

**QUANTUM-INFORMATIONAL MEDICINE QIM 2011:  
ACUPUNCTURE-BASED & CONSCIOUSNESS-BASED  
HOLISTIC APPROACHES & TECHNIQUES**

# **QIM 2011 Symposium Proceedings**

Editors

**Dejan Raković  
Slavica Arandjelović  
Mirjana Mićović**

**QIM 2011  
Belgrade**

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Dejan Raković  
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Mirjana Mićović

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## SYMPOSIUM OF QUANTUM-INFORMATIONAL MEDICINE QIM 2011: ACUPUNCTURE-BASED & CONSCIOUSNESS-BASED HOLISTIC APPROACHES & TECHNIQUES

**Belgrade, 23-25 September 2011**

### FINAL ANNOUNCEMENT & PROGRAM

#### Topics

#### HOLISTIC MEDICINE & NON-CIRCULAR (PSYCHO / ENERGY) THERAPIES FOR BALANCING ACUPUNCTURE SYSTEM & INDIVIDUAL CONSCIOUSNESS

- Traditional Acu-Stimulations: Acupuncture / Moxibustion / Acupressure •
- Microwave Resonant Therapy • Bioresonant Diagnostics and Therapy •
- Laserotherapy • Magnetotherapy • Segmental Reflex Massage • Lithotherapy •
- Chiropractic • Homeopathy • Chromotherapy • Aromatherapy • Aeroionization •
- Yoga Breathing • Meditation • Autogenic Training • Psychotherapies & Similar •

#### SPIRITUALITY & CIRCULAR (PSYCHO / ENERGY) THERAPIES FROM ALL RELEVANT META-POSITIONS FOR BALANCING INDIVIDUAL & COLLECTIVE CONSCIOUSNESS

- Prayer • Transpersonal Psychotherapies • Family Constellations • Meridian Therapies •
- Reiki • Reconnection • Theta • Shamanistic Traditions & Similar •
- Plenary Lectures • Oral Presentations • Workshops • Equipment Presentations • Round Table •

#### DEADLINES / INSTRUCTIONS FOR AUTHORS

- Abstract (1 August 2011) • Paper (1 September 2011) •

#### REGISTRATION / INSTRUCTIONS FOR PAYMENTS

##### Symposium & Round Table

health professionals: before 1 September 60 €, after 1 September 90 € (three-day, certificate)  
others: 30 € (one-day, certificate); students: 10 € (one-day)

##### Workshops

30 - 60 € (each, certificate)

Secretariat QIM 2011, 11000 Belgrade, Serbia  
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**SYMPOSIUM OF QUANTUM-INFORMATIONAL MEDICINE QIM 2011:  
ACUPUNCTURE-BASED & CONSCIOUSNESS-BASED HOLISTIC APPROACHES & TECHNIQUES**

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**Belgrade, 23-25 September 2011**

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***A. ACUPUNCTURE-BASED HOLISTIC APPROACHES & TECHNIQUES***

***Friday, 23 September 2011***

**PLENARY SESSION A1**

**Chairpersons:** *A. Škokljević, A. Ya. Grabovschiner, M. Y. Gotovski, B. P. Grubnik, K. Schmidt, Z. Jovanović-Ignjatić*

**ACUPUNCTURE-BASED & CONSCIOUSNESS-BASED HOLISTIC MEDICINE:  
QUANTUM-INFORMATIONAL PSYCHOSOMATIC FRAMEWORK**

*D. Raković, M. Mičović, S. Arandjelović (Serbia)*

**QUANTUM WILL BE MEDICINE OF TOMORROW AND WILL REVOLUTIONISE OUR LIVES!**

*A. Ya. Grabovschiner (Russia), J-L. Garillon (France)*

**MODERN VIEWS OF MECHANISMS & CLINICAL EFFECTS OF MM EM RADIATION**

*B. P. Grubnik (Ukraine)*

**ON QUANTUM PHYSICS OF THE ALIVE AND QUANTUM MEDICINE**

*S. P. Sitko, I. Chervony (Ukraine)*

**CEM TECH MICROWAVE RESONANCE TECHNOLOGIES**

*Y. P. Potekhina, Y. A. Tkachenko (Russia)*

**MODERN SITUATION AND PERSPECTIVES OF ELECTROPUNCTURAL DIAGNOSTICS &  
BIORESONANCE THERAPY**

*M. Y. Gotovski (Russia)*

**INERGETIX-CORE QUANTUM-INFORMATIONAL TECHNOLOGIES**

*K. Schmidt (Germany)*

**ON-LINE DIAGNOSIS STATE OF A PATIENT IN TREATMENT BY METHODS OF QUANTUM MEDICINE**

*A. V. Ivanovskaya (Ukraine)*

**MICROWAVE RESONANCE THERAPY**

*Z. Jovanović-Ignjatić (Serbia)*

**PLENARY SESSION A2**

**Chairpersons:** *V. Stambolović, D. Karabeg, D. Mandić, D. Djordjević, M. Dunjić*

**KNOWLEDGE FEDERATION HOLISTIC FRAMEWORK**

*D. Karabeg (Norway)*

**DECOLONIZATION OF ALTERNATIVE MEDICINE**

*V. Stambolović (Serbia)*

**THE ANALYSIS OF BIOLOGICAL SIGNALS AND GENETICALLY DETERMINED  
FUNCTION OF AUTONOMIC NERVOUS SYSTEM**

*B. Milovanović, V. Radivojević, S. Mutavdžin, B. Milovanović, T. Krajnović (Serbia)*

**HOMEOPATHY: ENERGY-INFORMATIONAL HOLISTIC VIEWPOINT**

*L. Trifunović (Serbia)*

**MADU MAGNETOTHERAPY**

*D. Mandić, D. Đorđević, D. Cvetković, S. Kažić, J. Popović (Serbia)*

**CHIROPRACTIC AND HOLISTIC APPROACH TO HEALTH**

*P. Dinić (Serbia)*

**LITHOTHERAPY: KALININ METHOD**

*I. D. Kalinin (Russia)*

**BI DIGITAL O-RING TEST**

*M. Dunjić (Serbia)*

**DISCUSSIONS & CONCLUSIONS**

## **ORAL SESSION A**

**Chairpersons:** *M. Mićović, S. Arandjelović*

### **QI VITALITY AS A BASE OF TRADITIONAL CHINESE MEDICINE**

*A. Žikić (Serbia)*

### **ADDITIONAL APPLICABLE TECHNIQUES IN ACUPUNCTURE TREATMENT: MOXIBUSTION, CUPPING AND GUASHA**

*A. Žikić (Serbia)*

### **CHINESE CONCEPT OF FIVE PHASES (WU XING - 五行) IN THE LIGHT OF SYSTEMS SCIENCE**

*N. Mišić (Serbia)*

### **APPLICATION OF BOWEN THERAPEUTIC TECHNIQUE IN THE TREATMENT OF SCOLIOSIS**

*A. Maksimović (Serbia)*

### **QUANTUM-INFORMATIONAL MEDICINE AND BIORESONANCE TECHNOLOGY**

*R. Prelević (United Kingdom)*

### **POSSIBILITIES AND TRAPS OF BIORESONANCE DIAGNOSTICS**

*T. Lalić (Serbia)*

### **HARMONIZATION OF HUMAN BODY SYSTEM BY HARMONIZED EM RADIATION WHICH EXCITED LONGITUDINAL MECHANICAL WAVES $\lambda \leq 2m$ IN BIOMOLECULES**

*A. S. Tomić, G. Marjanović, R. Vojnić-Tunić, Dj. Koruga (Serbia)*

### **BONE FRACTURE TREATMENT BY MADU MAGNETOTHERAPY**

*D. Mandić, D. Djordjević, D. Cvetković, S. Kažić, J. Popović, M. Kažić (Serbia)*

### **OSTEONEOGENESIS BY MADU MAGNETOTHERAPY**

*D. Djordjević, D. Mandić, J. Popović, S. Kažić, D. Cvetković (Serbia)*

### **RHEUMATOID ARTHRITIS TREATMENT BY MADU MAGNETOTHERAPY**

*J. Popović, D. Mandić, S. Kažić, D. Djordjević (Serbia)*

### **EFFECTS AND MECHANISMS OF ANGIOGENESIS BY MADU MAGNETOTHERAPY**

*D. Djordjević, D. Mandić, J. Popović, S. Kažić, D. Cvetković (Serbia)*

### **POSSIBILITIES OF NEURONEOGENESIS BY MADU MAGNETOTHERAPY**

*D. Djordjević, D. Mandić, J. Popović, S. Kažić, D. Cvetković (Serbia)*

### **CONTRIBUTION OF ANOMALOUS INTENSITIES OF ELECTROMAGNETIC AND MAGNETIC FIELDS IN ETIOPATHOGENESIS OF MENTAL DISORDERS AND DISEASES**

*N. Trifunović, D. Jevdić, A. Jevdić, K. Jevdić (Serbia)*

### **CONTRIBUTION OF ANOMALOUS INCREASE OF MAGNETIC FIELD IN ETIOPATHOGENESIS OF CARDIAC-VASCULAR DISEASES**

*N. Trifunović, D. Jevdić, A. Jevdić, K. Jevdić (Serbia)*

### **CONTRIBUTION OF ANOMALOUS INTENSITIES OF ELECTROMAGNETIC AND MAGNETIC FIELDS IN ETIOPATHOGENESIS OF MALIGNANT DISEASES**

*N. Trifunović (Serbia)*

## **DISCUSSIONS**

## **B. CONSCIOUSNESS-BASED HOLISTIC APPROACHES & TECHNIQUES**

**Saturday, 24 September 2011**

### **PLENARY SESSION B1**

**Chairpersons:** *V. Jerotić, S. Milenković, Lj. Klisić, G. I. Brekhman, M. Sovilj*

#### **PRAYER AND/OR PSYCHOTHERAPY**

*V. Jerotić (Serbia)*

#### **INTEGRATIVE ART PSYCHOTHERAPY**

*S. Milenković (Serbia)*

#### **BODY PSYCHOTHERAPY AND TE-PSYNTESIS**

*Lj. Klisić, A. Djordjević (Serbia)*

#### **HOLOTROPIC BREATHWORK**

*I. Antolić (Croatia)*

#### **PEAT & ENERGETIC AND SPIRITUAL (PSYCHO)THERAPIES**

*Ž. Mihajlović Slavinski (Serbia)*

#### **YOGA & CONSCIOUSNESS EVOLUTION**

*D. Lončar (Serbia)*

#### **HEALTH & EXPERIENCE OF HIGHER STATE OF CONSCIOUSNESS (UNIFIED FIELD)**

*Ž. Trišić (Serbia)*

#### **WESTERN MEDICINE & TRADITIONAL HEALING**

*I. Kononenko (Slovenija)*

#### **MAN AS A QUANTUM-WAVE PSYCHOSOMATIC SYSTEM**

*G. I. Brekhman (Israel, Russia)*

#### **PRENATAL BASES OF DEVELOPMENT OF SPEECH AND LANGUAGE & PRENATAL STIMULATION**

*M. Sovilj (Serbia)*

### **PLENARY SESSION B2**

**Chairpersons:** *I. Kononenko, W. Carvalho Liimaa, Lj. Ristovski, Č. Hadži Nikolić, D. Lončar*

#### **THE RECONNECTION – HEAL OTHERS, HEAL YOURSELF**

*E. Pearl, R. Levy (USA)*

#### **QUANTUM-INFORMATIONAL MEDICINE: BRASILIAN EXPERIENCE**

*W. Carvalho Liimaa (Brasil)*

#### **BIOENERGY, BIOFIELD, AURA: ON THEIR NATURE AND PIP CAMERA MEASURING**

*Lj. Ristovski (Serbia)*

#### **REIKI & SPIRITUALITY**

*M. Milenković, M. Mićović (Serbia)*

#### **QUANTUM TRANSFORMATION**

*S. Simonovska (Austria)*

#### **ABIKU PHENOMENON: SPIRITUAL ORIGIN AND TREATMENT OF SELF-DESTRUCTIVENESS**

*M. Tomšić Akengen (Slovenia)*

#### **ENTHEOGENIC SHAMANISM: ANTHROPOLOGICAL CATEGORY, TRANSPERSONAL DIMENSION OR PSYCHOTHERAPEUTIC MODEL**

*Č. Hadži Nikolić (Serbia)*

#### **QUANTUM EVALUATION OF NOOSPHERE-ECOLOGY PARAMETERS**

*K. G. Korotkov (Russia) in absence*

#### **QUANTUM-HOLOGRAPHIC ENERGY SYSTEM & RESONANCE BIOFEEDBACK**

*B. J. Øverbye (Norway) in absence*

### **DISCUSSIONS & CONCLUSIONS**

## **ORAL SESSION B**

**Chairpersons:** *M. Mićović, S. Arandjelović*

### **INTERGRATIVE MEDICINE**

*D. Nešić (Serbia)*

#### **RECONNECTION: EXAMPLE OF INCREASED REGENERATION OF BONE FRACTURES & MUSCLE DAMAGES**

*D. Nešić (Serbia)*

### **BIOLOGICAL DECODING**

*A. Frauenkron-Hoffmann (Luxemburg), D. Portić (Serbia)*

#### **INTEGRATIVE APPROACH TO TREATMENT OF STATE OF PANIC: CASE STUDY**

*O. Vulićević (Serbia)*

#### **THE EARLIEST HOLISTIC HEALING TREATMENT OF NEWBORNS: METHOD BY DR VUCICEVIC**

*J. Jovanović (Serbia)*

#### **THERMOVISUAL MONITORING OF YOGA NIDRA PRACTICE**

*D. Nikolovski, Z. Stević (Serbia)*

### **IMPORTANCE OF PRANAYAMA**

*D. Milićević (Serbia)*

#### **SKIN CONDUCTANCE PSYCHO-PHYSIOLOGICAL CORRELATES OF NOVEL HOLISTIC TRANSPERSONAL DIAGNOSTICS AND HEALING**

*B. Bedričić, M. Stokić, Z. Milosavljević, D. Milovanović, D. Raković, M. Sovilj, S. Maksimović (Srbija)*

#### **EEG PSYCHO-PHYSIOLOGICAL CORRELATES OF NOVEL HOLISTIC TRANSPERSONAL DIAGNOSTICS AND HEALING**

*B. Bedričić, M. Stokić, Z. Milosavljević, M. Ostojić, D. Milovanović, D. Raković, M. Sovilj, S. Maksimović (Srbija)*

#### **SELF-REINTEGRATION, AN QUANTUM-BASED ENERGY (PSYCHO)THERAPY, FOR THE TRANSCENDENCE OF DUALITY**

*P. M. F. Baccelli Reis (Brasil) in absence*

### **DISCUSSIONS**

### **C. WORKSHOPS**

**Sunday, 25 September 2011**

**Chairpersons:** *S. Arandjelović, M. Mićović*

#### **DETERMINATION AND PRESERVATION OF BIOLOGICAL YOUTH**

*A. Ivanovskaya (Ukraine)*

#### **CEM THERMODIAGNOSTICS – SELF OBSERVATION**

*Z. Jovanović-Ignjatić (Serbia)*

#### **MEASURING ENERGY FIELDS**

*K. G. Korotkov (Russia)*

#### **INERGETIX-CORE QUANTUM-INFORMATIONAL TECHNOLOGIES**

*K. Schmidt (Germany)*

#### **MADU MAGNETOTHERAPY METHODS**

*D. Mandić, D. Djordjević (Serbia)*

#### **RECONNECTIVE HEALING**

*E. Pearl, R. Levy (USA)*

#### **REIKI FOR SELF-HELP**

*M. Milenković (Serbia)*

#### **QUANTUM TRANSFORMATION**

*S. Simonovska (Austria)*

#### **THE HEALING ART OF QI GONG**

*V. Vidović (Serbia)*

#### **YOGA BREATHING TECHNIQUES**

*D. Lončar (Serbia)*

#### **AUTOGENIC TRAINING**

*M. Čosović (Serbia)*

#### **CHANGING YOURSELF THROUGH INTEGRATIVE ART PSYCHOTHERAPY**

*S. Milenković (Serbia)*

#### **TE-PSYNTESIS BODY PSYCHOTHERAPY**

*Lj. Klisić, A. Djordjević (Serbia)*

#### **WORKSHOP KNOWLEDGE FEDERATION DIALOG BELGRADE**

*D. Karabeg (Norway), D. Raković (Serbia)*

### **D. ROUND TABLE**

**Sunday, 25 September 2011**

#### **KNOWLEDGE FEDERATION DIALOG BELGRADE 2011:**

#### **PARTIAL VS HOLISTIC ORIENTED APPROACHES**

- *Physics • Medicine • Biology • Psychology • Transpersonal Phenomena •*
- *Engineering • Society • Art • Philosophy • Religion & Similar •*

**Moderators:** *D. Karabeg, D. Raković*

**SESSION C1:** *D. Karabeg (Norway), D. Raković (Serbia), A. Ya. Grabovschiner (Russia), M. Y. Gotovski (Russia), G. I. Brekhman (Israel, Russia), M. Sovilj (Serbia), L. Trifunović (Serbia), A. Žikić (Serbia), M. Arandjelović (Serbia).*

**SESSION C2:** *I. Kononenko (Slovenia), Č. Hadži Nikolić (Serbia), W. Carvalho Liimaa (Brasil), S. Milenković (Serbia), Lj. Klisić (Serbia), Ž. Mihajlović Slavinski (Serbia), S. Simonovska (Austria), S. Saxer (Norway), D. Pavlović (Serbia).*

**SESSION C3:** *M. Dunjić (Serbia), V. Stambolović (Serbia), Z. Jovanović-Ignjatić (Serbia), S. Arandjelović (Serbia), M. Mićović (Serbia), D. Davidov-Kesar (Serbia), V. Jerotić (Serbia), A. Gajšek (Serbia), A. Raković (Serbia).*

**SESSION C4:** *M. Dugić (Serbia), M. Rakočević (Serbia), Dj. Koruga (Serbia), Lj. Ristovski (Serbia), D. Djordjević (Serbia), D. Mandić (Serbia), P. Dinić (Serbia), B. Milovanović (Serbia), G. Vitaliano (USA).*

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## SYMPOSIUM OF QUANTUM-INFORMATIONAL MEDICINE QIM 2011: HOLISTIC APPROACHES & TECHNIQUES BASED ON ACUPUNCTURE & CONSCIOUSNESS

Belgrade, 23-25 September 2011

[www.qim2011.org](http://www.qim2011.org)

### EDITORS NOTE

Contemporary investigations of psychosomatic diseases imply the necessity of application of *holistic methods*, oriented to *healing the person as a whole* and not disease as a symptom of disorder of the whole, suggesting their *macroscopic quantum origin*. In the focus of these quantum-holistic methods are body's *acupuncture system* and *consciousness*, which have a *structure of quantum-holographic Hopfield-like associative neural network*, with very significant psychosomatic implications.

*Symposium of Quantum-Informational Medicine QIM 2011: Acupuncture-Based & Consciousness-Based Holistic Approaches & Techniques*, held in Belgrade, 23-25 September 2011, provided fundamental quantum-informational framework for better understanding of the *nature of psychosomatic diseases* as well as *limitations of the healing methods*, which might help in *developing strategies for psychosomatic integrative medicine in the 21st century*.

The two-day *QIM 2011 Symposium*, dedicated to September 23 acupuncture-based and September 24 consciousness-based holistic approaches and techniques, included more than sixty Plenary talks and Oral presentations; the September 25 one-day *QIM 2011 Workshops*, provided opportunity for organizing more than ten parallel 4-hour workshops, dedicated to acupuncture-based and consciousness-based holistic approaches and techniques. Our e-Proceedings hereby presents written contributions of two-day *QIM 2011 Symposium* (mostly papers and rarely only abstracts, enumerated not according to their order of appearance at the symposium but according to their topics, including several of them which has been invited but not presented at the symposium) and written contributions of one-day *QIM 2011 Workshops* (only abstracts).

The September 25 one-day *QIM 2011 Round Table Knowledge Federation Dialog Belgrade 2011: Partial Versus Holistic Oriented Approaches*, was opportunity for critical consideration of partial and holistic oriented approaches to physics and engineering, medicine and biology, psychology and transpersonal phenomena, art and philosophy, society and religion. The corresponding e-Proceedings with provided written contributions of one-day *QIM 2011 Round Table* is published separately.

The Editors are indebted to their institutions and numerous sponsors, as well as to members of *QIM 2011 Program Committee, Organizing Committee, and Secretariat*, for logistic support to *QIM 2011*. We also acknowledge all *QIM 2011 Symposium* plenary and oral speakers and *QIM 2011 Workshop* teachers for their reports on pioneer research and enthusiastic work in the emerging field of acupuncture-based & consciousness-based holistic medicine.

## **A. ACUPUNCTURE-BASED HOLISTIC APPROACHES & TECHNIQUES**

# ACUPUNCTURE-BASED AND CONSCIOUSNESS-BASED HOLISTIC MEDICINE: QUANTUM-INFORMATIONAL PSYCHOSOMATIC FRAMEWORK

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**Abstract.** The subject of this lecture is integrative quantum-holographic framework for psychosomatics. This is of special importance because of wider application of integrative medicine in developed countries, as contemporary research of psychosomatic diseases indicates the necessity of application of holistic methods, oriented to the healing of man as a whole and not diseases as symptoms of disorders of this wholeness, implying their macroscopic quantum origin. In the focus of these holistic methods are body's acupuncture system and consciousness – which as macroscopic quantum biosystem have (fundamental!) quantum-informational structure of quantum-holographic Hopfield-like associative neural network, within the Feynman propagator version of quantum mechanics. So it seems that Nature has chosen elegant room-temperature quantum-holographic information processing, permanently fluctuating between quantum-coherent state and classically-reduced state of various biological hierarchical levels: from the level of cell, to the level of organism, and further to the level of collective consciousness, with biofeedback dynamic influence on gene expression. In the context of quantum-informational therapies, their goal would be a bioresonant excitation of the target palpatory-painful/psychologically-traumatic state of the acupuncture system/consciousness (as one of hundreds possible disordered states!) thus enabling that its initial memory attractor is bioresonantly excited becoming more shallower and wider on the account of deepening of the energy-dominating attractor of healthy palpatory-painless/psychologically-normal state of the acupuncture system/consciousness. This might have significant psychosomatic implications on necessity of including three front lines of integrative psycho-somatic medicine: (i) Spirituality and circular (psycho / energy) therapies from all relevant meta-positions, with possibility of permanent erasing of mutual memory attractors on the level of collective consciousness; (ii) Eastern (quantum) holistic medicine and non-circular (psycho / energy) therapies, whose efforts temporary erase memory attractors on the level of acupuncture system/ individual consciousness, and prevent or alleviate their somatization, as a consequence of the indolence on the first level; and (iii) Western symptomatic medicine, whose activities on the somatic level via immunology, pharmacology, biomedical diagnostics and surgery hinder or soothe somatized consequences of the carelessness on the first two levels. The presented integrative quantum-holographic framework for psychosomatics might have significant holistic implications, providing fundamental quantum-informational framework for better understanding of the nature of psychosomatic diseases as well as limitations of the healing methods, which might help in developing strategies for integrative psychosomatic medicine in the 21st century.

**Keywords:** *quantum-informational medicine, quantum-holographic informatics, integrative biophysics, acupuncture system, individual consciousness, collective consciousness*

## 1. Introduction

Contemporary medicine has put its emphasis on „alopathic-dosed non-economic“ highly pharmaceutical-oriented medicine technologies. On the contrary, in the past years more attention is paid to bioadequate „homeopathic-dosed economic“ bioresonant quantum-informational medicine technologies, related to usage of such values of the field energy, appearing in normal functioning of human organism [1–9]. On these lines, contemporary investigations of psychosomatic diseases imply the necessity of application of holistic methods, oriented to healing the person as a whole and not disease as a symptom of disorder of the whole, suggesting their macroscopic quantum origin [3-9].

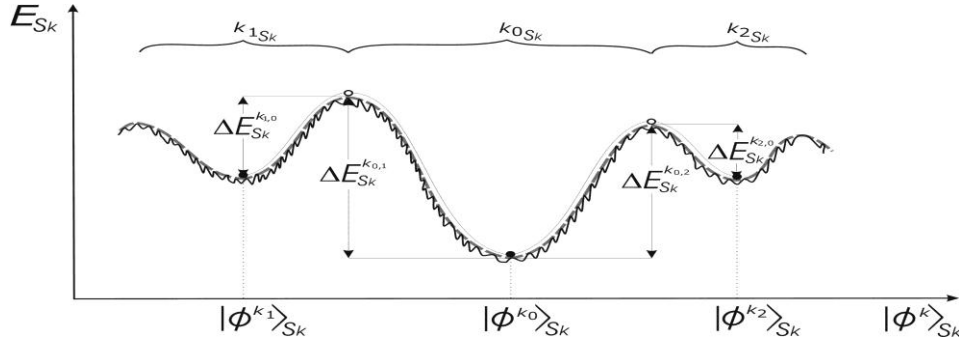
In the focus of these quantum-holistic methods are body's acupuncture system and consciousness – which have quantum-informational structure of quantum-holographic Hopfield-like associative neural network, within the Feynman propagator version of quantum mechanics [10] – with very significant quantum-holographic psychosomatic implications [3-9]. In this context, it should be noted that Resonant Recognition Model (RRM) of biomolecular recognition implies that on the biomolecular level information processing is going on in the inverse space of Fourier spectra of the primary sequences of biomolecules [11,12], similarly to (quantum) holographic ideas that cognitive information processing is going on in the inverse space of Fourier spectra of the perceptive stimuli [13,14], thus supporting idea on quantum-holographic fractal coupling of various hierarchical levels in biological species (cf. Fig. 1).

## 2. Quantum-holographic framework for psychosomatics

In the context of quantum-informational bioresonant therapies [3-9,15–20], their goal would be a external resonant stimulation of the corresponding band of electromagnetic (EM) spectrum of microwave/ultralowfrequency-modulated radiation of the treated psychosomatically disordered (palpatory painful) state (as one of hundreds possible disordered states) thus enabling that its initial memory attractor is resonantly excited becoming more shallower and wider on the account of deepening of the (energy-dominating) attractor of healthy acupuncture (palpatory painless) state (cf. Fig. 1) – which is then altogether quantum-holographically projected on the lower EM quantum-holographic cellular level, thus changing the expression of genes [3-8]. In this context, homeopathy might be also categorized into quantum-informational bioresonant therapies, as (non)dissolved homeopathic diluted substance [19–23] with characteristic EM memory-attractor states (like any other substance, as demonstrated by muscle test of the Applied kineziology [24]), can interact with macroscopic quantum-sensory EM level of the acupuncture system/consciousness and imprint in there its program of homeopathic correction.

On the other hand, in the context of quantum-informational meridian (psycho)therapies [3-8,25,26], via simultaneous effects of visualization of the treated (psychologically traumatic) problem and tapping/touching upon the selected acupuncture points, new boundary conditions are imposed in the energy-state space of the acupuncture system/consciousness, and memory attractor of the initial psychosomatic disorder becomes shallower and wider, with greater overlap and followed associative integration into memory attractor of normal (energy-dominating) ego-state (cf. Fig. 1). In this context, techniques of energy healing of the acupuncture system/consciousness [27-30], positively-visualizing meditation healing [31,32], and various psychotherapeutic techniques for recognition/integration of psychological conflicts and personality growth [33-36]) might also be categorized into quantum-informational therapies, via introspective emotional/traumatic excitation with imposed new (psychologically healing) boundary conditions in the energy-state space of the acupuncture system/consciousness.

In the same context it is important to make half-a-year diagnostics and balancing of the acupuncture system, whose disbalance presumably originates from the restituted patient's mental loads from his non-reprogrammed mental transpersonal environment of the quantum-holographic collective consciousness [3–8] (as supported by the Tibetan pulse diagnostics, enabling precise diagnosis of psychosomatic disorders not only of the patient himself but also of his family members and enemies [37,38]). This implies that memory attractors of quantum-holographic network of collective consciousness might be treated as psychosomatic collective disorders which represent generalized field-related quantum-holistic records (including inter-personal finally-reprogrammable nonlocal loads, via hesychastic prayer or circular psychotherapies from all relevant meta-positions included in the problem [3–8]) – which might represent basis of quantum-informational medicine of collective consciousness (cf. Fig. 1).



**Figure 1.** Schematic presentation of the adaptation of memory attractors in the energy-state ( $E_{S_k}(\phi^k)$ ) hypersurface of the quantum-holographic memory/propagator of various hierarchical levels of biological macroscopic open quantum systems  $S_k$  (local cell's protein-target biomolecular one, local acupuncture system/consciousness, or nonlocal out-of-body consciousness/collective consciousness) [3–8]:

$$G(r_2, t_2; r_1, t_1) = \sum_{i=1}^P \phi^{k_i}(r_2, t_2) \phi^{k_i*}(r_1, t_1) = \sum_{i=1}^P A_{k_i}(r_2, t_2) A_{k_i}^*(r_1, t_1) e^{\frac{i}{\hbar}(\alpha_{k_i}(r_2, t_2) - \alpha_{k_i}(r_1, t_1))}$$

It should be pointed out that quantum decoherence presumably plays fundamental role in biological quantum-holographic neural networks, through presented energy hypersurface shape adaptation, equivalent to permanent solving of Feynman propagator version of Schrödinger equation by the open macroscopic quantum system  $S_k$  exposed to continuously changing boundary conditions (in contrast to low-temperature artificial qubit quantum processors where decoherence must be avoided until the very read-out act of quantum computation) – which implies that Nature presumably has chosen elegant room-temperature solution for quantum-holographic information processing (from the level of cell – to the level of organism – and further to the level of collective consciousness), permanently fluctuating 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 the open macroscopic quantum system  $S_k$ , through non-stationary bioresonance interactions with out-of-body farther environment and through decoherence by bodily closer environment of biological open macroscopic quantum system  $S_k$ . It should be also pointed out that the proposed quantum-holographic/quantum-decoherence model might serve as bioinformational basis of Quantum-informational medicine (QIM) related to acupuncture system/consciousness and its psychosomatic states [3-8]. So, for instance, during application of some QIM-therapy for transferring disordered acupuncture system/consciousness  $S_k$  from the psychosomatically disordered excited state  $|\phi^{k_2}\rangle_{S_k}$  (as one of hundreds possible disordered states [38]) into the attracting healthy ground state  $|\phi^{k_0}\rangle_{S_k}$ , it is necessary during the bioresonance external action ( $T_{\text{ext}}$ ) to provide external energy of the QIM-source (similar to annealing procedure in artificial neural networks [39]) for skipping over potential barrier of the (acupuncture palpatory-painful or psychologically traumatic!) disordered state ( $\Delta E_{S_k}^{k_{2,0}}$ ), which after relaxation process ( $T_{\text{rel}}$ ) of taking-off the excess external energy ( $\Delta E_{S_k}^{k_{0,2}}$ ), gives rise to condition of the completed quantum state change of the acupuncture system/consciousness, with additional decoherence time ( $\tau_D$ ) and decrease of one quantum of energy in the state  $|\phi^{k_2}\rangle_{S_k}$  and increase of one quantum of energy in the state  $|\phi^{k_0}\rangle_{S_k}$ . By multiple repeating of this process, the depth of the memory attractor  $k_2$  is getting shallower in favour of deepening of the attracting healthy state  $k_0$ , finally giving rise to complete erasing of the psychosomatic disorder  $|\phi^{k_2}\rangle_{S_k}$  and deepening of the healthy state  $|\phi^{k_0}\rangle_{S_k}$ , i.e. dynamic modification of the potential hypersurface of the acupuncture system/consciousness, in full analogy with the situation of learning classical Hopfield associative neural networks.

### 3. Discussion

It should be pointed out that on all quantum-holographic hierarchical levels of biological macroscopic open quantum systems  $S_k$  (local cell's protein-target biomolecular one, local acupuncture system/consciousness, or nonlocal out-of-body consciousness/collective consciousness), there exist *two* (interacting) macroscopic quantum subsystems [4-6]: first with *modifying many-electron hypersurface*  $E_e(\phi_e^{(k)})$  and second with *modifying EM multi-phonon hypersurface*  $E_v(\phi_v^{(k)})$ .

It should be added that an 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 subsystems [40-42]), 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 [3-9,16-18].

The mentioned quantum-holographic picture implies that quantum-holographic hierarchical parts carry information on wholeness, enabling subtle *quantum-holographic fractal coupling* between different hierarchical biophysical levels – including various acupuncture projection zones and corresponding organs and cells, with underlying *macroscopic quantum-informational control mechanisms of embryogenesis/ontogenesis and morphogenesis* and their backward influence on the *expression of genes*, starting from the first fertilized cell division which initializes differentiation of the acupuncture system of (electrical synaptic) "gap-junctions" [3-9].

This underlying quantum-coherent nonlocality might be of fundamental importance in understanding macroscopic (quantum)holistic very nature of *psychosomatic health and diseases* as well – implying also a *fuzzy borderline* between quantum coherent (nonstationary) and semi-classical decoherent (stationary) manifestations of macroscopic quantum-informational *acupuncture system* and *consciousness* (as well as any macroscopic condensed-state physical (sub)system), and their *close relationship* with significant psychosomatic-cognitive implications [3-9,43].

### 4. Conclusion

The presented integrative quantum-holographic framework for psychosomatics might have significant holistic implications, providing fundamental quantum-informational framework for better understanding of the nature of psychosomatic diseases as well as limitations of the healing methods, which might help in developing strategies for integrative psychosomatic medicine in the 21st century.

Thus, it might be said that three front lines of integrative psychosomatic medicine do exist [3–8]: (1) Spirituality and circular (psycho)therapies from all relevant meta-positions, with possibility of permanent erasing of mutual memory attractors on the level of collective consciousness; (2) Eastern (quantum) holistic medicine and non-circular (psycho)therapies, whose efforts temporary erase memory attractors on the level of acupuncture system/individual consciousness, and prevent or alleviate their somatization, as a consequence of the indolence on the first level; and (3) Western symptomatic medicine, whose activities on the somatic level via immunology, pharmacology, biomedical diagnostics and surgery hinder or soothe somatized consequences of the carelessness on the first two levels.

Hence, necessary activities on the second and third levels, with neglect of the first level, might have a consequence of further transfer of memory attractors on the level of individual and collective consciousness in this and further generations, thus accumulating quantum-holographic loads which afterwards might cause not only illnesses, but also inter-personal fights, wars, and other troubles.

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# QUANTUM WILL BE THE MEDICINE OF TOMORROW AND IT WILL REVOLUTIONIZE OUR LIVES!

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**Abstract.** Quantum medicine can be defined as a new medical direction, based on synthesis of all recent advances in quantum physics and the latest data on the deep nature of the living with the millennia experience of oriental medicine, or with the information-energy reality of a living substance. Quantum medicine is based on the use of energy quanta, i.e. small doses of electromagnetic radiation, for the purposes of diagnostics, treatment and prevention of many diseases, facilitating recovery of human health. In this case electromagnetic radiation is close to the natural level and intended to have a positive effect on functions of cells, tissues, organs, systems and whole organism. Although quantum medicine is at the initial stage, it promises revolution in majority of the methods to ensure human health in the near future. Through development of information-energy biologically compatible processes, quantum medicine might optimize all areas of healthcare.

**Keywords:** *quantum medicine, quantum diagnostics, quantum therapy, quantum prevention, future of quantum technologies*

## 1. Introduction

Illusion or magic for some, realistic and overwhelming for others, quantum physics upheavals mechanistic and rational materialism of our everyday routine.

