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## **SEMIOLOGICAL INTERPRETATION OF THE ELECTROACOUSTIC MUSIC PHENOMENON**

As evolving technologies become more massive and more easily accessible to virtually every user, as the speed of the global Internet grows faster and more, the composer's relationship with these capabilities takes on new meanings. It was not so much the issues of accessibility and quantity that became relevant, but rather the issues of quality, artistic value, and the uniqueness of creation. This article attempts to review the principles of composing electroacoustic music based on semiological theory. Music, as a message, passes through the various stages of creation, transforming the consciousness of both its sender and receiver. It is important to capture, highlight and define these processes. The identification of oneself as a creator and a clear, unambiguous perception of one's work provides a clear ideological and esthetic basis for new means of composition. Electroacoustic music opens the way to hear any possible sounds, infinity of sounds — from realistic to surreal. The listener's traditional connection to physical sound is often severed: electroacoustic sound forms and qualities usually do not reveal the original sound source and cause. Composers face the dilemma of how to ground a new esthetic field in the wide-open world of sounds, how to develop more clearly defined methods of sound creation, how to understand and explain electroacoustic music.

**Keywords:** electroacoustic, perception, poietic process, esthetic process, semiotic.

**Introduction.** In recent times, the interest in electroacoustic music also raises serious questions about various aspects of this phenomenon — technological, psychological, and cultural, etc. It is therefore not surprising that composers become not only generators of their own music, but also of new ideas about creativity and its philosophy. There is a desire not only to name his work from a genre point of view, but also to justify its existence on certain theoretical grounds. How we perceive music, how we articulate it, in many cases depends on innate qualities beyond our control. To grasp the thin thread between our ability to hear and listen, to imagine and interpret, to observe and to identify the various phenomena around us is a task that correlates with the subject matter of this article. The trace between the composer and the listener, from the semiotic point of view, between the sender and the receiver of the message, takes on different meanings, depending on the feedback and the environment that affects our consciousness. The fundamental works of Jean-Jacques Nattiez, Jean Molino, Leigh Landy, in particular the semiotic research in the field of music, have given impetus to the broader study of these topics. The differences between note-based composition and real-time sound-based composition are primarily reflected not only in technology but also in the psychological aspects of self-identification in these creative activities.

**Definitions of Electroacoustic Music.** If we delineate the stylistic differences that characterize the genesis of this fixed media music, we will enter etymological quests trying to find the origins of individual, historically crystallized currents of experimental music. However, there is no single significant term that would serve as a universal definition of the meanings that connect such music. Just as it is difficult to describe in one word people (if they do not identify themselves) who create (organize) similar musical formations. Some call themselves composers, others sound artists or sound designers. The ambiguity is even more pronounced when one wants to understand to which art form the art of sound belongs. Meaning is often drastically abstracted to minimal naming *audio*, which describes everything that can be heard and touched by the mind and hands of the creator. For example, the pioneer of electronic *glitch* music, Markus Popp, states, “I don’t usually use the term music, I usually say *audio*”<sup>1</sup>.

Despite the diversity of terminology, which has been determined both by the traditions of different countries and by the different insights of individual artists or art theorists, there are clear connections recognizable in the creative activities of various representatives of electronic and electroacoustic music. What we call electronic and electroacoustic music is also worth defining. In his book “Understanding the Art of Sound Organization”, American composer and musicologist Leigh Landy identifies electronic music as one in which sound material is not pre-recorded but generated electronically. In the old days, these processes were done by oscillators and noise generators, now, mostly, by computers. For example, the German word equivalent *Elektronische Musik* has a more historical connotation, describing electronically generated post-serialist compositions created in the early 1960s at the Cologne Electronic Music Studio in West Germany.

The term electroacoustic music originated in the late 1960s and sparked heated debate among music theorists and practitioners. Despite the specific meaning of the word in sound engineering, it has been adopted as an umbrella term encompassing the practices of *musique concrète*, magnetic tape music, and electronics composers. French composer and theorist Michel Chion proposed the term *L’art des sons fixés*, meaning the art of sound recorded on fixed media. Another Frenchman, composer François Bayle, combines this music under the name *musique acousmatique*. However, with the clear dominance of English terms in Western culture, the term electroacoustic music is used much more widely in the world.

The term *computer music* should also be noted as a reference to the composer’s practice of using one or more computers. In this case, the emphasis is less on esthetics the reality of composition, and the technical nuance of composition creating. The computer can act as an assistant composer, reproducing algorithms (*algorithmic* composition). It can also become a sound-generating instrument itself — in this way we are talking about sound synthesis. The computer can analyze the incoming audio information and play it back (*interactive* composition). Thus, computer music can be composed in both real and non-real-time<sup>2</sup>. In 2001, François Delalande formed the concept of the electroacoustic music paradigm, which consists of three “technological paradigms”: acoustic, written, and electroacoustic (studio-based)<sup>3</sup>. However, according to the prevailing technological discourse at the time, the electroacoustic paradigm in Delaland predicts that man creates in a

<sup>1</sup> Cox, Cr., Werner, D., eds. (2004). *Audio Culture. Readings in Modern Music*. New York: Bloomsbury Publishing, p. 364.

