

PHENOMENOLOGY OF MERIDIAN (PSYCHO)THERAPIES AND QUANTUM-HOLOGRAPHIC PSYCHOSOMATIC-COGNITIVE IMPLICATIONS

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Abstract. Meridian (psycho)therapies is a common term covering a group of new alternative (psycho)therapies created in the past decade, based on ancient teaching of psychosomatic disorders on the level of energetic field in and around human being, proving in practice that many psychological and emotional problems can be successfully treated in quantum leaps, without the need to pass through long and laborious stages of discovery, emotional and cognitive restructuring, often considered to be the trade marks of serious psychotherapy. Their fast removing of traumas, phobias, allergies, post-traumatic stress and other psychosomatic disorders, *via* simultaneous effects of visualization of the psychosomatic problems and tapping/touching of some acupuncture points, in the framework of our quantum-holographic Hopfield-like model of acupuncture-based psychosomatic disorders might be interpreted as 'smearing' and associative integration of the disorder-related-memory attractors through successive imposing of new boundary conditions in the energy-state space of acupuncture system/consciousness during visualizations of the psychosomatic problems – demonstrating close relationship between consciousness and acupuncture system. In our presentation fundamental field-related macroscopic Hopfield-like quantum-informational basis of the underlying quantum-holographic paradigm will be also considered, with implication that whole psychosomatics might be considered as a quantum hologram, both on the level of individual and collective consciousness.

Keywords: *meridian (psycho)therapies, psychosomatic disorders, traumas, persistent phobias, allergies, post-traumatic stress, transpersonal psychology, acupuncture system, consciousness, bodily hierarchical Hopfield-like neural networks, quantum neural holography, quantum decoherence, quantum-holographic paradigm, explicate order, implicate order.*

1. INTRODUCTION

Meridian (Psycho)Therapies is a common term covering a group of new alternative disciplines created in past several years [1-4], which imply that *acupuncture system* is closely related to *consciousness* and *psychosomatic disorders*. They are based on the ancient teaching about *energetic field* in and around human being, *meridian paths* inside that field and *vital energy chi (qi, prana ...)* circling through them, integrated with modern psychological knowledge. Their goals are elimination of unwanted emotional, psychological and physical states, and in some of them like PEAT (*Primal Energy Activation and Transcendence*) [2], an expansion of consciousness and spiritual maturity and development. Although in present moment they do not have scientific validation behind them, results they are getting day after day is the reason why they are attracting so wide and growing attention, thus opening new vistas in healing and to new revolutionary paradigms in our understanding of human being. For many common psychological conditions they represent the most rapid, effective and painless treatment possible, because they proved in practice that many psychological and emotional problems can be successfully treated in quantum leaps, without the need to pass through long and laborious stages of discovery, emotional and cognitive restructuring, often considered to be the trade marks of serious psychotherapy.

On the other hand, the prevailing scientific paradigm considers information processing within the central nervous system as occurring through *hierarchically organized and interconnected neural networks* [5-7]. It seems that this hierarchy of biological neural networks is going down sub-cellular *cytoskeleton* level, being (according to some scientists) a kind of interface between *neural* and *quantum* level [8]. The last one having within the Feynman propagator version of Schrödinger equation *analogous* mathematical formalism as the Hopfield associative neural network [6]. The mentioned analogy opens additional fundamental question - how *quantum* parallel processing level gives rise to *classical* parallel processing, which is a general problem of relationship between quantum and classical levels within the *quantum decoherence theory* as well [9] (for details cf. App. 5.3); naturally, the same question is closely related to fundamental nature of *consciousness*, whose indeterministic manifestations of free will [10-12] and other holistic manifestations of consciousness, like transitional states [12] and altered states of consciousness [13], conscious/unconscious transitions and consciousness pervading body [14] – necessarily imply that some manifestations of consciousness must have *deeper quantum origin*, with significant *psychosomatic and transpersonal implications*.

2. MERIDIAN (PSYCHO)THERAPIES

The Meridian (Psycho)Therapies are also called Energy (Psycho)Therapies, because of the common observation of majority of practitioners that psychological problems can be understood as manifestations of energy disruptions of energy configurations in the human energetic field. In essence, systems of *Energy/Meridian (Psycho)Therapies* (EMPTs) represent an application of the energy paradigm to the removal of psychological and emotional aberrations, diseases, and other maladies. The proponents of these therapies believe that the causes of these aberrations are disturbances in the energy field (or aura) of a human being, fundamentally manifested as energy structures, which naturally manifest themselves neurologically, biochemically, cognitively and behaviourally. The introduction of the energy paradigm into the fields of psychotherapy and spiritual technology represents a quantum leap in the understanding of these important areas, since it makes us look at them from an entirely different viewpoint. Psychological problems are resolvable far faster if we approach them as if they were disturbances in energy fields, than if we start searching for their historical causes - as was characteristically done in earlier times, beginning from the Freud psychoanalysis. Changing the structure of the energy fields that are at the roots of problems is enough to create healing or a shift in the Spiritual Consciousness. In this presentation we shall mention just few main systems of EMPTs, and then briefly review main differences between them and our PEAT [2].

Thought Field Therapy (TFT) was invented by clinical psychologist Roger Callahan, who started this energetic revolution in psychology and psychotherapy. TFT entails diagnostic procedures to determine meridian disbalance, combined with percussing at specific acupuncture points in a prescribed sequence (algorithm) in order to treat an array of psychological problems. *Emotional Freedom Technique* (EFT) was developed by Gary Craig, one of the first disciples of Roger Callahan; he founded it on the same basis as TFT, but, judging by the statements of many practitioners, it is simpler and more efficient than TFT, because it uses just one algorithm for all disturbances. *Tapas Acupressure Technique* (TAT) was created by Tapasvini Fleming, who fruitfully connected her knowledge of acupressure with meridian systems; briefly, TAT is a 'do-it-yourself' therapeutic technique, based on traditional Chinese Medicine, which is extremely efficient with all kinds of allergies, sensitivities with different kinds of food and negative environmental influences. *Eye Movement Desensitization and Reprocessing* (EMDR) was developed by Francine Shapiro, and works by diminishing sensitivity through eye movements and

reprocessing traumatic incidents; it is simple and efficient method for healing traumas and disorders connected with anxiety.

Finally, we shall briefly review a few main differences between our *Primal Energy Activation and Transcendence* (PEAT) and other EMPTs [2]: (1) In most EMPTs the subject taps certain points on his/her face, body, or fingers (hence, the popular name 'Tapping Therapies'), while in PEAT one lightly puts two fingers on the points (without pressure or rubbing), take one deep breath, exhale, and remove them a few seconds later; (2) In ultimate Deep PEAT a client focuses on the suppressed unconscious contents which come up to the surface of his/her consciousness; (3) In its application we now use only 3 points; (4) In contrast to other EMPTs, in the beginning of Deep PEAT we do not pay attention to the strength of unwanted states, because our goal is not to diminish the problem, but to resolve it completely at its deepest possible level, at its root. (5) The PEAT Processor does not end the session until the problem is resolved, and on average a session lasts from 20 to 45 minutes; (6) The basis and greatest value of Deep PEAT is that we do not pay too much attention to the problem we are working with, but rather on the contents of the mind, which bubble up very quickly to the level of awareness; most of these contents are unwanted psychological states, negative thoughts and limiting beliefs, uncomfortable physical sensations and wrong decisions we once made; (7) Deep PEAT goes to the deepest possible level of the problem, its essence and root, so we are able to find and neutralize the client's *Primal Polarities or shortly Primes*, thereby resolving many problems that previously appeared in the chain of contents; (8) PEAT is therapeutic method, and at the same time a system of Spiritual development, although such a division is artificial because Spiritual development has therapeutic effects and clearing (resolving) his/her problems makes the Being more free; (9) As a method of healing PEAT is a transpersonal EMPT, which removes quickly, easily and elegantly whole chains of traumas and other negative contents without emotional abreactions, by releasing blocked energetic currents in the aura of a Being, and making conscious and neutralizing opposites from extremely remote times: problems, destructive fantasies, compulsions and obsessions, blockages, entities, implants etc.

It should be added that if a person wants to get to the deepest root of some permanent problem or some unwanted experience, he/she must discover his/her Primordial Polarities or Primes, even if he/she does not make a conscious decision to do this. Person usually never heard of them. They are his/her most fundamental polarities, his/her first Yin and Yang. Between them human being plays his/her most fundamental game of life, compulsively and unconsciously. Primordial Polarities or Primes are the first pair of confronted polarities which he/she neutralizes during the Deep PEAT, presumably because their emotional charge is the strongest as they are the root of all our larger life problems, so they are first to emerge in the field of consciousness from the deep unconscious. In the moment of their Neutralization, they stop being polar opposites, they merge and become One. In that moment Being recovers own spiritual and psychological freedom – this valuable and exciting experience being the end phenomenon of PEAT process – which opens higher dimensions of consciousness (Void, Great Unmanifest, Quantum Vacuum, Implicate Order... etc.) and the next phase in the Spiritual and psychological development of human beings [3]. We are now standing on the verge of it.

