Quantum Biophysical Semeiotics evidences of Water-Memory-Information by means of Music Energizing Action: Caramel's experiment

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Introduction

Masaru Emoto claims that human consciousness has an effect on the molecular structure of water. Emoto's hypothesis has evolved over the years of his research. Initially Emoto claimed that high-quality water forms beautiful and intricate crystals, while low-quality water has difficulty forming crystals. According to Emoto, an ice crystal of distilled water exhibits a basic hexagonal structure with no intricate branching, and positive changes to water crystals can be achieved through prayer, music or by attaching written words to a container of water.

Since 1999 Emoto has published several volumes of a work titled *Messages from Water*, which contains photographs of water crystals next to essays and "words of intent."Through the 1990's, Masaru Emoto performed a series of experiments observing the physical effect of words, prayers, music and environment on the crystalline structure of water. Emoto hired photographers to take pictures of water after being exposed to the different variables and subsequently frozen so that they would form crystalline structures.

Recently, Quantum Biophysical Semeiotics experiments offer new evidences about the existence of a Water-Memory-Information, and following the interesting hypothesis of Emoto about the changes to water crystals achieved by music and songs, in this article we present an interesting experiments in order to verify the hypothesis of the memory-information feedback between water and music.

State of Art

Argument of large discussion, water memory has been always considered just a conjecture. In fact, nobody has ever proved that water is able of retaining a memory – information of substances dissolved in it once to arbitrary dilution. The concept was notoriously proposed by Jacques Benveniste to explain the *purported* therapeutic powers of homeopathic remedies, which are prepared by diluting solutions to such a high degree

that not even a single molecule of the original substance remains in most final preparations. Benveniste sought to prove this basic tenet of homeopathy by conducting. For the first time a Quantum-Biophysical-Semeiotics – QBS - experiment, CLINICALLY proves **the existence of water-memory-information** (1).
This proof above mentioned suggested one more QBS experiment whose results confirm that Water-Memory-Information is aiming to treat **Chronic Fatigue Syndrome**, and this evidence allows to state that a "possible", really efficacious therapy of CFS has been discovered, if it will be corroborated on a very large scale (2).
Water-Memory-Information using energized water by a quantum device able to capture the frequencies of drugs and re-transmit them to the water, open new perspectives **in drugs assumptions, limiting their quantity** with the same therapeutic results (3).
Furthermore, glycocalix QBS Evaluation plays a central role in order to demonstrate the Water Memory-Information (4).
Quantum-Biophysical-Semeiotics so introduce a new principle: the Principle of Water-Memory-Information (5), which is the first scientific prior of new next experiments and applications about this matter.

Water-Memory-Information and Music Energizing Action: Caramel's experiment

Notoriously, listening to the music ameliorates humor level.
In fact, under this situation, physicians observe microcirculatory activation of humor anatomical neuronal centers, for instance, in pre-frontal and limbic cortex, amygdales, and so on, corroborated by QBS (6).

At rest, I assessed *basal* microcirculation (Appendix) behaviour in above-mentioned neuronal centers: AL+PL+DL = 6 sec. duration (6).

Soon thereafter, when I was listening to some music (songs), I observed in my-self type I, associated, physiological, *maximal* microcirculatory activation of pre-frontal and limbic cortex, and amygdales: AL PL DL = 10 sec. (NN = 6 sec.).

At this point, I located a glass containing *pure* water, near a Radio, broadcasting music (songs). After about 5 minute, closed the Radio, and sitting down near the same glass (less than 1 meter!), I evaluated for the third time identical parameter values, cited above: AL PL DL showed their maximal values: their duration was 10 seconds.

Finally, I swallowed the water of the glass, and the microcirculatory activation in my pre-frontal and limbic cortex, and amigdales simultaneously appeared intensively stimulated, lasting at least for two hours; AL+PL+DL = 10 seconds.

Subsequently, I observed in five healthy individuals, of both sexes and different in age, the identical data above-referred.

Conclusions

In conclusion, Caramel's QBS Experiment demonstrates that music energizes water, and that Water Memory-Information does really exist.
Furthermore this experiment open new perspectives about the music therapy, and its application to infantile autism, mental retardation, disabilities, Alzheimer disease and other brain disorders, psychosis, mood disorders, somatoform disorders (especially chronic pain syndrome), chronic fatigue syndrome, eating disorders (anorexia nervosa).
Through this experimental evidence new light is given also for the interpretation of wakes from coma with music.

