

A Peircean Model for Music and Sound-Based Art: a Pragmatist Approach to Experiences in the Artistic Use of Sound¹

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Abstract

As a composer of music and an art educator, I delved into C. S. Peirce's theory of semiotics searching for possible connections between both practices and to other arts and disciplines. The application of peircean semiotics to the study of the artistic use of sound has confirmed the inherent interdisciplinary nature of music. Semiotics has provided clear methods to reveal and construct significant relations between artistic sound and other areas of knowledge.

What this model offers is a method of observation of the processes of signification in experiences in the artistic use of sound. The model's first categorical proposition is the recognition of three moments of artistic communication: Reception, Production and Analysis. These describe differentiated participations of interpreters in musical events and rituals. A second set of categories organizes the referential potential of sound, music and musical experiences, and establishes three planes of signification: Temporal, Spectral and Ritual. Both trichotomies respond to an application to music of Peirce's tri-relative sign unit of Representamen, Object and Interpretant and his phenomenological categories of Quality, Relation and Law. The model takes metaphor, understood by Peirce as a hypoicon, as guiding principle and mediator between the model's proposed categories.

1. Introduction

The semiotic model outlined in this paper uses C. S. Peirce's semiotics and his conceptions of pragmatism and hypoicon to offer one possible approach to the experiences in the artistic use of sound. The model uses the notion of *artistic use of sound* to address practices, both creative and educational, related to music and sound based-arts. In the development of the model, Peirce's general theory of semiotics has served to link and integrate different theories of signification and musical meaning with the intention to guide analytical observation and to argue in favor of empirical research and interdisciplinary study in the practices related to the

¹ This paper briefly outlines the semiotic model of analysis developed in the research project titled: *A semiotic model of music and sound art*. This one was realized during the period of 2011-12 as final thesis work to acquire the bachelor's degree in Art Education offered by the *Escuela Superior de Artes de Yucatán* (ESAY). I extend my gratitude to professors Humberto Chávez Mayol and Emiliano García Canal for their support and guidance throughout this project and also to the Electroacoustic Music Studies Network and the organizing committee for the EMS12 Conference for the opportunity to present a synthesis of this investigation.

artistic use of sound. Semiotics has been used for this model with the following premises. First, that there is no still point or particular reality from which to understand music in a general way. There is rather a rich diversity of musical realities that are better understood in their particularity. Second, that semiotics offers general concepts apt for the study of particular realities. Generality in semiotics emerges and strengthens with the empirical study of phenomena and their multiple varieties of signification. And third, that knowledge from semiotics studies cannot be thought with absolute validity, as it looks upon reality through a certain lens and asserts that all observers hold beliefs, theories and myths that profoundly affect their construction of knowledge.

To present the model, first I will briefly introduce key aspects of Peirce's semiotics necessary to understand its categorical proposal, concentrating on how the theory can guide a practice of observation of processes of signification. I will then explain how the concepts of experience and hypoicon define the model's mode of observation. After that, I will present the model's categories of planes of signification and roles in artistic communication, closing with brief dissertations to describe the analytical viewpoint they suggest.

2. Peirce's tripartite thought

In Peirce's pragmatist line of semiotics, signs are understood by the way they enter in daily life behavior. Interpretation is a process that leads to the construction of concepts that an interpreter believes logically valid, which are equivalent to habits of conduct. A logical concept is a naturalized association between a Sign and its Object by way of an Interpretant.

