LUXONICS,
THE SCIENCE OF LIGHT AND SOUND:
A SEMIOTIC APPROACH

To my very special friend,
Professor ION MÂNZAT,
to whom LUXONICS is essentially indebted.

Symbolically speaking, the intuition of a "Creative Word" and could be associated with the "First Light / Sound" expression: the Big-Bang explosion of rays. Cosmologically speaking, this represented:

- the primordial "musical frame", for which the 2,7 K reminiscent radiation (light) is a relevant sign;
- the determinative pattern which permitted the cosmic substance to organize itself into different cosmological / light systems (galaxies, stars, planetary systems, etc.);
- the generative cause of "harmony of spheres", the resonant relationship between different types of cosmic structures, the field of different vibrating forces which unifies the cosmic world;
- the genesis of the human being, as cosmic effect of sounds / lights fields energy and information (as a "divine soul"), able to organize / model the "cosmic dust" (clay / substance);
- the "cosmic language" (the system of virtual signs) which generated the "human language" (the system of real signs, nonverbal or verbal).

All these aspects are connected by a fundamental mechanism, specific both to sound and light: the mechanism of the "essential resonance", respectively:

— the property of all micro- and macro-cosmic structures to generate vibrations (in the virtue of an universal dualism corpuscle-wave);

— the common physical properties of sound and light waves: frequency, intensity, length-wave, speed, etc.;

— the harmonic combination between all these types of waves, rhythms, repetitions, connections, etc., generating the beauty of music and the harmony of forms;

— the "holographic" resonance (following the "gold number" relationship) between micro- and macrocosm, between the atom and the planetary system, etc.;

— the vibration correspondence (resonance) between the 7 essential sounds, the 7 colors of the light spectrum (ROGVAIV), the 7 level of human aura and the 7 energetic centers of the human being (chakras), etc.

The presence of a manifested resonance, everywhere in the world, involving the light and sound coherent presence, represents both an intuitive and an analytic hypothesis. In a practical way, this hypothesis is verified by different therapeutic strategies, beginning with the meditation on sound and light (such is SANT MAT is, the Master's Spiritual Path of SANT THAKAR SINGH) until the psychoanalysis, from chromotherapy to cymatics, able to optimise the human state of consciousness and of physical health.

1. THE GENESIS OF LIGHT AND SOUND LANGUAGE: FROM INTUITION TO SCIENTIFIC RATIONALITY

In this topic, we could consider that the first archaic "scientific" theory was the animism, concerning the presence of a "resonant soul" of relation between all the objects (physical and biological) of the world.

A lot of other symbolic stories concerning the power of sound and light complex are present throughout the history of human being, such as: the Egyptian genesis of the world by the music / voice of Thot, the demolition of Yerichon's walls on account of the sounds of trumpets, the Pythagorean harmony of spheres or the cherubs celestial music, etc. Besides the symbolical meanings, we can find the same unifying and objective physical mechanism of resonance in all these stories. This mechanism permitted some efficient human action, usually assumed only from a symbolical point of view, such as: the story of "*Sesame, open*" type, the action of human voice upon the nature's elements (the myth of the "man who brings the rain"), the power of "magic therapeutic" music (the symbolism of exorcism), etc. All these archaic / "magical" practices, doubled by the modern technology of sounds (such as music-therapy and cymatics) could be explained scientifically by the general mechanism of waves interference, by the "vibratile" nature of the human being (biological structures), respectively.

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The genesis of the human language, nonverbal (musical) and verbal, describes the essential passing from "nature" (bio-physical / emotional / perceptive resources of the human being, governed by the right hemisphere) to "culture" (the semantic competence of language, controlled by the left hemisphere). This process still has some mysterious aspects for scientists, because it involves some mechanisms such as: auditory and visual perception, memory, significant representation, imagination, creativity. All these resources of competence – belonging to the "black box" activity – could be better clarified using the biophotonic original hypotheses [Stănciulescu, 2005b: 139-146].

