

## Referential Sounds, Symbolism and Semiotics

**Jean-Louis Di Santo**

SCRIME, Bordeaux, France

Jean-Louis.Di-Santo@wanadoo.fr

### Abstract

English below

De par le passé, de nombreux compositeurs, de C. Janequin à O. Messiaen qui se sont inspirés des oiseaux, en passant par Chopin qui, à travers sa « Polonaise », a voulu exprimé une idée, pour ne citer qu'eux, ont tenté d'extraire la musique de son aspect intrinsèquement abstrait ou uniquement tourné vers l'expression de sentiments pour en élargir le champ. Cette démarche se trouvait limitée par l'utilisation des instruments et la conception de la musique qui se limite à la gestion des hauteurs et des rythmes pour bâtir le discours musical, du motif à la grande forme. La possibilité d'enregistrer des sons et de pouvoir les réutiliser dans des compositions musicales constitue alors une véritable révolution à bien des égards. Ce qui nous intéressera tout particulièrement ici consiste dans l'utilisation des sons dits référentiels ou anecdotiques, c'est-à-dire des sons de notre environnement dont nous pouvons identifier la cause. Nous sommes ici aux antipodes de l'écoute réduite, dans ce que nous pourrions appeler une écoute élargie: ces sons sont porteurs d'une dimension symbolique qui va au-delà de leur morphologie musicale (même si leur morphologie elle-même peut symboliser autre chose) et peuvent générer une signification. Cette signification, comme lors de l'utilisation des mots, va dépendre alors du contexte dans lequel le son est placé, et des pouvoirs de dénotation et de connotation qu'il recèle. Mieux encore : ils autorisent de manier la symbolique qui leur est attachée à la façon dont les peintres ont utilisé les images afin de relater des récits ou exprimer des idées. Les sons anecdotiques sont habituellement considérés comme indices dans la sémiotique peircéenne et repris comme tels dans « le traité des objets musicaux » de Pierre Schaeffer : un bruit de voiture par exemple nous renvoie à l'arrivée de ce véhicule même si nous ne le voyons pas. Enregistré et déconnecté de son contexte, sa « phonographie », pour reprendre l'expression de F. B. Mâche, perd sa nature d'indice pour devenir ce que F. Bayle a appelé « im-son », c'est-à-dire une image en termes sémiotiques. L'écoute élargie prend alors en considération ces aspects non musicaux des sons mais qui pourtant contribuent à la musique dans le sens où la musique n'est plus simplement une architecture sonore, un jeu formel replié sur lui-même, mais un système sémiotique de représentation. Ces « im-sons », lors du montage/mixage, de par leur association, vont générer un langage comparable au langage cinématographique. Les figures classiques de métaphore et de métonymie vont alors jouer à plein, ainsi que les phénomènes d'éloignement, gros plan, apparition..., bref tout ce que l'on peut ranger dans la catégorie des archétypes à la suite de F. Bayle, D. Smalley, T. Wishart ou F. B. Mâche. Toute manipulation ou transformation audible de ces sons devient alors porteuse de sens. Si, comme le notait B. Lortat-Jacob pour la musique en général « ... la musique produit du sens (dont la difficulté d'appréhension ne peut être mis sur le compte de

sa minceur) et est elle-même générée par le sens », cette remarque prend davantage d'acuité dès lors qu'elle s'extrait de l'abstraction : le sens afférant à la musique ne devient peut-être pas plus épais, mais certainement plus aisé à saisir. Entre symbole littéraire (où, comme l'analysait R. Barthes, l'on assiste à un glissement où le signifié devient le signifiant d'un autre signifié) et symbole peircéen (un signe créé pour être signe), le son anecdotique perd sa nature de simple icône et produit du sens. Une fois brisé le tabou posé par P. Schaeffer (l'utilisation des sons anecdotiques pour leur valeur référentielle) s'ouvre alors un univers de possibles que de nombreux compositeurs ont exploré.

En utilisant principalement les théories sémiotiques de CH. Sanders Peirce, et en nous référant à des exemples musicaux, nous analyserons le fonctionnement de ces sons référentiels et serons amenés à distinguer trois grandes catégories de compositions : les poésies sonores, les pièces narratives et les arguments musicaux.

## Introduction

Translation: Léa Di Santo-Navarro

The following paper is based on an artistic approach. I wanted to create with sounds what some painters did with pictures: expressing ideas or developing an argumentation. Velasquez's work, *Las Meninas*, illustrates best this kind of approach, since it is considered a painting manifesto. As long as music was restrained to the use of music instruments, including human voice, composers, such as Clément Janequin in *La guerre (War)*, or Olivier Messiaen in *Les oiseaux (Birds)*, could only, in the best case, imitate the environment or express a feeling towards a situation. This is how Chopin showed his indignation in *La Polonaise*. Therefore, the opportunity to record sounds known as referential sounds, that is to say which cause we can recognize or which one can easily identify in their environment, and to use them afterwards in a musical composition is a real revolution. Not only does it significantly increase the number of sound's morphologies and thus releases music from instrumental abstraction, but these sounds also generate a meaning it is possible to handle. In a first place, by focusing his attention on sound's morphologies using the principle of reduced listening, Pierre Schaeffer prevents them from being used in a musical composition. This taboo is rapidly broken by Luc Ferrari in *Hétérozygote*, a work that enabled other similar experiments and set the principle that could be called *écoute élargie* (broadened listening), that is to say a listening taking into account all the morphologic and symbolic dimensions of sounds. Then, a question rises: what are the different ways, for the composer, to make the most of this symbolic? Before using semiotics, which deals with meaning and signification, one has to make sure music actually is a sign. This allows a more precise definition of what referential sounds are, and what is their relation with, on the one hand, anecdotic sounds and, on the other hand, signification within a musical composition, insofar as they constitute music's vocabulary. These precisions are made in order to know where referential sounds stand in Peirce's trichotomy. CH. S. Peirce's sign theory, which is going to be briefly presented, frames the answer to this question. Since semiotics is used, one has to make sure music is a sign. Being more specific about the definition of the referential sounds and their relation with, on the one hand, anecdotic sounds and, on the other hand, meaning comes out to be necessary. Then, one will be able to understand their use in Peirce's triad representamen/object/interpreter. Eventually, from this triad, the different implications involved by the use of these sounds will be defined.

