

## East-west-Monitoring: What is the Relation between the “Water” - “Fire” Axis of the “Bagua” and Long-Range Coherence Effects in Biological Systems?

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### Abstract

The focus of this work is to consider some properties of water via an East-West-Monitoring where the statements of the Daoistic way of thinking, especially the I Ging with the 64 hexagrams, with the new results of Western Science, referring to animate biological systems. In the Daoistic way of thinking the oneness, brings out the Yin and Yang that further creates all the things. Two trigrams are combined, representing the inner and outer Bagua, and the whole is called Hexagram, while 64 hexagrams is the basis of the I Ging. Those 64 Hexagrams can further separated in “early and late heaven” via the Bagua by trigrams, or split into 32 Hexagrams, representing the wheel of live. In the Daoistic way of thinking, eight trigrams represent the Bagua by their encoding and allocated by a metaphoric description, which can be at least partially transformed in a physical meaning as well. In combining them with the “mystery” of Latin squares offers new perspectives, e.g., in ordering the periodic system basing on protons, which might be a fractional code further. In western science philosophy, the ontological and epistemological level could be considered as an equivalent. While on the ontological level, a physical prediction is made of the whole world and on the epistemological one, the material world is described. The Daoistic way of thinking and the peering results in physics in Western, considering the interpretation of the quantum field theory by Bohm, Heim and the string theory by Susskind or the Randall-Sundrum models are compared respectively. In string theory, a supersymmetry is assumed and by broken symmetry the observable things are created, which obey the known physical laws in our world. It is speculated that the “string theory” with hidden layer of physical laws that goes by now beyond quantum mechanics - and herein, some “customized agreements” have been made to obtain the upright “Denkgebäude” in a conservative scientific view - could be a combination of the early and late heaven according to the Daoistic way of thinking.

The scientific investigations of the medium water conclude on the ontological level, “Life is more than water”. Therefore, in animate matter the nervous system demands a basic “simple”, low energy level constructed highly redundant rapid communication system (HRRCS) with an also high flexibility and manipulability. Such a system could be realized via the body-water and the extracellular matrix (ECM). Recent results concluded that the behavior of the body-water on both sides of cell membranes plays a specific role while a good observable parameter might be the pH-value of them, which differs much from the pH-value of the blood one. Considering the Hyaluronic acid in the human body, which is widely distributed throughout the soft connection tissue, epithelial and neural tissue, could support such a system in physiological terms. By using the Yin-Yang theory considering also the phases of changes, the “water-phase” possesses the properties of passivity, structure and regeneration and seems a sound assumption as a working hypothesis for this attempt of comparative scientific study. Water by all its properties should be the interconnecting medium in biological systems that can be easily manipulated, e.g., via electromagnetic fields and mental force. Long-range coherent electromagnetic phenomena could establish a hologram in biological systems. This could be a hint for the many somatotopic areas/points as conduits in Chinese Medicine and the swirls in the Vedic theory, a body-information system. Performed experiments in biological systems show similarities with the full detail investigated superconducting circuits using solid-state bodies where the function taking advantage of the AC and DC Josephson effects.

**Keywords:** Electromagnetic wave propagation; General theory in fluid dynamics; Vortex dynamics; Rotating fluids; General theory and mathematical aspects; Biological information; Philosophy of sciences; Metrology; Coherent structures; Holography; Life science; Central nervous system; pH-value; Genetic; Regulation medicine

### East-West-Monitoring

The concept of East-West Monitoring is visualized by the schematic drawing in Figure 1 according to Daoistic way of thinking [1-3]. It is an attempt in order to compare the statements of the daoistic way of thinking with the new results of Western Science, referring to animate biological systems, mainly of the both scientific disciplines physic and biology.

Probably one can put it in that way of the thinking of the German physicist W. Heisenberg: “The whole is greater than the sum of its parts.”

In the Daoistic way of thinking the mind creates the oneness, which brings out the Yin and Yang that further creates trigrams. Those trigrams