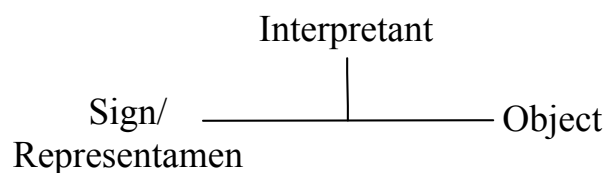


Figure 1: Peirce's sign unit: Representamen-Object-Interpretant

Such is Peirce's tri-relative sign unit, in which a "Sign or Representamen" represents another sign "called its Object", in a mediation brought upon another sign, "its Interpretant".² Any sign, by virtue of standing for or representing another to a mind, can act as a Representamen. By establishing Objects and Interpretants as signs, the theory allows them to act as Representamina in other tri-relative units, pointing to a dynamic and permanent interpretation of signs. A sign unit, therefore, more than a container of meaning, is a diagram of a transformative relative process of *semiosis* in which signs interrelate through interpretation to form evolving symbolic networks. "Symbols grow" Peirce wrote, "They come into being by development out of other signs, particularly from icons [...]. We think only in signs."³

² "A *Sign*, or *Representamen*, is a First which stands in such genuine triadic relation to a Second, called its *Object*, as to be capable of determining a Third, called its *Interpretant*, to assume the same triadic relation to its Object in which it stands itself to the same Object." CP 2.274 *The Icon, Index and Symbol*. Here, CP refers to the *Collected Papers of Charles S. Peirce*. Following the scholarly tradition, this text will be quoted with the abbreviation CP to refer to the text, followed by number of volume and paragraph and the title of the section.

³ CP 2.302, *The Nature of Symbols*.

This conception of signs and signification rests on Peirce's phaneroscopic or phenomenological categories of Quality, Relation and Law⁴. These classify modes of being of ideas present to a mind in ordinary experience:

1. Quality: qualities of feeling and sensuous impressions;
2. Relation: reality, factual correspondence and the experience of effort;
3. Law: mind, representation and legitimation through interpretation.

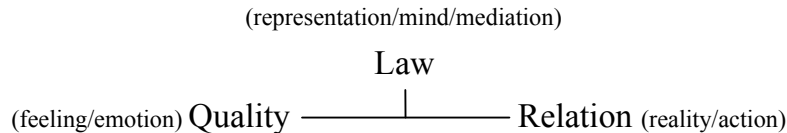


Figure 2: The peircean or phaneroscopic categories

The logical order of these categories underlies every sign classification in Peirce's theory, beginning with the first sign division of Representamen, Object and Interpretant; namely: without qualities, there cannot be relations between qualities, and without relations between qualities, no laws about relations. The two sets of categories serve to understand the pragmatist notion of experience. In an experience, an interpreter feels qualities that he or she interprets as signs, which represent and construct the reality in which he or she meaningfully participates. Mind mediates between the sensations impressed upon it and the actions it takes in the world it experiences. An experience is a complex sign that binds together intellectual, practical and emotional meanings that intermediate each other.⁵ In recollection, after its meaningful culmination, an experience reveals a unique yet complex quality that characterizes it despite of its constitutive parts. Conceptions can therefore not only be understood as logical concepts and habits of conduct, but also as mental operations that reduce to unity a manifold of experienced qualities of feeling, forming a sign unit that impresses an overall quality or icon on a mind.⁶ When an icon is unknown by interpreter, that is, when an interpreter holds for a sign no logical concept or habit, he or she performs an abduction or hypothetical inference to know its Object. Such inference commonly begins in terms of similarity, on what the sign resembles. The classification Peirce offers for Sign-Object associations based on similarity is of iconic signs or hypoicons, to which metaphor belongs.

⁴ For a detailed take of Peirce's phaneroscopy and his categories, read CP 1.284 *Phenomenology*, CP 1.545, *On a New List of Categories* and CP 8.327 *To Lady Welby*.

⁵ "An experience has a unity that gives it its name [...]. The existence of this unity is constituted by a single *quality* that pervades the entire experience in spite of the variation of its constituent parts. This unity is neither emotional, practical nor intellectual, for these terms name distinctions that reflection can make within it.", John Dewey, *Art as Experience*, New York, Perigee Books, 1980, p. 37.