We must however remember that nuclear fission was discovered by physicists in 1938 and that the atomic bomb was a "quantum invention" [1]... Is this an archaic utopia or more a sad reality?

Part of physics, chemistry, biology, cosmology and metaphysics, the quantum theory is bringing a true pacific revolution that will certainly influence future centuries.

S. Ortolì and J.-P. Pharabod in their book stated [1]: "The "wild", subversive and destructive theory of quantum physics destroyed the refined structure built up throughout the centuries by traditional science. Quantum physics sends us straight into the world of science fiction. Republican, Marxist, Islamic, and other revolutions may become insignificant one day when compared to the quantum revolution. Our socio-political structure and our way of thinking have been or will be even more disrupted than ever before!"

Victor Weisskopf, the renowned physicist and Schrodinger's assistant, confirmed [2]: "It is not the notion of uncertainty or Heisenberg's principle of indetermination that is at the heart of quantum physics, but that of identity, just like the "theory of absolute" (unfortunately called "theory of special and general relativity" stated by famous Einstein) is definitely a new conceptual framework that united mechanics, electrodynamics and gravity. It has brought forward a new perception of space and time, enabling us, for the first time, to formulate the laws of nature without referring to other systems of reference. In other words, in more precise terms, quantum physics allows us to give these laws a real meaning."

The *quantum theory* does not in no way change traditional mechanical laws (or physical laws) as far as body movement is concerned. This theory brings new light to the atom level and its components for which we had to create new kinds of formulations and adapt new thinking methods.

The quantum action concept was written in 1900 by Max Planck, however, it was not until 1913 that he could affirm that, "the quanta hypothesis brought forward the idea that in nature it underwent changes that were not carried out in a continuous way (according to the principles of the electromagnetic theory), but in an explosive way, in other words, a discontinued yet discreet manner."

Following the "field of physics" concept by Newton and Maxwell, quantum mechanics was developed in 1926 thanks to researchers Louis de Broglie, Niels Bohr, Wolfgang Pauli, Werner Heisenberg, Erwin Schrodinger and Paul Dirac [3]...

..."These physicists had the impression to suddenly be holding for the first time the keys to the universe!", Weisskopf wrote.

According to French professor Cannenpasse-Riffard who reveals to us through his work [4] the fullness of emptiness, the quantum theory approaches of the conscious and the physics of resonator systems: "Quantum mechanics is how matter and light behave in all their aspects, notably, all that happens on the atomic level."

According to a renowned theorist, who died in 1998, Richard Feynman, "On a very small scale, things do not act as waves nor as particles, nor clouds or pool table balls, or neither as weights on a rope nor as anything you have ever seen before."

## **2. Quanta and Photons Revolution**

As we know, a "quantum" (in plural: "quanta") is a "seed", an elementary dose of energy emitted by an atom and, according to the definition by the English physicist Stephen Hawking, "Quantum is the undividable unity which can emit or absorb waves."

Quantum includes the two-sided nature of electrons, both particle-like and wave-like ... This may seem paradoxical but it is an atomic reality proven by de Broglie in 1923 and established in real quantum applications!

To this notion we add "the hierarchy of material systems" still dubbed "quantum scale" [2]: "The atoms identity prevails as long as it is not disturbed by quantum effects. A slight amount of energy, for example, is all that is needed to change the quantum state of a large molecule. A lot is needed to change the quantum state of the atom itself and hundreds of thousands of more energy to change the atomic nucleus. This enables us to come up with a quantum scale."

Light also reveals a double-sided nature as it is spread throughout space as a wave and concentrated in an infinite point as a particle.

Commonly known as a "seed of light", the "photon" is an elementary particle of light which is both an energy corpuscle and quantum whose flux makes up electromagnetic radiation. According to Hervé Dole [5] "Photons carry information on where they came from and what areas they have travelled through. The photon is a quantum object, vector of electromagnetic interaction. We can decompose light, which is very useful, as it reveals the chemical composition of matter! Each chemical element has a unique signature. It absorbs or emits just a specific family of energies and therefore photons."

This explains why we can use the expression "photonic medicine" or even the term "médecine superlumineuse" [6] according to the book title of professor Régis Dutheil and Brigitte Dutheil!

## **3. Towards Quantum Medicine or Photonic Medicine**

As a result, quantum medicine is an approach which is not founded on the action of chemical substances within the body but on wave reactions or electromagnetic fields applied to the living organism to bring it back to a balanced state, still called "stable state". These reactions must take into consideration the entire biological nature of the patient and in particular his/her genetic predetermination, in other words his/her genetic make-up. Furthermore, "quantum medicine recognises fundamental interdependence between the spirit and body within all stages of life. It also considers the person's spiritual dimension as an inevitable aspect," according to Cannenpasse-Riffard [4].

This application corresponds to a quasi prophetic prediction by Erwin Schrodinger (one of the quantum mechanic founders) on the quantum theory of living matter.

"A human being should not consider his/her self to be matter driven by energy. It is energy that pre-exists matter and that orientates matter towards the vital phenomenon" confirms the Chinese scholar Lin Zhou.

It is important to underline that quantum medicine does not need great quantities of energy (as for the bistoury laser, for example) but only the emission of low level of energy and weak magnetic fields [7] via radiation [7] which are not perceived by the patient (no electrical currents nor heat is perceived).

It is not therefore an excitation or inhibition current that is applied to the organism but a "weak signal" which carries a certain type of energetic data. As a result, quantum medicine only reacts on an informational level on molecules and on cells and then via chain reactions interacting with the skin and the entire organism [8].

It is therefore possible to solely use an ultra-hertz energy emission of 1-3 electron volts (eV) during quantum therapy with a considerable positive influence on the organism and with immediate observable effects. In comparison, one must know that the bonding energy that makes up the atomic nucleus (association of protons and neutrons) is around a million electrons volts (MeV).

Russian scientists have been working on quantum medicine for over the last 20 years and quantum physics applications for man in Space and on Earth are as follows:

- laser emission of the optical frequencies range,
- emission of the ultrahigh frequencies range (millimetre waves) and of the hyper frequencies range (centimetre waves),
- emission of chromatic light in the visible frequencies range,
- electromagnetic emission of low frequencies,
- acoustic or oscillation emissions.

All these different wave emissions (still called oscillations) are specific to the being's physical state and are organically linked to the individual's vital activity process. Under certain conditions, these emissions can positively influence the living system's level of stability (biophotonic [9], a synergy of functions that fall within the "functional integration model" associating energies, information and substances).

#### **4. What Kind of Information and Why?**

The action mechanism for applications implemented by quantum medicine needs to study another field, that of genetics, to understand the reason for the efficiency and universality of the quantum revolution.

Firstly, we are going to tackle the biotechnologies problematic (genetic modifications and implants) and in particular the notion of cloning which we have often spoken about following the cloning of the famous Scottish sheep called Dolly. Cloning is the artificial reproduction of a living being, a carbon copy made from one living cell. What is the point for an individual to clone one or several carbon copies of one's own identity (and surely not with the same personality)? Like a machine with spare parts? This possible mechanical and surgical solution does, by no means, answer life's everyday questions!

What mainly interests us is the answer to the question itself. How can an original cell maintain all information on the adult copy of Dolly? What colour will its wool be, its eyes? How will it behave and interact with its congeners? The questions we can ask ourselves on how an individual relates to oneself and to one's surrounding environment are endless! Where is all this information stored?

Certain researchers calculated that in a gamete germ cell, for a chromosomal structure of a millimetre in length, if we compare the volume of genetic information in this cell to that of a computer, it would be equivalent to 5-7 times the distance from the Earth to the Sun!

These studies lead to a very important conclusion: The development of an adult gamete germ cell cannot be preserved and transferred solely on a cellular level. The cell's physical and chemical resources, in other words the cells matter potentialities are not sufficient enough to store the large quantities of information.

Therefore we can ask ourselves a question: Where is this genetic information stored? Where is this huge database that creates man from a foetus and which turns a simple sheep cell into a living sheep and an apple seed into an apple tree?

Furthermore, it is necessary to underline not only the colossal amount of genetic information but also the

prodigious reliable degree of storage and transmission or restoration of this type of information! The modification or the loss of one of these genetic unities can lead to death or disease of the entire organism. We all have in mind the obvious cancer process in which cell multiplication is modified although it has been genetically programmed...

## **5. Programme or Hologram?**

The latest research shows that genetic inheritance (genetic code) is not only preserved as a biochemical gene substance but also in the form of a "field structure" or "quantum structure". This structure is nothing more than a quantum structure that carries genetic information and which is organised in a hologram form [8].

However the hologram has a prodigious and exceptional quality: Each of its parts contains information on the entity. We can therefore understand the reasons why the cell carries such information [10].

To create a hologram and to keep it going, we must have a source of coherent light (coherent radiation such as laser)! Where this light can be found in the living cell, this source of emission? The Russian scholars Gourvitch, Lubitchev, Beclémichev and Gariaev managed to prove that certain molecules, such as DNA, function according to the principle of coherent light emissions.

Apart from their goal to preserve genetic inheritance, all cells are able to transmit, to process like a computer, and even restore lost details – not forgetting the cells primary capacity which is to create a memorised development programme by strictly applying the energetic-informational transformations programmed sequence in a specific time and place (Space travels are inspired by this!).

Nowadays, a lot of researchers manage to recognise that chromosomes use emissions from the UHF and HF range (ultra-high and hyper-frequencies), laser light spectrum and acoustic fields for transmissions, processing and restoring of biological information.

## **6. Question of Nature's Memory Capacity or Quantum Image?**

Experiments by American researchers on aura illustrate the cognitive and memory capacity of the living tissues for the organism where they originated from. For example, we cut off a part of a leaf from a healthy and entire leaf that came from a healthy plant. Then we took photos of this partially amputated leaf using very sensitive apparatuses capable of detecting the UHF frequency fields as well as laser, acoustic, and other electromagnetic fields. To researcher's surprise, they could observe an image of the entire plant on synthesised photography! ... How was the part of the amputated leaf reconstructed on the photo, as it was materially absent?

This means that the remaining leaf cells have a memory capacity – as a structured electromagnetic field – of the quantum image of the entire organism where they came from and which was made by nature.

## **7. Heading towards Quantum Medicine**

We can define quantum medicine [4] as *a new medical application based on the synthesis of all quantum physics achievements [3], by adding the latest information on the profound nature of the living being with the millennium experience on Oriental medicine or on a living being's energetic reality.*

Quantum medicine is therefore based on the usage of energy quanta, in other words, small doses of electromagnetic radiations, for diagnostic purposes, for individual health prevention and restoration. In order to do so, we use electromagnetic action involving factors similar to those in nature, which have a positive influence on the system's cells, tissues, organs as well as the entire individual.

It is important to note that the low power levels of energetic action used in quantum medicine is entirely harmless. The method consists of re-establishing the abnormal functioning, in other words, the information linked to the disease, to regain a balanced energetic state, commonly known as a healthy state. This can be explained by the fact that quantum action uses the organism hidden adaptation capacities both on a cell level as well as on the living system level. This action quickly increases the organism's immunity levels and activates the body's defence mechanisms to build a robust resistance against functioning gaps (alterations).

Therefore, Yuri Kheifets, a Russian doctor and practitioner and quantum medicine researcher at the Energetic Institute in Moscow, gives this definition [11]: *"Good health lies within the harmonic energetic information relationships between an individual (the subject) and Nature (the object). This harmony is expressed by the organism's homeostasis process on a physical, mental and spiritual level"*.

The homeostasis process can be considered to be an optimal process for self-regulation, self-defence and self-curing mechanisms of the living organism, in other words, an active health process of the entire person.

Quantum medicine is based on the fact that all biological processes linked to vital living organism activity, have a unique representation in the electromagnetic information field structure. This structure can be found both inside as well as outside the organism.

## **8. Using Quantum Diagnosis**

Quantum diagnosis is based on the observation that the energetic information parameters of the organism characterise – in a precise, concrete and reproducible manner – the functional state of the entire organism and its different parts: Organs and isolated linking systems (germ layers, metabolic activity ...). By recording the micro-electric parameters, corresponding to internal functioning structures, on the patient's skin, we cannot only observe the parameters of a disease but also how the disease progresses and utmost we can precisely evaluate the patient's potential disease predispositions. This is how we monitor astronauts' health status on a regular basis! This new "health check-up" offers an extra advantage: recorded digital data can be sent via satellite anywhere in the world and this new technique is called "telemedicine"...

## **9. For Quantum Therapy**

Quantum therapy uses all types of biological and ecologically-pure radiation to re-establish the electromagnetic information that has been altered by the disease, bringing this field back to a stable state. In order to do so, the electromagnetic emissions used are in harmony with the energetic information process of the living organism.

The fields of quantum therapeutic application in human and veterinary medicine are as numerous as medical specialities such as cardiology, pulmonology, surgery, traumatology, gastroenterology, gynaecology, urology, stomatology, dermatology, ophthalmology, neurology, rheumatology, cosmetology and more. And numerous medical statistics confirm the efficiency of these treatments and have validated the results.

To date, the application field for quantum medicine is continually expanding and advanced research is being carried out in Russia for diseases such as: oncologist sicknesses (tumours), radiation sickness, HIV, certain cardiovascular sicknesses, sterility, alopecia, renal calculi, infant cerebral palsy, bronchial asthma, urinary incontinence, etc.

## **10. With Quantum Prophylaxis**

Experiences show the importance of quantum technological applications as a preventive method, such as during allergy seasons or during epidemics. It is possible to use prophylactic cures for 3 to 5 days during 5 to 10 minutes per day.

Reliable Russian statistics show that the number of disease cases decrease by 4 to 5 times depending on the type of disease and the time of cure application. The same process is used both for quantum prophylaxis as well as for quantum therapy.

Quantum prophylaxis is also regularly used in sport and cosmonautic medicine fields, for preparing competitions and spatial flights.

A recent series of scientific publications showed that the use of quantum prophylactic technologies with 2-3 cures a year would prolong human life for 7-12 years!

## 11. Quantum Regeneration

The importance of quantum regeneration – still dubbed, recovery or rehabilitation – was underlined in many cases: recovery and post-operative scarring acceleration (following complex and major operations), and recovery following chemotherapy and/or radiotherapy. Recovery time can be 2 to three times quicker than normal.

We can quote the example of the former Russian President, Boris Eltsin, whose quick two-week recovery after a triple bypass at the end of 1996 stunned the entire world!

## 12. Future for Quantum Applications

Quantum medicine applications are still very new and they have not yet gained entire public recognition. However, the rate at which quantum therapeutic technologies are progressing seems to greatly exceed all other forms of widespread medical technologies worldwide.

Quantum therapy's efficiency, coupled with its universal aspect as well as its ecological aspects (harmless and painless), with no iatrogenic effect nor any medicine addiction, represents a great advantage for the future health of populations. Furthermore, the cost of treatments, with an application recommended in more than 200 different symptomatic diseases [12-15], is low and avoids having to operate in certain cases such as calculi, gastric or varicose ulcers, prostate adenoma and fibromas...

Current studies affirm that quantum technologies will soon be used for prophylaxis and for treating diseases such as: auto-immunes pathologies, diabetes, cancerous tumours, atherosclerosis, epilepsy, schizophrenia, etc.

Current studies on how electromagnetic radiation affects genetic structures (DNA), species memory mechanism and genetic information systems, could lead to human organ regeneration on accident-lost, deformed or amputated organs, such as teeth, eyes, fingers, arms, legs, or liver. Taking as an example, worms, slugs and lizards have kept their natural capacity to restore lost organs or functions.

Rather than opting for a surgical implant which would justify all organ fabrication biotechnologies (via genetic manipulation, cloning or other methods), the Russian scholars make it a point of honour to find the key to quantum bio-regeneration of organs and other applications to determine human health in the future.

## Conclusion

"Quantum medicine" still remains an unknown field. It is liable to revolutionise most investigation and care methods in the near future. With progress made in entirely biocompatible energetic processes [16], without having to carry out genetic manipulations or vaccines, quantum medicine will optimise all health fields by giving creation back its real meaning given by life!

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## MODERN VIEWS OF MECHANISM AND CLINICAL EFFECTS OF ELECTROMAGNETIC RADIATION OF MILLIMETER RANGE

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**Abstract.** Electromagnetic radiation of a millimeter range (ERHF) has versatile influence on a human body and, first of all, on processes of regulation and homeostasis maintenance. Realization of this influence is appreciably provided at the expense of subcellular, cellular mechanisms of regulation of functions and is caused by a number of features. One of the cores, its multilevel character, is: effects of influence are shown at all levels of the biological organization of an organism. In the mechanism of influence ERHF on a human body unique feature is possibility of its resonant interaction with endogenic ERHF. ERHF affects practically all known types of cages (nervous, muscular, reception, etc.) in modeling systems of any level of the organization of biological object. Mechanisms of this influence are defined by specificity of arising changes of functional parameters of a cage, its separate components caused by influence of the given kind of radiation at molecular and sub-molecular level of the organization of a cage. Possibility of updating under the influence of ERHF physics – chemical properties of a plasmatic membrane, activity of enzymes, ionic transport, permeability of cellular membranes, processes of aggregation of cages – are shown. The expressed influence of ERHF on electric activity of separate neuron is shown. Influence of Microwave Resonance Therapy (MRT) on a sick organism promotes restoration of an aerobic way of recycling of glucose by cells. The extensive clinical and experimental material is testifying changes of the immune status of sick people and after influence of MRT the activity of immune cells is saved up. It is shown that the irradiation of blood of ulcer patients in vitro leads to restoration of the lowered metabolic activity of leukocytes, fagocytic activity of neutrophils, and monocytes. MRT normalizing impact on coagulation system is observed at diseases of cardiovascular system, in particular stenocardias. Usage of MRT at sick of hypertensive illness of I stage restores compensatory possibilities of cardiovascular system, with favorable normalizing impact on hemodynamics. MRT is effective at treatment of gastro duodenal ulcers, at neurologic patients, in complex treatment of patients with hyperplastic processes in a uterus, treatment of gynecologic diseases, in treatment orthopedic, diseases of an urological profile, at treatment of a chronic obstructive bronchitis, in treatment of oncological patients of SH-1Y stage, at sick of a cerebral atherosclerosis, in preventive maintenance and treatment of paresis, a gastro enteric path after operations, treatment of a children's cerebral paralysis. Primary effects concern the general for cages of an organism of the processes underlying ability to live – fabric breath, mechanisms of electronic carrying over. Secondary effects of display of influence of MRT on biological object are defined by hierarchy of levels of the organization peculiar for given biological object. At higher levels of the organization of metaphytes (organic system, level of a complete organism), effects of influence MRT cover the increasing range of displays. At these levels of the biological organization, the increasing role is played by normalization of broken regulation mechanisms – hormonal, nervous, immune, and restoration of the broken functions of separate tissue, bodies, systems of bodies, adaptation-compensatory organism systems. The analysis of results of the usage of MRT in clinical practice allows to conclude that efficiency of microwave resonance therapy is defined not only specifically on the concrete form of diseases, but also in depth of infringement adaptive-compensatory organism systems, convertibility of organic changes in bodies and fabrics. The extensive actual material testified to the various parties of the ERHF influence on biological objects is the basis for the further expansion of a range of searches of applied use of methods of MRT in medicine.

**Keywords:** *Electromagnetic radiation of a millimeter range (ERHF), Microwave Resonance Therapy (MRT), mechanisms, clinical effects*

# THE REALIZATION OF GENOME IN THE NOTIONS OF PHYSICS OF THE ALIVE

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**Abstract.** Quantum Physics of the Alive is based on the definition of the Alive (in its distinction from the Dead-inanimate) as a fourth level of quantum organization of Nature (after nuclear, atomic, and molecular levels). Self-consistent potential of each living object is formed in accordance with genome as a laser of mm-range wavelength. Such a notion concerning the Alive, grounded on theoretical considerations, clinical material and the direct experiments, allows us to cast a fresh glance on the fundamental problems of biology and not only on them...

**Keywords:** *the Alive, coherence, genome, quantum-mechanical organization of Nature, quantum medicine, mm-range of electromagnetic waves, ancient Chinese medicine, God*

## 1. Introduction

The notions of Physics of the Alive permit us to abandon primitive point of view on the realization of genome, which sounds as seeking "the genes responsible for so, so and so". It is absurd, nonsense. A gene is combination of DNA molecules and even being very big and complicated it cannot "respond" for peculiarities of morphological structure of human body or the features of man's character as well.

The hereditary information is only preserved in genome, but is realized by means of functioning of the coherent eigenfield of organism (electromagnetic framework, electromagnetic model, God's defence).

Quantum medicine rests upon the belief that understanding of the essence of the alive in its distinction from the non-alive must serve as a prerequisite for medical treatment or better say "rendering aid to people".

Just this belief was introduced into quantum medicine by its theoretical basis, i.e. Physics of the Alive – a new trend of natural science which has turned biology and medicine from empirical into fundamental science. It is expedient to remind here that nowadays there exists a strict definition of the notion of fundamentality in natural sciences. They are the sciences in which the objects of investigation have discrete spectra of characteristic eigenfrequencies. Before the discovery of "manifestation of characteristic eigenfrequencies of a human organism" [1], that is, before the time when ideas of physics of the alive have been formed, there were three such sciences: nuclear, atomic, and molecular physics.

I believe, Weisskopf [2] was the first one who has drawn attention of the scientific community to the fact that just the principles of quantum mechanics, i.e. the principles of identity and discreteness, and also existence of characteristic eigenfrequencies related to them, ensure diverse stability of the world at nuclear, atomic, and molecular levels of the matter self-organization. Weisskopf introduced the notion about three stages of quantum organization of nature or, as it is often said, three steps of Weisskopf's Quantum Ladder. Guided by the well-known facts of the levels overlap in the energy spectra of manymolecular structures (due to the screening mechanism and close connections in solid bodies and liquids), Weisskopf has guessed that the third molecular level was the last level of quantum organization of nature, and molecular physics was the third and the last fundamental science, respectively.

At the same time, in nature, besides nuclei, atoms, and molecules, there is also at least one more class of objects which are characterized by diversified differential stability as well. These are the living beings. Life is not a substance that constantly varies its form and structure as "the ocean of life" in the well-known film "Solaris". The earth, water, and air are inhabited by quite discrete representatives of flora and fauna. There are their species,

genera, particular individuals. Their similarities and differences are stable in time: at any continent we distinguish cats, dogs, sparrows.

We, I mean the humans, are also much alike to each other, but each of us has individual features of appearance which remain unchanged so that we recognize ourselves (in a mirror) and our acquaintances when we see them. Thus there arises a temptation to explain diverse differential stability of the living by the same principles of quantum mechanics, i.e. the principles of identity and discreteness and, accordingly, to consider the living systems as the whole quantum-mechanical entities<sup>1</sup>.

## 2. Physics of the Alive and Macroscopic Quantum Effects in Biophysics

Microscopic dimensions do not serve as the necessary condition for application of quantum mechanics. The presence of macroscopic quantum effects testifies to this fact: superfluidity, superconductivity, Josephson effect. Actually the necessary condition for application of quantum mechanics is existence of the entire self-consistent potential in the system. The self-consistent potentials of the same type determine the existence of the objects which form the respective steps of quantum ladders.

In other words, *the necessary condition* for formation of the whole macroscopic quantum-mechanical entity is existence of the efficient long-range acting forces within a restricted energetic (frequency) range that would have created the coherent multimode fields of laser type in each entity.

Additionally, *the sufficient condition* for existence of macroscopic quantum-mechanical entity at its own step of Weisskopf's quantum ladder is the availability of the mechanism of self-support of such types of fields, and of characteristic spectral composition defined by active centers, but certainly on condition of positive energy of their joining.

Such conditions are realized in the living systems.

Really, as shown by Fröhlich [3], the frequencies of eigenoscillations of cytoplasmic membranes of all living systems must lie within ( $10^{10} \div 10^{11}$ ) Hz range. It means that this is the range where we can observe the effects of resonance amplification of selective modes related with the reaction to changes of spatial genome structures in the process of DNA replication, RNA transcription, protein translation. In this context, of great importance is the existence of the so-called proton transport described by Mitchell [4], which consumes a considerable portion of metabolic energy of cells and which constantly maintains the great tension of electric field on cytoplasmic membranes (approximately  $10^5$  V/cm). Just this fact may (potentially) turn the cells (their membranes, to be more exact) into the active centers of formation and maintaining of coherent eigenfield of a body in millimeter range of electromagnetic waves.

However, as water prevails in chemical composition of human organism and this water intensively absorbs the mm-range electromagnetic radiation, so the necessary condition of generation of coherent modes is not sufficient as yet, though the favorable conditions exist ( $h\nu \ll kT$ ). In this case the relation of probability of induced transitions to spontaneous ones is much higher than unity ( $P_{\text{ind}}/P_{\text{spon}} \sim kT/h\nu \gg 1$ ) [5].

That is why the answer to the question whether the real situation in living organisms lies beyond the threshold of non-equilibrium phase transition to coherent state, should be obtained by way of observation and research.

Such observations exist.

Several thousand years BC the Chinese men of wisdom, who have laid the foundation of what we call now the Ancient Chinese Medicine or acupuncture, were guided by the ideas that the internal organs of a man are intersected by the lines, the so-called meridians (channels), whose external tracks are situated at the surface of a body. There are 26 channels, twelve paired and two unpaired. The majority of biologically active points (BAP) or

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<sup>1</sup> We must do justice to Weisskopf: drawing schematically his quantum ladder, he has also drawn the fourth step with discrete energy levels – the level of life – as early as in 1972... with no comments, just as a foresight of a genius.

acupuncture points are situated just over them. These points are used for sticking the needles into them according to the needling technologies (by way of example see [6]).

Skeptical attitude of the official West medicine towards the Ancient Chinese medicine in spite of undeniable achievements of the latter is related to the ideas concerned with the existence of a meridian network. The problem resides in the fact that channels are not observed at anatomic-morphological level, and the West medicine based on the so-called chemical paradigm adheres to the visualization principle claiming that only something that can be seen directly by an eye or with the help of a microscope does actually exist and can be an object of scientific research in an organism. The origin of so primitive, at first sight, ideas can be understood if we consider the history of development of the West science in general, and medicine and biology in particular. The modern West medicine had been forming in the middle ages staying under the pressure of religious dogmatism, with canons defended by the Inquisition in the struggle against heretics. The meticulous medical men were in a constant danger to be enlisted among the heretics. The bravest of them displayed their protest by spontaneous formation of primitive materialistic world outlook. In the struggle against official religious scholasticism they shifted to positions of the extreme atheism, denying the very existence of God with the argument that “nobody saw him”.

In my opinion, just this argument underlies the principle of visualization which has been considered the criterion of science in medicine and biology for many centuries.

During the same centuries, the fundamental science studying the non-living nature expanded essentially our ideas about it, in particular, due to the field concepts. And nowadays, even at domestic level nobody is surprised at the possibility to tune the radio or TV sets to a great number of stations or the possibility to chat by mobile telephone, though it is impossible in all these cases to “view” by an eye the carriers of information.

As to the scientific notions, the mankind enters the third millennium with strong recognition of the idea that in the worldview a field and a substance are represented at the fundamental level as equal in rights.

It is worth noting that for several centuries, i.e. long before formation of concepts of quantum electrodynamics and physical vacuum, physics (being non-oppressed by ideological burden in contrast to medicine and biology) has been guided by global principles which reflect the material unity of the world due to existence of the effective long-range action and which underlie the laws of modern physics. I mean the principle of the least action (Maupertuis), the principle of the shortest optical path (Fermat), the least losses principle (for current), the principle of a system transfer to the lowest potential energy, etc.

It is difficult to imagine that not a single person in medicine and biology knew nothing about it. Then a question arises: why is it considered the axiom that for a child birth nothing is needed apart from the union in vitro of a spermatozoid and an ovum, for example? Or else, that it is necessary to look for the genes which are “responsible” for something [7]?

I am convinced that *the cause of such views is macroscopic dimensions of independently functioning living objects.*

Really, the modern West civilization was based on atomistic ideas of Democritus according to which cognition of nature must proceed by way of division of the macroscopic objects surrounding us into smaller parts, up to the indivisible ones (atoms) and their study would give an answer to all questions. And though today our atoms are not the smallest objects of the microworld, the atomistic idea itself proved to be very fruitful and the achievements of the West civilization testify to this statement.

It should be recognized that the physicists who made revolution in natural science in the first decades of the last century have also contributed to consolidation of false idea that only in the microworld there occur the events having the fundamental importance.

As it is known, the pretext for the above-mentioned revolution was impossibility to explain certain phenomena of the microworld by the laws of classical physics, and its consequence was the origin of quantum mechanics, the principles of which (identity and discreteness), as was noticed earlier, ensure the existence of three steps of Weisskopf's quantum ladder and, respectively, three fundamental sciences: nuclear, atomic, and molecular physics. It means that many molecular objects having no discrete energy levels cannot carry the fundamental information.

In this way, beyond the interest of fundamental science (with its notions of field, virtual particles and photons, quantum transitions and metastable states, volume and length of coherence, etc.) there was left not only

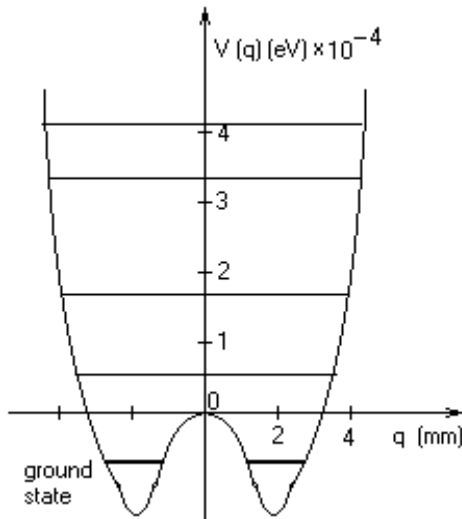
the whole macroscopic physics but the entire living world. It means that according to the standard notions the integral living beings (the humans inclusive) must be studied within the scope of classical physics solely, painted with chemical reactions, and the phenomenon of life itself is a singularity which stays outside the science.

Thus, we are the witnesses of the absurd situation: all people have no doubts that the living differs from the dead, life from death, but dozens of biological and medical sciences, the task of which must have been the support of life in its opposition to death, were not imbued with the phenomenon of life studying only its fragmentary signs.

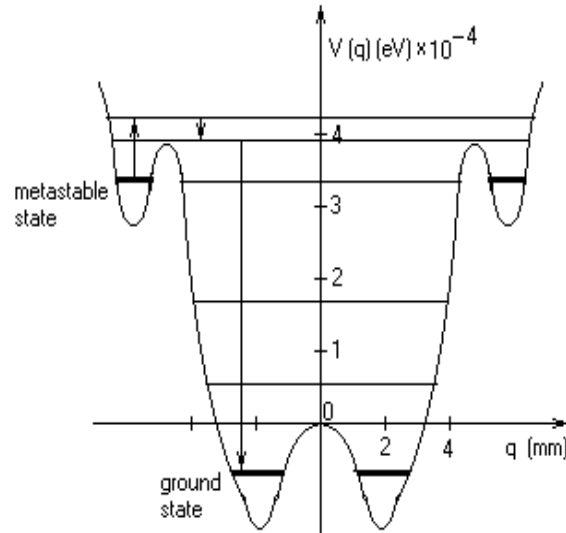
### 3. Physics of the Alive and Quantum Medicine

Physics of the alive and quantum medicine have radically changed the situation. It became clear that an organism displayed all signs of the whole quantum-mechanical system, the ground state of which is health and metastable state – disease.

And really so, transition from the metastable to the ground state, similarly to the preceding steps of the quantum ladder, is realized in a body during medical treatment by mm-range electromagnetic quanta, the energy of which stimulates transition of the system from metastable state to such an excited state from where a cascade transition into the ground state (health) goes by the selected rules with the higher probability than the return to the metastable state (Fig. 1a,b).



**Figure 1a.** Organism's ground state (health). Landau-Haken potential  $V(q)=kq^2/2+k_1q^4/4$  ( $k<0$ ,  $k_1>0$ ).



**Figure 1b.** Metastable state (disease) of the organism. Deformed Landau-Haken potential. The way out of metastable state (treatment) is shown with usage of MRT.

As is generally known [7,8], the basic technology of quantum medicine is microwave resonance therapy (MRT) which makes use of the flows with spectral density  $(10^{-21} \div 10^{-20})$  W/Hz·cm<sup>2</sup> in medical practice. This density corresponds to quite a few mm-range quanta.

In this way, the physician of quantum medicine working with extremely low flows of the mm-range electromagnetic radiation tries to do his best to implement the conditions depicted in Fig. 1b. At one of these “resonance” or therapeutic frequencies, the electromagnetic framework of human returns to the ground state and as far as the framework is self-consistent with anatomic-morphological structure of a body, so such an approach induces the process of adjustment of the anatomic-morphological structure to the restored framework, i.e. the process of cure starts. Taking into account that the organs and other morphological structures of a body cannot get

reconstructed in a moment, there remains probability that with the lapse of time (several hours) the organism will return to metastable state though deformation of potential decreases and the state approaches to the one depicted in Fig. 1a. It should be noted that according to variation of the potential form, therapeutic frequencies may be changed in the following days of treatment, so the resonance “tuning” is necessary at each session. It is easy to notice that in a healthy organism there are no therapeutic frequencies and this fully corresponds to the practice of the MRT application.

Let us return to the question about formation of the coherent field of a body, existence of which, in accordance with genome, allows to perceive an organism as a whole quantum-mechanical entity.

The investigations showed that the maximal MRT efficiency is observed in those cases when the action of the source of the mm-range electromagnetic radiation is directed to biologically active points (BAT) of a body which correspond to acupuncture points, and are located mostly, as it was noticed above, over the external tracks of the channels painted on sculptural images of a man by Chinese men of wisdom more than 5000 years ago.

I have already written that trajectories of the meridians do not have morphological peculiarities, i.e. they cannot be seen by eyes, that is why the West medicine denies their real existence in the belief that their only destination may be to help the physicians-needling therapists to find BAP on a human body.

We managed “to see” the channels [9].

They actually exist and really connect the fingertips of hands and legs with the internal organs, but not within a visible range seen by the eyes but just within mm-range of electromagnetic framework, coherent eigenfield of an organism, due to which there exist efficient long-range acting forces of an organism ensuring its quantum-mechanical entirety.

According to the ideas of physics of the alive, formation of a meridian system of a body begins during 14th week of an embryo development. At this time cartilages harden and are turned into the bones, this is accompanied by spontaneous breaking of symmetry at fundamental level: the running waves are reflected from the nails thus forming dynamic interferential picture such as standing waves. This can be observed as a papilar picture at the fingertips of one’s hands and legs [10]. The meridian system in the form of dynamic waveguides is formed due to reflection of the running waves from the bones, on the one hand, and, on the other hand, from the inside skin surface in the area of BAPs, positions of which on the surface of skin are defined with the places of falling of the running waves at angle of the complete internal reflection [10]. Stability of the meridian system during functioning of the joints is ensured by the obligatory presence of BAP in the center of flexions of each joint of the limbs.