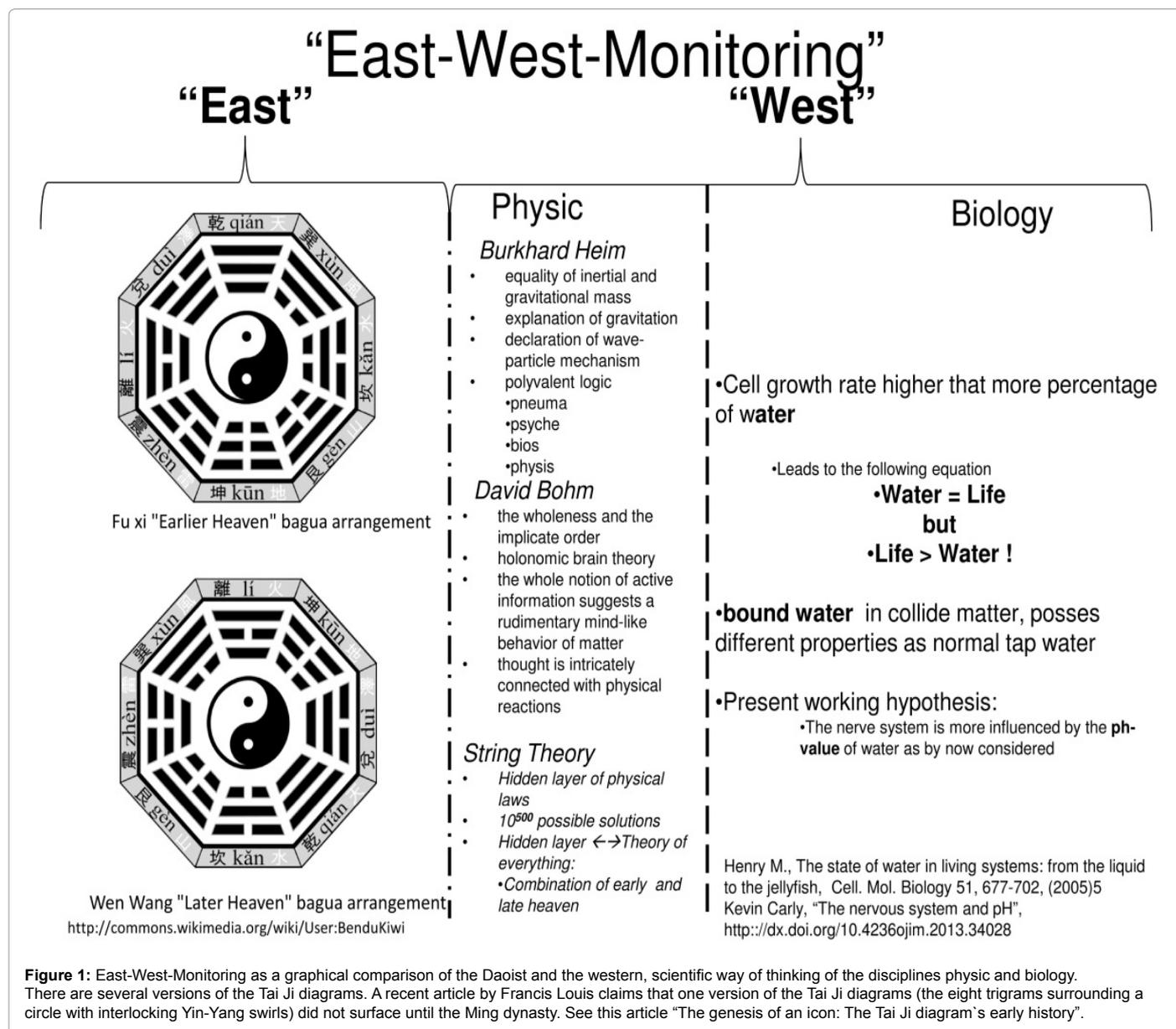
create all the things, which are represented by the 64 hexagrams and called I Ging. The ordering of trigrams, in the so-called “Bagua”, as schematic drawing is shown in Figure 1, is basing on a twofold orderings system, which is named the “early heaven” and the “late heaven” [4]. The ordering “early heaven” or “Ho Tu” could be understood as higher regulations, e.g., divine laws, plan or information and not accessible general, respectively.

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Interesting is here, that an allocation for yang=1 and yin=2 leads to the number 9 of the opposite trigrams and this number stands for the immutability. This philosophy has been in retrospect attributed to the person Fu Xi, which represents a static system and common used. The ordering called "late heaven" or "Lo Shu" [5,6] represents the material ordering, introduced by the Chinese emperor Wen. In contrast to the immutability of the "early heaven", the forces move in a cycle at the periphery of the circle and represent the eternal growth and decay. While the first "wheel" possess no imbalance and is in perfect harmony as in contrast the second "wheel" represents the earthly life and their reality, the appearances. Both wheel in a mutable exchange but represent to completely different worlds. The combination of both wheels is usually called "the wheel of life". More elucidated details can be found by Unschuld & Tessenow, Van Osten & Porkert [1,7,8].

In Western Science philosophy, there is the distinction in an ontological and epistemological level, and that seems to be comparable in the context of the meaning. While on the ontological level, a physical

prediction is made, in order to describe the whole world. Here, there is the theoretical, infinite information without any contribution to pay to the nature. On the epistemological level, we have the wisdom about the world that describes our knowledge about the world. In contrast, here, there is the concrete, finite information with the payment of a contribution to the nature [9].

In the following paragraph, essential specialized concepts are briefly explained, which are considered for the comparison of Western Science philosophy with the Daoistic way of thinking and shown in Figure 1.

