Exosemantic Analysis Analysis Of Music-As-Heard

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Abstract

By the term *exosemantic* I refer to the way music is associated with entities beyond its own material and intrinsic structure. The definition of a musical sign will consist of three aspects: the manifest aspect (i.e. the signifier, the perceptible sound), the hidden aspect (i.e. the signified, the meaning of the sign), and the link between them (the semiosis or signifying act). In the context of the present project – a post-Schaefferian study of music-as-heard – the semiosis can be identified as being the *listening intentions* that imbue what we hear with meaning.

Four semioses will be discussed: *Comparison*, *Causal Inference*, *Association*, and *Recognition*. These correspond to the semioses involved in the constitution of, respectively, *Iconic Signs, Indexical Signs, Metonymic Signs,* and *Arbitrary Signs*. However, musical signs turn out to have a more complex nature than what is involved in the latter four types of signs, each of which are conventionally described as being constituted by one unique semiosis. I have resolved this problem by a developing a matrix that combines the primary semiosis with a secondary one. Thus in a motivated sign where the primary semiosis will be Comparison, Causal Inference or Association, there will be added a *secondary semiosis*, Recognition. In order to describe more complex constitutions of signs, different semioses may be combined into chains, notated as formulae.

The presentation proceeds to make an exosemantic analysis of *Nimb 45* by Toshimaru Nakamura.

Introduction

This presentation will outline a novel method of musical semiotics capable of integrating semiotic elements developed by other authors. While the majority of music semiotic studies (such as Hatten 1994 and Grabosc 2008), seem to base itself on traditional musicological concepts – not the lest the concepts of topos and genre – the present approach is squarely based on ‘music-as-heard’, to use an expression coined by Thomas Clifton 1983. The method applies equally to instrumental and EA music. The man focus of this presentation is on the method itself, rather than on presenting a number of applications.

I have earlier, during previous EMS conferences and in three papers published in *Organised Sound* presented analytical tools for a systematic analysis of music-as-heard (See Thoresen 2010). The overall perspective was a phenomenological one, since a differentiation of various

listeners' intentions was basic to our approach. The analytical methods were focused on three levels of articulation:

Level 1 (abbreviation: L_1). *Sound-objects* (accessed through the listener intention of 'reductive listening' and elaborated by spectromorphological analysis)

Level 2 (abbreviation: L_2). *Compound sound-patterns* (accessed through 'taxonomic listening level two', and communicated through identification and description the structure of motives, textures, composite sound-characters etc.)

Level 3 (abbreviation: L_3). *Form-building* (accessed through 'taxonomic listening level three', identifying and describing segmentation, layers, patterns of similarity/dissimilarity, dynamic forms, and form-building transformations)

Exosemantic of Music-as-heard

I will pursue the phenomenological approach into the field of musical semiotics and present an outline of a new approach called the *Exosemiotic of music-as-heard*. By the term exosemiotic or exosemantic I refer to the way music is associated with entities beyond its own material and intrinsic structure. (In contrast, a taxonomic description would be characterized as *endosemantic;* the description of endosemantic elements will serve as a description of the *signifier* of an exosemantic *signified*). The approach builds on basic semiotic distinctions introduced by C. Peirce and F. de Saussure, but, consistent with a phenomenologically informed approach, shifts the focus from the sign as a reified entity towards the *semiosis*, i.e. the mental acts that constitute the sign. The definition of a musical sign will consist of three aspects: the manifest aspect (i.e. the signifier, the perceptible sound), the hidden aspect (i.e. the signified, the meaning of the sign), and the link between them (*the semiosis* or signifying act). In other words, semiosis can be defined as the nature of the mental act that joins the signifier and the signified. In the context of the present project – a post-Schaefferian study of music-as-heard – the semiosis can be identified as being the listening intentions that imbue what we here with meaning.