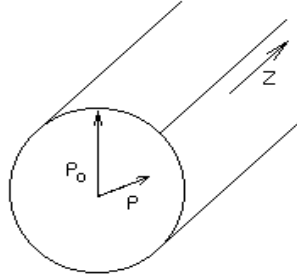
The measurements carried out with the help of specially designed radiometric system at the level of the inherent noises  $\sim 5 \cdot 10^{-23} \text{ W/Hz} \cdot \text{cm}^2$  [8,11] gave the possibility to obtain the important characteristics of the channels and BAPs:

1. The channels have diameter (3÷5) mm, at least at the spots of their approaching the surface in acupuncture points;
2. The refraction index inside the channel is the same as in atmosphere, that is  $n = 1$ , but not 5÷6 as in the body outside the channel areas;
3. In case of functional disorders related to the concrete channel, at density of the external flux within the range of  $(10^{-21} \div 10^{-20}) \text{ W/Hz} \cdot \text{cm}^2$ , the respective acupuncture point completely absorbs this radiation, that is, the black-body mode is realized with the absence of reflection;
4. With the current density increasing up to  $10^{-19} \text{ W/Hz} \cdot \text{cm}^2$  and more, the situation changes in a triggering way – BAP completely reflects the external mm-radiation (it can be suggested that just in this way life on the planet is preserved under condition of technological electromagnetic pollution of the environment within the life range which is, in natural conditions, devoid of the sun effects due to the intensive absorption of mm-range electromagnetic waves by the atmosphere).

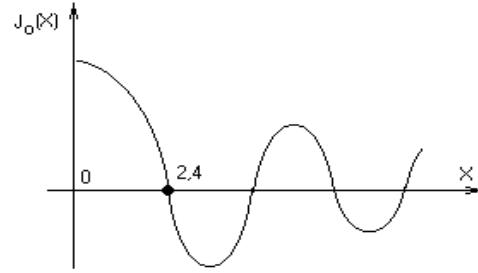
The above-stated properties of the channels actually allows to consider them as dynamic waveguides along which light-excitons are running ensuring the coherence of the entire electromagnetic framework of a body [12]. Such an interpretation gives good reason to apply the electrodynamics laws in the attempts to understand the peculiarities of the metric scale used in ancient Chinese medicine.

It is known that the distance between acupuncture points along the external tracks of the channels in the ancient Chinese medicine is measured in the specific length unit – *cun*. One *cun* length is different with different people, because it is defined by anatomic characteristics of a particular organism. In monographs concerning acupuncture [6], to determine the *cun* length, as a rule, it is recommended to give due regard for certain anatomic peculiarities of a hand. Generally speaking, one *cun* is approximately the width of a thumb in the plane of a nail in a joint, that is, this value for the grown-up person with common anatomic proportions constitutes approximately 2.5 cm.

Let us turn our attention to the mechanism of formation of the field inside the channel, considering the latter as dynamic cylindrical waveguide with diameters  $d = (3 \div 5)$  mm and refraction index equal to unity ( $n = 1$ ), i.e. the same as in the air (Fig. 2).



**Figure 2.** Scheme of the channel as dynamic waveguide  $\rho_0 = d/2$ .



**Figure 3.** Cylindrical Bessel function of the first degree of zero order.

In the process of formation of the standing wave along the waveguide ( $Z$ ), at first the running wave is in motion. Axially symmetric problem is solved in cylindrical coordinates ( $\rho, z$ ). Write down the wave equation:

$$\nabla^2 E - 1/c^2 \cdot \partial^2 E / \partial t^2 = 0. \quad (1)$$

Its solution will be found as:

$$E = E_0 j_0(k_\rho \cdot \rho) \exp(j(\omega t - k_z z)), \quad (2)$$

where  $k_\rho$  and  $k_z$  are components of a wave vector in channel-waveguide along radius  $R$  and channel waveguide  $z$ , respectively, and  $j_0(k_\rho \cdot \rho)$  is cylindrical Bessel function of the first degree of zero order (Fig. 3). Let us use the first root approximation:  $k_\rho \cdot \rho_0 = 2.4$ .

Taking into account that Bessel function is eigenfunction of Laplace equation, after substitution of (2) into (1) we obtain:

$$-k_\rho^2 - k_z^2 + \omega^2/c^2 = 0; \quad (3)$$

$$k_z = \sqrt{(\omega/c)^2 - k_\rho^2}. \quad (4)$$

After substitution  $k_\rho \cdot \rho_0 = 2.4$  into (4) we get:

$$k_z = \sqrt{(\omega/c)^2 - (2.4/\rho_0)^2}. \quad (5)$$

By definition:  $k_z = 2\pi/\lambda_z$ , where  $\lambda_z$  is wave length in a waveguide; in addition, by taking  $\rho_0 = d/2$ , from formula (5) we obtain:

$$\lambda_z = \lambda_0 / [1 - (\lambda_0 / 1.3 \cdot d)^2]^{1/2} \quad (6)$$

where  $\lambda_0$  is wave length in atmosphere and  $\omega/c = k = 2\pi/\lambda_0$  is wave vector  $k$  in atmosphere; for  $\lambda_0 = (5 \div 6)$  mm and  $d = (3 \div 5)$  mm, from formula (6) it follows  $\lambda_z = (5 \div 6)$  cm.

In a standing wave formation, the distance between the maxima (and minima) equals the half of the wave length, i.e.  $(2.5 \div 3)$  cm.

Certainly, the values of  $\lambda_z$  given by formula (6) are very sensitive to the relation  $\lambda_0/d$ . But formation and support of the proper meridian in a body, in accordance with genome, represents a self-consistent process; when depending on the state of an organism, the meridian diameter  $d$  can “breathe” by fractions of millimeter, preserving constant distance in *cun* between atomic-morphological structures; if we take into consideration the internal tracks of the channel, then, perhaps, it controls also the structure and form of the internal organs.

#### 4. Biological Implications

Such approach is in accordance with our perceiving that all living beings, due to existence of coherent eigenfields of everyone, are macroscopic quantum-mechanical entities which obey the laws of quantum mechanics. In particular, not only blood [13] but every liquid in a human organism ought to move as superfluid ones (for example, not touching the walls of vessels). Besides, every organism ought to be a superconductor [14] of the second type, stability of which in the environment realizes due to “breathing” of normal threads. Such role here renders meridians (dynamic waveguides).

In this way, besides anatomic-morphological structures of a body which we can see by eyes, there exists (actually exists, because it can be measured [11]) something that it is impossible to see – the so-called electromagnetic framework of a man or, to be more exact in scientific sense, the coherent eigenfield of a human in mm-range of electromagnetic waves. This field is formed owing to electromagnetic activity of each cell of a body, but having been formed, it coordinates, synchronizes, and directs the functioning of each organ, each structure of a body in a mother’s womb and after the child birth during the whole life. Taking into account that genome of each somatic cell of a particular organism is the same, so just by way of formation and functioning of this coherent field, this electromagnetic framework, the genome is not realized, as it was believed earlier, exclusively by way of chemical transformations within the cells (by cell division and proteins generation).

Apart from maintaining the growth of an organism, these processes (DNA replication, RNA transcription, protein translation, etc.) are also realized for the vital requirements, i.e. for the case when coherent field of an organism does not match its anatomic-morphological structure. This happens in two cases.

The first case is related to the situation when the external factors (blows, falls, injury, etc.) break morphological structure of an organism and form mismatch between electromagnetic framework and its realization in a particular spot (for example, in a wound).

The second case is realized in the situation when under some extremely strong external stimuli, the coherent field gets deformed. It no longer corresponds to the genome and gradually imposes its deformation to the anatomic-morphological structure which cannot be removed by the methods of the medicament therapy. In this way chronic diseases arise.

The stated approach gives us the new attitude to solution of many well-known problems of biology. By way of example, let us consider two of them: the “garbage genes” problem and the wounds healing problem.

Existence of nearly 98% genes as if not participating in the hereditary information transfer is considered as one of the most painful paradoxes at the modern stage of development of biology. This problem does not exist for Physics of the Alive, since it considers that all 100% of the genome genes participate in formation of coherent eigenfield of a body in mm-range of electromagnetic waves (the electromagnetic framework). In conformity with the quantum mechanics laws, the potential wells of Landau-Haken type along the meridians, which at this approach are considered as Poincare’s limit cycle, are filled with the energy levels. Transitions between these levels, in accordance with selection rules, form the spectrum of characteristic eigenfrequencies of a particular organism. The genome hereditary information is retranslated just in this spectrum. This spectrum is universal passport of an organism and, as mentioned before, it is visualized in the form of papilar patterns on the soft flesh of fingers of hands and legs, which are (proceeding from positions of physics of the alive) nothing else but the dynamic interferential images (on concave screens) of the direct and reflected from the nails eigenwaves of an organism [10].

In a healthy organism whose quantum system is devoid of metastable states, the electromagnetic framework is self-consistent with anatomic-morphological structure. For maintaining of such a state, biochemical mechanisms of the cell division and protein generation must switch on from time to time and in the definite spots of an organism, namely, in those where between the structure of a coherent field and its morphological realizations mismatch begins to exceed the definite threshold. This happens in the situations when even in natural conditions, life-time of certain cells or tissues is restricted, for example, for epithelium tissues or erythrocytes. Let us remind that life-time of the human erythrocytes constitutes 120 days and nearly 2.5 mln of them dies and is generated again in a spleen and liver each second. For constant maintenance of these processes, the coherent field of an organism actually utilizes only very insignificant portion of the genome.

Quite a different picture must be realized during the embryo development (embryogenesis) and in post-natal period (morphogenesis), in case of the damages of electromagnetic framework or injuries of anatomic-morphological structure of an organism. In all these situations, much greater part of the genome, up to one hundred percent<sup>2</sup>, proves to be effectively actuated depending on the specific conditions in the chain “genome – coherent eigenfield – anatomic-morphological structure”.

By way of example, consider a prosaic situation which can take place with everyone. You have cut a finger. Why the wound is healing? Why just that kind of tissue is formed which is required and in the quantity that is required and in such a way that if the cut is not very deep, then in some days even trace of it will disappear?

Despite the seeming simplicity of these questions, the answers on them are related with solution of one of the fundamental problems of biology – the problem of morphogenesis, form creativity and differentiation of tissues. Within the boundaries of classical biology and linear physics, there were no answers to these questions, moreover it was unclear how to get closer to their solution.

By the end of past century when the revolution in natural sciences has taken place, the situation changed. It was due to recognition of the importance of non-linearity and openness in formation of stable self-organized systems far from thermodynamic equilibrium. That is, the conditions of local entropy decrease became clear. Implementation of these ideas resulted in origin of two new sciences: synergetics and theory of dissipative structures.

Undoubtedly, Belintsev [15] was the one who applied the methods of self-organization theory for development of the foundations of biological formativity and solution of the related problems in the most professional and fruitful way. Unfortunately, he remained within a chemical paradigm; he believed that the carrier of long-range forces were the so-called morphogenes, chemical substances formed by some elements of future organism during form creativity and absorbed by the others. This approach has not allowed him to make a step towards understanding of the living as the whole quantum-mechanical entity which is situated at the fourth step of a quantum ladder when self-consistent potential is formed in accordance with genome as coherent eigenfield of a body within millimeter range of electromagnetic waves. Just this definition lies at the basis of physics of the alive.

From these positions the phenomenon of healing of the injured (cut) finger finds its *schematic explanation*. In the wound area a certain number of cells were destroyed, but electromagnetic framework – coherent eigenfield of an organism remained, since it was created by billions and billions cells of an organism carrying the same hereditary information. The mismatch between the structure of a coherent field of a body (realized owing to the spectrum of its characteristic eigenfrequencies and which describes by the universal electromagnetic language all

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<sup>2</sup> The real situation is much more complex. I understood this, preparing for publication the unpublished proceedings of my father, Prof. Sit'ko Panteleimon Onufrievich, Doctor of biological sciences, genetics scientist, on occasion of his 100 years birthday anniversary (1906). To all appearances, he was the first to pay attention to so-called “polygenomity of heredity”, i.e. that there should be inherited not only the genome connected to DNA, but also division mechanisms (among them occurrence of division spindle, ensuring divergence of chromosomes in mitosis and meiosis), formation and functioning of mitochondria as energetic pool of cells, etc. So the development of exclusively chromosome heredity theory is of rather fragmentary, initial character.

the details of body's structure and its functioning) and the deformed morphology at the injured spot initiates the standard and well-known mechanisms of cells' division and generation of the particular proteins just at the injured spot (DNA replication, RNA transcription, protein translation). These processes must proceed under control of the electromagnetic framework until the mismatch between a framework (which gives what is necessary) and morphological structure at the injured spot becomes less than sensitivity threshold of the system realizing this mechanism of communication.

The expression "schematic explanation" was underlined earlier because I do not actually have a claim on description of the details of formative mechanisms. It is just a scheme as yet but the real scheme based on the modern scientific ideas [3,9-27], medical-biological and physical measurements [28-33], the impressive clinical results [34-43] obtained during 20 years in the process of curing of hundreds of thousands of patients in many countries of the world.

So I hope that the above-stated, the new in principle, ideas about the nature of life which form physics of the alive and quantum medicine, will enable biology (and medicine as well) to overcome the prejudice, the historical roots of which I described in this paper and which essentially hamper the development of the relevant sciences. I hope as well that planning of the further research in biology and medicine will be carried out with due regard for the stated above.

## 5. Medical Implications

We discussed the process of healing i.e. self-cure. But what can be done if the disease becomes chronic and is not cured by itself, or with the efforts of surgery and the medicament therapy. It was mentioned that this corresponds to the situation of disorder (deformation) of the electromagnetic framework itself. Quantum medicine (and, respectively, its basic technology – microwave resonance therapy – MRT) are aimed at restoration of electromagnetic framework of a human. The patented technologies of diagnostics and quantum medicine therapy [44] allow for determining of disorders in these or that channels and for eliminating them.

As a rule, the course of treatment consists of 10÷12 sessions, 45÷70 minutes each. During this time the metastable state of the framework decreases so much that not a single self-organization level can be formed here. In other words, the framework of an organism is constantly in the ground potential well.

The express-diagnostics methods [31,32,35,42] used by us, permit us to monitor the dynamics of treatment and to make the adequate corrections, if necessary.

The most impressive (even fantastic from the point of view of the West medicament therapy) results are observed at the first session. At the moment of resonance which ensures returning of quantum system from metastable state to the ground state, the patient feels that his pain disappears practically instantly, the feeling of lightness, of imponderability, complete bliss arises, in the closed eyes there appear dark blue, light blue, violet, green colours or bright white radiance.

Let me remind that MRT is monotherapy, i.e. its application envisages the complete rejection of any drugs or medicaments several days before the first session. Thus our patients pass to the new, non-chemical medicine.

It is important to underline that the procedures of BAP stimulation are realized by the powers carrying a few quanta ( $10^{-21}$ ÷ $10^{-20}$ ) W/Hz·cm<sup>2</sup>. The points of action are located, as a rule, in a distal way, on fingertips of hands and legs, sometimes in other places. To apply stimuli directly to the wound or painful area is prohibited categorically. The first and very important MRT rule is formulated as: never exert influence upon a focus of a disease.

It was found that subjective sensations of a patient are more reliable and efficient method of "tuning" to resonance. The point is that human sensations have been formed as a result of action of millions of self-consistent structures of an organism, which ensure its functioning. The most reliable value herewith is the painful sensation. Adjustment to resonance aimed at removing the pain proved to be the important and obligatory prerequisite of successful treatment. The modern quantum medicine technologies (Sit'ko–MRT) ensure practically complete removing of pain even in case of the grave oncological patients when anesthetic drugs fail to help.

Unfortunately, this does not mean that in all cases of rendering help to very grave and “incurable” patients we can save them from their disease and also from the consequences of their treatment by well-recognized methods of the West medicine: surgical operations, chemical therapy, and irradiation. But almost always we manage to improve their quality of life: to prolong it maximally without taking drugs and other chemical preparations; to remove the pain allowing the patient to keep his dignity and to associate with his relatives and fellow men up to the last day. In this way, the objective reasons for discussion about euthanasia disappear.

As the treatment proceeds, the depth of metastable well of self-consistent potential of an organism decreases as well as the probability of residence of an organism in this well, and the averaged sensations during the session become less acute. In case of the complex potential restoration which corresponds to the healthy organism criterion according to our ideas, the “resonance sensations” disappear, which gives the reason to speak about experimental definition of a healthy person as such who does not respond in any way to the external mm-range electromagnetic radiation of extremely low intensity.

As we see, even the first steps of the new sciences – physics of the alive and quantum medicine, based on the comprehension that life is the fourth fundamental level of quantum organization of nature – make it possible to approach the solution of global problems of biology and medicine in a new way. So it is a natural hope that practical medicine would, as soon as possible, take into account the new ideas about the nature of life and implement the available technologies of quantum medicine in order that the declared slogan: Medicine of the third millennium – “Life without pain”, would have been realized in the forthcoming ten years.

## 6. Philosophical Implications

To conclude the paper I would like to pay attention to philosophical aspect of the concepts of physics of the alive.

I have underlined more than once that all the living beings are macroscopic quantum-mechanical entities which obey the laws of quantum mechanics (beginning with its principles).

At the same time we get used to treat ourselves and other living beings surrounding us (people, dogs, cats, birds, etc.) as the common macroscopic entities which obey the laws of classical mechanics. According to these laws we are moving, the forces of gravitation and inertia affect us, in a free state we are positioned with the minimum of the potential energy, our extremities and jaw bones work by the law of levers. Moreover, millions of chemical reactions in a body take place in accordance with the laws of chemical transformations, just those, which can be observed and re-created outside a body. And what is the living organism – the quantum-mechanical entity, the object of classical mechanics, or the extremely complex computer which defines the sequence of chemical transformations, generation of the adequate ingredients, etc.?

The first, the second, and the third, all at once... and something else above it. Under the words “something else above it” I imply “the special point” around which there occur events related to formation of the electromagnetic framework inside a mother’s womb. From mathematical viewpoint this corresponds to Poincare solution of nonlinear differential equations as the limit cycles in the phase plane. During the embryo period and further on, during the whole life, there have been developed and sustained synergetic scenarios [45] which are called the dissipative structures hierarchies. And at different intersections of the cognition planes, they characterize the living as a whole quantum entity as well as a complex computerized factory and also as an object of classical mechanics.

“The special point” is and, I am convinced, will always be beyond the cognitive possibilities of science. Mechanical and chemical aspects of life are studied by the existing medical-biological sciences. Physics of the Alive and Quantum Medicine investigate the fundamental quantum-mechanical level of the living.

## 7. Conclusion

I am sure that nobody from mortals could treat anybody. What I can do (with my assistants) is to try to restore the patient electromagnetic frame (coherence eigenfield of the organism), knowing that if it would be successful all the rest the Nature will do by itself.

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# CEM<sup>®</sup> TECH MICROWAVE RESONANCE TECHNOLOGIES

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**Abstract.** CEM<sup>®</sup>-Technology is the abbreviation for Controlled Energy Material Technology. CEM<sup>®</sup> TECH device has a mode of treatment with “background resonance radiation” (BRR<sup>®</sup>-Therapy). CEM<sup>®</sup> TECH device can be used as the addition to standard treatment as well as a method for influencing acupuncture points for treatment of many diseases (inflammatory, vascular, degenerative, metabolic, immune, and oncology). In both of the cases, preliminary examination is needed for finding the necessary points and zones for influencing. The method of infra-red thermography is suitable for this purpose. It is absolutely safe, non-invasive, and highly sensible. Thereby, we offer a modern approach to treatment of diseases: non-medication therapy under temperature supervision with constant feedback.

**Keywords:** *microwave therapy, background resonance radiation, infra-red thermography, personal thermograph, acupuncture point, feedback.*

## 1. Introduction

CEM<sup>®</sup>-therapy (abbreviation of Controlled Energy Material Technology) is a modern method of therapy, which is based on the technology of material use with controlled energy structure. They were created according to the special technology on the basis of gallium arsenide, and capable «to remember» external EHF-radiation thus forming exact similarity of signals of the pathogenic and/or medical factor. This allows influencing an organism not only in a classical mode EHF-therapy, but also in a mode of background resonant radiation (BRR). These modes are executed by CEM<sup>®</sup>-TECH device. Clinical approbation has shown that EHF and BRR are especially effective in cases of medication intolerance, presence of contra-indications to methods of traditional physio- and reflexotherapies, as well as insufficient efficiency of the mentioned ways of treatment [1,2].

Personal thermograph CEM<sup>®</sup>-ThermoDiagnostics is used for early diagnostics of more than 50 prevalent acute and chronic diseases (inflammatory, vascular, oncology) in home and professional conditions, individual treatment selection and its objective control, teleconsulting services.

## 2. Background Resonance Radiation Therapy

Tomsk researcher Alexander Kozhemyakin has developed semiconducting materials that are capable of “memorizing” high-frequency electromagnetic radiation. Basing on this technology the CEM<sup>®</sup> TECH device has been created. It emits electromagnetic waves on the following frequencies: 42.2 Gc/s (7.1 mm), 53.5 Gc/s (5.6 mm), 60.7 Gc/s (4.9 mm) as well as in infra-red diapason. The device can radiate on fixed frequencies in the “noise” mode in diapason of 42-78 Gc/s.

Also, this device has a mode of treatment with “background resonance radiation” (BRR<sup>®</sup>-Therapy). The essence of this method: semiconductor (Gunn diode based on gallium arsenide) reflects external electromagnetic radiation on the frequencies that are specific for the biological object with which the semiconductor was in contact. Upon application of a semiconductor on a biological object (the skin's surface at a specific location) and

applied to a single voltage generator circuit is formed. This circuit generates electromagnetic waves with frequency characteristics of a biological object. After disconnecting the power source, a steady state of the semiconductor is formed, and semiconductor continues to generate these frequencies [3]. Since the intensity of radiation is low (power flux density is no more than  $10\text{-}20\text{ W/cm}^2$ ), the activity of healthy cells in biological object is not suppressed, but it is enough to suppress pathology processes that are in developing stage. Interaction between Gunn diode and biological object has a resonant nature, not only by frequency but also by the radiation power [4].

BRR®-Therapy is used for treatment of many diseases (inflammatory, vascular, degenerative, metabolic, immune, and oncology). It has a regulatory action and does not have contraindications. Numerous studies have proved the following effects of treatment by CEM® TECH device: improving the immune defense of the body, reducing the pain of any origin, well stated anti-inflammatory effect, faster and better tissue regeneration, normalization of vascular tone and improvement of microcirculation, and normalization of regulatory processes. CEM® TECH device can be used as the addition to standard treatment which helps to reduce treatment time and lower the doses of medications. This device can be used to influence the projection of lesions and damaged organs, acupuncture points, the areas of reflection according to Su-Jok system and other systems [2]. In all of the cases, preliminary examination is needed for finding the necessary points and zones for influencing.

### 3. Infra-Red Thermography

The method of infra-red thermography is suitable for this purpose. It is absolutely safe, non-invasive, and highly sensible. Infra-red thermography is a method of functional diagnostics, which allows to register infrared radiation from a body surface. Normally, distribution and intensity of thermal radiation is defined by microcirculation and other physiological processes [5].

Normally there is a symmetrical distribution of temperature and a gradual decrease in skin temperature from head to extremities [6]. Pathologic processes (inflammatory, oncology, and degenerative, disturbances in blood circulation) are characterized by thermo-asymmetry and by the presence of temperature gradient between the problem zone and surrounding skin tissues or reference point. A significant difference in temperature is more than  $0.6\text{ }^{\circ}\text{C}$ . For a more detailed research and detection of latent pathology, these methods can be combined with functional tests [7].

The main reasons for local temperature increase are:

- Inflammation of any origin, at which local vasodilation of the microvasculature and the increase of metabolic processes occurs;
- Malignant tumors, which activate metabolic processes. ThermoDiagnostics is especially effective for malignancy of the skin and breast cancer;
- Disturbances of the venous outflow and venous stasis;
- Irritation of the spinal roots and peripheral nerves. In this case, the increase of temperature is observed in their area of innervations;
- Increase of the metabolism of various organs.

while the main reasons for temperature decrease are:

- Disturbances of the arterial blood supply (atherosclerotic arteries, thrombosis, etc.);
- The deterioration of microcirculation;
- Degenerative processes with the replacement of functionally active tissue in the connective;
- Expressed disturbances of functions of spinal roots and peripheral nerves (in the respective zones of innervation).

In many cases, local changes in temperature go ahead of other clinical manifestations, which is very important for early diagnosis and timely treatment.

Changes of the intensity of infra-red radiation in the area of acupuncture points are connected to the change of functional condition of correlated organ or system. “Cold” zones correspond to degeneration processes and processes that suppress functional activity. “Hot” zones correspond to inflammation processes and processes that

increase functional activity. The significant difference of temperatures is more than 0.4°C (M.V. Vogralik, V.G. Vogralik, M.V. Golovanova; Diploma on discovery N115). For example, in case of the secondary thymic-dependent immunodeficiency cold zone appears in the projection of acupuncture points on frontal medial channel. In case of hypertension, Wai-guan point becomes "cold". In case of inflammatory diseases distal points along the channel of the lungs become "hot". Temperature at the point and the size of the area with temperature changes can vary during the course of treatment.

CEM-Technology company has created personal thermograph CEM®-ThermoDiagnostics. It transmits data to the computer through USB-dongle and its program CEM®-ThermoImage-BIO helps to draw thermograms on a photo of a problem area or on 3D model of a human body. The thermograph is handy, portable, easy to use, absolutely safe, and affordable. It also has the optimal accuracy for medical purposes. This device helps to conduct early diagnostics of many diseases and monitor the effectiveness of any kind of treatment. Doctor or a patient under doctor's supervision can estimate the effectiveness of every treatment. For example, therapy with CEM®-TECH device improves microcirculation, consequently, the temperature will increase in the area influence after the treatment. It is possible to estimate the effectiveness of the treatment course by doing repeated thermographic examinations before execution of treatment procedures. For example, in case of successful treatment of acute inflammatory process, the temperature in the projection of the inflammation center should decrease. It is also possible to estimate the length of remission of chronic diseases, and reveal exacerbations on early stages. Personal thermograph CEM®-ThermoDiagnostics can be used by any doctor of any specialization in his/her everyday practice [8]. Besides, it can be used by computer literate patient after receiving sufficient instructions of a doctor. Obtained thermograms can be exchanged by patient and doctor by email or other means of communication.

#### 4. Conclusion

Thereby, we offer a modern approach to treatment of diseases: non-medication therapy under temperature supervision with constant feedback.

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## MODERN SITUATION AND PERSPECTIVES OF ELECTROPUNCTURAL DIAGNOSTICS AND BIORESONANCE THERAPY

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**Abstract.** More than 30 years ago Dr. F. Morel introduced a bright idea of the bioresonance therapy. Since that time we observe development of several directions of technical implementation of this idea as well as clinical application of the equipment. It should be noted that bioresonance therapy, homeopathy and electropunctural diagnostics methods are officially approved by Ministry of Healthcare of the Russian Federation. All that gave the chance for both fast and deep, accompanied by fundamental research, development of diagnostic and therapeutic methods based on integration of empiric conceptions and heuristic models of classical acupuncture, homeopathy, physiology, chronopathology, with support of electronic hardware. Medical educational institutions offer post-graduate retraining courses covering all methods of traditional medicine. Such favorable situation gave rise to development of domestic producers of equipment for bioresonance therapy and electropunctural diagnostics and therapy, for example Center of Intellectual Medical Systems IMEDIS, which produces all range of mentioned equipment. In Russia method of bioresonance therapy gained wide distribution thanks to researches and developments conducted by Center of Intellectual Medical Systems IMEDIS directed by Yu. V. Gotovskiy. First experimental works on development of bioresonance therapy were done in middle of 1980ies by the collective of developers of diagnostic and therapeutic equipment later formed as Center IMEDIS. In 1994 apparatus for bioresonance therapy IMEDIS-BRT for the first time was approved for production and application in medical practice in Russian Federation, and in 2000 Ministry of Healthcare of the RF approved methodical recommendations for bioresonance therapy. Conception of endogenous adaptive bioresonance therapy formulated and developed by Yu.V. Gotovskiy, based on meridional systematic approach to therapy of various diseases, is realized in equipment produced by Center IMEDIS. Along with creation of diagnostic and therapeutic equipment, collective of Center IMEDIS worked out principally new methodic approaches to application of bioresonance therapy for treatment of various pathologies as well as rehabilitations and sports medicine. The results of such work are used by Center IMEDIS for scientific research, development of educational packages for post degree training of medical doctors, and methodic recommendations. Bioresonance therapy is developing on the basis of experimental and clinical backgrounds at the modern level of knowledge. For example, one of the first researches in the area of bioresonance therapy in Russian Federation was the article of Prof. B. I. Islamov, entitled “BRT as method of non-pathogenic induction of protein synthesis in human blood lymphocytes”, published in 1995 in Reports of Russian Academy of Sciences, where it was shown that BRT restores synthesis of heat shock albumens in patients with stomach ulcerous disease, polyarthritis, spinal osteochondrosis, and that heat shock proteins responsible for development of autoimmune processes are also raised, e.g. an affect of similia is observed. During last 15 years a huge scientific research and practical work on application of the bioresonance therapy in clinical practice was done. Books, practical guidances, methodical recommendations, and articles in profile magazines were published. And candidate and doctorate works were fulfilled. Up to date results of experimental and clinical work will be presented during report.

**Keywords:** *Center IMEDIS, electropunctural diagnostics, bioresonance therapy*

## INERGETIX-CORE QUANTUM-INFORMATIONAL TECHNOLOGIES

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**Abstract.** The Inergetix-CoRe™ offers the only system that combines informational and energy medicine to find reproducibly client specific frequencies. The Inergetix-CoRe™ offers worldwide the first and only software controlled method to find client specific frequencies automatically, fast, effective and reproducible. It is based on the principles of quantum physics, the principles of resonance and global scaling, issuing a complex statistical analysis on the basis of a large database of over one hundred thousand patterns of internal and external stress sources. By using Random Event Generator (REG) quantum-informational interaction with representative “informational signature” of each individual, the image of every “symptom” and each “remedy”, the Inergetix-CoRe™ generates and selects complex models to establish the REG resonance between the client, symptoms and remedies and then uses the statistical analysis of the results to set the probabilities of the highest resonance. It works both on the informational or energetic levels, and its results will always be probabilities and not Yes/No answers. The main challenge in understanding Inergetix-CoRe™ is that it does not have to be physically connected to the client to evaluate or balance. Simply put, the quantum-holographic connection of a person’s information with healing information is performed by their quantum-holographic coupling via REG software programs. In other words, *in one quick procedure we can know which frequencies are out of balance, and then re-balance them right away, all with the same equipment.* This is the future happening right now!

**Keywords:** *Inergetix-CoRe™, energy-informational medicine, quantum-holographic principle, REG quantum-holographic coupling*

# ON-LINE DIAGNOSIS STATE OF A PATIENT IN TREATMENT BY METHODS OF QUANTUM MEDICINE

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**Abstract.** Modern views on medical technology include multiple links, which form a complete cycle. The main links in the system diagnosis are: identification of functional parameters of the organism or its separate systems, the selection on the basis of received information treatment parameters, continuous (on-line) patient monitoring, and research at the end of treatment. These diagnostic methods have become particularly relevant with the advent of microwave resonance therapy (MRT). The purpose of this report is presentation of the results of several research methods: endocellular microelectrophoresis, infrared thermography, differential reflectometry, and reflectivity study of biologically active points. These methods, in our opinion, meet the necessary requirements: to rapidly obtain a result, noninvasive, no traumatic for the patient, repeatedly reproducible, and having no any impact on the patient's energy. Displaying the patient's condition in real time using the proposed methods provides feedback and enables the doctors to correct operational parameters of MRT.

**Keywords:** *Citobiophysical method of evaluation of the patient, infrared thermography, differential diagnostic reflectometry, anisotropy and reflecting properties of human skin*

## 1. Introduction

Modern representations about medical technologies provide presence of several links which, supplementing each other and being in interdependence, would form a complete cycle. Key links in this system are nosological diagnostics of diseases, definition of integrated functional parameters of an organism, a choice on the basis of the received information of modes of treatment, permanent control of a condition of the patient in real time and control researches on the treatment termination.

Ways of diagnostics used now set as the purpose research basically constant sizes, their correlation with concept of statistical norm or definition of morphological characteristics of bodies.

Practically there are no diagnostic methods which would provide an integrated estimation of a condition of an organism in real time, as a difficult dynamic system in constant movement and interaction with endo- and exogenous factors. Similar ways of diagnostics became especially actual with the advent of microwave resonant therapy (MRT) [1]. Being extremely dynamical way of the treatment which parameters sometimes are necessary for changing several times during one session [2], MPT demands constant control of a condition of body and organism systems.

## 2. Motivation

In this paper we have tried to give the review of diagnostic methods which from our viewpoint are most adequate to the problems standing before the doctors practicing in the field of quantum medicine.

## 3. Material and Results

In our work we used several ways of research: endocellular microelectrophoresis [3,4], infra-red thermography [5,6], differential reflectometry [7], and skin reflection properties of a at healthy people and in pathological conditions [8].

These ways meet necessary requirements: allow rapidly obtaining operative result, noninvasive, no traumatic for the patient, and repeatedly reproducible.

### **3.1 Endocellular microelectrophoresis**

Informative response of a human body to treatment in the form of condition change of buccal epithelium is caused, firstly, by the fact that oral cavity mucous membrane possesses the raised ability to regeneration and the big stability to action, temperature, chemical and mechanical irritants. And, secondly, being the most widespread in a human body, epithelium tissue of a mucous membrane of an oral cavity reflects infringements of exchange processes and disease of various bodies and systems – endocrine, immune, nervous etc.

One of displays of physical properties of a kernel of a cage is its bioelectric potential which research can be applied in a method of endocellular microelectrophoresis. The technique allows to define native kernel condition in an express analysis mode, and also operatively, practically in real time, to estimate reaction of an organism to action of electromagnetic radiation (EMR) of mm-range both within the limits of one session, and throughout all course of treatment [9-11].

### **3.2 Infrared thermography**

Infrared thermography (thermovision) is the direction of diagnostic which is based on measuring the natural electromagnetic radiation from the body, in the infrared range of wavelengths of thermal radiation of the body. It is well known clinical method.

Thermography is applied to diagnostics of infringements of blood circulation in peripheral vessels of extremities, at illnesses of joints and skin, at inflammatory processes of an internal, deficiency of a blood-groove in arteries at sick of diabetes, at traumatology patients and so forth [12].

The technology of application thermography in the course of MRT consists in studying of thermal fields of the patient before and after a session. Thus we register presence of thermo anomalies, thermo-asymmetries and dynamics of their change in treatment process. At a part of patients sites of local heating or lowering the temperature have been identified, which correspond to the topography of biologically active points and meridians sites of a warming up or local decrease in temperature, which correspond to topography of biologically active points (BAT) and meridians. That, in our opinion, is essential help at definition of zones of influence of EMR.

Reduction of areas of the raised temperature at inflammatory processes, opening of "thermal channels" at vascular pathologies, renewal of symmetry of thermal fields – confirm the regulatory influence MRT.

Practical application of thermography in technologies of quantum medicine confirms high potential possibilities of this method, and allows raising efficiency of MRT.

### **3.3 Differential reflectometry**

The development of quantum medicine needs to establish diagnostic equipment, which is based on the use of physical principles and effects. Such devices include diagnostic differential reflectometer (DDR) of the UHF range [13-15].

Anisotropy definition of acupuncture points and definition of parametric deviation from a norm at different diseases is a basis of creation of DDR. Work of diagnostic's reflectometer is based on measuring of changes of a vector of the polarization wave, reflected from the acupuncture points on the patient's skin. In the absence of pathology, the polarization vector describes a circle, while the appearance of anisotropy indicates the presence of pathology, which is associated with the corresponding BAP.