*** Dedicated to Dr. Simone Caramel, President of SISBQ, I consider the greatest Expert on Quantum Biophysical Semeiotics.**

References

(1) **Sergio Stagnaro (2011) First Water Memory-Information Demonstration through Quantum Biophysical Semeiotics – 2011**
(2) **Sergio Stagnaro (2011)** Water Memory-Information containing Muscle Extremely High Energy Frequency: Is the Therapeutic Problem of Chronic Fatigue Syndrome solved? **– 2011**
(3) **Sergio Stagnaro (2011) Water Memory-Information based Therapy: quick Recovery from Arthrosis-Dependent Backache – 2011**
(4) **Sergio Stagnaro (2011) Glycocalix Quantum-Biophysical-Semeiotic Evaluation plays a Central Role in Demonstration of Water Memory-Information – 2011**
(5) **(Sergio Stagnaro (2011) The Principle, rather than the Theory, of Water Memory-Information – 2011**
(6) **Simone Caramel and Sergio Stagnaro (2011) Clinical QBS Diagnosis and Primary Prevention of Brain Disorder 'Inherited Real Risk' and Alzheimer Disease – 2011**

APPENDIX - **Elements of Clinical Microangiology**

According to Tischendorf's concept of Angiobiotopie (Curri, 1986), biological tissue-microvascular system can be described as formed by single units: the tissue-microvascular units.

In its turn, the tissue-microvascular unit (T.M.U.) is made up by three fundamental components:

1) *microvessels*, diameter < 100 μ,

2) *the blood*, flowing in them,
3) *perivascular connective*, periangium, interstitium or "environment" in which microvessels are placed, formed by water, free- and bound- water, cells and connective fibers, and interstitial matrix, glucosamino-glycanes.

Microvessels can be subdivided as follows (Pratesi, 1990):
1) *Para-microcircle*: small arteries and arterioles, according to Hammersen, venules of I, II, III order, shunts or Arterio-Venous Anastomoses (AVA), functionally speaking (Bucciante, 1949);
2) *Microcircle*: nutritional capillaries, post-capillaries venules, "meta"- arterioles.

With the aid of Biophysical Semeiotics, doctor is able to evaluate, in dynamic manner, T.M.U. of every biophysical system, from both structural and functional view-point, according to a synergistic[i] pattern, i.e. the clinical evaluation of microvascular dynamics.

Notoriously the microvessels carry on a motor activity, autoctonous and deterministic chaotic, which represents one of the most remarkable manifestations of microcirculatory hemodinamics, characterized by a *flow-motion* and hematocrit rhytmically fluctuating due to the particular behaviour of both *vasomotility* and *vasomotion*[ii].

A biological system, as the tissue-microvessel system, so much highly evolved and well differentiated, as regards anatomy and physiology, can not react to attacks, different in origin, which involve it, by a lot of ways.

As far as tissue-microvessel unit is concerned, cells, transformed in *smooth muscle cells* and in *ramified smooth muscle cells*, when stimulated, either contract or dilate, although there is a residual possibility of further response.

On the contrary, smooth muscle cells of the media of great arteries – elastic and muscular – which are less differentiated, react to various stimuli, even, de-differentiating and, then, evolving towards cells with secretory activity (Simonescu 1990, Gimbrone 1997).

These concepts account for the reason of the restricted number of tissue-microvascular unit reactions, doctor can observe at the bed-side by biophysical semeiotics and *Clinical Microangiology*[iii].

According to biophysical semeiotics, in a supine healthy subject, psycho-physically relaxed, with his (her) open eyes, aiming to inhibit melatonin secretion, digital pressure of "low-mean" intensity, applied upon the skin projection area of heart, brings about upper, middle, low-ureteral-, gastric aspecific-, caecal-, and choledocic- reflexes, i.e., upper-, mean, low-ureter as well as stomach, caecum, and choledocus dilate, the latter three after a latency time of 8 seconds.