## Is music a sign?

Referring to both Thomas d'Aquin's definition of sign, *aliquid pro aliquo*, and Greimas' more elaborated one, sound, except if only having a strict physician listening of it, is never used for itself in musical compositions. Expressing feelings has been considered as music's most specific property for a long time, and reached its apex at the Romantic era. Greimas describes sign as a unit of the manifestation plan, unit made by semiotic function, that is to say by the reciprocal relation of presupposition (or solidarity) established between the elements of the expression plan (or signifier), and the contents' ones (or signified) during semiotic system and process. During most of the 20<sup>th</sup> century, formalism as a leading approach got interested in rationalism and in the expression of an organizing thought. Composers, such as F. B. Mâche, following in Gesualdo's or Monteverdi's footsteps, intended to describe Nature and its bounds with Man. National anthems stand for countries. Antoine Hennion showed how music could be an object of social representation, Freud found a psychoanalytic dimension in it... Music clearly is a phenomenon where both the expression plan, that is to say the sound itself, and the contents' one that can be extremely varied as just seen, are linked together. Be it whether by d'Aquin or Greimas definition, semiotics can be applied to music. This important amount of different approaches reminds of Umberto Eco's remark, according to which "the condition of a sign is not only substitution (*aliquid pro aliquo*) but also a possible interpretation". This remark leads to the following conclusion: music is a sign.

## Referential sounds

Before being more specific about this concept, a first approximate definition must be set. By definition, recorded referential sounds that are used in a musical composition refer to a referent, that is to say something different from themselves. Here, it is the cause that produces them (which is to be later referred to as an image of sound). Let's be more precise about this notion. At first, any sound seems referential given the fact that one can identify the cause of any sound. A sound, be it produced by a machine, an animal, an acoustic instrument or a synthesizer can be recognized by everyone. Yet, all sounds are not referential in the same way, some are more equal than others, so to speak. One should differentiate the sounds that will be named anecdotic from the non-anecdotic referential sounds. Anecdotic sounds are the sounds produced by nature (wind, sea, animals...) or by an human activity, be it mechanic, artisanal or the one of the body (machines, sounds produced by dishes, breathing...), or, to put it differently and establish a clear distinction, every sound not related to the activity of instrumental music or language. These sounds, in everyday life, are the index of their cause. Here lies their main interest unless one's attention is caught by their beauty in a moment of sudden aesthetic concern. Anecdotic sounds often appear as the incidental result of an action that, except for animal cries, does not aim at producing, if not sound, at least musical sound. At that point, an analysis of the relations between, on the one hand, anecdotic sounds which are produced in order to generate sounds – when recording sounds produced by objects, radio or cinema sound-effects engineers – and, on the other hand, strict musical sounds, produced by musical instruments, would be interesting but not accurate because not in the core of the problem. Let's just say that sounds produced by objects either aim at imitating reality, and then are an imitation referring to the daily life, or become so different from their usual form that its primacy over denotation is made clear. Non-anecdotic referential sounds produced by

instruments are the exact opposite: their form is more important than denotation. For example, while listening to a symphony, one doesn't pay attention to the fact that violin is the index of one or several violinists' action. What one's attention focuses on is the quality of sounds, of interpretation... Use lowers or changes the power of denotation and connotation of the instruments, that is like a catachresis, or a dead metaphor in instrumental compositions. Non-anecdotic instrumental referential sounds belong more to musical or emotional analysis than to an analysis of the meaning. On the contrary, mix or acoustic pieces allow the reactivation of the connotations linked to the instruments and musical styles to denote a country, an era or a concept by creating the accurate context. For example, acoustic guitar refers to Spain, serenade or protest songs. An excerpt of Gregorian chant is related to religiousness or the Middle-Ages, a synthetic sound to post industrial occidental society and to the virtuality era... These sounds enable composers to put notions together the same way they do with anecdotic sounds. Depending on the context and the intention put into the listening, they are interpreted either as referential sounds or instrumental sounds.

