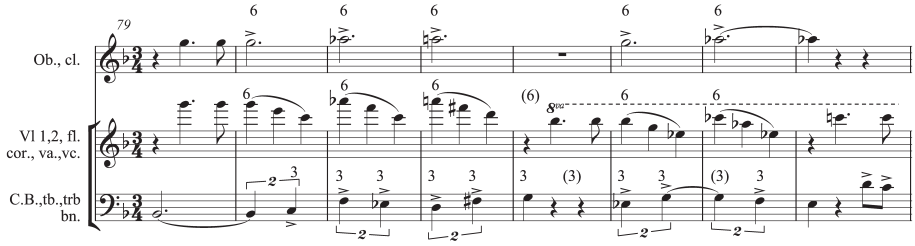


Ex. 7

Generally Nielsen seems to work with the idea, consonance-dissonance-consonance progression; a rocky dissonant passage is always followed by a consonant, or at least a less dissonant, phrase in order to calm down the music.

The next curious metrical event kicks in around b. 77. The primary metrical 6-layer is articulated by brass and string instruments with distinct markings on the downbeat. However on b. 80, the bass instruments, the double basses and bassoon play *duplets* against the metrical 6-layer. The rhythm appears very irregular at this point and the feeling sensed is a two against three motion. Each note in the *duplet* figure is formed of three eighth notes, and therefore establishes a strong 3-layer. Note

that this layer is also accented by dynamic accents (*Ex. 8*). These elements altogether make a consonance 6/3 according to the theory. There is an audible mismatch in labelling this obvious conflict as a consonance: the interaction both sounds and looks dissonant. Correctly, this is a consonance if we are looking at it strictly on layer level. But if we view this at the level of time signatures it creates a dissonance. The notated metre is 3/4, which Nielsen is also signalling with the metrical 6-layer. But what Nielsen is also suggesting here is a 2/4 meter at the same time. So this is a time conflict more than a conflict between layers. That is why, even though this interaction is written as a consonance, it still sounds like a grouping dissonance G3/2, or G6/4 to be correct.

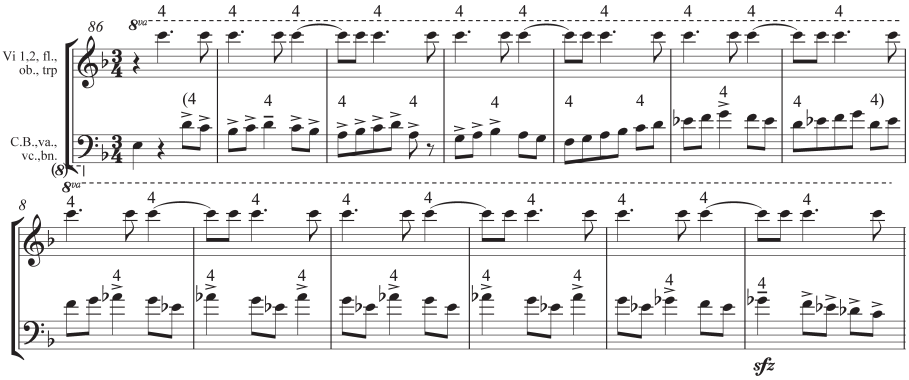


Ex. 8

Nielsen takes us directly from the time conflict to the more rational grouping dissonance G6/4 (which sounds a bit like the previous metrical state). The violins, timpani and later on the flute, oboe and clarinet, suggests a clear 4-layer by durational accents and pattern repetition. The brass section maintains the metrical 6-layer and on b. 87 the grouping dissonance appears. Meanwhile this grouping dissonance is perceptible the double bass, cello, viola and bassoon discreetly prepare a displaced 4-layer. Nielsen prepares this 4-layer by hinting with accentuations on the important beats in the new interpretive layer. They are still just slight insinuations, but as the music reaches b. 93, he goes all in with the new 4-layer and brings it to the surface with dynamic-and durational accents. The new 4-layer is displaced by two eighth notes from the already existing 4-layer in the violins, timpani and woodwinds. So once more we see a D4+2. The compound dissonance of the G6/4 and D4+2 is maintained for almost 10 bars, until bar 100 (*Ex. 9*). This specific example is also mentioned in Michael Fjeldsøe's article on Vitalism, *Vitalisme i Carl Nielsens musik* (Vitalism in the Music of Carl Nielsen). Fjeldsøe points out that this particular example of a two beat figure hidden within a triple meter is a way for Nielsen to maintain the energy and the forward-driving motion in the music.[11] Remember that this is not the first D4+2 Nielsen in-