<sup>2</sup> Landy, L. (2007). *Understanding the Art of Sound Organization*. London: MIT Press, 320 p.

<sup>3</sup> Delalande, F. (2001). *Le Son des musiques. Entre technologie et esthétique*. Paris: INA Buchet/Castel, pp. 42–50.

non-real-time mode of study. For all this abundance of terminology, the description “*Studio-based*” (or “*in-studio*”) composition would be most appropriate in this context. Terminology is often confused when trying to name and concretize a set of sound organization processes based on certain technological resources. It should be emphasized that the term “Studio-based composition” is not a definition that defines a specific field of music composition or, even more so, a stylistic difference. Rather, this definition connotes several essential elements inherent in composers, sound artists, or producers who create similar principles. An essential condition that combines these principles is that at least one stage of the creative process must use at least one device capable of recording, generating, transforming, or transmitting sound. In other words, a natural acoustic derivative — sound — must be transferred to a non-natural analog or digital medium and transformed into its own representation. These mediums usually determine the strategies taken by the developer in trying to organize the sound constructs. The phenomenon of study composition names a certain sound architecture in which various conceptual options that form sound structures co-exist. What structural elements we choose in the creative process, in many cases, depends on the mental schemes established at the level of our consciousness. However, these cognitive processes that determine the expression of creativity are not spontaneous flows — information is generated in a structured way, based on logical assumptions and conclusions. Therefore, naming, defining, concretizing the theoretical model with which we form the reflex of experimental music is a challenge for many music theorists.

Studio-based composition is treated as a set of composition tools and principles, encompassing various technological and esthetic paradigms of recent decades. The components of this concept can be realized in a wide variety of stylistic manifestations. For example, the term sound art, relevant for several decades, combines these umbrella esthetic aspects like sound installations, sound sculptures, sound objects, sound events, and more. All the more so, these terms, these names often intertwine, expanding their original meanings.

**Relevance of perception and analysis.** We are confronted with the practical and theoretical problems of electroacoustic music analysis (if more precisely — the issue of the interaction between practical application and theoretical substantiation). On the practical side, the methodology is highly developed these days. Numerous software has been developed that allows visualization of signals quickly and easily. It has radically changed the possibilities of our practical analysis. Not only metrological calculations of the height and duration of sound structures but, most importantly, the visual fixation of the music itself has become easily implemented. However, technological possibilities do not change the theoretical problem. They provide only external information about the acoustic phenomenon, without going beyond the field of knowledge of perceptual understanding.

In this context, the aforementioned analytical approaches raise aspects that directly correlate with the dimensions of musical analysis. The theoretical and practical basis lies in the understanding of music as a form of interpersonal communication. In the cultural field of human communication, audiovisual media, “messages” spread through certain systems of symbols, which are increasingly prone to escape from the Western logocentric dominant. The understanding of the meanings of music is examined in terms of the means of how electroacoustic practice and acoustic listening embody the semiotic aspects of music as a system of meaning. Both “classical” semiotics and the post-structuralist model of music semantics combine the fundamental paradigms of human perceptual processes. The idea inherited from the tradition of “Absolute Music” that the meanings of music arise from the musical material and its organizational structure is questionable. New musical expressions raise the question of a broader theoretical terminology, taxonomy, theoretical

system that tries to answer the symbolic meanings of sound, which can answer the question of the functioning of sound as a sign from a semiological point of view. The new systemic framework should not reinforce the dividing line (characteristic of many traditional theoretical constructs) between intra- and extra-music. Especially concerning the electroacoustic and acoustic paradigm. In this context, music is a means of communication. By listening to it, meaningful content emerges through the interpretation of (musical) information. Meaningful content can be summarized in three aspects arising from musical information: extra-musical, intra-musical, and music-genic. Extra-musical (non-musical) meaning is designative, i. e. describing the relationship of music (sound, word, etc.) to reality, but not to its originator. This class of musical meanings is defined by three dimensions: icon, index, and symbol. Iconic musical meaning derives from common patterns or forms, such as the resemblance of musical sound to the properties of some object or object (e. g., “warm”, “sharp” sound, etc.). In linguistics, this is called Onomatopoeia. The musical significance of the index derives from action-related patterns (e. g., prosody — intonation, accents, duration, pauses, and other sound-shaping factors) that affect psychological states (e.g., emotions, composer intentions, etc.). The musical meaning of the symbol derives from clear, customary non-musical associations (e.g., the National Anthem). It is a “culturally active” meaning that is shaped by culture<sup>1</sup>.