The hypotheses argue that the "resonant competence" of the human being, respectively his sensitivity to sonorous and to light vibrations, is due to the optic activity of the "liquid crystal" structures of cells membranous. These structures permit, by a piezoelectric effect, the transformation of each sonorous stimulus into electric stimuli (electrons) and bio-electromagnetic (biophotons / bioluminescent) emission. This bioluminescence shares all the properties of a laser sonorous-light emission. Consequently, the sounds are represented at the level of the human brain as a harmonic complex of "light" (biophotonic fluxes), respectively as some coherent holograms describing the properties of the sonorous / visual referential. In other words, it's possible to explain how sounds become lights and vice versa.

The mechanism of such a "transduction" – which the paper minutely describes – made it possible to formulate the hypothesis that, at the level of the human brain, coherent sounds and lights are responsible, first of all, for a musical reproduction of the referential, and then for its semantic representation (musical imagination and creativity). Such an explanation could make clearer from a scientific point of view the powerful effect of therapeutic music, the mechanism of musical art "mimesis" and "catharsis". The hypothesis that our life is a permanent "struggle of vibration" involves music as a "messenger of peace", which determines the "essential resonance"

of human vibrations, beginning from the DNA's rhythms until the spiritual resonance of love.

By concluding, we could find in this history of the word a very special intuition of the sufi thinkers: ”The Word is the mirror by which the Divinity reflects himself in the exterior… *The word is both sound and light, because the light is the sense of the sound”*. It is difficult to find a more suggestive expression of the presence of the “Light-Sound Word” into the world, of the essential iconicity between the uncreated “Divine Light” and the “complex light” of the Human: *body and soul, mind and spirit* [Stănciulescu, 2002].

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The conclusions of the present chapter valorise the virtues of the semiotic / hermeneutic analysis – as an unifying "metalanguage" – in order to propose an integrative vision upon an ontological "language object”, respectively upon the relationships between:

a) the (cosmo)genetic / natural competence of human being to receive and generate harmonic resonance (by the interference of sounds and lights waves), on the one hand;

b) the cultural performance to interfere music (the art of sound therapy) with the feeling of the visual (the art of light therapy), on the other hand.

The history of culture offers two models of religious attitude: a sonorous model of culture (GOD is far, invisible, but audible, as Moses confessed) and a visual one (GOD is visible, could be seen, like old Greeks have the possibility to do). Here are the roots of two artistic languages, with a complementary force: music and visual arts. From the viewpoint of semiotics speaking, both these artistic languages could be analysed as:

1) a structural relationship between forms and contents, between deep and surface structure, signifier and signified, etc.;

2) a triadic unifying construction:

— a syntactic one, interfering the "waves" of the world's structure;
— a semantic one, reflecting the human meaning of world's functionality;
— a pragmatic one, generating at the level of the human being some synergic effects;

3) a complex semiosis, involving the connection between the context of creation and the artists / receptors, between the artistic means and the purposes, etc.

Using such semiotic instruments, it will be possible to say that signs of musical-visual languages are the synergic measure of the human being, regarded as a bio-psycho-social entity, that they are a measure of man's resonance with himself and with his fellows too, with the micro and macro-cosmos vibrations, with the language of the DIVINE CREATION. And, taking into consideration that – as Father Ghelasie Gheorghe said – God speaks the human language, the human beings must recuperate and use this language, for optimizing his / her own state of health.

2. ON THE HARMONIZING POWER OF ETHNICAL LANGUAGE

The genesis of (ethnical) language genesis represents a very disputed problem, whose solution began to be clarified in the last period, as a result of a new paradigm: any problem of the human existence and history involves *specific interdisciplinary*

approach. This problem represented the subject of interest for another chapter of the book.