⁶ "[...] an object, to be esthetically good, must have a multitude of parts so related to one another as to impart a positive simple immediate quality to their totality; and whatever does this is, in so far, esthetically good, no matter what the particular quality of the total may be. If that quality be such as to nauseate us, to scare us, or otherwise to disturb us to the point of throwing us out the mood of esthetic enjoyment [...]." CP 5.132, *Ethical and Esthetical Goodness*.

3. Metaphorical associations

Peirce defines metaphors as hypoicons that “represent the representative character of a representamen by representing a parallelism in something else.”⁷ He places metaphor within a trichotomy of iconic signs or hypoicons that represent their Objects by similarity, next to images and diagrams. In images, there is a similarity of simple qualities between a Sign and its Object, while, in diagrams, of relations. The similarity in a metaphor is in terms of modes of representation, in other words, it is based on a similarity on how the two signs that it juxtaposes – the metaphor’s Sign and Object – represent their own Objects in different but somehow parallel tri-relative units.

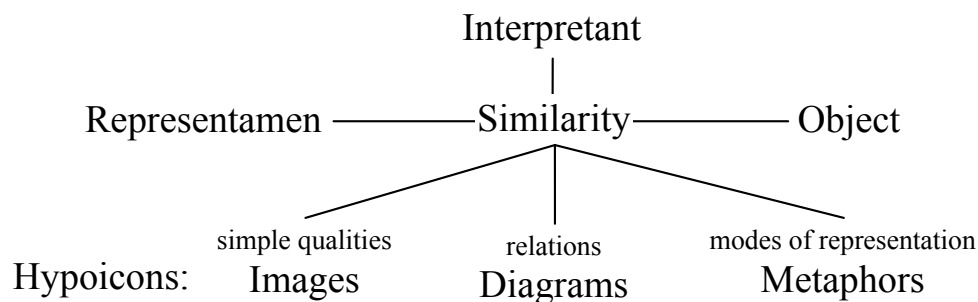


Figure 3: The trichotomy of hypoicons or iconic signs

Images, diagrams and metaphors in music and sound are common. Composer and musicologist José Luis Martínez illustrates them with musical gestures that imitate sounds from nature, like weather phenomena or animal calls, such as bird songs.⁸ There is also diagrammatic iconicity in the repetition and variation of musical motives and in the resemblance between musical temporal organizations and the temporality of lived experiences. Also, sound recordings and samplings can be considered imagetic to their sound sources, and the description of enigmatic acousmatic sounds in terms of the behavior of known phenomena can be considered diagrammatic and metaphoric. Imitation, likeness, resemblance operate in different levels in the artistic use of sound. The division of hypoicons offers useful analytical concepts. Nevertheless, it is sometimes impractical to say that sounds are exclusively images, diagrams or metaphors. The image-diagram-metaphor trichotomy of hypoicons responds to the same interdependent logic in every peircean trichotomy. Recent studies by scholars of Peirce, like Farias and Queiroz⁹ and Frederik Stjernfelt¹⁰, offer descriptions of this logic, that is, of the role of images and diagrams within metaphors. Simply stated, metaphorical interpretations rest on the evocation of images and the construction of diagrams based upon their qualities in order to transfer meaning between “conceptual spaces”.¹¹ The two bonded signs in a metaphor become the same in an imaginary

⁷ CP 2.277 *Icons and Hypoicons*.

⁸ José Luis Martínez, “Icons in music: A Peircean rationale”, *Semiotica*, 110(1/2), 1996, pp. 73-83.

⁹ Priscila Farias and João Queiroz, “Images, diagrams, and metaphors: hypoicons in the context of Peirce’s sixty-six fold classification of signs”, *Semiotica*, 162(1/4), 2006, pp. 287-308.

¹⁰ Frederik Stjernfelt, *Diagrammatology: An investigation on the Borderlines of Phenomenology, Ontology and Semiotics*, Copenhagen (Denmark), Springer, 2007, Kindle Edition.