Another example of non-anecdotic referential sound is language. Indeed, its purpose is to produce meaning – Roman Jakobson writes about the referential function of language –, and the morphology of sound becomes less important except when intonation is meaningful or in poetry. According to Jakobson, poetry is the withdrawal of language within itself, where it becomes its very object. It then plays with sonorities and thus gets closer to music, but this is not the object of the paper. Various composers, such as Luc Ferrari, used this phenomenon to study the music of language or the denotative function of words. At the end of his piece *Presque rien n° 1*, when the woman's song fades into the cicadas' song, Ferrari uses both functions. The lyrics are musical by the singing and by the sonority of language, that is interpreted as an anecdotic sound by the listeners, while the speaker also understand the meaning of the words that are sung. The hörspiel totally understands the melting of levels of meaning between text and music and is built on these imbrications. From the lettrist productions of Isidore Isou, to George Asperghis' *Recitations*, without forgetting the sprechgesang, various paths between musicality and referential function have been explored. Here, one notices that the musicality of the word car, for example, does not refer to a car and that the meaning of the word only appears if its interpretant is known, whereas the noise of a car immediately refers to the vehicle (insofar as it is an index) that caused it. This difference has formal implications. Referential implications are of no interest here. To conclude, anecdotic sounds function on two plans: the one of denotation and the one of connotation, and these two plans can be simultaneously or separately used in a musical composition.

*Remark: referential sounds, whatever their origin is, can be interpreted in a double way, either by putting in evidence the representations connected to their cause, if these exist, and those connected to themselves, if they exist. Thus, one obtains marked or not marked categories, that is to say with or without particular ideological echo. As for animal's cries, one can establish the following categories: one will use + to design marked categories, - for not marked ones, C for cry and A for animal:*

- (A +, C +): wolf*
- (A +, C -): peacock*
- (A -, C +): cricket*
- (A -, C -): hen*

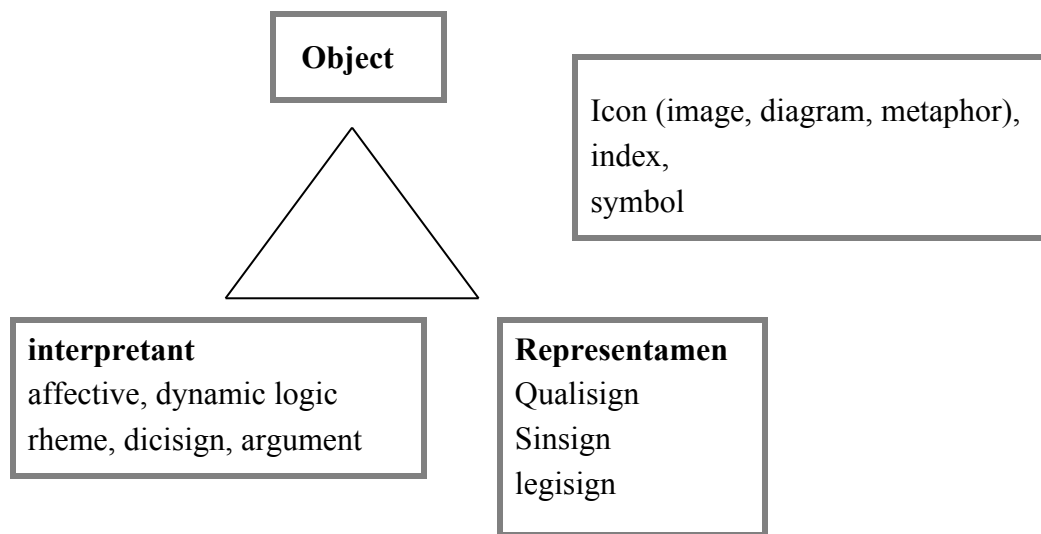
*The group (A +, C +) is regarded as the most powerful one considering emotion and meaning, but is jeopardized by cliché. Then, the choice between different sounds generated by the same object, when it is possible, is not neutral: representing a horse by neigh or by gallop, for example, does not have the same implication when dealing with meaning. Gallop rather refers to the speed and the muscular power of the animal when neigh expresses a certain nervousness, a raw way of asserting its existence. Yet, the very horse, whatever the sound that symbolizes it is, keeps its own symbolic. Through the process of synecdoche, sound holds the symbolism usually attached to the objects that produced it and their meaning necessarily comes to the mind when the sound is heard in a musical piece.*

## **Peirce's sign theory**

One will briefly and clearly try to present Peirce's sign theory, rather than giving a detailed explanation of it. He established the three principles of firstness, secondness, thirdness in his phanerology (that is to say the analysis of what appears). To say it shortly, firstness deals with the concept of a not materialized thing, an idea-in-itself. On the opposite, secondness supposes a related to something else existence. Thirdness is a law that links a first with a second. Given this principles, sign is based on three elements: the representamen, first, that is related to the object for which it stands, that is second, and that an interpretant, third, links according to a law. Representamen can be a qualisign (first), a mere quality, a sinsign (second), that is the materialization of qualisigns, or a legisign, that is to say a sign designed to be a sign. Legisign, which is a concept, is materialized by replicas.

The relation between the representamen and its object also draws a triad: icon, based on similarity, index that is directly related to its cause, and symbol, related to its object according to a law. Symbol necessarily is a legisign. Icon is divided in three categories: image, if there is a strict likeness, like a photography, diagram if the representamen only shows a few parts of its object, and metaphor if it transposes the object into something else.

Eventually, Peirce offers two triads of interpretants. The first one is made by a rheme (or term), representing one or another kind of object, a dicisign that is the sign of a real existence, or an argument representing its conclusion and that it determines. This triad is the one that interests us to compose using referential sounds. The second one, whether it is affective, dynamic or logic describes the different modes of reception of sign. This can be summed up by the following scheme:



At this point, one should note that Peirce established ten classes of sign. Yet, the rheme, dicisign or argument can only be made with representamen which are replicas of legisigns, that involve themselves symbols.