11 Michael Fjeldsøe, 'Vitalisme i Carl Nielsens Musik', *Danish Musicology Online* 1, 2010, 42.

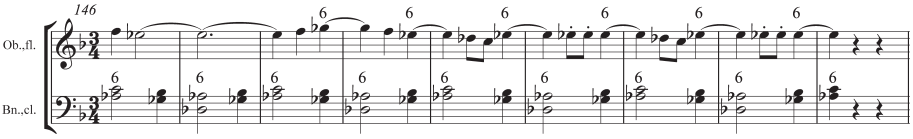
serts. *Ex. 7* describes a similar dissonance which, maybe even more explicitly, shows these energetic motions hidden in the piece's own material. You really sense that these are two rhythmic layers pushing each other forward.



Ex. 9

The main subject and subsequent transition is closed with another D6+2 and thereafter follows a long overall state of consonance. Nielsen does something familiar just before reaching the second subject. He manipulates the notated metre solely by using the timpani. Attacks on the downbeats in bb. 125-128 hints the metrical layer, resulting in a consonant feeling. Nielsen then decides to constrict the pulse with the timpani and hits two beats in a row instead of one. As he did at the beginning of the exposition, he changes the feeling of the notated triple metre into a duple one. Why he does so is not obvious; he is not preparing a general change of the notated metre and the second subject is beginning with a primary metrical consonance. It is probably to underpin the fact that several parts of the main subject are associated with duple dissonances such as D4+2 and the noteworthy phrase with the *duplets*. Anyway it functions very well as a frame rounding up the main subject.

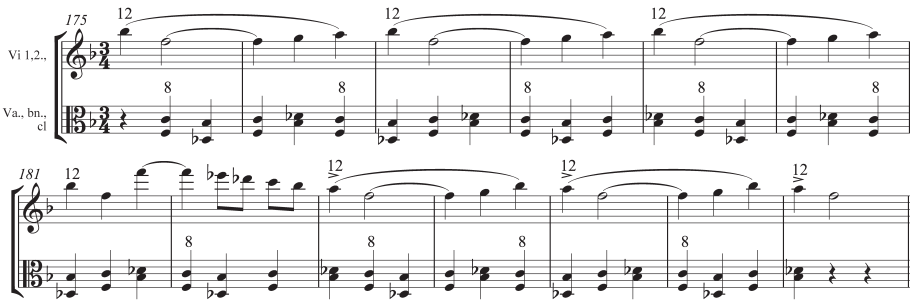
The theme in the second subject is initiated as a metrical consonance. However this state is not kept for long. On b. 148 Nielsen presents to us a new dissonance: D6+4 (*Ex. 10*).



Ex. 10

The first 6-layer is the metrical layer, suggested by the accompaniment in the clarinet and the bassoon. On b. 148 the first flute and oboe pick up a melody which stresses the third beat in the bar with a dynamic-and durational accent. These events mark a new interpretive 6-layer. The interaction between the metrical-and the anti-metrical layer makes up the D6+4.

A consonant state begins around bar 159. The melodic material hints at the metrical 6-layer and the double basses attack each downbeat. A new and interesting dissonance occurs at b. 175. The violins suggest a 12-layer enforced by pattern repetition and occasional dynamic accents. The viola hints at an 8-layer made up by strict pattern repetition. These two layers establish the grouping dissonance G12/8 which remains audible all the way to b. 191 (*Ex. 11*).



