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The Harmonizing Language of the "Living Light": a Biophotonic Explanation

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Abstract

The paper drafts a still absent scientific explanation of the genesis of verbal language, by corroborating the data of semiotics and of biophotonics (biology + theory / technology of lasers). By using the hypotheses of the proposed model, the author is rationally clarifying how the magical "powerful words" such as mantras, exorcizes or the incantation of some poetic verses could generate by resonance a harmonizing / therapeutic effect on human body and soul.

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1. On the genesis of human language

Over a century ago, *the problem of the language (speech) genesis* – of the neuro-linguistic sign genesis and their efficient use by the human being, namely – was a taboo subject for the members of the Linguistics Society in Paris (Ducrot, Schaffer, 1995: 72), because it imposed the surpassing of neuro-linguistics limits and rose passionate debates, lacking scientific support. The recent gains of knowledge allow for the elimination of such an interdiction, once accepted the truth that, generally, *the problems of human existence presuppose inter- and transdisciplinary research*. In particular, the controversies issued by logo- / gloto-genesis mechanisms presuppose the correlation of different explanations, starting from those of quantum physics up to those of biology, from those of neuro-psychology up to those of logic, philosophy and linguistics. In its double quality as theory and method, semiotics unveils its integrating, transdisciplinary virtues to describe and explain the process of the passage from Ontos to Logos, from the "language of nature" to the "language of culture".

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Why have we chosen language (sign-word) to mark the transition from “nature” to “culture? On the one hand, because nothing is more important for the historic evolution of the human being than language: we admit that the attribute of *significans / loquens* is the one that is the basis of his qualities as *sapiens, cogitans, faber* etc that usually define the human being. Because, being a cosmic and social being, he can best be described by his language, as Wittgenstein states: “The limits of my language mean the limits of my world” (1991: 102). Because “being a human being means existing through language” (Capra, 1997: 319), and being in language (in communication) means “becoming oneself” (Posner, 1985), means being in accordance with the natural and cultural environment through the word.

On the other hand, because, as we have showed in another context (Stanculescu, 1996: 7-12), language has an essential function in the creative manifestation of the human being, taking into account the fact that language:

- ensures the passage from image to the imaginary, from nature to its significance, from the biologic to the psychic, from the representation conscience to the (re)significance conscience;
- answers the need to name things (the world);
- satisfies the social need of linguistic communication, of stocking and transmitting the spiritual (cultural) values accomplished by humanity along the centuries;
- allows the human being, through the force of language as essential tool of culture, to oppose the entropic tendencies of nature, contributing to its “creative” transformation (not always beneficial, as we have to admit) and himself.

Taking into account all these aspects, we can say that stimulating the linguistic competence / performance represents an essential condition for the optimization of all creative-innovating resources of the human being. Or, finally, it is this very object that is held in view by the present phase of research.

2. (Un)conventional explanations of neuro-linguistic mechanisms

In the metamorphoses presupposed by human language genesis that correspond to disciplinary preoccupations of biosemiotics, the passage from the inner language to the exterior through the word holds a special importance.

The debated hypothesis that states that *the human language is nothing more than a “speculum”*, a mirror in which, in an isomorphic manner, the world itself is reflected, imposes the reconsideration of certain questions. To what extent is language a model of the Universe with words as “incorporated natures” (Boethius)? To what extent do the features of words manifest the features of named things (Thomas of Erfurt), or are things and words not connected to a “common essence” that makes possible their naming (Foucault)? The explicit or implicit answers to all these questions sketch the object-language of this communication: *the word and its metamorphoses*.

Why can we consider the word as an archetype of culture? Because, within the whole set of sign systems through which culture may be defined (Lotman, 1974; Eco, 1982), the word (language) occupies a central position¹, having the possibility of translating any sign through “plurimediality” (Wienold).

From a methodological point of view, we propose to search the word genesis (language) as a semiosis related to the idea of “essential tension” (Kuhn, 1981). Thus, we will use his phrase to redefine the polarity between:

- *intuition and reason*, the opposition or / and complementarity between classic and modern theories (tradition and innovation) with regard to the origin of the word / language, analysis accomplished from a predominantly semantic perspective;
- *ontos and logos*, the tension between physical reality and the word, having in view a syntactic assumption of the iconicity degree between referent-mental image-word;
- *culture and nature*, regarding the complex of conclusions / pragmatic attitudes that the human being should take from the isomorphism existing between the language universe and the universe of social and cosmic existence.