For the problem of ethnical values, the study of the (verbal) language is quite important, taking into consideration its *potential / optimising virtues*, as we have already argued:

→ it realizes the passing from nature to its reflection, from biological to psychical, from representation to signification, from image to imaginative etc.;

→ it gives names to the objects of the world;

→ it prefigures at the mental level, in a "holographic" manner, the project of each creative act which is going to be realised;

→ it satisfies the social need of communication, of storage and transmission of spiritual values realized by (ethnic) human community in its history;

→ it allows the opposition with the nature's entropic tendencies (non-organization and uniformity) and determinate its optimised metamorphoses.

From a semiotic perspective, we have argued that any type of language is an essential mediator between Nature and Culture, taking into consideration its double structure: the signifier (substantial-energetic) and the signified (informational-radiant). By his language (verbal and / or nonverbal), the man / human group receipt and reflect by its bio-psychical state (of health) both the influences of some "physical" factors (cosmic, geographical, climatic etc.), and the influences of some "metaphysical" factors (social-historical context, cultural-symbolic, tradition, etc.).

2.1. Some Romanian stories about the resonance between human and nature

Among the types of optimising languages, the verbal language has, of course, at utmost relevance. This special place is justified not only because the verbal language can "translate" the other languages in its system of signs, but because it has a powerful influence upon the behaviour / state of health of the individual or of the (ethnic) group. This influence is realised both at the level of the signifier and at the level of signified. In this direction, we tried to prove, with very recent interdisciplinary arguments, two hypotheses, namely [Stănciulescu, 2005a: 264-268]:

(1) *The use of a certain language determines the temperament, body's morphology, health's state, behaviour etc. of the individual or human group*. This hypothesis involves the recent contributions of bio-photonics, used by us in order to explain *the genesis of the sign-word as a photo-sonic hologram which reflects by an homeomorphic way the natural attributes of the referential*. Consequently, it is possible to postulate that by the energetic-informational properties of light / sounds (signifier), verbal language could act as a "energo-informational pattern" (signified) of the human as a whole.

In this context, the bio-physical resonance between the human energy fields and the natural referential could explain the real roots of some "stories", such as:

- The story of the (proper) name as an essence of the human personality, according to the principle: "Who ever controls the name controls the person"). For example, it is possible to explain rationally the Romanian symbolical practice to "sell the new-born", in the extremely situation when he seems to be affected by an unknown illness. This practice is supposed to generate an emotional trauma (by passing him through an open window) and to change his forename (in fact, what is

changed the is bio-physic resonance determined by the sound components of the name at the level of organs, endocrine glands etc.).

- The stories of "communication" between man, plants and animals are present in the Romanian Folklore in a lot of variant. Such a "telepathic" communication is mentioned to have happened between very close people (parents and children, brothers etc.), between the Brave Prince and his animal assistants, between the good-soul man and the flowers which he cultivates etc. In fact, all these situations concern an objective resonance (feed-back) instituted between the bio-psychic (biophotonic / bioluminescent) fields of the human being and those of his biological receptors.
- The story of the type "Open, Sesame!" is found into Romanian popular culture in the motive of the "wild beast's plant", which could open any door / padlock if it was accompanied by some magic words. We can find here the effect of resonance establish between the acoustic vibration of the articulate words and the different types of energy fields of the natural or artificial objects.

Once again we can discover that the ethnic tradition registered – everywhere in the world – a lot of "magical" phenomena which science began recently to explain rationally.