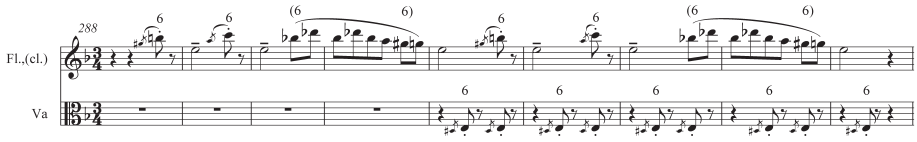
Ex. 11

The second subject deviates from the main subject in terms of metrical dissonance in several respects. The main subject contains several 4-layers which are involved in grouping dissonance and displacement dissonance. In contrast the music in the second subject does not contain a single 4-layer. The overall impression is that the first part of the exposition was more dissonant than this. An argument for this can also be found in the grouping dissonances we find in both sections. In the main subject we saw the grouping dissonance G6/4 several times and in the second subject Nielsen inserts a G12/8. These grouping dissonances are actually creating the same rhythm, only in half tempo. Krebs names this kind of relationship between dissonances: an augmentation. A more extensive explanation of augmentation can be found on page 41 in Krebs' book.

Nielsen's use of displacement dissonances also suggests calmer music. The strength of a displacement dissonance is controlled by the size of the displacement index. If we have a relatively low 'a', we experience the dissonance as weak and vice versa. Remember how Nielsen inserted a D6+2 in the main subject. This was a relatively strong dissonance compared to the D6+4 in the second subject.

Development

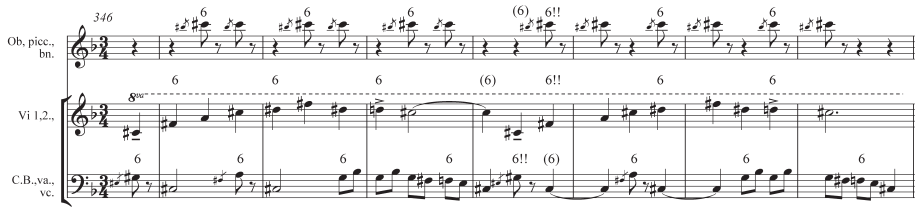
As we move towards the development we see a familiar use of the timpani. Again Nielsen uses this single instrument to mess up our feeling with the metre. Already beginning at around b. 280, Nielsen hints something that can be perceived either as some kind of duple layer or a displaced 6-layer. It turns out that it is the latter. Nielsen is preparing a 6-layer in the flute starting on the third beat in the notated metre (see *Ex. 12*, b. 288). New events and durational accents suggest this anti-metrical layer.



Ex. 12

This layer is fully established in b. 289. Three bars later the viola suggests another 6-layer, also an antimetrical one. This results in a D6-4. I use a minus sign instead of plus because a backward interpretation of the dissonance is reasonable.[12] The two layers' first encounter crosses the bar line and opens for a possible misreading of the event as a D6+2. The D6-4 is the main dissonance of the development section, only interrupted by brief passages of consonance.

At b. 350 the above mentioned D6-4 takes an interesting turn (*Ex. 13*). The dissonance displaces itself by two eighth notes. This event coincides with a rare displacement of the melody from the primary theme in the main subject. The string section attacks the weak metrical second beat, disturbing our sense of time. The notation of this dissonance is an indirect D6+2 due to the juxtaposition, and later a direct D6+2 (notice that the plus sign is back due to its own displacement; we hear the dissonance forward again). Instead of starting the melody on the third beat and using it as an upbeat, the melody sets off on the second beat, a funny little hiccup, which also marks a new event in the music. For the first time in the development Nielsen inserts a D6+2 which serve as a marker that something new in the music is about to happen; not the end of the development, but a clear hint that the recapitulation is coming up soon.