¹ The word is the essential element of any linguistic system. Consequently, analyzing the metamorphoses of the word means, according to the *holography* principle, analyzing the very evolution of human language.

We will notice that, generally speaking, in all these explanatory horizons, the generating mechanism is that of an *iconic situation*. Thus:

- modern theory recuperates principles of the classic theory;
- the word reproduces the mental image that, in its turn, reproduces the natural one;
- the word reflects nature, to come back to it as a modeler.

Consequently, we may say that *iconicity* (mimetism) represents an intrinsic feature of reality and a paradigm through which semiosis and sign can be defined². Because, any semiosis presupposes a certain degree of iconicity established between information (signified) and form of the sign (signifying), on the one hand, with the named referent, on the other hand. Iconicity designates the resonance relation established between the sign and its referent. Due to its importance, the iconicity paradigm was exposed to strong debates. Let us present two points of view:

- actualizing an important historic tradition, Thomas A. Sebeok considers that the study of signs is necessarily linked to the iconicity mechanism; since the sign has a “natural” component, the sign has its origin “in the simulative representation of the world”, thus iconicity is “the heart of semiosis” (Danesi, 1998: 10, 12);
- a totally different attitude is expressed by Umberto Eco who criticizes iconicity, proving that it is based on a few “naïve” prejudices (the existence of common, similar, motivated properties between the sign and the substituted object) that may be logically invalidated, due to the “cultural nature” of signs (1982: 253-283). Seemingly, there is no possibility of reconciliation between the two viewpoints. In reality, as we will see, this reconciliation is possible because both viewpoints are justified, since they are complementary in reporting the “communication situation” to which they refer and historically flexible in that they have modified themselves over time³.

Just as people thought that the Aristotelian logic of the excluded middle proved to be damaging for establishing the option of one or the other of the alternatives, so we will maintain the utility of a polyvalent logic of the “and / and” type. We will formulate our resolution in relation to the multiple debates of the “essential tension” in accordance with the principle of the “middle path”: *aurea mediocritas*. In this reconciliation attempt, semiotics has the privilege of being *metalanguage*.

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Un solved dispute still marks the history of language as a system of signs: is the word a “*natural object*”, carrying something essential from the denominated referential, as Cratylus sustained, or is the word – and language, implicitly – only a *conventional relationship* among people, as Hermogenes argued? In the terms of a “*semiotics of light*” (Stanciulescu, 2003b) one can demonstrate rigorously that both theories are justified, because:

- at the very beginning of the human history, the natural genesis predominated; *in illo tempore* the power of the word was generated by the “iconic resonant” force of the *signifier*, of the sonorous / energetic support of sign;
- in time, this genesis was replaced by the conventional one: the power of the word began to be expressed at the level of the *signified*, of the cultural / informational meaning content.

² The semiotic concepts of *iconicity / mimetism* describe (with a certain redundancy) the existence of a certain degree of similarity or physical analogy between the physical substratum of the sign (*significant*) and its referential, a degree of semantic correspondence between the informational content (*signified*) of the sign and the named reality. According to this correlation, we will say that iconism represents the semiotic expression of the resonance process that is the basis of the ontogenesis of all complex systems of the world: physical, biological and psycho-social. Depending on the level of manifestation and the type of resonance, we will speak of primary iconicity (from the physical and biological level) and secondary iconicity, at the level of the signifying human reflection. We can say that the first type of iconicity constitutes a language-object for the metalanguage of the second type.

³ Thus, in the “pro” and “con” dispute over iconicity, we could argue that the two viewpoints are complementary and not disjoint. Natural *iconism* is much more obvious where the predominant evaluation criterion is the *significant* (i.e. at the physio-biosemiosis level, of the symbolic phase of the human language), just as *conventionalism* characterizes especially the present (modern) phase of language. Specialists such as Sebeok and Gorasson pay special attention to the former aspect, demystifying the “great illusion” that is the “Fundamental Arbitrariness of the Sign” (Voronin, 2000) from the position of the sciences of nature. Others such as Eco and Goodman etc support the latter aspect, denouncing the “naivete of iconism” from the standpoint of the humanities. Here are two seemingly different perspectives that together complete the image of a unique reality. Let us remember, in this context, that we can talk of two variants of dialectical opposition: *simultaneity* (the unity of the opposites corpuscle-wave or even significant-signified) or *succession* (the duality day-night, present-absent, motivated-unmotivated etc). Both are present in the complex problem of language genesis and evolution.