Take, for example, the sound of a church bell beating. Its relationship to the object can be iconic, indexed, or symbolic, depending on the meaningful context. The sound of the bell is iconic in the sense that it depicts the bell through a specific metallic beat sound. We recognize the sound of the bell because of its inherent iconic properties. The sound of the bell is also indexed, as it is evident that the church bell has been shown to emit sound. The symbolic sound is related to the idea of the function of the church tower, which is a learned association.

**Semiotic approach and interpretation.** The model of semiotics formed by Charles Sanders Peirce, which can be applied to the decoding of audio codes of electroacoustic music, is proposed as supporting points for the understanding of the new theory. In this perspective, the meanings of music (and not just music) are perceived through three theoretical levels of interaction:

1. Emitter / Channel / Receiver<sup>2</sup>
2. Icon / Index / Symbol<sup>3</sup>
3. Syntax / Semantics / Pragmatics<sup>1</sup>

<sup>1</sup> Koelsch, S. (2011). Towards a Neural Basis of Music Perception. In: *Frontiers in Psychology*, Vol. 2, Jun 9, 2011, Article 110, 20 p.

<sup>2</sup> The emitter and the receiver share the code, which creates the possibility of meaning and its interpretation. All communicative processes take place in a social context where it is possible to understand and interpret signs. Only because of the preconceived notions (or implicitities) shared between the issuer and the receiver can a common code exist that produces the interaction between the issuer and the receiver. In a communicative context, a common code of perception requires a common equivalent of encoding and decoding. In other words, in communicative systems, it is sufficient to integrate the third — common — element between the two elements, which ensures the successful course of communication (Gonzalez, A. M., Bovone, L., eds. (2012). *Identities through Fashion: A Multidisciplinary Approach*. Oxford; New York: Berg Publishers, p. 96).

<sup>3</sup> The three models have different levels of conventionality, predictability, and compliance. For example, symbols such as letters or numbers are very conventional. Their system is fixed and clear. Iconic signs are usually less conventional, while indexes are difficult to recognize and point to their objects in hidden meanings. These three forms are not necessarily derived from each other.

The phenomenon of electroacoustic music is complex. The theory of the nature of musical “fact” and analysis formulated by the French semiologist Jean Molino does not highlight abstract analytical methods but proposes a schematic theory of music as communication. According to him, three dimensions make up the so-called triad: poietic, esthetic, and neutral. This triad is the cornerstones of treating music as a system of symbols. These are operations or processes of symbols that are not necessarily communication in the literal sense, but, at the very least, are a system of exchange between individuals, the same as language, art, dance, religion, science. Communication, in this case, is indirect, depending on the code embedded in the work, understood by both the sender and the receiver (listener, etc.). Jean-Jaques Nattiez, another French semiotician and musicologist, calls this intermediate link between the sender and the addressee a Trace<sup>2</sup>. The encoding and decoding of a message are based on a poietic process, the result of which is a named trace, and an esthetic process, which affects the reconstruction of the trace (Figure 1).

Figure 1.

Message encoding and decoding scheme<sup>3</sup>

Such simple decoding of its scheme in the esthetic process of reproducing a message (trace) is based on a “perception strategy”, the theory of which is formed by the American scientist Charles Sanders Peirce in his conception of interpretation. According to Peirce’s theory, the percept is a sensory element that emerges after contact with external reality, giving “the first signs of the senses”. Perceptual judgment is an interpretation of the perception, “the first premise of motivation”. Both of these phenomena occur automatically, without the control of the subject. But there is no sign of real sensations: perception, as an interpretation of the perceptual judgment, is reality. Peirce, as an example, distinguishes two concepts using the verbs “see” and “watch”. When we see an object, through our senses we passively receive the stimuli of external reality. This is a percept. When we look at an object, we are participants in an abstract process in which we contextualize the object and give it perspective by defining the qualitative properties of the latter. This is perceptual

<sup>1</sup> Pragmatics examines language in the context in which it is used. Pragmatics has nothing to do with linguistic structures. Language is considered a social factor governed by many social provisions. The field of pragmatic study is contextual thinking. Meanings are interpreted according to two aspects — how the speaker communicates and how the listener interprets.

The relationship between linguistic expression and the outside world is independent of language and should be examined not semantically but pragmatically. The origins of this approach lie in the philosopher Paul Grice’s thoughts on the differences between notation and meaning. Grice argued that linguistic expressions signify something, so the speaker speaks through linguistic expression. However, not always what the words mean is what the speaker thinks. Semantics is about what words signify, pragmatics are what the speaker gives meaning to in his or her expression (Borges Neto, J. (2005). Is Music a Language? In: *Electronic Musicological Review*. Vol. 9. DOI: [http://www.rem.ufpr.br/\\_REM/REMr9-1/borges-engl.html](http://www.rem.ufpr.br/_REM/REMr9-1/borges-engl.html)).