In Heim's quantum theory, the "whole reality" consists of an "energy space" and an "information space", also called "consciousness" represented by a 12-dimensional space. Therefore, the "information space implies that the observer is included during a measurement, which is inherently coupled with the observer. The 6-dimensional energy space is our "perceivable world" and represented by 64 elements with the matter in the foreground.

In Bohm's quantum field theory the essential idea is the notion of implicit order, which means that everything is enfolded in to everything like a hologram. The “wholeness” of the observing instrument and what is observed is new and in contrast to nowadays physics. This means that the mind is not divided by matter.

In the mathematical String theory all the particles, all forms are constructed by vibrations of hypothetical 1-dimensional strings or 2-dimensional branes. By doing so, a multidimensional space is created and compacted. It is not a single theory and it turns out that at least  $10^{500}$  different solutions can exist. Due to this vast numbers, only those solutions can be realized that have physical laws in our world. The string theory, and here the M-Theory – where M stands for, e.g., matter, matrix master mystery etc. describes the world in an 11-dimensional space. Further, a supersymmetry is assumed and by broken symmetry the observable things are created, which obey the known physical laws in our world.

By now, it is speculated that the “string theory” with hidden layer of physical laws goes by now beyond quantum mechanics (Figure 1).

It is noticed, that in Heim's theory the numbers of dimensions are 64 in this theory and this corresponds remarkably to the 64 Hexagrams in the I Ging. Bohm's theory and the String theory look like, as it would be a combination of the “early heaven” and “late heaven” according to the Daoistic way of thinking as shown in the schematic drawing in Figure 1. Heim's quantum field theory separates in an “energy space” and “information space”.

A closer look to the tertiary coding of the “Bagua” and its interpretation is briefly given in the following paragraph.

It is astonishing that a binary code appears here and this is in contradiction to the Chinese characters, “*Hanzi*”, and implies possible a different origin. More information can be found for a deeper understanding in the cited books, while probably they could give an approach to the answer [4,10,11]. Basing on the Yin-Yang theory, further conclusion will be manifest in the following paragraphs. The binary code arranged in the trigrams, are represented in the following manner, Yang by a stroke (—) and Yin by a dashed line (- -). Each of these phases of changes [12] are now represented by a tertiary code and called the inner “Bagua” [13]. By doubling the trigrams, the outer Bagua is created where the second trigrams are the outer trigrams and the both trigrams are combined to Hexagrams of the I Ging and can be interpreted as an energy pattern. The Bagua for the “late heaven” is represented by eight states, which should keep each other in balance and leads to four axes via the opposite trigrams. The different axes are named as following, the space-axis between (“kien-kun”) (“heaven-earth”), the dynamic-axis (energy) between (“xun-dschen”) (“wind-thunder”), the transformation axis (time) between (“kan-li”) (“water-fire”), and the elasticity-axis (pulse) between (dui-gen) (“see-mountain”). In this work the transformation-axis (time) with opposite trigrams kan (“water”) and li (“fire”), is considered.

The second category, named “Western science”, is subdivided in the scientific disciplines physics and biology. Nevertheless, keeping in mind that this category should be extended by the fields of emotion and spirit in order to find a unified description of the material world. In this way, partially the ontological level is considered but here in this work, almost neglected to the easy. According to the Daoistic way of thinking, those categories certainly have an immense influence on the behavior of at least animate matter, but rather difficult to combine here in this work. At the discipline physics the quantum field theory as

considered by Burkhard Heim, David Bohm and the string theory for describing the microcosms is favored since the material world is seen as a wholeness of implicate order and corresponds closer to the Daoistic way of thinking in the opinion of the author [14,15].

In Western Science, water in general is considered in every culture and in the scientific disciplines, as physic and biology, it plays an eminent key role. Corresponding to its energetic interpretation, see next paragraph, it possesses in the presence a strong force of the trigram water. The meaning of strong power in the presence is a starting hint for the east-west- monitoring. On the site of Western Science, and here in the discipline Biology, the investigations of the medium water in the past and recently, it was found that Cells growth rate is higher that more percentage of water. This experimental result, on the epistemological level, leads to the conclusion “*water is life*” due to the growth rate of cells, and this is obviously a simplification and therefore false. However, going a step ahead and taken in account the ontological level, the conclusion would be, “*life is more than water*” [16-18]. An important finding here is that bound water in collide matter possess different properties as normal tap water. This leads to a paradigm change in that way that the nerve system is more influenced by the pH-value of water [19].

In this work, the ordering of the trigram, which represents a tertiary code, the ordering of the “*early heaven*” is considered in order to work out a plausibility explanation of “water” and the opposite trigram “fire”, in both meanings on the transformation-axis and more elucidated in the next paragraph.

