

Quantum Biophysical Semeiotics

Sergio Stagnaro

Abstract

This paper provides a brief biography on Sergio Stagnaro, in addition to his innovative research with Quantum Biophysical Semeiotics (QBS), which is an extension of classical semeiotics, an original medical science which purports to interpret the body's signals for diagnostic purposes. The key of this new discipline is the awareness that human bodies are a continuum of biological systems whose dynamics follow the laws of deterministic chaos, which are able to be measured by means of nonlinear statistical invariants. Furthermore, there is the recent discovery that energy information and communication between DNA and bio-systems are strictly connected with quantum behavior. An integrated quantum-chaotic approach is evidenced as an epistemological base for a new approach to modern sciences. A full overview of theoretical perspectives behind QBS is overviewed, as well as scientific evidence for its promising use to prevent and/or change the course of various diseases.

Key Words: auscultatory percussion, diagnosis, disease prevention, microvessels, quantum biophysical semeiotics, quantum chaotic determinism

NeuroQuantology 2011; 3: 459-467

Introduction

Stagnaro's Innovative Work with Quantum Biophysical Semeiotics

'Quantum Biophysical Semeiotics' – QBS - is an extension of classical semeiotics, an original medical science which purports to interpret the body signals for diagnostic purposes (Stagnaro *et al.*, 2004a). The key of this new discipline is the awareness that human bodies are a continuum of biological systems whose dynamics follow the laws of deterministic chaos (Lorenz, 1963; Ruelle, 1991; Cramer, 1994; Stagnaro *et al.*, 1996), which are able to be measured by means of nonlinear statistical invariants. Furthermore, there is the recent discovery that energy information and communication between DNA and bio-systems are strictly connected with quantum behavior. An integrated quantum-chaotic approach is evidenced as

an epistemological base for a new approach to modern sciences.

Before explaining in a simple and accessible way what QBS is, a brief introduction to philosophy is necessary. Many readers may recognize that the progress of science and philosophy goes hand in hand, but that there are apparent contradictions, or at least there are unresolved issues. To give some examples, think of the past determinism of Laplace and Newton, where the 'free will' has been denied, in addition to the classical interpretation of quantum mechanics by Niels Bohr, in which chance and probability play a crucial and paramount role. In recent decades, then the new discipline of chaos theory emerged based on deterministic chaos, which has been called the stochastic or probabilistic behavior of non-linear deterministic dynamic systems, showing an apparent coexistence of determinism and stochastic behavior.

Furthermore, there is the so-called causal interpretation of quantum mechanics,

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Received June 30, 2011. Revised June 30, 2011. Accepted Sept 3, 2011.

with scientific legitimacy demonstrated by David Bohm (1980), who proposed a quantum determinism in the sense that it is true, according to the principle of indeterminacy of Heisenberg, that it is not possible to determine the position and speed of a particle simultaneously, but this does not imply that it has become inherently uncertain and probabilistic behavior, as it appears. Niels Bohr at that time was a friend of Heisenberg's, and interpreted at will his principle, bringing with it his flagship. Heisenberg in his old age realized that he was used, and distanced himself from classical interpretation, but unfortunately, his principles were unheard of and he was alone.

According to Bohm (1961; 1980; 1989), the trajectory of a particle, such as that of an electron, is very clear and determined, but the result of this type of determinism is much weaker than that of Laplace, because it has the inherent characteristics of unpredictability and uncertainty (not to be confused with the case and probability). This is reinforced by his theory of continuous feedback related to the electron between explicate and implicate order, billions of times per second. Unpredictability and uncertainty properties are inherent, even in deterministic systems with chaotic dynamics, and recent studies confirm the possibility that the structure of the electron may be so complex (like that of a chaotic attractor), that the genome can have a fractal geometrical structure.

This correlation between chaotic behavior and quantum behavior discovered by Bohm (Bohm *et al.*, 1989; Bohm, 1990; Germine, 1995; Mitchell, 2004), constitutes a new school of thought where it is possible to link chaotic determinism to quantum determinism, giving it the name of 'Quantum-Chaotic Determinism' (Caramel, 2010b), which admits a causal background and a law with an underlying scheme that directs everything that happens in nature. But where there is (according to the laws of chaos) sensitive dependence on initial conditions and complexity, and (according to the quantum aspects) of non-locality and constant feedback are even discontinuous in behavior dynamics (apparently probabilistic)

of the observed events (where uncertainty and unpredictability are their intrinsic properties, and therefore not by chance).