<sup>2</sup> Nattiez, J. J. (1990). *Music and Discourse — Toward a Semiology of Music*. Princeton, New Jersey: Princeton University Press, p. 12.

<sup>3</sup> Nattiez, J. J. (1990). *Music and Discourse — Toward a Semiology of Music*. Princeton, New Jersey: Princeton University Press, p. 17.

judgment. It is, according to Peirce, an indicator (or index) of perception. Perceptual judgment is not subordinate to us, we are forced to accept it. If we see something, we cannot avoid perception, if we look at something — perceptual judgment<sup>1</sup>.

If we compare Ferdinand de Saussure's statements about the structures of language<sup>2</sup>, this basic idea develops further — in music (as in other arts, by the way) the signs are limitless, endless: the footprint means nothing in its transparent, literal sense. Jean Molino concludes that the symbol system is a complex of elements that cannot be fully explored, which is never static and finite<sup>3</sup>.

Perception is an interpretive and cognitive process. On this basis, Jean Molino rejects the classical theories of musicologists such as Adolf Bernhard Marx or Heinrich Schenker, treating them as fiction. According to Molino, structuralism is also an allegory. Peirce revealed the fundamental fact that the information of a mark and the generation of its interpretations is an endless process. Molino concludes that the process of analysis itself is endless, which refutes attempts to keep music analysis closed and finite. As shown in Molino's table, such a system of symbols unites all musical and musicological activities — analytical, interpretive, historical, and esthetic (Figure 2).

The trivial model of poesies, esthesis, and trace is further developed by French musicologist Jean Jacques Nattiez, arguing that this theory of Jean Molino is the most adequate way to explain the practices of symbol functioning both in human activity in general and in music in particular. Nattiez notes that "human creations and actions leave material traces", which can be linguistic, works of art, esthetic expressions, or social factors that have a material basis, a form that is in itself a trace. They are symbolic forms, meaningful to everyone who creates them, to everyone who perceives them, i. e. it is possible to assign values to them. These are the signs that make up the object's, the abstract idea's, the emotion's, etc. symbolic forms — word, line, color, sound and gives different meanings of the sign itself<sup>4</sup>.

So, returning to Molino's theory (which he began with an examination of structuralism but later became independent of the stylistic context), Nattiez draws his three-part semiological scheme in his way (Figure 3).

We see descriptions of three levels — poietic, neutral, and esthetic. The poietic is understood here as the connection between the composer's intention, creative actions, mental schemes, and the results of these actions. All these components materially embody the work. The poietic description is also related to a special form of listening (Edgard Varèse called it the "inner ear"): what a composer hears when he imagines a sonorous result of work or experiments with an instrument or recording.

The esthetic level is understood not as simple attentive hearing, but as perceptual functioning in a particular listening environment: how sonorous aspects are captured in perceptual ways.

<sup>1</sup> Misak, C. J. (2004). *Truth and the End of Inquiry: A Peircean Account of Truth (Oxford Philosophical Monographs)*. Oxford: Clarendon Press; New York: Oxford University Press, p. 78.

<sup>2</sup> According to Ferdinand de Saussure, the relationship between the signifier (physical form of the sign) and the signified (mental ideas associated with it) is arbitrary — there is no direct connection between form and concept. For example, there is no direct motivation between the letters D-O-G to create a picture of an animal with four legs (or the corresponding sound from these phonemes). It is only a reaction to the traditions of speaking the same dialect (Storey, 2006, p. 111).

<sup>3</sup> Molino, J. (1990). Musical Fact and the Semiology of Music. In: *Music Analysis*, Vol. 9, No. 2, p. 107.

<sup>4</sup> Barcellos, L. (2012). Music, Meaning, and Music Therapy under the Light of the Molino / Nattiez Tripartite Model. In: *Voices*. Vol. 12 No. 3, pp. 3–15.

Figure 2.