A schematic drawing is seen in Figure 2, and it is striking that in the Daoistic way of thinking, the Yin Yang theory leads to a sinusoidal behavior of the energies according to the phases of changes. Two coarse categories are assigned as Yin and Yang.

According to the ancient time in Chinese philosophy, starting from the Wu Qi it is subdivided via movement process leading to a polarization and called with abstract items old yin and old Yang. Then these items are further divided in essential (- -) and transformed (→←) Yin and essential (—) and transformed (☛) Yang 5. The aim is to have now an ordering of the polarization, which is controllable. In the Daoism way of thinking, Yin possesses the properties conservative, structure, regeneration while Yang is represented by functionality, expansively, and mobility. A further subdivision of Yin via the phases of changes leads to the metaphorical designation “Metal” and “Water”. The “Metal” phase is responsible for relaxation, while the “Water” phase is allocated to structure creating. In the same manner, the subdivision of the Yang phase is assigned by the metaphorical designation of “Wood” and “Fire”. With the sequence Wood, Fire, Earth, Metal and Water, this cycle is called mutual generation. Those “five elements” could be regarded as metaphors and showing that something fundamental is going on in the environment [20]. The ordering as follow, Wood-Earth, Water-Fire, Metal is called mutual overcoming. Considering the mutual overcoming the axis “Water”- Fire, which is also called a transformation axis, as mentioned above, via chemical processes [5]. The trigrams itself can own also a chronical reading via the strokes. The bottom line represents the past (ancestry), the middle line the presence of (dominance) and the top line the future (aim, destination). In the case of the trigram “Water”, one can read, that it stems in the past from the essential yin(- -), possess a strong force in the presence by essential yang(—) and goes in the future back to essential yin again(- -). The trigram “Fire”, the bottom line (—) is essential yang in the past, in the presence it is essential yin (- -) and then in the future goes back to essential yang (—) again. Related the trigrams on the transformation