## Referential sounds and semiotics

Peirce, and Schaeffer after him, thought that anecdotic sounds were index of their cause. Then, they no longer belong to the three interpretants that matter here. This is entirely true in everyday life: the sound produced by a car, for example, directly refers to the arrival or presence of the vehicle. What is to be figured out is if an index or an icon, that is to say a recorded sound different from a word, can become a symbol. One should point out the fact that, even in such a raw context, that is to say a context in which sound heard is directly produced by the object that caused it, an index sinsign can be turned into a legisign by a specific listing intention, considering for example John Cage's famous *4'33 of silence* or his extra-mural performances that prefigured the musical landscapes. The point here is not to identify the sources of sound but for one to be moved by the real sounds. "Everything is music", said he, "and not only the music made to be music". This recalls Marcel Duchamp's ready-mades, as well as the interpretation's condition established by Umberto Eco. The transformation is made possible by the fact that a sinsign can be as well the materialization of qualisigns or the materialization of a legisign through its replica. As it will be seen later, it is possible to play with this ambivalence. A fortiori, the opportunity of recording these sounds and reproducing them ad libitum by their decoupling from their cause implies huge consequences: index becomes image, that is to say that the recorded sound looks like the original one, in the same way as a photography looks like its object. The example of the sound produced by a car will be kept. In real life, it is the index of the fact that the very car producing it at this very moment is coming. The sound is straightly related to the vehicle and moment, *hic et nunc*. Recorded, this sound loses these temporary and indicial dimensions to become what F. B. Mâche named a phonography and F. Bayle, rooting his work in Peirce's theory, an image of sound (im-son). Sound is no longer produced by the vehicle but by the speakers, and thus becomes a pretense bearing an intention, a will to use reality to other purposes.

NB: Even if sound and its cause are decoupled, the initial cause remains identifiable and keeps occurring to the mind as an index, in the same way as the photography of a wind-vane is an icon of it, but keeps a sign of its position, determined by wind. A physicist uses a recording as an icon to analyze sound's properties, a musician uses these properties for composition or the referent sound for the production of symbol (see Schaeffer's listening intentions: the physicist, natural or musician ones).

Another consequence is the fact that the particular sound in this precise situation, by the action of the speakers reproducing it, becomes general. The listener no longer listens to the car, but to a car, and in a way thinks of the common noun instead of the proper one, of the general instead of the singular, of the car as a concept and not as an object. John of Salisbury already noticed: "*singularia nominantur sed universalia significantur*". To say it in a semiotic vocabulary, the index or icon become symbols. Yet, the fact that the symbol has to be a legisign must be recalled at that point. Has one reached a dead-end since these sounds appear to be sings? In graphic arts, and more specifically in the example of Velazquez's *Meninas* that has already been used before, the use of icon in its semiotical meaning in order to generate an argument, that is to say an interpretant that determines its conclusion, is common. *Las Meninas* is not just a portrait. It also is a deep reflexion about painting as a mode of representation, the status of the artist within the society, his relations toward power, the interplay between what can be seen and what cannot, and many other themes. Velazquez himself considered that he belonged to a tradition in which painters expressed ideas through their medium. Another example, more simple, is the fact that many analysts saw an opposition between earthly pleasures and the love of the divine that points out the ephemeral of the former to highlight the eternal nature of the latter in Lubin Baugin's *Five senses*. These painters use image in its semiotical sense as a symbol, that is to say a legisign. Thinking of those works only as icons referring to their object by mere likeness would be a complete misunderstanding. They actually fit Peirce's definition of an argument, that is to say that they aim at determine a conclusion. The point here is to create the equivalent of it in the musical area. How can images, be they visual or sound turn from sinsign into legisign? The ambivalence of sinsign has already been mentioned. Indeed, it can be as well the replica of a legisign or the icon becoming symbol. Yet, the word symbol can bring confusion since it can either refer to its literary or semiotical meaning. To avoid ambiguity, one will set that semiotical symbol, like the chemical formula H<sub>2</sub>O or the word water do, clearly designates a reality represented by the symbol through an interpretant. This can be referred to as immediate meaning. Literary symbol uses shift. The signified, water for example, becomes the signifier of another signified: purity, come back to the mother's womb, or other meanings depending on the context. This can be referred to as shifted meaning. Semiotic symbol is supposed to be precise and monosemous – although language is full of polysemous words –, when the literary symbol is more blurred since it depends on the context in which it is used, and then can be polysemous. It is a symbol which is second, so to speak, that, like the semiotic symbol, matches Peirce's definition: "sign that would lose the character which renders it a sign if there were no interpretant".

What is left to analyze is the transformation of the sinsign into a legisign. One suggests the following explanation: be it Cage or Duchamp, who were mentioned before, or a recorded piece, sinsigns appear in the specific context of a work of art. This leads to the postulate according to which what will be named containing legisign exists. A containing legisign only exists to receive other signs. Following Duchamp, an urinal becomes an artwork in a containing legisign "museum". A containing legisign can be concrete and materialized by objects: the concept of book, for example, refers to the book as an object. Besides, it signifies

nothing but the fact it will contain words and signs. What these words are is not precisely expressed in the concept, but is in its replica, the book as an object. This containing legisign can be an abstract: the concept of musical piece for example will never be materialized as an object but by the idea that the sounds that are heard are related to one another and create a sound architecture or a group of sounds that have to be listened to in a larger unit. This is what enables Cage to bring a group of listeners in nature and tell them that thanks to his expert listening of composer, the sounds that are going to be listened to will no longer be sounds that depend on natural contingencies but that they gain the status of artwork. The distance between the listening of the recorded sound of a car, in order to have it in mind again for example, and the listening of this same sound within a group of recorded sounds considered as a musical piece and linked to each other by this concept in an acoustic piece, is blatant. In the former case, it only is an image. In the latter, it gains a value – to use Saussure’s words – and the containing legisign embraces the whole material and gives it this status.