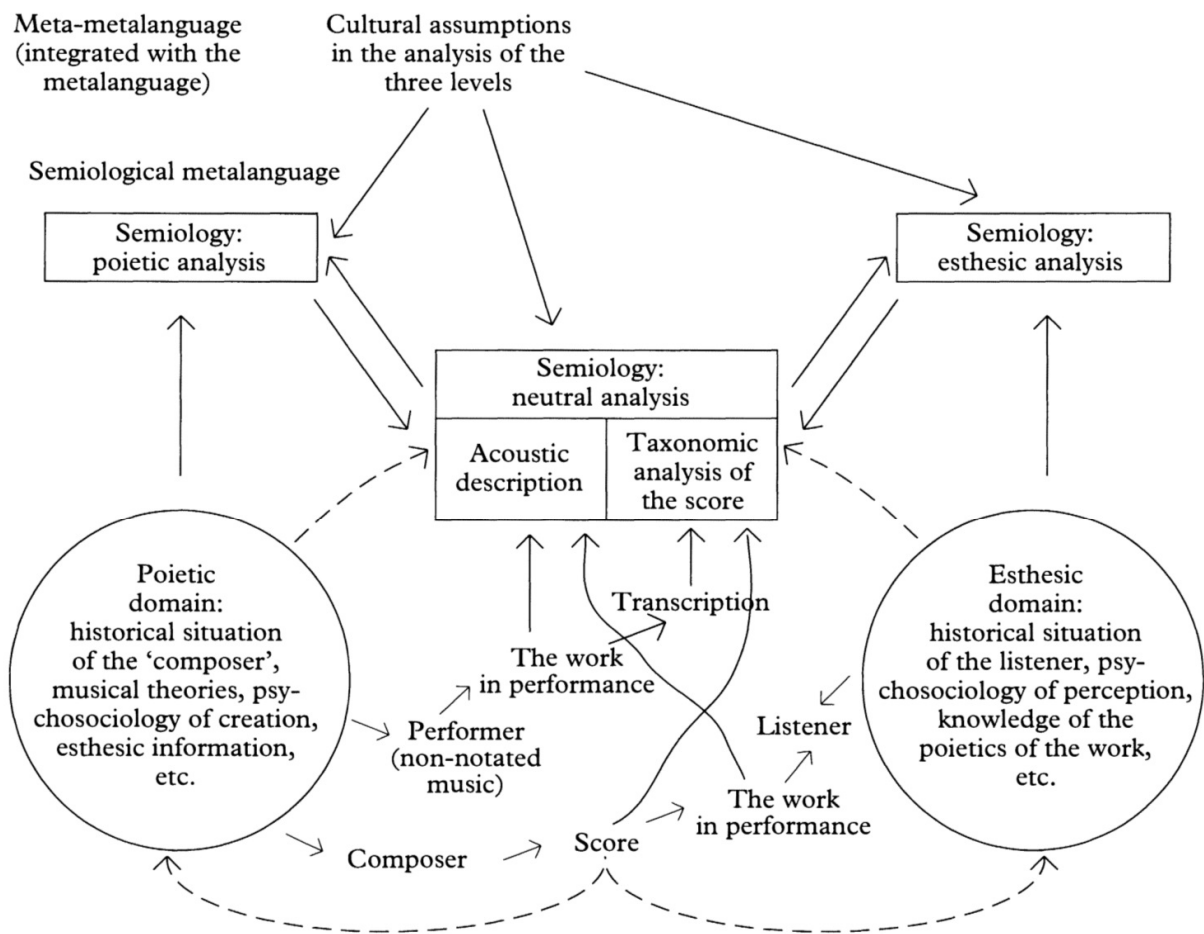
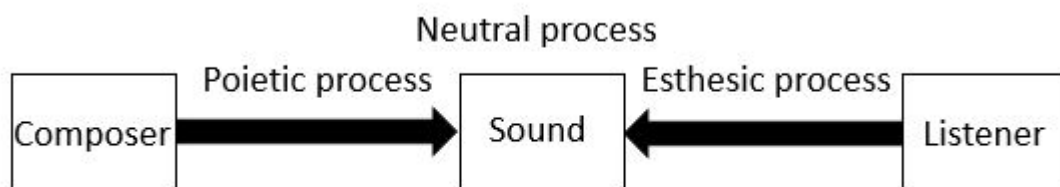
J. Molino symbol table<sup>1</sup>

Figure 3.

Three parts semiological message scheme according to Jean-Jaques Nattiez



<sup>1</sup> Dunsby, J. M. (1977). Fondements d'une Sémiologie de la Musique. In: *Perspectives of the New Music*, Vol. 15 No. 2, pp. 226–233.

The intermediate — neutral — level is the physical “traces” (according to Saussure soundscapes, sonores) created and interpreted on the esthetic level (as a result of perception, perceptual and social constructs) and on the poietic level (as creative, compositional constructs or organizational and social constructs).

Jean-Jacques Nattiez provides a simple diagram showing the different types of musical definitions (Figure 4).

Figure 4.

Semiological typology of different musical definitions<sup>1</sup>

	Poietic level (composer's choice)	Neutral level (physical definition)	Esthetic level (perceptual decision)
<b>Music</b>	Musical sound	Harmonic spectrum	Received sound
<b>Not music</b>	Noise (non-musical)	Noise (complex sound)	Unacceptable noise

These theories otherwise cannot provide the meanings of musical analysis itself. Nattiez proposes new communication criteria that perceive musical analysis as a “metalanguage” applied to a musical “fact”.