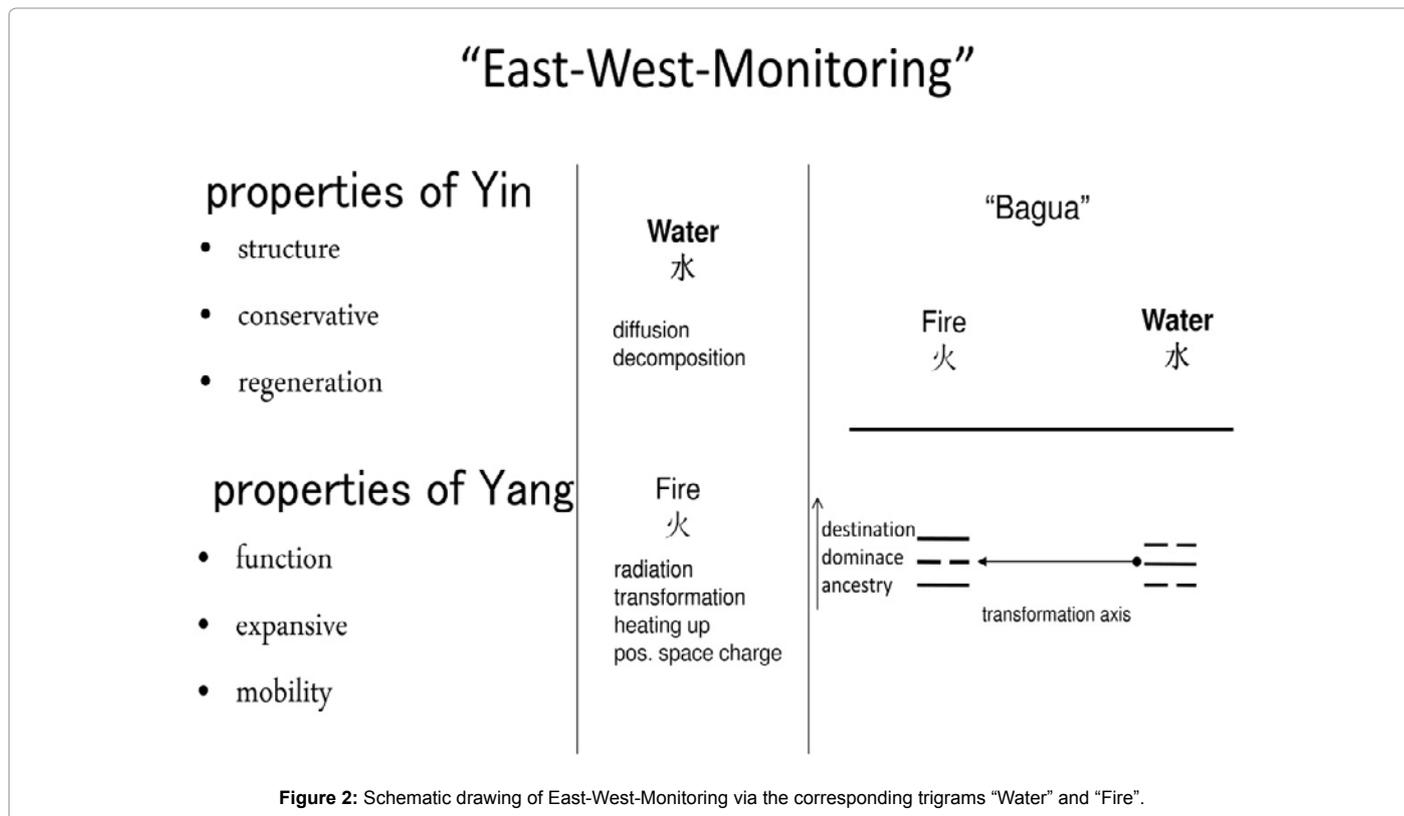


Figure 2: Schematic drawing of East-West-Monitoring via the corresponding trigrams “Water” and “Fire”.

axis in the Bagua via the mutual generation, the following conclusion can be drawn. The transformation axis considered in the presence form the trigram “Water” to the trigram “Fire” transforms from essential yang to essential yin, which could be interpreted also that a diffusion process leads to a condensation via a chemical reaction. The stored energy in “Water” in the structure undergoes a diffusion-like process and leads to a functionality via radiation, which also can be interpreted as a signal that contends information. In other words, the phase “Water” thus has the task to establish and simultaneously store energy in the structure. This stored energy can be used via a transformation process for functionality in the “Fire” phase. In other words, “Water” controls “Fire”. The mutual overcoming cycle between the elements “Water” and “Fire” obeys a transformation and can be seen that starting from a structure in the end radiation process is settled which therefore provides information too. Now to interpret this fact in Western science and especially in animate matter such kind of process is known as proton jumping with the aid of a “chain” as structure and a signal is rapid distributed and will be explained in the corresponding paragraph where proton jumping is considered. It should be noted that in the early embryonic state, the parenchyma is completely water.

So far, these above mentioned items and classification could probably correspond in Western science as the four basic forces, as gravitation, electromagnetism, strong and weak interaction forces. In the oneness or unification theory the string theory is thought that all four forces where unified before the so called “big bang” or one could think also of an ignition by a movement or one frequency. Meanwhile it turns out in string theory that at least  $10^{500}$  different solutions possible [21].

What is found in Western science and especially for the physical state water is worked out as following. Apparently, the similarities to the western, scientific findings in water, where crystalline structures

creating a network are observed, are striking. If one considers that water is setting up structures they should show a survival time at least in the range of  $10^{-11}$  up to  $10^{-12}$  s [22]. It is known that such kind of structures basing on super molecules are weak bonded and can easily be influenced. This could be an advantage but also a disadvantage when weak forces, the van de Waals forces, are likely to be very easily affected by electromagnetic fields [23]. In this context, one must the mental force to bear in mind. The work of Chaplin and Pollack regarding the water give insight in the behavior on the road of scientific Western mind. Since the water can form three-dimensional networks, it is obvious that the structure building on the Platonic solids takes place. Such coupling can lead to weak coupled “grain boundaries” and act as “weak-links” which possess superconducting properties. By using, the Josephson Effect, long-range coherence needs brief explanation in terms of biological systems [24-27].

Considering “long-range”, is of spatial nature and occurs in space, e.g., in crystals (periodic or aperiodic), even as imprints in water. In biological system, this term stands also for a synchronized cell growth or, in time, or frequency.

The term “coherence”, is in physics defined by two wave generators, which independently produce waves with the same frequency and a constant phase difference (phase-shift). The established steady states are spatial and/or in frequency, ranging up to quantum regimes. Thus, quantum coherence has the potential to create novel properties on a macroscopic scale. In the case of superimposed light-waves, they are able to construct a hologram, and in the case of non-optical waves, via probability-fields, quantum cryptography could be established.

Recent experimental results from the Rosetta-mission show that the water on earth stems probably from weft of asteroids [28]. This sounds well compared to chronical reading of the trigram “Water”: coming

in the past from the essential yin (- -), possess a strong force in the presence by essential yang(-) and goes in the future back to essential yin again (- -).

Probably an important conclusion can be made when one takes into account the recently ongoing project who should give explanations about the creation of life on earth. Thus, another mosaic for the “East-West-Monitoring” would be delivered.

### Construction of a Highly Redundant Rapid Communication System

The basic question is how the energy, named by different expressions like Prana, Entelechie, Lebenskraft and Qi, supplies the animate matter. All biological systems need a ground regulation in this intermeshed control loop system in animate matter [29,30]. The focus of this contribution is to suggest a suitable mechanism for this highly intermeshed system that is able to supply/assist these servo loops with higher priority as a part of the regulation medicine. It is assumed that the highly developed nervous system demands also a highly redundant rapid communication system (HRRCS) by the aid of the extracellular matrix (ECM). The strongest candidate is on the basic level the body-water and reasoned as aforementioned. Probably on the following level then, with the most occurring and important structure components, a system of proteoglycans and glycosaminoglycans (PG/GAGs) [29,31] and has been already reported by Fromknecht in 2013 [32].