¹¹ *Ibid.*, p. 39.

moment¹² that equates them through a shared semantic relation¹³, a relation known through diagrammatical interpretation of the signs' icons. Relations of similarity of hypoicons operate in the transfer of meaning between signs. They offer a qualitative and affective supplement to Logic and argumentation in the description of how signs are linked through interpretations. This peircean notion of metaphor resonates with the studies by Aristotle, Ricoeur¹⁴, Lakoff and Johnson¹⁵, Hatten¹⁶ and Visokolskis¹⁷, among others, who mostly agree in their recognition that metaphors:

- Imply an intuition to see similarity in dissimilars
- Understand or describe something by way of something else
- Bring together different realms of meaning
- Create a new meaning from tension between the signs it juxtaposes
- Transfer meaning between conceptual spaces
- Evoke images and pose a challenge to imagination
- Play a role in meaningful learning experiences

Musicologist Christopher Small focuses on this last attribute. He uses the concepts of metaphor, ritual and myth for a theory of musical meaning that sees music as a ritual activity in which one “musicks”¹⁸, be it listening, creating or performing music. Through such musicking, one affirms, explores or celebrates an identity in relation to a community. According to him, an individual defines an identity by getting to know a community-held belief or myth by acting it out in a ritual, which he calls metaphor in action.¹⁹ Small defines a myth, based on ideas of anthropologist Clifford Geertz, as a metaphor that tells how something in the world came to be and how it ought to be. Such ideal social relations captured in a myth are represented metaphorically by the actions and social relations enacted in a ritual by members of a community. Practices related to the artistic use of sound involve myths that enter via metaphor in the experiences of those who practice them, who learn, through meaningful participation, the significance of their identity in a community.²⁰ The

¹² *Ibid.*, pp. 82-84.

¹³ Paul Ricoeur, *The Rule of Metaphor: the creation of meaning in language*, New York, Taylor & Francis e-Library, 2006, Kindle Edition, pp. 233-236.

¹⁴ *Ibid.*

¹⁵ George Lakoff and Mark Johnson, *Metaphors We Live By*, Chicago, University of Chicago Press, Kindle Edition, 1980, p. 5.

¹⁶ Robert Hatten, “Metaphor in Music”, in *Musical Signification. Essays in the Semiotic Theory and Analysis of Music*, ed. Eero Tarasti, New York, Mouton de Gruyter, 1995, p. 379.

¹⁷ Sandra Visokolskis, “Metáfora, icono y abudcción en C. S. Peirce”, in *Peirce en Argentina*, II Jornadas GEP Argentina, September 7-8 of 2006, p. 8, (my translation from Spanish).

¹⁸ “To music is to take part, in any capacity, in a musical performance, whether by performing, by listening, by rehearsing or practicing, by providing material for performance (what is called composing), or by dancing.” Christopher Small, *Musicking: The Meaning of Performance and Listening*, Middletown (CT), Wesleyan University Press, 1998, p. 9.

¹⁹ “Myth tells us, in extended metaphorical fashion, how the relationships came to be, while ritual can be thought of as metaphor in action”, *ibid.*, p. 104.

²⁰ “During [the] concentrated time [of a ritual], relationships are brought into existence between the participants that model, in metaphorical form, ideal relationships as they imagine them to be. In this way the participants not only learn about those relationships but actually experience them in their own bodies.”, *ibid.*, p. 96.

metaphorical association formed through ritual participations are then between ideal and actual social relations.

In this sense, metaphor defines the way the model looks upon experiences. This is not to say that metaphor is the only or most important type of interpretation in experiences, but only that it helps to illustrate how its multiple layers are weaved together. In what follows, the model's categorical proposal will be presented, and the concepts of experience and hypoicon will be key to describe how they interrelate.