In order to argue scientifically such a point of view, two categories of explanatory hypotheses are taken into consideration: conventional (involving the semio-linguistic disciplines) and unconventional (involving the biophotonics perspective) hypotheses.

2.1. The “mimesis umbrella”: hypotheses of the conventional (semio-linguistic) sciences

Two categories of explanations have been historically associated with the attempt to understand the appearance of verbal language:

- the *naturalistic* one (*phusei*) maintains that it was due to motivation that the word appeared through its con-substantiality with the denominated reality;
- the *conventionalist* one (*thesei*) postulates the arbitrariness of the name compared to the referent.

Both of them constitute the object of the notorious feud between Cratylus and Hermogenes, the two characters of Plato’s well-known dialogue, carried out with ontological and etymological arguments.

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All in all, we can say that the appearance and usage of the verbal (oral) word must be bound to the naturalistic explanation (in a first phase of human beings becoming manifest through the word) and to the conventional explanation in a “modern” subsequent phase of our history. To support this viewpoint in another context (Stanciulescu, 1996), we can reconsider the assembly of explanatory hypotheses, which have been formed up to now from some complementary, merely “intuitive” disciplines, such as linguistics, philosophy, language psycho-sociology, as well as the “logical” ones such as phonology, phonetics and semiotics. We can group five categories of scientific explanations regarding the genesis of verbal language under the “mimesis’s / iconism’s umbrella”, as Umberto Eco would call it. They refer to:

(1) *The hypotheses of primary (ontological) mimesis* spotlight the quality of the sound as the “passive” support of reproduction of some particular objective processes or phenomena based on similarity. This category includes the appearance of the words by sonorous imitation of certain sounds or onomatopoeically generated sounds beginning with the material ones (Cock-a-doodle doo!, “bow-wow!”, “kew-mew”, etc.) up to the artificial ones: Thud! Thump! Slap! Pop! Bang! (“bow-wow” theory).

2) *The phonetic (secondary) mimesis* uses the “active” valences of articulated sounds to convey adequate correspondences with a certain referent by:

- *phonetic mimesis* of some sequences, suggests the reality of some objects, phenomena, processes and builds nouns such as: flickering, murmur, so on through symbolic mimicry or adequate verbs (to shout, to blow like the wind, etc.);
- *articulate mimesis* that motivates the existence of some sonorous reactions of an emotional sensory nature identical to all the people, which are capable of expression (cf. Danesi, 1998: 50); we may identify four types:
 - some interjections, such as: Why! Ah! Hey! Alas! Ha!, which suggest, by sounds, certain psycho-affecting situations: pain, astonishment, anger (“pooh-pooh” theory);
 - instinctual sonorous manifestations like babbling and grumbling at the specific stimuli, like the breathing of a mother reaching for her infant (“ding-dong” theory);
 - sonorous expressions generated by the need to coordinate activities within certain processes of work (“yo-he-ho” theory);
 - sonorous complexes generated by the need to respond to affectionate states such as love, play, etc. (“la-la” theory);
- “*distinctive features*” *mimesis*, establishing the existence of the following elements in the language:
 - sonorous couples / oppositions (special states of acoustical energy such as: vocal-nonvocal, consonant-nonconsonant, compact-diffuse, tensed-relaxed, sonorous-deaf, etc, through which words are articulated in accordance with referents (Jakobson, Halle, 1977, cf. Ionescu, 1992: 131-135);
 - objective relations such as: little-big, sad-gay, hot-cold (cf. Kerbrath-Orecchioni, 1977: 31-32) or by some bright / dark vowels or soft-liquid, peaceful-aggressive consonants, etc. (Fonagy, 1970).