The metamorphosis of qualisigns into legisigns completely is in action at the musical level. It is an integral part of the profession of composer or interpreter. Here can be quoted, as example, an extract of the note of *Saturn* by Hugues Dufourt: “... The remorseful affection of Melancholy is embodied by the paralysis of the grave winds, fixed to the very shrill of their attributes, or by the dark and shrill textures of the electronic technology. The paradoxical management of the temporality transcribes a psychic state of apparent inactivity”. Any element of the TARSOM can become legisign.

The legisign implies an intention to communicate, a language. As any language, besides the paradigmatic functions, it implies a syntagmatic function. This one plays on two levels: in the micro-shape, by the arrangement of qualisigns, and in macro-shape by the arrangement of singings.

The arrangement of qualisigns, at the level of the micro-shape, can result of pure random: when using a patch of polystyrene as sound object, all the criteria of sound material depends on laws of nature, but are independent from the will of the manufacturer who does probably not care about it. Still, a musician can use them if he finds in it an interesting resultant.

A composer, by filtering or mixing timbre, looks for the tone that he considers best regarding what he wants to express. The modification of qualisigns into a well identified sinsign can be considered as a legisign. This, F. Bayle expresses the following way:

“If the "concrete" is at the same time object "anecdotal", representational, let us put a human "step" (in *Tremblement de terre très doux*) the operation of distortion (here dilation-contraction, that is slowing down - progressive acceleration) has at the same time a direct incidence on the thrown meaning, on the sense of the image. The semantics, strictly correlated in the formal, modifies itself at the same time”.

François Bayle has also understood the consequences of the introduction of sinsign in a legisign “musical piece”:

“All the capacities of a technique which substitutes for the object its image, acquire there then the status of a rhetoric. Assembly, extraction, insertion, illustration, swelling, but also crack of time, explosion of places, but still mixing, overprint, metamorphosis of outlines, but finally introduction of the speed and the space, become then together average and contents, medium and message”. These containing legisigns are these “middle-places” (*mi-lieu*) that allow the extraction of sign from its ordinary context, so that it can receive or generate other signification.



“So the image will become established from the central notion of double disjunction: that physically produced by the structure of the other causes, according to a law of simulation – and that psychological which distinguishes the indication of an enactment, an interpretation, a sign”.

Of course, musical composition also deals with sound's shape. Another remark can be made at that point. Indeed, sound affectations undergone by the original sound, which everybody is supposed to hear, are the indications of the composer's action. They can be classified in three categories. First one, what Michel Chion called “*Indices Sonores Matérialisants*” (ISM, Sound Materialisation Index), where the microphone is used as magnifying glass (so to speak) in order to enlarge the details of sound and give them more presence. Following this logic, I define two other categories.

The second one is the opposite. A filtered sound, emaciated could one say, indicates “*Indices Sonores Dématérialisants*” (ISD, Sound Dematerialisation Index), which are the mark either of the passage by a system of broadcasting in a narrow band pass, such as the telephone, or of a will to make sound immaterial. Finally, effects like flanger or “time compress / expand” can be considered as “*Indices Sonores Transformants*” (IST, Sound Transformation Index), which directly testify of an action of the composer on the perception of the real. This way, the composer gives indications during the three stages of the elaboration of his work: recording, mixing and sound treatment.

“A Legisign is a law that is a Sign. Usually this law is established by men. Every conventional sign is a legisign. It is not a single object, but a general type which, it has been agreed, shall be significant. Every legisign signifies through an instance of its application, which may be termed a Replica of it. Thus, the word "the" will usually occur from fifteen to twenty-five times on a page. It is in all these occurrences one and the same word, the same legisign. Each single instance of it is a replica. The replica is a sinsign. Thus, every legisign requires sinsigns. But these are not ordinary sinsigns, such as are peculiar occurrences that are regarded as significant. Nor would the replica be significant if it were not for the law which renders it so.” (‘A Syllabus of Certain Topics of Logic’, EP 2:291, 1903)

## Symbolism

### Poietic level

Since an artwork's elements can be considered symbolic legisigns, what is left to be figured out is the way they can be used within it. Here, one will come back to Peirce's interpretant triads. What is the kind of relation existing between the two triads of interpretant? Why is there only two of them? How can they be applied to the music? My point here is to try to complete this theory.

It is known that Peirce established the principles of firstness (the idea of things that exist or not), secondness (all that exists) and thirdness (the law that always joins different elements). Here Eero Tarasti has to be quoted: “The art work itself can doubtless be considered a primary act, its performance or reception a secondary event, and a text written about a product of a "third degree””.