Ex. 13

12 Krebs, *op. cit.*, 35.

The development is generally highly dissonant. Dissonances occur quite often and tend to be strong. Nielsen is still maintaining a structure of consonance-dissonance-consonance. We rarely move from one dissonance to the other without having a small consonant break. The development ends with some familiar dissonances associated with the exposition, only made a tad different this time. A huge passage of consonance wraps things up in the development and makes it resolve in a beautiful consonant way.

Recapitulation

Exactly where the recapitulation begins is still the subject of ongoing discussion. I share the widely accepted notion that the recapitulation kicks in at b. 483 only in a reversed order (the second subject before the main subject). This opinion is also based on arguments derived from the metrical analysis. A more extended discussion about the arrival of the recapitulation will be offered later in this paper, when I discuss metrical dissonance in the context of form.

Though I believe that the recapitulation begins at b. 483, I doubt that the music from bars 452-582 should be perceived as belonging to the development section. As I see it, it functions more like a foreshadowing or a major up-beat-section adjacent to the recapitulation. The final bars of what I recognize as the development fade out in a clear consonance (bb. 440-451) and it would be strange to bring the music to a consonant rest only to bring it back to dissonant 'life' without having a sectional change. In this up-beat section Nielsen activates a D6+2 between the flute and oboe. This takes place at b. 457 and lasts for 8 bars. What follows in the subsequent bars is a consonant preparation leading up to the entry of the recapitulation's second subject. There is a high level of similarity between the material leading up to the second subject in the exposition in bb. 130-138, and the material in bb. 468-482. I am referring particularly to the tremolo in the violins.

So I am making an assumption that the recapitulation begins with the second subject at b. 483. Another aspect of the passage which supports my assumption is the metrical dissonance we come across ten bars into the second subject in the recapitulation. It is the rare D6+4 we also encountered ten bars into the second subject in the exposition. Nielsen is further marking the advent of the returning main subject by a D6+2, this time heavily intensified by heavy attacks on the downbeats by the double basses. The D6+2 is, not surprisingly, morphing into a rapid D4+2. The metrical chaos induced by this manoeuvre is somewhat similar to the opening of the movement: metrical chaos in the timpani before it bursts out in the primary theme.

The main subject in the recapitulation uses the same melodic material as in the exposition, but if we look at the metrical structures something has been altered.

Nielsen differs in his choice of dissonances between the main subject in the exposition and in the recapitulation, and some of the dissonances introduced in the exposition are totally left out at this late point. Of course this conflicts with our expectations, and we would have preferred two similar main subjects. I still think that Nielsen is linking the main subjects through dissonances in a pretty subtle way. If we focus on the up-beat section (bb. 452-482) we discover that this weird intermezzo is closely connected to the music in b. 584. They share the same melody and both have a metric structure like this: consonance-D6+2-consonance. It is this strong similarity that leads me to label the aborted primary theme as a major 'up- beat or foreshadowing of the recapitulation. This discussion will be clearer in the next paragraph, where I present the metrical map and discuss the arrival of the recapitulation.

The metrical map and metrical dissonance as a form tool

A good way to get a sound overview of the metrical development of the music is by making a metrical map. A metrical map is a schema with two axes. The x-axis is a time line indicating bars and the y-axis shows the metrical states occurring in the piece.

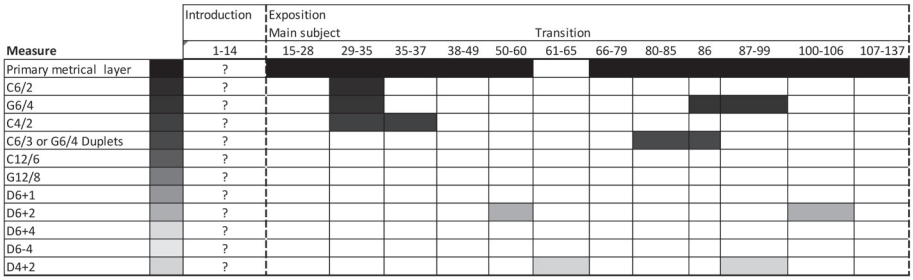


Fig. 1

The example above (*Fig. 1*) is the main subject depicted on the metrical map. Note that each type of metrical dissonance is represented by a colour in grayscale in order to make the patterns more legible. When there is no other colour than the black bar in the top of the schema, only the primary metrical layer is audible. I need to point out the lack of relationship between the number of bars and the size of the cells in the map. Due to limitations in software it was impossible to make a 1:1 map of the movement.