(3) *The hypotheses of “conventional mimesis”* suggest, displayed in the juxtaposition of the two antinomy concepts, the passing from the genesis of the motivated language (natural) to the non-motivated type (conventional), by means of the following generative mechanisms:

- *semantic transfer*, which is capable of expressing certain elements of the nonverbal language (motivated) in terms of a verbal language (half motivated) by a reflection of grade three of reality; for example, “figure five” stands for the word “hand” as a consequence of translating the symbolic gesture of hand-raising within the articulated sonorous complex (Brunschvig, 1929: 11);
- *the symbolic motivation* (relative), that presupposes to name the reference through reporting it only as certain qualities (attributes), which impress the one who gives the names such as: “ghiocel” which comes from the Romanian “ghioc” = a special form of helical shell, from the Russian “podznejnic” = under-snow or French “perce-neige” = to pierce / penetrate / break through the snow, from the German “schnee gluckhen” = “snow-bell” or from the English “snowdrop” = drop of snow, etc. (Miclau, 1977:172-173);
- *etymology by vicinity* that characterizes the genesis of some substitutive rhetorical figures (Augustin, 1991: 152) such as synecdoche (mortal = man), metonymy (to drink/have a glass = to drink its content), automasia (cancer = death) covering the relations between the content and the recipient, the whole and the component, a cause and its effects, etc.;
- the mechanism of *generating words by grammatical-semantic combination* such as achieving some words through association (sun-flowers, edible-oil) or by adding prefixes or suffixes (“in”-dispensable or symbol-“izing”, etc.).

(4) *The semi-partial conventionalism* refers to the genesis of the word by semi-arbitrary denomination of a certain real / or unreal referential, either at the level of the significant (as in the case of the “quark”), suggesting, by its significant, something frisky (playful), or at the level of the signified (as in the word “tele-vision”, motivated at the level of the signified only).

(5) *The hypotheses of the integral conventionalism*, developed in the channel of saussurienne arbitrariness, emphasize the fact that a (great) part of our linguistic signs have been born through cultural convention, by a social arrangement at the level of linguistic groups, words being unmotivated at the levels of the signifier or the signified (as in some concrete words like “bureau”, for instance, or in some abstract words like “satisfaction”).

This summary of categories of explanation allows us to elaborate some conclusions of a semantic nature such as:

- their succession spotlights as clearly as possible the process of passing from the linguistic unity to diversity as postulated by the Babel myth from the natural genesis of the words (a “pre-Babel phase”) to a conventional genesis (a “post-Babel phase”);
- the “gradual continuum” (Eco, 1982: 273) possibilities of an iconic expression of the word employ all levels of the word’s power starting with the energetic resonance of the sonorous significant with the named thing up to the informational resonance of the signified.

Each of the above attempts at explanation distinctly mentions a hypothetical generating mechanism, specific to a certain type of words. Consequently, we can say that it is the complementary of the registered hypotheses that can draw an integrative image of the way in which the multitude of word kinds in human language have appeared.

The explanations proposed are preponderantly built out of the perspectives of the socio-humanistic disciplines that do not act with instruments of excessive formalism or scientific experiment. Therefore, they can be correct from the intuitive viewpoint, but, scientifically speaking, they are not supported and substantiated enough. The necessity of integrating the most recent results of the sciences of the complex systems (neuro-cybernetics, cognitive psychology, the theory of information, the technology of computing and holography, etc.) requires a new vision of logogenesis capable of enlightening the “black box” in which words were born and sprang out. This perspective constitutes our goal and we intend to use it in order to elaborate a genuine vision and, consequently, a less conventional one regarding the genesis of the “words of power”: *biophotonics vision*.

2.3. *Sesame, open !: A biophotonic explanatory model of the “iconic word”*

The “biological light”: *biophotonic hypotheses concerning the nature of language*. As a merely recent scientific discipline, *biophotonics* tries to unify *biology*, as a science of living, with *photonics*, as a theory and technology of lasers. It explains the role of the (bio)light emission of each biological system, starting from DNA to the whole body – a *ultraweak bioluminescence* having the same properties as a laser emission; the German scientist Fritz-Albert Popp (Popp, Li, Gu, 1989) put experimentally into evidence the morphology and optical functionality of the biological structures, in their quality of “bio-lasers”.

The postulates of biophotonics, named by us the “*Biological Lasers Theory*” (BLT) (Stanculescu, Manu, 1993-2002), put into evidence – at the level of all biological systems (vegetal, animal, human) – the same unifying mechanisms, namely: a) the absorption / stimulated emission of light / bioluminescence, at the level of the molecular complex phosphate / linked water / oxygen; b) the presence of certain liquid-crystal structures at the level of cell membranes, able to allow the penetration and stocking of (bio)luminescent waves / biophotons inside the human body systems, down to the DNA level; c) the analogical functioning of the nuclei and of the cells, of the organs and of the whole organism as some kind of “biological lasers”; d) the harmonizing complementary mechanism of BEMPh (biochemical, electric, magnetic, photonic) processes; etc.

