

# **Intermezzo - Lullaby**

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# 1) Aesthetical precondition

## 1.1 Individual influences

A great influence is my previous pedagogical study. I am concerned in the comprehension of music, thus I researched in musical perception and got a perpetual need to keep the complexity at an optimal level.

I made some attempts to study my secondary discipline "physics" which I finally gave up in favor of composing. Nevertheless I recognize several analogies in perception between the behaviour of sounds and the behavior of elementary particles as electrons or quarks (e.g. between the relation of tones to a system and the relation of electrons to protons)

Now I would like to provide a subjective view of my own cultural context.

I do not know if I am one or two generations after the glorification of progress. To my mind the last century brought a multitude of musical inventions, and there is a danger to neglect organizing these achievements. Irrespective of whether one might share this opinion, I want to concentrate my work in connecting or rather **melting** achievements of the past, as connecting already happened through postmodern composing. Therefore I highly regard myself as conservative writer as I consciously insert elements of very old music, and do not invent new things. Especially my concentrating on pitch and rhythm can be regarded as anachronistic.

## 1.2 Sources of Inspiration

The piece is inspired by the myth of Simson and Delila, which can be found in the bible (Judges 16, esp 4-22). The plot inspired as well several painters throughout the last centuries. Rembrandt e.g. painted scenes from all four Chapters dealing with Simson, for this famous scene there are even two different interpretations. My first contact with this content was in the "Städel"-Museum in Frankfurt, as there are two contrasting interpretations: A cruel fight scene by Rembrandt and a silent thrilling scene by Liebermann: In the center Simson is sleeping on Delilas knees, who already has cut his hair off and hands it to the shadow of a lurking Philistine in the upper left corner. The situation and positions of the persons within the picture and the position of the painting in the Museum suggest a trio-version whereas one player is hidden in the next room, as there is a doorway near the left side. While working on that version, the music became quite difficult to execute for three players, and the new aspects of the original source supported another instrumentation for chamber ensemble.

The comparison with the text was an additional creative source, because there are some contradictions to the painting. The written words say that a Philistine cuts off Simsons hair, the painting does not support this version. Also the language used in the bible had a great attraction on me, especially the form, as there is a cyclic persistence with hardly any linguistical extension. In a following cycle the words are sometimes permuted, but often reiterated literally. Otherwise it is expressed in new words.

## 1.3 Traditional aspects of music composing

In the following, I want to show which concepts of composing influenced aspects of the piece, and what impact traditional concepts have on my music.

1) The Title already hints at the existence of a **content**, so the question is, whether and how it may be represented in music nowadays, as the text itself gives a certain legitimation to insert older compositional techniques.

One part of the title I chose in the end (Lullaby), derives from an abstraction of what had been the crucial aspect of the plot and also of what I saw in Liebermanns representation, that is the act of intentionally making tired (lulling).

2) For this reason I applied the necessity to concentrate on **one consequential item** or principle (as known from Beethoven) this is a retarding oscillation.

3) With Liebermanns very figurative artwork in mind, I tried to investigate in how far **figuration** in music as well as in the arts is codemned. In the arts figuration bears inevitably a content, in music I know two different types of figuration. The first is what we know from baroque music, where melodic elements represent emotions, but also a concrete imitation (as common in the "musique concrète") can be seen as figuration in direct analogy to arts. Here the figuration is in a sense of musical gestures, that build Phrases and Melodies. In Germany it is common to avoid melodies.

4) The discussion about **consonance** is refreshed through the spreadening of spectralist ideas and further developing. For me the Pythagorean theory is still the starting point for my investigations about consonance. Creating different levels of consonance is very easy, as the spectrum from Consonant to dissonant is explored in depth. The more dissonant the sound or chord, the grater the possibilities to mould. My investigations aim at chords consisting of consonant intervals that do not share their root, so my reseach is concerned with the harmony of compound chords consisting of low level interval ratios ( here especially  $12/11$  ,  $11/10$  ,  $10/9$  ,  $8/7$  ,  $11/9$  ,  $9/7$  )

5) The **formal** concept is a synthesis of different layers. The ground layer is the general principle of the piece, the next layer is the traditional dramatic-dialectical sonata form and above these are some sorts of linear progresses. The structure is very much represented by developing variation, and the opening phase implies the same principles of tension as a sentence (TD - DT - TSDT ). The intention is still to produce expectations in the listeners memory that can be used to recapture similar elements in a different context.