In health, the dilation of upper and low ureteral reflexes, appears after 6 seconds and lasts for 6 seconds, while all other reflex duration is less than 4 seconds. The latter parameter value proved to be of paramount importance, from diagnostic viewpoint, informing precisely about local microvascular structures and function, as well as microvessel remodeling. In fact,

such as digital pressure brings about “low-mean” stimulation of coronary trigger-points, inducing "rapidly" oscillations of upper and choledocic reflexes (small arteries, according to Hammersen) and subsequently those of lower ureteral (arterioles, nutritional capillaries), which parallell fluctuations of the related microvessel structure, according to a synergetic model (Stagnaro, 1994).

The oscillations of “upper” reflexes define the vasomotility – the general dynamics of microcirculatory vessels, while those of “lower” one express the vasomotion – capillary-venules dynamics (Figure 1).

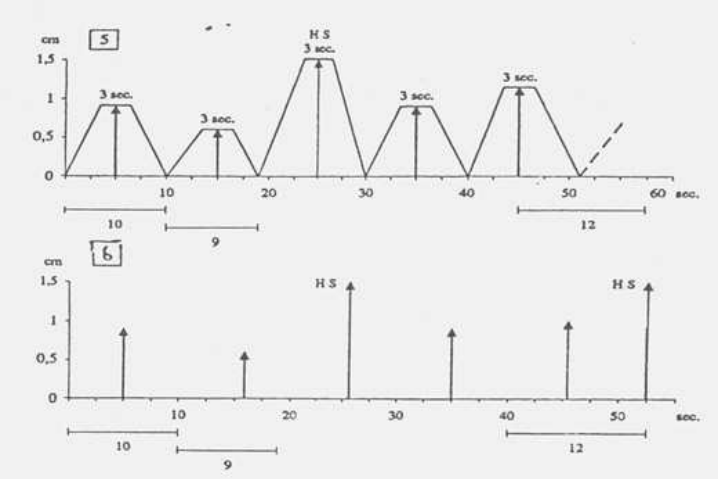


Figure 1: Physiology fluctuations of upper and lower ureteral reflexes, ar rest (vasomotility and vasomotion); HS stands for Highest Spike or highest oscillation

In figure 1 we can see how are practically evaluated vasomotility and vasomotion. Drawing a Cartesian diagram, in the x-axis is represented the reflex’s duration (in seconds), while in y-axis is represented the reflex’s intensity (dilation of parenchyma, in cm). Interestingly, the period of oscillations is not fixed or constant: under physiological condition, it varies from 9 seconds to 12 seconds showing 6 cicles per minute. The average duration of fluctuations is 10.5, i.e., a fractal number. Furthermore, the intensity of “normal” oscillation is variable in a unpredictable manner, varying in health from 0.5 cm to 1.5 cm. Physiologically, after two normal, different in intensity, unpredictable fluctuations, we observe an highest oscillation - highest spike (HS) – that corresponds to "quantic", maximal, periodic adrenalin and nor-adrenalin discharge from autonomic nervous system endings, which occurs exactly every 25 seconds. Finally, these signs can usefully be evaluated under stress tests (Stagnaro, 1996).

Vasomotility and vasomotion of every T.M.U. physiologically show an highly complex type of variability, "constrained randomness", reminiscent of chaos (Goldberger, 1991,

Murry, 1986), which may be evaluated nowadays at the bed-side with the aid of biophysical-semeiotics, as demonstrated for the first time clinically (Stagnaro, 1994).

Biophysical-Semeiotics allows doctor to detect the chaotic behavior of both intensity and period of ureteral (and choledocic) oscillations, i.e. vasomotility (upper ureteral reflex: small arteries) and vasomotion (low ureteral reflex: nutritional capillaries) of the microcirculatory bed of all organ and tissue, including the heart (Figure 1).

In addition, more intense stimulation provokes numerous, pressure-dependent, middle ureteral reflexes, informing respectively on different types of EBD and AVA, according to Bucciante (1949). Middle ureteral reflexes are correlated with EBD both physiological and newborn-pathological (Table 2). Furthermore, low ureteral reflex oscillations give information on nutritional capillaries. Interestingly, mean digital pressure upon Th-1 – Th-2 dermatomeres stimulates cardiac β-adreno-receptors. Physicians assess the capillary diameter as intensity of low ureteral reflex. Highest spike (HS) intensity divided for minimal oscillation gives a ratio 3/1 under physiological condition. This value is unavoidable in calculating biophysical-semeiotic fractal Dimension (fD) of microvascular deterministic chaotic systems. It is perfectly identical to the value of differential latency time of heart-aspecific gastric and –caecum-reflex, surely easier to be evaluated (table 1).