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Using the hypotheses of biophotonics concerning cerebral functions it is possible to justify the mechanism of iconic genesis of the word by: (1) explaining Karl Pribram's (1971) essential hypothesis sustaining that the brain's activity is of a holographic type; (2) arguing that between the capacity of sight and speech is a very strong connection (Jakkendoff, 1987: 90).

Taking into consideration the hypothetical principles and problems mentioned above, we could propose a *biophotonic explanatory model for the word / language genesis*. This model is based on the *paradigm of iconicity*, considered by Thomas A. Sebeok (1989) – in his IH (“iconicity hypothesis”) – to be “the primary means by which bodily experience is transformed into a system of signs and meanings” (Danesi, 1998: 18). In this spirit some other very recent contributions are formulated, such as: the “iconic theory of language genesis” (Voronin, 2000; Allot, 1988), etc.

The biophotonic mechanisms above mentioned (un)conventional “biological laser” systems – are able to explain, by their coherence, the genesis of the human verbal speech. Consequently, an explanatory / integrative model of the primitive “iconic word” genesis must take into consideration the correlated following aspects:

- the specific commands realized by the brain (transmitted from the central or peripheral brain sectors) in order to transfer the information comprised in the cerebral hologram (as a “photonic sign”), at the level of the verbal-kinesthetic apparatus;
- each type of information reproduces a certain real property of the referential: colour, form, material, etc.;
- this information (hologram’s vibrations) is transformed into mechanic (pressure) information at the level of the verbal-kinesthetic apparatus, due to the same property of piezoelectricity of the liquid crystals;
- this type of information is transferred simultaneous and synchronized at the level of the system of “linked resonators” (stomach and lung cavity, trachea, larynx, pharynx, mouth cavity), which defines a complex type of SASER (Sound Amplification by Stimulated Emission of Radiation):

— stomach, lung and trachea muscles, in order to regulate the quantity of pumped air into the resonating cavities;

— the larynx’s muscles regulate the complex of stimulated sounds to become *coherent, mono-harmonic and directed*; these effects are generated at the level of symmetric vocal cords, whose vibration determines the appearance of some “nodes” and “ventres”; in this way, the diffusion (diffraction) of the luminous fascicle on the sound waves (Mandelstam-Brillouin diffusion) is achieved effectively (cf. Tarasov, 1990: 103);

— the muscles of the larynx, which *amplifies* the sound complex;

— the muscles of the face, mouth and tongue are differently activated for each type of sound; at the level of the oral resonator (only with human being this is disposed perpendicularly on the direction of the other resonators) the “iconic motif” of the cerebral hologram is reproduced on a sensible manner (by articulated sounds); the phonic complex pumped by the pharynx – the *sound signifier* – is able to suggest on a “resonant” manner some meanings (signified) such as:

(a) *forms* of circular, linear, fricative or slide, round or pointed type, etc.;

(b) *actions* of implosive or explosive, descending or ascending, intensive or extensive type, etc.

(c) *attributes* such as light or dark, hot or humid, warm or cold, etc.

In conclusion, the succession of “technical” consideration we were been obliged to present above, can justify that the primordial human words could have this short “history”:

- after some essential energo-information (biophotonic) metamorphoses, the *interior form / signified* (mental hologram) is finally expressed as an *exterior form / signifier*, delivered at the level of oral cavity as a “articulated word”, as a “photo-sonic hologram”, respectively;
- by such a generative process, the “sign-word” reproduces by resonance the properties of the “hologram-object”, which is, in its turn, in a homeomorphic relationship with the referential object;
- by their iconicity, the primordial words are a “second degree reality”, as a “reflection of reflection”;
- the “natural genesis” of the word permitted to the human being, *in illo tempore*, to act upon the denominated object, by a sonic resonance of the type: “Sesame, open!”.

We could find in this history of the word a very special intuition – which I have already mentioned – 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*” (cf. Dewhurst-Maddock, 1998: 93). 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, mind and soul. Each of these hypostases of the human “living light” could be assumed in a specific way by an integrative “semiotic of light”.