6) In general one can say, the ambition I have, is not to create extreme music, rather an **extremely balanced** music, in every sense: traditional-progressive, static-motional, consonant-dissonant, gestual-atmospheric, technical- emotional, precalculated-impulsive, programmatic-abstract and so on.

## 2) Elements

The principle of oscillation implies two consequences for the piece: The first is the existence of a **bipolar tension** between two extremes. The other one is that these extremes are never juxtaposed, but rather **continuously achieved**.

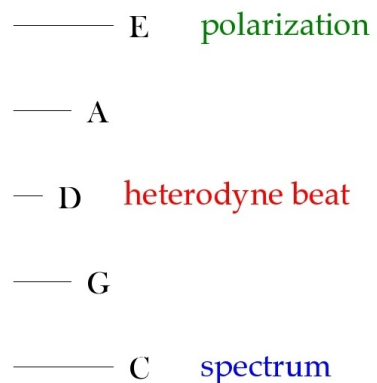
Therefore every parametre has two contrasting extremes and different types of positions inbetween.

### 2.1 Tonality

The concept derives from the regular tuning of the stringed instruments in perfect fifth: The Cello C is treated as a base or spectral root, the D as a central tone, and the Violin E as a top, as described later.

The Central-D and the Base-C are the two extremes of the tonality-oscillation as each of them has its own sphere, the material of the spectrum is in theory strictly defined, and also the more dissonant beat effects have a relatively solid point of gravitation. The E represents a more unstable tonality, a force that tends to other directions without using other means than the former.

The idea of the pitch arrangement is very much , that sounds could move freely through the universe (whole pitch spectrum without degrees), if there were not forces attracting them to a center (central tone) of gravitation or a grid (spectral harmonic) of pol (cf. magnetism). The two regions later will prove to be closely related, so to affirm the contrast also different textures and the rhythms will be linked to the tonalities to give them a definite character: The one is more vivid and flexible, and will be developed in various styles (Inversion, transposition, simulation, sawtooth), the other one is stable and calm and cannot get out of the spectrum despite the transposition.



#### 2.1.1 Heterodyne Beat - Central Tone

The heterodyne beat occurs, when two sounds have nearly the same frequencies. On the one hand it produces rhythmic pulsations, on the other hand it is related to the difference tone producing an additional pitch. It gains even more ambivalence when considered as timbre of a single note.

This element has its origin in the center tone D, it reaches other pitches as well, but near its origin it can develop best. Every recapitulation of the opening D (p10/20/32) has more instruments involved to multiply the beat effect pattern.

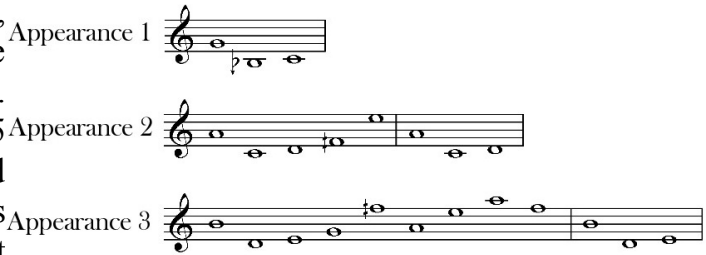
The principle of the central tone can be transposed and other pitches can temporarily become a point of gravity, so hierarchies can be established. These hierarchies were blurred by means of consonance, duration and dynamics (see 4.3 Texture)

### 2.1.2 Tone Row Tranposition

The opposite extreme is the Base-C, which is the spectral root for a tone row developing in each appearance.