Let us mention our recently developed processes [4]: *DP4 Method*, *Basic PEAT*, and *Fore-Finger Method*, having in common that they do not use associative chain of arising contents – but 'frozen' picture or snap-shot of most dramatic and strongest moment of unwilling experience or problem.

DP4 Method is fourth level of Deep PEAT, which requests along with imagination of 'frozen' picture an alternative using of only one 'insight' acupuncture point in the internal corner of both ocular orbits: by touching right-hand point, related to rational and logic left-

hand hemisphere, it is requested from the client to feel himself/herself 'here and now', and to report the four elements he/she feels in this moment (psychic picture, thought, emotion, bodily sensation). Then by touching left-hand point, related to holistic and emotional right-hand hemisphere, it is requested from the client to feel problematic situation as if it is happening now, and to report their four elements. The client should move in his/her imagination alternatively between two situations (two polarities) and two points on the face, and very quickly these polarities will be empty. If the treated problem is related to some being or group, it is necessary to do circular process, i.e. from other viewpoints. If this method is used to create some new desired state, feeling or identity, the client put his/her right-hand fingers on the right-hand point and feel himself/herself 'here and now', and then put his/her left-hand fingers to the left-hand point and feel himself/herself within the snap-shot of the desirable situation.

Basic PEAT requests along with imagination of 'frozen' picture an alternative using of the three acupuncture points around both eyes. Unpleasant experience disappears mostly in one treatment. The method has proved efficient not only in removing actual problems, but also in removing hard, chronic disorders.

Fore-Finger Method is the newest method, efficient for removing even very hard traumas. The method uses centripetal rotation 3-4 times counterclockwise around client's bodily axis, with client's previous closed-eyes visualization of the 'frozen' problematic situation. The client pays attention and reports four elements of that experience, alongside with putting the top of fore-finger in the center of this traumatic picture and imagining that the picture is stuck on the top of the fore-finger. The method is as simple as efficient. If the treated trauma is related to some other person(s), and trauma is not completely removed at the end of the process, it is necessary to do circular process, i.e. from all relevant viewpoints (just points of view which are emotionally charged).

3. BODY'S HIERARCHICAL NEURAL NETWORKS: COGNITIVE AND PSYCHOSOMATIC IMPLICATIONS

As demonstrated by *quantum-coherent characteristics* of the Russian-Ukrainian school of *microwave resonance therapy* (MRT) [15,16], the *acupuncture system* is the only *macroscopic quantum system* in our body (while brain still seems not to be [17]!) which might be related to consciousness. And as recent investigations show that any quantum system has formal mathematical structure of *Hopfield's quantum-holographic associative neural network* [6] - then (acupuncture-meridian temporary-reprogrammable [18,19]) *memory attractors of the quantum-holographic acupuncture network* (cf. Fig. 1) can be treated as *psychosomatic individual disorders* representing EM/MW (*quantum*) *holistic records* - which might represent biophysical basis of (*quantum*)*holistic local psychosomatics* [12,18,20]!

At the same time, the mentioned analogy between mathematical formalisms of *Hopfield's associative neural network* and *Feynman's propagator version of the Schrödinger equation* implies that *collective consciousness* is possible *ontological property of the physical field itself* [12,18] with various micro-quantum and macro-quantum (both non-biological and biological) excitations, which is widely spread thesis of *Eastern esoteric/religious traditions* [21] - and then *memory attractors of the quantum-holographic space-time network of collective consciousness* (cf. Fig. 1) can be treated as *psychosomatic collective disorders* representing *generalized (quantum)holistic field records* (including interpersonal hesychastic-prayer finally-reprogrammable loads [18,22]) - which might represent biophysical basis of (*quantum*)*holistic global psychosomatics* [12,18,20]!

So it seems that the *whole psychosomatics is quantum hologram*, both on the level of *individual and collective consciousness*, which resembles Hinduistic relationship *Brahman/Atman*

(‘*Atman is Brahman*’ [21]), as wholeness and its part which bears information about wholeness. The mentioned quantum-holographic picture also implies that quantum-holographic hierarchical parts carry information on wholeness, enabling subtle *quantum-holographic fractal coupling* of various hierarchical biological and non-biological levels in Nature: acupuncture-based-quantum-informational (un)intentional control of ontogenesis and morphogenesis, starting from the first fertilized cell division which initializes differentiation of the acupuncture system of (electrical synaptic) "gap-junctions" [23]; quantum-holographic language-influence on the genes expression [24], as well as global fractal-information coupling of hierarchical levels in Nature [25] (for details see App. 5.1-2).

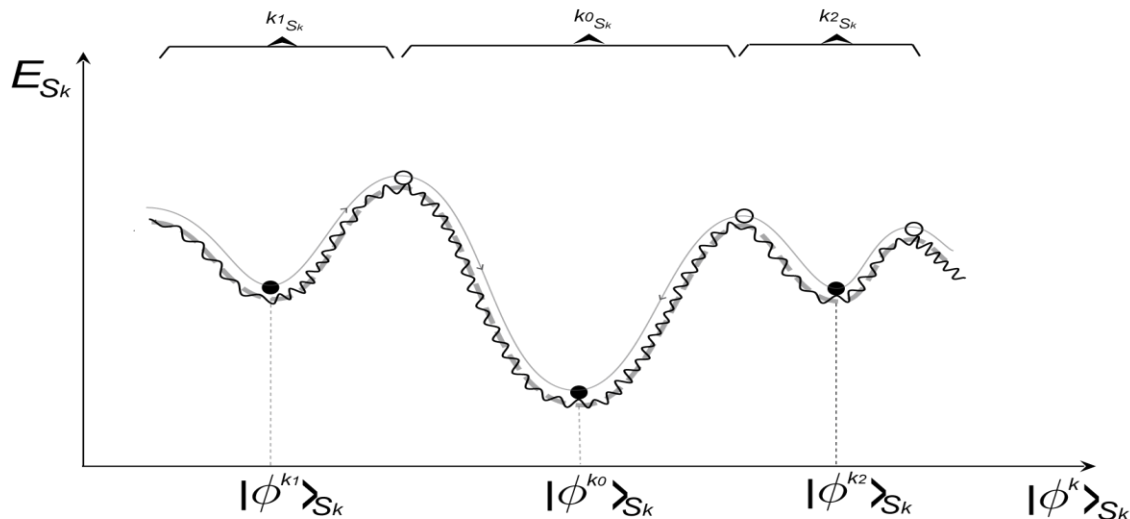


FIGURE 1. Schematic presentation of the memory attractors in the energy-state ($E_{S_k}(\phi^{k_i})$) hypersurface of the *open macroscopic quantum acupuncture system/consciousness* [6,12,18] (as quantum-holographic bases of psychosomatic disorders, being more than 400 in basic classification of the *Tibetan traditional medicine* [19]). It should be pointed out that *quantum decoherence* presumably plays *fundamental role in biological quantum-holographic neural networks*, through presented *energy hypersurface shape adaptation* – which implies that Nature presumably has chosen elegant *room-temperature solution for biological quantum-holographic information processing*, permanently *fluctuating between quantum-coherent states and classically-reduced states of acupuncture system/consciousness* S_k , through nonstationary interactions with out-of-body farther environment and through decoherence by bodily closer environment [12]. The same might be related to *lower hierarchical quantum-holographic cellular enzyme-gene level* (which also functions on the level of permanent *quantum-holographic-like cellular quantum-conformational* molecular recognition), as well as to *higher hierarchical level of quantum-holographic collective consciousness* and related (*quantum*) *holistic global psychosomatics* (with religious/social implications on necessity of transpersonal spiritual quantum-holographic removing of all unwilling side memory attractors, which non-reprogrammed by prayer will unless cause psychosomatic diseases and interpersonal fights in this and/or further generations they are transpersonally and unconsciously transferred to, on the level of collective consciousness) [12]. See App. 5.1 for details.

Also, according to our theoretically elaborated relationship [8,15,21] *individual consciousness/acupuncture system* i.e. EM-ionic quantum-holographic Hopfield associative neural network, *esoteric notions* such as *astral body* (*manomaya, lingasarira, manovijnana, ka, psyche, subtle body, psychic body, soul...*) and *mental body* (*vijnanamaya, suksmasarira, manas, ba, thymos, noetic body, spiritual body, spirit...*) might be biophysically related to *out-of-body displaced part* (connected with the body by miniature 'wormhole' space-time tunnel/'silver

ribbon' of the vital energy chi/prana [4,26,27]) of the ionic acupuncture system, and to embedded EM component of ionic microwave ULF-modulated currents, respectively [12].

Then *transpersonal interactions* [28-34] might be interpreted [12] by *collapse-like consciousness-channeled quantum-gravitational tunneling of operator's individual consciousness* – mentally addressed on the target's content of collective consciousness in operator's (short-lasting) transitional states of consciousness – *thus intentionally channeling composite state of the 'field' of target-under-influence-of-operator part of collective consciousness, and automatically influencing complementary 'particle' output in quantum-gravitationally-induced and consciousness-channeled collapse* (for details see App. 5.2).

4. MERIDIAN (PSYCHO)THERAPEUTIC IMPLICATIONS

Previously described *Meridian (Psycho)Therapies* for very fast removing traumas, persistent phobias, allergies, post-traumatic stress and other psychosomatic disorders (cf. Sect. 2), in combination with theoretical concept of bodily quantum-holographic hierarchical neural networks (cf. Sect. 3), demonstrate close relationship between acupuncture system and consciousness and psychosomatics!