Four semioses will be discussed: *Comparison (abbreviation: CMPAR), Causal Inference (abbr. INFER), Association (abbr. ASSOC),* and *Recognition (abbr. RECOG).* These correspond to the semioses involved in the constitution of, respectively, *Iconic Signs, Indexical Signs, Metonymic Signs, and Arbitrary Signs*. However, musical signs turn out to have a more complex nature than what is involved in the latter four types of signs; this has been pointed out by semioticians such as Umberto Eco and Raymond Monelle. Frequently the semiosis of motivated signs (*Comparison, Causal Inference, Association*) are combined to some degree with differing degrees of *Recognition*, the semiosis characteristic of arbitrary signs. Arbitrary signs are based on processes of definition, such as conventions, codes, explanations, etc. The four established sign categories Icons, Indexical Signs, Metonymic Signs, and Arbitrary Signs are, each of them, conventionally described as being constituted by one single semiosis, and thus do not allow more complex semioses. I have resolved this problem by developing a matrix that combines the primary semiosis with a secondary one. Thus in a motivated sign, where the primary semiosis will be either *Comparison*, *Causal Inference* or *Association* there will be added a secondary semiosis, *Recognition*. The secondary semiosis is specified by stating how far the process of definition has gone in fixating the meaning of the sign; thus the degree of fixity or conventionality of the sign will have to be indicated, from full openness (a new sign, not conventionalized or defined) to signs

with a clearly defined semiosis (e.g. national anthems). The constitution of the musical sign may is shown in the diagram below (Figure 1):

<table>
<tr><td colspan="4">Signified:
(to be described in each case)</td><td rowspan="10">S
E
M
I
O
S
E
S</td><td rowspan="10">Primary semioses:

Causal Inference

Association

Comparison</td><td colspan="2">Secondary semiosis/
Fixity of Interpretation:</td></tr>
<tr><td colspan="4" rowspan="2">Signifier levels:</td><td rowspan="2">F_0</td><td rowspan="2">Open interpretation</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td colspan="4">Level 1</td><td rowspan="2">F_1</td><td rowspan="2">Conventional/habitual interpretation</td></tr>
<tr><td>Energy</td><td>Substance</td><td>Shape</td><td></td></tr>
<tr><td colspan="4">Level 2</td><td rowspan="2">F_2</td><td rowspan="2">Coded (or lexical) interpretation</td></tr>
<tr><td>Energy</td><td>Substance</td><td>Shape</td><td></td></tr>
<tr><td colspan="4">Level 3</td><td rowspan="2">F_3</td><td rowspan="2">Opaque interpretation (original meaning forgotten)</td></tr>
<tr><td>Energy</td><td>Substance</td><td>Shape</td><td></td></tr>
</table>

Figure 1: The constitution of musical signs

Semiotic chains.

So far we have shown that our shift of focus from sign-definition to semiosis is adding nuance to the description of musical signs. By adding the secondary semiosis, one has also opened the sign to a process of historical change, since new things tend to be conventionalized, coded and eventually taken for granted. But beyond this it opens the possibility to describe even more complex constitutions of exosemantic meanings. We would then speak of *semiotic chains:* concatenations of semioses. The description of a semiotic chain will be made as formulae of letters. An analysis of exosemantic elements of a piece of baroque music could be described as follows; in the first matrix below the signifier is a tremolo played by the orchestra (Figure 2):

Signifier:	**Primary semiosis**	**Secondary semiosis**	**Signified**
Iterated sound (L_1)	CMPAR + INFER	F_2	Anxiety, unrest

Figure 2: Exo-musical meaning of J. S. Bach's 'O Schmerz' from the *Mattheus Passion* on level one with secondary semiosis as F_2

The pain of the musical subject is described through the diminished intervals of the melodic part and the contorted melodic contour. In this case the signifier is on level two (compound sound-patterns) (Figure 3):

Signifier:	**Primary semiosis**	**Secondary semiosis**	**Signified**
Diminished intervals, Contorted melodic contours (L_2)	CMPAR + INFER	F_2	Pain

Figure 3: Exosemantic musical meaning of J. S. Bach's 'O Schmerz' on level two

A new stratum of musical meanings is revealed by considering what interpreting what happens on the third level, that of form-building (Figure 4).