At first it consists of 3 notes, then 5 and at last 9 and is transposed upwards every time. The row is presented cyclic, so that one cannot

define a starting or ending point clearly. The rows were constructed before they appear in their stable configuration, i.e. the required pitches (material) were introduced in different shapes (e.g. similar pitches. When the construction is complete, the row is not permuted any more (inversion, retrograde). The approximate interval-structure is exactly defined by spectral polarization.



### 2.1.3 Spectral Polarization

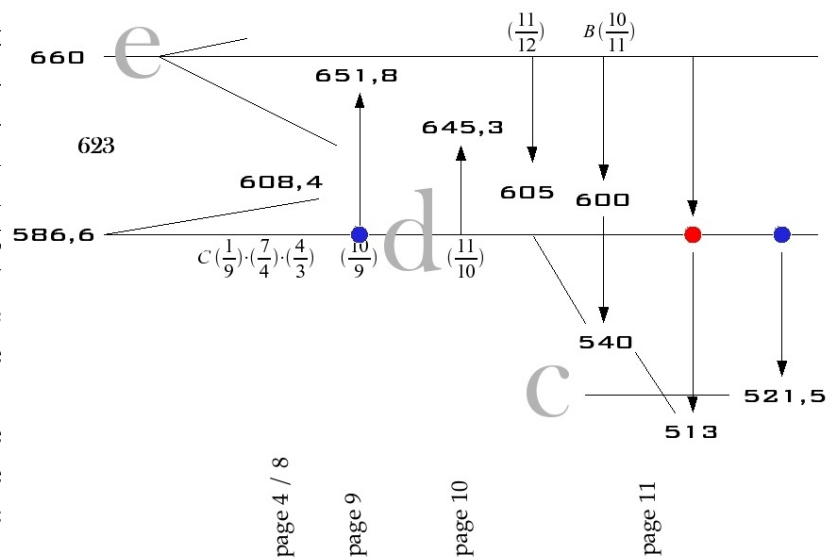
Spectral Polarization is a kind of intonation. A framework of Intervals or chords (like the Tone row previously mentioned) is considered only an approximate pitch and can change its shape, the exact intonation is defined by a spectral root, sometimes initiating the polarization (p10/11), sometimes as "invisible" motor (p25). It is applied on the tone row, on a small frequency band, or as aim throughout passages (similar to a tonic function), especially on the interval ratios mentioned above. A terminated polarization means stagnation, therefore it is the counterpart of oscillation.

Example:

In 6 the first row is established and keeps its constant intonation (12 : 7 : 8). The gesture d-e gains independence through the intonation of the e as open string/harmonic. It has a different root of polarization. In the following pages the two notes melt together into an irregular frequency band with randomly pitched beat effects. When reaching the opening gesture in 10 the frequency

band continues but changes its function in a sudden and becomes a formant band wherein only exact ratios can appear. The polarizing forces appear and intensify the state. In 11 a single accent on D launches the repolarization.

Throughout this and the following passage especially the c experiences various states.



## 2.2 Rhythm

The notation of the rhythm is supposed to be optimized for gestual freedom. My imagination of a "chamber orchestra" is that the players strongly influence the flow of music and must therefore interact closely with the conductor and most important the other way round. The time from one note to the next is approximated by space notation and defined through the metaphoric tempo-description.

Nevertheless there are as well pulsations that require accurate relations with other pulsations, where the players cannot influence the tempo.

## 2.3 Timbre

This is the medium where most oscillations take place. But it derives from the limits of perception, at what time a change in timbre becomes an independent element. A vibrated tone, pitch or loudness, is inevitably a fast oscillation. The repetition of notes at a certain speed (e.g. tremolo) can as well be regarded as timbre. In other words, all oscillations have a great range of dimensions, the smaller are perceivable as timbre, and the greater will have impact on the form.