As I have mentioned earlier in this paper, metrical events can be indicative regarding formal and sectional boundaries in the music. Krebs discovers this in many of his Schumann analyses, where they clearly show that Schumann associates different passages in his music with specific types of dissonance.[13] The way the metrical

13 *Ibid.*, 143.

map is used by Krebs in Schumann's music can also be applied to Nielsen's. It also serve as support an argument in the dispute about the sectional boundaries in this particular movement. I have stated earlier that I support the schematic form on page 104 in Grimley's book; it is hard to argue against such a thorough examination of the melodic and harmonic processes in the piece. However I find it rather interesting to compare it with the metrical map and see what patterns might occur. The table below (*Fig. 2*) is a rough reproduction of the schema as it is in Grimley's book.[14]

Sonata	**Exposition**			**Development**	**Recapitulation**			
Intro	Primary theme	Transition	Second subject + coda		Second subject	Coda	Primary theme	Transition + coda
1-14	15	61	138	284-482	483	562	584	613-734

Fig. 2

Nielsen clearly uses metrical irregularities to indicate sectional lines in the movement. This can be seen particularly in his way of using them close to phrase endings. Right before each ending of a section we see a dissonant state resolving into a consonant state. This is quite similar to a cadential motion in the harmonic domain, for example V4/5-V7-I. Thus the progression metrical dissonance- metrical consonance can be understood as a dominant – tonic progression. Considering that the movement does not follow the typical sonata form harmonic pattern, the overall strict metrical progression becomes an important structural element.

According to the metrical map, the second subject is a calmer section. The dissonances are weaker and their frequency of occurrence is lower. This is an effective way to keep the two sections apart and different. See *Fig. 3*.

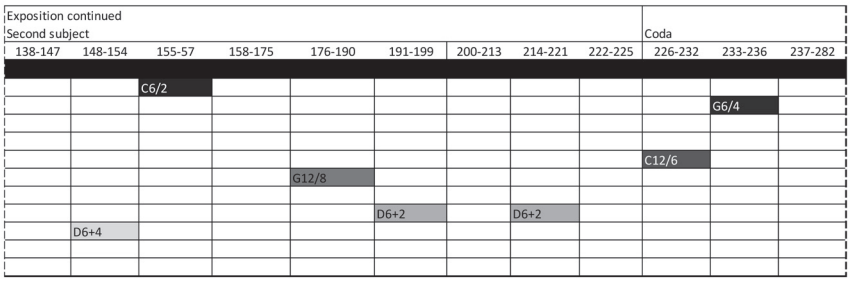


Fig. 3

14 Daniel Grimley, *Carl Nielsen and the Idea of Modernism*, Woodbridge 2010, 104.

There is a clear distinction between the metrical shapes in the exposition and the development. Nielsen makes a great effort to establish the D6-4 as the dominating factor in this section. Note how carefully he constructs a consonance-dissonance-consonance progression throughout the section (see *Fig. 4*). It is as though the development is becoming a metrical wave of forward-pushing motion. A similar analogy to motion and energy is mentioned in the chapter 'Energetics' in Grimley's book, where he argues that the common displacement of the melodic and harmonic material throughout the music contributes to a kinetic cycle of energy expansion from within.[15] [16] Similarly the rhythm expands from within.