Middle ureteral reflexes

Low intense stimulation: 1 cm.; 7 sec. duration;
6 sec disappearing time. = type II EBD.

Mean-moderate intense stimulation: 1,5 cm.; 15 sec. duration;
6 sec. disappearing time = type I, A, AVA

Moderate-intense stimulation: 2 cm.; 20 sec. duration;
6 sec. disappearing time = type I normal and newborn-pathological, subtype b) EBD.

Mean intense stimulation: 1,5 cm.; 15 sec. duration;
6 sec. disappearing time = type II, AVA.

Intense stimulation: 2,5 cm.; 20 sec. duration; 6 sec.
disappearing time = type I, newborn- pathological, subtype a) EBD.

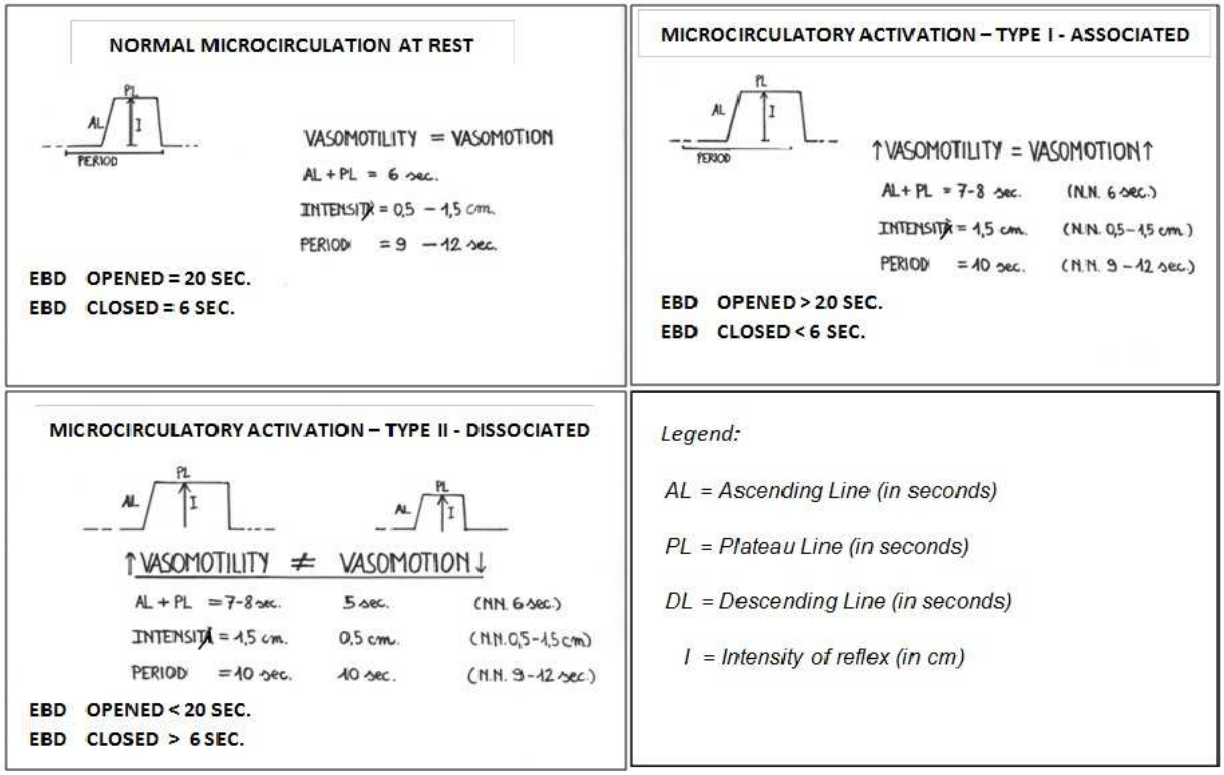
***Table 2**: parametric values of different middle ureteral reflexes as well as their significances*