# 3) Structure

## 3.1 Dimension of Oscillations

Actually, an oscillation as main idea can count for every piece, that uses pitches, as it is an oscillation, too. But I avoid having other elements, so the piece consists of nothing else than oscillations. One note in the score is mostly involved in several oscillations at once, all with different amplitude and frequency. The greater the dimension of oscillation, the more degrees inbetween can be perceivable. Faster oscillations concern the timbre, others the texture, and very slow ones the form. The previously introduced oscillations were in order of dimension:

0) Pitch	(0.0005 - 0.05)
1) Timbre	
- heterodyne beat	(0.05 - 2)
- tremolo	(0.1 - 0.2)
- formant oscillation (timbre)	(0.2 - 5)
- loudness oscillation (pressure)	(0.25 - 4)
- loudness oscillation (bowspeed)	(0.4 - 2)
- vibrated notes	(0.3-10)
- Repetitions of a tone	(0.2 - 10)
- Oscillation between tones	(1 - 3)
- Linearity - Harmony	(5 - 15)
- D-Center - C-Spectrum	(30-250)

## 3.2 Texture

The outer parts differ from the middle part because of the missing brass and woodwind instruments, giving the form a symmetrical feature. The texture shares the symmetry, as more instruments produce a denser texture. The system for the texture for all parts is a steady oscillation between the amount of layers sounding simultaneously. In the calmer sections there are between 0 and 2 superpositions, and in the more vigorous sections between 2 and 4.

Within the sections the texture changes with the tonality. The substantial texture for the D-tonality is a heterophone Progression, where the density is measured by the amount of notes involved and simply the dynamics. The density of the C-spectrum is lower although more different tones are involved, but through the consonance the single tones should melt to one sound. The density is therefore achieved by the loudness of a dissonance, that is fragmented to pieces being reconstructed in a spectrum, a similar state but not the same (cf. Quarks / Proton). In one sense, this counterpart is also a derivation of a single sound.

The **fragmentation** happens through splitting a tone and its loudness into a just interval representing a point of bifurcation by the merging qualities of consonant intervals, i.e. a state between one and two sounds. To keep the complexity at a perceivable level and to generate an oscillation between linearity and harmony, the most branches of the ramification are very small ending immediately.

The result is, that the tone row is only accompanied by singular gestures, in the exposition (6-9) as well as in the coda (36-41). The second appearance is too much involved in development processes, that the efforts to calm down do not seem successful.

The middle section gains its high density through the **repetitions**, which can be intensified on the same pitch. Rhythmic pulsations are treated the same way as pitches; a glissando, too, is in fact nothing else than an acceleration/deceleration of the frequency. They can be split, change gradually and counterpoint each other. The

The **amount** of repetitions is also adapted to the human perception. Pitch and timbre have no impact on the perception; oscillations between 0.4 and 4 sec are easily countable, but more than about 7 repetitions will be perceived as continuous. Generating an acceleration or deceleration requires some more repetitions, but even the faster oscillations seldom consist of more than 15 repetitions without a change. Some oscillations switch shape in an instant {11,2 (instrument) / 28,5+6 (pitch+frequency)} like the ones mentioned above (beat+simulation).

### 3.3 Form

A typically German tradition that survived nearly every kind of modernism is the desperate concern with the form. As mentioned fundamental layer is the retarding oscillation between the two tonalities. They both have their own functions, textures and principles. The starting tonality has a central tone D and with the beat effects and the octave upwards a driving force and flexibility. When calming down, the tonality tends to a spectral chord on C respectively the tone row based on it. The repetition of the tone row (6-7 / 15-19 / 33-41) has the same calming function as remaining in a spectral chord like a fermata. (5,2).

In the **beginning** there is hardly anything else than slowly gliding pitches creating beat effects or dissonants. The row polarizes the octave upwards and dispels the dissonants for a short time, until the former texture returns slowly to its starting point.