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At the level of the human body all these types of meaningful forms – determined by the energy-information of sounds (intensity, frequency, amplitude, etc.) – are sustained by three major types of signifiers / bio-physical memory support:

- the membranous liquid crystal structures, transparent to (bio)light and extremely sensitive – by piezoelectricity – to sonorous resonant stimuli;
- the water molecules in the human body (about 70 %), present in the interstitial cell water, in blood, plasma, etc., that can be structured according to the frequency and forms of certain sonorous stimuli;
- the bioluminescent field, able to preserve by complex waves interferences (Fourier spectrum) the message of the external or of inner sounds emission, already transformed into a bio-luminescent field by a piezoelectric or / and holographic cerebral mechanism.

The integrity of these types of signifiers / language type of memory represents an essential condition of human health harmonization, because – in terms of biophotonics and of complementary therapies, we could say that:

- **illness** refers to losing the memory of the good functioning / structure of the organism, at the level of the substantial organism substrata (cells, tissues, organs) that the bioluminescent light-field (human aura) essentially governs;
- **health** refers to recuperating the right memory capacity of the organism by the reconfiguration of the different levels of aura (beginning from DNA to the whole body), by using different allopathic or complementary strategies.

Semiotically, to recuperate health means to re-establish the harmony between the soul (auric signified) and the body (physical signifier) by two types of complementary therapeutic actions:

- to modify in a beneficial way the properties of the human aura / biofield by means of certain adequate vibratory stimuli, the optimizing information being non-aggressively transmitted to the structural body systems; it is the perspective of the old “magic medicine”, of the holistic medicine curing the “soul” first (the informational signified) and then the body (the substantial signifier);
- to act by biochemical / surgery procedures directly upon the affected organs (the signifier’s substratum), an action that will adequately modify the human aura state (the signified’s content).

Therefore it is possible to recuperate health by acting from the invisible state of the “soul / field” to the visible state of the “body / corpuscle” or vice versa.

All in all, the succession of “technical” considerations we had to present above can justify the idea that the primordial human words could have had this short “history”:

- after some essential energo-information (biophotonic) metamorphoses, the *interior form / signified* (mental hologram) is finally expressed as an *exterior form / signifier*, delivered at the level of the oral cavity as an “articulated word” and as a “photo-sonic hologram”, respectively;
- by this generative process the “sign-word” reproduces by resonance the properties of the “hologram-object”, which is, in its turn, in a homeomorphic relationship with the referential;
- by their iconicity, the primordial words are a type of a “second degree reality”, as a “reflection of reflection”;
- the “natural genesis” of the word allowed the human being, *in illo tempore*, to act upon the denominated object and to influence it by a sonic resonance of the type: “Open, Sesame!”.

We could find in this history of the word a very special intuition that the suffi thinkers had: “The Word is the mirror by which Divinity reflects himself to the exterior. *The word is both sound and light, because light is the sense of the sound*” (Dewhurst-Maddock, 1998: 93). It is difficult to find a more suggestive expression of the presence of the “Light-Sound Word” in the world, of the essential iconicity between the uncreated “Divine Light” and the “complex light” of the *human body and soul* (Guja, 1993).

3. Open conclusions: on the harmonizing effects of the “living light” language

Each of these hypostases of the human “living light” could be assumed in a specific way by an integrative “semiotics of light”, including pertinent explanations on the effects of “magic language”, from the harmonizing (therapeutic) effects of exorcism or of “powerful words” (such as mantras, prayers, etc.) to the harmonizing power of poetry, both scientifically studied by Mineo Moritani (1998)⁵.

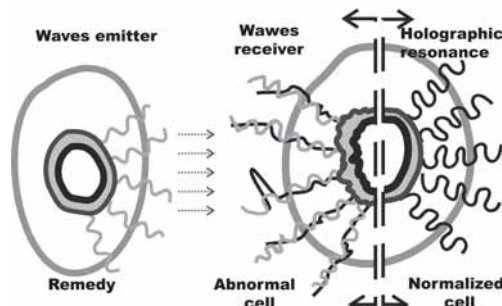


Fig. 1. The general mechanisms of healing by sounds / words:

the waves of the remedy / sonorous resonator specifically interact (after a first piezoelectric metamorphosis) with the waves of the receptor (at the level of cells, organs, the whole body), firstly by modulating / normalizing its own vibratory state, secondly by remodeling the receptor’s substantial form (by determining the repositioning of the liquid crystals).