Signifier:	**Primary semiosis**	**Secondary semiosis**	**Signified**
Unquiet, dissonant time fields with soloist vs. quiet, consonant time fields (L_3) with choir singing with a choral like texture	CMPAR	F_0 or F_1	E.g.: Collective belief soothing individual pain

Figure 4: Exosemantic musical meaning of J. S. Bach's 'O Schmerz' on level three

The overall structural pattern for musical semiosis that I have demonstrated enables us to correlate and integrate in an overall perspective valuable viewpoints put forth by Francois Bayle (2008), Umberto Eco (1971), Peter Faltin, Michel Chion (1998), Jean-Jacques Nattiez (1990, 2005), Winfried Nöth (1990), Pierre Schaeffer (1966), Denis Smalley (1997), and Phillip Tagg (2007). E.g. the *Im'son* (the sonic image) defined by Francois Bayle will be a Level one signifier interpreted through *Causal Inference* (a recorded sound is heard and the listener infers that it is the sound of a bird; thus the image of a bird is appearing to the listener). The *Di'son* (the sonic diagram) of Bayle will be a Level 2 sound pattern appreciated for its intrinsic structure (thus an *endosemantic, taxonomic listening*). His *Me'son* (the sonic metaphor) will then be defined as overall features on Level two or three whose meaning is found by *Comparison* (e.g. textures or lines that describe the trajectory of a soaring bird).

Denis Smalley's concepts concerning 'surrogacy' (Smalley 1997), as well as Chion's 'chose sonore' (Chion 1998) are all related to Level one phenomena, in which *Comparison* can be combined with *Causal Inference* and *Association*. A case of *Comparison* on Level one would be when one sound is made to refer to another sound through imitation (more common in instrumental music, where e.g. a kettle drum roll is supposed to imitate thunder). Phillip Tagg refers to this as a 'sonic anaphone'.

While an explication of semiosis reveals the logic by which a certain interpretation of extramusical meaning is being made, it does not account for the meaning itself, the semantic content. An extramusical meaning will have to be arrived at both through spontaneous insights and through hermeneutic processes of interpretation; thus the method proposed leaves the question of actual meaning completely open. The analyst, after having arrived at an interpretation, will in hindsight have to analyze the mental acts involved in the constitution of the interpretation, as part of a reflective process. When interpretations of different analysts differ, one may possibly trace at which point in the chain of semioses the different options arise, thus opening for a reasonable discussion of musical meaning.

In addition to the above method of analyzing the meaning of music-as-heard I have developed a complementary approach dealing with the semiotics of musical communication. This theory is based on R. Jacobson's original communication model in combination with an elaboration of F. Delalande's *Listening Behaviours*. I have identified and described a number of listening behaviors beyond those described by Delalande (Delalande 1989). A matrix representation has been worked out, by which the analysis of signifier, signified and semiosis is combined with the model functions of communication. However, time constraints will make me able only to hint at this larger perspective.

An exosemiotic study of *Nimb Number 45* by Toshimaru Nakamura.

As a case study of an exosemiotic analysis of electro acoustic music I have chosen *Nimb Number 45* by the Japanese composer *Toshimaru Nakamura*, who is a well-known figure in the so called *onkyo*, or noise music scene. The piece is published on his CD *Egrets*, released by Samadhisound in 2010. I am grateful to the composer Mark Trayle for bringing this piece of music to my attention, and providing me with the first spectromorphological transcription of it.

Nakamura's music is played from a non-input mixing board. In commenting his own music Nakamura seems consistently to avoid describing the exosemantics of his music; his focus seems to be on the sounds themselves, and on his relationship to his instrument in the act of performing. So when I am now asking questions about the meaning of the music from a listener's point of view, I am probably diverging from the intentions of the creator. The *poiëtic* aspect of the music (the point of view the composer, the producer, his intentions) are, however, never exactly identical to the *esthesic* aspect of the music (the point of view of the listener, receiver – perhaps even the curator). In literary circles, as part of the New Criticism, the concept of the *Intentional Fallacy* has almost attained the status of an absolute moral principle in academic circles. The concept is tersely formulated by W.K. Wimsatt and Monroe Beardsley: "The design or intention of the author is neither available nor desirable as a standard for judging the success of a work of literary art." The text is the only source of meaning, and any details of the author's desires or life are purely extraneous. If they are to be commented, the evidence must be extracted from the text itself.

The following reflections then, have no other source than my own reactions and thoughts in encountering this piece of music, which, frankly, is at variance with my personal aesthetics as a composer. The listening intentions by which I trace the meaning of the music (the semioses) are explicitly stated, which could enable others to add theirs in an equally explicit way.