Within this framework the 'free will' is allowed, since feedback dynamics are possible, acting both in the observed events, in the space that exists between the deterministic law and the generating event, and in the scheme or in the law itself, resulting in changing or altering their initial conditions. In this context, cause and effect, subject and object, end and means, are nothing more than simple ex-post interpretations, not facts, as evidenced by Friedrich Nietzsche. The characters of the unpredictability and uncertainty are entitled to a potential causality, cause in power because subject to variation of the initial conditions of the systems, and to the 'free will', if any.

This is the scene in which QBS was born. This science is an extension of classical medical semiotics, which is a discipline of medicine that studies and interprets the signals of the human body in order to detect and diagnose diseases. QBS was developed in accordance with a multidisciplinary approach that combines chemistry and biology, genetics and neuroscience, chaos theory and quantum physics. It is based on the method of auscultator percussion, through which by simple means of the common stethoscope, it is possible to listen to the messages that the body gives us when it is appropriately stimulated. The stimuli that can be used include percussion, pinching, and applying finger pressure of various intensities to specific parts of the body. These techniques are used to induce consistent behavior - typical of dissipative systems that are far from equilibrium as defined by Prigogine, and comparable to the behavior of plasmas studied by Bohm - in precise and well defined biological systems of the human body, thus giving local qualitative information on the state of health or disease of the body (even if a disease is potentially being developed but not yet evident by usual clinical trials, effective, or even in chronic phases).

QBS provides a very detailed case study based on the duration, intensity and latency time of the reflexes, which are the central elements of all the diagnostics. It

is on this basis that it is possible to say that the presence of deterministic chaos, as measured by the fractal dimension, is an indicator of the physiological state of the biological system investigated, and this is always accompanied by a non-local reality that is simultaneous and synchronic (as demonstrated at the sub-quantum by Aspect), parallel to the local one, where there is of course waste of energy in space-time. However, if the equilibrium of type 'chaotic or strange attractor' gives way to equilibrium of type 'limit cycle' (periodic) or 'fixed point', this is a sign, respectively, of potential pathology and the tendency to develop into disease, or to chronic states. The quantum aspect is reinforced by the fact that the reflections are not implemented in a continuous way, but are quantized and discontinuous, showing constant feedback between implicit and explicit order, as suggested by Bohm.

We have to highlight that QBS can be used to detect at birth the potential existence of well defined diseases such as cancer (Stagnaro, 2004a), diabetes mellitus (Stagnaro 2002; Caramel, 2010c), atherosclerosis, hypertension, brain disorders (Stagnaro, 1986; Caramel *et al.*, 2011d) and ischemic heart disease (Stagnaro *et al.*, 1997), which is likely to be present only if maternal mitochondrial DNA is altered (Gadaleta *et al.*, 1986), which in turn leads to a particular mitochondrial cytopathy (painful condition of the cell) called CAEMH (Stagnaro, 1985; Caramel *et al.*, 2010a). In the case that cytopathy was intense, from birth it gives rise to specific QBS constitutions (Stagnaro *et al.*, 2004c), grounds on which can be used to check the corresponding diseases, where there is evidence of their actual risk. For example, the 'Oncological Terrain' can exist from birth, which can lead to the Inherited Real Risk of cancer, which in turn (thanks to 300 other existing risk factors which are not causes but mere facilitators), allows at a certain point in life the onset of cancer. Another example is given by the arteriosclerotic constitution, which gives rise to the 'Real Risk' of CAD (Coronary Artery Disease), which can often lead to unexpected death from myocardial infarction (Caramel, 2010a), as is the case with many young athletes (and even innocent victims

monitored by a cardiologist each year, according to the traditional diagnosis).

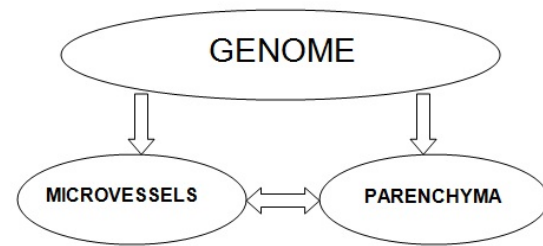


Figure 1. Genome affects both micro-vessels and parenchyma

In Figure 1 it is shown how genome affects both micro-vessels and parenchyma, according to Angiobiopathy theory (Stagnaro, 2009b-c).