(2) *Language determines the spiritual (cultural-symbolical) attitude of the individual or (ethnic) human group by its latent content.* We find here the major ideas which Sapir-Whorf's hypothesis sustains from the *ethno-linguistic* point of view: the language of a certain human society, which thinks and speaks in this language, is the organizer of its experience and, in this way, it models the society "world" and "social reality". In this situation, the informational component of the language (signified) is particularly activated, because:

- According to Sapir's major idea, present in all his writings [1921], the ethnic language reflects the ontologic specific features of the ecosystems, and registers them at the level of the "abyssal memory" of the society. These features are assumed by the historic experience of the social group (by its major economic, social and cultural activity) and will be reflected in the structure of ethnical language. This point of view proposes, in fact, a rational hypothesis concerning the dialectic relationship between language and knowledge: *language creates the virtual or real world of any ethnical culture*.
- Concerning Whorf's main hypothesis [1957], the world is a flux of impressions which must be organized by our spirit, by our linguistic system respectively. The psycho-mental and linguistic ethnic values are present in the major conception about the world (*Weltanschauung)* of every ethnic group. Otherwise, by its reflective / projective power, by its "creative resonance", the symbolic language turns towards its generative reality, in order to (re)signify or change it, by different types of actions.

In conclusion, two aspects must be assumed in this context:

— as a social product, our native language influences the perceptions of our environment;

— the people reflects differently the environment, according to the differences between their linguistic systems.

As a conclusion of this subchapter, we could postulate that the "metaphysics of language" present especially at the level of the signified on the Sapir-Whorf's hypothesis (language is a "measure" of ethnical personality) finds a lot of arguments

into a “physics of language”, developed by biophotonics predominantly at the level of the signifier.

2.2. The wave obsession:
Romanian optimising practices of archetypal resonance

We could say that the language (re)signifies the world in a creative manner, in order to generate specific values for each people. These values could be defined as a kind of resonance relationship between the world and the signs it generates, signs expressed by a degree of iconicity: correspondence (truth), of adequacy (good), aesthetic metamorphosis (beauty) etc.

Two essential components mark the traditional values of each ethnical culture: *space* (cosmic, geographic conditions) and *time* (historical becoming). For the Romanian people, both of them are manifested under the integrative sign of the “*wave*”, differently expressed on the forms of creative language [Stănciulescu, 2004a].

(1) ***The action of cosmic / natural geographical factors*** (space, relief, climate, vegetation etc.), permitted the hypothesis of a “spatial soul” of ethnic culture (Frobenius, Spengler). In Romanian culture, this intuition was assumed as a *predominance of the wave* (of the curly space), which the Romanian philosopher Lucian Blaga defined as a ”mioritic space”, defining the succession of the mount / hill and valley / plain. We could find the archetype of this ondulatory landscape in a lot of symbolic forms of the nonverbal languages: musical, gestural, plastic.

- ***The musical language*** suggests the “essential ondulation” especially in the melos of the Romanian “doina”, a winding melody traditionally played by flute, by “panpipe”, or by “tulnic”. We must observe that all these instruments are manufactured in *wood,* the “living material” which has a special relevance for the Romanian people’s life and health, because: (a) it is the essential material for the construction of the houses, of the main utilitarian objects etc.; (b) the wood, by its vegetable structure is both a “live “and a “perishable” material, fact which permitted to the Romanian people to conserve unchanged the “live tradition”; (c) the forest represented for the Romanians a space of retire in the case of historical perils, like invasion etc. (“The forest is Romanian’s brother.”) ; (d) the "living forest" was a source of permanent inspiration for the Romanian popular creation, generally, for the musical creation, particularly.

The musical theme of the "doina" is also played by voice, by some “natural instruments” (such as the leaf, the fish scale, etc.) or by a special instrument like “drîmba”, able to generate the vibration of the mouth’s cavity. Consequently, about the “musical language” of the Romanian popular song, a semiotic triadic analysis could establish that:

— its “signifier” is usually a natural material or the human voice itself, whose vibrations could imitate the natural sounds of the wind, water, leaf rustle etc.

— its “signified” reflects the affective states of longing, grief, revolt, love etc., states which generate a permanent interior oscillation;

— thanks to its “signification” and its direct force of expression, the music could be considered as an integrative language, used both to stimulate the health of the body (as it happens in the incantation of the exorcism, for example), or to generate the peace of the soul (like in the case of “lullaby”, of “doina” and “ballad” etc.).