I begin with a spectromorphological transcription, by using the listening intention of hearing sounds as sounds, avoiding any interpretive act beyond categorization. The graphic and conceptual terminology is explained in a paper published in *Organised Sound* (Thoresen 2007). In the process of making the spectromorphological transcription I discover that the first half of the piece is constructed around a sustained *sound-character* consisting of two strata: An *unvoiced complex sound* in combination with a *homogeneous accumulation* of *complex sound fragments* on top of that; this sound-character is prolonged in *ambient time*. On top of this drone there are short *complex* sound-objects, with *sharp onsets and sharp endings.* They are superposed on the extended sound character; they are the elements of play ('values') that enhance the temporal prolongation of the sound-character through keeping up the listeners' awareness which otherwise would be lost because of predictability and monotony; the sound components of this play (the *complex unvoiced* and the *sharp, complex onsets*) are already implicit in the sound character used as a drone under these shorter values. I name this sound-character *A*. The spectromorphological transcription of the sound-character is shown in Figure 5. The concepts of *characters and values* are defined and further discussed in Thoresen 2009.

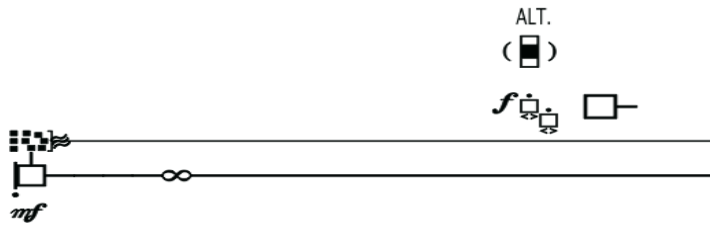

Figure 5: Sound-character *A*

Fading in over sound-character *A* comes another sound-character: This one is also stratified in that it consists of two components: a *chord of sinusoidal pitched sounds* and an *ostinato* of two – three pitched sounds. I call this sound-character *B*. The spectromorphological transcription of the sound-character is shown in Figure 6. Sound-character *A* stops rather abruptly after a while, but remnants of it stays on.

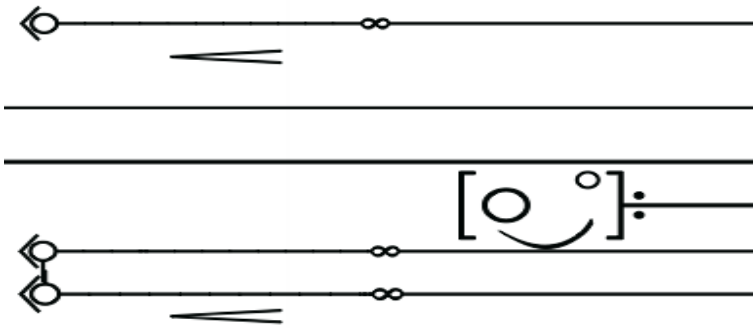

Figure 6: Sound-character *B*

So far I have explored the music with *reductive listening*, i.e. simply describing sounds. Now I change my focus in order to discuss questions of interpretation and musical meaning. My first reaction, hearing *sound-character A*, was that these sounds were just technical noise (the hissing sound, the crackling accumulation). The sharp attacks of the superposed shorter sounds also seemed like the kind of technical disturbance one would have from a sine-wave curve abruptly cut by a VCA, i.e. when the attack is shorter than one period of the wave. During my education in the EA studio I was trained to regard such sounds as unwanted, apart from them being, to my ear, physically unpleasant. Shortly, I was prone to dismiss the music as junk. The kind of listening intention – semiosis – that I used in making these observations is clearly *Causal Inference* addressing *Articulation Level One*, the level of the sound-objects, thus a *semiosis* we can describe as [L_1: INFER, F_3].

The codification of these sounds as technical noise is made according to a common standard of a sound-producer's preferences, so I give it a degree of fixity 3. Pierre Schaeffer gives this kind of listener intention a specific name: *écoute praticienne*; i.e. *professional listening*. This is a type of indexical listening in which one tries to identify the technical causes of the sounds, such as extraneous noises, technical malfunctioning, unwanted background sounds, fans in the recording locality etc.

Next I told myself that OK, the composer evidently intends to use these – to me unpleasant – sounds, so let me go along with him and see if his composition justifies the use of them. By having me to make this choice, the composer evidently has achieved something: he leads my attention away from interpreting the sound-objects as referring to other things in the world

outside the composer's repertoire of artificial sounds selected for this particular piece. In a way his sounds become indifferent to me as carriers of meaning, much in the same way that the indexicality of instrumental sounds in a piece of traditional interval based music is to a great degree uninteresting for the comprehension of the musical structure that happens on articulation level two. By negating the listener to give the sounds intrinsic significance, they may be point away from themselves for instance by being part of abstract elements in a design. But which design?