Therefore, QBS reinforces the new school of thought based on 'Quantum Chaotic Determinism', which is linked with potential causality where 'free will' plays a key role. Based on this, it is possible not only to diagnose any potential disease in their potential states (including pre-embryonic, pre-pathological, and pre-clinical), but also to avoid their occurrence and/or onset. This is subject to appropriate therapies implemented with QBS, which makes the actual risk simply residual, and has been demonstrated by clinical and experimental evidence that has benefited thousands of patients treated over the past fifty years.

Also, it is highly possible to apply QBS and principles based on 'free will' to benefit humans before they are even born, as evidenced by Manuel's Story. In a nutshell, two potential parents who were both positive for Oncological Terrain, and were 100% likely to give birth to a child who would also be positive for Oncological Terrain (with obvious disastrous consequences), agreed to embrace a preventive therapy prior to becoming pregnant. According to principles in QBS, for a couple of months they both took melatonin conjugated Di Bella-Ferrari, combined with an etymologically intense diet. A few months later, they gave birth to their son, Manuel, who was "incredibly" negative for the Oncological Terrain disease. Subsequently, this means that Manuel will never get cancer - even in the presence of various other risk factors -

since his Psycho-Neuro-Endocrino-Immune system (PNEI) is not genetically altered and will protect him for life. Some may think that this is a miracle, but the philosophical and scientific basis, together with the clinical and experimental evidence, are sufficient to confirm that this is all perfectly explicable. So how can we deny 'free will' and human freedom, even in the presence of deep determinism which is updated a billion times per second?

CAEMH, QBS Constitutions (Stagnaro, 2004c; 2007a), Inherited Real Risks, and practical principles of QBS (*i.e.*, auscultatory percussion of the stomach) are necessary fundamentals that are needed in order to grasp the meaning and significance of deterministic chaos and quantum behavior in biological systems. To understand the physiological or pathological behavior of parenchyma, QBS makes an indirect analysis through the investigation of microvessels, whose non-linear fluctuations provide important qualitative and quantitative information about microcirculation dynamics from structural and functional points of view. The failure of microcirculation is a symptom of a disease, or potential pathology of the related parenchyma, and this is due to genetic alteration of mit-DNA mostly from the mother's side (Rosing *et al.*, 1985), that generally occurs from the moment of birth and leads to the onset of a well-defined mitochondrial cytopathy called CAEMH.

CAEMH is the source of different QBS constitutions (Stagnaro, 2007a) and its congenital real risks (Stagnaro, 2009a), situations where the disease is still potential, and/or gray area or pre-metabolic syndrome (*i.e.*, pre-clinical stages of the disease), can be identified during various phases. In the case of either an active or potential disease, this is due to a state of distress of the parenchymal and microvascular tissue cells, and is evidenced by the reduced level of tissue oxygenation and the consequent production of histangic acidosis, as well as the structural imperfections due to pathological Endoarteriolar Blocking Devices (EBD), a kind of dam which regulates blood flow in microvessels directed to the parenchyma (tissue, substance of a body) by opening or closing themselves (Bucciante,

1949; Hammersen, 1968; Curri, 1986; Stagnaro *et al.*, 1989; Pratesi, 1990; Stagnaro 2007b; 2007c; 2007d).

Fluctuations in microvessels are physiologically characterized by complex dynamics, identified by a Microcirculatory Functional Reserve (MFR) which lasts from 3 to 4 seconds, indicating the microcirculatory activation, type I, associated, and coincides with the value of the fractal dimension, fD, marker of deterministic chaotic equilibrium (Cavalcanti *et al.*, 1995; Stagnaro *et al.*, 1994), which is geometrically represented by a strange or chaotic attractor.

