

THE PRINCIPLE OF MINIMUM STIMULUS IN THE DYNAMICS OF LIVING ORGANISMS AND IN THE AUTOPOIETIC PROCESSES OF BIOENERGETIC SELF-REGULATION, BONDING AND EMBODIMENT.

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"The Reichian dream of the orgasm as pulsatory engine motor of life and of the cosmos finds a conceptual foundation in the revolution brought about by the quantum physics .

The psyche, the mysterious level where the chemical reactions produce energy, interacts directly with the soma, from which it receives directions.

The nature of the ancients has been characterized by *the horror vacui*, the fear of the void, the emptiness. The nature of quantum physics is characterized by *quietis horror*, the fear of absence of movement. "

Emilio Del Giudice, a theoretical physicist, Prigogine Award 2009.

INTRODUCTION

*What I have the pleasure to share with you is my elaboration of the fruit of theoretical and clinical research of the organization to which I belong, **the Centro Studi Eva Reich**¹, particularly of our colleagues Silja Wendelstadt and Margherita Tosi, body psychotherapists and Emilio del Giudice, theoretical physicist, scientist, leader in quantum field theory applied to the dynamics of living organisms. Silja Wendelstadt in 1995, with the express support of Eva Reich, was the founder of the Centro Studi Eva Reich and since then the Centre has continued the commitment to research biophysics, training of professionals and parents, care and promotion of physical, mental and emotional health of adults and children from their conception.*

My educational and professional training is in somatic-energy psychotherapy developed by Wilhelm and Eve Reich. Orgone physics was the contribution that Wilhelm Reich gave to form an olistic explanatory model of Life phenomenon.

In this paper I present, in the context of the physical paradigm of Quantum Field Theory applied to living systems, scientific coherence between this model of the dynamics that inform the phenomena of life and the research on the energetic functioning of living energy, developed by Wilhelm and Eva Reich. The researches have taken their origin from the biophysical process of character structure armoring. They have explored with the introduction of the concept of orgone energy, the energy property of resonance

expressed by the matter, including the living matter and its physical and somatic dynamics. Giving that way a specific corpus of reference to the orgonomic sciences and particularly to **Gentle Bioenergetic**.

The body therapies owes much to Wilhelm Reich. He first made the hypothesis of a real unconscious anchored in the body, the root and the driving force of the libido theory, creating an energetic approach of a pulsating somatic psyche and of the relationships of the individual with his environment. He discovered a precise process of entanglement² between physical and mental wellbeing.

The post-Reichian and the current neo-reichian elaboration increasingly refers to a neghentropy-systemic-evolutionary paradigm. I like to remember among the various representatives of these approaches Genovino Ferri³. He recognizes and decodes in the Relationship, the energy of "*a living form*" in itself, which responds to the autopoietic and evolutionary laws of the living systems. I also want to mention Will Davis⁴, who in his Functional Analysis model, refers to the autopoietic self-organising property of the Endo-Self, which energetically exists in the core of the living.

Nevertheless in the current Reichian vision, as well as in other body psychotherapies approaches that derive or who have been inspired by Reich, the orgone physics, which would be the natural reference and without it the theoretical framework that sustain the analysis of character and the process of armoring would fall, seems to have passed into the background. It's no longer subject to an elaboration coherent with the therapeutic practice. I believe that this is happening also because of the incompatibility of the energetic orgonomic paradigm with mental constructs derived from classical physics.

To confirm the validity of Reich's system Quantum Physics intervened and in particular QFT⁵, Quantum Theory of Fields applied to living systems. Here on the contrary, the orgone physics is currently finding convincing corroboration, fruit of experimental results. The QFT in its specificity offers us elements to explore what are the conditions and the quality of interactions that allow this "living form" to express neghentropy their evolutionary capacity.

Among all material available in this discipline, some articles published a few years ago have focused the attention on the physical processes of the emergency of the psyche in the body and the physical dynamics that governs the energy processes.

The first article to which I refer belongs to Emilio Del Giudice *The psycho-emotional-physical unity of living organisms as an outcome of quantum physics*, published in "Brain and Being", Eds. G. Globus, K. Pribram, G. Vitiello, Benjamins, Amsterdam 2004, where it is proposed, in accordance with the quantum effects in the dynamics considered⁶, that the psycho-emotional and physical units of living organisms emerges as a result of the quantum physical dynamics⁷ of resonance of the phase.

The second, which leads to the subject of my contribution here, is "*The Principle of Minimal Stimulus in the Dynamics of the Living Organism*" published in 2013 by the Institute of Science in Society, written by E. Del Giudice and Margherita Tosi⁸. It focuses on biophysics response of the living system to external stimuli and how this regulates the dynamics of self-organization.

In both articles there's a due recognition to the depth and enlightening appropriateness of Wilhelm and Eva Reich rigorous insights and conclusions, consistent with current acquisitions of QFT.

The quantum physics, which is generally regarded as a relevant theory only for microscopic objects, shows in depth the way to connect macroscopic and microscopic levels of reality, how in a unitary manner the microscopic components behave and perform in macroscopic objects and phenomena.

As I will try to clarify later, the quantum model considers the reality not as a mere aggregation of atoms, but it adds to it a number of relationships not necessarily localized in space and time, whose structures emerge from a base, called quantum vacuum.

In this framework the reality is observed as fields of energetic relationships in which phenomena are not separable localizable entities. They interact with all the localizable objects in space and time. This ensure that there is a global holistic behavior of the parties and there are correlations between the movements of the separate bodies. The whole is thereby greater than the sum of the parts.

The starting point of this conceptual revolution in classical physics and molecular biology was undoubtedly the transition from the classical scheme, founded by Galileo and Newton, to the quantum scheme.

In the classical scheme matter is conceived as an inert object, where the uniform movement can only vary based on the application of external forces. Furthermore, the matter is conceived as divided into bodies mutually isolable, in each of these it is possible to accurately determine all the variables dynamics, such as energy, the quantity of movement and of course the position in space-time.

In this scheme, however, there is no place for the appearance of a self-organising dynamic, which has so far prevented a productive dialogue between physicists and scholars of life. The molecular biology itself and neuroscience are based on these mental constructs and they are not able to explain the dynamics of perception and of self-movement of living matter.

On the contrary in the quantum scheme, this is possible. In this framework, each physical object, be it a material body or a force field, it turns out to be inherently fluctuating and able to fulfill a set of spontaneous oscillations able to join in phase with each other and with a set of existing fields in nature, called in the jargon of physicists *gauge* fields.

An example of such fields is the potential of the electromagnetic field, which is the only relevant one for the molecular dynamics. Thanks to this joining together of the oscillations, all existing bodies in the universe acquire the ability to mutually correlate in fields of relationships, even at great distances, losing the properties of isolation, which we saw is one of the cornerstones of classical physics. These pairs of resonances contain information.

QUANTUM PARADIGM IN THE RESEARCH OF THE DYNAMICS OF PSYCHIC PROCESSES

Currently the biological basis of psychic processes and their actions, what is known as embodiment, have been explored by the neurosciences. Research by Rizzolatti⁹, Gallese¹⁰ and other neuroscientists on mirror neurons, have tried to provide a possible answer to the question of what the neurobiological basis of bonding looks like. To name a few, Rizzolatti argues that *"The availability to mirroring determined at the neurobiological level is the fundamental law on which it is based the relationship between the baby and the mother."* Joachim Bauer¹¹ has written a book on the subject: *"Why do I feel what you feel."*

Modern neurobiology has addressed this problem from many sides. But beside the approach described above, which attaches specific brain functions to specific neurons, a trend has developed, to speak more holistic, based on the pioneering intuition of Karl Lashley¹², on the accurate experimental work of Walter Freeman¹³ on the capacity of collective resonance of nerve cells.

They were led to the hypothesis of the existence of a mass action of a large number of neurons in the storage and extraction of brain memories. In an article by Lashley it reads *"Nerve impulses are transmitted from one cell to another through defined intercellular connections. However the whole behavior seems to be determined by masses of excitation within the general fields of activity, without regard to particular nerve cells. What kind of nervous organization might be able to respond to an excitation pattern without specialized paths of conduction? The problem is almost universal in the activity of the nervous system"*. This insight has been confirmed by laboratory observations and K. Pribram¹⁴ and G.Vitiello¹⁵ proposed the analogy between these neural activity fields distributed in the nervous system and the wave patterns in holograms.

So it was explored that, rather than the activation of individual masses of neurons, it is precisely this collective resonance ability of nerve cells that produces a collective aspect of neurocerebral and cellular activity. This makes possible the dynamics of perception, the mirroring and the resonance with external subjects.

E. Del Giudice and M. Tosi, within the Centro Studi Eva Reich, have dedicated themselves to the investigation and research in the field that looks specifically at the bonding and embodiment processes.

The study of the scientific model of the Minimum Stimulus, has been confirmed valid and congruous with the same properties both in the QFT and in orgonomy. It has also allowed us to focus on the differentiated energetic quality of the Biophysical response of the living organism to the physical properties of the stimulus received from the environment.

It made it possible to prove that interaction with minimal stimuli in the body promotes a co-resonance process, which sustains the ability of living matter to form states of biophysics coherence and the emergence of self-organizing processes. The studies highlight the properties of the bioenergetic function of co-resonance in biophysical processes that bring self-organization, embodiment and bonding capacity¹⁶.

These processes autopoietically emerge in the biophysical energetic resonance in the energy field of the mother-child dyad, as the original form of communication in the process of bioemotional contact.

A LOOK AT HISTORY: THE DIALOGUE JUNG - PAULI: THE PSYCHE AS GLUE OF THE MATTER

Emilio del Giudice and Margherita Tosi report in their article *"The Principle of Minimal Stimulus in the Dynamics of the Living Organism"* of the dialogue that took place between C. G. Jung and W. Pauli on the psyche as the glue of the matter¹⁷.

Freud thought that physicists of his time could not understand the emergence of an emotional sphere from the molecular structure of a body, as being too difficult in the cultural climate of his day. He warned his followers to ignore physics. Not everyone followed his advice. The theoretical physicist Wolfgang Pauli, one of the founders of quantum physics¹⁸, accepted the dialogue with the world of psychodynamics, in this case with Carl Gustav Jung. In the dialogue between Pauli and Jung emerge some seeds for future developments.

The first is that the psyche, which cannot be embodied in a particular material body, could instead be the set of resonant relations between the different parts of the body established through the quantum

vacuum. In this way the psyche ensures a unitary behavior of the organism and it becomes the way of being of the organic matter.

These resonant relations, as it was shown later by Ilya Prigogine¹⁹, do not require a flow of energy, but rather a concentration of internal energy already present in the subject, which implies a decrease of its entropy. It turns out that the movement of the organism is not only a movement that requires a constant supply of energy from outside; it is rather a movement from within, based on the reorganization of internal energy and triggered by informational stimuli.

The rational basis of the principle of minimum stimulus begins to emerge.

A second and more profound suggestion has to do with the extra-temporal nature of the quantum vacuum, which is able to connect in itself, in a field of energetic phenomena, events localized in different spaces and times. Jung sensed that this result of quantum physics would permit a completely different phenomenology from the one based on localized events in space and time, linked together by the principle of causality. In this dynamic, on the contrary, a collective process is established, which involves events localized in different spaces and times that consequently become synchronous events. It can be observed in fact, in different ways, in the psychic dynamics of people living here and now, the presence of psychic experiences occurred at different times.

Freud, who first tried to understand the deep laws of the unconscious, the mysterious part of the organism called Id (which gives rise to instincts, emotions, dreams and forms a permanent structure, the character, that runs the entire behavior of a subject) warned his colleagues not to look at what physics could have said about the emergence of psychic processes in the body. Over time the issue was resolved by the physicists themselves, by the way they oriented the subsequent research. Originally the field of psychodynamic science would have not needed to learn from physics, physics had to shift the focus of its investigation beyond a deterministic paradigm.