**Compound elements of electroacoustic music perception.** Meta-language takes over different discourses of object research, examining the never-ending structural diversity of electroacoustic music. Because such music is usually constructed from sound material, detached from its original source, and re-contextualized in new musical structural frameworks, the absorbed semiotic basis of theory provides more realistic possibilities to more or less decoding the genotypes of the music under analysis. Electroacoustic music has an infinite number of characters that are not recognizable to the audience in a conventional form.

Analysis accumulates one or more interrelated goals. The question of intention can include aspects and challenges such as reproducing structure, layers, narrative discourse, sound qualities, and their changes over time. Also explore different types of listening, incorporating social, emotional, semantic elements related to music performance and audio material. For example, in this context, the characteristics that provide a template for the further development of the analysis have been singled out, which is useful to examine based on the theory of the triad.

**Representation.** Visual representation is important in analyzing examples of electroacoustic music. However, the question arises as to which form of visual representation is most effective.

**Material.** This category deals with the type of sound and the morphological aspects of sound. Unfortunately, we only have a few systems by which audio material is classified. Some are based on the description of the origin of the sound, others on the data of the acoustic spectrum. Metaphorical methods of description are also possible. However, there are no clearly organized taxonomies that complement other categories.

**Interpretation of hearing.** The nature of the listener's interpretation of sound material, the perception of sound structures, is examined quite extensively. Listeners' listening experiences and strategies are usually different, depending on the nature of the work. Realistic sounds raise an amplified or contextual question, while abstract sound material is listened to in a more reduced or musical way. In other words, sound recognition

<sup>1</sup> Nattiez, J. J. (1990). *Music and Discourse — Toward a Semiology of Music*. Princeton, New Jersey: Princeton University Press, p. 46.

affects our listening experience. The relationship between listening style and the musical language is of great importance for the analysis of electroacoustic music<sup>1</sup>.

The fundamental problem in describing music is that we hear it differently each time we listen to it. One of the ideas of listening interpretation is to try to explain, not what, but how the listener hears what shapes his listening strategy. Careful listening consciously assimilates the result: not only is the perceptual image of the work formed with its system of symbols and meanings but, at the same time, sensations and emotions are aroused, which in turn reinforce or re-orient our expectations. It is a process where goals, strategies, perceptions, symbols, emotions are interconnected and directed to the interpretation of a question.

François Delalande, experimenting with listeners' reactions to the audition of one part of Pierre Henry's "*Variations pour une porte et un soupir*" entitled "Sommeil", singled out three types of listening strategy, proposing clear coherence of listening analysis:

1. **Taxonomic listening** is related to the desire to generalize the main elements of the work. The subject notices the most important structures of the work, differentiating larger morphological formations, identifies them, thus creating a general image of the work being listened to. The listener is sensitive to the contrasts of musical development and sudden changes. In this way, the main information of the work remains in the listener's memory.

2. **Empathetic listening**. The listener draws attention to the psychological factors caused by the sound derivatives. Focuses on the level of sensuality, becoming a participant in the music experienced. This process takes place at a given moment, avoiding the systematization of a pre-set sequence of musical events. Metaphorical forms are used to develop the object-subject associative relationship.

3. **Figurative listening**. Figurative, in this case, is a receptive behavior where the narrative becomes more than just a metaphor for form — it creates a model in perception. The listener forms an image in which various sounds imply an autonomous "movement". Contrast is sought between sound constructs related to the images of a moving subject and other elements. Metaphors are used to describe these images. Personal metaphors are created to illustrate the different positions (oppositions) between the characters created by the sound and the contexts that shape them. According to Delalande, "one thinks of emerging sounds that resemble something that moves, lives"<sup>2</sup>. The opposition and harmony of this "life" and contextual frames is the basis of figurative listening.

**Morphology of the substance.** This characteristic is related to the morphological aspects of the work material and correlates with the examined characteristic of the material as a type of sound. The material of any music has the property of changing in the process of its representation. In addition, it is related to sound quality progression and compatibility. For example, when two different, competing musical materials are represented, they create a new, unique sound quality. In other cases, they perform an individual function of a system of representative sounds — for example, by combining contextualized sound elements, the origin of which we suggestively identify, with abstract, unfamiliar background sounds that play an individual role in this structure. These aspects are very important in musical analysis in shaping new creative strategies for electroacoustic music.

**Sequence.** The latter feature concentrates on the sequence of sound events and their organization. Both horizontal and vertical sound flow events are analyzed, as well as the characteristics and discourses of audio and structural strategies. Patterns are analyzed

<sup>1</sup> Emmerson, S., Landy, L., eds. (2016). *Expanding the Horizon of Electroacoustic Music Analysis*. Cambridge: Cambridge University Press, pp. 13–14.