So, simultaneous effects of *visualization* and *tapping/touching of some acupuncture points* might be interpreted as *smearing and associative integration of the memory attractor of psychosomatic disorders* (cf. Fig. 2), *via successive imposing of new boundary conditions in the energy-state space of acupuncture system/consciousness, during visualizations of the psychosomatic problems [18] – in associative sequence during Deep PEAT, in 'frozen' picture during Basic PEAT, or in alternating visualizations of the polarities of self/problematic situation in DP4 Method.*

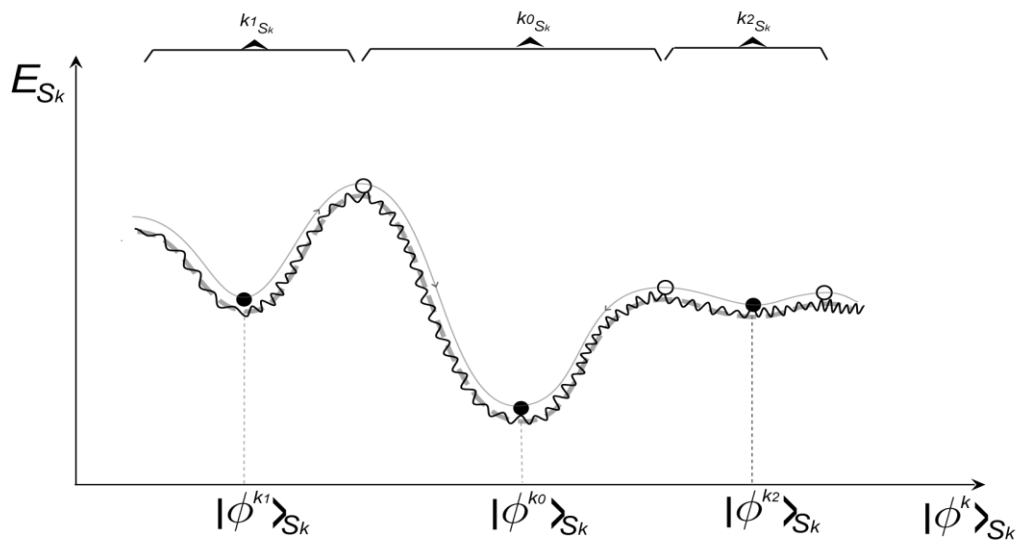


FIGURE 2. Schematic presentation of 'smearing' and associative integration of the memory attractor of psychosomatic disorder ϕ^{k_2} into normal ego-state ϕ^{k_0} , via simultaneous effects of visualization of the psychosomatic problems and tapping/touching of some acupuncture points, in meridian (psycho)therapies – which might be interpreted as successive imposing of new boundary conditions in the energy-state space of acupuncture system/consciousness $E_{S_k}(\phi^{k_i})$ – when memory attractor of the initial psychosomatic disorder ϕ^{k_2} (cf. Fig. 1) becomes shallower and wider (in Fig. 2), with greater overlap and followed associative integration into memory attractor of normal ego-state ϕ^{k_0} .

On the other hand, removing of traumas by *Fore-Finger Method* via centripetal rotation 3-4 times counterclockwise around client's bodily axis, with client's previous visualization of the 'frozen' problematic situation, might be theoretically interpreted as *smearing and associative integration of the memory attractor of psychosomatic disorders* through continuous imposing of new boundary conditions in the energy-state space of acupuncture system/consciousness, but also as additional *discharging of the memory attractors of psychosomatic disorders* – in contrast to external charging of the aura by (aero)ions which would be spontaneously going on through rotational clockwise flow of ions, chi/prana (and the same can be achieved by corresponding meditative visualization). The similar polarities are related to clockwise/counterclockwise rotations of chi within acupuncture points, on left-hand/right-hand pair meridian [35], to forward/backward or upward/downward orientations within aura, for states good/bad, pleasant/unpleasant, or useful/harmful – which can be easily detected by so called *muscular test* from the *Applied Kinesiology* [2].

Having in mind very high efficiency of transpersonal circular meridian (psycho)therapeutic processes, i.e. from all relevant mentally-addressed viewpoints of other persons involved in the treated trauma, this implies that these interactions of the trauma-related persons have quantum-gravitational origin *via* miniature 'wormhole' space-time tunnels in transitional states of the trauma-related persons (or 'silver ribbons' of vital energy of the astral/mental body, extrasensory observable in altered states between heart, stomach or throat chakras of the interconnected persons; in African-Haitian voodoo magic the 'silver ribbon' between the operator and the victim is intentionally created by visualization, while in Hawaiian hooponopono tradition the 'silver ribbon' is cut by visualization thus removing traumatic emotional relationship – which otherwise naturally exists between mother and child, and spontaneously arises by intense exchange of the vital energy between relatives, close collaborators, actual or ex-lovers, friends and enemies, and can even persist *post mortem* between the alive and dead persons [4]).

It should be pointed out that discovery and neutralization of the client *Primordial Polarities (Yin-Yang)* during *Deep PEAT*, points to most fundamental roots of client's compulsive and unconscious life game, i.e. on deep roots of thought processes on the very borderline (*quantum-coherent*) *implicate order* – (*classically-reduced*) *explicate order* of the quantum-holographic individual/collective consciousness. In the moment of neutralization and getting conscious of *Primordial Polarities*, on the one hand they become quantum-entangled in quantum-coherent state of the *implicate order*, and on the other hand they become psychologically integrated in classically-reduced state of the *explicate order* of client's consciousness – and Being regains its spiritual and psychological freedom out of previously unconscious and compulsive life game.

In this context it is worth mentioning to point out discovery of the *Tibetan Buddhism*, that there exist more than 84.000 possible psychic 'entities' or 'thoughts' (created by separation from Oneness on the very borderline of (*classically-reduced*) *explication* of quantum-holographic individual/collective consciousness) and that their cloned associative constructs (i.e. memory attractors) overflow our consciousness [4], as carriers of some sort of 'meta-language' of altered states of consciousness.

5. APPENDIX: SCIENTIFIC BASES OF QUANTUM-HOLOGRAPHIC PARADIGM

In Talbot's excellent book *The Holographic Universe* [26], he refers to renown quantum physicist David Bohm [36] and neurophysiologist Karl Pribram [37], whose investigations imply that *Universe* might be a *giant quantum hologram*, a kind of *mind construct on the subject/object interface* – thus relativising a question *whether objective reality exists or fluctuate between implicate and explicate order!*? In his book, Talbot (himself extrasense!) argues that most of well documented *mysterious phenomena*:

- *synchronicity, lucid dreams, eidetic pictures, multiple personalities,*
- *viewing and therapy of aura, visualizing, hypnotic and miraculous healings,*
- *mystical religious, out-of-body and near-death experiences,*
- *psychometry, precognition, extrasensory perception,*
- *psychokinesis, materialization, teleportation,*

whose well *documented review* represents special value of this book, might be presumably explained in the framework of (still controversial) *quantum-holographic paradigm*.

5.1 Quantum and Classical Neural Networks: Local and Global Cognitive and Psychosomatic Implications

In the context of contemporary *investigations of quantum-holographic bases of consciousness and their fundamental cognitive-epistemological and psychosomatic-religious implications, association of individual consciousness to macroscopic quantum acupuncture system, and application of theoretical methods of associative neural networks and quantum neural holography and quantum decoherence theory, imply two cognitive modes of consciousness, according to the coupling strength consciousness-body-environment* [12,18,38,39]:

- *weakly-coupled quantum-coherent direct one* (in religious/creative transitional and altered states of consciousness, like prayer, meditation, creative dozes, lucid dreams...),
- *strongly-coupled classically-reduced indirect one* (in perceptively/rationally mediated normal states of consciousness, like sensory perception, logical and scientific thinking...),

with conditions for mutual transformations - and significant *religious and epistemological implications* related to re-gained strong coupling of quantum-holographic contents of consciousness with bodily-environment, classically-reducing directly obtained quantum-coherent informational content – thus explaining *in principal non-adequate informational rationalization* of any direct quantum-holographic spiritual/religious *mystical experience* (as a general problem of the quantum theory of measurement, of reduction of implicate order of quantum-coherent (quantum-holographic) superpositions into explicate order of measured projective quantum and mixed classical states [38]!).

So it seems that science is closing the circle, by *re-discovering two cognitive modes of consciousness* and at the same time by imposing its own *epistemological limitations* – as it was preserved for millennia in *shamanistic tribal traditions* [40], or as it was concisely described by Patanjali in *Yoga Sutras*, pointing out that mystical experience (samadhi) is 'filled with truth' and that 'it goes beyond inference and scriptures' [41,42], or as this difference between faith and knowledge was formulated at the beginning of the last century by Berdyaev in his *Philosophy of Freedom* as the difference of two modes of cognition, prayer-mediated 'comprehension of the affairs invisible' and rationally-mediated 'comprehension of the affairs visible' [43]!