Physicists however, in order to overcome the limitations given by the classical physics in understanding reality, found themselves to get closer, somehow, to the revolution which begun with Freud first and later with Reich. This allowed the opportunity to overcome what prevented them from seeing how the matter allows a psyche to emerge, at a certain stage of its development and its self-organization.²⁰

Today, however, we find ourselves in the paradoxical situation. The scientific paradigms of human sciences that investigate or have as a reference the energetic body-mind relationship, cannot in fact in the therapeutic practice come out totally from the paradigm of classical physics. Vision that, for its theoretical references, has been unable to account and explain processes inherent the energetic dynamics of living matter.

REICH'S RESEARCH ON THE ENERGETIC FUNCTIONING OF LIVING SYSTEMS AND THE EXPRESSIVE LANGUAGE OF THE LIVING

The theme of the physical foundation of the dynamics of the Id (instinctual-pulsional unconscious,) was taken up more vigorously by Wilhelm Reich, whose thinking has gone through three phases.

The first phase, which covers the period from 1920 to the beginning of 1930 (which he shared in the essay Character Analysis²¹) moves forward on the track initiated by Freud, being Reich one of his main assistant. He focused on the dynamics and the functional aspects of the character structure, how the psychic

structure has given rise to corresponding somatic structures, whose set is the "armor" that makes the rigid character.

The correlation between physical and psychic structures became the center of Reich's research. He suggested an alternative way to intervene on the psychic structures through an intervention on physical structures. This perspective was followed in the second phase, which goes from 1930 to 1938 and led to the formulation of the so-called vegetotherapy.

Vegetotherapy states that the living organism is basically characterized by an original "pulsation" in the breathing rhythm of the whole organism²². This pulsation provides unity and harmony to the organism. The psychic disorder that corresponds to neurosis derives from an alteration of the pulse in which the inhalation phase, (corresponding to the energy charging process) plays a dominant role compared to the exhalation phase (corresponding to the discharge of energy associated to the possibility of feeling pleasure). According to Freud's theory, neurosis is seen as a consequence of the suppression of pleasure, but W. Reich goes far beyond starting a thorough biophysical research in understanding how and why this process occurs. This marks the beginning of W. Reich's third phase of research, which extends from the late 1930s until his death in 1957. In this phase W. Reich investigates the organic basis of the living pulsation and traces this process in a particular form of energy which he calls orgone.

He tried to open a communication with A. Einstein, but without success.

In Reich's thinking, it still seems unclear whether the orgone is a form of energy as others, such as the gravitational or electromagnetic energy, or if it is, as we shall see later in the proposal made with QFT by Del Giudice, a way of being of the energy, an electromagnetic interaction between the different parts of an organism, when they manage to synchronize their oscillations, their individual pulsations.

Reich saw a special correlation with the water, but he could not get past that, given the tools and knowledge at his disposal. Just in relation to the particular link between orgone energy and water, Reich studied thoroughly the harmful orgone dynamics in organisms. In this field he managed to track down how in the cancer disease returns a physical deformation of the energy produced by the suppression of the pleasure principle and by the block of pulsations²³. In 1949 he sets up in collaboration with his daughter the Orgone Infant Research Center.

Research on the energetic functioning of living systems and on the expressive language of the living leads the Reichs to the understanding of co-resonant processes in the energy fields.

Silja Wendelstadt and I liked to define this process original forms of communication, innate configurations of co-resonance²⁴.

Nature in its deepest recesses expresses this "*resonance in phase*" with configurations and behaviors carrying a biological sense that never ends to amaze and to touch us.

I mention some references regarding research and natural phenomena observed or discovered proposing that the events considered show a circularity and interdependence of relationships based on co-resonance and self-organization of the bioenergetic fields involved. In orgonomy we see the energetic process of contact between biosystems, in biology the maternal fetal microchimerism²⁵, in ethology the Breast Crawl²⁶, in psychology D. Winnicott speaks of internal states of continuity of being²⁷. In neuroscience the mirroring processes, in psiconeurocibernetica the collective processes of nerve cells's co-resonance, observed by Lashley and Freeman, the holographic patterns of the mind and perception by G. Vitiello²⁸ e K. Pribram. In physics the fractal structure, in nature the expression of fractal processes at all levels of organization of the matter and the morphogenetic fields.

From this emerges a vision of living matter, such as a set of properties and potentials capable of assuming coherence and resonance patterns, self-organisation and in living beings a conscious production of self at a certain degree of evolutionary organization. The living organism have the capacity of expressing a nuclear psyche with affective consciousness²⁹, as the product of the resonant relationships between the parts of

the organism with the environment that surrounds it. The psyche itself in accordance with the principles of non-locality and non-causality, shows in the body to resonate in synchrony with energetic affective memories, also within the bio-genealogical networks. In each adult in fact is contained the seed of the child.

LOOKING AT THE LIVING ORGANISM IN THE LIGHT OF QUANTUM PHYSICS

Our experience has so far recognized two types of movement: the first is the one generated by an external cause, which manifests itself as a force and requires a flow of external energy and/or impulse. The second one is the movement coming from the inside the subject: self-movement or spontaneous movement.

All living matter however shows that they have the characters of self-movement and perception.

The colleagues Chiappini, Tosi and Madl wrote in a recent article "On this side of the principle of the minimal stimulus " *living matter produces biological codes that convey meanings. These codes are modulations of different frequencies and express fractal structures and processes. The same human development from conception onwards shows itself as a fractal structure*³⁰". Even inert matter is subject to this feature, we can think of fractal structures expressed in the journey of the water in rivers, in the atomic arrangements of crystals, in the clouds, in the galaxies. In biolinguistics language itself and its representations, when analyzed in its underlying dynamics³¹, reveal itself in the properties of its own syntax, coherent with the very same mathematical representation used in the demonstration of the coherent dynamics of the living water³².

This leads us to think that we are dealing with one reality in its various and different degrees of developmental organization and evolution.

All this unifies, as Reich realized, the living to the universal. Everything that exists appears to be an expression of modulations of different frequencies and it is here essential the role played by spontaneous fluctuations of all physical objects (that just cannot avoid to fluctuate) and the dynamic interaction that occurs. This oscillatory behavior of the physical object is defined ground state (or state of least energy of the object) and is named in the jargon of the discipline, "vacuum". The Vacuum is in fact called the totality of spontaneous fluctuations of the object.

In the dynamics of living systems, the Vacuum, this field of fluctuations of living matter, acts in the body, through it and around it. It is both a network of information and perception system, which receives and transmits messages from the environment³³.

These spontaneous fluctuations prevent the object to be "closed", while it communicates with the environment through these fluctuations. The fluctuations of rhythm of oscillation of objects, which is called "phase" in the jargon of physics, spread in the environment in the form of special fields of potentiality. The most obvious example is the electromagnetic field, which governs the interactions between atoms and molecules. The phase, considered separately from the energy, can travel faster than the light and carries information. This produces a violation of causality in the way Einstein intended. As a result, the interactions based on transmission of energy obey to the principle of causality (no effect occurs before the arrival of the cause), while the interactions based on the transmission of the phase are mediated by a messenger that can travel at infinite speed or also can go back in time. They do not follow the principle of causality and can connect different subjects in different spaces and times.

Here we can find a rational basis for understanding the origin of synchronic phenomena sensed by Jung³⁴.

There are then two possibilities: the first is that, when the fluctuations of the bodies and the vacuum remain not mutually synchronized, they lead to a large indeterminacy of the entire oscillation rhythm, which cannot defined value and averages. In this case, the bodies keep their individuality, so that it is still

possible to accurately determine their atomic structure. The spontaneous oscillation does not play an essential role here and the whole dynamic, as in classical physics, is handed over to the dynamics of strength and energy.

The self-regulating movement disappears and all that remains is the movement from outside the bodies that are considered inert. This is the world described by the conventional molecular biology, which is the basis of institutionalized medicine.

There is a second possibility. Under appropriate conditions, the fluctuations of matter and vacuum can be synchronized, thus beginning a collective dance that recalls the orgasmic organismic pulsation sensed and observed by Reich. This state of matter is called "coherent" by physicists. In this state, the number of components remains undetermined, while the oscillation rhythm acquires a more precise definition³⁵.

To engage in the collective dance, the oscillatory rhythms of the participants and their frequencies should be the same, but absolute equality does not exist in nature. The possibility that two frequencies are exactly equal or even slightly different, it's equal to zero.

Then how these objects can resonate? Emilio Del Giudice says: *"It could never happen in a state of isolation, because they need a comfortable environment, full of fluctuations at a very low frequency, with a widespread noise that would leave the two physical objects resonate, or as Reich would say, enter in a deep organotic contact or orgasm, stealing from the environment the small fluctuations that fill the gap, and to equalize the oscillation frequencies of the partners"*³⁶.

This is the condition that allows to form what is defined in quantum physics coherent (or correlated) state of matter³⁷. A coherent system is able to decrease its own entropy and increase the capacity to perform external work.

The reichian energetic biophysical model of tension-charge-discharge-release is coherent with this particular quantum phenomenon that explains the dissipative function, negentropic function, the orgasmic discharge process that allows the organism, through the emergence of states of biophysical coherence, the recovery of expendable energy³⁸.

In addition in a physical system, to gain coherence is equal to acquire the ability of self-regulated movement³⁹. The role of coherence in the dynamics of life has been highlighted over the years by Mae-Wan Ho⁴⁰ in her research on the coherent dynamics of liquid water, in which has been proven that the onset of coherence in a physical system opens up the possibility of its autonomous movement⁴¹.

We can finally put forward our hypothesis that Wilhelm Reich's orgone energy is the form taken by the energetic functioning of the organism in a state of coherence⁴². In this case, the disappearance of the orgone⁴³ becomes the consequence of the loss of coherence of the organism⁴⁴, with consequent loss of self-movement and a tendency toward the state of inert matter⁴⁵.

The quantum object is therefore characterized not only by the energy and impulse, as the classical object, but also by the rhythm of oscillation, called phase in the jargon of physicists, concept expressed by W. Reich as orgonic pulsation.

It can be influenced, beyond the external forces, also by the resonance between the phase of its oscillation and the phase of oscillation of the objects and external fields. This new form of interaction does not involve exchange of energy or impulse, but it produces the mutual feeling of the bodies involved moving in phase with no expenditure of energy, just like in the organismic pulsation of the orgasm and in the bioenergetic-emotional body contact of lovers and mother and baby. Wilhelm Reich in 1951 had called this process *cosmic superimposition*⁴⁶.

In the organism, according to QFT, the same biological and energetic dynamics appear as outcome of coupled co-resonance between networks of functions.

The first network (biochemical) which provides for the supply of ions circulating in the connective tissue in the cellular and interstitial protoplasm, which correlates the bioenergetic processes of the molecular

species, puts the processes into phase and carries information. The second network, informed at every moment without expenditure of energy from the first network, which is in a state of phase coherence, produces currents of awareness throughout the body via the nervous system in its perceptual expression. The first network, responsible for the biochemical activity as energetic product, gives rise to the bodily sensations that translate into emotions.

The unconscious informational content of the first network could correspond, as it was proposed by Solms and Panksepp⁴⁷, with the Id theorized by Freud and that Wilhelm Reich identified with the deep vegetative bodily currents.

This informational content, says Emilio del Giudice⁴⁸, could coincide with the current of ions traveling in the connective network, also conceivable as the Chinese meridian network.

The first network contains the foundation of emotional movement and the "affective" mode of consciousness at the level of the Id, the biological basis of affectivity.

The second network is the basis for the perception of emotions, at the subconscious and conscious level.

The psycho-emotional and physical unity emerges from the quantum resonance processes in phase, through the establishment of states of coherence in the organism, which take place in the energetic communication between the two networks, in their energetic interaction with the environment⁴⁹.

The question of what promotes this dynamic has initiated an investigation into the function of the quality of the stimulus on living matter.

The rationale of the principle of minimum stimulus was begun to emerge thanks to Prigogine, who had well clarified that the resonant relationships do not require a flow of energy, but rather a concentration of internal energy already present in the subject, which implies a decrease of its entropy.