4. Planes of signification and communicative roles

The following planes categorize different process of signification in the experiences in the artistic use of sound; they are:

1. The temporal plane;
2. The spectral plane;
3. The ritual plane.

A second set of categories refers to three interrelated roles in artistic communication. Since an individual can perform a combination of these roles in the same experience, they can also be thought as moments in artistic communication; these are:

1. Reception;
2. Production;
3. Analysis.

In the communication cycle they imply, an interpreter receives signs from intentional or non-intentional sign productions. A sign's meaning is analyzed and reconstructed by a receiver based on the sign's qualities for a possible production of signs, through thought or action.²¹ There is a recursive relation between the three communicative roles, in which Interpretant-dependent analysis precedes a production of signs that can be then received by interpreters in a communicative context, including those involved in their production. A context always introduces other signs and qualities that, as metamesages²², interact with intentionally produced signs and affect the signification of a communicative experience.

²¹ "The meaning of the Peircean sign is most adequately understood through the habits of action, reaction, and thought they provoke, sustain and modify [...]", João Queiroz and Floyd Merrel, "Semiosis and pragmatism: Toward a dynamic concept of meaning", *Sign Systems Studies*, 34(1), 2006, p. 44.

²² "We recognize the correct context from other signals that the animal sends with the rest of its body. Bateson calls these messages about messages *metamesages*, and these are important in the understanding of activities such as art and games [...]", Christopher Small, *op. cit.*, p. 58.

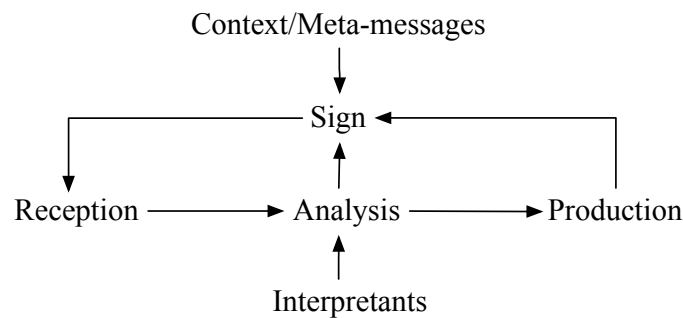


Figure 4: The recursive relation between reception, production and analysis of signs

In what follows, both sets of categories will be explained by the way the planes of signification enter in each of the communicative roles. See the next table for the resulting categories:

	Reception	Production	Analysis
Temporal	Temporal expectation	Temporal flux	Temporal analysis
Spectral	Spectral expectation	Recombination process	Spectral analysis
Ritual	Ritual expectation	Iconic categorization	Ritual analysis

Table 1: The planes of signification within the roles of communication

5. Reception and expectation

In the reception of signs, the temporal, spectral and ritual planes of signification are understood as types of expectation. The temporal plane refers to the perceived flow of time in which events are actualized. In the experience of a musical work, present events project possible future consequents and close projections of past events. When the work concludes, it becomes atemporal and can acquire a determinate meaning for a listener's mind. Musicologist Leonard Meyer accounted for this process of temporal signification through three types of meaning he called Hypothetical, Evident and Determinate.²³ These describe the dynamic relations and tensions between present, past and future events.

Expectation, according to Meyer, deals with the evocation, fulfillment and impediment of tendencies or habits. Habits, as we saw in Peirce, are the practical equivalent to logical concepts that are the final product of interpretations. An interpreter enters an experience with habits previously formed. Expectation emerges from states of uncertainty about received signs, either when an interpreter believes an event will have a probable consequence or when there is doubt about the meaning of a sign. Thence, a mind expects that confirmation or certainty will ensue, that is, given the necessary time and inquiry. Such is the nature of investigation. The following diagram represents this:

²³ Meyer bases his proposal on theories of the pragmatist school, such as those of Charles Morris and John Dewey. Leonard B Meyer, *Emotion and Meaning in Music*, Chicago, University of Chicago Press, 1956, pp. 36-37.