At the same time, the *analogy between mathematical formalisms of Hopfield's associative neural network and Feynman's propagator version of the Schrödinger equation* [6] additionally implies that *collective consciousness is possible ontological property of the physical field itself* with various micro-quantum and macro-quantum (both non-biological and biological) excitations [12,18], which is widely spread thesis of *Eastern esoteric/religious traditions* [21] – and then *memory attractors of the quantum-holographic space-time network of collective consciousness* can be treated as *psychosomatic collective disorders* representing *generalized (quantum)holistic field records* (including interpersonal *hesychastic-prayer finally-reprogrammable* loads [22]) – which might represent *biophysical basis of (quantum) holistic global psychosomatics* [12,18], with *religious/social implications* on necessity of *transpersonal spiritual quantum-holographic removing* [33] of all unwilling collective memory attractors (which non-reprogrammed by prayer will unless cause psychosomatic diseases and interpersonal fights in this and/or further generations they are transpersonally and unconsciously transferred to, on the level of collective consciousness).

The same might be related to *lower hierarchical quantum-holographic acupuncture system/individual consciousness* S_k , with memory attractors (states) $\phi^{(k_i)}$ in the energy-state $E_{S_k}(\phi^{k_i})$ hypersurface (schematically presented in Fig. 1) and *its quantum-holographic memory/propagator* [6,38,39]:

$$G^{(k)}(\mathbf{r}_2, t_2, \mathbf{r}_1, t_1) = \sum_i \phi^{(k_i)}(\mathbf{r}_2, t_2) \phi^{(k_i)}(\mathbf{r}_1, t_1)^* = \sum_i A_{k_i}(\mathbf{r}_2, t_2) A_{k_i}(\mathbf{r}_1, t_1) e^{\frac{i}{\hbar}(\alpha_{k_i}(\mathbf{r}_2, t_2) - \alpha_{k_i}(\mathbf{r}_1, t_1))}$$

which might represent *biophysical basis of (quantum)holistic local psychosomatics* [12,18].

It should be pointed out that *quantum decoherence* might play *fundamental role in biological quantum-holographic neural networks*, through *energy hypersurface* $E_{S_k}(\phi^{k_i})$ *shape adaptation* (in contrast to *low-temperature artificial qubit quantum processors* where it must be *avoided* until the very read-out act of quantum computation [44]!) – which implies that Nature presumably has chosen elegant *room-temperature solution for biological quantum-holographic information processing*, permanently *fluctuating* [45] *between*

quantum-coherent states $|\phi^k(t)\rangle_{S_k} = \sum_i c_{k_i}(t) |\phi^{k_i}\rangle_{S_k}$ and *classically-reduced states* $\hat{\rho}_{S_k}^k(t) =$

$\sum_i |c_{k_i}(t)|^2 |\phi^{k_i}\rangle_{S_k} \langle \phi^{k_i}|$ of *acupuncture system/consciousness* S_k , through non-stationary electromagnetic interactions with out-of-body farther environment and through decoherence by body's closer environment [38,39].

The same might be related to *lower hierarchical quantum-holographic macroscopic open quantum cellular enzyme-gene level*, which might be also functioning on the level of permanent *quantum-conformational quantum-holographic like* molecular recognition (through changes in operator of macromolecular electronic-conformational density of states $\hat{\rho}_e(t)$) – so that *quantum neural holography* combined with *quantum decoherence* might be very significant element of the feedback *bioinformatics*, from the level of cell to the level of organism [38,46].

All this additionally imply that the *whole psychosomatics is quantum hologram* [18,38,39], both on the level of *individual and collective consciousness*, which resembles Hinduistic relationship *Brahman/Atman* ('*Atman is Brahman*' [41,42]), as wholeness and its part which bears information about wholeness. The mentioned quantum-holographic picture also implies that quantum-holographic hierarchical parts carry information on wholeness, enabling *quantum-holographic fractal coupling* of various hierarchical levels:

- *acupuncture-based-quantum-informational (un)intentional control of ontogenesis and morphogenesis*, starting from the first fertilized cell division which initializes differentiation of the acupuncture system of (electrical synaptic) "gap-junctions" [23];

- *meridian (psycho-energetic) therapies*, with very fast removing of persistent phobias, allergies and other psychosomatic disorders [1-4], demonstrating closest relationship of consciousness and acupuncture system;
- *quantum-holographic language-influence on the genes expression* [24], with implications of great psychosomatic significance of thought-emotional contents;
- *global fractal-information coupling of hierarchical levels in Nature* [25] (out of which the most fascinating is mathematical discovery of 'Bible Code' on the level of preferences of collective and individual history coded within The Old Testament – which might be interpreted as a consequence of *global quantum-holographic coupling of cosmic collective consciousness* (God!?) and *its every original manifestation* (including *The Old Testament*, as well as every *individual consciousness* (Tesla and Mozart as examples of *miraculous deep creativities* [39])) - which still *does not mean the strict determinism of the History* by the existing state of collective consciousness, whose memory attractors could (and should!) be *reprogrammed by hesychastic prayer for the others* thus removing interpersonal loads of the quantum-holographic Hopfield-like neural network of collective consciousness - so leaving the room for *free will and influence on the future preferences* [12,18,21,22,43]).

It should be pointed out that on both cellular and acupuncture levels, there exist *two* (interacting) macroscopic quantum subsystems – first with *modifying many-electron hypersurface* $E_e(\phi_e^{(k)})$ and second with *modifying EM multi-phonon hypersurface* $E_v(\phi_v^{(k)})$.

In particular, dynamic modification of the many-electron energy-state hypersurface $E_e(\phi_e^{(k)})$ of the *cell's quantum-ensemble* protein/substrate macroscopic open quantum system (through changes in operator of density of states $\hat{\rho}_e(t)$), is a natural consequence of coupled electronic-conformational processes – which implies potential possibility to consider cell's biomolecular recognition as *Hopfield quantum-holographic associative neural network* – with assuming *standard cell's local treatment of quantum ensemble of non-interacting dynamically non-coupled N distinguishable* quantum biomolecular proteins of the same type (and their corresponding biomolecular classes of substrates) [47]. However, there is an alternative possibility of *holistic cell's non-local treatment of quantum system of non-interacting dynamically coupled N in-distinguishable* quantum biomolecular proteins of the same type (and their corresponding biomolecular classes of substrates) – when dynamical modification of many-electron energy-state hypersurface of cell's biomolecular protein macroscopic open quantum system (and analogously their corresponding biomolecular classes of substrates), can be best represented in the formalism of *second quantization* [48], which treats all biomolecules of the same atomic configuration as *in-distinguishable* quantum particles which occupy different isomeric-conformational states (which automatically provides a *plausible quantum-holistic* picture of biological cell, and especially *phenomenologically approved quantum-holographic coupling* of various hierarchical levels, *from-biological cell-to-acupuncture system/consciousness-to-collective consciousness*, with significant psychosomatic and cognitive bioinformational implications [5-7,12,19-22]).

In this second quantum-holistic cellular approach – the mentioned cell's *N*-particle protein quantum state is considered in quantum-mechanical *occupational basis* (generally bosonic, because of protein-substrate integer spin due to even number of their covalent-bonded electrons!), describing number of proteins which occupy complete set of protein-substrate *isomeric/conformational states*: $|n_0 n_1 n_2 \dots\rangle_e$, with conditions $N = n_0 + n_1 + n_2 + \dots$ and $E_{S_{ke}} = n_0 E_e^{(0)} + n_1 E_e^{(1)} + n_2 E_e^{(2)} + \dots$ (where E_{S_k} is the many-electron energy of the total cell's protein-substrate *N*-particle isomeric/conformational state, while $E_e^{(0)}$, $E_e^{(1)}$, $E_e^{(2)}$... are the

many-electron energies of the protein quantum isomeric/conformational states 0, 1, 2, ...). An many-electron energy-state hypersurface of such protein N -particle isomeric/conformational state has a schematic representation of Fig. 1, where internal surface of every minimum is proportional to the partial energy ($n_i E_e^{(i)}$) of the i -th protein isomeric/conformational state occupied by n_i isomers of the same form ($i = 0, 1, 2, \dots$), so that total energy ($E_{S_{ke}}$) of the cell's protein N -particle isomeric/conformational state is proportional to the sum of internal surfaces of the all minima of the many-electron hypersurface.

On the same line, regarding a multi-phonon energy-state hypersurface of the all possible protein isomeric/conformational states, requires their consideration in quantum-mechanical *occupational basis* (also bosonic, because of phonon's integer spin!) – describing number of phonons occupying complete set of single-particle *phonon states* of the all protein-substrate isomers/conformations: $\left| n_1^{(0)} n_2^{(0)} \dots n_{3N-6}^{(0)} n_1^{(1)} n_2^{(1)} \dots n_{3N-6}^{(1)} n_1^{(2)} n_2^{(2)} \dots n_{3N-6}^{(2)} \dots \right\rangle_v$ where every isomeric protein-substrate complex composed of N_i atoms has generally $3N_i-6$ vibrational degrees of freedom (phonon types), out of which every phonon state can be occupied by unlimited number of phonons (which is characteristic of all bosons, i.e. particles of integer spin). It should be pointed out that an energy hypersurface of multi-dimensional phonon quantum state has also a schematic representation of Fig. 1, with potentially unlimited number of phonons in every single-phonon state. This energy hypersurface of multi-phonon quantum state might also include low-energy long-range coherent microwave Frohlich excitations (created as a result of interaction of electronic and phonon isomeric subsystems – of particular significance in microwave resonance therapy (MRT) of a dynamic modification of the EM multi-phonon (and related many-electron) acupuncture macroscopic quantum subsystem [38,47]!).