Numerous conditions, physiological and pathological, bring about "rapidly" modifications of deterministic-chaotic fluctuations of the small arteries, arterioles, nutritional capillaries, post-capillaries venules, and AVA, functionally speaking, in particular EBD, ubiquitous structures, essential in causing flow-motion in the microcircle of biological systems. It is easy to understand that such microcirculatory modifications aim to adapt in a better way the biological system to new conditions. Obviously, the activation of "peripheral heart" aims to realize and maintain a sufficient flow-motion in nutritional capillaries in relation to actual

functional situations of local parenchyma, whose local microcircle has to supply material-energy-information in a perfect way.

The normal microcirculation at rest can become physiologically *active* when the parenchyma starts to work. The important set of microvascular dynamic events, related to *microcirculatory activation - M.A.*, can be subdivided in three types (scheme 11):

- type I or "associated", "physiological", in which both the *vasomotility* and *vasomotion* result increased and consequently blood-flow in nutritional capillaries and post-capillary-venules is augmented, due also to right AVA reaction; (e.g. during parenchyma work);
- type II or "dissociated", "pathological", in which the *vasomotility* shows increasing of both intensity and oscillation duration, while the *vasomotion* shows a highly differentiated behaviour, in relation to the presence of microcirculatory "compensation" or "decompensation" (failure), as we will say later on. (e.g. during pathological conditions);
- type III or "intermediate", when vasomotility is activated, while vasomotion shows basal activity, and hemoderivative structures are not activated. The transition from type I to type II goes through numerous intermediate stages, which from the compensation reach the total irreversible decompensation of microcirculation, showing a large variety of different and significant forms.



Scheme 11. Vasomotility and vasomotion. Microcirculatory activation types

M.A. - type I shows the increasing of oscillation waves: the sum of AL[iv] (ascending line) and PL[v] (plateau line) duration is equal to 7-8 seconds, maximal intensity (1.5 cm) as well as a period of 10 seconds. Arrows indicate the activation[vi] of both vasomotility and vasomotion. Consequently, fractal dimension appears clearly reduced (scheme 11). The under curve area "shows" microvessel sagittal surface

during their highest and prolonged opening phase so that, under such condition, microcirculatory blood-flow is greatest.

In healthy, who is invite, e.g., to bend and extend repeatedly homolateral foot or, more easily and refined, to "think" of perform such movements, avventitial arterial microcircle of common femoral artery moves rapidly from basal microcirculatory condition, characterized by microvessels deterministic-chaotic oscillations, revealed by upper and lower ureteral reflex fluctuations (figure 1), where fD is 3,81, to the typical type I, associated, activation, in which all fluctuations show the same, greatest, intensity (*highest spikes*) and fractal dimension lowers from 3,81 to 1,5 (figure 2).

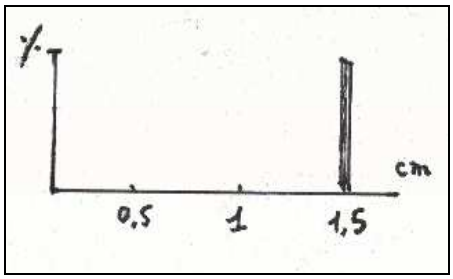


Figure 2

Figure 2 illustrates the "at far column" type of Fourier's transformation of oscillations observed in the M.A., type I, associated, in which capillary as well as arteriolar fluctuations intensity are all identical and highest, showing value of about 1,5, as conventional measure.

Among microcirculatory structures, a primary role in the microvessel blood-flow is played by Endoarterial Blocking Devices (EBD), which are largely present in human body (scheme 12).

Physiological Endoarteriolar Blocking Devices
Type and Type II: location

Type I and Type II:

Skelatal Muscle, right cerebral hemisphere (individuals positive for CAEMH-alpha), etc.

Type II: really UBIQUITOUS

Brain (without CAEMH-alpha), Heart, Lung, Stomach, Duodenum, Liver, Gall-Bladder, Prostate, Womb and Ovaries, Endocrine Glands,e.g., Adrenal, Pituitary, Thyroid Glands, Diencephalic NeuroneCenters, Adipose Tissue, etc.