I do not totally agree with him. Following Peirce, not only is the third degree a text written about the creation act, which certainly is a third degree, but it also is the product that results from this act, the product in which is the meaning(s) of this act and can be interpreted with the appropriate code, the law that links the firstness (sender) to the secondness (receiver), that is to say the art work itself. Peirce considered that an interpretant could represent another one

and so on ad libitum: it is the case here, and this is what I try to show. Let us consider the description of communication act by Roman Jakobson. There is the sender, the message itself and the receiver. Even better is Jean Molino's trichotomy between poietic, neutral, esthetic levels. Peirce's first triad of interpretants (rhematic, dicisign, argument) only describes the message itself (on a neutral level): a sign as a law that determines the kind of relation it has with reality. It thus is thirdness by definition. A picture of the Minotaure for example only belongs to what is possible (since it has never been seen, and since it is known to be an imaginary product). It thus is a rhematic. On the other hand, a photography of Churchill refers to reality: it is a dicisign. A mathematical demonstration proves something: it is an argument. These three examples are descriptions of messages.

The second triad (affective, dynamic, logic) describes how one reacts when receiving signs (esthetic level). It thus is secondness, and I here agree with Tarasti. In Peirce's system, firstness is missing, that is to say the interpretant concerning the sender (poietic level). Is the poietic level a firstness? Deduction leads to assume it is. If secondness is the esthetic level and thirdness the neutral one, firstness is the poietic level. Yet, this is not enough to prove it. The firstness triad deals with the possibility of existence before any materialization and any reaction to this materialization by its firstness, so to speak. This is why it necessarily is found in the consciousness of a creating subject and regards the process of production.

What are thus the three elements of the poetic triad? The first one must have the character of possibility and immediateness: the "intuition" – or inspiration – of which Greimas says that "it [intuition] could be considered as a component of the cognitive competence of the subject, which manifest itself at the time of the elaboration of the work hypothesis". However, he gives this word a strict cognitivist meaning through this definition and forgets all of the philosophical tradition. Formerly, it was related to the sensible, and to the direct relation between the individual and things, their existence as pure consciousness, without the mediation of the language. This profound comprehension, Henri Bergson calls "Intuition" too: "We have designated by this word the metaphysical function of the thought, principally the intimate knowledge of the mind by the mind, subsidiarily the knowledge, by the mind, of which is essential in the matter". Here, what is considered is intuition as the immediate knowledge both by hypothesis and by intimate knowledge.

One has already seen that the intuition can be applied as well to the understandable and to the perceptible. In conformance with the understandable, intuition generates both metaphor and metonymy, but it stops being intuition once taken into consciousness, in the very fact that it allows a return on itself. In accordance with the perceptible, it especially commands the management of qualisigns, that address to our senses. Qualisigns can become legisigns (e.g.: red for blood or aggressiveness) if they are interpreted by one or several receivers (the composer making a return on its work being at this moment considered as receiver), by one of the affective, dynamic, logical elements of the triad. They will only have meaning by the last one and will so reach the quality of symbols. Intuition especially manages the quantitative choices (more or less reverberation, intensity...), and sometimes qualitative choices (harmonic timbre, mass...) when several sounds with the same cause are possible. Some of these choices will remain to the state of firstness, especially if they are produced by an instrumental gesture in which a part of feeling always intervenes. Other choices will be analyzed by judgment and be modified until the wished effect is obtained. They thus will take value of symbols.

The second element of this poietic triad establishes a relation between the existents either by the realization of possibilities so that these really are affected by their object, or by the association of different existing. This relation has strength of law as interpretant. What appears here is the metonymy, that governs relations of proximity through its secondness. If classic rhetoric gives to this term the meaning of relationship by correlation or by correspondence, Jakobson and Lacan widened its meaning. For both of them, what is at stake is the use of word to word, and it is true that two words or two elements side by side will interact with each other. This addition is particularly precious within the framework of an artistic production. Metonymy becomes the key notion which organizes the syntax, the relation between the various elements of a discourse, not only on a linear level, but also, transposed to the musical discourse, on vertical level, where different elements coexist and interpenetrate themselves.

Metonymy produces sense, both by the elements which it puts in contact in a relation of proximity belonging to empiricism, and by the management of syntax, which defines connections of proximity as Jakobson showed it. Metonymy organizes qualisigns within the structure of sinsign, even if it is a minimal sound unit, as well as the horizontal and vertical dimensions within the great form.

All of the possibilities of sense generated by this syntax are not going to be defined here. The only thing that matters here is the fact that it produces a meaning which is seized by intuition or empiricism at the poietic level. However, I am going to quote some of these possibilities.

F. Bayle began to think of the semantic of this syntax, that he sums up in this table:

<b>Dynamics sorts</b>	<b>figure targets of the semantic field</b>	<b>Operating processes of acousmatic writing</b>
Temporal shape	To appear to disappear to deform, to twist to interrupt to substitute	closure, opening molten / chain modulation assembly inversion loop
Spatial shape in 2 dimensions	to pull, to push to rub, to slide	stretching transposition
Spatial shape in 3 dimensions	To drill, to cross, to turn, to screw	intermodulation interpolation
Spatial material	to break, to kink to hurt, to cut to appear, to spring	Microediting reproduction reverberation filtering harmonization
shape / Spacio-temporal material	to rest, to crush to penetrate, to invade to wind, to gobble up	Mixing overprint admixture spatial distribution

In *Penser la musique aujourd'hui*, Pierre Boulez presents tables summarizing the various possibilities of horizontal syntax concerning time, timbre, height, intensity (amplitude) and

space, at the level of the macrostructure. One will only reproduce the one which, in his own opinion, can be applied to the different parameters:

## I Homogeneous spaces

### A streaked spaces :

#### 1 definite, fixed or variable cut

**a** fix modulo: straight space

**b** modulo variable: curved spaces

focused                      one focus

not focused                several focuses

#### 2 fixed or variable Modulo

**a** determined fixed cut: regular spaces

**b** variable definite cut: irregular spaces

focused                      one focus

not focused                several focuses

### B smooth spaces

indefinite cut : no modulo

statistic distribution of frequencies :

equal: non aimed spaces

unequal : aimed spaces – pseudo – focus(es)

## II not homogeneous Spaces

smooth / streak Spaces {alternation,  
superimposing

Even if this table is supposed to be purely formal, one can see the semantic use that can be made of it. In fact, it defines processes that recall literary or painting ones. If painters put some elements in the light or in the shadow, or at the intersection of formal lines, to define a grammar helping to read the picture, a musician can apply this table to compose with referential sounds. It inevitably generates meaning: the signification of a horse neigh is not the same in a streaked space or in a smooth space. In the first case, it fits in the general movement. In the second case, it could suggest dream, for example.

The use of UST (*Unités Sémiotiques Temporelles*) is another possibility of syntax. Some of them are structures, as I showed it. These structures produce sensations, linked to a gesture or a feeling (for example “*en flottement*” or “*trajectoire inexorable*”...) that have an effect on senses.

Metonymy is also defined by the relation of proximity it causes and is divided into two categories: on the one hand, the actual proximity, when it indicates the part for the whole, the contents for the container, the effect for the cause (which is named synecdoche) and then assumes the function of index. Yet, it emphasizes the pointed out element, which will be considered as an icon. On the other hand, metonymy allows the association of a-priori different elements and the creation of a link between them which does not exist at natural state, by simple juxtaposition.

With the figure of the synecdoche (the part for the whole, the contents for the container), metonymy belongs to the borders of substitution as a process of replacement. In the case of a musical language based on the loan of sounds from reality, synecdoche immediately appears

to be indispensable insofar as sound is supposed to represent the object, and as the object cannot be represented by anything but the sound it makes. The synecdoche thus becomes an obliged figure.

The third element of this triad determines the relation of reference and substitution established on the basis of laws: it is the metaphor (that shall be called substitution in order to differentiate it from the metaphor, which is an icon by nature in Peirce's theory) which governs the relation of similarity. Substitution expresses through the words "as" or "like" used by the poet as well as the sign "=" used by the mathematician. Once again, Lacan and Jakobson's extensions of the term are particularly useful: by the principle of "a word for another", which is the principle of paradigm, the metaphor/substitution is a fundamental function of the language and of the production of discourse. It is the indispensable condition for demonstration and for the production of what Peirce called a "deduction", which is a particular sort of argument.

"It is necessary to define the metaphor by the setting-up in a signifier chain of an other signifier, by what that that it supplants grave to the rank of signified, and as latent signifier perpetuate there the interval where another signifier chain can be transplanted", wrote Lacan. This is how metaphor governs the relation of exchangeable elements that is based on laws. Yet it creates a rupture that opens a breach susceptible to receive itself a signification.

This triad (intuition, metonymy, metaphor/substitution), if it is constituted by already known elements and replaced in its context, can be used in composition, at the poetic level. Indeed, if the triad (rheme, decisign, argument) determines the sign by its relation to the message itself at the neutral level, the triad (affective, dynamic, logical) is applied to the listener or to the esthetic level.

This table of interpretants can thus be built:

	firstness	secondness	thirdness
	poietic	esthetic	neutral
firstness	intuition	affective	rheme (or term)
secondness	metonymy	dynamic	Proposition or decisign
thirdness	Metaphor/substitution	logic	argument

This table does not involve that the different lines cannot be linked. A proposition for example can be seized by the dynamic interpretant. This table only shows the privileged link between the different levels of interpretant: intuition, affective and rheme, then metonymy, dynamic and proposition, and eventually, substitution, argument and logic interpretant. All this proceed, applied to music, is particularly useful to determine the different sorts of symbolism in electroacoustic music using referential sounds, and this is the purpose here.

A firstness (intuition or affective interpretant) only produces or receives a rheme, a simple possibility, that it is perceptible or logical. A secondness (metonymy or dynamic interpretant) produces or receives either a rheme or a decisign, a true or false real object. A thirdness (substitution or logical interpretant) produces or receives a rheme, a decisign or an argument.

Hence, the production of an argument implies substitution, but an emotional interpretant can only seize an argument as a rheme. If listening to some extraordinarily rigorous reasoning in a

foreign language, one will only seize a suite of sounds, without discerning if they imply something real. This argument will thus be a rhem. Conversely, it is possible to use metonymy in its syntagmatic function and substitution in its paradigmatic function to generate a rhem.

### **Interpretants: sounds and concepts**

This part will focus on the neutral level. By all that proceed, a definition of the different kinds of musical symbolism, only allowed by electroacoustic music thanks to the use of "im-sons", is possible to elaborate.

**A) Rhem (or term), firstness:** "for its interpretant, represent such or such sort of possible object, in its characters". "A *Rheme* is a Sign which, for its Interpretant, is a Sign of qualitative Possibility, that is, is understood as representing such and such a kind of possible Object. Any *rheme*, perhaps, will afford some information; but it is not interpreted as doing so.