For instance, in two-isomeric protein transitions $\phi_e^{(i)} \rightarrow \phi_e^{(f)}$ there appear *dynamic modification* of both *many-electron hypersurface* $E_e(\phi_e^{(k)})$ and corresponding *EM multi-phonon hypersurface* $E_v(\phi_v^{(k)})$ of the cell's N -particle *protein macroscopic quantum system* – in full analogy with training in Hopfield's associative neural networks.

So, on the cellular level of the N -particle *protein-substrate* macroscopic quantum system, there would exist *two* (interacting) cell's *protein-substrate* macroscopic quantum subsystems – first with *modifying many-electron protein-substrate hypersurface* $E_e(\phi_e^{(k)})$ and second with *modifying EM multi-phonon protein-substrate hypersurface* $E_v(\phi_v^{(k)})$ – described by the

second quantization Hamiltonian: $\hat{H} = \hat{H}_{is}^{(0)} + \hat{H}_{ph}^{(0)} + \hat{H}_{int}^{is-E} + \hat{H}_{int}^{ph-E} + \hat{H}_{int}^{is-ph} = \sum_i E_{is}^{(i)} a_i^+ a_i$

$+ \sum_i \sum_{j=1}^{3N-6} E_{ph}^{(i,j)} b_{i,j}^+ b_{i,j} + H_{int}^{is-E} + H_{int}^{ph-E} + \hat{H}_{int}^{is-ph}$, in which a_i^+, a_i are creation and annihilation

operators of the various many-electron protein isomeric/conformational states, $b_{i,j}^+, b_{i,j}$ are creation and annihilation operators of the various phonon states in all many-electron protein isomeric/conformational states, and \hat{H}_{int}^{is-E} is a model-dependent Hamiltonian of the many-electron protein isomeric-environment interactions, \hat{H}_{int}^{ph-E} is a model-dependent Hamiltonian of the many-electron protein phonon-environment interactions, and \hat{H}_{int}^{is-ph} is a model-dependent Hamiltonian of the many-electron protein isomeric-phonon interactions.

5.2 Quantum-Holographic Religious and Transpersonal Implications

Our theoretical investigations imply *real origin of religious and other transpersonal experiences* of various traditions of East and West [21,22] – and according to our elaborated theoretical relationship *consciousness/acupuncture* EM-ionic quantum-holographic Hopfield-like associative neural network [12,18,38,39], *esoteric notions* like *astral body (manomaya, lingasarira, manovijnana, ka, psyche, subtle body, psychic body, soul...)* and *mental body (vijnanamaya, suksmasarira, manas, ba, thymos, noetic body, spiritual body, spirit...)* [21,22] might be biophysically related to *out-of-body displaced part* (connected with the body by miniature 'wormhole' tunnel of vital energy of the astral/mental body) *of the ionic acupuncture system*, and with embedded *EM component* of ionic microwave ULF-modulated currents, respectively.

Then, transpersonal interactions [28-33] might be interpreted [12,18,38,39] by collapse-like consciousness-channeled quantum-gravitational tunneling of operator's individual consciousness – mentally addressed on the target's content of collective consciousness in operator's (short-lasting) transitional states of consciousness – thus intentionally channeling composite state of the 'field' of target-under-influence-of-operator part of collective consciousness, $|\Phi\rangle_S \rightarrow |\Phi_j\rangle_S$, and automatically influencing complementary 'particle' output $|\Psi\rangle_E \rightarrow |\Psi_j\rangle_E$ in quantum-gravitationally-induced and consciousness-channeled

$$\text{collapse } (|\Phi\rangle_S |\Psi\rangle_E \rightarrow \sum_i c_i |\Phi_i\rangle_S |\Psi_i\rangle_E \xrightarrow{p_j = |c_j|^2 \approx 1} |\Phi_j\rangle_S |\Psi_j\rangle_E).$$

It should be pointed out, that in the context of *necessary conditions for decoherence* [49], defining of open quantum system and environment is – *simultaneous process* – so that in the context of universal validity of quantum mechanics consciousness is *relative concept*, non-locally also influenced by farther parts of existing observing universe (and *vice versa!*) [50], simultaneously creating conditions for the process of decoherence in the context of *existing relative borderline*:

$$|\Phi\rangle_S |\Psi\rangle_E \equiv |(partial)individual/collective consciousness\rangle_S / |(complementary)environment\rangle_E.$$

This is fully in accordance with the idea of *collective consciousness* as a possible *ontological property of the physical field itself* [12,18,38,39], with different micro-quantum and macro-quantum (both non-biological and biological, real and virtual) excitations. Then, as *cosmic collective consciousness* $|\Phi\rangle_S \sim \prod_k |\phi^k\rangle_{S_k} = \sum_i c_i |\Phi_i\rangle_S$, coincident with the 'field' of Universe, has its *complementary 'particle' cosmic environment* ($|\Psi\rangle_E = \sum_i c_i |\Psi_i\rangle_E$), their strong-interaction-coupling affects *decoherence of the 'field' of cosmic collective consciousness* into stationary *classically-reduced (observing) stochastic state*, ($\hat{\rho}_S = \sum_i |c_i|^2 |\Phi_i\rangle_{SS} \langle \Phi_i|$), with probabilities ($|c_i|^2$) of realizations of corresponding classically-decoherent states of cosmic collective consciousness; however, *cosmic composite quantum state* ($|\Phi\rangle_S |\Psi\rangle_E$) *evolves without collapse (due to absence of the complementary outside-cosmic environment!)*, which implies that *Universe as a whole is quantum hologram* subject to deterministic Schrödinger evolution [38,39]!

However, prayer-induced hypothetical macroscopic vacuum non-loaded spiritual excitations (whose exciting by prayers arises associations on 'Holy Grace' as in-deterministic intervention in otherwise deterministic evolution of the quantum-holographic cosmic (and embedded human)

History, which thus provides essentially new non-Schrödinger boundary conditions!) might modify cosmic collective consciousness ($|\Phi'\rangle_S \sim \prod_k |\phi^k\rangle_{S_k}$) and thus cosmic composite quantum state ($|\Phi'\rangle_S |\Psi'\rangle_E$), i.e. classically-reduced stochastic state of cosmic collective consciousness ($\hat{\rho}'_S = \sum_i |c_i|^2 |\Phi_i'\rangle_{SS} \langle \Phi_i'|$), so implying possibility of *prayer-optimized* [38] (most probable and energetically most convenient) *preferences of cosmic collective consciousness* (and conversely, on modification of the *cosmic-consciousness-observable* classically-reduced stochastic state of the complementary "particle" cosmic environment ($\hat{\rho}'_E = \sum_i |c_i|^2 |\Psi_i'\rangle_{EE} \langle \Psi_i'|$), implying possibility of *prayer-optimized* (most probable and energetically most convenient) *preferences of future cosmic alternatives!*).

5.3 Implicate and Explicate Orders of Quantum Hologram and their Observation

From the above there appears that classically-reduced level (of quantum system/ consciousness $\hat{\rho}_S(t)$ or environment $\hat{\rho}_E(t)$), is permanently emerging from and dissolving into quantum-holographic level ($|\Phi(t)\rangle_S |\Psi(t)\rangle_E$) (cf. Fig. 1), and this permanent pulsating is going on extremely fast – with observing Bohm's *explicate order* of either average state of so called classical mixtures (of quantum system/consciousness $\hat{\rho}_S(t)$ or environment $\hat{\rho}_E(t)$) of quantum-holographic reality *via* classical measuring devices/senses, or classically-reduced so called stationary quantum states (quantum system/ consciousness $|\Phi_i\rangle_S$ and environment $|\Psi_i\rangle_E$) *via* macroscopic semi-quantum measuring devices – while non-stationary quantum/holographic reality of Bohm's *implicate order*

$$|\Phi(t)\rangle_S |\Psi(t)\rangle_E \sim \prod_k |\phi^k(t)\rangle_{S_k} |\Psi(t)\rangle_E = \sum_i c_i |\Phi_i(t)\rangle_S |\Psi_i(t)\rangle_E$$

might be observed *exclusively* in non-stationary quantum-coherent superpositions of states, characteristic of quantum-holographic creative-religious altered and transitional states of consciousness (individual $|\phi^k(t)\rangle_{S_k} = \sum_i c_{k_i} |\phi^{k_i}(t)\rangle_{S_k}$ or collective $|\Phi(t)\rangle_S = \sum_i c_i |\Phi_i(t)\rangle_S$).

This viewpoint is close to experiences of many *shamanistic tribal traditions*, which consider that *genuine* (quantum-holographic!) reality is represented by *dreams* [51], while (classically-reduced!) awake state is lie/illusion (*maya*, as it is argued in *Eastern traditions* [21,41,42])!