To me the design features that appear to be the most striking are the parallels and contrasts between sound-character A and B. Also character B has something primitive and technologically unrefined about its sonority: sinusoid sounds seemingly straight from the generator or from a feed-back circuit and ostinatos that seem to be a mechanical loop [L_1: INFER, F_3].

Anyway, I have decided to let such considerations out for a while, at least, so I rather want to find out what meaning emerges from the musical contrast between these two characters.

From a taxonomic point of view (thus applying the intention to observe relations of order and structure), there are a number of parallels between A and B: They are both somehow stratified: sustained elements (A: hiss, B: chord) serve as background elements for moving foreground events (A: accumulation, B: ostinato). They invite comparison.

Character A has got a complex sound-substance, full of technical clicks. There is no regularity to the movements in time. Character B has got a pitched sound-substance; the ostinato is regular, and in ripple-time (the term refers to a typology of velocities presented in Thoresen 2009). The regularity bestows on the music a feeling of easier flow (a term used to describe the endosemantic category of flux - variations of rhythmical friction vs. flow; see Thoresen 1987). The chords, less unpleasant because of being in the middle register, and containing less sharp click-sounds, seem to me a kind of relief. Character A is like a problem, character B is like less of a problem, although character A is not completely removed. This makes sense to me: One passes from a more problematic, closed, frozen state into a state that is less problematic, more open, containing more movement. Time seems to pass easier in the second part than in the first. The semiosis then would be: [$L_{2/3}$: CPAR+ASSOC, F_0].

This interpretation is centered on articulation level two or three, depending on the point of view. In sound-based music level two and three often merge, that is, cannot be consistently separated. The interpretation compares what happens in music with the connation of similar things associated with life and emotions.

From here on one could proceed to specify which of one's personal experiences and associations would fit into this formula: there are many experiences that would seem to resemble the simple pattern describe (more problematic vs. less problematic). However, such associations would seem entirely arbitrary and probably make the music seem banal. After all the music, having blocked indexical interpretations of level one, leaves no indication as to which region of the Lifeworld (culture, nature, emotions, community, society) it naturally refers, and to deprive the music of its openness would be to act against what seems to me to be it. May be the main aesthetic achievement of the music is the way in which the music succeeds in evading any specific semantic interpretation outside its intrinsic realm of technical associations (which we condensed in the expression F_0, that is to say in the complete openness of its exosemantic interpretation). The fact that the music transcends being a mere exposé of sound-objects, is based on the similarity and the contrasting between sound-

characters A and B, a fact that establishes itself on Level Two/Three. It is this internal parallelism that invites semantic interpretations, a 'tertium'comparationis' is – as in metaphor – achieved by combining opposing entities, and this emerging third entity can be transferred further to entities outside the musical discourse.

On this point, one may raise critique against my interpretation of one track of a recording which I have subjected to an investigation of its referential aspects. May be a more adequate approach would have been to look at the semiotics of communication that I referred to briefly at the end of the introduction to this paper. The consideration that Nakmura's music is improvised in a social context with an audience of supposedly young people, may lead us in the direction of a semiotic interpretation centered around a concept of communality for which the music may stand as a symbol rather than being meaningful through the inner-musical, discursive potential for signification found in the work itself. The social context, the way the composer/performer makes sounds with his inexpensive equipment by using it in ways that all user's manuals would warning him from doing, the excitement of an improvisation as opposed to the following of a preconceived plan, are all part of a greater cultural context, which evidently is felt to be meaningful to groups of young people. However, the discussion of such factors would have to be the subject of another presentation.

For me, although I initially did not intend to constrain my range of interpretations to be in conformity with the composer's stated reservations in this respect, I have, much to my surprise, through my own chain of observations of the music-as-heard arrived at a conclusion that bestow meaning to this unassuming piece of music. It may or may not corroborate the composer-improviser's aesthetical point of view. The process of analysis has, however, been rewarding to me: I have discovered something meaningful in an aesthetical sphere, to which I initially had little affinity.

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