Therefore, the movement of the organism is not only a movement that requires a constant amount of energy from the outside, it is rather a movement from within, based on the reorganization of internal energy and triggered by informational stimuli. Stimuli capable of forming information must have the features of making contact with the bio-system without bringing energy exceeding the sustainability of the system but providing a co-resonance, able to harmonize in phase and to promote states of greater holistic integration of its individual functions. This biophysical dynamics is also observed within the living phase⁵⁰ of liquid water⁵¹.

The quantum model in fact demonstrates that it is the interaction with the phase to allow that the fluctuations, in coherent state, consent the emerging of solitons⁵², which, developing trains of impulses at long distance with no thermal dissipation, involve in more harmonics dances the nervous system's network and the connective tissue's network⁵³. This is the content of the effect Böhm-Aharonov (Bohm, 1959), formulated on theoretical basis in the Fifties and confirmed experimentally in the Eighties. The interaction with the phase does not carry energy and momentum, it does not exercise forces, it only tunes together the phases of the parts provided that have a specific phase. This is another important step towards the understanding of the principle of the minimum stimulus.

Furthermore, the quantum physics with the studies of G. Preparata has also shown that a large number of small oscillations are much more useful than a single oscillation of equal amplitude to facilitate the achievement of the condition of resonance between the components⁵⁴. This also consistently emerges in Eva Reich's principle of the minimum stimulus.

When the domains of coherence assume from the outside a greater share of energy, an alteration of the gradient of the phase happens to the point of cancelling it. This causes the stop of the flow of ions that is

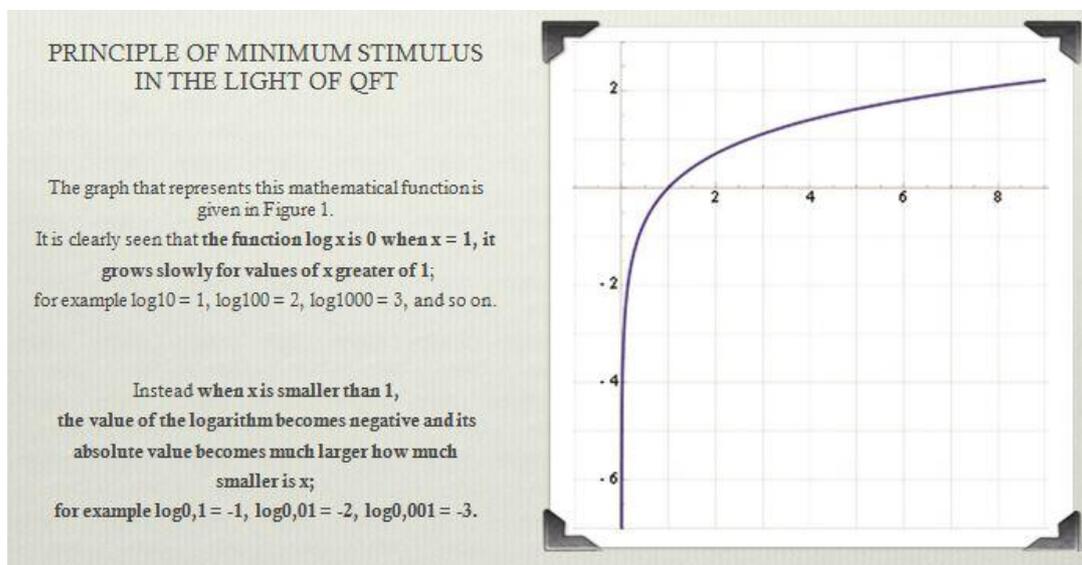
recognizable and it is at the base of the dis-embodiment phenomenon, i.e. of separation and splitting of the psychic, emotional and physical components due to the systems' absence of coherence. Reich speaks of energetic block.

The flow of the emotions in this framework can be identified as the organized system of traffic at long range of ion's currents guided by the phase, in their expression of the wave length of the oscillation. The living beings do this because its components interact with a medium, the quantum vacuum, which is not nothing but is the set of all the oscillations. An energetic matrix structure capable of interacting with objects through the phase and the resonance. The living being is oriented to a continuous attempt to establish coherence between the vibrating elements. This makes us understand why the living being, which is an organism phase-centered, has this expansive desire (libido energy) and why he tends to connect with the largest possible number of beings in nature.

For this reason, the bioenergetic function of self-regulation emerges when in the biosystem the conditions for the co-resonance in their constituents are being created, emerging from an interaction of a co-resonance in phase between the individual and the quality of the stimuli provided by the environment.

I have already introduced that QFT points out what is the quality of the relationship between the intensity of the stimulus and the body's response. It has been shown, in accordance with the scientific model enunciated by Eva Reich, that minimal stimuli, below the stress and alarm's threshold, have the capacity to promote an interaction and an intra-action with the phase, which does not carry energy and quantity of movement, it simply tunes together the phases, provided they have a particular phase.

If the response of a living organism is proportional to the logarithm of the stimulus, as the physiological law of Weber and Fechner showed us, the lesser will be the stimulus, the greater will be his response.



Observing clinically and mathematically this function, it is clear that, when the stimulus is small (small resonating oscillations), is capable of activating processes of self-regulation and organizes the field allowing the emergence of the self-perception, because the body perceives the movement coming from inside, creating a condition of inbound⁵⁵ of psychosomatic embodiment.

The essential element is not therefore the amount of energy involved in its pulsation but its quality, if it is able or not to trigger an information process of phase coherence.

Based on that the correlations between the quantum model of the QFT and the organomic energetic model become more evident. In particular, the QFT shows us that when there is no synchronization between quantum vacuum and fluctuations of the bodies, self-regulated movement is not produced, but there are only dynamics of force and energy coming from the outside. When fluctuations of the bodies and the vacuum (which is the state of minimal energy of the system) are synchronized, a "coherent state" is established. The coherent state of matter is only produced if there is a system open to the fluctuations of the environment and in order for this to happen they must be very small. In the living system this opens the possibility of an autonomous movement, evolutionarily self-organized. The organomic pulsation of the organism gets expanded.

The good health therefore does not coincide with having a lot of energy, but rather with the ability to donate outside all the energy exceeding the level of maintenance of the vital pulsation. This conception finds a mature expression in the work of Eva Reich (*Glow & Flow*).

This has been well argued in a recent article⁵⁶ that I have already mentioned, fruit of the research carried out by E. Chiappini, M. Tosi and P. Madl, colleagues of the Centro Studi Eva Reich of Milan. The armouring process, the sympathicotony, the energetic block is decoded as the result of failure of the normal logarithmic response of the system to external stimuli. It reads: "*It is this missing response that ultimately slowdown the plasmatic movement, the damage and asphyxia of the tissues. Blocking of vegetative movements is followed by muscular contraction and shock reaction, which produce, in a substantially healthy organism, apoptosis and the recovery of expendable energy. On the other hand in an armored organism lead to neurosis, to T disintegration⁵⁷ and to the production of cancer cells.*"

Special importance assumes then the quality of the dynamics that inform us about the energetic set up of the environment, because the whole picture explained above primarily depends from the phase and much less from exchanges of energy. Like the performance of an orchestra depends on the rhythm given to the orchestral by the conductor, much more than by the energy communicated by the musical instruments. The same in a living organism, the dynamics is governed mainly by the value of the phase and much less by the energy exchanged.

In this process of emerging co-resonance from the agency's⁵⁸ capacity of the biosystem, the surrounding environment must be able to provide information capable to resonate, by bringing the minimum amount of energy needed to promote the widest possible organization in phase of the oscillation (a physical phenomenon called state of coherence) and create coherence's domains.

This quality of the experience is cultivated by the nurturing environment that promotes energetic resonance *in and between* the cells of the bodies of mother and newborn, mutually perceived in the process of bioemotional contact, resonating within their energy field. This allows the production of specific and functional biochemical substances, such as the ossitocinocinergic network (identified by K. Uvnäs-Moberg⁵⁹) active in the processes of bonding and empathy. Original forms of communication, delicate instinctual forms of co-resonance are contained in the treasure box of life's process.

The biophysical and emotional pulsation, that informs the psychobiological sense of the continuum of existence⁶⁰, emerging from the configuration of resonance *in and of* the field of mother-child's dyad,

constitutes holographically the delicate energetic and organismic core of basic trust and intersubjective skill of the empathy, foundation of the biological basis of affectivity⁶¹.

The ability to love of us adults takes shape from this primary matrix. It is from here that we articulate the primal emotional grammar and the ability to form emotional and social bonds. *"The baby comes into the world with a strong energy system, capable of informing the environment of his needs"* Eva Reich liked to say. He is the bearer of the meaning of agency, as psychic manifestation of the organizational properties of all living entities perceived in themselves⁶².

If the environment allows it, the two mother and baby, already in utero, are strongly "attracted" to each other and have an energetic biochemical and emotional communication. The new being "must nest" in the energetic field of the mother to develop its vital functions, his life depends from that nesting. If he is in bioenergetic contact with her, if he "pulsates and flows", then he is a very healthy baby. He is centered in his pleasure to "function". In his body he lives and feels interoceptively, in the experience of flow of internal states, the emerging experience of a perceptual affective nuclear consciousness that resonates in the quality of BEING THE EXPERIENCE OF HIMSELF⁶³. Grounding and bioenergetic bonding have this common vibration.

Being the experience of himself is the entanglement's process, it is psyche in matter.

This entanglement is not simply being intertwined and interconnected with the self or with the other, as if it were a meeting of separate entities, without an independent self-contained existence.

Existence is not in fact an individual affair. Individuals do not exist prior to their interactions, rather they emerge through and as part of their implied intra-relative involvement, says K. Barad. This informs the setting of each process, both biological or therapeutic. It becomes necessary therefore to make the transition from what happens as *"Inter (between or in the middle) action"* to what becomes in the *"Intra (from inside) action"*, in order to understand the communication and the relationship that takes shape at the confines of the domains of each intra-active and co-resonant individuality⁶⁴.

For this reason the attention goes to the whole, to issues of therapeutic methodology and of "Interface", both in relation to the external/internal environment of the therapy's setting and in relationship to the internal state of the therapist, in the possibility of an informed setting of minimum stimulus.

THE INFORMED SETTING OF PRACTICE IN MINIMUM STIMULUS

Vegetotherapy, I just hope only the old one, was based on the effort to loosen the armor through performing physical exercises involving the exchange of large amounts of energy. In the orgone phase, on the contrary, the intensity of energy's supply is not as important as the coincidence between the pulsations of the stimulus and the organism. When this coincidence happens, and consequently a resonance's relationship is established, says Emilio Del Giudice in his research, the oscillation of the organism amplifies and becomes dominant on the spurious oscillations that disturb the dynamics and finally it removes them.

This is more likely to occur when the stimulus is smaller, below the limit in which the body becomes alerted. In case of large stimuli on the other hand, for instance those associated with therapeutic practices such as the vegetotherapy old type or some tendencies of lowenian bioenergetics, always exists the possibility that the body's warning mechanisms are activated producing stress and a new energy block

replaces the old one. The discovery of the principle of the minimum stimulus, especially thanks to Eva Reich, marks a crucial step in psychodynamics. She called this approach Gentle Bioenergetic pointing the focus simultaneously to the bioenergetic function that underlies the vital processes and to the quality of the setting that promotes this energy movement. She liked to say that it was a modified vegetotherapy⁶⁵.

The discovery, that is not with the strength of the approach that we can promote the self-regulation bioenergetics but only with a sustainable modality for the energetic process of the person, brings Eva Reich to expand the therapeutic action, by applying it not only to the child, as proved by the latest research done by her father on primary prevention, but also to the adults. The therapeutic setting informed by the minimum stimulus' practice becomes an interaction and a loving practice in the bioemotional contact with the own internal presence.

It's an action, we could say, to remove. Removing as letting go of ego superstructures that prevent feeling and being able to enter with more simplicity in the experience of contact with each other as people with body and soul. Removing the background noise, with a contact from skin to skin that resonates, when the presence is not polluted by judgments, intellectual preconceptions and the compulsion of the therapeutic doing that takes space away from the listening.