In the case of either an existing or potential disease, MFR (measured in seconds and corresponds to the pause between two successive reflexes) increases due to the microcirculatory remodeling necessary to compensate for the reduced blood flow due to the functional and structural alterations described above, while the fractal dimension (Mandelbrot, 1967; 1982) decreases as well as the complexity of the system (limited cycles, fixed points). In fact, the fD in biology is measured as the ratio between the maximum microvascular fluctuations (high spikes) and lowest one in unit time, of vasomotion and vasomotility in the urethral reflexes. Consequently, when these fluctuations are low of complexity, for example, they tend to limit cycles or fixed points and fD decreases, indicating respectively potential or effective pathologies and chronic diseases.

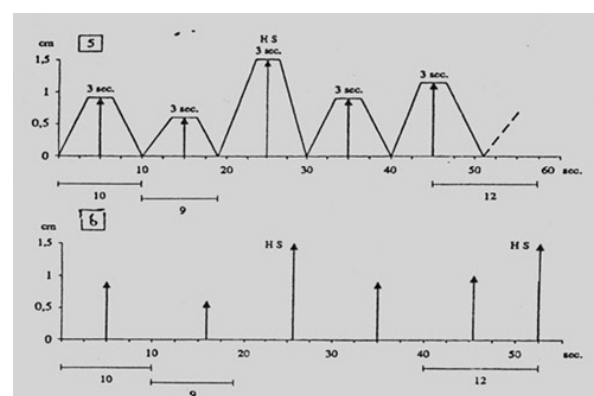


Figure 2. Vasomotility, Vasomotion and highest spikes

Lory's experiment supports the existence of non-local reality in biological

systems (Manzelli *et al.*, 2007), legitimizing the extension of some of the properties of quantum physics to biology (Pribram, 1991; 1993; Stagnaro, 2008a-f; Stagnaro *et al.*, 2007; 2008a-d). Lory's experiment is based on the fact that "all" subatomic components, both atomic and molecular, structured to form a cell and the whole cell or parenchyma, are correlated between themselves and with "all" the other branches of the same embryo in the non-local reality in a higher-dimensional space (*i.e.*, four dimensional space), as well as are just "plotted" (entangled) two electrons observed by Aspect (1982) in his experiment. The effect of 'entanglement' means that the information takes on a "non-local" dimension. Lory's experiment is as follows: if digital pressure is applied over a parotid gland, or a salivary gland sublingual, of a "single ovular" twin sister, simultaneously (Jung, 1976) a microcirculatory activation, type I, associated, in the pancreas of the other twin sister is observed (Figure 3), - regardless of the distance which separates them in meters or kilometers (Stagnaro *et al.*, 2007d; Caramel *et al.*, 2011c).

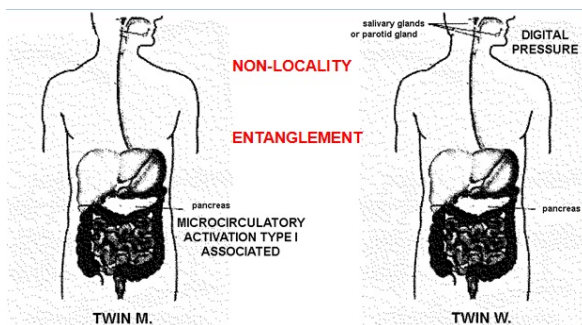


Figure 3. Deterministic chaos and non-local reality are strictly correlated reinforcing the hypothesis of a 'Quantum-Chaotic Determinism' underlying the nonlinear dynamics of living systems, as evidenced by Manuel 'story.

The behavior of biological systems in the human body is generally non-linear and under physiological conditions, as just discussed, is strictly deterministic chaotic. These systems are dissipative systems far from equilibrium (Prigogine *et al.*, 1984), which however raises the question of how to measure their behavior quantitatively and qualitatively. Stagnaro's insight is to study the behavior of microvessels which are intimately connected with their parenchyma, so that if any functional and/or structural abnormal behavior is observed in them, this

would also indicate a real or potential malfunction of their parenchyma (everything in these cases due to the genome, or more exactly, to the genetic alterations of mit-DNA, present from the moment of birth). The observation of microvessels indicates that appropriately stimulating the trigger-points of well-defined areas of the parenchyma (*i.e.*, of the stomach), so that using QBS the doctor induces the particular biological system observed (*i.e.*, coronary microvessels), which at a certain phase causes coherent local behavior (*i.e.*, one or more gastric aspecific reflexes that are well classified and characterized mainly by three factors such as well-quantitatively measurable latency time, duration, and intensity of the reflex).