(2) *The gestural language* – in the present context we will refer only to dance – is complementary to the musical one. It symbolizes the dynamics of the cosmic forces – especially of the sun (as a generator of light and thermic energy) – by the language of body movements. Two traditional Romanian dances are "hora" and "căluşul", both of them describing the same symbolic forms of the wave: the circular closed movement, the pulsative movement in open circle, the spiral movements, unfolded on the right hand direction.

From a semiotic point of view, one may say, in connection with the presence of the wave symbolism in the Romanian dancing tradition, that:

— *syntactically,* its *signifier* involves the rhythmical (combined) movements of all the components of the body (legs, arms, head), doubled by the complementary use of some instruments, such as: wood sticks, special costumes with decorative elements, etc.;

— *semantically*, its *signified* suggests an optimistic vision of life, the joy of living, a fight of man against evil, illness, etc.;

— *pragmatically*, the *significance* of dance language – just like that of the musical language – presupposes a double function: (a) a spiritual one, originated into the mythical-ritual practices, which conserve – at the level of an "unconscious collective" – the feeling of the community between man and cosmos, and stimulate the psychical reactions; (b) a bio-physical one, generated by the resonance of the human bio-field vibrations / movements of the body with the vibrations of the cosmic / solar fields, having as results a special state of health (the therapeutic function of dance is possible to be understood in rational terms).

(3) *The plastic language* suggests, more clearly than other languages, the presence of the wave archetype in the space of Romanian culture. Beginning with the 15^{th} millenium before Christ until today, some "sacred signs" could be found on the Carpatic-Danubian space, as a deep resonance of the human soul and body with the cosmic and telluric forces, with life or death etc. On a essential lecture, we could assimilate these signs – on a very schematic structure (curbs, volutes, spirals, (semi)circles, angles, triangles etc.) – with some major letters of the Latin alphabet: C, S, Y, V, A, M, W, X, Z, O. We ignore at the present moment any other obscure relationship between the "conventional" forms of the alphabet and the "natural" forms of the wave. But it does not mean that such a relationship could not be found.

Structurally, a semiotic assumption of the archetypal symbols imposes the following considerations:

— the *signifier* support is different in the Romanian popular culture (textile, clay, wood etc.), being present in the tissue motives of popular costumes, in the decorative incisions of the ceramics, the decorative wood sculptures on the utilitarian objects, on the elements of houses etc.;

— the *signified* has – excepting the aesthetic role – a very complex symbolic function, which expresses the *dualistic conception* of the Romanian people, concerning the complementarity of sky and earth, light and dark, increase and decrease, life and death, the life's metamorphoses though "unlimited energy" etc.

3. LIGHT AND SOUND: ON THE "ESSENTIAL UNITY"

Synthetically, we could consider that the major *signification* of Romanian ethnic languages express the *unity in diversity* of the ethnical languages. The same

meanings are expressed by a lot of wave forms, by a lot of material, rhythms, colors, sounds, etc. From a semio-logical point of view, all these forms of waves define not only the "patterns" of Romanian archetypal culture, but the "forms of all the forms", metaphorically named by us*: ovoid, hourglass, column, cluster.* These forms – genially suggested by Constantin Brâncuşi – are the symbols of *the "Essential Unity": the unity between the human, macro- and micro-cosmos, between physical, biological and psycho-social.*

The final conclusion of this paper is quite evident: *by its languages, human culture turns towards itself and towards the natural structures, in order to modify or to recreate them.* Using *ecosemiotics* terms, we could say that *the creative performance of the cultural language is proportional with the degree of iconicity, motivation, symbolization permitted by the relationship between Nature and Culture.* And, as we have tried to prove, this iconic relationship is a necessary and essential condition of one of the most relevant HUMAN VALUE: harmonious health of the body, soul and spirit, having as an essential mediator the power of LIGHT and SOUND.

LUXONICS, the "sacred" science…

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