Or we may say that a *Rheme* is a sign which is understood to represent its Object in its characters merely..." ('A Syllabus of Certain Topics of Logic', EP 2:292, 1903)

This definition describes what will be called sound poetry, as can be found in Francis Dhomont's or Denis Dufour's music for example. In the first place, "im-sons" are used for their morphologies and their shapes are used for formal or esthetics reasons, but not for their meaning into a reasoning or to show something real. However, one still can recognize them, whether it is merged or not with abstract sounds, and their meaning comes up to one's mind when hearing them. It exactly matches what Roman Jakobson called the poetic function of language. At this level, sound poetry and poetry can be compared, and they can both assume the hermeneutic function that was described by Paul Ricoeur: a kind of reflection about the real that is different from philosophy. Poetry focuses on the media to reach the real when philosophy focuses on concepts.

Poetry puts into question the way by which the world is perceived, and sound poetry sends back to the pure impact of our perception. Musical sign mainly functions by its morphology and additionally by connotation.

**B) Dicisign:** "for its interpretant, sign of real existence. Cannot be an icon, which does not send back necessarily to anything real. Imply a rheme to describe the interpreted fact as indicating", secondness. "A *Dicent Sign* is a sign, which, for its Interpretant, is a Sign of actual existence. It cannot, therefore, be an icon, which affords no ground for an interpretation of it as referring to actual existence. A *Dicisign* necessarily involves, as a part of it, a rheme, to describe the fact which it is interpreted as indicating. But this is a peculiar kind of rheme; and while it is essential to the *dicisign*, it by no means constitutes it.

[...] Or we may say [...] that a *Dicisign* is a sign which is understood to represent its object in respect to actual existence..." ('A Syllabus of Certain Topics of Logic', EP 2:292, 1903)

This definition takes narrative pieces into account, such as *Presque rien n°1* by Luc Ferrari, *Corazon road* by Kristoff K. Roll, Horspiels or radiophonic pieces. It corresponds to the referential function of language. This level simply seems to describe reality, real or imagined. Referential sounds are put one after the other (metonymy) to create a representation of reality and a linear discourse imitating the flow of time. Still, everybody can imagine a secret meaning. Of course, literature teaches that very often, particular means general, so when one

shows something, he shows, in fact, a hidden idea. Musical sign mainly functions by denotation and additionally by connotation. It aims at being a sign of existence.

C) Argument, thirdness: “for its interpretant, sign of law. Sign understood as representing its object in its character of sign... An argument represents clearly its interpretant – called its conclusion – which he intended to determine”. “An *Argument* is a sign which distinctly represents the Interpretant, called its Conclusion, which it is intended to determine” (‘Minute Logic’, CP 2.95, 1902)

The only case of musical argument I know, except *Star spangled banner* by Jimi Hendrix, is my work *Reflections* which intends to develop a reasoning. It is another case of referential function. This work is based on the principle of replacement of one element by another that results of what was before (metaphor/substitution). This development aims at a conclusion and is not following a suite of different elements based on real possibility, but an idea. Musical signs function by connotation and denotation and can be substituted to one another in order to develop an idea until its conclusion. *Reflections* is made of several pieces called *Evolutions*, *Génocide (that can be heard on my website)*, *Humanité...* that express a point of view on the condition of the human being. In these pieces, using referential sounds, I use the necessary grammar to compose any musical piece. Not only do I use them for formal exigencies but also to generate a meaning, and make them coincide.

As a matter of fact, the formal exigency of music implies what Jakobson called “poetic function”. But the use of referential sounds – or “im-sons” – is very specific to electroacoustic music. Each alteration, each horizontal or vertical association, each structure, each equivalent of this kind of sound means something. It considerably increases the symbolic possibilities of the music.

## References

BAYLE François, *Musique acousmatique, propositions... positions*, Paris, Buchet/Chastel, 1993.

BERGSON Henri, *La pensée et le mouvant*, Paris, Quadrige/PUF, réédition 1998.

BOULEZ Pierre, *Penser la musique aujourd’hui*, Paris, Gallimard, 1987.

CHION Michel, *L’audio-vision : son et image au cinéma*, Paris, Nathan, 1994.

DI SANTO Jean-Louis, “Composer avec les UST”, *Vers une sémiotique générale du temps dans les arts*, Paris-Sampzon, Ircam-Delatour, « Musique/Sciences », 2008.

DUFOURT Hugues, notes in the book of the CD *Saturne*, CD Accord 465-714-2, Musique Française d’Aujourd’hui, label accord una corda, 1993.

ECO Umberto, *Sémiotique et philosophie du langage*, Paris, PUF, 1988.

GREIMAS Algirdas Julien, *dictionnaire raisonné de la théorie du langage*, Paris, Hachette Supérieur, 1993.

JAKOBSON Roman, *Essai de linguistique générale, T 2*, Paris, Minuit, 1973.

LACAN Jacques, *Ecrits II*, Paris, Seuil, 1966.

MACHE François Bernard, *Entre l’observatoire et l’atelier, volume 1*, Paris, Kimé, 1998.

MIM, *Les Unités Sémiotiques Temporelles – Éléments nouveaux d’analyse musicale*, Marseille, édition MIM, Paris, diffusion Eska, « Documents Musurgia », 1996.

PEIRCE Charles Sanders, *Ecrits sur le signe*, Paris, Seuil, 1978, translation from French to English found on the website: <http://www.helsinki.fi/science/commens/dictionary.html>, accessed 12/16/12.

RICOEUR Paul, *La métaphore vive*, Paris, Seuil, 1975.

TARASTI Eero, “The “Structural” and “Existential” Styles in Twentieth-Century Arts”, *Existential Semiotics*, Bloomington (Indiana), Indiana University Press, 2000.