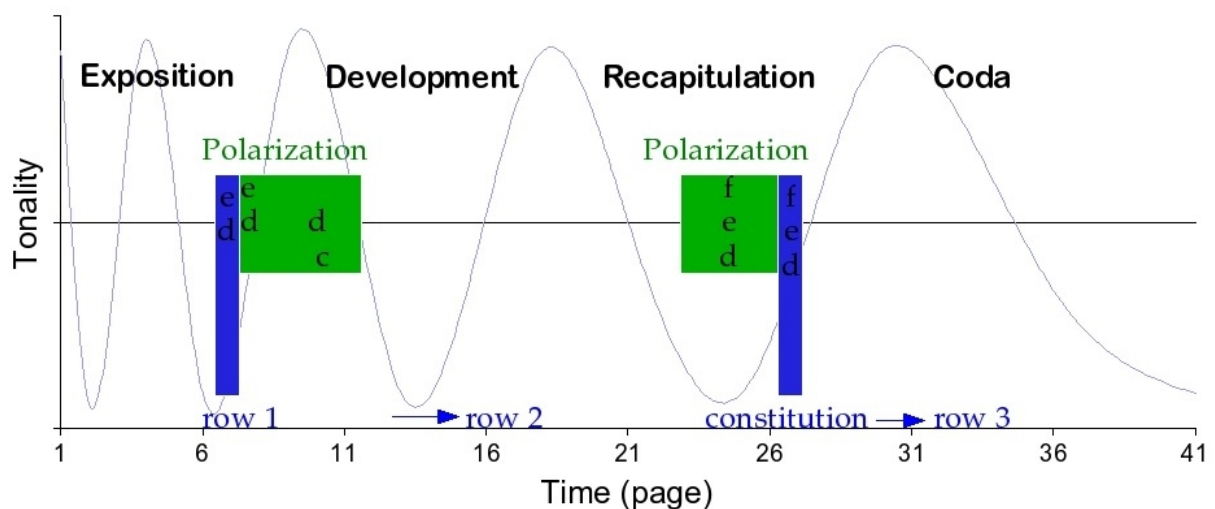
When reaching the double bar, what follows derives from the previously perceived, and is now presented in various other combinations and shapes, so it is legitimate to call it **development section**: First of all the oscillating character of the beat effect is abstracted and replaced by real beats or rather a simulated "beat effect" separated from the dissonance (deconstruction), so a combination with spectral chords can take place. When the real beat effect recurs, the abstraction is made clear by splitting one decelerating pulsation in a heterodyne beat and its imitation { 12,1 V1+V2 / 17,2 V2+Db & 18,2 V2+C1 }. The developing of new textures will continue in the following parts, so that we need new categories for the distinction of the parts. A smaller intersection point is the completion of the second tone row in 15,0 where another two developments were added counterpointing the row (an inverted sawtooth waveform and a simple pitch oscillation). The unchanging row in the development section is increased by attaching spectral chords to the definite pitches of the row, to establish a balance of gravity. The polarization compensates the root function of the C-spectrum by emphasizing the harmonics as individual pitch connecting them to various other relations.

The last note of the row (D in 19) is also the first note of the recapitulation. As mentioned before, the form implies aspects of the traditional sonata form. These are directly related to the strict forms found at Johannes Brahms' music, e.g. that we will not find a fixed starting point of the recapitulation, but rather a gradual approximation of analogies to the exposition leading to an absolute analogue passage (the second theme). Here as well the recapitulation is not fixed and the analogies were hidden: The mentioned D goes downward and when drawing attention to the viola the D is also approached from above, like at the beginning, but simultaneous and without a gesture. The glissando from above has started even earlier, so when counting to the recapitulation it the starting point is blurred. When the opening gesture is reconstructed by combining the octave-oscillation (Va) with the beat effect (20,2=1,1) the recapitulation has now a clear analogy but already is proceeding to the next step the violins are already aiming at (21,3-5 = 3,1). The transposition of the opening gesture was in 3,1 a fifth upwards, and is now a fifth downwards; probably the most obvious



relation to the sonata form, even perceivable as progression to the dominant or subdominant. The following passages recapitulated as well are transposed to pitches constructing the final appearance of the tone row, but the closeness of the analogies oscillates. Besides the developed derivations there are several quite literal references { e.g. 22,1=1,3 / 22,4 = 5,1 (inversion) / 24,2 (row) } which are not limited to the "Exposition" { 25,3 =11,1 (Chord) 27,1=14,1 (a-e arpeggio) } but occur immediately doubled, i.e. repeating immediately a second time transposed to the ending tone.