Scheme 12: Doctor who knows the exact location of physiological type I EBD (skeletal muscle, right emisphere of individuals CAEMH-positive, conjunctival mucosa) can recognize in easier way the type I pathological DEB, that play a pivotal role in diagnosing biophysical-semeiotic real risk of most common and serious human disorders

Both physiology and anatomy of EBD, evaluated "clinically" for the first time, play a primary and pivotal role in diagnosis and prevention of the most common and serious human diseases, including diabetes, hypertension, ATS, CVD, and cancer, permitting, for the first time "clinically", to define the link existing between *genetic* factor and *phenotype*, according to the theory of Angiobiopathy (Stagnaro, 2004).

EBD, derived from arteriolar medial layer, and located in a single point of vascular wall with two (arterioles) or more (small arteries, according to Hammersen) layers of smooth muscle cells, protruding to the lumen, show very different structure and form, under physiological and pathological conditions: small cushions with wide base, polypoid formations, generally pedunculated, sphincteric formations, intimal contractile architectures (figure 3).

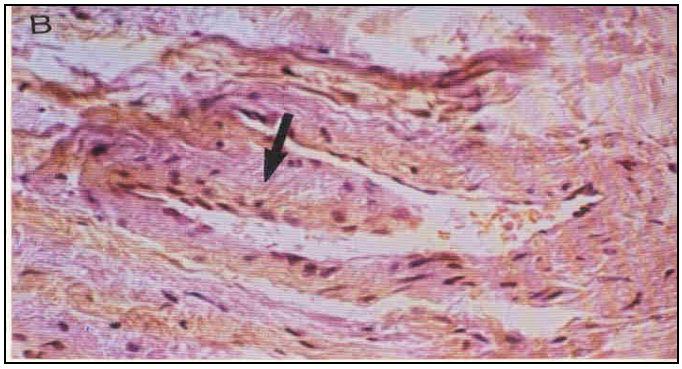


Figure 3. For kind permission of Curri S.B. (1986), the figure shows a refined imagine of EBD with a large base of the type "proboscide"

They are ubiquitous since they are located in all biological systems; more precisely speaking, only type II, normal, EBD, localized in arterioles, according to Hammersen, are ubiquitous. EBD are playing a primary role in the regulation of local microcirculatory *flow-motion*, as the following clinical evidence demonstrates: when abnormal, at least from functional biophysical-semeiotic viewpoint, EBD bring about impairment of MFR, which contribute to conditioning the "real risk" of disorders, like CAD, whose onset will possibly occur after years or decades.

EBD contraction, i.e. the contraction of its muscular cells, at the base of mean ureteral reflex (arteriolar opening), brings about blood flow increase in the capillaries, microcirculatory stasis and, then, if lasting, possible hypertensive damage of related capillary net, and subsequently dilation at first, and, thereafter, basal membrane thickening. In case of microcirculatory activation type I, associated, EBD contribute significantly to increasing matter-energy-information supply to parenchyma, according to the physiological behaviour.

During M.A, *type I, associated,* EBD are "open" mean ureteral reflex, brought about by "middle" digital pressure on the artery, lasts for > 20 seconds (NN = 20 seconds), i.e., for a time longer than that observed at baseline, and, moreover, reflex disappearing (EBD decontraction, expressed by reflex cessation from biophysical-point of view) is < 6 sec. (NN = 6 seconds). These functional "vasomotion" modifications aim to increase the blood-flow in nutritional capillaries of arterial wall external, outward third and, consequently, to remove efficaciously H^+ as well as various catabolites.

On the contrary, M.A., type II, dissociated, in which *vasomotion* is reduced, is always associated to EBD dysfunction, indicating pathological local microcirculation: *microcirculatory bad distribution of blood flow*[vii], according to S.B. Curri (1986).

In M.A., type II, dissociated, pathological, in which occurs the microcirculatory phenomenon of the so-called "blood-flow centralization", due to the greater opening of AVA, and subsequent removal of capillary blood, we observe an insufficient blood-flow to parenchyma, that flows mostly in AVA, shunting therefore it away from parenchymal cells.

For instance, in case of chronic arteriopathy, arteriosclerotic as well as of other origin, it is present the *dissociated type of activation*, which brings about tissue acidosis, recognized at the bed-side by caecal, gastric aspecific and upper ureteral reflexes.