The metabolic processes could be very fast and work in the picosecond range. Therefore, in combination with the nervous system, this is getting aware of deviations from the desired value above a threshold value, in at least one order of magnitude lower on the time scale, probably most of them in the millisecond range. Therefore, the suggested HRRCS should now provide the information like a hologram for the nervous system that in turn samples the data, probably on the macroscopic scale via the pH-value of the body-water, in order to react via the cerebral system above a certain threshold value. A hint for such kind of underlying system would be the many somatotype areas/points in the human body. Such system should possess at certain areas/points, where one has an access in order to manipulate the animate matter in the whole. Those areas are well known as acupuncture points, conduits or Head'sche zones [33]. Concluding, by treating on the physical/biological level, one influences not only those levels, also the emotional/spiritual level of animate matter in this case. This is supported via the morphologic relation of the inner organs to dermatomes and viscerocutaneous reflections and vice versa, which take place evanescently effectively from the point of maximum.

Further, considering the electro-magnetic behavior [24,34] the system should own long-range coherent properties while it is speculated as one possibility, it could act superconducting-like via the well-known Josephson Effects according to evidenced experiments in the past [17,24,35].

Under this assumption, a system is now established and possesses properties for very high sensing and sampling rate of set point deviations at different levels. The nervous system is now able to re-establish the desired value via the vegetative system by short-range ordering on local and/or long-range-ordering at non-local parts.

### Histological Arguments

Cramer investigated the Water content percent in fresh tissues of an adult mouse of bounded body water in several organs of an adult mouse and in the embryonic state [36]. Water is essential and acts as a medium

|                        |                                     |
|------------------------|-------------------------------------|
| • Liver                | 72,3%                               |
| • Muscle               | 75,8%                               |
| • Heart                | 77,9%                               |
| • Kidneys              | 77,2%                               |
| • Spleen               | 78,8%                               |
| • Testis               | 83,0%                               |
| • Brain                | 80-85%                              |
| • Blood                | 83%                                 |
| • Embryo               |                                     |
| - 15 day old           | 90%                                 |
| - 20 day old           | 84%                                 |
| ** carcinoma in mice's | 80-86%                              |
| • water by molecules   | 99%                                 |
| • water by mass        | 48%(female) - 75% (new born infant) |

**Table 1:** Water content of an adult mouse.

for the base-regulation via its macroscopic measurable pH-value [16]. According to C.W. Smith who found out, ... reversible pH changes [37] occur when frequencies are imprinted into water and on erasure. A frequency in a coherent system like water has fractal-like properties inter-linking the optical, microwave and low frequency regions of the electromagnetic spectrum all of which can interact.

In contrast, non-reversible deviations could lead to malfunctions, and as the desired value deviation lasts on a long term it can become larger, while chronic decays could appear. Describing such a complex regulating system, The Lorenz attractor in the chaos theory could be considered for the system instability and therefore the recovering process. Meanwhile, several experiments in Western Science verified these facts by Smith, Pollak and Pokorny [16,17,20]. Thus, the pH-value [19] of the body-water should be considered more carefully under the circumstances of the nowadays findings (Table 1).

The realization of a highly redundant rapid communication system could probably be done on the basic level by the body-water via the soft connection tissue, which is the biggest “organ” in the animate matter and connects every part of the body via the cell membranes inside and outside [38]. Therefore, it possesses the best conditions in order to establish such an effective structured pathway system acting as a complementary system to the nervous system. It is assumed that the information is stored as a standing wave pattern, like a hologram. In this control loop, all the other processes are then launched on a different time scale in order to re-establish the desired value of the living system via a homeostasis in combination with the nervous system.

There exist many theories concerning the meridians/conduits, reticular planes -a finer web interconnecting the meridians/conduits- and acupuncture points. It is emphasized that liquid crystals, e.g., in water, collagen fibers and the hyaluronic acid probably are responsible for transmission of sound waves, longitudinal waves, and/or transversal electromagnetic waves, (TEM) and a charging up in the soft connective tissue and acting as a bulk for the entire body [39-41]. By now, experiments evidenced, that not only one single frequency appears as Fröhlich proposed, but several frequency-bands are observed [17]. The different frequencies in this broad frequency spectrum, including optical modes, so-called bio-photons, even their measurable intensity is weak has to be taken into account [42]. In addition, Needham, a British

biologist and sinologist, found that the protoplasm, nowadays named cytoplasm, in living system acts actually as liquid crystals, with many metastable phases [43].