The coda traditionally summarizes the piece by exposing the fundamental principle. Exept from some irritations, the retarding of the third tone row is stretched in small steps until the end of the piece. The brass and woodwind players stop playing, and execute the polarization of the natural harmonics of the cello. In a similar way extended is the counterpoint, a simple acceleration of homophone (=> without dissonants) pitch oscillations, now reestablished (16-19). After seperating off remaining elements from the development section, this type of oscillation aims at an ordinary vibrato, trying to manifest a melody. Before ending, the two independent oscillations complement each other shortly and both vanish polarized in the spectral harmony of C.



4) And it cometh to pass afterwards that he loveth a woman in the valley of Sorek, and her name [is] Delilah, 5) and the princes of the Philistines come up unto her, and say to her, 'Entice him, and see wherein his great power [is], and wherein we are able for him -- and we have bound him to afflict him, and we -- we give to thee, each one, eleven hundred silverlings.'

6) And Delilah saith unto Samson, 'Declare, I pray thee, to me, wherein thy great power [is], and wherewith thou art bound, to afflict thee.'

7) And Samson saith unto her, 'If they bind me with seven green withs which have not been dried, then I have been weak, and have been as one of the human race.'

8) And the princes of the Philistines bring up to her seven green withs which have not been dried, and she bindeth him with them. 9) And the ambush is abiding with her in an inner chamber, and she saith unto him,

'Philistines [are] upon thee, Samson.'

and he breaketh the withs as a thread of tow is broken in its smelling fire, and his power hath not been known.

10) And Delilah saith unto Samson, 'Lo, thou hast played upon me, and speakest unto me lies; now, declare, I pray thee, to me, wherewith thou art bound.'

11) And he saith unto her, 'If they certainly bind me with thick bands, new ones, by which work hath not been done, then I have been weak, and have been as one of the human race.'

12) And Delilah taketh thick bands, new ones, and bindeth him with them, and saith unto him,

'Philistines [are] upon thee, Samson.'

and the ambush is abiding in an inner chamber, and he breaketh them from off his arms as a thread.

13) And Delilah saith unto Samson, 'Hitherto thou hast played upon me, and dost speak unto me lies; declare to me wherewith thou art bound.'

And he saith unto her, 'If thou weavest the seven locks of my head with the web.'

14) And she fixeth [it] with the pin, and saith unto him,

'Philistines [are] upon thee, Samson.'

and he awaketh out of his sleep, and journeyeth with the pin of the weaving machine, and with the web.

15) And she saith unto him, 'How dost thou say, I have loved thee, and thy heart is not with me? these three times thou hast played upon me, and hast not declared to me wherein thy great power [is].'

16) And it cometh to pass, because she distressed him with her words all the days, and doth urge him, and his soul is grieved to death,

17) that he declareth to her all his heart, and saith to her, 'A razor hath not gone up on my head, for a Nazarite to God I [am] from the womb of my mother; if I have been shaven, then hath my power turned aside from me, and I have been weak, and have been as any of the human race.'

18) And Delilah seeth that he hath declared to her all his heart, and she sendeth and calleth for the princes of the Philistines, saying, 'Come up this time, for he hath declared to me all his heart;' and the princes of the Philistines have come up unto her, and bring up the money in their hand.

19) and she maketh him sleep on her knees, and calleth for a man, and shaveth the seven locks of his head, and beginneth to afflict him, and his power turneth aside from off him; 20) and she saith,

'Philistines [are] upon thee, Samson.'

and he awaketh out of his sleep, and saith, 'I go out as time by time, and shake myself;' and he hath not known that Jehovah hath turned aside from off him.

21) And the Philistines seize him, and pick out his eyes, and bring him down to Gaza, and bind him with two brazen fetters; and he is grinding in the prison-house.

22) And the hair of his head beginneth to shoot up, when he hath been shaven,