In conclusion, with the above biophotonic explanations in mind, we could understand scientifically and recuperate therapeutic practices such as:

- The correspondence between the sounds of the musical scale vibrations and the human organs’ state of health represents a relation on which the *music therapy* is integrally based (Fig.1), supposing the permanent and harmonic hearing of the musical notes.
- The old practice of *healing by personal emitted sounds*, resonating by their frequency to different levels of the human body, consisted in: the simple reproduction of “cosmic sounds” like *shhhhu, hhhuuu...*, the incantation of the vocals phonemes (A, E, I, O, U) or of the morphemes (like AUM, KSAM, HAM, YAM,

⁵ Into the frame of an amazing interdisciplinary research, the mentioned author explained analytically / semantically, at the level of signified, and proved technologically (by stereo-ponic transduction), at the level of signifier, how the “light” of Lord and of the cosmic signs, translated by a resonant illumination / inspiration into the poetic sounds (particularly applied to Milton’s “Paradise lost” poetry), is able to harmonize by (re)incantation the human being bio-psycho-logical state / health.

RAM, VAM, LAM), and the incantation of the complex oriental mantra (such as: OM MANI PADME HUM). Having recuperated the suggestions of the “magic medicine” tradition, the modern *cymatics* already uses the technology of the infra- or ultra-sonorous inductions to disperse the malfunctions of the organism.

- The incantation of the most powerful personal mantra, which is the *given name*, could be connected to some other traditional practices, such as: protecting a child from malefic interventions by keeping his/her right name hidden or / and by supplying it with a nick-name⁶. In Romanian folk therapy people still use the ritual of “selling” the little child and changing his/her name in order to heal an unknown illness. By changing the name, a certain dysfunctional stimulation present in its signifier / sonorous complex is avoided and the child’s health is recuperated. In synthesis, such practices give credit to the hypothesis that the *resonance of the name determines essentially the becoming of the human personality*, from the body structure to the genesis of temperament and character.
- Lastly, as regards the universal *practice of exorcism*, we could argue that it is complementarily based on:
 - The *resonant effects of the signifier*, which are determined by the right pronouncement (with the same intonation, intensity, etc.) of certain “magic” words / sounds, sometimes with no semantic sense (as magical *abracadabra* seems to be). For example, the Romanian exorcism “against snake” uses the incantation: “*Da zalca malca / Da zatka batca / Aturisi utur bre...*”. These words – lacking logical signification (maybe the meaning belongs to a lost old language) – resonate somehow and somewhere inside the human body, entailing the delivery of some specific antitoxins of the organism, necessary for annulling the effect of the snake’s poison (Stanciulescu, 2003a: 143).
 - The *mental influence of the content of the exorcism* (verses / signified) seems to be determined by the very well known “placebo effect”, the self-suggestive effect of positive thinking, generated by the imperatives that the exorcist explicitly pronounces: go away illness, whatever you may be, go to the waste, over 99 countries and seas, and perish there, X “*to be purified / purified and bright / Like filtered silver, / Like the sun when the sky is clear / For ever amen!*”. Such a powerful / positive suggestion – manifested by the specific types of resonances / holographic complexes of waves – is able to generate at the level of the brain a specific emission of serotonin or melatonin, of different types of hormones, etc., able to generate an objective state of health.

The verbal practices are implicitly accompanied by *different types of complementary therapies*, such as bio-energization by hands, press-puncture and acupuncture, massage, etc. In this way, complex BEMPH effects are synergically generated at the level of human body systems, transforming exorcism into the *first holistic therapy of humanity*.

To conclude, we can assert that the recovery of certain spiritual values that time has not altered might result in the reaching of an ideal that wise men of science, who met in Tsukuba - Japan, 1985 - formulated for the Third Millennium: the ideal of becoming a *visionary-visual being* (Yuasa, 1986) capable to emphasize the values of scientific rationality by intuitive harmonizing practices.

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⁶ The same strategy applies to keeping secret the real name(s) of God, which – in the Hebrew religious ritual – are used only once a year, only by the great priest, in the sacristy of the church; this way a profane action upon God’s name power is avoided.

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