Also being without doing. Do not force the other's process, do not force the resistance to it, do not force our own and others' internal limit both physical and psychic. Do not force or push into stress, accepting the limit as a resource, recognizing in this our own self-regulation. Do not force to ground in the basic trust of Life's intelligence that is expressed in us. Do not force to stay in touch with what is and there is.

It's a doing without adding. Do not blindly add interpretations, projections, theories. Do not add anything to the experience of the other in its significance and uniqueness. It 'a job in the softening and dissolution of the ego.

As the surrounding environment allows the amoeba to expand or contract, the principle of the minimum stimulus embodies in the therapeutic space a process where a profound transformation of the personal existential experience can happen.

Incredibly the ego-softening, that occurs in taking away, not in forcing, not in adding, creates a place, a vacuum, a vibration of existence in which it is possible that the resonance emerges and people can access the deep understanding and the connection within themselves and with each other.

Just like what happens to the mother with her newborn baby when she is in the bodily perception of being in touch with herself, both they gather the meaning and significance shared of experience that merges the one with the other. In wonder they discover themselves and bound by the pleasure of their own expansion, they fall in love. Within both's psychic system in the process of contact, a deep surrender can happen in the integration of energetic movements, emotions, moods and possible solutions. A confident surrender to the here and now grounds the psychological experience of basic trust promoted by resonance. *"Finding the common thread that allows you to reconnect to your own resources"*, these were Silja Wendelstadt's words. Feeling themselves a psychic being, nuclearly defined and resonating, feeling it in the emotions of the body and in the energy of their movement.

The power of this movement of surrender in the embodied depth of one's psychic being, rooted in the here and now, gives the form of the way we are with the other⁶⁶. A way in which the instrument of knowing and proceeding is not the diagnostic definition of the other or the anchoring to his pathology, but the meeting of two beings in the experience of reconnecting with their own internal resource.

This allows for a real transformation of the psychic and bodily experience. It dissolves the fear of contact anchored in the depths of the bodily implicit memory, as the event that renews the inevitability of trauma, division, de-realization. Therapy is not only curing the disease but it is dissolving the fear of the meeting with each other and with the self. It's a work that focuses on the emerging resource and not on the structural deficit.

Resonating in the defenses, focusing the action on the structure of body armor, in fact reinforces the functional forms of somatopsychic stratification of the adaptations to the trauma of loss and to the block of the bioenergetic flow. It consolidates the experience that produces the intrapsychic sense of rupture of the continuity of existence (*going on being*⁶⁷ says D. Winnicott) in the block of pulsation, that has fragmented the self and organized the defense.

The mother for example, to resonate with the child must let go of what she thinks of herself and surrender into being able to feel the resonance that happens in her body. Within herself, thanks to this, she creates internal bioenergetic states with profiles of consistency and psychic-emotional coherence, capable of providing a harmonic resonance in the interactive field of the child. As well for the therapist. In therapy with adults or with children it is necessary, in order to promote a resonance that can sustain the autopoiesis of the system, to give up the forms of identification with a false self, the ideal ego, to loosen up the attachment to an image of self in the relationship, to be rooted in the perceptual flow of his/her biophysical, vegetative and emotional currents. The Reichs called it being able of organotic contact. This process sustains a field in which the process of contact assumes the properties of an attractor, at various intensities, towards configurations of embodiment and self-organization for both.

In the therapeutic setting organized according to the minimum stimulus, metaphorically it happens something similar to what is needed in accompanying a childbirth. The mind in fact, if energetically embodied in perceptual consciousness of the body, is like a mother's womb and the art of assisting birth is meditative, especially in the action when this art has to be acted. It is being rather than doing. It is an intrapsychic bioenergetic quality of being. It's being able to stay in silence. It's emanating peace and trust. It's knowing how to stand on the sidelines and being capable of the minimal gesture. No more, no less. To distinguish feeling and not acting. The knowledge gained in the study is helpful but not enough. It takes something more, that is not acquired with a diploma or applying a protocol of therapeutic or diagnostic tools⁶⁸.

At the intra-psychic level, the principle of the minimum bioenergetic stimulus bridles the mind. It does so in a womb who lovingly welcomes the vital and psychic movement of the emotions in the soma. It allows to contain the contact with life over the limits of the words. Maieutically emerging from the sense of his incarnate process, it creates meaning, living word, deeply embodied in the living energetic movement.

Do not do for doing sake. Pleasure is in being, rather than in the doing or "*to be done for*". The principle of the minimum stimulus therefore is cultivated in the inner aspiration, not as an end in itself but as means to preserve an environment that supports the contact and freedom. In this sense these words are synonyms of autopoiesis and of interior presence to what is happening in the body of sensations, emotions and thoughts. Vivid experience of happening and becoming: what I perceive is happening and what I feel becomes fully itself. All is one. Silja Wendelstadt called it the spirituality of contact.⁶⁹

It's a biopsychic process of deep somatic and emotional connection that allows us to understand and accept our human nature from moment to moment. Recognizing, embracing, loosening and dissolving, in the experience of bioemotional contact, the hidden identification with somatic and emotional memories of

inner discontinuity and fragmentation and lovingly bringing light to our human configuration of shadow. It's a humble job, because our subjectivity is not a matter of individuality, but a relationship of responsibility to the other. An embodied responsibility.

INBOUND

It is necessary somehow to have gone through and to be clear and conscious of our personal hell⁷⁰ of the egoic illusion⁷¹. The obstacle of being someone and not being anyone. Being able to be in genuine contact in the truth of our condition. W. Reich has written extensively about the functional involvement that exists between the biophysical state of the organism and the perception's process⁷². He says "*[...] truth is full, immediate contact between the Living that perceives and life is perceived. The truthful experience is the fuller the better the contact. [...] Thus truth is a natural function in the interplay between the Living and that which is lived. [...] Therefore, truth is a function most akin to growth, since development is reaction of expansion and variation to various outer and inner stimuli [...]*"⁷³

*"[...] all this has nothing to do with mysticism. It has to do exclusively with keeping our sensory apparatus, the tool of our research, in good condition. This condition is not a "gift", not a special "talent" [...]"*⁷⁴, but as Roberto Sassone, reichian and transpersonal psychotherapist says, it is a genuine intention in the practice of bringing, without purpose or expectations, the attention to the self, to the emotional and somatic heart of the self-perception process⁷⁵.

In this experience is necessary having lightened the surrogate and compensatory identity⁷⁶, experiencing a loving practice towards the self, being able to loosen and soften the resistances to do it, knowing the manner in which they camouflage themselves. Feeling the humility of the relationship with ourselves and with the other, within the borders and the limits set by our own history and affective memory. I want to get out of the intellectual and operational examination of the so-called analytical material of transference and countertransference, made a posterior and recovered within the separate shield of the mind, functional to escape from the contact with ourselves and the painful and fleeting sensations that often go with it. W. Reich himself noted⁷⁷: "*[...] mechanistic rigidity in observation and theory formation serves one's personal security far more than it does objective exploration. I have experienced time and again both in myself and in many of my co-workers, that clinging to rigid barriers and laws has the function of sparing us psychic disquiet. Strangely enough, by letting the motile element rigidify, we feel less threatened than we do in exploring a motile object [...]*".

As quantum physics shows us with the principle of indetermination, which speaks of the intrinsic, shady and evanescent nature of the objects' properties, when I make a measure of the state that I am observing, this state disappears, and the energetic process of resonance of contact vanishes. "*[...] to stand aside, entirely logical and dryly "intellectual" and observe your own inner functioning, amounts to a splitting of the unitary system that only very few seem to bear without deep upset. And the few who far from being frightened, enjoy submerging in their inner most selves (are the great artist, poets, scientists and philosophers who) create from the depths of their free flowing contact with nature inside and outside themselves; [...]*"⁷⁸ reflected W. Reich.

The loving attention to what is and what is happening in one's body, it allows us to cross the kaleidoscopic complexity and fractality of physical emotional states. It concedes us to feel how are formed the affective memories that shape our beliefs and our thoughts. Feeling the inner existence of deaf, mute, blind, excited,

mutable or fading existential sensations but always internally becoming, this is what is grounding us in the presence of contact and this deep connection is what promotes the resonance in the other. This is the process of contact. Only after having learnt to let go into my own reality of physical mental and emotional states I am not reluctant anymore to be touched by the reality of another.

The principle of the minimal stimulus resonates, like the state of apparent irreconcilability of the duality wave/particle, in a perceptive contemporaneity of a "I'm not" and a "I am nothing more now here, than my pulsation". Inside of me, the perception of continuous flow of information, perceptual objects, sensations, emotions, thoughts, affective states, arise and disappear at every moment of consciousness, in the permanence of intrapsychic and biophysical presence, in contact with my internal states.

If we work with the principle of the minimal stimulus inevitably the rigid egoic structure starts melting, bypassing the defenses, both in the therapist and in the patient. In the therapist's structure and in the field of this living form, which is the therapeutic relationship, inevitably occurs less 'virtualization' by the false self. There's less unconscious dematerialisation and splitting by the ego and a lower identification with the structure of mentalisation of the process, that is happening in the therapeutic interaction. I am reminded of the words written by W. R. Bion: *"It's impossible to know the reality for the same reason that it is impossible to sing the potatoes; they can be cultivated, weeded out or eaten, but not sung. The reality must be "beened": there should be a transitive verb "to be" to use as passive with the term "reality."⁷⁹* In short, it is necessary for the therapists to be in it with both feet or as Emmanuel Levinas writes "to be in our own skin" and allow ourselves to surrender to the flow of the internal states, grounded moment by moment to the lived reality of the perceived body.

It goes without saying that the experience of being in biophysical-emotional contact can happen and stay sufficiently only if in the therapist there is no defensive block linked to an ideal ego so camouflaged as to be not known. That means that we therapists had a sufficient and authentic experience of our true, unconscious, blind, deaf, pseudo-contact.

The bioemotional contact's process at the psychic level organises configurations of biopsychic coherence and capacity of co-resonance.

THE PROBLEM OF EMOTIONS WITH THE THERAPISTS, EVEN BODYPSYCHOTHERAPIST.

Psychotherapy in general, also body-oriented therapy, still suffers much of the interpretive echo of the Freudian "pulsional model" of neuroses. In this model, the sexual and the aggressive instinct, driven by the needs of the "discharge" are presented as the primary mode to maximize pleasure. Upon closer observation it has been seen that children do not only look for the discharge but much more for interpersonal contact, love and containment. Wilhelm Reich in *'The Children of the Future'* showed that exists in children, even though they are very small, a kind of happiness that comes from being fully in the moment. The sheer joy of being alive, in fullness or in concentration. Freud had also noticed it, but he seemed to be more at ease with the common unhappiness rather than with the joy. This trend has been passed down for generations of approaches putting more focus on the deficit aspects of development than on the internal resources of the living system. The same body psychotherapy seems to handle with more ease sclerotic certainties of the dissatisfactions and the rigidity of blocks than the diffuse and elusive uncertainty of potential of growth, hidden under the adaptive dysfunctional structure.

There must be a congruent reason. I think it has to do with what Reich called pseudo-contact and Winnicott called false self, adaptive product of the relationship between child and action of the nurturing environment.

Winnicott speaks of states of *"going on being"*, as the emerging product of the pleasure of working in the body of the physical and emotional sensations. A child who can get lost in the game of his watchful vigil, in touch with his/her sensations, knowing that a parent is present and will not interfere, interrupting the inside biophysical contact, it's a child that allows the rising ego to dissolve, at the moment he/she finds a good intrapsychic contact. This dissolution of the ego, namely of the adaptive defenses, it satisfies and feeds the sense of his/her inner continuity and the implicit trust, essential to feeling real. Metaphorically he/she reaches the intra-psychic and somatic experience of feeling safe in a vacuum full of vibration and resonance.