In the same context, necessity of direct quantum-holographic coupling of individual and cosmic collective consciousness in observing *implicate order* needs weak out-of-body quantum-communication coupling consciousness-environment, i.e. previous *reprogramming of all psychosomatic loads* (cleansing of possessive or hedonistic *emotional-mental sin/karmic connections* with the world – which as loading 'mental addresses' would give rise to *quantum projections* of mentally/channeled tunneled consciousness on corresponding *out-of-body environment*, and thus to classically-reduced out-of-body *extrasensory observing* of mentally-addressed environment!) – and so the efforts of *mystics of all traditions* to *clean consciousness/soul* through spiritual practice (*prayer, meditation, ...*) and thus to reach their final eschatological goal (*Kingdom of God, nirvana, ...*), i.e. *post-mortem salvation* (of the sin-free/ karmic-free non-bounded soul) [21,22] appear reasonable!

The Talbot's book and our mentioned investigations are on the line of the again arisen scientific interest for investigation of the phenomenon of consciousness in the past decades

[1-4,6-8,10-14,18,21,22,26-43,46,51-64], with significant contributions of our scientific community – with forecasting *great synthesis* of two cognitive modes, *rationally-scientific* (classically-reduced, in normal states of consciousness) and *creative-religious* (quantum-coherent, in altered and transitional states of consciousness) in the framework of new *quantum-holographic holistic paradigm* – where *personal role* becomes indispensable due to the influence and care for collective mental environment, which is *fundamental question* of both mental health and civil discency, i.e. of both spiritual and civil morality [12,18,38,39]!

6. CONCLUSION

In this paper the *Meridian (Psycho)Therapies* for very fast removing of numerous psychosomatic disorders (traumas, persistent phobias, allergies, post-traumatic stress ...) are considered, in combination with theoretical concept of *bodily quantum-holographic hierarchical neural networks*, demonstrating close relationship between acupuncture system and consciousness, with significant psychosomatic and transpersonal implications. So simultaneous effects of *visualization of the psychosomatic problems and tapping/touching of some acupuncture points*, might be interpreted as *smearing and associative integration of the disorder-related-memory attractors*, through successive imposing of new boundary conditions in the energy-state space of acupuncture system/consciousness during visualizations of the psychosomatic problems – in associative chain during *Deep PEAT*, in ‘frozen’ picture during *Basic PEAT*, or in alternative visualizations of the polarities of self/problematic situation in *DP4 Method*. On the other hand, removing of traumas in the *Fore-Finger Method* via centripetal rotation 3-4 times counterclockwise around client’s bodily axis, with client’s previous visualization of the ‘frozen’ problematic situation, might be theoretically interpreted as *smearing and associative integration of the memory attractor of psychosomatic disorders* through continuous imposing of new boundary conditions in the energy-state space of acupuncture system/consciousness, but also as additional *discharging of the memory attractors of psychosomatic disorders*.

In the Appendix scientific bases of the quantum-holographic paradigm are considered, implying that whole psychosomatics is quantum hologram, on the level of individual and collective consciousness, which resembles Hinduistic relationship *Brahman/Atman* (*‘Atman is Brahman’*), as wholeness and its part which bears information about wholeness, enabling quantum-holographic fractal coupling of various hierarchical levels: acupuncture-based-quantum-informational (un)intentional control of ontogenesis and morphogenesis; quantum-holographic language-influence on the genes expression, with implications of great psychosomatic significance of thought-emotional contents; and fractal-information coupling of hierarchical levels in Nature, with fundamental holistic implications on the origin of miraculous deep creativities and determinism of the History through the coupling with the existing evolving state of collective consciousness – whose memory attractors could (and should!) be reprogrammed by hesychastic prayer for the others thus removing interpersonal loads of the quantum-holographic Hopfield-like neural network of collective consciousness. This leaves the room for free will and influence on the future preferences, and implies indispensable personal role and care for collective mental environment.

7. REFERENCES

1. R. J. Callahan, J. Callahan, *Thought Field Therapy and Trauma: Treatment and Theory* (Indian Wells, CA, 1996); R. J. Callahan, The impact of thought field therapy on heart rate variability (HRV), *J. Clin. Psychol.*, Oct. 2001, www.interscience.Wiley.com.
2. Ž. Mihajlović Slavinski, *PEAT and Neutralization of Primeival Polarities* (Belgrade, 2001).
3. Ž. Mihajlović Slavinski, *The Return to Oneness* (Belgrade, 2005).

4. Ž. Mihajlović Slavinski, *Invisible Influences* (Belgrade, 2008).
5. J. J. Hopfield, Neural networks and physical systems with emergent collective computational abilities; *Proc. Natl. Acad. Sci. USA*, 79 (1982) 2554-2558; T. Kohonen, *Self-Organization and Associative Memory* (Springer, Berlin, 1984); D. Amit, *Modeling Brain Functions: The World of Attractor Neural Nets* (Cambridge Univ. Press, Cambridge, 1989); H. Haken, *Synergetic Computers and Cognition: A Top-Down Approach to Neural Nets* (Springer, Berlin, 1991).
6. M. Peruš, Neuro-quantum parallelism in mind-brain and computers, *Informatika*, Vol. 20, pp. 173-183, 1996; M. Peruš, S. K. Dey, Quantum systems can realize content-addressable associative memory, *Appl. Math. Lett.*, Vol. 13, pp. 31-36, 2000; C. K. Loo, M. Peruš, H. Bischof, Simulated quantum-optical object recognition from high-resolution images, *Optics and Spectroscopy*, Vol. 99, No. 2, pp. 218-223, 2005, and references therein. Such practical and convincing demonstrations of the model applications of quantum-holographic Hopfield-like neural networks for superior pattern recognition, imply that *quantum-holographic informational laws* appear as *structural-invariant characteristics of every quantum system*. Such a structural invariance reminds on similar ideas of the *General system theory* applied to biological systems [L. Von Bertalanffy, *General System Theory* (Braziller, New York, 1968); M. D. Mesarović, D. Macko, Y. Takahara, *Theory of Hierarchical Multilevel Systems*, (Academic Press, New York, 1970)] – and might be related to a well known open problem of *emergent control* (known also as *downward causation*) of higher hierarchical levels over lower levels in *Cognitive sciences* [J. Szentagothai, Downward causation?, *Ann. Rev. Neurosci.*, Vol. 7, pp. 1-11, 1984; R. W. Sperry, Discussion: Macro- versus micro-determinism, *Philosophy of Science*, Vol. 53, pp. 265-270, 1986].
7. K. R. Popper, J. C. Eccles, *The Self and Its Brain* (Springer, Berlin, 1977); B. J. Baars, *A Cognitive Theory of Consciousness* (Cambridge Univ. Press, Cambridge, MA, 1988).
8. S. R. Hameroff, Quantum coherence in microtubules: A neural basis for emergent consciousness? *J. Consciousn. Stud.*, 1 (1994) 91-118.
9. D. Giulini, E. Joos, C. Kiefer, J. Kupsch, I.-O. Stamatescu, H. D. Zeh, *Decoherence and the Appearance of a Classical World in Quantum Theory* (Springer, Berlin, 1996).
10. J. Von Neumann, *Mathematical Foundations of Quantum Mechanics* (Princeton Univ. Press, Princeton, NJ, 1955).
11. H. P. Stapp, Quantum theory and the role of mind in nature, *Found. Phys.*, 31 (2001) 1465-1499; H. Stapp, *Mind, Matter, and Quantum Mechanics* (Springer, New York & Berlin, 1993).
12. D. Raković, Brainwaves, neural networks, and ionic structures: Biophysical model for altered states of consciousness, Invited chapter, in D. Raković, Dj. Koruga (eds.), *Consciousness: Scientific Challenge of the 21st Century* (ECPD, Belgrade, 1995); D. Raković, Prospects for conscious brain-like computers: Biophysical arguments, *Informatika (Special Issue on Consciousness as Informational Phenomenalism)*, 21 (1997) 507-516; D. Raković, Transitional states of consciousness as a biophysical basis of transpersonal transcendental phenomena, *Int. J. Appl. Sci. & Computat.*, 7 (2000) 174-187.
13. C. Tart, ed., *Altered States of Consciousness* (Academic, New York, 1972).
14. A. Shimony, in R. Penrose, A. Shimony, N. Cartwright, S. Hawking, eds., *The Large, the Small and the Human Mind* (Cambridge Univ. Press, Cambridge, 1995).
15. N. P. Zalyubovskaya, *An Estimation of Effects of Millimeter and Submillimeter Microwaves upon Various Biological Objects*, M.Sc. Thesis in Biological Sciences (Kharkov State University, 1970), in Russian; N. D. Devyatkov, Influence of the millimeter wavelength range electromagnetic radiation upon biological objects, *Soviet Physics - Uspekhi*, 110 (1973) 452-469; N. D. Devyatkov, O. Betskii, eds., *Biological Aspects of Low Intensity Millimeter Wave* (Seven Plus, Moscow, 1994).