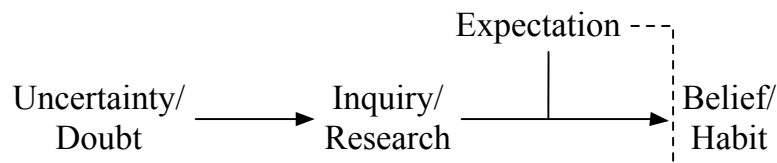


Figure 5: Emergence of habit-conditioned expectation

In a musical experience, an interpreter receives signs and interprets them dynamically, constantly inquiring about their meaning, expecting certainty about them, and thus, establishing new habits and beliefs susceptible to become erratic by new received signs, producing new hypotheses and expectations. It is then easy to see how expectation extends beyond the temporal plane into the spectral and ritual planes.

While in the temporal plane habits are established through the repetition and variation of patterns in time, in the spectral plane, the types of habits that operate are those that associate the qualities of sounds to a multiplicity of possible references. Denis Smalley's theory of sound shapes recognizes the tendency or habit to associate sonic qualities to possible references and offers one possible classification of the referential capacities of sound.²⁴

Expectation in the ritual plane is conditioned by habits of association between participations and individual and collective identities. Participations in rituals generate expectation in terms of their intersubjective significance. According to Christopher Small, an individual does this by affirming or celebrating a known identity, or exploring a new one.²⁵ In ritual expectation, individuals expect to know the meaning of a ritual and of their participations in it.

So, to sum up, interpretative habits in each plane condition the three types of expectation the model proposes:

- Temporal expectation; conditioned by habits related to repetition and variation of events and patterns that acquire meaning in memory.
- Spectral expectation; conditioned by habits of association of sonic qualities with a multiplicity of possible references.
- Ritual expectation; conditioned by habits of association related to the meaning of individual and collective identities and of ritual participations.

In this scheme, the temporal plane sets the necessary condition to produce expectation, the spectral plane centers the model on experiences immanent to music, sound-based arts and the artistic interpretation of any sound, while the ritual plane involves ritual participations that define identities and allow knowing, through metaphorical meaning, the myths of a community.

²⁴ Smalley defines the concept of source-bonding as "The *natural* tendency to relate sounds to supposed sources and causes, and to relate sounds to each other because they appear to have shared or associated origins." His classification of sonic references extends from a base primal gesture, susceptible to be bonded to reference, to four orders of surrogacy in which reference becomes increasingly remote and, in last instance, "unknown and unknowable.", *ibid.*, pp. 112-110.

²⁵ "[...] rituals are used both as an act of affirmation of community ("This is who we are"), as an act of exploration (to try on identities to see who we think we are), and as an act of celebration (to rejoice in the knowledge of an identity not only possessed but also shared with others).", Christopher Small, *op. cit.*, p. 104.

6. Production and instrumental functions

In the productions of signs, the categorical proposal is of instrumental functions. The proposal is based on the recognition of the processes of signification that enter in musicians' and sound artists' use of objects, tools, actors, spaces, concepts, myths, in short, everything that waves the entire context of the experiences in which artistic sound is received, produced and analyzed. The categories are intended to direct observation to the mereological structures of music and sound-based art experiences and to provide semiotic concepts for their analysis. Mereology refers to the study of the relations between a whole and its parts. On this, the analysis of hypoicons provides useful conceptions.