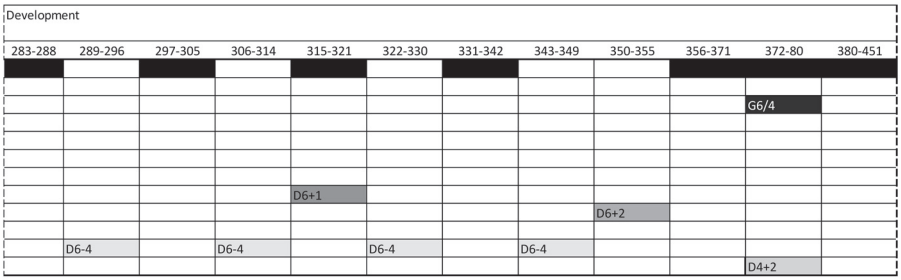


Fig. 4

The compound dissonance consisting of a D4+2 and G6/4 which appears in b. 372 is a new and somewhat surprising metrical state to explore in the development. Nielsen has used the dissonance before, but not in this context. It could be a subtle notification of the primary theme (which is aborted and instead referred to as the upbeat-section or foreshadowing) ahead of us. It is the same metrical dissonance as he inserts in the first part of the exposition. So not only can dissonances help us identify the separations between sections, they can also create links between sections, whether they are adjacent or non-adjacent.

The entrance of the recapitulation

Where does the recapitulation begin? This is still an open question. Currently three different solutions have been proposed by different scholars.

Simpson

The aborted primary theme happening on b. 452 is an interesting little curiosity. It contains the characteristic rising triad, but in a different key and also a different

15 *Ibid.*, 114-115.
16 *Ibid.*, 128.

metrical state. If we compare the primary theme in the exposition with the primary theme on b. 452 we see that they are both starting out consonant, and then moving into dissonance. The primary theme in the exposition uses a G6/4 and the aborted primary theme a displaced dissonance D6+2. Perhaps this is a way for Nielsen to distinguish the two sections. Robert Simpson believes that this aborted primary theme represents the beginning of the recapitulation. He is basing his assertion on the tapering motion in the music around this point.[17] He does have a point that the music is moving into a consonant state; however the lack of similarity to the original of the aborted primary theme, metrically and harmonically, is too strong a factor to consider them alike. See *Fig. 5*.

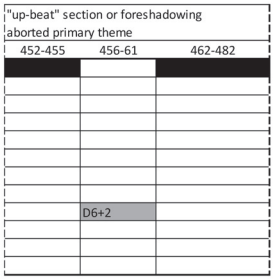


Fig. 5

Grimley and Hamburger

Daniel Grimley and Povl Hamburger regard the presentation of the second subject on b. 483 as the point of recapitulation. Hamburger believes that reading this piece as a strict classic sonata form is impossible. The harmonic ambiguity is too severe and spoils the traditional patterns. Instead he suggests that we take other musical parameters into account such as melody and rhythm.[18] A harmonic analysis is very much based on a vertical reading of the music while a melodic and rhythmic calls for a horizontal reading. Hamburger is convinced that Nielsen's compositional style is more tectonic than architectonic, and hence calls for a horizontal interpretation. This way of perceiving the events makes very good sense in this section, because a rhythmic analysis actually supports the idea of a recapitulation starting on the second subject.

Nielsen moves into the recapitulation in a reversed order and metrically it makes sense. The map shows that the first rupture in the metrical surface is a shift from consonance to the familiar D6+4, which is also used as the first dissonance in

17 Simpson, *op. cit.*, 63.

18 Poul Hamburger, 'Formproblemet i vor tids musik', in *Dansk Musiktidskrift* (1931) 6, no. 5, 67.

the second subject in the exposition (see *Fig. 6*). Generally the two sections bear many resemblances and Nielsen is, more or less, treating it as a metrical recapitulation. In the end of the second subject in the recapitulation, bb. 572-583, strong dissonances take us directly to the main subject. This is a metrical chaos which can be seen as a reference to the one caused by the timpani in the first bars of the movement. In order to stress this point I have inserted an excerpt from the metrical map showing only bb. 572-583. Note that the primary metrical layer is totally left out the last two bars.