16. S. P. Sit'ko, Ye. A. Andreyev, I. S. Dobronravova, The whole as a result of self-organization, *J. Biol. Phys.*, 16 (1988) 71-73; S. P. Sit'ko, V. V. Gizhko, Towards a quantum physics of the living state, *J. Biol. Phys.*, 18 (1991) 1-10; S. P. Sit'ko, L. N. Mkrtchian, *Introduction to Quantum Medicine* (Pattern, Kiev, 1994).
17. M. Tegmark, Importance of quantum decoherence in brain processes, *Phys. Rev. E*, 61 (2000) 4194-4206.
18. D. Raković, M. Dugić, M. M. Ćirković, Macroscopic quantum effects in biophysics and consciousness, *NeuroQuantology* (www.NeuroQuantology.5u.com), 2(4) (2004) 237-262; D. Raković, Hopfield-like quantum associative neural networks and (quantum) holistic psychosomatic implications, in: B. Reljin, S. Stanković, eds., *Proc. NEUREL-2002* (IEEE Yugoslavia Section, Belgrade, 2002); D. Raković, M. Dugić, Quantum and classical neural networks for modeling two modes of consciousness: Cognitive implications, in: B. Reljin, S. Stanković, eds., *Proc. NEUREL-2004* (IEEE Yugoslavia Section, Belgrade, 2004).
19. According to *Tibetan traditional medicine* [S. Petrović, *Tibetan Medicine* (Narodna knjiga - Alfa, Belgrade, 2000), in Serbian], an acupuncture procedure must be repeated every several months - presumably as a consequence of restituted patient's mental loads from his mental-transpersonal-environment of closely related family members and enemies, that remained non-reprogrammed on the level of quantum-holographic collective consciousness [18], which might be supported by Tibetan pulse diagnostics based on 20 pulses, enabling precise diagnosis of psychosomatic disorders not only of the patient himself but also of his family members and enemies.
20. Z. Jovanović-Ignjatić, D. Raković, A review of current research in microwave resonance therapy: Novel opportunities in medical treatment, *Acup. & Electro-Therap. Res., The Int. J.*, 24 (1999) 105-125; D. Raković, Z. Jovanović-Ignjatić, D. Radenović, M. Tomašević, E. Jovanov, V. Radivojević, Ž. Martinović, P. Šuković, M. Car, L. Škarić, An overview of microwave resonance therapy and EEG correlates of microwave resonance relaxation and other consciousness altering techniques; *Electro- and Magnetobiology*, 19 (2000) 193-220; D. Raković, Biophysical bases of the acupuncture and microwave resonance stimulation, *Physics of the Alive* 9 (2001) 23-34.
21. K. Wilber, *The Atman Project* (Quest, Wheaton, IL, 1980).
22. J. Vlahos, *Orthodox Psychotherapy: Holy Fathers Science* (Missionary School of St. Alexander Nevskiy Church, Belgrade, 1998), Serbian translation from Greek.
23. S. E. Li, V. F. Mashansky, A. S. Mirkin, Low-frequency wave and vibrational processes in biosystems, in: K. V. Frolov (ed.), *Vibrational Biomechanics. Using Vibrations in Biology and Medicine, Part I: Theoretical Bases of Vibrational Biomechanics* (Nauka, Moscow, 1989), Ch. 3, in Russian; D. Djordjević, *Electrophysiological Investigations of Mechanisms of Reflexotherapy*, M.S. Thesis (Faculty of Medicine, Belgrade, 1995), Ch. 1.2, in Serbian; Group of authors, *Anti-Stress Holistic Handbook: With Fundamentals of Acupuncture, Microwave Resonance Therapy, Relaxation Massage, Aeroionotherapy, Autogenic Training, and Consciousness* (IASC, Belgrade, 1999), in Serbian.
24. A review of Russian investigations on quantum-holographic influence of language communication on expression of genes is given in: P. P. Garyaev, *Wave Genetic Code* (Moscow, 1997), in Russian; P. P. Garyaev, U. Kämpf, E. A. Leonova, F. Muchamedyarov, G. G. Tertishny, *Fractal Structure in DNA Code and Human Language: Towards a Semiotics of Biogenetic Information* (Dresden, 1999).
25. On *local quantum-holographic coupling* on the level of bodily acupuncture system and its numerous projection zones see [P. Ch. Vu, *Su Jok Self-Healer* (Balkan Su Jok Therapy Center, 2003), Serbian translation from Russian, 2001]. For most fascinating manifestation of *global quantum-holographic coupling* on the level of preferences of collective and individual history coded within The Old Testament, see [D. Witztum, E. Rips, Y. Rosenberg, Equidistant letter

sequences in The Book of Genesis, *Statistical Science*, Vol. 9, pp. 429-438, 1994, as well as: M. Drosnin, *The Bible Code* (Simon & Schuster, New York, 1997); M. Drosnin, *Bible Code II: The Countdown* (Viking Penguin, New York, 2002)] - which might be interpreted as a consequence of the quantum-holographic nature of the cosmic collective consciousness (God!?) and its every original manifestation (including The Old Testament, as well as every individual consciousness) - which still does not mean the strict determinism of the History by coupling to the existing evolving state of collective consciousness, whose memory attractors could be reprogrammed by hesychastic prayer for the others thus removing interpersonal loads of the quantum-holographic Hopfield-like neural network of collective consciousness - so leaving the room for free will and influence on the future preferences [12,18]. On *fractal-information coupling of hierarchical levels* in Nature, see [M. Rakočević, The universal consciousness and the universal code, in: D. Raković, Dj. Koruga (eds) *Consciousness: Scientific Challenge of the 21st Century* (ECPD, Belgrade, 1995); .Dj. Koruga, Information physics: In search of a scientific basis of consciousness, *ibid.*].

26. M. Talbot, *The Holographic Universe* (Harper Collins Publ., New York, 1991), and references therein.
27. R. A. Moody, jr., *Life after Life* (Bantam, New York, 1975).
28. R. G. Jahn, The persistent paradox of psychic phenomena: an engineering perspective, *Proc. IEEE*, 70 (1982) 136-170; R. J. Jahn, B. J. Dunne, *Margins of Reality: The Role of Consciousness in the Physical World* (Harcourt Brace Jovanovic, New York, 1987); and many PEAR (Princeton Engineering Anomalies Research) archive publications and technical communications www.princeton.edu/~pear.
29. V. P. Kaznacheev, A. V. Trofimov, *Cosmic Consciousness of Humanity* (Elendis-Progress, Tomsk, 1992), and references therein.
30. W. A. Tiller, W. E. Dibble, Jr., M. J. Kohane, Exploring robust interactions between human intention and inanimate/animate systems, *Ditron Preprint*, presented at *Int. Conf. Toward a Science of Consciousness - Fundamental Approaches*, May 1999, UN Univ., Tokyo, Japan, and references therein.
31. M. A. Persinger, E. W. Tsang, J. N. Booth, S. A. Koren, Enhanced power within a predicted narrow band of theta activity during stimulation of another by circum-cerebral weak magnetic fields after weekly spatial proximity: Evidence for macroscopic quantum entanglement?, *NeuroQuantology* (www.NeuroQuantology.com), 6(1) (2008) 7-21.
32. A. Liptay-Wagner, Differential diagnosis of the near-death experience: which illness cannot be considered as NDE?, *Proc. 6th Int. Multi-Conf. Information Society IS'2003, Mind-Body Studies* (IS, Ljubljana, 2003); P. van Lommel, R. van Wees, V. Meyers, I. Elfferich, Near-death experience in survivors of cardiac arrest: prospective study in the Netherlands, *The Lancet*, 15. Dec. 2001; see also www.revital.negral.hu; and references therein.
33. L. Dossey, *Healing Words: The Power of Prayer and the Practice of Medicine* (Harper, San Francisco, 1993).
34. *Miracles on Lord's Grave* (Orthodox Missionary School of St. Alexander Nevskiy Church, Belgrade, 1998), Serbian translation from Russian.
35. On the ionic nature of the vital energy *chi/qi* in Chinese acupuncture system (or *prana* in Indian energy system), imply an order of magnitude higher concentration of ionic "gap junction" channels, which is in accordance with an order of magnitude higher electrical conductivity of the skin within acupuncture points in respect to the surrounding skin, as well as with significantly enlarged resorption of aeroions in acupuncture points! The biophysical ionic interpretation of the acupuncture system can account for the origin of Chinese therapeutic yin-yang/tonification-sedation rules through the type/rotation of the needles [20]: yin syndrome (excess of negative ions in some left meridian) is tonified by taking in positive ions from air or taking off negative ions from the meridian (through Ag needles working as

anode) i.e. by rotating needles in counterclockwise direction on the left meridian (thus closing its gap junction channels for flow of negative ions) or clockwise direction on the corresponding right meridian (thus opening its gap junction channels for flow of positive ions); and yang syndrome (excess of positive ions in some right meridian) is sedated by taking in negative ions from air or taking off positive ions from the meridian (through Au needles working as cathode) i.e. by rotating needles in counterclockwise direction on the right meridian (thus closing its gap junction channels for flow of positive ions) or clockwise direction on the corresponding left meridian (thus opening its gap junction channels for flow of negative ions). On the other hand, some other Chinese therapeutic rules need taking into account functional physiological interactions between acupuncture system and nervous and humoral systems [20]. The ionic nature of chi/qi i.e. prana also implies the significance of aeroionic balance and regular *rhythmical breathing*, recognized especially in Indian tradition, see [H. Johari, *Breath, Mind, and Consciousness* (Destiny Books, Rochester, Vermont, 1989)]. According to swara yoga the rhythmical breathing through the nose is especially important, in order to inhale as many as possible aeroions (prana) within the two (out of three) most significant nadis (the left ida and the right pingala), with their entrances in corresponding nostrils: this is recommended in fresh and nonpolluted air, when even some excess of negative ions exists, with the relaxing healthy influence on the body! It should be pointed out that breathing through the nose is crucial, with pauses for keeping breath between inhaling and exhaling (in order to inhale as many as possible aeroions within ionic channels, and then redistributed through the whole acupuncture ionic system). For keeping good healthy state, a half-hour rhythmical breathing in the morning and evening relaxing walks, with rhythmicity 6:6:12 (during 6 steps deep inhale, next 6 steps keeping the breath, and following 12 steps the full exhale), 5:5:10 or 4:4:8, depending on individual lung capacity. In the same context, in closed environments a microclimate engineering can be recommended by applying aeroionizers which produce an excess of negative ions.