Studies of anisotropic properties of skin area were at the beginning and end of treatment. The results of differential reflectometry in millimeter range of electromagnetic waves were compared with data of electrocardiography, which was held immediately after the preliminary study the clinical data. The studies showed that one can identify a number of features characteristic for different groups of patients.

Industries of application of the device are cardiology, immunology, gastroenterology and other [16-18].

### **3.4 Skin reflection of biologically active points**

Another of the proposed methods studies the properties of an electromagnetic signal, reflected by the skin of the patient in the biologically active points.

The method allows the on-line diagnosis of the patient via changes in reflection coefficient.

The method is informative, non-invasive, allows changing time zones and has impact directly during a session of MRT [19].

#### 4. Summary

Long-term experience of usage of the above methods for control over MRT results, has demonstrated them as high informative and of a clinical importance. Displaying a condition of the patient in real time by means of the offered techniques, medical doctors had an opportunity to operatively change zones and influence time during a session of MRT.

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# MICROWAVE RESONANCE THERAPY

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**Abstract.** The usage of athermic, low-intensity electromagnetic waves of extremely high frequency microwave range (EM MW) is a biomedical novelty in quantum medicine. Microwave resonance therapy (MRT) is based on the Russian-Ukrainian concept on quantum nature of acupuncture system, as a dynamic structure joined at the locations of the maximum of de Broglie's interferential three-dimensional standing waves. The changes in dielectric properties of tissues lead to a disease, deforming the structure of the EM MW standing waves and related acupuncture system. Microwave resonance therapy (of extremely high frequency 42-100 GHz, athermic energy  $10^{-4}$  eV and extremely low intensity  $10^{-21}$  W/Hz cm<sup>2</sup>) resonantly normalizes frequency responses in excited acupuncture system and an organism biochemically overcomes a disease via physiological-neurohumoral MW and self-regulatory acupuncture mechanisms. This paper shows biophysical basics of microwave resonance therapy, methodology, similarities, differences and novelties in current Russian and Ukrainian technologies, as well as results of microwave resonance therapy application in own practice, which confirm high effectiveness of this approach.

**Keywords:** *quantum medicine, microwave resonance therapy (MRT), acupuncture system*

## 1. Introduction

In the second part of the 20<sup>th</sup> century it was discovered that *the human body has its own, characteristic frequency (f) of the electromagnetic field (EMF) in the microwave range (30-300 GHz), as well as that the organism itself is capable of detecting as much as 0.01% disturbed frequency of the stable EMF*. The application of low intensity EMF MW of spectral density  $10^{-21}$  W/Hz cm<sup>2</sup>, frequency range of 30-300 GHz and wavelength range of 1-10 mm, in the biomedicine is a new trend, originating from the former SSSR, from the middle of 1960ies [1-7].

What is important for quantum mechanics is not only the microscopic dimensions, as it can also be applied to macroscopic sizes. An absolutely essential condition for the quantum mechanics application is the very existence of the organic self-preservation potential in the system. These potentials determine the existence of an object on certain levels of the quantum scales. The formation of the organic macroscopic quantum mechanic entity is determined by the existence of the efficient and far reaching active forces in a limited frequency range, which create coherent laser-type fields in every entity and can be found in living systems, too. Even as early as 1972, Weisskopf anticipated the fourth stage of self-organization of the substance with the special energetic levels, but he left the presentment without the comment. Weisskopf was the first to realize that only principles of quantum mechanics, the principles of identity and continuity alongside with existence of the characteristic related frequencies, enable three individualistic world stabilities on three substance self-organization levels: a nuclear, atomic and a molecular one. It became clear to Weisskopf that the nature, apart from these three, knows at least one more level of the substance self-organization, that is the fourth level of the substance self-organization in the nature, upon which exist living creatures [1-17].

It is possible, through the principles of quantum mechanics and quantum medicine, to reach a scientific understanding of many diagnostic-therapeutic methods typical of the traditional medicine. Also, homeopathy got its scientific recognition only after the development of the device originating from the quantum physics domain, which enabled us to monitor the subtle energetic ultralow dilution levels of  $10^{-24}$  mmol/l. For checking homeopathy preparations, an information energetic methodology has been proposed: laser spectroscopy and nuclear magnetic resonance (NMR). The explorations done with the laser photo dispersion have confirmed the difference between homeopathy preparations and the distilled water, while when they were done with the aid of NMR, the studies of the homeopathy preparations, of various potentials, showed the difference in the time of the transversal proton relaxation, contrary to the placebo, that is the distilled water.

Quantum medicine utilizes low energy, safe electromagnetic emissions (EME), that have beneficial effects on intra and intercellular processes [8-18].

*Microwave resonance therapy - MRT (Extremely high frequency radiation - EHF, Microwave millimeter-range radiation)* utilizes frequencies of 42-160 GHz. MRT is most frequently employed via biologically most active points - BATs (acupuncture points - APs) and biologically active zones - BAZs.

MRT inventors are scientists from the former SSSR: Andreev, Beli, Sit'ko and coworkers from Kiev; Deviatkov and coworkers from Moscow; Zalubovskaya, Cherkasov and Nedzvetsky from Harkow; Tkachenko and coworkers from Nizhny Novgorod; Kozhemyakin and coworkers from Tomsk; along with the great contribution of Zhukovsky, Besonov, Golant, Temuryanc, Macheret, Lebedeva, Betsky, Zaporozhan, Kuz'menko, Rodschadt, Grubnik, Kovalenko, and many more. Some analogue research was conducted by Vebb in Canada, and Gründler and Keilmann in Germany [1-17,19,20]. The assumption from 1980ies that *the acupuncture system (AS) is a dynamic structure differentiated on the points of the maximum of the tridimensional standing waves, formed as a result of the reflection of coherent microwave Fröhlich excitations of the molecular cellular membrane and protein's subunits*, was encouraged by some other researchers pointing out that differentiation of the intercellular ionic gap junction channels, whose density was greater on the spots of acupunctural meridians (AMs) and APs, was slightly sensitive to the EMF changes, too [1-17,21-26].

This new scientific approach has undergone several developmental procedures and got confirmations, from preclinical research program (1964-1978), animal experiments and clinical application with the statistic monitoring of the results obtained (since 1978). As of mid 1980ies devices with extremely high frequencies have been developed. At the forefront of this developmental process are the centers in Kiev, Moscow, Tomsk, and Nizhny Novgorod.

Weak electromagnetic waves (EW) play an important role in the correlative relationship of an organism with its environment, as well as in the functioning of all living creatures. The fact that there is an interaction between the surrounding objects from our environment and the human organism has also been in the focus of Sit'ko's scientific team's interest (Sit'ko, NIC Kiev, Ukraine), the team that conducted measurements of various natural and synthetic substances from our environment, scaling their relationship with the human organism.

## 2. Biophysical Mechanisms of Acupuncture Regulation

When the fundamental science about "the alive" started to take form and the clinical results of its application became apparent, it meant the beginning of understanding AS through quantum-mechanic approach. According to this theory *the systems of Chinese AMs also have an electromagnetic nature*.

AMs form in the 14<sup>th</sup> week of the embryo development, at which time papillary lines get also shape. At that time cartilage tissue turns into the bone, which, from the "the alive" perspective, means the possibility for EW reflection ("the reflecting wave") from the bones and the skin and the formation of the meridian system. Stability maintenance of the organism's coherent field is enabled by the condition of EW falling inside onto the skin cover into BATs, under the angle which is right or greater than the angle of the full internal reflection. *The skin breaking angle in APs areas* differ from the breaking angle on the other points, likewise EW of the right-hand side or left-hand side polarization [1-7].

*The physics of "the alive" makes it possible to grasp the mystique "vital energy" (qi, ki, prana, pnevma), that forms the basis of the traditional medicine, through ASs with the classic ionic and quantum solitonic nature (wave-particle dual nature).*

*Qi* has its own interpretation in the ionic currents and the corresponding EMF with the informative contents encoded in space-time transmissions of the acupuncture ionic currents and corresponding *MW* and extremely-low frequency (*ultra-low frequency* - *ULF*) of EMF. In this way, it is possible to identify the ionic and the quantum-solitonic nature of AS. *Ionic acupuncture currents and corresponding EMF have two resonating windows: (extremely-low) ULF and (extremely-high) MW components*, taking into consideration that a very fast *MW* component is modulated in its amplitude characteristic by a substantially slower *ULF* component, which enables the opening of the windows in the tissue interactions with a weak EMF. The proof for *ULF* nature of the ionic currents of the acupunctural channel lies in the resonant *ULF* stimulation of the acupunctural system in the conditions of the endorphin analgesia (~4 Hz), serotonin and/or norepinephrine (~200 Hz) mechanisms, as well as in the efficiency of the bioresonance therapy (BRT). On the other hand, the proof for *MW* component of the ionic acupuncture currents can be found in an efficient application of MRT (30-300 GHz) [1-17,21-26].

Sit'ko and coworkers presented the "quantum physics of the alive", based on AS as a dynamic structure associated on the locations of the maximum of de Broglie's interferential three-dimensional standing waves, which resulted in the reflections, from the skin and bones, of nonlinear coherent EM *MW* (Fröhlich's) excitations of highly polarized molecular subunits in cellular membranes and cytoplasmic proteins. This was shown by some other researchers who pointed out that formation of the gap junction channels in AP and AM was involved in the activation process of the channel opening, as well as in the association of the connexons semi-channels, or even in the creation of the connexons monomers. All this results in changing the membrane priority and polarity, which can be stimulated by space-time maximal *MW* ranges of the organism's EMF (by altering voltage sensibility in the gap junction channels' conductivity). In that context, the explanation for the efficiency of MRT (the leading quantum-medicine method), as a noninvasive biomedical treatment, should be sought in the following: certain organism's dysfunctions, connected with the local alterations in the dielectric characteristics of the tissue and organs, lead to an increase in deformity of the structure of the standing waves of the electric organism's *MW* EMF, which affects certain changes in the time-space AS structures and, secondly, the AM's resonant frequencies, which generate the onset of an illness [1-17,21-26].

According to the Sit'ko's group's concept, AM trajectories are reflexed on the points of EMF *MW* movement in the human organism, which makes it possible to find the connection between the characteristics of the limit cycles and balanced structures within the coherent EMF *MW* organism's range and the topography's regularity of the classical acupuncture meridians. The appearance of the limit cycles is associated with the generation of a resonant and discrete emission in the system of "the filling active cellular systems - linear absorbing environments". The emergence of AM can be considered as a phase transition. EM body network was examined by both Sit'ko and Tzvily. Their basic assumption was that *the discharge complexes, which appear in the source of a coherent MW EMF, get connected with the cell's membrane if frequency vibrations of the cell's membrane are placed in the millimeter range (mm) EM spectrum*. The pressure's greatness or pressure complexes, connected with the membrane, can be seen as a thermodynamic parameter, which the neighboring membranes' vibrations start with, so that the internal states of discharge complexes become synchronized, which leads towards a significant modification of that thermodynamic indicator of the physical environments, enabling a dialectical penetrability to occur. It is through the discharge complexes connected with the cell's membrane, formed alongside the meridian, that the actual place of AM in the organism is being determined. *Formed AM have the character of phase transition of the second order*. Phase transition can be understood as the development of the thermodynamic parameters' unstable fluctuations, limited by nonlinear character of the interactive environmental units. Interactive units are represented by the cell's membrane discharge complex, which represents the factor of meridians' creation and contributes to the transition into the final thermodynamic state. EMF parameters, that form an interactive force of the neighboring cells' membrane potential, establish the correlation between their vibrations and the inner environment, through connected discharge complexes, characteristic of the temporal existence.

Therapeutic effect through excited AMs happens as a result of summing of the external EMF's quanta, of spectral density  $10^{-21}$  W/Hz cm<sup>2</sup>, which shows that the discharge alterations represent the source of a coherent EMF of the quantum mechanical character. The energy migration alongside AMs corresponds to the description of photoexcitons, having a character of quasiparticles (alongside with the existing quantum mechanical wave-particle dualism), so that AMs creation acquires a quantum mechanical interpretation as a birth of the new phase - photoexcitons [1-7].

Phase transitions lead to changes of the physical systems, so the meridians' *geometry differs from the local geometry of the other human body's areas. The kinetics of the examining phase transition can be perceived as a spontaneously changed dynamic symmetry, which accounts for the photoexciton's course of movement alongside the meridian* [1-7].

The model of AMs formation as a phase transition of the second order, described as a wave function of the coherent state, makes it possible, in the linear approximate diameter, to evaluate the flow of AMs which is regarded as a streamed EM MW system of the wave-conductive type. EMW, spreading across a streamed system, possesses a quantum mechanical wave-particle dualism, and can be connected with the choice (though a possibly incomplete one) of the quantum quasiparticles - photoexcitons [1-7].

This is how a dual nature of AMs could be described: an *ionic* and an *electromagnetic-solitonic* one. APs represent a wave leads for the entrance of the external photons within EMF MW range. A resonant therapeutic activity of the quantum of EMF MW external source can be interpreted as a resonant "*springing up*" through the barriers of the external photons within MW range. EMF MW dissemination across a dialectic wave lead falls exponentially with the distancing from the wave lead's axis, which can be seen when EMW exists out of the cylindrical wave lead [1-17,21-26].

A dispersive interaction between energy and the projection of photoexcitons' pulses onto the AMs axes can be interpreted as a fixation of other quantum "*quasi particles*" in a dispersive interaction of a possible wave type in a wave lead's management system with a certain dialectic penetrations' tensor, which, together with the magnetic penetrability's tensor, determines an index of the environments' breaking angle, with a given frequency of the external EMF for the waves within MW range. *A quantum mechanical quality can be explained as a transient layer between the coherent EMF components and the absence of a non-coherent field within the meridian's circumference* [1-7].

According to this model, the mechanism of AMs formation is universal for the organism and is not connected with certain cytomorphological characteristics, which helps the organism to form a stationary, as well as a "*time meridian*"-wandering, *unstable* and a "*wondrous meridian*". This enables us to understand the organism's non-stationary EM network within the borders of the conception of the whole organism's self-regulatory potential and suggests researching unstable or "*wondrous meridians*", as a time-related formed EM structure of the organism, of the limit cycle's type [1-7].

Sit'ko's group's experimental research has shown that the skin's breaking angle in the APs areas differs from a breaking angle on the other points, which is similar to the changes that occur in EMW of the left-hand side and right-hand side polarized points, irrespective of the fact that it is also the characteristics of other points of the skin [1-7].

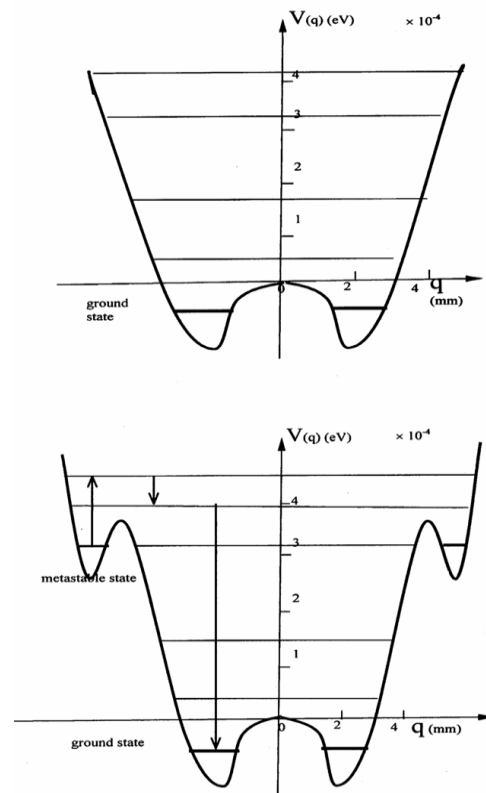
The research with some other kinds of AM technologies can possibly harm a coherent state in the meridian's depth because of the external influences that lead to the occurrence of thermodynamic processes, because of the greater intensity of their parameters of influence on the meridian. Exploring AMs with the external influence of the resonant EMF of low, athermic intensity, induces a phase transition from a metastable thermodynamic state and has the character of a macroscopic coherent state's formation. The research induced by a phase transition of the external EMW within MW range, can be applied to the results analysis and the explanation of the alteration of the form of EMW therapeutic activity's resonant surface.

Dynamic, coherent EMW is formed in a non-linear environment of the human organism, spreading to its other parts, in interaction with certain regulations of the non-linear optics for the resonator filled with the non-linear absorption of the environment with active centers. The analysis of APs alongside external meridian trajectories has confirmed this assumption, in accordance with the principles of minimal loss of the wavelength that falls upon the skin surface from the inner side, under the angle not smaller than the angle of the full inner

reflection for the environment in question. The ratio of the meridian's lateral section is determined by the conditions of the existing environment alongside AMs trajectory, and is, in most cases, correctly formed as a result of the EMW reflection from the fingernails and toes. This research known as *Rudjenko effect* (1997) has shown EM nature of Chinese AMs. In order to satisfy the measurement conditions which would not deteriorate AMs integrity by heat emissions (as a receiver it cannot absorb heat emission that occurs at that temperature, nor as the source it cannot emit such an emission), it was arrived at the following solution: to decrease the receiver's temperature up to the point of its own noise (that could be found below the emission level, in mm, "trail" of the Planckian distribution). The first version of the developed radiometric systems had a level of its own noise of  $4 \cdot 10^{-3}$  W/Hz  $\text{cm}^2$ , that is not very much below the level of a thermal balanced emission, while, in NIC "Vidhuk" in Kiev, an innovative solution has currently been employed, devised by a group of scientists led by Skripnik and Yanenko. They have constructed a radiometric device of the new generation, that emits a level of its own noise within the frequency range of 53-78 GHz within the scale of  $5 \cdot 10^{-23}$  W/Hz  $\text{cm}^2$ , which means that the noise level has been decreased greatly and that it is now possible to obtain significant results [1-7].

### 3. Biophysical and Technical Aspects of Microwave Resonance Therapy

At the onset of an illness (a meta-stable state, according to Sit'ko), there is the information about the illness, which was however preceded by the information about the healthy state (except for the genetically preconditioned illnesses and disorders), as well as existing self-organizational and self-regulatory processes that, in every moment of our lives, with the aid of several billion perfectly composed biochemical reactions, keep under control our health, by basically following the pattern that was encoded and that in every moment, absolutely precisely, supervises and surveys every process and holds back every intention towards losing control, reintroducing the state of a controlled, self-organizational processes, by establishing EM network of the body.



**Figure 1.** Landau-Haken potentials [1-7]: health as a basic organism's state (above), and illness as a meta-stable organism's state (below).

According to Sit'ko, from a quantum mechanical point of view, it could be said that *EF within mm range reflects the existence of the macroscopic self-regulatory potential of Landau-Haken type*, cf. Fig. 1, while, with the application of nonlinear thermodynamics and synergic interpretations, it is being said, they represent a spatial projection of six even (on the plane phase) limit cycles [1-7].

Regardless of good clinical results obtained from the application of AMs MRT stimulation methods, biological mechanisms of influence still lie within the domain of theoretical assumptions:

- The interaction of MW with watery and biological environments, through the water cluster.
- Through the microtubules' role, which represent a kind of a wave lead for MW.
- Inducing mechanical resonances through piezoelectric skin structures in APs zones.
- Through the role of protein molecule in EMF MW transmission range.
- Through the effect of EMF MW diapason it has on the membrane's receiving systems.
- Through the role of *AS as a quantum self-regulatory system*, which would be a crucial explanation. The first five mechanisms could be seen only in the light of the *starting AS activations as a quantum coherent self-regulatory system*.

For a single dosage of MRT stimulation, Sit'ko's group proposed monitoring the level of mitochondrial enzyme, dehydrogenase succinate (SDH), which can be seen microscopically, in the lymphocytes of the blood periphery, because the lymphocytes' metabolism can be used an illness index. Lymphocytes' system "remembers" earlier health states and stores the information about the illness, trying to bring the organism back into the former healthy state.

#### 4. Medical Aspects of MRT

Quantum medicine and MRT as its representative, have the character of holistic medicine, because they solve a series of problems that accompany the basic problem both individually and on the level of the whole organism. MRT, as one of the most representative quantum medicine technologies [1-17,19,20,27-29], facilitates:

- *Registration of the temperature range*, by measuring both integral and spectral densities;
- *Determination of the source of thermo-diversity* in the organism;
- *Registration of the influence* of physical and chemical factors on bio-objects' temperature fields and *establishing* the relationship between electromagnetic EMF parameters and bio-objects' physiological parameters, with *correction of the process of healing* by physical and chemical methods according to changes of the parameters of bio-objects' EMF;
- *Organism's ability to choose a necessary resonant frequency*; The resonant quantum-therapeutic action of the external EMF source can be interpreted as a resonant "springing up" through the barriers within the external EMF MW range;
- *According to the results of experimental parameters*, the MW range emissions are informative enough; moreover, they correlate with the biophysical parameters and the physical state of the human organism and can be employed in the diagnostics of various illnesses;
- *MRT works with intensities commensurate to the coherent field of human organism in MW range*, located on the quantum level of fundamental organism's characteristics, in the range from  $10^{-22}$  to  $10^{-11}$  W/Hz cm<sup>2</sup>; The intensity of the emitted therapeutic signal is located far below sanitary allowed levels, according to the standards adopted by modern medicine;
- *Therapeutic effect* occurs as a result of summing up the external quantum EMF (efficacy's intensity of  $10^{-21}$  W/Hz cm<sup>2</sup>), which implies that the discharge changes represent the source of a coherent EMF and have a quantum-mechanical character;
- *Existence of a resonant, sensor organism's response* to small changes of external MW frequency (0,01-0,1%); MRT effect means that EMF MW within the range of MW generator makes corrections of EMF MW within an ill organism's range, alongside with prompting self-regulatory recovery mechanisms;
- *MRT is possible to use narrow and wide spectrum generators* of MW emissions; The narrow spectrum generators emit a manually or automatically chosen frequency, based on the local, sensory organism's

response; Wide spectrum generators emit a whole EMF MW frequency spectrum ranging from 42-100 GHz, while the organism chooses its own frequency; Here are the devices with the regime of "svepirovanije", which shift through all frequencies in just a second's fraction; CEM®Tech devices have a characteristic FRI regime (they register and reemit a background EMF emission, which aligns it with the bio-resonant methods);

- *Resonant, non-dissipative, informative effect* (showing that AS is a macroscopic, quantum-holographic, MW informative network, ULF modulated, with the memory "attractors" that store individual states of psychosomatic health and various organism's disorders [1-7,21-26]);
- *Discharge complexes, that occur as a source of a coherent MW EMF*, connected with the cell's membrane, if frequency vibrations of the cell's membrane are within MW EM spectrum's range;
- *Energy migration alongside the meridian corresponding to photoexciton's notion* (having a character of quasi particle, with the existing quantum-mechanical wave-particle dualism), and *the meridian origination getting a quantum-mechanical interpretation as the birth of a new photoexciton's phase*;
- *Low intensity* (up to  $10^{-22}$  W/Hz cm<sup>2</sup>) and *low energy* (up to  $10^{-4}$  eV) of a biologically efficient MW radiation far below a thermal effect and the absence of adverse effects of MRT, as a highly safe biophysical healing method;
- *Negligible MW energy losses* across significant lengths alongside acupuncture meridian (~1 m) from an exposed acupuncture point;
- *Biophysical possibility to establish an EM homeostasis*: low intensity EMF of the signal within MW range enables a renewal of EM network through which it is possible to stabilize all systems of organism's vital functions as well as biochemical processes that get adjusted to EM network;
- *Non-medicament prompting of self-regulatory mechanisms* for getting over an illness and reaching recovery;
- *Absence of adverse effects of MRT*, as a highly safe biophysical way of healing;
- *Non-invasive, non-contact method* (although a contact with the skin can be made, without the skin surface's icing), which rules out the possibility of infectious diseases' transmission from a patient to a patient (like hepatitis B, AIDS...);
- *Possibility to put MRT to diagnostic, therapeutic and rehabilitation purposes*;
- *High efficiency* (it shortens the healing period as much as 1.5 or 2 times, compared to some other healing methods) and *high economy* (sick leaves are reduced and the usage of pharmaceuticals get reduced or even eliminated) in healing;
- *Compared to classical acupuncture* comparative statistics show a greater efficiency of MRT (82% in chronic, up to 100% in acute cases, while with acupuncture these results are 65-72%).

*MRT is employed in healing of many illnesses in:* cardiology, pulmonology, neurology, psychiatry and the addiction, gastroenterology, gynecology, dermatology, pediatrics, immunology, orthopedics, traumatology, surgery (pre and post operational), and oncology [1-17,19,20,27-29].

*While there are no serious contraindications for the employment of MRT, those considered relevant are the following:* acute pain in abdomen that requires an urgent surgical intervention, pregnancy (because there have been no studies for this category), and pacemaker.

MRT can be employed in hospitals, as well as in ambulance conditions, spas and sanatoriums, as an independent structural unit that has to have certain working conditions satisfied. It is also possible to employ certain generators in domestic conditions, or while giving an emergency help in the car, thanks to the portability of certain appliances and under condition that certain measures for their safe functioning are taken, which applies in MRT cabinets as well.

Human organism represents a highly sensitive detector of both thermal and athermal EMF. This is what accounts for efficiency of the application of the external low-intensity EMF while curing certain illnesses as functional disorders of man's immune system. A positive effect is attributed to the external influence of the generator with EMF in MW range which imitates its own informative-management signals of a living organism. Besides, what is also recruited is the organism's defensive compensatory abilities in the process of EMF affecting

the cell's membrane and protein structures, which leads to the improvement of the immune system's parameters, which has been the subject matter of many studies.

An insight into some encouraging findings of MRT applied to psychosomatic disorders can be gained through the results of Sit'ko, Devyatkov, Kozhemyakin, Golant, Besonov, Kolbun et al (numerous expert works, published in various expert journals) [1-17,19,20,27-29].

#### 4.1 Our MRT medical results

Our results presented in Table 1 are very encouraging and confirm high efficiency of MRT [8-17]; they also correspond to Russian-Ukrainian results in MRT employment [1-17,19,20,27-29].

**Patients and methods.** Standard diagnostic procedures were conducted before MRT treatment, in referential hospitals where the patients had already been treated. After that, traditional diagnostic procedures were carried out, for determining functional changes or certain AM's pathology and the analysis of responses on the signal APs, as well as AMSAT diagnostics, in order to work out the prescription solutions and make a selection of APs for MRT employment.

The total number of patients and their clinical effects were divided into three categories (without an improvement, with a moderate improvement up to 70 % and with an significant improvement above 70%). A clinical evaluation for every single disorder is represented in the last column of the Table 1. Moderate improvements were determined according to the degree of the symptom alleviation and (sometimes) according to the corresponding degree of the referential diagnostic parameters improvement. Significant improvements were evaluated in comparison with the initial state.

**Painful states of orthopedic-neurologic origin.** They should attract a special attention as MRT can be very efficiently applied. So, here follows a short overview.

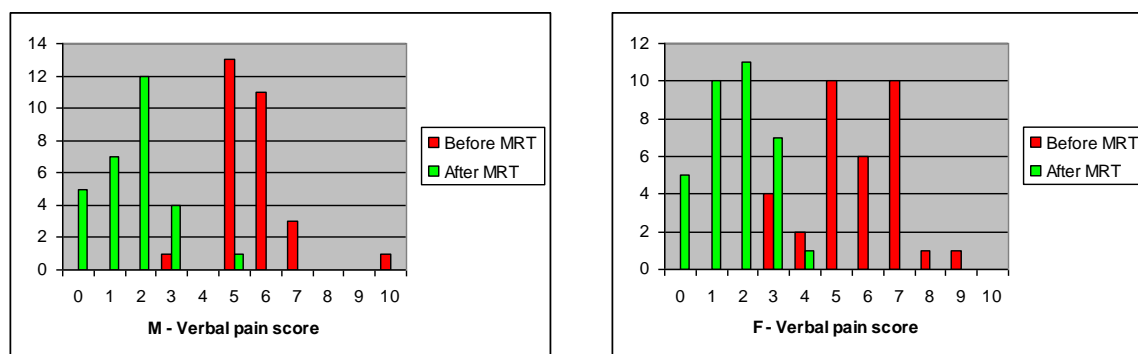
**Aim:** A brief overview of biophysical basis, the integration of conventional diagnostics (CD) and MRT of the pain of orthopedic-neurological origin (ONO).

**Patients and methods:** Retrospective, a two-year study of MRT painful ONO conditions, in 63 patients (29 M and 34 F), mean age 57 (27-100). The assessment of pain intensity was gained using verbal pain score (VPS) and statistical data analyzed with a T- test.

**Results and a comment:** Patients had undergone CD with CTh in referential hospitals before applying MRT. It was a persistent pain that indicated involvement of MRT. Pain intensity was monitored: 1<sup>st</sup> - 10<sup>th</sup> day, after 1.5 month and during next two years. Statistically significant high pain reduction was observed after a 10-day MRT application ( $p < 0.01$ ).

**Pain intensity assessment:** VPS-verbal pain score (score on the scale from 1 to 10): little pain: 1, 2, 3; moderate pain: 4, 5, 6; extremely strong pain: 7, 8, 9, 10.

A significant pain reduction with all patients was observed after MRT: In men, the pain decreased on average from 5 to 1.65 (that is as much as 66%); in women, the pain decreased from 5.67 to 1.67 (that is, as much as 70.55%), cf. Fig. 2.



**Figure 2.** The pain scale assessment before and after MRT: men (left); women (right).

The results achieved with MRT sustained even after 1.5 months, as well as in the following two years. After a twenty-day MRT course, a statistically significant pain reduction was observed ( $p < 0.01$ ).

**Table 1.** Our medical MRT results (Z. J. Ignjatić) [8-17]

<b>Diseases</b>	<b>Patients</b>	<b>Clinical effects</b>			<b>Evaluation</b>
	No	None	<70%	>70%	
<b>Neurology</b>	<b>408</b>	<b>22</b>	<b>79</b>	<b>307</b>	
DCP (age group 2 to 6)	4	-	3	1	+ st. loc.; EEG; EMG,
Neurological pain	194	10	34	150	+ st. loc
Tunel carpal sy	2	-	2	-	+ st. loc
Cephalea	58	-	13	45	+ st. loc
Migraine	7	2	1	4	+ st. loc
Neuralgia n. trigemini	5	1	3	1	+ st. loc
Paralysis pl. brachialis	4	1	3	-	+ st. loc, EMG
Sy. Cervicale	8		1	7	+ st. loc.
Sy. Cervicobrachiale	17	1	8	8	+ st. loc.
Radiculopathio L-S	24	5	2	17	+ st. loc.; Rö
Lumboischialgio	70	1	1	68	+ st. loc.; Rö
Hemiparesis post CVI	14	1	7	6	+ st. loc.;
Quadriparesis spast.	1		1		+ st. loc, SDG
<b>Psychiatry</b>	<b>83</b>	<b>-</b>	<b>8</b>	<b>75</b>	
Neurosis	72	-	6	66	sympt.
Sy depresivum	11	-	2	9	sympt.
<b>Traumatology</b>	<b>22</b>	<b>-</b>	<b>7</b>	<b>15</b>	+ st. loc, Rö
<b>Muscular and Skeletal System</b>	<b>95</b>	<b>6</b>	<b>11</b>	<b>78</b>	
Gonarthrosis	18	-	18	-	+ st. loc, Rö
Coxarthrosis	8	3	5	-	+ st. loc, Rö
PHS	8	1	2	5	+ st. loc, Rö
<b>Urology</b>	<b>10</b>	<b>-</b>	<b>-</b>	<b>10</b>	
Cystitis chr.	6	-	-	6	sympt. + lab. bioch.
Prostatitis chr.	3	-	1	2	sympt. + lab. bioch. US
Adenoma prostate	1	-	-	1	sympt. + lab. bioch. US
<b>Gynecology</b>	<b>5</b>	<b>1</b>	<b>-</b>	<b>4</b>	
Dysmenorhea	3	1	-	2	sympt.
Myoma uteri	2	-	-	2	sympt. US
<b>Gastroenterology</b>	<b>24</b>	<b>-</b>	<b>1</b>	<b>23</b>	
Ulcus ventriculi	12	-	1	11	sympt. + lab. bioch.
Gastritis	12	-	-	12	sympt. + lab. bioch.
<b>Upper respiratory tract</b>	<b>36</b>	<b>2</b>	<b>4</b>	<b>30</b>	
Tussis prolongata	3	-	-	3	sympt.
Sinusitis chr.	34	2	1	31	sympt. Rö
<b>Pulmonology</b>	<b>22</b>	<b>2</b>	<b>3</b>	<b>17</b>	
Asthma	22	2	3	17	sympt. spirometry
<b>Dermatovenereology</b>	<b>8</b>	<b>-</b>	<b>3</b>	<b>5</b>	.
Neurodermatitis	5	-	3	2	sympt. + st.loc.
Alopetio areata	3	-	-	3	sympt. + st.loc.
<b>Immunodeficiency</b>	<b>8</b>	<b>-</b>	<b>1</b>	<b>7</b>	K. sl., st. loc., lab. bioch.

## 5. Anti-Stress Aspects of MRT

MRT can be used in the prevention of a great number of diseases in all age groups. As the greatest number of all illnesses has a psychosomatic nature, and their commonest cause is stress, a timely application of MRT can prevent the somatization and the externalization of many illnesses' symptomatology.

Prevention based on the application within EMW MW range can be regarded as a very promising method in overcoming stressogene provocateurs of the psychosomatic disorders, as it manages to correct initial deviations in EMF AMs and APs, through their structures that play the role of the transmitters within EMW MW range.

In the prophylactic anti-stress microwave resonance program, used upon the endangered AM with action on the APs of this AM, the goal is to establish homeostasis and overcome altered neurohumoral relationships responsible for producing stress reactions of the organism and the somatization of the illness. In order to enable the prophylactic anti-stress MRT action, it is necessary to prevent the activation or establishing of a complex psycho-somatization chain of stressogene influences, by using some of APs with an all-refreshing, calming, relaxing and immunologic effect. Taking into consideration the patient's characteristics, as well as the potential disorder of a meridian or an organ, the *microwave anti-stress prophylaxis* can be conducted on the following APs: GV 20 - *Baihui*, LI 4 - *Hegu*, PC 6 - *Neiguan*, HT 7 - *Shenmen*, ST 36 - *Zusanli*, but out of auricular points only the point 55 - *Shenmen* should be used. *Additional points*: their choice depends on the possible or already present disorders on AMs: GV 14, GV 12, GV 4, CV 6, BL 23 (the point that corresponds with the kidney energy), or point BL-43 ("life's center"), SP 6 (which is a carrier of discomposure on an emotional level, on a mental plane of reason and consciousness) [8-17,21-26].

There have been a great number of studies about various aspects of the usage of the waves within MW range in stress situations and in prevention of psychosomatic illnesses caused by stress.

The clinical tests of CEM-TECH device in stress conditions were performed from 1999 to 2005 in the Science Research Institute of Traumatology and Orthopedics - NII, in the N.I. Lobachevski Institute NGU, and in the Military-Medical Institute of The Frontier (Nizhny Novgorod) [19,20].

Macharet and Korkusho explored the influence of EMI within mm range on the stress state: better MRT effects were produced with the rabbits in hypokinesia than with the group with high mobility – hyperkinesias; In adaptive reactions to stress, the leading role belongs to neutrophils, with the central role in resistance and channeling of the phagocytosis reaction as well as their production of the humoral unspecific protection factors [30].