A child who has not lived enough such experience will show fractures, flaws in the ability to let go, to surrender to the becoming of being, with a rigid egoic structure to support this defensive process. The defense is structured because the biophysical originating process has been coerced, taken energetically hostage by the need of the environment. The result is the adaptive creation of a false self. (Who is immune?)

Winnicott in his metaphor, approaches incredibly W. Reich's account, when he describes in terms of energetic functionalism⁸⁰, this process of loss of pulsatory biophysical contact⁸¹. Winnicott says: *"At first the individual is like a bubble. If the external pressure actively adapts to the internal pressure, then the important thing is the bubble, but if the environmental pressure is greater or less than the pressure inside the bubble, then the environment is more important. The bubble adapts to the outside pressure⁸²"*. So the false self develops and with it the pseudo-contact mode. The same intrapsychic sensations of "falling forever", the "fear of breakdown", that Winnicott attributes to inadequate environmental containment and Reich saw as the result of the breakage of the energetic pulsation⁸³, have the same consequence: the reactivity monopolizes or devours the awareness, making it separate from the here and now.

In the primal experiences of rupture of the pulsatory rhythm and in the loss of the flow of resonance, we found ourselves in the experience of "falling", corresponding to the plasmatic movement of the anguished and distressed contraction caused by the loss of intra-psychic contact and perception. The intelligence of life creates the protective block to avoid these unsustainable biopsychic sensations. As adults we find them inscribed in our plasmatic blocks that support the activities of implicit memory traces inscribed in the soma. When we return in contact with them the living memory of the soma reactivates, taking us back to hear the crystallized echo of the pain of discontinuity and the bioplasmatic interruption of bodily and psychic sense of our continuity of pulsatory being. The biophysical experience has energetically informed our relationship with ourselves and with the world.

These archaic plasmatic sensations recall preverbal and biophysical memories, that precede the conceptual or linguistic maturity, making possible the intellectual elaboration and the neuromuscular maturation. At this level of functioning of the organism, the defense is organized at the systemic cellular level, in which the energy doesn't resonate in phase with the environment and doesn't achieve states of psycho-bio-physical coherence proportionate to the need, blocks the movement of pulsation. These are memories that we can only feel.

It's here where you still have the problem of emotions for anyone, including of course the therapists. For example, if we get in touch with your breath, we all contact after a while, the reality of our emotional body,

an impermanent tangle of thoughts and feelings. We intimately experience the affective memory. If we go deeper we often feel a thick undercurrent trail of affective and physical inner states. A perception of almost-unbearable lack of a structure capable of soft containment and the repetitive automatic experience of an insufficient duration⁸⁴, so fragmented to prevent us from feeling able to remain and exist in the sensations. Soon or later, in the early days of our lives, when the pulsatory continuity of being was repeatedly interrupted, we experience that sense of disconnection that commonly often haunts people in the contemporary world.

Moreover, we fear these sensations, because they resonate of existential affects and they have the power to overwhelm us, anchored as they are to states of biophysical painful or unacceptably fragmented affective memories for that stage of development in which such experiences took place.

In fact, our conventional self, what we think we are, doesn't hold up and disappears in the height of passion, excitement or sadness. We fear the loss of our reassuring good self, slowly built, because it reminds us how delicate and tenuous grip we have now on ourselves, as we have in birth and perhaps in death⁸⁵. Birth and death are in fact constructive in the way reality surpasses the words. This reduces the self-complacency in what we believe we are, they shake us from the torpor of the egoic reassurance and support us to transform into the flow of what is happening.

This fear, this bioplasmatic contraction, as both Winnicott and the Reichs have well explore, albeit from very different starting points, produces a protective defense, both in terms of perception and cognition, structuring a surrogate contact or pseudo-contact with oneself and with reality. Perception is the fractalic product of phenomena of resonance between organism and environment.

A mental construction, in which the thought functionally linked to the organism's energetic process is defensive, where the secondary process is used to confront a difficult environment. The characteristic of this self is an approach to life itself mentally dysfunctional, judgmental or hyperrational. We ourselves paid a high price, in our superficial identity, result of functional adaptations to environmental intrusive or neglectful relationships in our need for survival. Falsehood and unreality replace the vulnerability but also the vivacity and vitality.

A greed, almost unquenchable, hiddenly digs the old desire to have more than one has already. Like our patients, we often try to protect ourselves from the enormity of the vision that emerges when we come into contact with the layers of surrogate and compensatory identities that are there to separate us from our deeper and more harmonious pulsatory reality. Our answer, unconsciously defensive and functionally related to our energy status⁸⁶, is to take refuge in a "protective attachment", egoically self-referential, separated from the real experience. Trying to be faithful to our illusory claim to be an outside observer, neutral, uninvolved, or involved "on command" to keep control of the situation, as a defense against the elicitation of our pure terror in the anguish or in the bioplasmatic excitement.

In the pseudo-contact, the freedom and the joy given by the experience of being in the inner becoming, it was sacrificed for the automatic and compensatory search of satisfaction for the false self, which cannot hold up the excitement and the flow of impermanent oscillation in between the changing perceptual and mental states of the emotional body.

Basically we feel protectively, like our patients, the feelings of horror vacui, the fear of the void, because getting in touch with primal emotions stored in the depths of the somatic defenses, elicits powerful emotions. It reactivates traces of energetic memories in the depths of our cells, somatic metaphors of

falling endlessly or disintegrating into nothing. The nothing, where "*nothing happens in me*" and that often accompanies the existential emotional pain of "*no one is here for me*", shakes us and deeply disturbs us. Yet the way for us is to follow and go through these affects in ourselves.

The *horror vacui*, the fear of the void⁸⁷, is anchored bioenergetically to the rupture and block of our expansion and our ability to abandon ourselves to it, to the estranging psychic perception of not being real enough, to the subtle feeling of falsity and to basically feeling worthless, coupled with an unquenchable tension of greed for something that could bridge the biophysical sense of the "*nothing felt*". They are visceral, deep, disturbing sensations, linked to our implicit memory, to our primordial biophysical affective memory, produced by the loss of the perceptual contact of the flow of resonance, the loss of the orgonotic sense of pulsation and the connection to our own energetic process of vital self-perception. Biophysical experiences have built the rigid and defensive stratifications of the Ego in our character structures.

For us therapists this means to take care of us sincerely, to have seeing well and gone through, melting in a loving process of inner intimate presence, the mesh of the emotional movement blocked in our egoic structures and in our opinions of ourselves and of the world around. To recognize and feel deeply that we are all in the same boat opens our minds and hearts.

With the principle of the minimal stimulus, thoughts, emotions and reactions can parade spontaneously on the screen of the perceptive consciousness, without reactivating the original trauma and defenses.

Containment given to the "*bubble*" by this "*quality of stimulus*", allows a contact, which bypasses the defensive reactive forms. Reconnecting their contents dense of affects within the perceived sense of something of ourselves that knows by identity, transforming the experience in a non-threatening and non-dangerous emotional affective experience.

It's an experience of flow and perceptive waves, totally impermanent, that are simply and constantly coming, breaking or laying down, expanding into the field of a nuclear consciousness of the our corporeal and psychic being. *Glow and flow* used to say Eva Reich.

Inside the "*bubble*", as defined by Winnicott, what I refer as perceptive experience of the state of the vacuum full of resonances, the movement of emergence of sensations, emotions, thoughts and their vanishing, becomes more interesting than the content itself. In the resonance of the experience itself, things perceived are in flux, arise and disappear at every moment in the perceptive consciousness, in the living endo- self, conscience made active and receptive by the absence of intrusions or external threats. The pulsation expands and vibrates in the field of contact with the environment and nature. It creates the experience of not being afraid of the fear, but to be alive and sentient experience of self, a vibrant perceptive field of an internal environment that knows and can accommodate in itself the movement of a deep emotional and biophysical melting of traces and sediments of its emotional memory.

The perception of the emergence of a wave of resonance dissolves from the experience of the self the feelings of helplessness and psychobiological resignation, anchored by the trauma and the emergence of a new internal structure starts forming because the potential is experienced. With this it is as if we could access to what is possible. In such experience and in giving birth this is tangible and it is perceived as sacred. It is as if you could catch and live in the psyche of the body the hologram of potentiality: life, living in the self, becomes in reality manifested.

In my human experience, my most real and consciously alive identity had the chance to reveal itself, not as a fixed entity, but as a flowing potential living pulsation, only within a context of minimum resonating

stimuli, I experienced my sustainability and I didn't feel threatened beyond my limit by the experience in place. In it I perceived and perceive my pulsation resonate with the pulsatory process of life itself in the whole nature of which I am part of.

Recognizing that we are often alienated and detached from our internal experience, from the reality of the moment-to-moment of the here and now, we can feel that instead of exploring the structures of defense, the sexual and aggressive instincts as such, we discover underneath in depth of the intelligence of the life of our body and in the cosmos, a continuum, a sentient pulsatory instinct of the consciousness that in the presence of self emerges as field of resonance and flow.

The therapeutic context oriented and informed by the Principle of Minimal Stimulus, in the contact, in the look, in the touch, in the word, it supports the bioenergetic function of resonance, which promotes states of biophysical coherence in the organism. It's a way to harmonize the pressure of the bubble, to allow people, including us therapists, who have lived more or less strong interference or who have been ignored, left in isolation, to pulsate with more breadth and harmony and "breathe" a little more the vibration of the air in their own "bubble". It's "like a good enough mother" who is in contact with herself and with her own needs, she contains lovingly, without invading, resonates, allowing the emergence of bioenergetic functions capable to mold to the sustainable energy of the energetic field, so that it doesn't have to adapt too much to the external environment.

A stimulus that remains below the alarm's threshold of a biosystem. It is not in fact an external force to whom it is necessary to adapt, but an invitation to the expansion of a movement from the inside, producing abandonment, surrender of the organism to its own rhythm.

This is bioenergetic self-organization.

CONCLUSIONS

I shared, drawing both from clinical experiences and lived intrasubjective experiences, the condition that allows us to interact within an informed setting of minimal stimuli and therefore processes of autopoietic self-regulation, bonding, empathy and embodiment, is also linked to the intra-psychic and bioenergetic processes of self-perception. These can emerge only through genuine internal contact, in which the embodied experience of somatic processes promotes the melting of the character's armor and the rigid structure of the therapist's ego.

The embodied perception of the self changes functionally the quality of the stimuli that interact in the therapeutic process. The nature of experience emerges as an original process of knowledge by identity. *"Every perception is based on the harmony between an internal function of the organism and a function of the outside world. That is based, on the vegetative harmony"* wrote W. Reich.

It seems clear then that the processes of co-resonance underlying the principle of the minimum stimulus constitute a decisive connection with the quality of the dynamics at play within the egoic protective structure of the therapist or the environment in general. With the minimum stimulus something inevitably melts the rigid egoic structure, bypassing the defenses, both in the therapist and in the patient and fractalily the information resonates in the healing process of the living form of the relationship.

Let me conclude by connecting with a final thought of Emilio Del Giudice and Margherita Tosi. *"There is an uncertainty principle in quantum physics for which the product of the uncertainty of the phase (that is, the intervals of values that the phase can cover) multiplied for the uncertainty of the number of oscillators involved in the collective oscillation cannot be smaller of a universal constant. On the other hand, as mentioned earlier, the value of the phase in a living organism must be well defined, for which the uncertainty of the phase must be as small as possible. Consequently, the uncertainty of the number of oscillators must be the largest possible. The health of a living organism, therefore, requires that its coherent oscillation extends beyond the well-enough defined number of internal oscillators of his body and involves an indefinite number of external oscillators, therefore other bodies, other parts of the universe.*

We understand why at his birth, the organism come into the world, requires resonance with the other self (the mother, the environment) with whom to relate with phase's relationships and not with massive flows of energy, which may disturb the harmony of the phase's relationships ".

The breath, the look, the harmonious sound, the touch and the subtle intervention, are the essential means by which the phase's relationship between the various organs of the living reaches equilibrium. This ordered phase's relationship could be seen as the structural foundation of the psyche and what commits us to responsibly to each other to our neighbor.