Based on these data we can draw a very detailed case study which can determine the investigated biological system's health (physiologically), its pathological or chronic conditions, and moreover, whether there is a tendency or progression (potential or real risk) of diseases such as diabetes, CAD or cancer (*i.e.* as shown by means of Rinaldi's sign).

In summary, the microvessels behave as dissipative systems far from equilibrium, and, if properly stimulated, they lead to consistent local behaviors that give important qualitative and quantitative information about their structural and functional state of health, and indirectly provide information about their relative parenchyma. In physiological conditions there is the co-presence of local and non-local reality, supported by equilibriums of type 'chaotic attractor', which diminish to equilibrium such as limit cycles in cases of illness, or even fixed points in cases of chronic states.

Lory's experiment provides strong evidence of non-locality in biological systems, extending what is already known in quantum physics which is that a quantum event at one location can affect an event at another location without any obvious mechanism for communication between the two locations.

Furthermore, since life systems are based on the communication system, DNA functioning can not only be seen as a storage of genetic information. We can consider

DNA/RNA as a dynamic system that is an Information Energy – EI – catalyst (Manzelli, 2007) that is able to transmit and receive bio-physical quantum signals to and from the proteins in the living cells. So DNA can be thought as an “antenna” transmitting nonlocal information through ‘gene quantum signals’.

Energy Information – EI plays an important role, which is a thin and catalytic energy that is dense with information (similar to the quantum potential of Bohm), that directs and facilitates, locally and globally, all biological processes and their networking systems. EI then catalyzes and rules the cognitive process that links the conservative autopoietic scheme of organization (Varela *et al.*, 1974; Eigen, 1979; Capra, 1997; Davia, 2006) to the dissipative structures (Prigogine, 1967; 1997) which constantly create and renew.

Treatment and prevention, according to QBS, must be geared to EI's increase and/or restoring or bringing it to a sufficiently high level in order to ensure a lasting non-local reality and the presence of deterministic chaos, by means of improving tissue oxygenation and mitochondrial's breath through diet (etymologically speaking), electro-stimulation with infrared low frequency (*i.e.*, NIR-LED), histangio-protectors, *i.e.*, conjugated-melatonin (Stagnaro *et al.*, 2004b; 2005), appropriate lifestyles (*i.e.*, sport activities, walks, yoga, meditation, and prayers). An integrated approach of the scientific aspects presented in this paper, suggests the new philosophical idea of Quantum Chaotic Determinism as an epistemological base for QBS as evidenced by Manuel's story (Caramel *et al.*, 2011b), and for modern sciences in general. Furthermore, Lory's experiment has been the kick-off of the new discipline called psychokinetic diagnostic (Caramel *et al.*, 2010b).

According to QBS, mit-DNA is mainly responsible for cell respiration in biological systems, and the genetic alteration of mit-DNA affects mitochondrial activity. The chance to investigate, indirectly and through bed-side evaluation, mitochondria functionality opens new ways for understanding and facing the initial stages of the pre-clinic process of many pathologies,

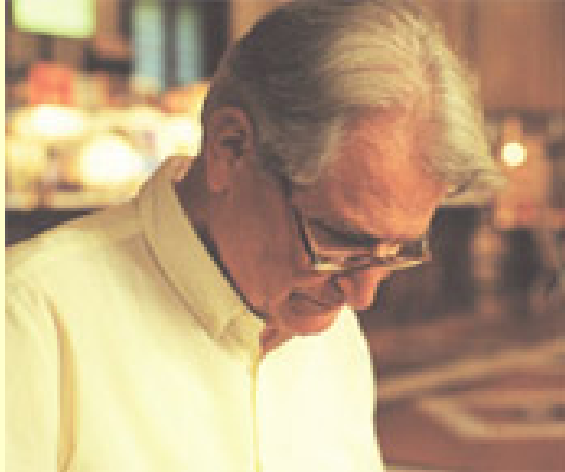
such as cancer, diabetes and heart diseases, giving original impulses to diagnosis and prevention. Furthermore, QBS clinical and experimental evidences have been analyzed and related to the Principle of Recursive Genome Function introduced by Pellionisz, in order to understand if the genetic alteration of mit-DNA could be reversed, due to the recursive energy, information and communication feedback between DNA, RNA and downstream structures such as tissues, cells, mitochondria and proteins.