Temuryanc and the coworkers has published work about the role of neutrophils in limitation of the stress reaction, "Anti-stress MW action" (Moscow, 1991): experiment conducted on experimental animals, with the proof of EHF effect on the functional states of hydrolytic enzymes and dehydrogenize in the 1<sup>st</sup> stadium of the experimental animals' hypokinesia, with the normalization of the indicators of increased neutrophils while hypokinesia with the limitation of the stress reaction [8-17,27,28].

Lebedeva in her work "CNS reactions on the periphery action of low-intensity emission EHF" points out the changes in a healthy man's EEG correlates which testify to the development of a non-specific activation reaction [8-17,27,28].

### 5.1 Our study of EEG correlates of anti-stress MRT relaxation

Our study, conducted from 1996 to 1998 in the Institute for Mental Health (Belgrade), explored EEG correlates of anti-stress MRT relaxation [8-17,21-26].

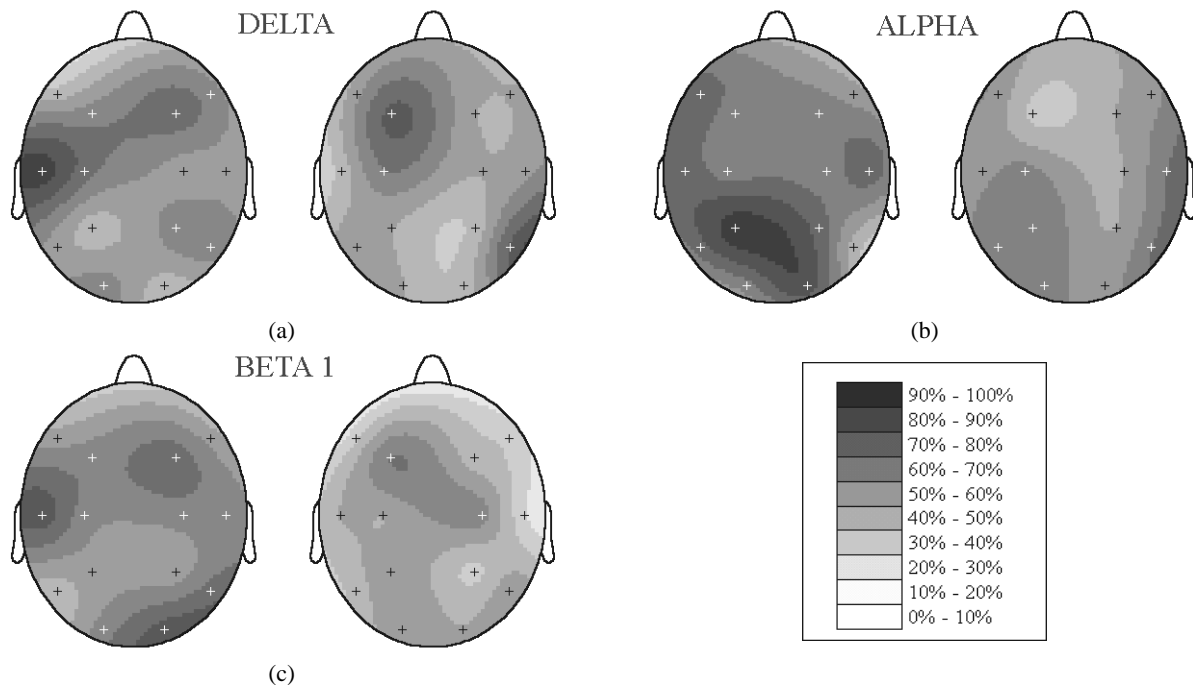
**Subjects.** The study was carried out on 28 healthy adult volunteers (13 men and 15 women). The subjects were classified into two groups: group 1 (11 subjects) not previously subjected to the MRT treatment and group 2 (17 subjects) that were being subjected to MRT in the past two years.

**Procedure.** The experiment was conducted in a sound-proof room, dimly lit for observation. Subjects lay comfortably. Each recording session was divided into three sequential periods: (1) relaxing 5 min with eyes closed; (2) MRT 20 min; (3) relaxing 5 min with eyes closed. During those periods two random samples, one minute each, were recorded for every subjects. The EEG record was stored on a hard-disc.

The MRT was applied by the wide spectrum POROG-3 devices, while the frequency measurement was carried out with the narrow spectrum apparatus AMRT-01, adjusted manually. POROG-3 frequency range is 52-78 GHz. Up to 10 mW low-power microwave generators, of the output power density of  $0.2\text{--}5\text{ }\mu\text{W}/\text{cm}^2$  (much lower than biologically limited  $10\text{ mW}/\text{cm}^2$  during 8 hours, as prescribed by USA National Standards, or  $10\text{ }\mu\text{W}/\text{cm}^2$  during 8 hours, as prescribed by Russian and Ukrainian National Standards [27,28]) are power supplied by the 220 W, 22 V/50 Hz a.c. or the autonomous 4.5 V d.c. MRT generator was applied on acupuncture points in the following order: GV 20, and the left-side points LI 4, PC 6, HT 7 and Ap 55, which resulted in relaxation, similarly to the parasympathetic effect. The choice of the acupuncture points for the relaxation session was made on the basis of well known principles of acupuncture stimulation, characteristics of the chosen points, and the therapist's experience.

**Data Analysis.** Time-varying EEG spectra (spectrograms) with 0.5 Hz resolution were worked out by MATLAB program using a 256-point FFT algorithm performed on 2 sec Hamming-windowed half-overlapping epochs. An array of EEG partial power spectra for each subject and each derivation was computed by integration by the trapezoidal rule of the spectrogram over the five frequency bands.

Both groups of subjects have significant changes in the EEG power over the whole head in  $\alpha$  and  $\beta_1$  frequency bands, with observation that a percentage of subjects with minor reactions is much less in the group 1. In both groups of subjects, a decrease in the EEG power is more frequently observed than an increase. As an illustration, in Fig. 3(a-c) the topographic mappings of the number of subjects (in %) having the significant EEG power changes in the  $\delta$ ,  $\alpha$  and  $\beta_1$  frequency bands, for the two groups of subjects are presented.



**Figure 3.** The topographic mappings of the number of subjects (in %) of the group 1 (left) and the group 2 (right), having the significant EEG power changes in the: (a)  $\delta$  band (1-4 Hz), (b)  $\alpha$  band (8-13 Hz), and (c)  $\beta_1$  band (13-18 Hz). The gradual percentage changes are presented in various degrees of shading, as designated in the insert [8-17,21-26].

The changes in coherency are not too significant. Most prominent changes, over the whole frequency interval (1-30 Hz), are registered in occipital region (O1 and O2). A decrease in the coherency is generally observed.

The point to be emphasized is that the persons, who had not been previously subjected to this treatment, reacted in a much stronger way, which is possibly the consequence of their less balanced acupuncture systems,

corresponding to the information stored in hierarchical brain structures too, which is the subject matter of the study by Vitiello [31]. A dissipative quantum model of storage is modeled as a coherent condensation of certain quanta of the basic brain state, with the shape of a corresponding narrow determined diapason that enables the stored information to organize themselves in hierarchic structures, in accordance with the various life ages of the memories and with the greatness of the corresponding diapasons.

Grabovshchiner, Zukovsky and Jech also explored the high frequency EMF's effects upon the brain, with a faster falling in sleep as well as a better sleep quality, with spectral EEG changes in N-REM and REM sleep cycles, although a hypnotic effect is also possible during the action of waves within mm-range. It was identified that the application of extremely high frequencies leads to the increase in the amplitude of corresponding EEG waves. An increase in the mental performances was also noted, especially while doing practice examples for which a higher level of operational memory was needed [32].

## 6. Conclusions

This paper presents biophysical principles and technical aspects, as well as indications and contraindications of microwave resonance therapy (MRT), a new modality which is a synthesis of the ancient Chinese medical knowledge (reflex therapy, acupressure, acupuncture) and some recent major discoveries in biophysics. The treatment of acupuncture points using microwave (of extremely high frequency) radiation in the range from 52 to 78 GHz has yielded impressive clinical results in surgery, orthopedics, traumatology, cardiovascular disorders, urology, gynecology, dermatology, gastroenterology, pulmonology, upper respiratory diseases, cardiology, neurology and oncology. MRT is contraindicated only in the case of acute abdominal pain associated with conditions requiring surgery and also during pregnancy and the menstrual cycle. The high efficacy of MRT has been confirmed in our clinic. MRT has produced a significant improvement in 79.2 % and moderate improvement in 15 % of the patients. A lack of clinical response was seen in only 5.8 % of the patients.

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# QUANTUM-INFORMATIONAL MEDICINE AND BIORESONANCE TECHNOLOGY

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**Abstract.** The e-Lybra® Bio-resonance system is designed to analyze imbalances in the bio-field of the client and at the exact same time produces bio-resonance patterns that harmonizes the imbalances found. These balancing bio-resonance patterns are sent to the client during a session via comfortable connection cables. The range of imbalances covered includes the complete physiology of the body, psychological, emotional and subtle energy systems. In this paper we provide information about e-Lybra® Bio-resonance System and our several case studies supporting its efficacy in non-distant and distant bio-resonance diagnosis and healing.

**Keywords:** *e-Lybra®, bioresonance technology, quantum-informational medicine*

## 1. Introduction

Although much research over the last 50 years has concentrated on finding direct frequencies, generated from an electronic frequency generator, and matching them up with the response of specific organs and structures within the body, this traditional frequency research has contributed a greater understanding in the workings of the human body but deals with a physical dogma rather than a holistic viewpoint which encompasses the subtle energy including meridians, chakras, negative emotional and physical trauma. The human body's energy field is not homogenous. It is a complex set of fields that are made up of electro-magnetic charges from the central nervous system, from chest cavity and lungs, gravity from the earth, electrostatic fields from charge in the nerves and energy from the large body cavities. When something goes wrong with the body, the transfer of information is incomplete, or body energy field is affected, the clinical manifestation is tiredness or the symptom of diseases appears! The absence of symptoms is no assurance of perfect health.

## 2. Bio-Resonance System e-Lybra®

The use of Quantum Information Medicine and e-Lybra® Bio-resonance system for healing purposes may be one of the most developed and successful diagnostic and therapeutic system available on the market at the present [1].

Its unique technology has been developed to enable practitioners to detect and correct imbalances using a fully interactive software program incorporated into bio-resonance equipment. These balancing bio-resonance patterns are sent to the client during a session via comfortable connection cables. The range of imbalances covered includes the complete physiology of the body, psychological, emotional and subtle energy systems. There are 222 categories containing approximately 320,000 of bio-resonance patterns which the e-Lybra® will use to make a comprehensive body status profile. The e-Lybra® then uses this profile to analyze imbalances in detail whilst sending balancing to the client. The items that are found in the analysis are stored on the database for the client each time they have a session. There is no limit to the number of clients nor the number of sessions that can be saved on the system. In addition, all the corrective bio-resonance patterns that are sent to the client during the session can automatically be programmed into the bio-resonance capsule for the client to take away. This is a bio-resonance storage device. It can be programmed and charged during an e-Lybra® balancing session with

Vibrational and informational patterns. These patterns once programmed into the e-Capsule™ will continue to resonate for a minimum of 3 months at which point the strength of the patterns will start to decrease until reprogrammed again. The e-Capsule™ can be used in place of Homeopathic drops or tablets. In tests the therapeutic value of drops and tablets on a comparable scale is about 35% whereas the therapeutic value of the e-Capsule™ is 70%. The therapeutic value of the e-Capsule™ may further be enhanced to 100% when the e-Capsule™ is placed on the Docking Station™. On one end of the e-Capsule™ there is a radio frequency identity tag (RFID). This electronic tag contains a unique identity number which is used to identify the e-Capsule™ when using the e-Lybra® system. For ease of reference this number is also laser etched on the other end of the e-Capsule™ as a visual reference. The e-Capsule™ can be placed in „Well B“ of the e-Lybra® base unit at the beginning of the session and removed at the end, or can be placed in „Well B“ at the point when the final „Prescribed Patterns“ are ready to download. This depends on the practitioner preference and experience.

An individual Formula may be downloaded to the e-Capsule™. The e-Capsule™ can also be used during a „Remote“ session as it contains a unique identifier and a direct link between the e-Lybra® system and the client. It is advisable for the e-Capsule™ to be in the possession of the client whilst they are receiving their remote session. The e-Capsule™ gets updated during each and every „Remote“ session for the client. The e-Capsule™ may also be sent by post to the client. If the e-Capsule™ has been programmed, it should be wrapped in foil before sending.

These new technologies suggest an effect can be carried out at a distance and with no convention means of protection or evidence of the influence.

It is because of this reason that we must now practice a more fully conscious approach to our life and work. The consciousness of a person is autonomous in the process of responding to bio-resonance patterns. We have created an interface which communicates with the body's consciousness and allows us to present patterns from our Resonance Pattern Database to the recipient's holistic bio-field and receive bio-feedback. Once we have access 'granted' we will be able to signal in new directions for body & mind behavior. Whether it is to mobilize the body's defense system or to inform a growing tumor to cease its activity, all these possibilities of the future have arrived.

In genetics research it was found that to make a super-control system, about 120,000 genes would be needed. Each gene was supposed to control one protein, you see and this is why that many were needed to act as a control system. The problem is that the DNA cannot act as a master control system for the cellular enzymes and hormones at all. The idea is *over*. *Genes do not even reflect our position on the evolutionary ladder*. We have almost the same number of genes as an earthworm they have 24,000 and we have but 25,000.

*First reason*, the Central Dogma of biology that the genes are the primary control mechanism for the cell via the creation of enzymes and hormones – has been the only permitted thought in allopathic medicine. It is no longer factually supportable. So we need look elsewhere for a control system. *Second reason*, experimentally, a long time ago it was found that the cell keeps on living even when the DNA in the cell nucleus is removed. The nucleus is *not* the brain of the cell at all. It is *not* a control center. In fact the cell only ceases to live once it can no longer replicate certain necessary proteins. DNA helps to replicate several hundred thousand proteins. *Third reason*, epigenetic shows that genes can change according to environmental influences. This in fact means that genes are the effect rather than the cause! *Forth reason*, the hopes founded on the use of genetics by correcting genetic errors has been dashed. Gene therapy does not work. It is not a reliable or viable therapy for anything. From 1955 onwards it was assumed that allopathy would take a huge step forward and actually cure some diseases. It was recently reported in the Spanish press that a common type of breast cancer involves 189 genetic errors, all of which might have to be corrected if the cancer were to be cured. And then there are nearly 200 different types of cancer, each with its own sets of errors. *Fifth reason*, the phospholipids as a class of fats are able to control what goes in and out of the cell, and so act as a control over physiological functions. They are embedded in the wall of the cell. They can control what goes though the cell membrane in both directions simply by changing shape. This is huge for the field theory of biology because it is about the function of space and this function is controlled by shape.

In the membrane of the cell there are protein receptors that respond to electromagnetic energies, space resonances. The e-Lybra® Bio-Resonance System “works with protein receptors on the cell membranes”! So in the allopathic model reported, so often in the popular press, healing is not possible. Yet we know perfectly well that *it is possible* because that is our job every day. Many illnesses and diseases start with emotional, mental or psychological trauma that upsets the various systems of the body eventually causing pathology to change for the worst. The e-Lybra® will detect and provide bio-resonance patterns to help release the trauma permanently and balance the associated energy around the damaged pathology.

### **3. Why is Healing Possible?**

Here is the key piece of information. In the body field energy model, healing is possible because we have *information sensitive proteins* inside the cell membrane. These are called Integral Membrane Proteins (IMP's). They are more important than DNA and RNA. They can act as intermediate information controls for the body field system and they are of huge importance during our healing treatments.

The e-Lybra® bio-resonance technology can change adaptive behavior by safely releasing traumas that have been trapped within the body by matching the exact resonance that holds the emotional charges. One trauma can be held in many places within the body and have multiple emotional charges in different parts of the body attached to them. Many imbalances in the bio-field come from environmental factors that includes toxic loading from chemicals, social conditioning, emotional attitudes and beliefs. Bio-resonance has a good track record in successfully detoxifying a whole range of chemicals including heavy metals, poisons and drugs and elimination of germs such as thousands of bacteria, viruses, parasites etc.

We are on the border of a transition in consciousness that cannot be ignored. It is quantum-informational medicine where the future of healthcare will involve finding the codes to access the activity ‘programs’ of the body. These new technologies suggest an effect can be carried out at a distance.

The unique interface between this bio-resonance system and the client allows direct communication with the autonomous consciousness of the client connected to it. The ‘bridge’ is the key to the interaction between the analysis of the client’s bio-field and its restoration to balance. Never before in the history of mankind has technology evolved to such a degree that now makes it possible for e-Lybra® technology to work at this level of consciousness and help make a change to a bio-chemical organism such as a human.

### **4. Fable?**

There was once an argument among the gods over where to hide the secret of life so that men and women would not find it. One god said: Bury it under a mountain; they will never look there. No, the others said, one day they will find ways to dig up mountains and will uncover it. Another said: Sink it in the depths of the ocean; it will be safe there. No the others objected, humans will one day find a way to plumb the ocean's depths and find it easily. Finally another god said: Put it inside them; men and women will never think of looking for it there. All the gods agreed, and so that is how the secret of life came to be hidden within us.

### **5. Case Studies**

Herby I would like to bring to your attention some of the extremely good results I have achieved with e-Lybra® during this spring and summer [2].

#### **5.1 Treatment of eye injury and consequences in vision reduction**

Patient M.T., age 55, suffering eye injury and vision reduction.

“This is amazing! This is absolutely amazing!” This is how Dr Lavin (the top eye consultant from Alexandra Hospital) describes the results after examining the patient M.T. during her last eye check-up. Last year during Christmas time she was suffering with eye injury, which left her eye with bad reduction on the vision and

prognosis for improvement was not very good. The operation was propounded in about 6 months, as per doctor's suggestion. But in meantime she came for treatment as she was my client couple of years ago for different issue. We started with e-Lybra® during 3 months and she noticed completely improvement in her eye. During her last examination the operation has been cancelled as her vision has been returned back 100%. She is with good health general condition.

Eye consultant did ask if I can improve the condition of other eye, in that case she wouldn't need the glasses more! I'm facing new challenge now treating her other eye!

## **5.2 Treating hypercholesterolemia as hereditary condition**

Patient D.G., age 46, suffering with hypercholesterolemia for last 10 years with no signs of improvement and on the medication as per doctor's prescription permanently.

On the chromosome 16 with e-Lybra® we detected genetically malformation link with lack of enzyme lipase, which is essential for breaking the fat in the cells. So, her mother has passed way very young because of the identical problem of high "lipids" in the blood. The patient D.G. was on the all possible pharmaceutical medication for last 10 years and with still extremely high cholesterol in the blood. She had one session, during approximately 2 hours on e-Lybra®. During next month she went for a blood test and her doctor was surprised as her cholesterol was first time in her medical history of last 10 years - normal! "This is amazing, what have you been doing different that your results of cholesterol in the blood are now normal?" "Only going to the Aerobic, nothing else", that answer was of course only to make the situation easier-acceptable form doctor's side.

## **5.3 Treatment for congenital abnormality in the blood in relation with formation of blood cloths**

Patient B.Dj., age 34, suffering with congenital abnormality on factor 8 in the blood in relation with formation of blood cloths.

The last results from the blood test in relation with Factor 8 was normal 1.45 as before e-Lybra® treatments it was 2.4 (normal level is 1.5), which means that the changes are improving on the level of chromosome and gen mthfr c677t – heterozigot. This was high risk factor for thrombosis and thrombosis-embolism, as she already suffers with stroke at age 30. But with this improvement she would be able now to have child. Also, her condition regarding recovering after stroke (at 2002 after child birth) has significantly improved, as she is walking now without stick and her arm is at level 80% recovered (at the beginning of the treatments with e-Lybra® it was about 25-30%).

The client is one ones-a-month treatment, with some distance treatments as well.

## **5.4 Treatment of depression and psychosis clients**

Patient D.W., age 67, suffering with depression and psychosis, with lots of pharmaceutical side effects.

Improvement was significant after first couple of sessions, so her doctor reduced her medication by 50% after first 3 sessions and for further 25% during next few sessions. The aim is to stop all her medications like pharmaceutical drugs, as she had had lots of side effects affecting her metabolism, water stagnation in the body, liver yang energy rising up and many more. By suggestion from e-Lybra®, we agreed to start with some additional Chinese herbal patented formulas as an option in transition. The results are even better after last 2 months with combination of the therapy.

The client is one ones-a-month treatment, with some distance treatments as well.

## **5.5 Detecting and treating meningitis on distance**

Patient M.J., age 14, suffering with headaches for three weeks, the other symptoms were: very little appetite and feeling nauseous, very bad sleep as to mention only some of the most significant in diagnosis process.

Detecting significant parameters for meningitis and treating them like Vaccination against Meningitis, she received distance treatment only (over 2000miles distance), and next day the headaches were reduced by more than 50%. Not to mention the pharmaceutical painkillers she was taking without any response from her body to reduce the pain - headache.

The client is on the program for digestive system condition, liver-spleen misbalance.

## **6. Conclusion**

In this paper we provided information about e-Lybra® Bio-resonance system and our several case studies supporting its efficacy in non-distant and distant bio-resonance diagnosis and healing. The unique interface between this bio-resonance system and the client allows direct interaction between the analysis of the client's bio-field and its restoration to balance.

It is quantum-informational medicine where the future of healthcare will involve finding the codes to access the activity 'programs' of the body. We are on the border of a transition in consciousness that cannot be ignored.

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# POSSIBILITIES AND TRAPS OF BIORESONANCE DIAGNOSTICS

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**Abstract.** Scientists well know that living cells and their structures emit electromagnetic waves which we use in functional examination of organisms. With their decoding and explanation, we can detect very early dysfunctions of whole organism from macroscopic to ultramicroscopic structures. Method we used is so called Bioresonance, which may capture changes in very small structures, showing dysfunctions in preclinical stage. Hence, it is perfect for correction and prevention of appearing illness. As a part of our research, we will show early detection of dysfunction in cardiovascular system. For evaluation, we used: (1) non-invasive bioresonance diagnostic methods, registering disturbances of electromagnetic oscillations in different organs and tissues; (2) daily saliva and urine pH values self-control, and (3) elemental hair analysis. Examinations were conducted on 103 subjects (67 females and 36 males) aged 15-86 years. Volunteers were divided in 3 groups according to their age (< 30; 30-50, and > 50 years). We followed changes in tissues of coefficients of Mg distribution and other relevant parameters for cardiovascular status validation (Ca, K, LDH CRP, cholesterol, alkaline phosphatase; creatinin-phosphokinase). In most subjects, early forms of abnormalities were discovered in functioning of myocardium (58%), abdominal and thoracic aorta (63%), arteries coronaries (66%), brain arterial circulation (69%), venous circulation (75%), and arterial blood pressure (50% hypertension, 15% hypotension, 45% variable). Also we followed changes in chromosomes with genes for cardiovascular system; we found changes on chromosome 1 in 89%, on chromosome 2 in 93%, on chromosome 7 in 66%, on chromosome 19 in 78%, and chromosome X in 75% of volunteers. These subjects were without symptoms, and without changes in laboratory or ECG examination. But this hides many traps for both doctors and patients, as the number of studies based on the Bioresonance technique is not large, although despite its young age it shows promising results. This also implies that nowadays doctors of integrative medicine have to be not only specialists in conventional medicine and holistic medicine, but in related multidisciplinary fields too.

**Keywords:** *bioresonance, electromagnetic waves, chromosomes, cardiovascular system, prevention*

## 1. Introduction

Many studies of cardiovascular diseases show that they are the first cause of morbidity and mortality in our and many Western countries. It is clear that disturbances in elements are associated with a risk of cardiovascular diseases. The most related elements are: Ca, Mg, K, Na, Zn, Se, Cu, Li, Mo, V, Cr, Si, Cd, Pb and Sn. To maintain normal acid-base balance, body uses basic minerals: Ca (pH 12), Cs (pH 14), Mg (pH 9), K (pH 14), Na (pH 14), Si, Sr and other.

If the diet does not contain enough minerals to compensate, a creation of acids in the cells will occur.

To restore balance by buffers in the blood, the blood takes minerals from other organs including the bones, soft tissues, body fluids and saliva. This occurs almost instantly, but buffers are rapidly exhausted, requiring the elimination of hydrogen ions to remain effective. Magnesium (Mg) is the fourth most abundant cation in the body, following calcium (Ca), sodium (Na), and potassium (K), and the second most abundant intracellular cation (after K). It is involved in more than 300 different enzymatic reactions, including carbohydrate utilization, ATP metabolism, muscle contraction, transmembrane ion transport, and the synthesis of fat, protein, and nucleic acids.

Bioresonance method is one of the most promising non-invasive diagnostic and therapeutic methods in the field of energy-information medicine [1-8]. It is based on the conception of integrity of human organism and as such it offers possibilities for sophisticated assessments. First time when registration of functional disturbances is mentioned was in 1904, by M.M. Volkov. In the root of the bioresonance method lies the fact that every organ,

cell, or even their microstructures, have their specific vibration spectra. Thus it is possible to do such specific spectral analysis and “read” about functioning of the small parts and of the whole organism as well. Bioresonance method is particularly efficient in: early diagnostic of different pre-pathological disturbances and pre-clinical stage of a disease development, when disease symptoms are not expressed or absent.

The relationship between hair element concentrations and human health is a complex process related to exposure, absorption, and tissue distribution of essential and toxic elements. Studies correlate elements in hair with exposure, disease and physiologic or pathologic effects of nutritional excesses or deficiencies. Hair analysis is useful for biological monitoring of most of the toxic metals and also as a prognostic tool to ascertain whether an individual has a specific biochemical uniqueness, which can then be addressed in a therapeutic or prophylactic program. Levels of elements in hair are often even up to 300 times higher than those in serum or urine. Hair is sensitive barometer of early imbalances and often reflects them before symptoms appear.

The aim of the present study was to evaluate interrelations between cardiovascular system health status markers obtained by Bioresonance diagnostics and concentrations of essential and toxic elements in hair of subjects from Serbia.

## **2. Material, Methods, and Results**

As a material for analysis we used hair samples 3-5 cm in length taken from at least six spots of the occipital scalp. About 0.5 g of sample was collected from each subject. The samples were thoroughly washed according to the method advised by the IAEA Advisory Group (1985) (acetone, 3X water, acetone), dried at 105<sup>0</sup>C to constant weight, and mineralised by using wet aching procedure. The following elements were analyzed in the hair: Al, As, Ca, Cd, Co, Cr, Cu, Fe, Hg, I, K, Li, Mg, Mn, Na, Ni, P, Pb, Se, Si, Sn, Ti, V, and Zn. For analytical determination of all elements except iodine, it was used atomic emission spectrometry with inductively coupled argon plasma (ICP-AES, spectrometer Optima 2000 DV, Perkin Elmer, USA), while iodine was determined by ion-selective electrodes. The accuracy of the method was confirmed by simultaneous analysis of the certified reference material (Chinese human hair GBW09101 powder). Hair element concentrations were expressed as µg/g dry weight.

For noninvasive diagnostics of functional abnormalities in cardiovascular system functioning and biochemical parameters in tissues, the bioresonance device Sensitive Imago [8] was used (**I** – individual, **M** – modeling, **A**– anatomical, **G** – holotopical (three dimensional), **O** – images). Electromagnetic oscillations that living body radiate in wide frequency spectrum, which govern practically all biochemical and morphological processes in organism, were measured by interface block “AUR-uM”, model 3x’30s (Producer – Center of New Technology, Omsk, Russia), equipped with programs that energo-informational data transform to diagnostic and corrective therapy procedures (RUS Patents No.: 2001610661 and 2001110-691, 2001). As such it assures quick diagnostic of organs functional status and internal interconnections between diseases of organs and systems of organism.

In this study we examined functional disturbances in vascular tissues and investigated the link between the free Mg level in tissues and cardiovascular disorders [9-11]. In the body tissues the coefficients of Mg distribution as well as coefficients of other relevant parameters for cardiovascular status validation (myocardium; aorta; coronary artery; average artery; brain blood vessels; average venue; liver; thymus; thyroid; chromosomes 1, 2, 7, 19 and X; cholesterol in myocardium, aorta, brain blood vessels and liver; LDH in average artery; c-reactive protein in myocardium, average artery and liver; alkali phosphatase in average artery and liver; creatinin phosphokinase in myocardium and average artery; potassium in myocardium and average artery; Ca, Mg and K in average artery) were followed. Beside mentioned parameters, the examined group was checked to parasites, bacteria and viruses.

Examination was conducted on 103 subjects (67 females and 36 males) aged 15-86 years.

Volunteers were divided in 3 groups according to their age (<30; 30-50 and >50 years).

For noninvasive diagnostics of free Mg in tissues and abnormalities in cardiovascular system functioning, the bioresonance device Sensitive Imago was used.

The results of functional disturbances of different tissues are presented in Tables 1 – 5:

**Table 1. Myocard**

years	< 30	30 - 50	>50	%
coefficient				
1	13	13	3	28.15
2	8	8	12	27.18
3	5	8	20	32.04
4	0	2	11	12.62
5	0	0	0	0

Coefficients: 1. Physiological functional activity, 2. Initial compensatory disturbances of function without symptoms, 3. Functional compensatory disturbances with symptoms, 4. Pathological disturbances of homeostasis – compensatory mechanisms disturbed, 5. Compensatory adaptable processes ended – irreversible changes incompatible with alive.

**Table 2. Aorta**

years	< 30	30 - 50	> 50	%
coefficient				
1	8	6	0	13.59
2	10	16	11	36.92
3	8	5	15	27.18
4	0	4	17	20.38
5	0	0	3	2.91

**Table 3. Arteries coronaries**

years	<30	30 -50	>50	%
coefficient				
1	9	8	3	19.42
2	11	11	15	35.92
3	6	9	19	33.01
4	0	3	7	9.71
5	0	0	2	1.94

**Table 4. Brain arterial circulation**

years	< 30	30 - 50	> 50	%
coefficient				
1	5	7	2	13.59
2	12	14	10	34.92
3	8	9	22	37.86
4	1	3	9	10.68
5	0	0	3	2.91

**Table 5. Arterial blood pressure**

years	< 30	30 - 50	> 50	%
coefficient				
1(without)*	7	16	3	25.24
2 (<)*	8	5	0	12.62
3 <*	10	8	0	17.48
4 (>)*	1	2	15	17.48
5 > *	0	0	23	22.33
6 (variable)	0	0	5	4.85

\*(without) - without changes in arterial blood pressure, (<) - sometimes hypotension art, < - hypotension art, (>) - sometimes hypertension art, > - hypertension art.

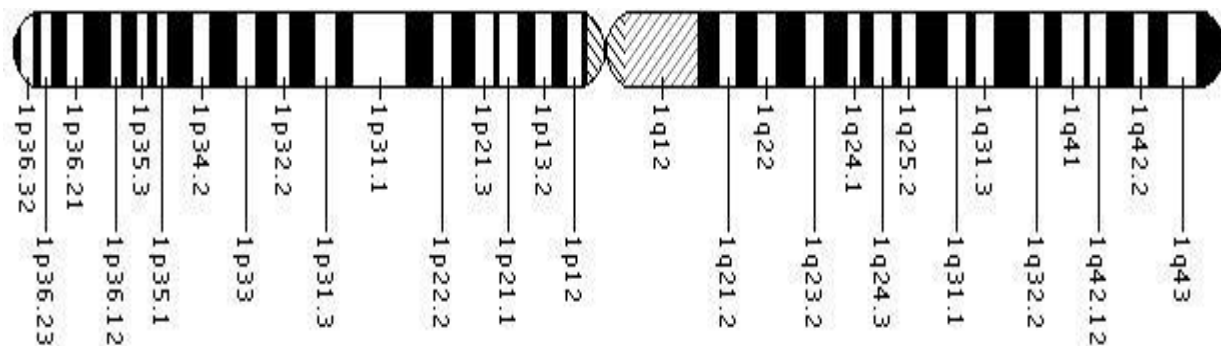
In the largest number of subjects early forms of abnormalities were discovered in functioning of:

- miocard (58%),
- abdominal and toracal aorta (63%),
- coronar arteries (66%),
- brain arterial circulation (69%),
- venous circulation (75%),
- pancreas (69%) and
- arterial blood preasure (50% hypertension, 15% hypotehnson, 15% variable).

The obtained data indicate that in all our patients with cardiovascular disorders there exists more or less expressed acidosis in tissues, and that Sensitive Imago bioresonance device is able to ascertain the early form of abnormality in Mg distribution in the body tissues and cardiovascular system functioning.

Results show that with increasing concentration of free Mg in tissues, level of functional disturbance also increases. These subjects were without symptoms, detectable disorders in total plasma Mg concentration and disfuncion of tested organs, determined by clasical diagnostic methods. Only Mg concentration in their hair was higher than normal.

Very intriguing is possibility to investigate chromosomes and genes responsible for some disturbances, by applying bioresonance technique in detecting their own spectrum of electromagnetic waves (cooperation with geneticians is welcome too). So, on Chromosome 1 (between others displayed in Fig. 1), there is a gene for hypertrophy cardiomyopathia, and ATP [12]: “The ATP1A2 gene provides instructions for making one part (the alpha-2 subunit) of a protein known as a Na<sup>+</sup>/K<sup>+</sup> ATPase. This protein uses energy from a molecule adenosine triphosphate (ATP) to transport charged atoms (ions) into and out of cells. Specifically, it pumps sodium ions (Na<sup>+</sup>) out of cells and potassium ions (K<sup>+</sup>) into cells. The ATP1A2 gene is located on the long (q) arm of chromosome 1 between positions 21 and 23.”



Chromosome 1 (human); Chromosome 2 – gene for changing Na and Ca; Chromosome 7 – gene for QT interval; Chromosome 19 – predisposition for atherosclerosis, cerebral atheriopathia, family hypercholesterolemia; Chromosome X – gene for less concentration of Mg, Ca and P (hypomagnesaemia, hypocalcaemia and hypophosphatemia).

**Figure 1.** The bands used to describe the location of genes on each chromosome.

### 3. Conclusion

Our bioresonance testing showed that such quick screening provides plenty of useful information that help in identifying the underlying root of patient’s complaints: function of organs and tissues, even cells. In the root of this method lies the fact that every organ, cell, or even their microstructures, have their specific vibration spectra.

However, this powerful method hides many traps. The biggest is in presenting results: even its excellent graphic shows that we follow dynamics of processes, from very first changes in preclinical stage. This also implies that contemporary doctors of integrative medicine have to be not only specialists in conventional medicine and holistic medicine, but in related multidisciplinary fields too.

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# KNOWLEDGE FEDERATION HOLISTIC FRAMEWORK

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**Abstract.** Quantum-Informational Medicine and Knowledge Federation share a fundamental interest: To develop a *holistic*<sup>3</sup> framework for science and for knowledge work in general, i.e. a framework that does not unnecessarily limit our worldview, but helps us evolve culturally and socially. Knowledge Federation approaches this task directly, by making it a subject of a collaborative ‘game-changing game,’ where we discover and make ‘moves’ whose aim is to change real-life knowledge work practices. This article summarizes eight such ‘moves,’ and extends an invitation to join the work on the larger new frontier that Quantum-Informational Medicine and Knowledge Federation might belong to together.