The bonding and re-bonding, says Eva Reich, is a bio-energetic process on which we can work bioenergetically⁸⁸.

(I thank my colleagues of the Centro Studi Eva Reich and Ermanno Bergami for his valuable work in the English translation.

I dedicate my contribution to my children, but also to Silja, Emilio and Roberto)

Appendix:

Paradigm Orgone Energy (Wilhelm and Eva Reich 1930-2008)	Quantum Field Theory (1900 -2016)
<p>Orgone energy, a way of being of energy, perhaps an interaction of bio energy and electromagnetic fields.</p>	<p>A way of being of energy, an electromagnetic interaction between the different parts of an organism, when they manage to synchronize their individual fluctuations in the quantum vacuum. Existence of energy properties of the quantum vacuum in which the dynamics of "quantum states" are organized in Domains Coherency capable of carrying information and to maintain resonance states.</p>
<p>Mass-free orgone</p>	<p>Quantum objects: no mass</p>
<p>Possibility of physical observation of the event: spiraling wave or pulsing particle</p>	<p>Possibility of observation of the event: wave or particle</p>
<p>Mode observed: Pulsation and Resonance</p> <p>Rhythm of oscillations = orgone pulsation</p> <p>Resonance between energetic systems=cosmic superimposition</p> <p>Orgonotic Energetic Contact: properties and process of the living and of self-perception and self-awareness of one's own psychobiophysical states. Bioplasmatic-physical-emotional entanglement.</p>	<p>Mode observed: existence of a rhythm of the oscillations = Gauge fields</p> <p>Rhythm of oscillations = Phase</p> <p>Resonance between quantum objects = resonance in phase of the oscillations, creations of super-resonances, Domains of coherence and Super-domains of coherence</p> <p>Quantum entanglement - Overlapping of states and behaviors of correlation between entities, separated in time and space.</p>
<p>Luminescence: unicellular organisms, bions, organic tissue of the breast milk</p>	<p>Luminescence: Biophotonic electromagnetic field of the organic tissue of the milk or eggs (F. Popp)⁸⁹</p>
<p>Link's affinity of orgone energywith the water⁹⁰</p>	<p>Biological water is an informational vector that creates Domains and Super-Domains of Coherence (E. Del Giudice, A. Tedeschi, et alter)⁹¹</p>
<p>Functional bioenergetics correlation between process, function and structure. "It 's the emotional movement to produce the objective of the pulsation and not vice versa"⁹²</p>	<p>The psycho-emotional-physical unity of living organisms as an outcome of quantum physics. (E. Del Giudice, Published in "Brain and Being", Eds. G.Globus, K.Pribram, G.Vitiello, Benjamins, Amsterdam 2004)</p>
<p>Eva Reich's Principle of Minimum Stimulus No energy exchange but resonance in phase. Self-organization, bio-energetic self-regulation.</p>	<p>The Principle of Minimal Stimulus in the Dynamics of the Living Organism (E. Del Giudice, M. Tosi) No exchange of energy but resonance of the quantum Coherence domains of the matter .Self-organization.</p>
<p>Spirituality of Orgonotic Contact (Wilhelm Reich, Eva Reich, Silja Wendelstadt)</p>	<p>Oneness holographic of the Universe. Interconnected network representing the observed phenomena. (E. Del Giudice, In Quantum theory the roots of the Oneness of Universe. A review of: QED Coherence in Matter, by G. Preparata)</p>

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- ¹ CENTRO STUDI EVA REICH, founded in Rome by Silja Wendelstadt operates offices in Ancona, directed by Beatrice Casavecchia, and Milan, directed by Luisa Della Morte and Margherita Tosi.
- ² K. Barad, *Meeting the Universe Halfway, Physics and the Quantum Entanglement of matter and Meaning*, Durham, North Carolina: 2007 Duke University Press.
- ³ G. Ferri, G. Cimini, *Analytical Setting: Relation Time and Complexity*, *Annals of the New York Academy of Sciences*, Vol. 879 June 30.1999.
- ⁴ W. Davis, *Endo Self*, *International Body Psychotherapy Journal*, 2014, 13 (1), pp. 32-41.
- ⁵ The Quantum Field Theory is the evolution of quantum mechanics that applies its theories to the concept of field. Particles are treated as excited states of the physical field itself in relation to a specific reaction. This theory was originally formulated to be the mean used by the "Physics of particles" to fill in the gaps left from the first approach to quantum mechanics, like trying to obtain a version of the QFT that was correct according to the "theory of relativity". Quantum Electrodynamics is the most tested and successful theory of physics to be formulated. Later, it was vastly used within that branch of physics that deals with condensed matter, because the fields, entities represented in every point of the space and time, can describe both radiations and matter, like fluids or crystals. The QFT was developed mostly between the 1920s and 50s by Paul Adrien Maurice Dirac, Wolfgang Pauli, Sin-Itiro Tomonaga, Julian Schwinger, Richard P. Feynman and Freeman Dyson.
- ⁶ Casimir effect, Lamb-Shift effect, Josephson effect, Zadin effect, Bohm-Aharonov effect.
- ⁷ Del Giudice E., *The psycho-emotional-physical unity of living organisms as an outcome of quantum physics*. Published in "Brain and Being", Eds. G.Globus, K.Pribram, G.Vitiello, Benjamins, Amsterdam 2004
- ⁸ Emilio del Giudice, Margherita Tosi. *The Principle of Minimal Stimulus in the Dynamics of the Living Organism*. 2013 - ISIS Report 2013 Institute of Science in Society. The Institute of Science in Society (ISIS) was co-founded in 1999 by scientists Mae-Wan Ho and Peter Saunders to Provide critical yet accessible and reliable information to the public and policy makers.
- ⁹ G. Rizzolatti, C. Sinigaglia, *I know what you're doing. The brain acts and mirror neurons*, R. Cortina, 2006; G. Rizzolatti, L. Fogassi, V. Gallese, *Cortical mechanisms subserving object grasping and action recognition: a new view on the cortical motor functions*, in *The cognitive neurosciences*, and. M.S. GAZZANIGA, Cambridge (Mass.) 20002, pp. 539-52.
- ¹⁰ V. Gallese, *Before and below 'theory of mind': embodied simulation and the neural correlates of social cognition*, "Philosophical transactions of the Royal Society B: biological sciences", 2007b, 362, pp. 659-69.
- ¹¹ J. Bauer, *Because I feel what you feel - Intuitive Communication and the secret of mirror neurons*", Hoffmann and Campe, Hamburg, 2005.
- ¹² From Lashley's article: "Nervous impulses spread from one cell to the other through intercellular connections. Although generally the behavior seems to be determined by a mass of energy produced by excited particles inside fields instead of singular nervous-cells. What kind of nervous system would be responsive to an excitation pattern without a specialized conduction pathway? This issue is almost universally present in the activity of the nervous system."
- ¹³ W. Freeman, *How do you think the brain*, Einaudi 2000
- ¹⁴ Pribram K. H. 1971 *Languages of the Brain* (Engelwood Cliffs, NJ: Prentice-Hall)
Pribram K. H. 1991 *Brain and Perception* (Hillsdale, NJ: Lawrence Erlbaum Associates Publ.)
Pribram K.H. 2001. *Brain and quantum holography: Recent ruminations*. In: Jibu M, Della Senta T, Yasue K., eds. *No Matter, Never Mind - Fundamental Approaches*. Amsterdam: John Benjamins.

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- ¹⁵ W. J. Freeman, G. Vitiello, Dissipation and spontaneous symmetry breaking in brain dynamics - Department of Molecular and Cell Biology, University of California, Berkeley, USA. Dipartimento of Mathematics and Computer Science, University of Salerno, and the National Institute of Nuclear Physics, Linked Group Salerno, Italy - JOURNAL OF PHYSICS a: MATHEMATICAL AND THEORETICAL, 2008
- ¹⁶ Emilio del Giudice, Margherita Tosi. The Principle of Minimal Stimulus in the Dynamics of the Living Organism. 2013 - ISIS Report 2013 Institute of Science in Society.
- ¹⁷ Meier CA. and. The Pauli-Jung Letters, 1932-1958, Princeton University Press, Princeton, 2001.
- ¹⁸ Quantum physics deals with the dynamics of quanta (quantum), packets of energy that make up everything in the universe.
- ¹⁹ Prigogine, Ilya and Paul Glansdorff, Thermodynamic Theory of Structure, Stability and Fluctuations, Wiley, New York 1971.
- ²⁰ It was a revolution that put in a position to address the phenomenon of life, its evolution over time and the emergence of a psyche on the dynamics of living matter. This research process led in fact some physicists such as Del Giudice, G. Vitiello and others to study the physical process of the living water and to find in it fractal properties and related behaviors in all physical processes, energy and symbolic in the shaping of life . On the characteristics frattaliche of physical dynamics of living water. See E. Del Giudice, G. Vitiello, The role of the electromagnetic field in the formation of domains in the process of breaking phase transitions, Psys. Rev. A 74, 022105, 2006.
- ²¹ W. Reich, Analysis of Character, The Expressive language of the living, SugarCo Editions, Milan 1949
- ²² W. Reich, La Funzione dell'Orgasmo, Sugarco Net. Ed. 2005
- ²³ W. Reich, Selected writings - An introduction to orgonomy. Taken from the International Journal of sex-economy and orgone research. Orgasmic theory, Lerici publisher 1960
- ²⁴ B. Casavecchia, S. Wendelstadt, the Original Forms of Communication in Human Being born, Mimesis Editore, Milano 2015
- ²⁵ D.W. Bianchi et alter, 1996 Tuft University of Boston. It has become apparent that, in regards of the maternal fetal cells Microchimerism, different complex bio-systems show huge similarities in physiological dynamics and emerging behaviors from the interaction between specific cells, genetically different one from the other, but able to survive inside a host. This kind of bio-cooperation process has been discovered in mammals and is a great example of how it is possible that genetically different organisms can tune in with their host, not only in order to survive but to participate in the healing process as well. The term Microchimerism refers to the presence of a small number of cells from one being into a host. This phenomenon can occur after a blood transfusion, organ transplant and more commonly during a pregnancy. In this last case we are able to observe a bi-directional exchange of cells starting from the 4th/6th week of pregnancy. Various studies on the matter showed that some of these microchimeric cells are able to persist in the system for decades with the ability to differentiate themselves into different kind of cells. Some fetal cells survive in the mother's blood stream and tissues for decades after giving birth, if not for the rest of their life. Cells transfers usually happen during the first trimester when the placenta connects to the mother's bloodstream. These migrating cells are a particular kind of Stem cells: rather than being set to become muscles or skin or neurons, they can change into different types of tissue. Even though many of these cells are eliminated from the mother's body with the help of the immune system, but some still manage to get into the tissues and hide in there for years, even decades at times, becoming part of her body. What are these cells that have migrated from the fetus and became part of the mother's organism? It has been discovered that those cells accumulate where there are wounds and help the healing process in the breasts, thyroid, brain, heart and skin, they can be found in tissues affected by cancer or by other diseases and sometimes even in healthy, normal ones. These fetus cells that become part of the mother keep their plasticity, so much that they're considered as a new kind of stem cells, called APC, progenitor cells associated to pregnancy. We are in front of a greatly refined form of communication between genetically different cells inside a host organism, that produces information and cooperation with autopoietic features and functions.