A connecting argument for the transport mechanism in inanimate and animate matter could be that the proton balance in a confinement undergoes a phase transition, probably a quantum phase transition [44], and behaves superconducting-like via Josephson Effects.

## Tetrahedral Structures

The significance of the Polyhedrons has been studied for thousands of years, and they are very important in Physics, Chemistry and Geometry [45]. A curiosity is that the five Platonic solids in the metaphoric meaning could correspond to the five elements used in the Daoistic way of thinking. Starting from a line, as an abnormal Platonic solid [46], up to polyhedrons, the Eulersche polyhedral axiom is obeyed. Those polyhedrons are a central part in crystalline superconductors, e.g., in Yttrium-Barium-Copper-Oxide (YBCO), a well-known studied perovskites structure [47]. The unit cell of this structure possesses two base plane faced octahedrons, separated via a small gap. The octahedral contents in the base plane four oxygen atoms and an apex copper atom while inside rest a. As a working hypothesis let us assume, and according to the vortex theory, that a vortex turns inside the octahedron and consisting of an in- and outward spinning vortex. The radius of the vortex at the base plane should be wider while on the top is getting narrow corresponding to the vorticity respectively. In the case of superconductivity of the orthorhombic phase of this perovskite structure, superconducting current flows in the Cu-O base plane, which is higher as the current in the chains along the octahedral side. In addition, it has been found that the oxygen apex atom plays a central role for the superconducting properties [48], probably steering the vortex behavior and influencing the superconducting current in the base plane. In addition, an two-dimensional superconductor with interesting electric, magnetic and structural properties is formed when a sodium cobalt oxide is oxidized in order to reduce its sodium content, and intercalated with water to further separate the cobalt oxide layers, ( $\text{Na}_{0.35}\text{CoO}_2 \cdot 1.3\text{H}_2\text{O}$ ) offers probably new perspectives [49]. In this case, the quintessence suggests that the both layers  $\text{CoO}_2$  and  $\text{H}_2\text{O}$  have the similar underlying physical mechanism. In all above-mentioned systems, the tetrahedral structure plays an important role related to superconducting properties. In addition, it is remarkable that Takada already suggest in the year 1994 the NaCoO system as a strong candidate for superconductivity - long-range coherence- but could succeed only after oxidative intercalation of water in 2003. Among these so-called unconfirmed superconducting objects (USOs) should be careful considered and whether or not the crystal-water plays a significant role for such long-range coherence effects via tetrahedral structures even in inanimate matter [50]. Further, in a thought experiment according to Heim's theory, one can take in account the equivalence of the electrical field acting as a mass that under a strong confinement the ordering of the long-range coherence increases strongly and leads to pathways with superconducting-like behavior at high temperatures as achieved by now. Therefore, according to the “Bagua” a hint might be given via the transformation axis of “Water” and “Fire”.

## Proton Chains - Information System

In biological systems, it is observed that water chains forms also tetrahedral and the charge transport is performed via a proton-jump along the water chain [51]. The effect is basing on water and the water molecules, formed from two hydrogen's and one oxygen atom and the common angle for the charge equilibrium by repulsion is usually found

to  $105^\circ$  and not at  $180^\circ$  between the hydrogen atoms acting than as a dipole [22]. Many studies of water revealed that all the crystallographic structures around us can be realized therein what a very profound and meaningful statement is. In the case of aligned water molecules with their opposite charge in a chain, it seems theoretically possible that a proton jumping could take place like a Newton cradle [41]. Then, the proton does not moving along the chain, but the chain behaves like a pendulum where the impetus is given by a proton bump. This mechanism is much faster than electrons can do in a wire and in addition much faster as ions can do by diffusion. Investigations of trapped water in carbon nanotubes, where the water enters via defects in the nanotube wall lead to the discovering of proton-chains therein [35]. The finding indicates that the charge transport therein is a jumping mechanism of the protons as aforementioned while no reaction with the tube wall took place. Summarizing these facts, water in the confinement behaves much different from that of bulk water while creating a new phase. Probably the confined water molecules therein undergo a phase transition [44] and set up an information system via the proton jumping that is very much faster as the saltatorial signal propagation in the nervous system.

We speculate that the HRRCS works at a much higher signal velocity as the nervous system but the initiation is still an open question. Deviations from the desired value appears as a standing wave pattern and gives the impression of a modulated memory while the control loop is reading out and changing the information until the setpoint is achieved. It is assumed that in the entire matrix a standing wave pattern as a hologram exist, and only precise interference pattern are stored who are basing on coherent “light”, and this demands Boson states. The latter implies that the superconducting-like behavior seems possible via Bosons. Therefore, the entire HRRCS acts as a holographic detector, probably creating liquid Nano crystals in order to establish this hologram. However, it seems that still very controversially discussed phenomenon's could be simple modeled by Bragg reflection via a crystal as in solid-state physics.