<sup>2</sup> Delalande, F. (1998). Music Analysis and Reception Behaviours: Sommeil by Pierre Henry. In: *Journal of New Music Research*, Vol.27, p. 47.

at various levels, from small segments to full-length structural elements. Notable is the method of computer analysis of sound classification developed by the American scientist Michael Casey, which automatically systematizes the sounds of the environment, musical instruments, human voices and calculates the metrics of similarities between the target and the sounds in the database. Structure identification, together with narrative and discursive elements in electroacoustic music, is one of the least studied areas of musical analysis. This is because textural compositions based on the principle of sound layering form a structural basis, the creation of which is difficult to formalize by the usual rules (for example, music recorded in notes). Most of these compositions are based on algorithmic methods, which are practically impossible to decipher phonetically. Thus, the structural analysis of this music and the description of the sequence poses new theoretical tasks.

**Space.** Territorial analysis of music and aspects of space and spatial movement is an integral part of the electro-acoustic composition. In live electronic music and fixed media works, these issues are highlighted by different sets of tools.

**Performative elements.** Live, especially improvised electroacoustic music has clear problematic implications. In most cases, there is neither a score nor a fixed media. The problem, in this case, is inseparable from the final result — the sound of sound in real-time. The language of performance, the levels of immediate decisions, and coherence make up many aspects of performance related to the strategy of performative elements. Live performance videos, which have become an integral part of E-analysis, are commonly used for analysis.

**Intentions / receptions, social, emotional aspects.** Among the factors that directly affect the listener concerning the analysis of the work are non-musical (extra-musical) aspects. The mental cycle of intent/reception is a possible measure of a particular musical communication. These stages of communication are various — dramaturgical, emotional, and semantic. One of the most important aspects of such an analysis is the social circumstances that determine the social causes of different performances or compositions. Not every electroacoustic composition is intentionally intended for the traditional performance or fixation of this genre (for example, it can be sound installations or other special presentation techniques). Social attitudes shape musical experiences through communicativeness, sharing musical values inherent in different individual expressions or genre diversity.

**Genre elements of the work.** There is no isomorphic relationship between intention, means, and genre. However, certain aspects emerge that are more or less relevant to music of different genres. For example, the question of the origin of pre-prepared sounds and how they are used (or even their legality) may have a direct bearing on the music created based on sampling. Such a connection between the use and development of technological means and genre aspects is interpreted as a hybridization of new genres.

**Completion.** The poietic and esthetic revelation of these characteristics is concentrated both in the experiences of the listeners (and how the work is analyzed from this perspective) and in the social context of the composer's intentions. Both of these facts influence the constructive paradigm of music itself<sup>1</sup>. Electroacoustic music analysis is a dynamic process. Over time, music genres changed and assimilated. Various genre practices have highlighted the authentic qualities of music, but not all of us perceive them instantly. The task of analysis is to reveal, explain, and integrate our new musical experiences. The paradigm of electroacoustic music composition is evident in its synchronicity — many issues converge here, which have been tried to overcome for many decades. However, it should

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<sup>1</sup> Emmerson, S., Landy, L., eds. (2016). *Expanding the Horizon of Electroacoustic Music Analysis*. Cambridge : Cambridge University Press, pp. 14–17.

not be forgotten, or perhaps even resisted, that music and its esthetic are, above all, a field of research in human psychology, logically incorporating various other aspects of the subject under consideration. To further abstract this idea, it can be argued that the fundamental issue of computer-aided electroacoustic music creation is not technological but psychological. Depending on the context, a computer can be a machine or a tool. For the composer, however, it becomes an instrument, one or the other, operated by the performer. According to British composer Trevor Wishart, the computer is “a universal sound instrument, a device capable of modeling and producing any sound object or sound organization scheme that is not difficult to imagine”<sup>1</sup>. However, especially in today’s post-digital age, the dominance of technology properties should not be absolute. The connection to technology is built around our immanent qualities, which have formed not over decades but throughout the evolutionary period. Therefore, from a phenomenological or semantic perspective, technological innovation is only a tool. From an anthropomorphic perspective, the same as a bone or stone pointed at a primitive man.

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**СЕМИЛОГИЧЕСКАЯ ИНТЕРПРЕТАЦИЯ  
ФЕНОМЕНА ЭЛЕКТРОАКУСТИЧЕСКОЙ МУЗЫКИ**

**Актуальность исследования.** По мере того, как развивающиеся технологии становятся всё более массовыми и более доступными практически для каждого пользователя, а скорость глобального Интернета растёт всё быстрее и больше, отношение композитора к этим возможностям приобретает новое значение. Актуальными стали не столько вопросы доступности и количества, сколько вопросы качества, художественной ценности и уникальности сочинения.