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- ²⁶ BREAST CRAWL - Initiation of Breastfeeding by Breast Crawl; First Edition Published by: UNICEF Maharashtra. Italian edition by AICPAM.
- ²⁷ Winnicott, D.W., "Memories of birth, birth trauma and distress" in *Through Paediatrics to Psychoanalysis*, Martinelli, Firenze 1975, p. 221.
- ²⁸ G. Vitiello, *Atque*, Vol. 5 New series, 155-176, 2008
- ²⁹ Solms, M. and Panksepp, J. (2012). The "Id" knows more than the "ego" admits: Neuropsychanalytic and primal consciousness perceptives on the interface between affective and cognitive neuroscience. *Brain Sciences* 2, 147-175.
- ³⁰ E. Chiappini, P. Madl, M. Tosi. *On This Side of the Principle of Minimum Stimulus*. Centro Studi Eva Reich Milano www.evareichmilano.it/articoli; cfr. M Barbieri, 2015, Springer, Dordrecht.
- ³¹ M. Piattelli Palmerini, G. Vitiello, *Linguistics and Some Aspects of Its Underlying Dynamics*, *Biolinguistics*, 9: 96-115, 2015
- ³² E. Chiappini, P. Madl, M. Tosi. *On This Side of the Principle of Minimum Stimulus*. Centro Studi Eva Reich Milan www.evareichmilano.it/articoli- About fractal characteristics of physical dynamics of living water, see: E. Del Giudice, G. Vitiello, The role of the electromagnetic field in the formation of domains in the process of breaking phase transitions, *Psys. Rev. A* 74, 022105, 2006.
- ³³ E. Del Giudice, *Energy and consistent biological dynamics*, in D. Beltrutti, S.F. Brena, M. Tiengo, *Pain and Energy*, Mattioli, Fidenza 2004.
- ³⁴ C.G. Jung (1952) - *Synchronicity. An Acausal Connecting Principle*. Published in 1972 by Routledge and Kegan Paul.
- ³⁵ E. Del Giudice, M. Tosi, *The Principle of Minimal Stimulus*, cit. "This result is the expression of a principle of uncertainty, valid in quantum physics, which states that the uncertainty of the number of oscillators in a physical system and their phase are in an inverse relationship. It is clear that, in order to reduce the uncertainty of the oscillation rhythm of a physical system and make it more coherent, we have to increase as much as possible the number of the participants to the group dance. Therefore, one must avoid the closure of the system, that maintain constant the number of components; on the contrary, we have to open as much as possible outside greatly amplifying the number of potential participants in the collective dance. Herein lies the main problem. "
- ³⁶ E. Del Giudice, *The psycho-emotional-physical unity of living organisms as an outcome of quantum physics*. Published in "Brain and Being", Eds. G. Globus, K. Pribram, G. Vitiello, Benjamins, Amsterdam 2004
- ³⁷ E. Giudice, M. Tosi. *The Principle of Minimal Stimulus in the Dynamics of the Living Organism*. 2013 - ISIS Report 2013 Institute of Science in Society. A coherent system is able to concentrate its energy from the totality of its degrees of freedom for a small number of them. In this way, the energy has a directionality not diluted in a large number of possibilities linked to the large number of degrees of freedom, but acquires its directionality through the elimination of agitation "useless" of its molecules. When the energy is distributed over a large number of degrees of freedom, the variable named entropy from physical has a great value, which becomes lower when the energy is concentrated on a few degrees of freedom. The energy that has a large entropic value can give little outside work, but if you lower the entropy, the physical system acquires the capacity to perform external work, as long as the system is open to the environment.
- ³⁸ E. Chiappini, P. Madl, M. Tosi. *On This Side of the Principle of Minimum Stimulus*. Centro Studi Eva Reich Milano www.evareichmilano.it/articoli
- ³⁹ E. Del Giudice, P.R. Spinetti, A. Tedeschi, *Water dynamics at the root of metamorphosis in living organisms*. *Water* 2010, 2, 566-86.

⁴⁰ H. MW, *The Rainbow and the Worm, the Physics of Organisms*, World Scientific, Singapore, London, 1st ed. 1993; 2nd ed. 1998; 3rd ed. 2008.

⁴¹ H. MW. Quantum coherent water & life. *Science in Society* 51, 26-29, 2011.

⁴² E. Del Giudice, *A Way to Quantum Systems Theory*, in L. Olives Urbani (eds), *World structures. Systems thinking as a reflection of a complex reality*, Volume II, The Mill, Bologna, 2010, pp. 47-50. In recent decades, quantum field theory with G. Preparata, (*QED Coherence in Matter*, World Scientific, Singapore and London 1995) was able to rigorously establish the conditions under which a set of independent oscillating molecules randomly, can be transformed into a related set of molecules oscillating in unison, with a single phase, the way the physics call the rhythm of the oscillation. This correlated status of the matter in physics is called Coherent state. In this particular state the molecules move following the rhythm of a magnetic field trapped amongst them. The oscillations of the trapped electromagnetic field constituting the music to whose rhythm the molecules dance collectively. The wavelength of this field trapped fixed coherent whole spatial size, called by physicists Coherence Domain. It can be shown that the set of molecules in the coherent state is lower than the corresponding set not consistent total energy, for which the coherent state is stable and its destruction requires an external power supply. The biochemistry of the living evolution is therefore controlled by its network of electromagnetic signals, seen in themselves, they are not a chaotic ordered structure, a musical composition, which ordered set of notes provides a "meaning" to the set of biochemical reactions and the somatic processes controlled by it.

⁴³ W. Reich *Bionic Experiments On The Origin Of Life*, pag.29-31, Ed Sugarco, 1978

⁴⁴ G. Vitiello, *Dissipation and Consciousness*, *Atque* 16, 171-198, Nov.1997 - Apr. : the properties of living processes are not property related to elementary components, but ownership of the way they are organized and for which the modalities of the dynamics that govern their interactions.

⁴⁵ E. Chiappini, P. Madl, M. Tosi. *On This Side of the Principle of Minimum Stimulus*. Eva Reich Centro Studi Milano www.evareichmilano.it/articoli

⁴⁶ W. Reich. *Cosmic Superimposition*, SugarCo Editore, Milan 1975

⁴⁷ M. Solms, and J. Panksepp, *The "Id" knows blackberries than the "ego" admits: Neuropsychoanalytic and primal consciousness perceptives on the interface between affective and cognitive neuroscience*. *Brain Sciences* 2, 147-175. (2012)

⁴⁸ E. Del Giudice *The psycho-emotional-physical unity of living organisms as an outcome of quantum physics*. Published in *"Brain and Being"*, Eds. G.Globus, K.Pribram, G.Vitiello, Benjamins, Amsterdam 2004.

⁴⁹ The quantum physics applied to the dynamics of living systems has proposed a rigorous and coherent theoretical framework consistent with the experimental data of quantum effects involved (Böhm-Aharonov effect, Casimir effect, Lamb-shift effect, Josephson effect, Zadin effect). This allows to describe the biosystem's process of psycho-emotional-physical unit as the product of the states of autoregulation and flow of biochemical, electromagnetic and electrical information, driven by the resonance in phase of the coherence domains of two distinct operating systems, resonant in the soma. This would cause a transmission of information through the connective tissue of the organism assuming the existence of a long-range communication of ions conduct current from the phase, between the nervous system and a flow energy system, analogous to the meridians of the Chinese system. This hypothesis is in fact agree with what the QED has shown: the systems can enter into resonance when their coherence domains (CDs) they tune so as to pick up from the surrounding environment, the minimum amount of energy able to bridge the gap from their individual oscillation. In this way the system is capable of putting in phase the individual interaction components (Lamb-shift effect, Casimir effect). This produces the creation of pulse trains (Josephson effect) conveyed by the phase, that allows the co-resonance in the long-range species of ions contained in the molecular species and the creation cascading of additional and larger domains of coherence, capable to resonate between superdomains them and create coherences, and so on on. This ability to armonize in phase and co-resonate allows to arrange, in the sense of Oparin, the traffic long range of ions across cell membranes (Zadin effect).

⁵⁰ E. Del Giudice, P. R. Spinetti, A. Tedeschi. *La dinamica dell'acqua all'origine dei processi di metamorfosi degli organismi viventi*. Pubblicato: 3 Settembre 2010 su *Water* ISSN 2073-4441 www.mdpi.com/journal/water. "This

theory applies to all molecular species and justifies the appearance of condensed states of matter (solid and liquid) starting from the gaseous state. In this general framework, a particular role is played precisely by the water, in which the coherent oscillation of the molecules takes place between a configuration in which all the electrons of the molecule are strongly bound to the nuclei and another configuration in which an electron per molecule is almost free, remaining dangling out of the molecule, with a weak bond with it. The set of these nearly free electrons in liquid water coherence domains is capable of being excited by external energy flow, giving rise to a spectrum of the excited states of the water coherence domain. It is therefore create the conditions for the establishment of a higher level of coherence: the coherence of a set of the coherence domains, which leads to the formation of larger superdomains, in turn susceptible of becoming coherences between them and so on. Therefore in the water, and only in the water, may generate a coherences hierarchical structure, capable of correlating vast arrays of molecules, generating simultaneously a complex set of electromagnetic oscillations, the frequencies of which are associated with each other producing agreements between notes, as is done in a musical score. These predictions of the theory have found experimental corroboration since inside liquid water were recorded were recorded coherent electromagnetic signals translatable into musical sounds."

⁵¹ H. MW. Quantum coherent water & life. Science in Society 51, 26-29, 2011.

⁵² G. Vatinno, Solitons in mathematical physics, Arachne Editrice , 2015. The Soliton phenomenon was first described by John Scott Russel after he observed a solitary wave in the Union Canal in Scotland. He reproduced the phenomenon in a wave tank and named it the "Wave of translation". One of the first to discover solitons in the Ocean, was Alfred Richard Osborne in 1980, first in the Andaman Sea and in others afterwards. Evidences of the existence of solitons were also found in the so-called Fermi-Pasta-Ulam System. In mathematics and physics a soliton is a self-reinforcing solitary wave that is caused by a cancellation of nonlinear and dispersive effects in the medium. It's not easy to precisely define what a soliton is because it is applied to the most various branches of physics. It might be helpful to describe a simple example in which dispersion and non-linearity interact, cancelling each other out: an impulse of light travelling through a glass, which will then show signs of dispersion of the components of the impulse, all these different frequencies will spread creating different paths on the glass, so much that the shape of the wave is affected and deformed because of it. However if the glass is characterized by non-linear effects in the same range of intensity as the light (Kerr effect), when its intensity changes the refractive index will also vary. If the pulse has just the right shape, the Kerr effect will exactly cancel the dispersion effect, and the pulse's shape will not change over time: a soliton. The Schrödinger equation gives a particular result that makes it possible for a wave to spread on a medium whilst maintaining its wave length and frequency. These two characteristics are co-dependent and inversely related, the wave changes and gets mitigated or amplified accordingly to the medium used, but it can always go back to its original form if the same medium is used. The wave, theoretically, can travel for countless kilometres without any dissipation, it can preserve itself which also means that no energy nor information is lost. The ability of the wave to preserve its original state is a huge advantage in technical application, not only for computers and telecommunications but for energy transmission as well, in fact there won't be any loss of energy in the electric system caused by the Joule effect. Nowadays solitons are mostly used in optic physics, in wave-driven systems (optic fibers, Bose condenser), in Quantum Chromo Dynamics, in Plasma Physics, in the study of sea-waves, in superconductivity and in the study of earthquakes. In biology, solitons are used to describe the behaviours of proteins and DNA; in neurology, they are a solution to the neuronal signal-transmission equation.

⁵³ L.S. Brizhik, Nonlinear electromagnetic dynamics underlying meridians in living systems, Bogolyubov Institute for Theoretical Physics, 03680 Kyiv, Ukraine; International Institute of Biophysics, Neuss, Germany brizhik@bitp.kiev.ua.

⁵⁴ G. Preparata, An Introduction to a Realistic Quantum Physics, World Scientific, Singapore, London, New Jersey, 1990

⁵⁵ E. Giudice, M. Tosi. The Principle of Minimal Stimulus in the Dynamics of the Living Organism. 2013 - ISIS Report 2013 Institute of Science in Society.

⁵⁶ E. Chiappini, P. Madl, M. Tosi. On This Side of the Principle of Minimum Stimulus. Centro Studi Eva Reich Milano www.evareichmilano.it/articoli

⁵⁷ W. Reich, The Biopathy of Cancer, Ed. SugarCo.