In addition, the Yin-yang theory of the Daoistic thinking, yin is associated with the properties, structure, passive, comprehensive and yang defines the functionality, active, expanding properties.

In the case of surplus protons in the cell, the homeostasis of water content is not anymore sustained, and a hyperpolarization is caused. This leads to a higher activity via Adenosine triphosphatase (ATPase) and additional metabolic processes starts for compensation while also an interaction with the Deoxyribonucleic acid (DNA) takes place probably including the HRRCS. Further, the homeostasis of the cells, concerning the ion equilibrium between internal (cytosol) and the external (interstitial) medium, this equilibrium has to be constant and dynamically supported by diffusion mechanisms or by active or not transport based specific exchanger. This process in general takes a velocity of milliseconds as in the nervous system transmission as well.

As a matter of the fact, the information distributes to all other cells as aforementioned via the HRRCS. We like to emphasize that the HRRCS acts as an example that the physical, biological, chemical and metabolic levels combines for the ground regulation.

## Superconducting-Like Behavior?

Here the non-optical wave fields as aforementioned are considered as a possibility at least a part of this HRRCS in living biological systems.

Fröhlich already reported about a superconducting-like effect basing on long-range coherent electromagnetic phenomena in biological living systems [39]. In his model, the cells act as oscillating

dipoles with a non-vanishing dipole moment where the ECM is considered as heath bath. A set of dielectric dipoles causing a large number of minimized energy states where on the macroscopic scale the phases of the dipoles are correlated and describable by the behavior of superconductors rather than by the Maxwell equation in this state. In recent experiments it was justified that in nearby domains of biological systems the criteria for Josephson are obeyed, e.g., excluding magnetic fields and quantized in the correlated region similar as Fröhlich found earlier by Trinchler [52]. The coupling of the cells could act like weak-link-junctions in superconductors that are separated by a small gap [27]. Those configurations have been extensively investigated in the past by Muller [53]. The quantum tunneling of bosons across such barriers was proposed by Fröhlich for biological systems.

Using the dc- and ac-Josephson effect, the HRRCS can now be permanent in contact with the entire body-water in order to use them as a memory as well. Therefore, it is then understandable that deviations of the desired value often show signs on different parts of the body -leading to mental state troubles- and can be manipulated via local and non-local points. The HRRCS possess probably at least two signal transmission methods, a proton jumping mechanism and a Josephson-like effect, and probably both exist according to local conditions at the same time.

This physical property could probably allocate the metaphoric phrase “Fire” who possesses the properties of radiation, or high frequency, according to their explanation. The mentioned Josephson effect involves a frequency to voltage (energy) conversion at  $h/2e \sim 484 \text{ MHz}/\mu\text{V}$ .

An adventuring speculation is made by comparing the model of the physicist Burkard Heim [54] where nowadays experimental findings, among them high-energy experiments, show a surprisingly equivalence according to the concept of East-West-Monitoring.

## Conclusion and Outlook

In summary, the findings from a comparative scientific point of view lead to the following conclusions:

1. Similarities seem to be possible that would support the working hypothesis of East-West-Monitoring.
  - According to the Daoistic way of thinking, it exist an ordering via the Bagua in an “early heaven” and “late heaven” who represents the unaccusable laws –the divine order- and the laws in the material world, respectively.
  - It has long been the presence of the material and nonmaterial world has known. In the theory of Burkhard Heim, they are defined as physical space in the “reference system” and “information space” in the “Hyperspace”.
  - The String theory with the possible  $10^{500}$  solutions seems to be a further approach in order to describe the “both world” on an ontological and epistemological level, while the “whole” could be interpreted as a hologram.
2. The base-regulation demands an effective highly redundant rapid communication system (HRRCS) on the microscopic level in biological systems.
  - It works in combination with the nervous system.
  - It provides the information of the whole body and probably acts simultaneously as a memory like a hologram.

- The nerve system is more influenced by the pH-value of the body-water as by now considered via this HRRCS.
3. At least three mechanisms could be taken in account for the signal transmission.
    - The water phase transition in confinements in the organic molecules and in the ECM as well resulting in a proton jumping in the water chains.
    - The web of Bong Han ducts will probably act on a higher ordered level in this system.
    - The system undergoes a phase transition and shows phenomena like long-range coherence via superconducting-like behavior with Josephson Effects.
  4. The Daoistic way of thinking, with the 64 hexagrams of the I Ging, describes the DNA [55], the number of cell division of the stem cells until the specification sets in, and last not least in the Royal Chess, 64 fields are used which is the number of the combined trigrams of the I Ging.

These ideas could be an alternative according in the way of thinking of Feynman, ... when the problems are too much in the clutter we have to go new ways since the old methods stuck already in the beginning [56].

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