**Keywords:** *knowledge federation, systemic innovation, epistemology, cultural revival*

*During philosophy's childhood it was rather generally believed that it is possible to find everything which can be known by means of mere reflection. It was an illusion which anyone can easily understand if, for a moment, he dismisses what he has learned from later philosophy and from natural science (...) Someone, indeed, might even raise the question whether, without something of this illusion, anything really great can be achieved in the realm of philosophic thought -- but we do not wish to ask this question.*

*This more aristocratic illusion concerning the unlimited penetrative power of thought has as its counterpart the more plebeian illusion of naive realism, according to which things "are" as they are perceived by us through our senses. This illusion dominates the daily life of men and of animals; it is also the point of departure in all of the sciences, especially of the natural sciences.*

Albert Einstein [1]

## 1. Introduction

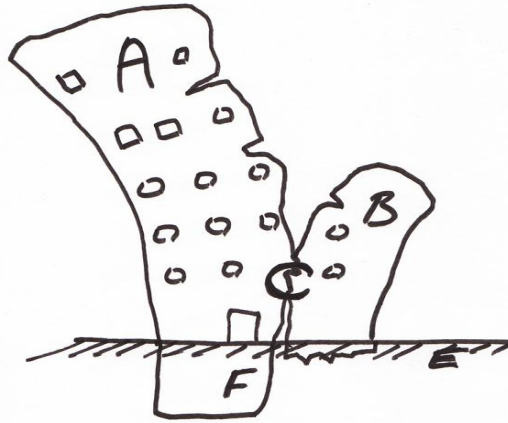
The Quantum-Informational Medicine community and the Knowledge Federation community share a fundamental interest – to develop a framework for science and more generally knowledge work that is not unnecessarily restrictive but *holistic*.<sup>3</sup> Lately we have been pursuing this interest in a common project called Tesla and the Nature of Creativity or TNC [2]. This article will outline the contours of a larger creative *frontier* that is emerging, summarize what Knowledge Federation may be able to contribute, and extend an invitation to join the work on this *frontier*. The modalities of participation will be explained in Conclusion.

In the spirit of *polyscopy* (part of our *holistic* framework, described below), we begin by summarizing the main message of this work in terms of a metaphorical image or *ideogram*.

The image below depicts our culture or civilization (labeled C) as a house split into two. The larger part A is the ‘mainstream’ culture, represented by the academia. Part B is a part of our culture that rooms vital human and cultural possibilities unacknowledged by Part A. Since B culture it is often considered as secondary to A culture, and pushed to a cultural margin called ‘alternative,’ we will call it the *bystander* culture. Part F, which is under the earth surface E and therefore invisible, represents the *foundations* of culture, and of knowledge work. F may also stand for the academic and cultural *frontier* that is a result of this condition. D is what is missing – a new kind of ethical sensibility we will be calling *design*.

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<sup>3</sup> The word *holistic* here means that we look for a framework for knowledge work that includes all knowledge worth including. This meaning is roughly analogous to what the logicians mean when they say ‘sound and complete.’



The message of this *ideogram* is that our civilization or culture is in danger of falling apart because its *foundations* are incomplete – not capable of holding the whole culture, and not providing a foundation for some of the parts that are needed to make it whole. When we look only at what exists above the ground to decide what work is there to be done, then building further either in A culture or in B culture seem to be the only options. But there is a third option – what we called the *frontier* – and that is to rebuild the *foundations* and continue building on this much more solid ground. Calling it ‘the frontier’ feels appropriate because – as illustrated below – it is a uniquely fertile academic space (the academic work that needs to be done there is in a proper sense *fundamental*), and at the same time it is an urgent practical need, being what our culture needs in order to recover and become whole, and able to evolve further. The rest of this article will illustrate what the work on this *frontier* might be like concretely, by describing several prototype projects we have undertaken to point at a much larger space of possibilities.

The following big picture view will further explain the above image and motivate this work.

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“Give me a place to stand and I shall move the world,” said Archimedes to highlight the power of the lever. During the ensuing twenty-two centuries our mechanical devices have become so powerful that we can now alter the biophysical condition of our planet – or in a sense ‘move the world’ – but not necessarily in a good direction! Authors too numerous to quote, representing disparate backgrounds and worldviews, observed that our future now hinges critically on our ability to evolve culturally and socially fast enough, to a condition where we are capable of handling the power of technology meaningfully and safely.<sup>4</sup> This leaves us with the challenge to find another kind of ‘lever’ – which might help us ‘move’ forward the *human* aspects of our world, namely our society and culture, and develop them, and ourselves, in this century with similar vigor as we developed science and technology in recent past.

If this task, to ‘change the world,’ might seem overwhelming, the good news is that we already have a leverage point that offers us sufficient power: It is what we are calling our culture’s *foundations*, i.e. the usually unstated assumptions based on which facts are established and worldviews are created. Our beliefs and values, our scientific method and the way we see the world, the way we determine our priorities and act, and ultimately our culture and the world we are able to create, all stem from our culture’s *foundations*. During the 19th century *foundations* were developed that relied on construction of causal, mechanism-like models of the natural world, in terms of so-called ‘scientific’ concepts, and accepted as possible or true only that which could be explained by such models. Results in 20<sup>th</sup> century physics, however, constituted a rigorous scientific disproof of those *foundations* — as Werner Heisenberg carefully explained in *Physics and Philosophy* [3]. He concluded:

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<sup>4</sup> For example Aurelio Peccei, the founder and first president of the Club of Rome, dictated to his secretary shortly before he would pass away: “Human development is the most important goal.”

“In this way, finally, the nineteenth century developed an extremely rigid frame for natural science which formed not only science but also the general outlook of great masses of people. This frame was supported by the fundamental concepts of classical physics, space, time, matter and causality; the concept of reality applied to the things or events that we could perceive by our senses or that could be observed by means of the refined tools that technical science had provided. Matter was the primary reality. The progress of science was pictured as a crusade of conquest into the material world. Utility was the watchword of the time.

On the other hand, this frame was so narrow and rigid that it was difficult to find a place in it for many concepts of our language that had always belonged to its very substance, for instance, the concepts of mind, of the human soul or of life. (...) It was especially difficult to find in this framework room for those parts of reality that had been the object of the traditional religion and they seemed now more or less only imaginary. (...) Confidence in the scientific method and in rational thinking replaced all other safeguards of the human mind. (...)

Coming back now to the contributions of modern physics, ***one may say that the most important change brought about by its results consists in the dissolution of this rigid frame*** of concepts of the nineteenth century. Of course many attempts had been made before to get away from this rigid frame which seemed obviously too narrow for an understanding of the essential parts of reality. (...) Only experimental research itself, carried out with all the refined equipment that technical science could offer, and its mathematical interpretations, provided the basis for a critical analysis—or, one may say, enforced the critical analysis—of those concepts, and finally resulted in the dissolution of the rigid frame. (Boldface is added by this author.)

Similar fundamental insights were reached in other academic disciplines. Maturana’s results in biology of cognition, Berger and Luckmann’s results in sociology of knowledge, Wittgenstein’s contributions to philosophy of language, Kuhn’s contribution to philosophy of science, Lorenz’s insights into the ‘chaotic’ nature of nonlinear dynamical systems and Turing’s landmark result in non-computability showed respectively that our mind is not an objective recording instrument (*‘camera obscura’*) as it was believed but that it *constructs* the picture we see; that our reality picture is also *socially* constructed; that our reality pictures are constrained by our language, which embodies our cultural point of view; that science is not producing a single true reality picture but a multiplicity of models that are *incommensurable* with one another (show different sides, apply in different circumstances); that exact and complete models of reality cannot be created; and even if they could, that their consequences would not be computable. Those insights made it clear that although it brought us a spectacular development of science and technology, the mentioned ‘reductionistic’ approach to knowledge cannot serve as *foundations* for entire knowledge work and culture.

Hence we have reached a condition where a radical change of culture is immanent, because its very *foundations* must change!

We reached this pivotal point of change more than a half-century ago (Heisenberg published his monograph in 1958), and we seem to be still standing there. Our intellectual tradition has not changed its fundamental premises and its manner of evolving as Heisenberg predicted. The academia has largely preserved the same approach to knowledge and a similar mental stance. Enormous increase in production of knowledge we have witnessed in recent decades mainly brought us more of the same.

What remains for us now is to find a new kind of ‘lever’ – which might help us move our *culture* out of this stalled condition.

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Quantum-Informational Medicine undertakes to work on this lever by extending the conventional scientific *foundations* with insights, methods and language of contemporary physics, and then using the resulting *foundations* to broaden the range of phenomena that can be studied and understood scientifically. Since this broadening of *foundations* has opened up a uniquely fertile space for knowledge work and for culture to expand into, quantum-informational medicine has emerged as a premier cultural lever builder.

But there is still more that can be done:

- as we have just seen, we cannot hope to *found* everything worth knowing on scientific explanations, even when they are extended by the worldview and language of quantum physics;
- the logic and the language of quantum physics are not accessible to most people;
- since the cultural *foundations* give power to worldviews, academic departments and whole industries, attempts at broadening them may be simply ignored.

Seeing in this issue of *foundations* for knowledge work an academic question par excellence, and an urgent societal need, at the University of Oslo we have been working on it since 1995, in ways that complement the approach of Quantum-Informational Medicine. Initially, this work was focused on another way to extend the scientific method: We showed how the approach to knowledge that was developed within the sciences can be made general – applicable to questions that are beyond the boundaries of conventional disciplines, and suitable for providing a *holistic* vision to society. Realizing that the framework that resulted also provided a foundation for a different and more inclusive approach to academic work, we later undertook to map the resulting academic space by developing a portfolio of new research directions that can be developed on it [4,5]. During the past several years this work morphed and cross-fertilized with several related initiatives, which in 2007/2008 led to Knowledge Federation.

Knowledge Federation developed based on the observation that various information technologies that have been developed now make it possible to bring innovation to a whole new, *systemic* level: We can now develop radically new systemic solutions for the main branches of knowledge work such as science, education, journalism and governance, by using new technology as connecting and building material [6]; we can develop new ways of doing and organizing knowledge work from the *foundations* up! In the context of our metaphor, Knowledge Federation is envisioned as Archimedes' "place to stand." It is a community and project where knowledge workers and other stakeholders can come together and do the work on rebuilding the cultural *foundations* and the culture itself simply by self-organizing in new ways.

The purpose of this article is two-fold: (1) to illustrate the potential of this 'place to stand,' both academic and transformative; and (2) to systematize and summarize (or *federate*) what we have done so far and make it available as construction material for building further. We do that by organizing our related work in terms of eight basic *foundations*-related challenges that may need to be addressed.

## 2. Rebuilding the *Foundations*

As Igor Kononenko demonstrated in his QIM 2011 article [7], and as the rest of us might agree – the world spiritual and healing traditions have been known to reach independently closely similar conclusions, for ex. regarding the phenomenology of spiritual practice, or the details of the acupuncture system, which were reconfirmed through experiences of large numbers of people. Do we really need to explain phenomena that are recurrent in experience as consequences of causal scientific models before we can give them an official stamp of existence?

As we shall see next, the mentioned 20th century fundamental insights now enable us to create a *foundation* for knowledge work that is inclusive or *holistic* – and which also allows us to turn sensible observation like the one above into an *academically* rigorous method. Here is roughly how this might work.

Since, as we have seen, the approach to truth that relies on 'reality mechanism' has been discredited by 20th century science, and since even the apparently universal axiom that 'truth' means 'correspondance with reality' can now be seen as a product of illusion, an obvious alternative is to *found* facts and insights not in a reality picture but in experience. While the spiritual and healing traditions and various contemporary therapy schools might differ vastly regarding cosmology and language, their shared *experiences* can provide us a solid basis for conclusions.

But there is a catch: What we need is a rigorous and universal *foundation* – that is, one that does not depend on *any* assumptions that may be a disputed. The above approach does not reach that goal. Already the statement

that truth does not or should not mean 'correspondence with reality' can be contested. And anyhow, saying it as a statement about reality is *already* self-contradicting!

The way out of this difficulty is so simple that its point is often missed: It is to make the above statement, and also other similar statements, not as axioms about the nature of reality, but as a convention. A convention is a statement similar to 'when I say X, I mean Y'. A convention is analogous to a contract – it is something that can be read, agreed on and used for communication – or found unsuitable and not used; but its factual content cannot be disputed, simply because there is none. Hence convention making gives us a possibility to create a *foundation* for knowledge work that is free of potential controversies and hidden assumptions.

(I should clarify at once that making such a convention is not an academic exercise, on the contrary. In informatics and computing it is standard to use such conventions as basis for practice, Object Orientation being a familiar example, and I submit that the case might be similar in knowledge work in general. Furthermore, as discussed below, the issue of *foundations* for knowledge work is not only academic but also political, in the sense that it has to do with a variety of power relationships. A constitution is an example of a society-wide convention. One of my main points will be that since there is no consensus that the *foundations* for knowledge work are preordained, they will need to be made an *explicit* part of the 'social contract'.)

We called this sort of convention '*methodology* definition,' and we created a prototype *methodology* called Polyscopic Modeling or *polyscopy* to illustrate this approach [8,9]. The Polyscopic Modeling *methodology* definition [10] consisted of eight simple clauses called *postulates*. The rest of the Polyscopic Modeling *methodology* provided suitable methods and example results of their application that were developed based on this *methodology* definition as foundation.

*Polyscopy* demonstrated how the *methodological* approach can allow us to turn some of the key insights and ideas that had been expressed earlier by for example Gregory Bateson, and other methodological innovators who saw what was basically going on, into a simple and clear social convention, free of ambiguities and contradictions.

The first result of *polyscopy* showed how its methods can be applied to create an insight about the paradoxical nature of human wellbeing, by combining – or as we would now say *federating* – experiences and insights reached in a variety of therapeutic, spiritual and other traditions, including the sciences [11]. The *methodology* definition allows us to use those heterogeneous experiences and insights in a similar way as witnesses are used in a legal procedure – to give credibility to a shared conclusion.

One of the *postulates* of *polyscopy* states that *information* reflects experience, not reality. Another one states that experience has no a priori structure. In *polyscopy* experience is considered (by convention!) as something like an ink blot in a Rorschach test – namely as something to which we are free to *attribute* meaning. This not only frees us from the bonds of old conceptual and metaphysical schemes, but it also allows us to develop something that is (I submit) our society's vital need – the ability to see and understand things *together* in completely *new* ways!

At the founding meeting of European Scientific Holistic Medicine conference in 2004 in Copenhagen we submitted – using Aesop's Fox and Stork fable as metaphor – that trying to *found* holistic medicine, or anything holistic, on conventional science as foundation has a better alternative in first rebuilding the *foundations* [12].

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Knowledge Federation introduces to the age-old work on *foundations* for knowledge work a completely new dimension – the Web. Credibility of a claim can be augmented already by making it visible on the Web and allowing people to comment. But a lot more can of course be done.

### 3. Liberating Knowledge Work

An obvious constraint on the kind of knowledge we can create – and an obstacle to *holistic* thinking and action in general – is what Heisenberg called “rigid frame,” namely the concepts and methods of conventional disciplines. How can we overcome this obstacle?

At IPSI transdisciplinary conference in 2003 we motivated *polyscopy* by telling the old joke about searching for the lost watch under a street lamp [13]. The point was that our conventional disciplines are like those street lamps in the joke – by their choice of questions, methods and terminology they allow us to see certain things clearly, but also limit what we can see; and there is a large crowd of people looking for knowledge under each of them, exploring every inch of the terrain that is illuminated by the discipline. But what about the rest? What if what we really need to be looking for is not found under our lamp? Or under any of those lamps?

*Polyscopy* undertakes to overcome this problem by creating a *general-purpose* method for knowledge work, which can be applied in principle to any question or issue. This method relies on a technique called *scope design* (free and conscious creation of suitable ways of looking or *scopes*). In the light of the above metaphor, *polyscopy* may be understood as a portable searchlight, which can be taken into the dark and pointed at whatever one wants to see and examine.

This general-purpose method is created by generalizing the conventional scientific approach roughly as follows:

- a way of looking or *scope* is created – usually by defining the key concepts by convention;
- the *scope* is given to the reader together with a certain claim, which is characteristically a statement about how the things are related with one another or a *pattern*. If by looking through the provided *scope* the reader sees what is claimed or the provided *pattern* in experience, then this 'communication experiment' is considered successful.

This method enables us to 'prove' (*polyscopy* would say *justify*) practically any type of statements, including ethical and even emotional ones. And to extend the dry language of science with the colorful language of art and metaphor, *without sacrificing rigor* [14]!

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As we shall see, Knowledge Federation extends this work on development of new methods by creating new socio-technical processes by which researchers from different disciplines, 'the crowd' and the media workers can cooperate to co-create, organize, evaluate and share reliable and verifiable facts and insights.

#### 4. Reorienting Knowledge Work

Not only the practices and the methods in conventional knowledge work, but also the choice of subjects and values have developed within an effort to create an objective reality picture. How can we overcome *this* limitation?

The general approach proposed above – to base knowledge work on a written convention or *methodology* – allows us to specify also an overall *purpose* as a convention; and to then define suitable criteria – what information and knowledge work need to be like to serve the intended purpose. Notice that this is not a restriction – other *methodologies* can be defined for the same and other purposes.

The choice represented by *polyscopy* is to ask: What sort of knowledge might make the largest positive difference to contemporary people and society? And to develop knowledge work practices that can provide such knowledge [15,16].

*Polyscopy*, or more specifically convention making, allows us to also define language terms by convention (they are written in italics). Two such terms were coined to pinpoint this new direction: *tradition* and *design* are defined as two alternative approaches to making things whole [17]. *Tradition*, by convention, relies on spontaneous, Darwinian-style evolution in culture; *design* means consciously taking responsibility for wholeness. A key insight is that whenever *tradition* is no longer in place or can no longer be relied on to bring us to wholeness, *design* must be used. *Polyscopy* calls the purpose it is created for *information design* – which means creating information needed to make things (our culture, ourselves...) whole.

In accord with its chosen purpose, *polyscopy* defines a set of criteria, specifying what information needs to provide to serve the designated purpose. The single conventional criterion – 'factual truth,' which reflects the old intuitive epistemology, the 'correspondence theory,' – is replaced by four new ones (four of the eight *postulates*

are criteria). A criterion called *perspective* states that *information* must be able to give an accurate picture of the whole (situation, or phenomenon), with nothing distorted or hidden.

It can easily be seen that to provide a clear and correct *perspective*, *scope design* (creation of suitable new ways of looking) must be used.

In the light of the metaphor of searching for the lost watch under a street lamp, both *information design* as orientation and *perspective* as criterion are basically saying 'Go search in the dark!'

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Knowledge Federation is self-organizing as a *transdiscipline* where the *design* of knowledge work can be developed and practiced [17,18].

## 5. Providing Insights

What could information provide us that is now lacking? In what way could that make a large difference to our society and culture?

Perhaps the most important distinction of the vision for knowledge work that is made concrete by *polyscopy* and Knowledge Federation is that it supports the creation of community-wide basic insights. "Our car is having a flat tire" is a textbook example of an especially useful kind of insight which *polyscopy* calls *gestalt*. A *gestalt* is an interpretation of a situation, which points at a suitable course of action.

It should go without saying that reliable and shared *gestalts* about key issues are what knowledge work needs to be able to provide to society.

At Visions of Possible World Conference at Politecnico di Milano in 2003 we presented a vision of a sustainable world where suitable (democratically created, reliable, transparent...) big-picture views are used routinely to orient and motivate action [19].

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At a recent miniworkshop that Knowledge Federation staged at Stanford University [20] we motivated Knowledge Federation by the teaser *gestalt* "Knowledge work has a flat tire!" We justified this *gestalt* by pointing at an example showing that our current social organization of knowledge work *inhibits* the creation of community-wide insights about critical issues [21]. Simply continuing business as usual – by focusing on production – would be like trying to rush ahead by pressing the gas pedal in a car with a flat tire; our situation calls for stopping and taking care a systemic problem.

But what might a remedial practice be like? To orient the quest, we gave this remedial practice a name – we called it 'knowledge federation' (we use small letters to point at the practice), and here is why: A political federation unites geographically and culturally distinct units (states) into a shared larger unit (the federation), while aiming to resolve the tension between the need for autonomy and the need for strong union, and ideally turn it into synergy. Knowledge federation undertakes to do something closely similar with knowledge resources. In this analogy, the role of the states is played by the now independent, scattered and disharmonious knowledge resources, while the role of the federation is played by a shared, community view of an issue. The work of Knowledge Federation begins where the conventional knowledge work ends – publication of individual documents and opinions – and undertakes to organize them together and either produce a shared, community view (i.e. a *federated* view), or (where this might be impossible) to make it easier to the reader to form such a view themselves. A basic insight that motivates Knowledge Federation (as the community dedicated to developing knowledge federation theory and practice) is that this work cannot be done by an individual, and that the creation of meaning will not be done by technology alone either. The solution will need to be a *socio-technical* process (human acts and social processes enabled by suitable technology, which of course does the part of the work that the technology can do).

Knowledge Federation undertakes to develop this process and put it into practice.

Like political federation, or democracy, knowledge federation brings a suitable new set of values to knowledge work, whose aim is to reduce the mental and cultural 'pollution' and to restore clarity and quality. Part of the task of Knowledge Federation is to develop a knowledge work culture.

## 6. Democratizing Knowledge Work

Large changes have often resulted from a new way in which the basic issues of freedom and justice are perceived. Is information in today's society really free? Are *we* really free? Are our contemporary versions of democracy and of free press the final solution to humanity's quest for a just society? Or is there still an insight that might inspire a large systemic change?

With the help of *scope design*, we developed a new and unconventional way of looking at the issues of power and freedom – by modeling the intuitive notions 'power holder' and 'political enemy' as *power structure*. The *methodology* allowed us to make this notion precise [9,15]. What follows is a brief, intuitive description.

Typically, a *power structure* will not be a conspiracy or a clique of powerful men (although it might be that), but a structure consisting of ordinary people, and their values and ideas, and various career and other interests, who are not even aware of the *power structure* they compose together. The power is perceived as not necessarily an attribute of any of the constituent persons or identifiable entities, but primarily of the relationsps they form together.

A *power structure* is a structural defect in the living tissues of a society, akin to a societal cancer, growing of its own accord, damaging the function of the affected organ affected and sapping the vitality of the organism – while being unrecognized by the societal 'immune system,' and treated in the same way as other, healthy tissues. Aberrations in American 'financial services industry' and government revealed by the 2008 financial crisis, and recently revealed defects in American and British public informing are prime examples of *power structure*. But they are not at all the only ones.

At the yearly conference of European Association for the History of Medicine and Health in Paris in 2005, we posed the question whether healthcare too can develop cancer, and we answered it positively by pointing at *power structure* tendencies [22].

A common symptom of *power structure* is that people are overworked and busy, and yet the social purpose of their work is not adequately served. The reason is that a lion share of effort is invested into spinning the wheels of a dysfunctional social machinery, or into competing within the *power structure* or with other *power structures* – an engaging pursuit in which the larger purpose is all too easily forgotten.

The *power structure* view can help us explain why knowledge work remained as it is in spite of mentioned fundamental insights. It allows us to place the work with *foundations* into a new, political context.

The *power structure* view also provides us a simple way to understand sustainability and other contemporary issues.

Technically, a *power structure* is not a thing, but a way of looking or *scope*, which allows us to perceive *power structure* tendencies in otherwise good and useful societal organs and tissues. If after training your sight a bit you end up seeing *power structures* everywhere, don't panic – some of the basic insights that result from the *power structure* view are really good news:

- The *power structures* are consuming or wasting so much of our vital resources that, if this problem can be remedied, our material condition might improve quite dramatically. While a more detailed report is being prepared, here is a way to reach that insight on your own: Watch the Oscar winning documentary The Inside Job, and the earlier one called No End in Sight by the same authors (both are available online); they will show why the 2008 bailout and the Iraq war are in all likelihood orchestrated by the same *power structure*. Then take a look at the Billion-Dollar-o-Gram [23] to compare the costs of those two events with the projected costs of resolving some of the common global issues such as 'saving the Amazon' and 'helping developing nations combat climate change.' Take into consideration that what you are looking at are the effects of a *single one* (albeit perhaps the wealthiest) among so many identifiable *power structures*!

- The *power structure* view radically changes the name of the game in politics – from 'us against them' (rich vs. poor, Capitalism vs. Communism, Republicans vs. Democrats...) to 'all of us against the *power structure*.' Indeed, although some of us may feel attracted to the apparent power that the *power structure* has given us (it is apparent because it lasts only as long as we serve the *power structure*), in an informed society the fact that the *power structure* tends to hinder even its most powerful individuals from reaching wholeness may become shared and obvious.
- And now the main point: This societal cancer has an obvious cure! It is – self-organization. The remedy that can bring this cure is the change of ethics from seeking personal advantage within the existing societal structures (which is the glue that binds us to *power structure*), to doing what best serves the wellbeing of larger social and natural organisms and their various organs (i.e. which brings *wholeness* on all levels).

'*Design*' as we defined it above ('taking responsibility for *wholeness*' or 'stewarding *wholeness*') is a name we have chosen for this remedy; and *tradition* – the ethics and behavior that once served us well, while we were living in functioning traditions – is what now bind us to *power structure*.

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If we diagnose that *power structure* is our society's cancer-like disease, then Knowledge Federation may be understood as a way to bring cure to our society's brain and immune system – and thus enable the society to cure itself. A core goal of Knowledge Federation is to foster self-organization in knowledge work. At the opening of the second Knowledge Federation workshop in Dubrovnik in 2010, where the present Knowledge Federation began to take shape, the participants – representing a suitable mix of backgrounds and interests to enable this sort of work [24] – were invited to perceive themselves not as people pursuing a career in a chosen profession but as elements in a collective mind – and to self-organize as it might best serve this role. During the three days of the meeting we began to work on systemic solutions for journalism, science and education.

There are several ways how Knowledge Federation may contribute to cure, such as:

- By employing the power of the Web and the new media to develop new systemic solutions. The power of the Web to democratize knowledge and knowledge work is well known – the Web has enabled in principle everyone to broadcast to the world! Furthermore – as numerous examples such as Google and Facebook have shown – the Web can generate enormous power with minimal initial investment. Therefore the Web is ideally suited for creating new, benign *power structures* that can outperform the malignant ones, and bring cure.
- By employing the power of the Web and the new media to empower good culture. Andrew Kohn's observation that 'the Web has disintermediated the expert' is true only partially – the academia has to a large extent disintermediated itself, by defining itself as a collection of traditional pursuits and ignoring the emergence and power of the new media. Similar statements could be made about literature, arts and other constituents of 'good culture.' In Knowledge Federation we undertake to implement the core functions of good culture in the new media. At this moment, for example, we are preparing our next workshop in Barcelona titled "Co-creating an Innovation Ecosystem for Good Journalism."
- By developing suitably designed (to provide 'checks and balances') and *transparent* solutions for knowledge work.

## 7. Recreating Knowledge Work

Academic criteria for promotion and funding support the disciplinary interests and pursuits. How can we empower this new way of working, and allow it to develop?

(Before we look into this question more closely, observe that the *design* approach to academic work empowers us to turn this question into an *academic* problem: As scientists working under the *design epistemology*, as we have been calling the above-described *foundation*, we are no longer those passive or 'objective' observers we used to be; we are actors, conscious participants in the changing world. When in

academia we perceive ourselves as a service to society in need for suitable knowledge, then changing the actual knowledge work becomes one of our core tasks.)

In Knowledge Federation, recreating the practice is an explicit and conscious goal. Since its second workshop in Dubrovnik in 2010, Knowledge Federation has been self-organizing as a 'game-changing game' – a collection or *federation* of semi-independent projects, each of which undertakes to be game changing in its own domain. Together, those projects compose Knowledge Federation as a general or generic game-changing game [6].

Knowledge Federation projects provide just enough structure for the participants to be able to employ their time and skills productively. But our core task is to discover and make 'moves' that can be game-changing.

*Power structure* being such a powerful opponent, we employ an approach similar to the one that is often associated with Judo – using the inclinations and energies that are already there, and deftly orienting them in a new direction.

A detailed description of various strategic points and moves is beyond the scope of this article, and we here provide only some taste bits:

- The emergence of the computer once led to the development of computer science and to manifold developments within *computer* system design and related innovation; the Web and the new media now invite R&D and innovation to ascend to a whole new level – *socio-technical* system development, in diverse areas of knowledge work such as education, journalism, science and governance. Specifically socio-technical system development could be the next interest for people working in various knowledge work technologies such as Semantic Web, Topic Maps, Dialog Mapping and others – as a way to bring the existing technology into actual practice. The first Knowledge Federation workshop in Dubrovnik in 2008 was a convention of researchers working on socio-technical solutions for collaborative knowledge work. We realized, however, that to truly bring this work into practice, a heterogeneous community, a federation of knowledge workers, will need to be formed. Knowledge Federation has been conceived as an organizational site where such a development can take place.
- It is a safe bet that the existing large socio-technical systems for knowledge work will change in the near future: Our children and our students are socializing, playing and enjoying – and creating – media material and entertainment by using the state of the art networked digital technology. When they become for ex. academic researchers and instructors – why would they continue using the procedures that have been developed based on articles, books and classrooms as the only available technology?
- The Knowledge Federation Course project is developing a federated university course model and a university course, scheduled to be offered in the Fall of 2012. In a federated education, where the learning resources are developed and maintained through collaborative work of a global community of researchers, the economies of scale enable completely new patterns of work. When an author is responsible only for a single lecture or part of a lecture (or whatever else will emerge as basic unit of education), and can cooperate on it with creative film makers and animation and visual artists who are also members in the federation, then completely new possibilities open up. Acquiring in this way access to new media technology, education becomes capable of competing with the gaming industry for the interest and attention of young people. The Knowledge Federation course will be offered to selected graduate students from some of the leading global universities (through Inter University Centre Dubrovnik, which is accredited to offer such courses). This course will enable students to begin a career in knowledge federation, and more generally – to join the *frontier*. The Knowledge Federation Course project brings *design* to education – and aims to take care of all core functions, not the least instilling creative and cooperative values and work habits.
- The operational goal of Knowledge Federation Stakeholders project is to secure funding; but the 'game' it enacts is quite a bit more interesting than it might seem. This project is currently in two parts. The task of the first one, the Corporate Stakeholders project, is to develop and extend its rather unique value

proposition to suitably chosen companies.<sup>5</sup> The task of the second one, which is called Proactive Donorship project, is to make a large donor interested in supporting a project that approaches the contemporary issues in a *systemic* way (...).

- Knowledge Federation's value proposition to its members is an answer to what we consider to be *the* contemporary dilemma: "How can we contribute sufficiently to making the world safer and better for our children, while continuing our normal life and careers?" Knowledge Federation answers this question by producing a *synergy* between the personal career goals, and those global and long-term ones.

## 8. Changing Our Collective Mind

We have now come to a subtle yet central obstacle to *foundations* change. Have you experienced that, when talking about religion or politics, or about the sort of themes that are represented in Quantum Informational Medicine, your interlocutor denies your view even before hearing your arguments; or even worse – that he stops listening while you are just beginning to make point? As Antonio Damasio showed [25], our decisions and choices are often not conscious but *pre-conscious*. We have been *socialized* to accept certain beliefs as true and certain practices as normal, even when they are not. And when our mind is facing an idea that contradicts its pre-conscious beliefs, its inclination is to simply ignore it.

How can we then ever hope to change our collective mind, when even our individual minds might pay attention only to that which our collective mind has prescribed?

A creative solution was developed by physicist David Bohm; he devised a technique he called Dialogue [26]. In a Bohmian Dialogue people sit in a circle and do two forms of practice:

- Supportive listening – while one talks, everyone listens without talking or judging. While we are listened to in this way, thoughts may emerge that even we did not know we entertained.
- Self-observation – observing one's own inward emotional reactions. When we practice self-observation, Bohm noticed, we become aware that our reactions tend to be incoherent with our consciously held values and beliefs. And this simple act of observing then also tends to correct our pre-conscious beliefs because, Bohm claimed, coherence is its inner nature.

Experience showed that when a dialog is successful, the result is coherence within the group. Instead of competing with one another, the members of the group begin to co-create. A reward is increased sense of togetherness and joy.

We adapted Bohm's Dialogue and developed a technique called Key Point Dialog (a *key point* is a value- and direction changing collective insight), by combining it with a therapeutic technique called intervention, and by adding the Web and the informing media. We applied the resulting procedure in practice by organizing an event called The Cultural Revival Dialog – Building the Future of Europe Together [27], in collaboration with European Movement Croatia, as part of the celebration of the 60<sup>th</sup> anniversary of the European Movement International. The specific modifications of Bohm's original idea were as follows:

- The circle was composed of opinion leaders (politicians, journalists, artists and public workers, academic researchers and others).

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<sup>5</sup> Here is a hint that points at the substance of this value proposition: While Blizzard Entertainment was able to create World of Warcraft, no software manufacturer can create a new 'academic game' or 'journalism game.' Researchers and journalists must do this change themselves. But they of course cannot do this alone. At the very least they need the experts who can creatively use the new information technology; ideally they should be the people who are developing technology for collaborative knowledge work; and then they will probably also need business planners, and entrepreneurs, and people who innovate in presentation of insights by using visual media... Knowledge Federation positions itself as an *enabler* of systemic innovation [23] – by being a *federation* of knowledge workers representing relevant kinds of expertise *and* by providing a way (self-organization or 'bootstrapping') in which they can cooperate together and create solutions.

- The circle was surrounded by four chairs with 'tacit invitees,' four 20th century authors, each represented by a large, framed photograph and two books. Symbolically, they represented the four walls defining the context for the dialog, which was the context of the 21st century (the 'tacit invitees were placing us into the context of 21st century by making us aware of some of the insights that were reached during the past century).
- We provided Internet and media support. If and when the circle would begin to resonate with the *key point*, we would allow the resulting waves to spread through the Internet and informing media (the dialog would be allowed to continue in the media).
- Into the middle of the circle (symbolically) we placed Sheng Szen Qigong ('Qigong of Unconditional Love'), represented by its Headmaster Li Jun Feng and his daughter, Li Jing, who is working on a Ph. D. dissertation about qigong at a university in Sweden. (Metaphorically, this was like throwing a rock into the middle and creating waves).

Master Li Jun Feng and Ph.D. Candidate Li Jing embodied experiences that challenged our conventional *foundations* and worldview, and pointed at human and cultural possibilities that reside beyond them. Conceivably, some of our participants may have been tempted to disqualify Sheng Zhen Qigong as pre-scientific and leave the circle, in any case mentally. But Werner Heisenberg was a 'tacit invitee' in one of those chairs surrounding the circle, representing the insight that – for all we know *scientifically* – qigong *is* possible! And Aurelio Peccei was in another chair, telling us that Sheng Zhen Qigong is pointing at exactly the sort of cultural possibilities that might be necessary for the continuation of our civilization.

The described additions turned the original Bohmian dialog circle into a high-energy site akin to a particle accelerator, capable of raising the energies to the point where change of mind has become possible.

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In Knowledge Federation we continue to organize similar dialogs within the Tesla and the Nature of Creativity project, which is described next.

## 9. Changing Knowledge Work Practice

This is all fine, but how can our ideas and solutions leave the laboratory and recreate the knowledge work *practice*?

As already mentioned, Knowledge Federation has self-organized to become a 'game-changing game' – inventing game-changing 'moves' is our explicit purpose! What we present are strategic 'moves' that are being developed within one of our projects called The Tesla and the Nature of Creativity.

Tesla and the Nature of Creativity (TNC) [2] is the project where work in Quantum-Informational Medicine is combined with work in Knowledge Federation. The scenario is that we take a result in quantum-informational medicine and federate it. The result is Dejan Raković's model of the inner workings of 'deep creative insight,' a phenomenon reflected in a highest degree by famous inventor Nikola Tesla. By federating this result we showed how any technical result of general relevance and interest may be federated i.e.:

- explained in terms that are accessible to general public,
- expressed as an idea in an idea graph and made available online for everyone to comment and work with,
- linked with other related ideas and results,
- developed into general insights that can inform policy- and lifestyle change,
- brought to the attention of academic and other communities where it may have large impact,
- brought to the attention of the media and the public.