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- ⁵⁸ R. Ryan, 1991. The Nature of the self in autonomy and relatedness. In J. Strauss & G.
- ⁵⁹ K. Uvnäs-Moberg, Stress Pattern Induced by Oxytocin, *News Physiol. Sci.*, Volume 13, February 1998
- ⁶⁰ D.W. Winnicott, Ego integration in child development "in emotional development and environment, Ed Armando, Roma 1970 cit. by M. Epstein. *Going on Being*. Broadway Books - New York, 2001
- ⁶¹ M. Solms, and J. Panksepp, (2012) .The "Id" knows blackberries than the "ego" admits: Neuropsychanalytic and primal consciousness perceptives on the interface between affective and cognitive neuroscience. *Brain Sciences* 2, 147-175. "The id dumb, embodies the essence of the body itself, in short, knows more than I can admit ... But the id, unlike the ego, is mute only Glossopharyngeal sense. It forms the "primary stuff" from which minds are made; and cognitive science ignores this at its peril. " They propose that the scientific evidence of research in neuroscience requires today to recognize the fundamentally emotional infrastructure of the mind and of the secondary and tertiary processes of cognition, and add the profound implication of the original forms of communication (bio-organismic and emotional) in the primary processes embodiment, consciousness, cognition, and health.
- ⁶² R. Ryan, 1991. The Nature of the self in autonomy and relatedness. In J. Strauss & G.
- ⁶³ W. Davis, Endo Self, *International Body Psychotherapy Journal*, 2014, 13 (1), pp. 32-41. W. Davis calls this potential as the emergent property of a Endo Self, supporting nuclear existence, in the living being, of an undamaged itself intact, lying beneath the defenses, in its autopoietic vitality.
- ⁶⁴ K. Barad, *Meeting the Universe Halfway, Quantum Physics and the Entanglement of matter and Meaning*, Durham, North Carolina: 2007 Duke University Press.
- ⁶⁵ E. Reich, E. Zornansky, *Bioenergetics Dolce, New Techniques*, Milano 2006
- ⁶⁶ E. Levinas, *Otherwise than Being or Beyond Essence*, Jaka Book 1983
- ⁶⁷ D. Winnicott, *The Maturation Processes and the Facilitating Environment*, "The mother's nondemanding presence makes the experience of formlessness and comfortable solitude possible, and this capacity becomes a central feature in the development of a stable and personal self ... This makes it possible for the infant to experience ... a state of 'going-on-being' out of which ... spontaneous gestures emerge. In Greenberg & Mitchell, 1983, p. 193
- ⁶⁸ The negative effects of a structured therapy and help system show when we have to deal with the delicate and complex dynamics typical of living beings. If we analyze the data we have of assisted childbirth and all the medical help that goes into giving birth to a child it is brought up to our attention that nowadays, in the era of high-technology medicine, women seem to be completely incapable to fulfill this task without the need of synthetic drugs (synthetic oxytocin), episiotomy, forceps or c-section. Is it therefore true that the bodies of modern and post modern women have lost their ability to give birth naturally? Or maybe it all depends on how we interfere with nature?
- ⁶⁹ S. Wendelstadt, *Donna & Donna – The Journal of Midwifery*, June 1997 n° 17
- ⁷⁰ W. Reich, *Ether, God and devil / Cosmic Superimposition*. New York: Farrar, Straus & Giroux, page 55, "[...] just as all emotions and reactions in life spring from and correspond to organ sensations and expressive movements; just as the living organism forms ideas of its surrounding world from impressions it derives from the expressions of the world around it; so all emotions, reactions and ideas of the armored organism are conditioned by its own state of motility and expression [...]".
- ⁷¹ Deformation of sensory perception "given by the protective defenses of character that separate us, at varying intensities, in a partial object between partial objects, perversion of the concept of self-perception in a I separate actor from their plasma emotionally expressive movement." Cfr. E. Chiappini, P. Madl, M. Tosi. On this side of the principle of minimum stimulus. *Centro Studi Eva Reich Milano*.
- ⁷² W. Reich, *The bioenergetic meaning of truth, in Murder of Christ*, 1953

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- ⁷³ W. Reich, (1951). The emotional plague of mankind, volume 1: the murder of Christ. New York: Orgone Institute Press, pages 167-168.
- ⁷⁴ W. Reich, (1973). Ether, God and devil / Cosmic Superimposition. New York: Farrar, Straus & Giroux, page 96.
- ⁷⁵ R. Sassone, Education for soul searching. Without a body there is no spirit, Anima Edizioni, Milano 2012
- ⁷⁶ R. Sassone, The search for love. A bridge between Reich and Sri Aurobindo, Anima Edizioni, Milano 2007
- ⁷⁷ W. Reich (1973). Ether, God and devil / Cosmic Superimposition. New York: Farrar, Straus & Giroux, page 107.
- ⁷⁸ W. Reich, Natural roots of reason, in Cosmic Superimposition, 1951. In Theory of orgasm and other writings. Lerici Publishers, Milan, 1961.
- ⁷⁹ W. R. Bion, Transformations. The transition from learning to growth, pag. 204, Armando, Roma 1973; in M. Epstein, The continuity of being. A positive psychology for the West, Ubaldini Editore, Rome 2001
- ⁸⁰ W. Reich, The discovery of Orgone: experimental research of biological energy, "Any form of self-perception is immediate expression of objective processes in the body (psycho / physical identity)", in Theory of orgasm and other writings. Lerici Publishers, Milan, 1961.
- ⁸¹ W. Reich, The expressive language of living substance in orgone therapy. [...] Evidently, language derives from sensations perceived by body organs. For example, the German word *ausdruck* and its equivalent "expression" exactly describe the language of the living organism: the living organism expresses itself in movements; we therefore speak of "expressive movements". Expressive movement is an inherent characteristic of the protoplasm. It distinguishes the living organism from all non-living systems [...] the physiological process of the plasmatic emotion or expressive movement is inseparably linked to an immediately comprehensible meaning which we want to call the "emotional expression". Thus the movement of the protoplasm is expressive of an emotion, and emotion or the expression of an organism is embodied in movement [...]"(1972). Character analysis. New York: Farrar, Straus & Giroux, pages 358-359.
- [...]An organism that uses most of his energies to conceal their vital nature, can only be unable to understand the life around him. [...]", In Theory of orgasm and other writings. Lerici Publishers, Milan, 1961.
- ⁸² Winnicott, D.W., "Memories of birth, birth trauma and distress" in Through Paediatrics to Psychoanalysis, Martinelli, Firenze 1975, p. 221.
- ⁸³ W. Reich, "[...] the falling sensation is, thus, the perception of a contraction of the autonomic system just as it is about to expand [...]" (1973). The cancer biopathy. New York: Farrar, Straus & Giroux, page 182.
- ⁸⁴ H. Bergson, Duration and Simultaneity, 1922, Cortina Publisher.
- ⁸⁵ Birth and death, are in fact for the constructive way in which the reality surpasses the words. This reduces complacency of what we believe to be; they shake us from the torpor of the ego reassurance and support us to transform us into the flow of what happens. Silja Wendelstadt spoke of the birth as a spiritual event.
- ⁸⁶ W. Reich, (1972). Character analysis. New York: Farrar, Straus & Giroux, page 445. "[...] We must further assume, if we follow logically, step by step, the different levels of coordination and the corresponding functions of the organism, that RATIONALITY, activity that is purposeful and meaningful in regard to the environment and one's own bio-energetic situation, now also appears as a function of emotional and perceptual coordination. It is obvious that no rational activity is possible so long as the organism is not functioning as a whole in well-coordinated fashion [...]"
- ⁸⁷ W. Reich. (1973). Ether, God and devil / Cosmic Superimposition. New York: Farrar, Straus & Giroux, pages 194-195. [...] the world of organomic "energetic" functionalism is a vigorously functioning, free and consequently lawful and harmonic world. It has no room for a vacuum in space, which the mechanistic physicist requires because he is incapable of making sense of nature in any other way; neither has it room for ghosts and phantoms, which

mysticism cannot demonstrate. Also the world of functionalism is not “shadow world”, as is the world of the abstract mathematician. It is a world that is tangible, full, pulsating, and simultaneously demonstrable and measurable [...].

⁸⁸ S. Wendelstadt. The principle of the minimum stimulus and the self-regulatory process. Franco Angeli Editore, Milan 2010

⁸⁹ Fritz Albert Popp, a precursor of quantum physics biophotonics, was the director of the Institute of Biophotonics. He has proved in laboratories in Germany the existence of biophotonics radiation of living substance and the cellular and intercellular communication through quanta of photon energy. F. A. Popp, Die Botschaft der Nahrung Verlag 2001 Frankfurt / Main 1999.

⁹⁰ Wilhelm Reich, in his biophysical studies of the orgone energy on the functionalism of living organisms gives a special ability and affinity of the biological water intra and extracellular to interact with what he called orgone energy. He observes the relationship and behavior in flow and stagnation's processes in the body's energetic pulsation and its function in antidegenerative processes in biopathies. It is interesting that quantum research on the functionalism of living systems today is advancing considerable progress in the discovery of the biological properties of water as informational carrier of electromagnetic waves capable of creating coherence domains of oscillations in phase, the functional to the electrochemical exchanges and to the self-organization of living systems.

⁹¹ E. Del Giudice, P. R. Spinetti, A. Tedeschi. The dynamic water source of the metamorphosis of living organism's processes. Published: September 3, 2010 on Water ISSN 2073-4441 www.mdpi.com/journal/water;

E. Del Giudice Spinetti P.R., Tedeschi A, 2010 Water Dynamics at the Root of Metamorphosis in Living Organisms. Water, 2, 566-586;

E. Del Giudice, A. Germano. 2009 Water Autocatalysis in Living Matter. Electromagnetic Biology and Medicine 28, 46-54;

Montagnier L, Aïssa J, Ferris S, Montagnier JL, C. 2009. Lavallée Electromagnetic Signals Are Produced by Aqueous Nanostructures Derived from Bacterial DNA Sequences. Interdisciplinary Science, Computing Life Sciences 1, 81-90.

E. Del Giudice. The role of water in the living substance, 2006 Physical Review;

"Quantum physics in general, describes the physical reality as a set of objects in close relationship with a comprehensive Quantum Vacuum, which then establishes a connection between all objects. The key to having an "active" matter, and then living, is the ability to decrease the entropy. This point was emphasized by a number of pioneers like Schroedinger, Szent-Gyorgyi, Prigogine, who introduced the concept of negentropy or negative entropy, as the key to understanding the living state. Advances in modern quantum field theory, showed the central role of electromagnetic interactions between molecules to achieve this goal. In this framework the liquid water has a peculiar property, not shared by the other molecular species, which makes it suitable to give rise to the phenomenon of life. In fact, in the case of liquid water, the coherent oscillation of the electron clouds of molecules which gives rise to the formation of Domains of Coherence, occurs between a low energy configuration in which all the electrons are strongly bound within the molecule and an excited state of high energy in which for each molecule an electron is almost free, in the sense that the residual energy of binding is extremely small. Thus while the incoherent molecules of water cannot give up electrons, the domains of coherence of the water have a strong tendency to give up electrons thus becoming elements chemically reducing, or may give rise to excited states because of any external energy input to the Coherence Domain it may give rise to the formation of collective excited states (vortices) of this set of quasi-free electrons. The Domain of Coherence of liquid water unlike domains of coherence of other molecular species is likely to give rise to a large number of excited states. Consequently, there's the possibility of a further level of coherence generated by 'collective oscillation of a plurality of Domains of Coherence of the water between two configurations: a coherence between Domains of Coherence, or a Supercoherence, that, on the one hand makes it grow the size of the related region by the tenth of a micron of the Domains of elementary coherence of the water up to micron of the cells, to centimeters of the organs or to the meters of higher organisms". We must not lose sight that water is the element that in greater extent constitutes the living matter, in man the content of water in the human body, according to Gerald Pollack, professor of bioengineering at the University of Washington, is lapping 99%.

⁹² W. Reich, Etere, Dio e Diavolo, Ed. SugarCo, 1994