36. D. Bohm, *Wholeness and the Implicate Order* (Routledge & Kegan Paul, London, 1980), and references therein.
37. K. Pribram, *Brain and Perception: Holonomy and Structure in Figural Processing* (Lawrence Erlbaum, Hillsdale, NJ, 1991); K. Pribram, *Languages of the Brain: Experimental Paradoxes and Principles in Neuropsychology* (Brandon, New York, 1971), and references therein.
38. D. Raković, *Integrative Biophysics, Quantum Medicine, and Quantum-Holographic Informatics: Psychosomatic-Cognitive Implications* (IASC & IEPSP, Belgrade, 2009); D. Raković, Ž. Mihajlović Slavinski, M. Sovilj, S. Pantelić, N. Stevović, J. Bojovic, I. Džamić, S. Jovičić, Dj. Baljuzović, M. Ostojić, M. Tomašević, D. Radenović, P. Šuković, L. Škarić, Meridian (psycho)therapies and techniques altering states of consciousness: phenomenology, psycho-physiological correlates, and quantum-holographic psychosomatic-cognitive implications, in: S. Jovičić, M. Sovilj (eds.), *Speech and Language: Interdisciplinary Research III* (IEPSP, Belgrade, 2009); D. Raković, Scientific bases of quantum-holographic paradigm, in: I. Kononeko (ed.), *Proc. Int. Conf. Measuring Energy Fields* (Kamnik, Slovenia, 2007), Invited lecture; D. Raković, M. Dugić, Quantum-holographic and classical Hopfield-like associative nnets: Implications for modeling two cognitive modes of consciousness, *Opticheskii J.*, 72(5) (2005) 13-18 (*Special Issue on Topical Meeting on Optoinformatics 'Optics Meets Optika'*, Saint-Petersburg, 18-21 Oct. 2004).
39. D. Raković, Tesla and quantum-coherent states of consciousness: Case study for understanding quantum-holographic nature of creativity, in: D. Mirjanić (ed.), *Ideas of Nikola Tesla* (ANU RS, Banja Luka, 2006); F. Holmes, *The Life of Mozart Including his Correspondence* (Chapman & Hall, 1878), pp. 211-213.

40. Č. Hadži-Nikolić, Therapeutic significance of altered states of consciousness in halucinogenic shamanistic rituals, in: D. Raković, Dj. Koruga (eds.), *Consciousness: Scientific Challenge of the 21st Century* (Belgrade: ECPD, 1995).
41. Swami Prabhavananda, Ch. Isherwood (tr.), *The Yoga Sutras of Patanjali. How to Know God* (New American Library, New York, 1969).
42. P. Vujčić, States of consciousness in esoteric practice, in: D. Raković, Dj. Koruga (eds.), *Consciousness: Scientific Challenge of the 21st Century* (ECPD, Belgrade, 1995), and references therein.
43. N. Berdyaev, *Philosophy of Freedom* (Logos Ant, Belgrade, 1996), Serbian translation from Russian.
44. For the reference textbook in the field of qubit quantum computation see: M. A. Nielsen, I. L. Chuang, *Quantum Computation and Quantum Information* (Cambridge Univ. Press, Cambridge, 2002).
45. Although, from the viewpoint of von Neumann entropy ($S = -kTr(\widehat{\rho}_{S_k}^{(k)} \ln \widehat{\rho}_{S_k}^{(k)})$), transitions from ‘mixture state’ $\widehat{\rho}_{S_k}^{(k)}(t)$ into ‘pure state’ $|\phi^{(k)}(t)\rangle_{S_k}$ under the influence of environment look like as entropy decreasing, it should be noted that $\widehat{\rho}_{S_k}^{(k)}(t)$ are ‘reduced mixture states’ of the open quantum (sub)system S_k over degrees of freedom of its quantum environment E_k , i.e. they are ‘mixtures of second order’ – so that strictly speaking a description of the state of (sub)system S_k by ‘reduced statistical operator’ $\widehat{\rho}_{S_k}^{(k)}(t)$ is more mathematical convenience than physical description (as in the framework of quantum decoherence theory it is strictly possible to define only a state of the total closed quantum system $S_k + E_k$, to which exact application of Schrodinger equation is only possible!) [44]. Besides, according to Prigogine theorem, an excitation of biological system far from equilibrium can give rise to an entropy decrease in the open non-equilibrium thermodynamic systems [46]!
46. D. Raković, *Fundamentals of Biophysics* (IASC & IEFPG, Belgrade, 2008), 3rd ed., in Serbian., Ch. 2.
47. D. Raković, M. Dugić, M. Plavšić, Biopolymer chain folding and biomolecular recognition: A quantum decoherence theory approach, *Materials Science Forum*, 494 (2005) 513-518; D. Raković, M. Dugić, M. Plavšić, G. Keković, I. Cosic, D. Davidović, Quantum decoherence and quantum-holographic information processes: From biomolecules to biosystems, *Materials Science Forum*, 518 (2006) 485-490.
48. A. L. Fetter, J. D. Walecka, *Quantum Theory of Many-Particle Systems* (McGraw-Hill, New York, 1971).
49. M. Dugić, On diagonalization of the composite-system observable separability, *Phys. Scripta*, 56 (1997) 560-565; M. Dugić, *Contribution to Foundations of Decoherence Theory in Non-relativistic Quantum Mechanics*, Ph.D. Thesis (Faculty of Science, Kragujevac, 1997), in Serbian.
50. M. Dugić, M. M. Ćirković, D. Raković, On a possible physical metatheory of consciousness, *Open Systems and Information Dynamics*, 9(2) (2002) 153-166.
51. L. McTaggart, *The Field: The Quest for the Secret Force of the Universe* (Harper Collins, New York, 2002); and references therein.
52. R. Targ, H. Puthoff, *Mind-Reach: Scientific Look at Psychic Ability* (Delacorte, New York, 1977).
53. S. Hameroff (ed.), *Toward a Science of Consciousness*, Series of Tucson Conferences, 1994-.
54. R. Penrose, *The Emperor's New Mind* (Oxford Univ. Press, New York, 1989); R. Penrose, *Shadows of the Mind: A Search for the Missing Science of Consciousness* (Oxford Univ. Press, Oxford, England, 1994); R. Penrose, A. Shimony, N. Cartwright, S. Hawking (eds.), *The Large, the Small and the Human Mind* (Cambridge Univ. Press, Cambridge, 1995); M.

- Longair (ed.), *The Large, the Small and the Human Mind* (Cambridge Univ. Press, Cambridge, 1997).
55. D. Chopra, *Quantum Healing: Exploring the Frontiers of Mind/Body Medicine* (Bantam, New York, 1989).
 56. K. C. Markides, *The Magus of Strovolos* (Arkana, New York & London, 1985); K. C. Markides, *Homage to the Sun* (Arkana, New York & London, 1987); K. C. Markides, *Fire in the Heart. Healers, Sages and Mystics* (Paragon, New York, 1990).
 57. D. Zohar, *The Quantum Self* (Flamingo, London, 1991).
 58. F. Capra, *The Tao of Physics: An Explanation of the Parallels Between Modern Physics and Eastern Mysticism* (Flamengo, London, 1991); F. Capra, *The Turning Point: Science, Society, and the Rising Culture* (Flamengo, London, 1997).
 59. F. Crick, *The Astonishing Hypothesis: The Scientific Search for the Soul* (Charles Scribner's Sons, New York, 1994).
 60. D. Raković, Dj. Koruga (eds.), *Consciousness: Scientific Challenge of the 21st Century* (ECPD, Belgrade, 1995); Lj. Rakić, G. Kostopoulos, D. Raković, Dj. Koruga (eds.), *Brain and Consciousness: Proc. ECPD Workshop & Symposium* (ECPD, Belgrade, 1997).
 61. E. Laszlo, *The Interconnected Universe Conceptual Foundations of Transdisciplinary Unified Theory* (World Scientific, Singapore, 1995).
 62. B. Rubik, *Life at the Edge of Science* (Institute for Frontier Science, Oakland, CA, 1996).
 63. D. Radin, *The Conscious Universe: The Scientific Truth of Psychic Phenomena* (HarperEdge, New York, 1997).
 64. S. Ostrander, L. Schroeder, *Psychic Discoveries* (Marlowe, New York, 1997), and references therein.