A Representamen or Sign has a base on a pure icon, that is, it has a quality that makes it similar to itself. According to Martinez, "since any kind of musical sign is preliminarily an icon, then nothing more than its own acoustic qualities are necessary for the accomplishment of [...] musical semiosis."²⁶ This quality or pure icon is not an existent but "strictly speaking, a logical possibility"²⁷. Pierre Schaeffer's reduced listening,²⁸ in which a sound is heard with no reference but to its own sonic qualities, resonates with Peirce's notion of pure icon.²⁹ Both Peirce and Schaeffer recognize that the active analytical observation of the qualitative makeup of an icon can reveal more about it than what is necessary for its recognition. Stjernfelt describes such analysis as diagrammatical. He writes, "as soon as an icon is contemplated as a whole consisting of interrelated parts whose relations are subject to experimental change, we are operating on a diagram"³⁰ and that such mental operation "precedes any metaphor consisting in the recognition of diagrammatic schemas in one phenomenon which may be used in understanding another."

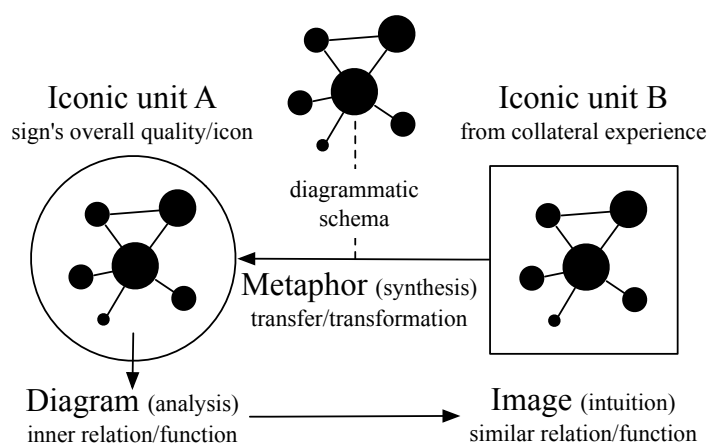


Figure 6: Image-Diagram-Metaphor in transfer of diagrammatic schemas from a sign to another

²⁶ José Luis Martinez, *op. cit.*, p. 71.

²⁷ Priscila Farias and João Queiroz, *op. cit.*, p. 4.

²⁸ Joanna Demers, *Listening through the Noise: the Aesthetics of Experimental Electronic Music*, New York, Oxford University Press, 2010, Kindle Edition, p. 27.

²⁹ "For a pure icon does not draw any distinction between itself and its object." CP 5.74, *The Categories Continued*; "A possibility alone is an Icon purely by virtue of its quality; and its object can only be a Firstness. But a sign may be iconic, that is, may represent its object mainly by its similarity [...]" CP 2.276, *Icons and Hypoicons*.

³⁰ Frederik Stjernfelt, *op. cit.*, p. 92

The multiple qualities that flow through the whole of an experience are dynamically interpreted and reduced to unity, forming sign units with base icons that I term *iconic units*. These reenter the flow as new qualities to be part in new units. An experience, in this sense, as the model's base iconic unit or whole, is a mereologically complex sign in a state of becoming until it concludes. It grows, weaving together multiple layers of meaning. An ambiguous iconic unit in any plane of signification can be understood in terms of a known sign in another plane. In fact, the planes inexorably resonate. Thus, while based on the same musical and sonic qualities, interpretation of the same piece varies depending on interpreters and contexts, on particulars of performance and means of reproduction. The following instrumental functions intend to describe some interpretative processes that enter in artistic sound experiences:

- Temporal flux; refers to the actions, processes and tools used to produce temporal flux of qualities of feeling.
- Recombination process; refers to the interactions between qualities of feeling that the use of spatiotemporal conditions produce.
- Iconic categorization; refers to the production of iconic units through conceptions that reduce manifolds of experienced qualities of feeling.

These instrumental functions can serve to articulate one the model's basic argument that, when an artist constructs artistic works, he or she provides the basis for the generation of rituals in which social relations actualize; and thus, has an inevitable social role that expresses, consciously or not, a culturally contextualized posture based on myths or beliefs that guide his or her artistic practices. An artist then becomes a type ritual designer, a catalyst for community interactions and a promoter, transformer and creator of myths.