QBS and experimental evidences (Caramel *et al.*, 2011d) are consistent with and fully confirm the Principle of Recursive Genome Function by Andras Pellionisz (2008). We can argue that the genetic alteration of the mit-DNA is reversible, generally not for a lack or impairment of genes, but from qualitative information imperfections in genes networking which lead to the activation of inappropriate genes or to inefficient configurations that are defective or missing in some cases. Similarly, in microvessels there are communication obstructions which slow down the communication itself (blood flow) from structural and functional points of view. On the other hand, it may be assumed that the alteration of the mit-DNA is reversible during one's lifetime, and not just in overlapping and/or future generations. This would not be due to the fact that we create new genes from scratch, or because we are able to repair single genes in some way in a patient (as in genetic determinism), but because we intervene holistically on the whole, thanks to a 'login password' which enters into the whole system, so that a proper and customized release of 'information' gives resonance to a virtuous feedback mechanism between DNA, RNA and downstream structures (tissues, cells, proteins, mitochondria) and vice versa, restoring physiological DNA dynamics. As a result, this is the reason why genome fD rises to physiological levels - mathematically demonstrating the neutralization of genetic imperfections.

Acknowledgement

I acknowledge dott. Simone Caramel, President of International Quantum Biophysical Semeiotics Society, and my precious co-worker, as the most skillful authority in the field of Quantum Biophysical Semeiotics

About the author



Sergio Stagnaro, MD, was born in Sestri Levante (Genoa) on December, 7, 1931. He is a graduate in Medicine and Surgery (November 16, 1956) from the University of Genoa, and specialized on Blood-Gastrointestinal- and Metabolic- Diseases (1959) at the University of Pavia, and has worked as an internal physician in Clinica Medica of Genoa University (directed by Prof. Lorenzo Antognetti). Since 1955, he has developed the “old” method of bed-side diagnosing Auscultatory Percussion, and founded Auscultatory Percussion-Reflex Diagnostics in 1970, and eventually Biophysical Semeiotics in 1990, which allows doctors to clinically evaluate the deterministic chaos of biological systems. In November 2007, he founded Quantum Biophysical Semeiotics, thanks to quantum physics knowledge he learned by his friend Paolo Manzelli, former Chief of the Chemistry Department at Florence University. The results of his research studies are published in more than 486 articles, are partly posted on the most famous websites, in addition to writing six books: “Il Terreno Oncologico”, “La Melatonina nella Terapia del Terreno Oncologico e del Reale Rischio Oncologico.”, “Le Costituzioni Semeiotico-Biofisiche. Strumento clinico fondamentale per la prevenzione primaria e la definizione della Single Patient Based Medicine.”, “Single Patient Based Medicine. La Medicina Basata sul Singolo Paziente: Nuove Indicazioni della Melatonina.”, and “Teoria Patogenetica Unificata” (the last five edited by *Travel Factory* in Rome-). He has also been an active member of the New York Academy of Sciences since 1992. His biography is mentioned in the most famous “who's who”, among them “Who's Who in the World” (from 1996 to 2009), Who's Who in America (from 1996 to 2009), Dictionary of International Biographies, Who's Who in the 21st Century (IBC di Cambridge), and the American Bibliographical Institute 500 greatest Geniuses of the 21st Century (since 2007). In April 2007 he was included in the book “Outstanding Scientists Worldwide”.

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ⁱ Quantum entanglement, also called the quantum non-local connection, is a property of the quantum mechanical state of a system containing two or more objects, where the objects that make up the system are linked in a way such that one cannot adequately describe the quantum state of a constituent of the system without full mention of its counterparts, even if the individual objects are spatially separated. This interconnection leads to non-classical correlations between observable physical properties of remote systems, often referred to as nonlocal correlations. During the formation of quantum theory, this property of entanglement was recognized as a direct consequence. Quantum entanglement is at the heart of the EPR paradox that was developed by Albert Einstein, Boris Podolsk, and Nathan Rosen in 1935, and was experimentally verified for the first time in 1980 by the French physicist Alain Aspect.