Since the TNC project is described in another article in QIM 2011 Proceedings [2], we here highlight only some of its strategic 'moves' whose goal is to change the practice. We use suitable metaphors to highlight the strategic points.

- **Candles vs. light bulbs.** By showing a systemic innovation that is obviously superior to conventional practice, we may produce an effect similar to contrasting an electrical light with a candle – make it obvious that the future will have to follow the indicated direction.
- **Court and court case.** To change the knowledge work practice, we apply a strategy similar to the one used for changing the *legal* practice in the USA and Canada: A certain specific law suit is carefully prepared and taken all the way to Supreme Court (an example is the court case that tobacco industry lost recently at the Supreme Court of Canada); this then makes it easier for other similar lawsuits to succeed. In the TNC project we develop a case for quantum medicine and the corresponding worldview by focusing on a specific academic result – Dejan Raković's model [28]. (Initially Knowledge Federation will need to be both 'the lawyer' and 'the court.' While developing 'the court' part we will emulate the traditional neutral and sober stance associated with good legal practice *and* good science, aiming to develop a new socio-technical procedure that will enjoy a similarly high esteem.)
- **Creativity as Trojan horse.** The phenomenology of creative insights is supported by research and numerous testimonies, and so well documented that it seems impossible to rationally deny it. But the structure of the result federated suggests a more general insight: The nature of something that is quite central for culture (creativity) has been misunderstood and ignored, because it failed to fit into what was erroneously conceived as 'scientific worldview.' Are there other phenomena that were similarly misunderstood and ignored? Hence our creativity case opens the door to a number of other phenomena to be seen and given citizenship rights.
- **Snåsamannen 2.0.** We have planned to stage a Knowledge Federation Dialog in Norway, where the public is already sensitized to the larger issue we are talking about through books and public events related to Joralf Gjerstad, a person with alleged healing and clairvoyant abilities, who became a celebrity in Norway after his biography became the bestseller. The first round of debates caused a rift between the academia and the public, endangering the public esteem of science [29]. Our intention is to create a second series of events, where this rift will be repaired (recall our *ideogram*).

## 10. Conclusion

We have seen a way how *foundations* for knowledge work can be made that are close to being *whole*, and several examples of new questions and ways of working that can be developed on this new *foundation*.

To highlight the larger *academic* frontier that both Quantum Informational Medicine and Knowledge Federation may belong to, and to point at the work that is opening up for us to do in the future, we now summarize what has been said by yet another big picture view or *gestalt*. The developments that were taking place in the arts a century ago will provide a suitable metaphor: It was then that the artists understood that 'objectively depicting what was seen in reality' was not really what art was or needed be about. A myriad possibilities for creative action, and numerous new styles and directions, developed from this insight. Our possibility, and arguably also our obligation to our intellectual tradition and society, is to begin a similar development in the academia, and in knowledge work in general.

It is instructive to see also how the *value system* of the art *academy* changed: Standards of excellence that were based on mirroring nature by imitating the technique of Old Masters became obsolete; something quite different began to be recognized as 'contemporary art.' After this change happened, to become members of an art academy, artists needed to be creative also in the very way in which they were doing their art. It was no longer the artists' skill in following an established pattern that distinguished them as artists, but their ability, and even their courage to challenge and recreate those patterns.

If it might indeed be true, as Aurelio Peccei claimed, that our most urgent need is a comprehensive cultural change,<sup>6</sup> we can now see how such an event might develop in a natural way – in the academia, where we are not

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<sup>6</sup> "The future will either be the inspired product of a great cultural revival, or there will be no future." [30].

bound by the sort of pressures that the industrial workers have, unless we unwittingly impose them on ourselves; and where the young people we are instructing can begin their professional lives with a larger worldview and inspiration for creative action. All we need to do is provide suitable space where vital new impulses can develop, and demonstrate suitable spirit. Knowledge Federation undertakes to be a step in that direction.

The need for reexamining and changing the *foundations* for knowledge work, by which we motivated the described work, empowers us to carry out large changes in academia not as a revolution, but as *evolution* – although the resulting developments might seem like a revolution, as indeed our circumstances might require. Courage and humility are required of us who undertake to work in this way. Courage – to see that what was academically considered as most solid and relevant in the past will not necessarily be that in the future; and humility – to see that much of what has been created in the past *will* be relevant, and perhaps even acquire new relevance. Our challenge is to open up this new academic space, where creating new *foundations* for knowledge work is seen as our core task (or as ‘basic research’), and on this new space make sure we import and learn from the past (i.e. *federate*) what is still vital. And that we then develop work that is as solid and as deep as the work that has been done by our great academic forefathers, which earned our profession the public esteem that we now enjoy.

To work on this new frontier, it is of course not necessary to join Knowledge Federation. It is sufficient to work under the ethical stance we called *design*. (This name is, of course, arbitrary and it too can be *federated*. There are already a number of people and communities who claim that the key to our condition is ‘the spiritual outlook on life’. And there are others who claim that it is ‘holistic thinking.’ Both notions are closely similar to *design*.) *Design* can be practiced in any profession, and in all walks of life.

On the other hand, Knowledge Federation is just beginning to develop and grow within the new organizational structure that has been described; it is now ready to receive new members who will want to work on the *frontier* by participating in this ‘game-changing game.’ If you might be one of them, please contact us at [knolfed@googlegroups.com](mailto:knolfed@googlegroups.com), while our new Drupal-based community site KnowledgeFederation.net is being completed. For more information about our on-going projects visit <http://KnowledgeFederation.org>.

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## DECOLONIZATION OF ALTERNATIVE MEDICINE

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**Abstract.** The relation of official and alternative medicine was changing according to the changes of socio-economic conditions. These changes, actually, have led the official medicine to colonize the alternative medicine. Nowadays, however, socio-economic conditions are enabling the process of decolonization. The decolonization of alternative medicine should be both professional and personal. Only merged those two aspects of decolonization could lead alternative medicine to quit the position of a minor, and official medicine to quit the position of an oppressive tutor.

**Keywords:** *official and alternative medicine: relations*

Discussion about decolonization of alternative medicine includes analysis of its former colonization, colonization established by official medicine. In this study, the colonization of alternative medicine is not analyzed from the point of values. It is discussed as a part of the developmental process, i.e. as the part of the process which had evolved in accordance with relevant socio-economic conditions. That is why, as the starting point, instead of a political, the cultural definition of colonization was adopted: colonization is the rule of people/institutions belonging to another culture [1].

As such, colonization is based on two fundamental elements:

- Rebuttal: within domineering culture all values of a colonized culture are negated,
- Repressive infiltration: a system of values, logic and philosophy of a domineering culture are forced on a colonized culture.

In countries of Atlantic civilization, official medicine took over the role and the power of a colonizer by acquiring monopoly over disease, including very narrowly defined human suffering. That monopoly was not acquired *per virtutem*, i.e. owing to better results of treatment comparing to other methods of healing [2]. (There are quite a few data indicating advantages of treatment by alternative methods, especially by homeopathy, even before official medicine took over monopoly.) It was acquired *per servitudinem*. Namely, at the time when official medicine started its expansion it suited very well to the ruling class, class of industrial capitalists who decided to support it legally and financially [3].

Which assets have brought the advantage to the official medicine?

First of all, it was a method of work, very similar to the industrial production with a hospital analogous to the plant, and patients as a raw material which is at the end of a production line discharged as a finished product (functional and ready for use), or as a waste (nonfunctional, or unusable).

The second advantage was the specific attitude of official medicine, the attitude which made it open only for outer causes of diseases. Namely, the official medicine did not consider living conditions of people asking for medical help. As main culprits microorganisms, defined almost as entities coming from another world, were proclaimed.

The third advantage which brought the privileged position to the official medicine were its logic and technology. Both were internalizing, not only in a medical context, the psychosocial pattern of manipulation and control.

In this first phase, the phase of achieving and maintaining the monopoly, official medicine denied any effectiveness to the alternative medicine. In accordance with that it placed a ban on practicing of alternative medicine as well.

On the other side, alternative medicine practitioners were trying to overcome this denial mostly by trying to expose and to discuss results of their work.

The balance of power led to the development and application of the three known methods of repression: criminalization, marginalization and medicalization.

However, during seventies of the last century there were global changes of socio-economical conditions.

At first, within societies of Atlantic Civilization, after the widespread student revolt at the end of sixties, a substantial interest emerged for both thematization of industrial capitalism and opening for other cultures, especially those of the Far East.

The second important fact was the significant political emancipation of the Third World countries, and the strengthening of their role in international institutions.

Consequently, the first and the second group of socio-economic changes led to the Alma Ata declaration “Health for all” in which the World Health Organization, in 1978, recommended to the member states to include in their health care systems traditional practitioners, i.e. practitioners of alternative medicine [4].

The overall result was the heightening of interest for alternative treatments.

What did the official medicine do in the new circumstances?

Rebuttal of alternative medicine was maintained, but it was joined by the repressive infiltration.

The repressive infiltration was imposed on through the three controlling directives:

- There is only One Medicine,
- Alternative medicine cannot be practiced without institutionally verified knowledge of official medicine,
- Efficacy of alternative medicine has to be proved by methodology of official medicine.

The first directive, “There is only One Medicine” opened the entrance of alternative methods of treatment into space of One Medicine but all power position in that space were occupied by representatives of official medicine, and both the value system and behavior were prearranged according to their interests and logic.

The second directive, by imposing that alternative medicine can be practiced by practitioners of official medicine only, is securing direct repressive infiltration and control through practitioners who are checked during their medical education and practice, and consequently indoctrinated.

The third directive, demanding application of official medical research methodology, is putting alternative medicine on the Procrustean bed with inevitable maiming, because its idiographic nature is forced into a nomothetic procedure [5].

The overall result of this repressive infiltration is specific repressive tolerance [6]. Namely, alternative medicine was allowed to “enter” so called One Medicine but only after official medicine “entered” deeply into it:

- By the way of physicians who started to practice alternative medicine,
- By the way of official terminology,
- By using official medical diagnostic nomenclature,
- By applying official medical code: patient as the object of manipulation.

In that way, instead of authentic alternative medicine, we have got the hybrid one.

Socio-economic conditions, however, kept changing. Much faster than before. So, at the end of 1990ies, the relation between official and alternative medicine came into a new context.

The significant determinant of that new context was the growing official medicine dependence from pharmaceutical companies. That dependence led, directly, to the increased incidence of iatrogenic diseases, and it was the key factor in the process of de-professionalization. Namely, owing to the corrupt members of official medicine elite, interests of pharmaceutical companies were significantly influencing the formulation of the “principles of as good practice” which themselves deprived official medicine practitioners of both independence and responsibility, basic prerogatives of each profession, the medical one included [7].

The position of alternative medicine has changed as well. Three factors played the important role:

- Institutionalization of alternative medicine which led to the professionalization and to the development of education independent of educational system of official medicine,
- Satisfactory results of treatment by various methods of alternative medicine,

- The fact that the first large social group which turned to alternative methods of treatment was influential. Namely these were predominantly middle-aged people with high education and higher than average economic status [8].

The general context was important also, with advancing Postmodern values like human rights (including patient rights), and especially concept of pluralism promoting medical pluralism, analogously to the political, cultural and religious pluralism.

These new socio-economic conditions, after long period of time, were enabling the change of relation between official and alternative medicine. Namely, they were enabling the overcoming of the repression and control of official medicine, and much stronger position of alternative medicine.

However, the overcoming of the subordinate position of alternative medicine would not be possible without open and persistent engagement of alternative medicine, i.e., its practitioners in decolonization. That engagement in decolonization should have two sides: the professional, and the personal one.

The professional decolonization should deal at first with three controlling directives of repressive infiltration: “There is only One Medicine”, “Alternative medicine cannot be practiced without institutionally verified knowledge of official medicine” and “The efficacy of alternative medicine has to be proved by methodology of official medicine”.

The overcoming of the first directive might be the simplest one. Namely, in developed societies the totalitarian mind stepped back in front of the idea of pluralism. In addition, there are clear indications that the directive “There is only One Medicine” is forcing the merger of two completely different therapeutic systems:

- Official medicine which is the system of Modernity, and alternative medicine which is system of Post-modernity,
- Official medicine which is based on the Cartesian paradigm, and alternative medicine which is based on the holographic paradigm,
- Official medicine whose basic orientation is control, so it is treating human beings as the closed systems whose (re)actions are predictable, and alternative medicine whose basic orientation is support, so it is treating human beings as open systems whose reactions are unpredictable.

Overcoming of the second directive which is based on a presumption of a higher position of official medicine, and on the principle of so called levels of competence is somewhat more complex. However, if we accept the principle of pluralism, i.e., the position that official and alternative medicine have no intrinsic similarities then the logical conclusion is that levels of competence which are valid within official medicine cannot be valid within alternative medicine. The next conclusion would be that the competence within alternative medicine is based on the knowledge of the specific expertise in alternative medicine, and acceptance of its logic, philosophy and system of values. Additional condition is overcoming of a widespread medical narcissism which is the basis of a deep conviction of many physicians that the knowledge of official medicine is giving them a special advantage in practicing alternative methods of treatment. In fact, this is a serious mistake because the strong indoctrination by official medical story makes physicians less accessible for alternative medicine. They need more time, more work, and more of personal transformation in order to open themselves to the alternative story.

Regarding the third directive, it is necessary to turn to the principle of pluralism again. This time we are dealing with scientific pluralism. Namely, the scientific method used to prove the efficiency of official medical treatment cannot demonstrate validly the efficiency of alternative treatments. The point is that the method used for checking of the results of official medicine belongs to the science of sensory experience. That is a monological science within which the researcher is not communicating with the object of research. He/she is only observing and registering results.

The method of checking results of alternative medical treatment, however, belongs to the science of mental experience. The approach of a researcher is dialogical, he/she is establishing an inter-subjective space with the subject of research, and the key element is interpretation.

Of course, invaluable is the role of the personal decolonization. The personal decolonization is closely connected with the personal development and as such it is the responsibility of each alternative medical

practitioner him/herself. Still, it rests in the domain of professional organizations. The personal decolonization is the *condition sine qua non*. Without it, alternative medicine is stuck in the position of a minor, and the official medicine is continuing its control as an oppressive tutor.

That is why, for us here the basic question is “Are we ready to tackle decolonization?”

This question, though, might be overly optimistic so that the more realistic question would be: “Do we want to engage in the decolonization at all, especially in the personal one?”

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# THE ANALYSIS OF BIOLOGICAL SIGNALS AND GENETICALLY DETERMINED FUNCTION OF AUTONOMIC NERVOUS SYSTEM

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**Abstract.** It is very known fact that according to some new studies hypertension and resting heart rate are genetically determined. According to some studies heart rate variability is the constant related to type of autonomic pattern. Owing to this fact that function of autonomic nervous system is constant, the treatment of diseases could be evaluated using different groups related to type of dysfunction. This is the first but very important step in the development of general principles of personalised medicine. In order to reveal right type of autonomic disorder we used short and long term of HRV analysis with special Ansa Scan Software. A comprehensive study protocol was done including finger blood pressure variability (BPV) and heart rate variability (HRV) beat-to-beat analysis and nonlinear analysis, 24-hour Holter ECG monitoring with QT and HRV analysis, 24-hour blood pressure (BP) monitoring with systolic and diastolic BPV analysis, cardiovascular autonomic reflex tests, cold pressure test, and mental stress test. The patients were also divided into sympathetic and parasympathetic groups, depending on predominance in short term and long term spectral analysis. In the second level of treatment of patients, we used drugs which are in complementary relationship to the type of autonomic pattern.

**Keywords:** *autonomic nervous system, biosignal processing, sympatho-vagal polarity, genetic aspects*

## 1. Introduction

The genetic determination of autonomic nervous system with constant patterns of activity is new and very promising approach in the treatment of diseases using principles of personalized medicine. The first and most interesting methodological problem is to reveal the type of autonomic pattern in order to start with medical treatment according to rule: one patient-one disorder. Sympatho-vagal polarity of two main branches of autonomic nervous system is the principal philosophy of the treatment of disorder in order to solve the problem of disbalance using rule to decrease stronger part of the system and increase the weaker. The main methodological problem related to assessment of autonomic system is solved in past decade using help of the physics and theory of chaos, especially heart rate variability analysis. This very strong step in the development of new science became exciting promotion of new integrative discipline – Neurocardiology [1-4].

## 2. Evaluation of Autonomic Function and Hemodynamic Status

All patients were tested in our Neurocardiology laboratory using comprehensive tree steps protocol for the assessment of autonomic nervous system and hemodynamic status. Tree steps protocol includes: (1) five standard Ewing's clinical autonomic function tests, cold pressure, and mental stress test; (2) short term ECG and HRV analysis; and (3) non-invasive beat-to-beat monitoring and analysis of hemodynamic parameters and autonomic function (Task Force monitor). Patients were tested under ideal temperature conditions (23°C), without any previous consumption of alcohol, nicotine, or food.

## 2.1 Clinical Autonomic Function Tests

Cardiovascular reflex tests according to Ewing's battery were the first step in our assessment of autonomic function. Participants rested in the supine position for 10 minutes before starting the tests and also rested for 2 minutes between each test [5].

### Parasympathetic tests

**Heart rate response to Valsalva maneuver:** The patient rested and lying recumbent was asked to maintain a column of mercury at 40 mmHg for 15 second blowing into a modified sphygmomanometer, with ECG recording. The result, expressed as a Valsalva ratio (VR) was taken as the maximum RR interval in the 15 seconds following expiration divided by the minimum RR interval during the maneuver.

**Heart rate response to deep breathing:** Respiratory sinus arrhythmia was assessed by the performance of 6 deep breaths at 0.1 Hz frequency. Patients were given adequate rehearsal to achieve the required frequency and counted through the 6 breaths. The response was taken as the mean of the differences between the maximum and minimum instantaneous heart rate for each cycle.

**Heart rate response to standing:** Heart rate response after standing (30:15 ratio), expressed as a ratio between the longest RR interval corresponding with 30th beat after starting and the shortest RR interval corresponding with 15th beat. The ratio was measured using a ruler and electrocardiograph trace which was recorded continuously.

### Sympathetic tests

**Blood pressure response to standing:** Orthostatic blood pressure change was calculated as the difference between the nadir systolic blood pressure 180 seconds after standing and the systolic blood pressure prior to standing.

**Blood pressure response to sustained handgrip test:** Sustained muscle contraction causes a rise in systolic blood pressure, diastolic blood pressure and heart rate. The test was performed with 30% of maximal voluntary contraction for 5 minutes with blood pressure measurement. Increment of diastolic blood pressure during this test was taken for the result.

**Cold pressure test:** The hand of the patient was put in iced water for 6 minutes. Sympathetic failure was diagnosed related to the fall or absence of changes of heart rate and blood pressure during the test.

**Mental stress test:** Arithmetic calculation with addition of 17 and 1017 for 6 minutes with previous rest period in duration of 3 minutes was used. Sympathetic dysfunction was present related to the absence of rise or changes of heart rate and blood pressure during mental stimulation.

Results of cardiovascular reflex tests were expressed as a scoring system: normal (0), borderline (1) and abnormal (2), related to the normal values from tables according to Ewing.

## 2.2 Short term ECG and short term HRV analysis

Analysis of standard 12 leads ECG recording using commercially available softer (Schiller AT-10, Austria) includes ECG waves and interval analysis: duration of P wave, PQ interval, QRS complex, QT and QTc interval.

QT parameters were measured automatically from the 12-lead ECG recording (ECG recorder model AT-10; Schiller, Austria) at a paper speed of 50 mm/s (gain, 10 mm/millivolt). The QT interval was measured from the onset of QRS complex to the end of T wave. Each QT interval was corrected for patient heart rate according to Bazett's formula:  $QTc = QT/\sqrt{RR \text{ interval}}$ , where QT and RR interval are expressed in seconds.

Short term HRV analysis was done from 512 consecutive RR intervals using commercial softer (Schiller AT-10, Austria) according to previously published guideline [6]. Short term HRV analysis includes: time domain analysis, frequency domain analysis, and nonlinear HRV analysis (Poincare space plot).

**Time domain HRV analysis:** Short term time domain variables were computed for each subject: mean RR interval (mean RR), standard deviation of normal RR intervals (SD), absolute mean of standard deviation (MD), mean square root of the mean of the sum of the squares of differences between adjacent RR intervals (r-MSSD) and percentage of adjacent RR intervals differing > 50 ms (pNN50).

**Frequency domain HRV analysis:** Short term frequency domain indices were determined using Hamming window type signal limitation before Fourier transformation: very low frequency (VLF, 0.016-0.05 Hz), low-frequency power (LF, 0.05–0.15 Hz), high-frequency power (HF, 0.15–0.35 Hz), and LF/HF ratio.

**Nonlinear HRV analysis:** Used to compare the shape of Poincare plot before and after amlodipine therapy.

### **2.3 Task Force Monitor: Beat-to-beat analysis of heart rate and blood pressure variability, baroreflex sensitivity and hemodynamic parameters**

The Task Force Monitor (CNSystems, Graz, Austria), was used to monitor beat-to-beat heart rate (HR) by ECG, beat-to-beat stroke index (SI) by an improved method of impedance cardiography, and beat-to-beat blood pressure (BP) by the vascular unloading technique, which was corrected automatically to the oscillometric blood pressure measured on the contralateral arm.

**Beat to beat spectral analysis of heart rate, systolic and diastolic blood pressure variability:** Automatically provided, applying an autoregressive methodology. The total power and power of three frequency bands (VLF, very low frequency band between 0-0.05 Hz; LF, low frequency band between 0.05-0.17 Hz; and HF, high frequency band between 0.17- 0.40 Hz) are computed and expressed in absolute values ( $\text{ms}^2$ ) or normalized units (%).

**Baroreceptor reflex sensitivity:** Automatically assessed using the sequence technique according to Parati [7,8]. Beat to beat analysis of blood pressure enables assessment of baroreceptor reflex sensitivity (BRS) from spontaneously occurring blood pressure rises and falls which are followed with regulatory heart rate interval changes. The following parameters were included in analysis: maximal slope, minimal slope, mean slope ( $\text{ms/mmHg}$ ) and baroreceptor effectiveness index (BEI) (%).

The Task Force Monitor allows intervention marks to be set to define periods for automated statistical analysis. Mean and standard deviation (SD) of the measured parameters were computed automatically for defined steady-state period.

### **2.4 Holter ECG: Rhythm analysis, Long term HRV analysis, ST segment, QT and QTc analysis, T wave morphology analysis**

Twenty-four-hour ambulatory ECG recordings were acquired by a 12 leads electrocardiogram, with sampling rate 1000 Hz per each lead (Cardioscan, D.M.S.USA), and analyzed by an experienced analyst. Cardiac rhythms were screened for ventricular premature beats (VPBs) and supraventricular premature beats (SVPBs). The recordings were reviewed, and the beat classifications were manually checked, corrected, and readied for further analysis. After all of the artifacts and misclassified beats were corrected, time and frequency domain HRV analysis, QT and QTc interval analysis, and T wave morphology analysis were carried out, using the software package present in the system. The Fast Fourier transformation (FFT) and Hamming window were used for the analysis of the frequency (spectral) domain parameters.

**Rhythm analysis:** Total number of VPBs and SVPBs for the whole period of recording was determined and number of VPBs per hour calculated.

**Time domain HRV analysis:** Long term time domain variables were computed: mean RR interval for 24 h (mean NN), standard deviation of normal RR intervals (SDNN), standard deviation of all 5-min mean normal RR intervals (SDANN), square root of the mean of the squares of differences between adjacent RR intervals (r-MSSD), and percentage of adjacent RR intervals differing  $> 50$  ms (pNN50).

**Frequency domain HRV analysis:** Long term frequency domain indices were determined: total power (TP, 0–0.4 Hz), high-frequency power (HF, 0.15–0.4 Hz), low-frequency power (LF, 0.04–0.15 Hz), and the (LF/HF ratio). Heart rate is measured in milliseconds (ms); variance, which is referred to as the power in a portion of the total spectrum of frequencies, is measured in milliseconds squared ( $\text{ms}^2$ ).

**Beat to beat analysis of QT i QTc interval and T wave morphology:** Determined from ambulatory ECG recording.

### 3. Conclusion

The genetic determination of autonomic nervous system with constant patterns of activity is new and very promising approach in the treatment of diseases using principles of personalized medicine. Owing to the fact that function of autonomic nervous system is constant, the treatment of diseases could be evaluated using sympathetic and parasympathetic groups, depending on predominance in short term and long term spectral analysis [9-13].

In this paper a comprehensive study protocol was done including finger blood pressure variability (BPV) and heart rate variability (HRV) beat-to-beat analysis and nonlinear analysis, 24-hour Holter ECG monitoring with QT and HRV analysis, 24-hour blood pressure (BP) monitoring with systolic and diastolic BPV analysis, cardiovascular autonomic reflex tests, cold pressure test, and mental stress test.

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# HOMEOPATHY: ENERGY-INFORMATIONAL HOLISTIC VIEWPOINT

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**Abstract.** Homeopathy is a medical system founded by the German doctor and chemist Samuel Christian Hahnemann (1755 – 1843) who had profound insight into life, the human body, health and disease. Only recently modern scientific disciplines, such as quantum physics, have started to explain the discoveries to which Hahnemann came intuitively. Homeopathy, contrary to conventional western medicine, is based on the belief that humans are much more than their material physical body. Homeopathy recognizes levels of existence that are not perceivable by our five senses. The core of our being is made of energy, our vital force. It abides at the energy level, but manifests itself on three different levels. The most subtle level of its manifestation is the mental level where it manifests as thoughts, the next level is our emotional level where it manifests as emotions, and on the physical level its manifestation is material body. When the vital force is in its natural state of balance, its ideal state, it is manifested as mental, emotional and physical health. However, if our vital force is out of balance it is considered in homeopathy as disease. This disease will be expressed by our vital force as pathological symptoms on the mental, emotional and physical levels, extending the concept of disease that classical medicine upholds. For homeopathy disease is possible only at the energy level. Symptoms on the mental, emotional and physical level are only the external, visible manifestation of the disease. In homeopathy influences on the vital force that throw it out of balance are called miasms. Miasm is a word of Greek origin which means pollution, impurity, or stain. Hippocrates was the first to use word miasm to explain how diseases are spread by air, water, or other ways. If we treat a single case of pneumonia we can heal it as an acute illness without understanding of miasms. However, if it reoccurs with other illnesses of the respiratory tract, this means there is a tendency towards these diseases. Our aim is to address the tendency and we cannot heal it without the understanding of miasms. Miasms are pathological energy fields that influence the vital force and keep it out of balance. This causes a predisposition towards different kinds of diseases that occur repeatedly, or towards a chronic disease with various complications and the onset of low immunity. As miasms are energetic influences, they could be treated only by other energetic influences, which can be homeopathic remedies. The therapeutic effects of homeopathic remedies are not based on biochemical reactions as in classical medicine, but on the interaction of energies.

**Keywords:** *homeopathy, vital force, energy level, mental, emotional, physical, disease, symptoms, miasm, energetic influences, predisposition, chronic disease, homeopathic remedies*

## 1. Introduction

Homeopathy is a system of healing [1-7] founded by the German physician and chemist Samuel Christian Hahnemann (1755 – 1843). Through his medical practice Hahnemann gained deep insight and understanding of the human organism and the conditions of health and disease. Remarkably, what he discovered more than two centuries ago modern science like quantum physics, molecular biology and neuroscience have only recently started to understand and explain.

Homeopathy is based on understanding the human being not merely as a physical body, as is traditionally accepted in allopathic medicine, but as considerably more. Homeopathy recognizes levels of existence that are not detectable by our five senses. According to homeopathic philosophy the core of our being is the vital force, or life force, which is energy that manifests itself on three different levels: On the mental level as thoughts, on the emotional as feelings, and on the physical as a physical body.

When the vital force is in balance, this manifests as mental, emotional and physical health. This is vital force's natural state. In *Organon of Medicine* [1] Hahnemann writes in paragraphs 9 – 13 about the spiritual vital force that animates the physical body, rules it and retains all parts of the organism in harmony. Without the vital

force the body is incapable of sensation, function and self-preservation. When a person falls ill this spiritual force is disturbed by a dynamic influence, by a morbid agent, inimical to life. This imbalance of the vital force is what homeopathy considers as disease and what constitutes its object of treatment. This is a radical departure from the traditionally accepted definition of disease.

Since the vital force is invisible, the only way the person can become aware of its influence is through its effects on the organism. A morbidly affected vital force, thrown off balance, manifests itself by producing symptoms. According to homeopathy a disturbed vital force evokes symptoms by trying to reduce its own dysfunction. Symptoms are only the external manifestation of internal disturbance through which the physician learns about internal disease. Symptoms are the expression of the vital force as it struggles against disease and not the disease itself. In other words, symptoms are not entities separate from the vital force and they cannot be treated this way. In allopathy symptoms are often misunderstood and accepted as the disease itself. As allopathy does not recognize the vital force, symptoms are treated separately from the underlying disorder. Consequently, allopathic treatment often leads to the suppression of symptoms, which is detrimental to the organism because it intensifies internal disease, or the disturbance of vital force by blocking its natural outlets.

In paragraph 201 of *Organon of Medicine* Hahnemann explains that the vital force that is burdened by chronic disease instinctually forms a localized malady on some external part, which will reduce the internal disease. However, the local affliction is never anything but an aspect of the internal disease. Further, on paragraph 202 it is mentioned that if symptoms are treated separately and removed without considering the internal disease, nature will make up for it by awakening and intensifying the internal disease.

This approach to healing was known long before the inception of homeopathy and it is explained well by the words of the Swiss physician, alchemist and philosopher Paracelsus from the 16<sup>th</sup> century:

*Those who merely study and treat the effects of disease are like those who imagine that they can drive away the winter by brushing the snow from the door. It is not the snow that causes winter, but the winter that causes the snow.*

Paracelsus was also the first physician to establish the Law of Similarity in healing, on which homeopathy is based. This means that any substance which can cause particular physical, emotional or mental symptoms in a healthy human being, can restore to health an individual with the same symptoms caused by disease.

## **2. Theory of Miasms in Homeopathy**

From the homeopathic point of view disease can exist only on the energy level where the vital force abides. Everything that takes place on the mental, emotional, or physical level is nothing but a manifestation of the state of the vital force. The question that arises here is what are the dynamic influences, or morbid agents that disturb the vital force and produce disease. The vital force is energy, as we already know, which means that it can be influenced only by other energetic agents. These energetic influences are called miasms in homeopathy. Accordingly, healing can take place only on the energy level.

The word miasm is of Greek origin and it means pollution or stain. Hippocrates was the first one who used it to explain how contagious diseases could be transmitted by air, water, or other means. Later it was used to explain atmospheric influences that could cause disease. In Hahnemann's time it was used for the unknown causes that produced disease in the entire organism.

Hahnemann noticed in his work that there were diseases which were caused by mechanical or external influences such as trauma, inappropriate diet, poisons, extreme cold or heat, to mention but a few. The first step in their treatment was to change the environment, or the patient's life style. However, he also noticed that there were diseases that could not be helped to a process of healing just by a healthy life style. No matter how healthy the life style of a patient was, new symptoms and aggravations would arise and the disease would progress all the way to death. Hahnemann considered these diseases as true chronic diseases. A healthy life style might cause the disappearance of a tumor, for example, but it could never eradicate the tendency of a body to produce tumors as an expression of internal disease, or imbalanced vital force. The cause of this tendency is miasm and this cannot be cured by a healthy a life style.

In his work Hahnemann also noticed that, in some cases, even a well-chosen remedy would work for some time and then its curing power would decrease. In the end symptoms would reappear. Furthermore, he noticed that very often, when one disease disappears another one would appear. He came to the conclusion that there must exist some obstacles to the cure that must dwell within man, not outside. Following the family history of his patients for a long time he discovered patterns of disease across generations. These patterns depend on miasms which are internal obstacles to the cure. His final conclusion was that until miasms are cured, chronic diseases cannot be cured completely, even with a well-chosen remedy.

In the book *Chronic Diseases* [2] Hahnemann explains his theory of miasms. He presents three miasms: psora, syphilis and syphilis. Psora is the first and the main miasm from which everything else developed. Later his followers added two more miasms. Pseudo psora, also known as tubercular miasm, which combines psoric and syphilitic miasms and cancer miasm, develops when at least two miasms that used to be active are suppressed. Later homeopaths added many other miasms and there is also a theory that every chronic disease has its own miasm.

Miasms can be inherited or acquired throughout life. They can be acute or chronic and dormant, latent, or active. Acute miasms can be fixed, such as childhood diseases, but they can also be recurrent, as in the cases of cholera, yellow fever, pneumonia, or diphtheria. Dormant miasms show no symptoms, but can be detected with a carefully taken case history, including the history of the patient's family of origin. Latent miasms show minor, usually unnoticeable symptoms for which a person would not necessarily contact a doctor and active miasms lead to clear symptoms and fully developed diseases.

Hahnemann talks of miasms as infections. Of course, these are not infections in today's sense because in his time microorganisms had not been discovered. He means energetic infections that disturb the vital force and cause diseases. Miasms are energy fields, which influence the vital force by interference of energy. If the vital force is not influenced by miasms it will be in balance and its manifestation will be health on the mental, emotional and physical levels. Once the vital force is overpowered by miasms it will influence the whole organism because it is kept constantly out of balance. The vital force reacts against this influence by producing symptoms in its attempt to re-establish the balance. This is why, as we mentioned before, it is not good to treat symptoms as separate from the underlying cause. This could block the process of self-healing and cause the internal disease to increase.

Miasms also weaken the vital force making it susceptible to other influences to which it has been resistant. This accounts for tendencies toward certain diseases, or predispositions for certain diseases. If a vital force that is infected by miasms is not treated with anti – miasmatic remedies miasms will not only stay for life, but will be transferred to the next generation. This is the reason why, along with suppression, even though allopathy is very well developed nowadays, more people are becoming ill every day, certain diseases remain incurable and appear at increasingly younger ages. It is not possible to cure miasms through allopathic medicine.

### **3. Homeopathy in Modern Time**

Our current understanding of life is founded on the philosophical ideas of past centuries: French mathematician and philosopher Rene Descartes regarded the world as a big machine. He divided it into an objective sphere of matter, which is the domain of science and a subjective sphere of mind, which is the domain of religion. According to Descartes these two parts are completely separate and independent. The English physicist Isaac Newton established the principle of causal determinism, according to which all motion can be predicted, given the laws of motion and knowing the initial conditions of the object. Furthermore, Charles Darwin's theory that human beings are the result of genetic mutations in the process of survival according to which the better and stronger survive, leads us to conclude that we humans are no more than survival machines.

According to the above, the human body is no more than a physical-chemical machine with two centers, the heart and the brain, in which everything is controlled and regulated by hormones and enzymes and predisposed by genes. If there is a malfunction, it is possible to be fixed by the addition of certain substances, or by the removal, replacement or addition of a certain part. Partially this is true, but only partially. Biology and medicine based on the Cartesian-Newtonian system recognize only visible stimuli that influence the human body. This

system of thought has been taught to many generations and many people still base their understanding of life on it. In this light, it is common sense that homeopathy would not be accepted as a science. There is no possible way for this system to accept a homeopathic explanation of the human organism, health or disease, nor to explain how homeopathic remedies work. For the Cartesian-Newtonian biology and medicine what is not perceivable with our five senses does not exist.