7. Analysis and interdisciplinary study

The processes of signification in each of the planes suggest different kinds of analysis. These are different in terms of the modes of inquiry they involve:

- In the temporal plane, analysis maybe in terms of: state of affairs, events, processes³¹; the dynamic and tensive relations between events in time; representations for time organizations and metaphors and analogies between temporal experiences and musical time³²; etc.
- In the spectral plane, in terms of: sound's sources, meaning coded in sound and sound's resemblances; construction of instruments and programs for sound production; psychoacoustics and sonic perception; etc.
- In the ritual plane, in terms of: individual and collective identities in rituals; meaning of participation in rituals and community; the meaning and interactions between myths and traditions; the use of space and contexts in creative practice; etc.

³¹ These categories belong to Tarasti's existential semiotics. Eero Tarasti, *Signs of Music: A Guide to Musical Semiotics*, New York, Mouton de Gruyter, 2002, p. 77.

³² For more on temporal studies based on Peirce's semiotics, see: Peter Øhrstrøm, "Peircean diagrams of time", *Semiotica*, 186(1/4), 2006, pp. 259-274.

The model uses the theories of Leonard Meyer, Denis Smalley and Christopher Small for the definition of the planes of signification. They are just three in the great diversity music/sound-related theories capable of offering analytical concepts that can enter in the analysis of one or more of the planes. This proposal is done with the desire to underline the advantages for interdisciplinary study and empirical research of experiences in both the practices of creation and pedagogy related to music and sound-based arts. The peircean concept of metaphor is useful in making this clear, as metaphorical interpretations play an important role in binding creatively and meaningfully the planes of signification in ordinary experiences as well as drawing connections and transferring methods between disciplines. Metaphorical interpretations, like any other type of hypothetical inference, are limited by the conceptual repertoire an interpreter holds. To metaphorize well, to quote Aristotle, does imply an iconic intuition or thought³³, but also a wide symbolic web and an active practice of constructing significant connections.

The model, in this sense, in no way pretends finitude or absolute validity. It is intended to open dialogues rather than close discussions and to establish a framework for possible investigations in the creative practices in music and sound. In its construction, there is an effort to follow in the tradition, set by initiatives of peircean theorists (i.e. Floyd Merrell, João Queiroz, Frederik Sjernfelt, José Luis Martínez, Humberto Chavez, and others), to extend the study established by Peirce and to employ his pragmatist semiotics to span the chasms between theories, disciplines and practices.³⁴ Peircean semiotics can be a guide in such practice, as it describes signs' interactions and relations, their development in time, their sensibility and dependence on context and different interpreters, and their emotional, practical and intellectual intermediations.³⁵ Confronted with the great diversity of musical and non-musical traditions and myths that interact in the simplest of musical rituals and experiences, semiotics offers one possible and powerful tool in research directed at the acquisition and construction of analytical and creative tools for the artistic use of sound.

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³³ For more on the concept of *iconic thought* in artistic communication, see: Nicole Everaert-Desmedt, “¿Qué hace obra de arte? Un modelo peirceano de la creatividad artística”, *Utopía y Praxis Latinoamericana*, 13(40), 2008, pp. 83-97. Article can be accessed at: <http://dialnet.unirioja.es/servlet/articulo?codigo=2585141> or <http://www.unav.es/gep/EveraertUtopia.html> (last accessed 01/23/13).

³⁴ “Most studies [on Peirce’s thought] fail to realize – and take advantage of the fact – that Peirce designed his work as intermingled theories. Some subjects relevant to music studies, such as aesthetics, phenomenology, semiotic or logic, perception, cognition, probability theory, continuity and evolution, as well as epistemology – all these areas were combined by Peirce into a compatible logic and philosophical ground.”, José Luis Martínez, *op. cit.*, p. 58.

³⁵ To read more on these qualities claimed for peircean semiotics, see: João Queiroz and Floyd Merrel, *op. cit.*, pp. 37-65.

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