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[i] The *synergetics* enables us to study the relation between microscopic level and the macroscopic one, with the principle of "self-organization". This is possible exclusively if, at microscopic level, complex system can modify in qualitative manner; let's think about the fluids in Bènard's cells and the laser. Technically speaking, we define "order parameters" macroscopic observables, which describe the macroscopic behaviour of a system, and "enslavement principle" the behaviour of microscopic elements, according to which it becomes defined when originate "macroscopic observables".

The laser gives us the best example, that illustrates the general rule: the casual emission of waves, under a defined current supply, becomes coherent; when it is excedeed, however, the emission moves toward a deterministic chaotic behaviour. The synergetycs, therefore, studies the characteristics of "complex" systems, without considering the nature of their elements, outlining strict analogies between the macroscopic behaviour of the complex systems in spite of the fact that they are really different.

[ii] In all tissues, a part from their local different architecture, microvessel diameter oscillates rhytmically during time. The term *vasomotility* refers to small arteries and arterioles sphygnicity, according to Hammersen, and *vasomotion* is the subsequent oscillation of capillaries and post-capillaries venules diameter.

[iii] Book in progress. See http://www.semeioticabiofisica.it/microangiologia/common_eng.htm

[iv] It is called ascending line because the reflex'intensity is growing for few seconds.

[v] It is called plateau line because reflex'intensity is steady for few seconds.

[vi] Microvessels with diameter of 100 μ show a motor activity of 2-3 circles/min. and diameter oscillation intensity of 10-20%. As far as vascular diameter lowers, motor activity progressively becomes more intense and rapid; in terminal arterioles, the frequency is 10-20 circles/min. and the width can reach 100% of mean diameter, causing periodically opening and closure of the microvessel.

This rhythmic activity is mainly spontaneous and direct consequence of periodic contraction of smooth muscle cells of arterioles with 20-90 μ of diameter. Diameter oscillations of small vessels is due to the properties of smooth muscle sells, which have a labile membrane potential and, then, depolarize periodically.

Smooth muscle cells activation by well-known polarization-depolarization processes, which bring about periodic vasoconstrictions, is caused by nervous, hormonal, local biochemical stimuli and also by myogenic stimuli, characteristic of myocells. These stimuli provoke in smooth muscle cells of small arteries and arterioles, according to Hammersen, the onset of depolarization and consequent jonic fluxes and, then, intracellular storage of Ca^{++}, partially due to release from cytoplasmic and membraneous storages, which bring about the phosphorylation of myosine, that in turn interact with actine, to start contraction mechanism in presence of phosphorylated nucleotides with high caloric content, produced in mitochondria.

The "vasomotion" varies in relation to temperature fluctuation, O_2 concentration, pH variations, jonic concentration of vascular wall. In fact, it has been demonstrated that Ca^{++} and K^{+} fluxes, due to channels voltage-dependent and, respectively, voltage and calcium dependent, at the base of the periodicity of these transports, brings about the rhythm of arteriolar contractions, ruled also by transmural pressure (Gonzalez-Fernandez J.M., Ermentrout B. On the origin and dynamics of the vasomotion of small arteries. Mathematical Biosciences. 119, 127-167,1994).

[vii] Likely, typical *vasomotion* behaviour of dyssociated activation, type II, pathological, represents a *defence* mechanism against increased endocapillary pressure. In other words, one may suggest the hypothesis that the lowered *vasomotion*, secondary to blood increased supply (*increased vasomotility*) to capillary net or *microcirculatory maldistribution*, could be caused by a less elastic, more tonic state, with subsequent functional damage of endothelial as well as myocellular mitochondria of EBD and of local microvascular wall, including local periangium, under these circumstances edematous. As a matter of fact, the described micorcirculatory situation ends into interstitial obstruction, first, and susequently into basal membrane thickening of capillaries themselves. From the above remarks, it does exist a strict relation between "vasomotion" and EBD behaviour, under physiological and pathological conditions, and the abnormalities of EBD is counterbalanced, for months or years, by the increase only of vasomotility, which aims to preserve a physiologic *vasomotion* (dyssociation); this fact explains the importance of such structures as regards the regulation of microcirculatory blood-flow, corroborated *clinically* for the first time.