**Научная новизна** статьи определяется тем, что область исследований электроакустической музыки является относительно новой, она расширяется вместе с технологиями. Теоретические основы этой области развиваются несколько десятилетий и ориентированы на перспективу.

**Цель статьи** — рассмотреть принципы создания электроакустической музыки на основе семиологической теории. Музыка как сообщение проходит различные стадии создания, трансформируя сознание как отправителя, так и получателя. Важно зафиксировать, выделить и определить эти процессы.

**Методология.** В работе использованы описательный, эмпирический, историографический, сравнительный методы.

**Выводы.** Идентификация себя как творца и ясное, недвусмысленное восприятие своего творчества даёт чёткую идеологическую и эстетическую основу для новых средств композиции. Электроакустическая музыка открывает возможность услышать любые звуки, бесконечность звуков — от реалистичных до сюрреалистических. Традиционная связь слушателя с физическим звуком часто прерывается: формы и качества электроакустического звука обычно не раскрывают первоначальный источник звука и его причину. Композиторы сталкиваются с дилеммой: как обосновать новое эстетическое поле в широко открытом мире звуков, как разработать более чётко определенные методы создания звука, как понять и объяснить электроакустическую музыку. Феномен электроакустической музыки изучается с помощью различных методов, которые предлагают музыковедение, феноменология, семиология и т. д. Одной из самых сложных черт этой парадигмы является как бесконечное количество новых, незнакомых ранее источников звука, так и новых слуховых впечатлений. Интегрируются концепции, расширяющие границы традиционного восприятия музыки: видимый или невидимый звук, опознаваемый или неизвестный источник звука.

Связь исполнитель — инструмент — музыкальное произведение — слушатель, доминирующая на протяжении веков, принимает новые формы, в которых мы не видим жестов исполнителя, не понимаем физики инструмента, не можем написать партитуру произведения. Однако даже без этих составляющих электроакустическая музыка и её феномены являются важным фактором эмоциональных переживаний слушателей и композиторов.

**Ключевые слова:** электроакустика, восприятие, поэтический процесс, эстетический процесс, семиотика.

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### **СЕМІОЛОГІЧНА ІНТЕРПРЕТАЦІЯ ФЕНОМЕНА ЕЛЕКТРОАКУСТИЧНОЇ МУЗИКИ**

**Актуальність дослідження.** З розвитком технологій, що стають більш масовими й доступними практично для кожного користувача, а швидкість глобального Інтернету зростає, ставлення композитора до цих можливостей набуває нового значення. Актуалізуються радше не питання доступності та кількості, а якості, художньої цінності й унікальності твору.

**Наукова новизна** статті зумовлена тим, що галузь досліджень електроакустичної музики є досить новою, вона розширюється разом з технологіями. Таким чином, її теоретичне підґрунтя розвивається лише кілька десятиліть і орієнтоване на перспективу.

**Мета статті** — розглянути принципи створення електроакустичної музики на основі семіологічної теорії. Музика як повідомлення проходить різні стадії створення, трансформуючи свідомість як адресанта, та і адресата. Важливо зафіксувати, відокремити й визначити ці процеси.

**Методологія дослідження.** У роботі використано описовий, емпіричний, історіографічний, порівняльний методи.

**Висновки.** Ідентифікація себе як творця та ясне, однозначне сприйняття власної творчості дає чітку ідеологічну й естетичну основу для нових засобів композиції. Електроакустична музика відкриває можливість почути будь-які звуки, нескінченність звуків — від реалістичних до сюрреалістичних. Традиційний зв'язок слухача з фізичним звуком часто переривається: форми і властивості електроакустичного звуку зазвичай не розкривають початкового джерела звуку та його причину. Перед композиторами постає дилема: як обґрунтувати нове естетичне поле в широко відкритому світі звуків, як чітко розробити певні методи створення звуку, як зрозуміти і пояснити електроакустичну музику. Феномен електроакустичної музики вивчається за допомогою різноманітних методів, запропонованих музикознавством, феноменологією, семіологією тощо. Однією з найскладніших складових цієї парадигми є як безкінечна кількість нових, незнайомих раніше джерел звуку, так і нових слухових вражень. Інтегруються концепції, що розширюють межі традиційного сприйняття музики: видимий чи невидимий звук, упізнаване чи невідоме джерело звуку. Зв'язок виконавець — інструмент — музичний твір — слухач, що панував протягом століть, набуває нових форм, в яких ми не бачимо рухів виконавця, не розуміємо фізики інструмента, не можемо написати партитуру твору. Однак навіть без цих складових електроакустична музика та її феномени становлять важливий фактор емоційних переживань слухачів і композиторів.

**Ключові слова:** електроакустика, сприйняття, поетичний процес, естетичний процес, семіотика.