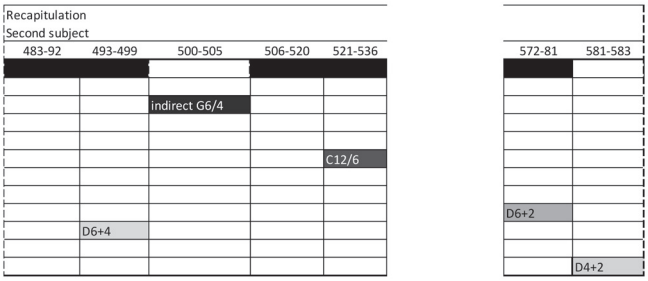


Fig. 6

Krebs

Harald Krebs regards the arrival of the primary theme on bar 584 as the real point of recapitulation (*Fig. 7*). For him it is the strong feel of a tonic platform at this very moment which supports his assumption. He argues that this is the first time in the movement where Nielsen establishes a really stable D minor, made up on a strong D-pedal point.[19] He does have a point that Nielsen's arrival on the tonic, combined with the primary theme, explicitly takes us back to stuff that is familiar from the exposition. I need to mention the metrical structures again, because once more the primary theme disappoints us metrically. Nielsen does not take us through the expected metrical combinations from the exposition. Most surprisingly, he allows a D6+2 to be the first dissonant state of the main subject in the recapitulation. He also made use of this little trick in the aborted primary theme.

The rest of the main subject is very much like the main subject in the exposition. Nielsen is rounding things up as he is expected to. He resolves all dissonances and brings the metre to safe ground with no ambiguous signals.

19 Harald Krebs, 'Tonal Structure in Nielsens's Symphonies', in *The Carl Nielsen Companion*, ed. Mina Miller, London 1994, 217.

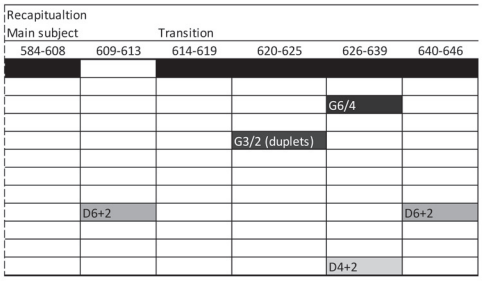


Fig. 7

Conclusion

A few concluding remarks on the metrical analysis. It has become clear that Harald Krebs' way of analyzing structures through their metrical domain without problems can be implemented in the analysis of Nielsen. Nielsen is using many of the same musical parameters as Krebs identifies in Schumann's music. Nielsen uses progressions from metrical consonance to dissonance to create energy and to maintain the forward drive of the music. Both Michael Fjeldsøe and Daniel Grimley talks about an underlying energetic drive in the *Sinfonia Espansiva*, created by different factors. It is fair to think of metrical dissonance as an independent musical factor contributing to the waves of energy, and this places the *Sinfonia Espansiva* in a vitalistic context.

The metrical map reveals how metrical dissonances can serve a purpose with greater scope. They mark section beginnings and endings, and can link between sections across a sonata form. Specific areas in a piece of music are associated with particular dissonances throughout a movement. As a result metrical analysis can help us divide a movement into different sections. Nielsen resolves all dissonances as he reaches section endings, almost as cadential closures, and he links sections with each other across the development to signal the arrival of the recapitulation.

Metrical dissonance analysis is a very strong supplementary tool, especially when it is combined with other analytical methods. It can be difficult to base a whole formal analysis on metrical dissonances only; in this case a harmonic survey must be added too.

A B S T R A C T

Carl Nielsen's music is known to be ambiguous in the harmonic department as well as in the metric. This article endeavors how Nielsen works with metrical irregularities, in the first movement of *Sinfonia Espansiva,* in order to create tension/relief- progressions, forward driven motions and finally sectional divisions. At several occasions in the music, Nielsen emancipates the notated meter and allows interaction between underlying layers to take over the metric control. The article provides a metrical map with form divisions according to the classic sonata form, and illustrates how metrical dissonances can indicate how and when sectional borders appear. The analysis is made based on theory by Dr. Harald Krebs, who has developed a useful analytic tool for this kind of musical research.