However, modern scientific disciplines that were developed in the twentieth century, such as quantum physics, molecular biology, or neuroscience recognize and focus on the invisible influences that are of great importance for human beings and life in general. Quantum physics recognizes the zero point energy field. This is the field of subatomic particles between which there is a constant interchange of energy. Although it is not perceivable by our senses it does influence everything that exists, including human beings. Einstein said that a particle is ruled by the field. A particle represents matter and the field represents the energy that surrounds us, although not visible to us. This means that properties of matter depend on energy. This is exactly what homeopathy claims: the state of the human body, including emotions and thoughts, depends on the state of the vital force. The energy field of the human body, invisible to us, is called morphogenetic field by quantum physics and vital force by homeopathy.

Hahnemann's miasmatic theory has not been very widely accepted, either by his followers, or by contemporary homeopaths [3-7]. Many homeopaths consider it controversial and unnecessary, for the possible reason that they lack proper understanding of it and cannot use it. Kent, the second best known homeopath of all time, says that treating a patient without understanding miasms is like treating Jack in the box.

#### 4. Conclusion

As we can see, homeopathy recognizes aspects of the human being that allopathic medicine does not. This is why homeopathy is called complementary medicine (from the Latin word *complementarius* that means to complete a whole, to supply a deficiency).

It is not possible to grasp miasmatic theory through common sense or allopathy. Quantum physics, however, is able to explain it. With proper understanding of miasmatic theory homeopaths would be able to use it with success in healing. And not only this. Understanding quantum mechanics could finally explain how homeopathy works, which would dissolve all speculation whether homeopathy is no more than a placebo treatment [7].

It is of the utmost importance that we understand the nature of human beings before we embark on treating them. Quantum physics and contemporary advances in science offer us the unique opportunity to enrich our knowledge of our nature and apply treatments that are in harmony with it, such as homeopathy. If we do not understand our true nature, no matter what system of medicine we use, we can have only partial results in healing.

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## CHIROPRACTIC AND HOLISTIC APPROACH TO HEALTH

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**Abstract.** Chiropractic was established in 1895 in the USA, when Daniel David Palmer, who was spiritual and energy healer, made first adjustment of the spine with the new method which was called chiropractic. Today chiropractic is one of the leading alternative or complementary methods of healing in the world. In more than 20 schools and Universities only in the USA and much more in other countries around the world, students are learning (during 5 years of studies), about the philosophy, science and art of chiropractic adjustments. The main focus of chiropractic is spine (back pain, neck pain, headaches) and pain that has sceleto-neuro-musculoskeletal origin, but often chiropractic can help those who have also other health problems. Three major philosophical principles of chiropractic are: vitalism, holism, and naturalism. Vitalistic principle in chiropractic assumes existence of Vital force, which in chiropractic we called *Innate Intelligence* (similar to Qi in Chinese medicine). Innate Intelligence or “innate” as a part of *Universal Intelligence* is acting mainly through the nervous system, creating the state of health or disease. We are all created to be healthy (not sic) and to have joyful and happy life and the only thing that can interfere with this is *misalignment* or “subluxation” which block the free flow of innate - nerve impulses (energy and vibrations), which put body in state of *dysfunction* and consequently disease, which is followed at the end with the symptoms. By definition and philosophy most conventional medical doctors (practicing allopathic medicine) tend to view good health primarily as a physical state where there is no obvious disease present. In contrast, chiropractic doctors, recognize true health as the optimal state of physical, mental, emotional and spiritual well-being. Holistic principles of chiropractic therefore require from us to look at the *whole person* and not only on its symptoms, which last comes and first goes away. Naturalistic principle of chiropractic is saying that: “Only the power that creates us can heal us”. Therefore, we have to look for more natural ways of treatment, without depending heavily on drugs and surgery. With more holistic and less materialistic-mechanistic approach to health, chiropractic is looking forward to share her holistic insights with other quantum-holistic methods, looking for better understanding and explanations of some “intangible” phenomena, such as Innate Intelligence, that she has often hard time explaining by paradigm of classical science. Chiropractic innately knows that quantum-informational medicine with consciousness based holistic approach, as well as energy-vibration medicine and mind-body approach, has paramount importance for bringing us that missing link and opening the door for better understanding of the real cause of the disease process, from non-physical perspective and out of *limited reality* that classical mechanistic scientific paradigm offers. In some near future this can brings us closer to the *source* of all diseases and helps us to understanding better: “Who we are and Why we are here”? This can provide us than with new tools for healing our individual and collective consciousness and re-connecting with our true self, nature, God and whole Universe. Better understanding of our consciousness, spirit (life force – innate), and soul, as the part of the brain and/or body experience, or as our “*extended self*” (aura, unified field of energy and vibration), will strengthen our quest for meaning and complement our mature spirituality. It is for us to hope that this quest will ultimately bring us transformative insights for better health and for the birth of a *new wisdom*.

**Keywords:** *chiropractic, health, Innate Intelligence, Universal Intelligence, holism, limited reality, extended self*

## 1. Introduction

Chiropractic was established in 1895 in the USA, when Daniel David Palmer, who was spiritual and energy healer, made first *adjustment* of the spine with the new method which was called chiropractic. Today chiropractic is one of the leading alternative or complementary methods of healing in the world. In more than 20 schools and Universities only in the USA and much more in other countries around the world, students are learning about the philosophy, science and art of chiropractic adjustments.

World Federation of Chiropractic (WFC), which is part of World Health Organization (WHO), is governing chiropractic in terms of education and safety procedures in more than 90 countries all over the world. Chiropractic help is covered by insurance in most of these countries.

The main focus of interest for chiropractic is spine and musculoskeletal system [1]. Chiropractic is well known as the safest and most effective way for treating back and neck pain – acute or chronic. Other conditions that chiropractic treats very successfully are: headaches, vertigo (dizziness), pain in the arms and legs, degenerative changes, sports injuries, etc. In addition, chiropractic can help those who have also other neurological or visceral (organ) problems. In its diagnostics chiropractic is using all methods and procedures that are commonly used by the conventional medicine (X-ray, MRI, CT etc.). Therefore, we like to say that chiropractic combine the wisdom – healing power of nature with the rigors of modern science.

Chiropractic doctors believe that the body has considerable power to heal itself. It is the role of doctor to facilitate and enhance this process with the aid of natural non-toxic therapies. Chiropractic is art of natural healing, which follows the Hippocrates principle: “First do not harm - Primum no nocere”. Therefore, chiropractic adjustment is safe and effective. Furthermore, doctor of chiropractic is first and foremost preventive medicine specialist and teacher who is educating, empowering, and motivating the patient to assume more personal responsibility for their health by adopting healthy attitude, lifestyle and habits which support health and prevent disease.

## 2. Three Major Philosophical Principles of Chiropractic

Three major philosophical principles of chiropractic are [1]: vitalism, holism, and naturalism.

Vitalistic principle in chiropractic assumes existence of Vital force, which in chiropractic we called *Innate Intelligence* (similar to Qi in Chinese medicine). Innate intelligence or “innate” as a part of *Universal Intelligence* is acting mainly through the nervous system, creating the state of health or dis-ease. We are all created to be healthy (not sic) and to have joyful and happy life and the only thing that can interfere with this is *misalignment* or “subluxation” which block the free flow of innate – nerve impulses (energy and vibrations), which put body in state of *dysfunction* and consequently disease, which is followed at the end with the symptoms.

For chiropractic Innate as Internal Intelligence and wisdom of the body has (i) material expression in flow of nerve impulses through the nervous system and (ii) spiritual expression as the *life force* (spirit, accumulated knowledge through the ages). This force is always working in our favor and acts from above – down and from inside – outside. Virgil Strang in his book *Essential Principles of Chiropractic* [2] explains that chiropractic first and most important philosophical principle, based on Innate Intelligence, cannot be proven by measuring it, because technology for it steel does not exist, but it is confirm indirectly every day on numerous examples of highly organized live matter which exists everywhere around us.

By definition and philosophy most conventional medical doctors (practicing allopathic medicine) tend to view good health, primarily as a *physical state* where there is no obvious disease present. In contrast, chiropractic doctors recognize *true health* as the *optimal state* of physical, mental, emotional and spiritual well-being. Holistic principles of chiropractic therefore require from us to look at the *whole person* and not only on its symptoms, which last comes and first goes away.

Naturalistic principle of chiropractic is saying that: “Only the power that creates us can heal us”. Therefore, we have to look for more natural ways of treatment, without depending heavily on drugs and surgery.

With more holistic and less materialistic-mechanistic approach to health, chiropractic is looking forward to share her holistic insights with other quantum-holistic methods, looking for better understanding and explanations

of some “intangible” phenomena, such as Innate Intelligence, that she has often hard time explaining by paradigm of classical science.

Talking about Innate Intelligence and subluxation as two major terms in chiropractic I would like to explain that today’s explanation of subluxation is not any more strictly related to only bony misalignment (less than 5 mm), but it also entails changes in the tonus and vibration field of receptors with consecutively changes in muscle tone, proprioceptive (receptor) deficit and changes in posture, that than affect brain function. It is interesting to mention that 80% of total brain stimulation is coming from those receptors in muscles, ligaments and joints.

From non-physical perspective and from the realm of vibration and energy medicine, everything from stones to angels is just vibration. Thus, we are all entities of different frequencies and we are all interconnected through vibration fields. We are all part of this eternal flow and ocean of energy that is everywhere around us.

If internal nature of our being is vibration, than our most important *alignment* sometimes is not on the level of our structure or receptor function, but on the level of our thoughts. An alignment that comes from there, we can call it “subluxation on the mental level”, is maybe than the most powerful alignment of all. Whenever we are aligned with who we really are – with the core of our being, we will be in balance and aligned with the source. Then we will be adding to the balance of the whole.

If we become good in our vibrations, choosing the best possible available thought in every moment, we will be performing everything through the eyes of source, that will provide us satisfaction in everything we are doing and we will be living joyful and happy life. Even more, from physical body and time-space reality we can transcend to become vibrational body in vibrational universe. Richard Gerber in his book *Vibrational Medicine for the 21st Century* [3] is saying that this can bring new awareness and expanded version of self, where becoming *ONE* with the source (*unified field*, or *energy informational field*), can bring us experience of the abundance (idea of any lacking than vanish) and eternal bliss. Then we can enter the field of collective consciousness (source of all ideas and creativity), where we can feel ideas flying to us because we are becoming *ONE* with the creator, we are co-creators and our potentials are limited only by capacity of our dreams and desires. If we keep ourselves in vibrational alignment with our dreams we will be speaking through them and our dreams will still live even when we are physically gone.

For all this we just have to know how to consistently “tune in” – quiet our mind, focus, put our thoughts where they feel the best, ask for what we are looking for and with the faith wait to receive it – to Feel it. Thus, through this expansion of self, we can all be the mechanism or mean of source, allowing vibrational source (Innate – life in us) to express, because we all have access to Infinite – Universal Intelligence. It is all about vibration (energy), vibrational alignment and the power of our thoughts. This is how Richard Gerber and many others spiritual “Gurus” and vibrational seekers are teaching us, how to reduce our resistance and *connect our physical and non-physical self* (which is as non-physical part always around us as vibrational match).

### 3. From Neurophysiology to Consciousness

Finally, from the level of thoughts, we can now move to the next level and even more enigmatic phenomena such as *consciousness*, spirit, spirituality, and soul.

*We have one certain fact at hand: We can be conscious.* This is a great miracle no matter how it happens. As neurophysiologists, I know that consciousness has a clear and concise meaning. It is awareness of oneself and one’s surroundings and it engages certain brain systems in a certain order. However, much how it functions in the physical brain is mysterious and of dizzying complexity.

Within consciousness, neurophysiology recognizes three states: Wakefulness, REM sleep (dreaming state followed with eye movement), and Non-REM sleep. The opposite of consciousness is coma. This definition and understanding is admittedly narrow and breaks down when pressed in certain directions.

The switch that regulates our three conscious states is in the brain stem. Brain stem is considered to be a “primitive brain” that controls arousal (wakefulness) and vital functions such as: heart rate, breathing, body temperature, muscle tone, etc. Many contributions come to consciousness from our senses interwind with mental processes that include emotion, thought, memory, reasoning and language. *In order to be conscious we must be aroused.* Brain stem has vital role in regulating consciousness and is basically similar to all mammals. It activates

other brain areas, like thalamus (limbic system – where our emotions are generated) and cortex (which analyzes, store and retrieve information important for our survival). Only our emotions and meanings we can give to the things happening to us, gives us unique human qualities.

And now we can make the central question: *Is man related to something infinite?* This question was made by many great scientists and philosophers in the past, including Carl Gustav Jung. I believe that making this question does not do harm to the mystery of life and death, or any religious believes.

According to the scientists with our basic senses we can sense only small segment (around 5 – 8%) of the universe or what surround us. The reminder exists as a *dark matter of energy*. Also, they indicate that 60 -80% of total energy consumption of the brain is taken by the circuitry that are working “behind the scene” and are without any connection with our basic senses and their responses to outside events. Furthermore, researchers have claimed that near death and out-of-body experience “prove” that mind exists separate from the physical brain. Such a claim is maybe the most extraordinary in all of science. However, there is no calculation for the experience on outside the brain yet.

Kevin Nelson, world renowned neurologists (professor at University of Kentucky, USA) who is examining the processes of spiritual sensations, in his book recently published *Spiritual Doorway in the Brain* [4] wrote: “We know more still about machinery of consciousness than about spiritual experience. Perhaps they use the same brain mechanism but in a different way... Believing in experience outside the brain is faith. Although there is room in the brain for faith, what brain can do for us, can be seen as spiritually neutral... Thus, spiritual truth of our being, were within dark energy and mass, as vast majority of the universe. But, this is the case if we are using only left hemisphere (analytical – rational thinking). Because it will look for “natural” and “supra natural” explanations. Therefore, I believe things my left hemispheres tells me exist, until better idea comes along with so called *direct insight*, from somewhere else”.

It seems that the nature of Faith makes it immune to science’s demands for consensus, verification and prediction. Science cannot prove or disprove the truthfulness of spiritual experiences. The prophet speaks lies beyond the brain in the realm of faith, or higher transcendental consciousness. How many levels of consciousness are there? Yes, we can be aware of our body parts and even about our thoughts – as “ground of our being” and still be *holistically aware* about connection of all things – which already has strong similarities to the mystical. It is all-pervasive, all-embracing, “The mind at large” experience.

Although some scientists are saying that basing one’s spirituality on science is as basing one’s science on spirituality, to me faith and science are not as different as some people have made them. And even if the scientist in me sometimes can be little bit reserved about this view and association to some extent, I innately know that mind needs to become aware of itself and its *potential to become*. The life of spirit and soul (if we agree that we have it), is evolving through asking two simple fundamental questions on which we all, I believe ponder sometimes. Those two questions are: Who we are? and Why we are here? Than it is not hard to realize that in essence we are all spiritual beings – made from “stardust”, living temporarily in these physical bodies on our journey between two eternities.

What does it mean to have spiritual experience and what makes personal experience spiritual?

For William James (professor at Harvard Medical School) who wrote *the book Variety of Religious Experience* [5]: “Sensing that something is more than coincidence is also expression of faith. The term *spiritual* is generally applied to any human essence connecting us to an unseen world that defies scientific measurement, but which we nonetheless believe and feel exists. It is something that deeply moves or transports us and connects us, in one way or another, to something “larger” than ourselves. When we are willing to sacrifice our small selves to that something that we feel and know is greater. This impulse can drive us to reach out to our fellow man in ways that are noble, inspiring and heroic... and it’s a part of what it means to be Human... Transcending the self or losing the self has long be thought to be prerequisite for the mystical experience of Oneness”. William James also wrote: “The world of our present consciousness is only one out of many worlds of consciousness that exist and those other worlds must contain experience which have a meaning to our life also”.

And then what makes personal experience spiritual? William James wrote: “It is the feelings, acts and experiences” of individual people who typically in their solitude understand that they have touched whatever they may consider the Divine (truth or wisdom). Each individual experience remains very much his or her own.

Which means it is exclusive to individual and was not shared directly with others. It is transcending experience as “stream of consciousness” that lead to important insight, or profound inner truth, about us, or real nature of the things around us.

Today spiritual seekers of all kinds in all areas, manipulate and “fine tune” (as the chiropractic is doing with structure of the body) their arousal (brain stem) and emotions (limbic system), through practices of: solitude, fasting, praying, meditation, etc. to enter the *borderlands of consciousness*. Following the idea that spiritual experience erupts in the borderlands between conscious, unconsciousness and dreaming state – getting *somewhere between REM state and waking* – where our consciousness states are not whole, but fragmented and blended with one another, in something similar to: universal or infinite intelligence (chiropractic term), universal energy-informational field, or collective unconsciousness (C. G. Young).

Thus, *fragmented self* did not strip away the illusion of integrated self, but on contrary it becomes pathway to integrated self and this notion of “borderlands” is simply another way of expressing a conscious state that is “higher”, “global”, “transcendent”, or “expanded” – a consciousness that touches Innate wisdom, nature itself, God, or the Universal truth.

Is our brain our spiritual source remains mystery? Kevin Nelson is questioning: “What if there is particular brain center or system, inside the brain or outside (as non-local entity), that give genesis for divine or mystical experience. And when we find it, will we try to nurture, destroy, or control it...? It is one thing to know brain mechanisms of putting sensation together or use the language, and quite another to be able to open it to searing experiences of ultimate truth or purpose. What if we have a drug which can create the mystical experience in us, bringing us to state of “Oneness”, or even closer to God? When divinity should be administered? Would withholding “Oneness” or Enlightenment be inhumane, if we have a power to summon it at will?

Finally, we are all of this world, but as human beings we have always been longing for immortality. The will to believe exist in each of us. Therefore, we are all religious to some extent, although we are not always aware of that. Today, we are on the threshold of a *new era* that holds tremendous promise for a new level of understanding consciousness and spiritual nature of our being. New quantum physics and integrative approach to health, through traditional (complementary) methods of healing and quantum-informational understanding of consciousness, can bring us new level of consciousness about ourselves and universe around us.

#### 4. Conclusion

Better understanding of our consciousness, spirit (life force – innate), and soul, as the part of the brain and/or body experience, or as our “extended self” (aura, unified field of energy and vibration), will strengthens our quest for meaning and complement our mature spirituality. It is for us to hope that this quest will ultimately bring us to better health and to the birth of a *new wisdom*.

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# APPLICATION OF BOWEN THERAPEUTIC TECHNIQUE IN THE TREATMENT OF SCOLIOSIS

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**Abstract.** Bowen technique is a gentle, holistic, manual therapy, beneficial for many body disorders. It works on babies and animals and so placebo effects are excluded. It works through stimulation of sensitive nerve endings, located within dense connective tissue elements such as tendons, fasciae, ligaments, periosteum and loose connective tissues throughout the body. In this particular work it is applied as a powerful remedy for spinal scoliosis. This disorder is quite frequent in school children and adults as well. There are specific Bowen relaxation movements and procedures (BRM), for different disorders, even though the effects are always beneficial for the whole body.

**Keywords:** *Bowen technique, scoliosis, sensitive nerve endings, BRM*

## 1. Introduction

The Bowen Technique is a completely new concept of working on the human body and, as such, it neither originates from nor is similar to any other physiotherapeutic method [1,2]. The Bowen treatment uses a series of gentle moves of the thumb and fingers across muscles and connective tissue, either on bare skin or over light clothing. Such moves send messages to the nervous system and call for the retrieval of the stored cell memory of their relaxed and balanced state and feeling. Frequent obligatory pauses are made throughout the session, thus providing time necessary for an adequate response and initiation of the healing process.

The results can be exceptional just after one session and the body continues with self-healing during the following few days. Very often, only a couple of sessions are sufficient for achieving the desired result. The therapist can focus on just a single specific problem or on the body as a whole. Completely different from any other “hands-on” therapies, the Bowen Technique does not involve any forced manipulation. Avoiding to force the body to respond “as commanded”, the therapist allows it to achieve what is necessary for self-healing taking any necessary time to do it within its own limitations.

The Bowen Therapy originated in Australia 50 years ago where Tom Bowen, a layman, who, having studied numerous complementary medical methods, got the gift and intuitively integrated the method recognised by him as the most efficient. There are records that he treated up to 13,000 patients per year!

The Bowen Technique is a therapy recognised by the Australian health care authorities, as well as by numerous private health insurance companies; as of the middle of eighties, it has been taught and used globally – in Europe, North America and Canada.

The Bowen therapeutic technique is a manual therapy that uses gentle but very “powerful Bowen moves” that send neurological impulses to the central nervous system which processes them and sends them back, which results in the body response – activation of the mechanisms leading to tension relief and muscle relaxation, improved blood and lymph circulation and speeding up the recovery process.

The moves are done based on a specific order on precisely defined points on the body (the therapist follows specified procedures) which, quite frequently, coincide with acupuncture points, i.e. the meridians of the traditional Chinese medicine. Such moves are called the Bowen relaxing moves or, as we will call them further on, BRM.

This technique is unique for the pauses that are made during the session which are necessary to adequately process and integrate the information sent to the CNS. Such pauses last for minimum 2 and maximum 25 minutes depending on pain – the stronger the pain, the longer the pause.

The Bowen Therapy lasts for 30 to 60 minutes with the patient lying mostly on their belly in as pleasant position as possible, in order to provide for good relaxation. After several moves the therapist leaves the room to

provide for maximum relaxation of the patient and the focus of the body on the given messages. The body then “decides by itself” what it needs to do to respond to those moves and has the time needed for fine tuning in order to reduce tension and relieve pain. It can sometimes happen that tension and pain relief occur during the treatment, especially in case of acute problems – sport injuries, back pain etc. The response to the given Bowen procedure continues during the following 7-day overall action cycle, which is followed by a new session.

The Bowen Technique is used to activate different body mechanisms, known in textbooks on human microscopic anatomy [3].

The moves stimulate the proprioceptors – sensory fibres at the end of peripheral nerves. The proprioceptors, which provide for proper body posture and movements, are located within the connective tissue, muscles and their fascia, joints and tendons. Stimulating them, the body is encouraged to move itself and return into its natural state of health.

The moves activate the stretch reflex and the receptors of Golgi cells that send the messages to the nervous system informing it about muscle tension, stretch or spasm. In case of muscle pain and spasm, that reflex path can be interrupted by a stimulus from the nervous system, which results in muscle pain and spasm relief.

The Bowen moves are done on the superficial fasciae where the links are activated between the fasciae, on one hand, and nerves, muscles and tendons, on the other. A fascia is a thin, though very strong, multifunctional connective tissue. It is primarily made of collagenous fibres, thickly spun in a cobweb fashion, passing along the whole body in continuity. Covering and interlinking all the structures with its layers (superficial and deep), it plays an important role in muscle coordination, body posture and overall structural and functional integrity of the body.

In a normal, healthy state, the fascia is relaxed having a wavy configuration. It is capable of unrestricted stretching and moving. In case of a physical or emotional trauma, formation of scar tissue or inflammation, the fascia loses its elasticity and becomes contracted and hard. Some research in the USA showed that stretching collagenous fibres induced by gentle pressure across the fascia produces weak electrical impulses (piezoelectric effect) which have a strong healing potential.

Especially significant effects of the Bowen Therapy are induced on the autonomous nervous system which controls, among others, the mechanism of self-healing. The ANS controls over 80 body functions (heart rate, breathing, peripheral circulation, endocrine and gastrointestinal function etc.). Most people today are exposed to constant stress and overstimulation of the sympathetic nervous system. Applying the Bowen Technique, the body is transferred from the state of sympathetic nervous system domination to the domination of the parasympathetic nervous system. During the treatment, patients experience deep relaxation, they often fall asleep so that only breathing and intestinal movements (gastrointestinal reflex) can be heard. This is the indication that the parasympathetic nervous system is taking over and that stress is relieved at a deeper level. Brain mapping shows that Alpha waves are produced during the Bowen Therapy and the patients feel as if in the state of deep meditation.

## **2. Spine Deformity – Scoliosis**

Sideways curvature of the spine, i.e. the deformity of the spine in the frontal plane known as scoliosis, is a frequent problem, in particular, of the young population. So far, this problem has been treated by kinesiotherapy or surgery. Recently, as of the beginning of application of the Bowen Technique, the results of the treatment of scoliosis have been outstanding with the success rate of 80%.

Types of scoliosis:

- Functional – unstructural
- Structural

Functional or unstructural scoliosis is a scoliotic posture involving curved spine where the curvatures are not fixed. The characteristic feature of this type of scoliosis is that curvatures disappear on the forward bend test, when the upper part of the body is flexed.

Structural scoliosis is characterised by the side curving of the spine, and vertebrae rotation and torsion.

A clinical presentation of a person with structural scoliosis is characterised by curvatures observable on the forward bend test. A rib hump is observed in the thoracic scoliosis; however, lumbar scoliosis is characterised by higher tension and greater rigidity of paravertebral muscles. Other signs are: lower position of the arm on the concave side, asymmetric space between the thorax and the stretched arm (Lorenz triangle), higher position of the iliac bone on the convex side of the curvature, asymmetric shoulders, asymmetric superficial abdominal reflexes, noticeable difference in leg lengths. The tolerated difference is 1 cm. For the length of the legs differing by 1.5-2 cm, correction is recommended and for that differing by 2.5-5 cm, correction is mandatory using appropriate shoes; the difference greater than 5 cm is the indication for surgery.

The degree of scoliosis is established taking into consideration the angle formed by the two steepest vertebrae in the curvature, i.e., scoliosis with a side curve of:

- up to 10 degrees are almost insignificant and occur in 23% of cases
- over 10 degrees occur in 2.5% of cases
- over 20 degrees occur in 0.5 – 4% of cases
- from 30 degrees on occur in children whose parents used to have scoliosis and its incidence is 15 – 27%.

By its origin, scoliosis can be:

- congenital
- idiopathic
- neuromuscular
- tumour-induced
- extraspinal

Congenital scoliosis can:

- occur upon birth
- result from vertebrae formation

Idiopathic scoliosis is the most common type occurring in about 90% of all cases. The incidence of scoliosis in girls is 5-7 times greater than that in boys. The cause is unknown; however, it is believed that it occurs more frequently in babies who sleep on their backs, and that the development of the spine is more sound in children who sleep on their bellies.

By age of occurrence, scoliosis can be:

- infantile (0-4 years)
- juvenile (4-10 years)
- adolescent (over 10 years).

Neuromuscular scoliosis is a consequence of changes in nervous or muscular structures

- due to motor neuron lesions
- myopathic, due to muscular lesions (muscular dystrophy, arthrogryposis, neurofibromatosis...).

Extraspinal scoliosis occurs due to contractions of extraspinal structures that lead to scoliosis as a secondary condition.

Scoliosis occurring at the age of 4-10 years has a worse prognosis than that occurring later or earlier! A large percentage of such scolioses (27-56%) at the end is managed surgically!

The main objective in the treatment of all scolioses is to stop further progression of the condition, and to reduce the existing deformities as much as possible. The Bowen Technique and targeted individual exercises achieve extraordinary results in terms of the reduction of the degree of deformity, pain relief and regaining strength. In our recent work with scoliosis, we have used common standard procedures based on the protocol of Professor Andrew Zoppos [2]. A normal procedure before the therapy is to make an x-ray or to have a recent orthopaedic report, so that we could establish the degree of deformity. After that, we tell the patient that the technique is manual, painless, with no contractions, that it is necessary they have a positive, optimistic attitude, and that it is applied with him/her lying on the belly. When treating scoliosis, we begin the first session with Bowen relaxing moves following the initial procedure for upper and lower back with gentlest possible touch and longer pauses between moves. Having done the BRMs on the back, the patient turns on the back when we do the hit the lat, a side energy hit, the basic move on the knee which is sometimes sufficient by itself. A new session is

scheduled after 7 days which is different from the previous one when we stimulate the body with very specific messages or requests to it to engage to the maximum to activate certain self-healing mechanisms. A common order is that, in addition to the basic procedure for moving the internal doctor, procedures are initiated for the kidneys, back thigh muscles and sacrum, pelvis and sacrum, back thigh muscles-knee-ankle-hampered digits, kidneys and a knee, respiratory procedure, kidneys and the respiratory procedure, respiratory procedure and temporomandibular procedure.

After each session, the patient should be told that a response to the procedure could be expected because we expect the body response to the sent messages. Tingling, numbness and pins in legs and arms are normal sensations during the therapy and sometimes involuntary moves are present, as well as frequent feeling of heat in the part of the painful or spasmodic part of the body. That can persist over a couple of days, which is the period required for the body to respond to the stimulus. What both the patient and the therapist notice after the first session is a change in the patient's body posture – now the patient has a straight posture saying that something is preventing them to bend forward. Depending on the type of scoliosis, individual, patient-specific exercises are given to elongate contracted or strengthen weak muscles and to activate antigravity muscles so that the patient can regain their stable position and gait. A common programme for scoliosis includes regular sessions at 7-day intervals during minimum 6 months.

## **2.1 Scoliosis case reports**

Working with our patients, we noticed that, during that period, curves were reduced by tens of degrees.

Patient Andjela S. (14), who had a 42-degree right thoracic scoliosis, after our work with her, she had no need for the previously scheduled urgent surgery since the post-treatment x-ray showed the curve reduction by 10 degrees.

Patient Emilia S. (16), a 34-degree right thoracic scoliosis, had curve reduction by 10 degrees demonstrated on her follow-up with Dr Milankovic at the Orthopaedic Clinic Banjica.

Patient Dragana A. (12), a 54-degree right thoracic scoliosis, is on the therapy for two weeks now; after those two sessions, kyphosis was corrected, the feeling of strength is improved and the patient has no pain in her back.

Patient Dusan J. (70), double scoliosis, gibbus, after the therapy regained subjective feeling of strength, can get out of bed more easily and has no pain in his back.

## **3. Conclusion**

Using the Bowen Therapy, we can stimulate the body and allow it to function at its maximum capacity. Combined with a positive attitude and raised awareness of the importance of our inner self-healing mechanisms, disease is conquerable and that is our choice.

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# QI VITALITY AS A BASE OF TRADITIONAL CHINESE MEDICINE

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**Abstract.** A major functional concept from traditional Chinese medicine (TCM) is qi. Qi is similar to the term prana (life force) of India and is known as ki in Japan. As a vital essence found in all things, qi has aspects of both matter and energy. Nowadays it is known that matter and energy are convertible into one another and that they actually represent one reality. Where qi is flourishing, there is health and quietness, if it is weak there is disease. qi concept gives us the measure of vitality of person, object or state. Using diagnostic methods of TCM we can accurately measure the level of qi in human body and its manifestation in functioning of internal organs. Transformation and proper movement of qi is the basic for the movement of blood, the transformation of Essence, digestion of food, the excretion of waste, the moistening of sinews and bones. TCM is considering different forms of qi: original, nutritive, defensive, gathering... We get qi in our body, from three different sources: (i) from air we breathe, (ii) from food, and (iii) from the essence of the kidneys, some part of which we are born with. Qi is also transferred between people in everyday life in form of different activities. Herbal therapy, acupuncture, exercises, awareness practices are some of the ways to clear obstructions and provide the free flow of qi. Chinese diet is one of the basic foundations of achieving and maintaining good health. Its foundations are concepts of yin and yang and five-element model. Healing properties of each food are defined by their thermal nature and taste. There are four basic thermal natures: hot, cold, warming and cooling. Taste of food is related to one of the five elements: sour for wood, bitter for fire, sweet for earth, pungent for metal and salty for water. In one of the oldest books of TCM, The Yellow Emperor's Inner Classic (Huang Di Nei Jing) it is mentioned that in order to get the best results one should consider current season and 24 hours flow of qi. Some of the main diet principles are: treatment should be primarily based on pattern discrimination, protection and promotion of stomach and spleen, and avoidance of prohibited food. Diet on the one hand must be balanced by adequate activity and rest/relaxation on the other.

**Keywords:** *traditional Chinese medicine (TCM), qi, movement of qi, vitality, essence, Chinese dietology, properties of food, thermal nature of food*

## 1. Introduction

The way we see our health greatly influences how we treat imbalance and how we maintain our mind and bodies. The deeper aspects of our culture play a significant role in this view. In the traditional Asian understanding of health, the body is a self-regulating organism operating as a whole, which gives rise to the term 'holistic health'. Symptoms are seen as signs of imbalance, which also involves all other parts of that system. Likewise, every part of the system has the whole within it, like a holographic system or like the DNA existing in every cell. This is called Holographic Theory in Traditional Chinese Medicine theory where the macrocosm is contained within every microcosm, just as human beings are seen as a microcosm of the universe. We are more than a machine, as we have the ability to heal ourselves. It is about the health of the overall system and every cell knowing what to do and when to do it, the inherent intelligence of the self-regulating organism. The way to treat these symptoms from a holistic perspective is to harmonize and regulate the whole. In order to avoid imbalance (illness and disease) we have to look more closely into the activities that are producing and regulating Qi (energy). The basic activities which are included in producing Qi in our body are : breathing, eating, thinking, sleeping and resting. Understanding this giving us one whole new concept where our mind spirit and we becoming one very important factor in regulating health system in our body. We can take active part in prevention or treating the illness, understanding that the healer is actually a patient by itself.

## 2. Qi Vitality

A major functional concept from traditional Chinese medicine (TCM) is qi. Qi is similar to the term prana (life force) of India and is known as ki in Japan. As a vital essence found in all things, qi has aspects of both matter and energy. Nowadays it is known that matter and energy are convertible into one another and that they actually represent one reality. The qi gives us a measure of for vitality of a person, object or a state. It could be said that qi has yang quality, and its yin counterpart is blood. They are inseparable- in function and action always influencing each other. Blood is yin and “the mother of qi”, since the nutrients in the blood support and nurture qi. At the same time qi leads and directs the blood. Digestive and circulative qi must be sufficient in order for the blood to be formed and to circulate. Qi of the human body has several functions : warming (as a yang substance, is rich in heat, it can warm internal organs, channels, skin, muscles and tendons, to maintain normal body temperature and the normal functional activities of these organs and tissues), pushing (it flows fast in the human body and it promotes the growth and development of the body, the movement, distribution and discharge of blood, body fluids and the functional activities of internal organs), defending (it can prevent the invasion of external pathogenic factors into the body, usually function of *wei* Qi), transforming (various conversions occurring along with the movement of qi. e.g. Spleen Qi transforms foods, Kidney Qi fluids..) transporting (e.g. Spleen Qi takes nutrients to the muscles, Lung Qi takes fluids to the skin to moisten it), controlling (qi controls the flow of blood and body fluids to prevent extravasation or unnecessary loss of body fluids [1]. At general, four kinds of Qi are most the commonly mentioned: pectoral, primordial, defensive and nutritive Qi. In the body, we get qi from the essence of the kidneys (some part of which we are born with), from food and from air we breathe. The first source of qi from kidney is called “former heaven essence” and the other two “latter heaven essence”. Kidneys are very important organ in TCM – they are prenatal foundation of the organism, both in its form and function. The original source of life, so-called “the fire of gate of life” is situated in kidneys. For our life *jing* or essence is very important. It is also situated in kidneys and there are two types of it. Former heaven essence its innate at birth. We are born with a finite amount of it, it is given from our parents, and also one part of it later on we deliver to our children. The other part of essence so-called “latter heaven essence” is manufactured from air we breathe and food and drink we consumed. Nutritive essence from food is transformed to qi and blood. Through each of activities, qi and blood are consumed- qi empowers function and blood nourishes form. In Chinese medicine it is said that essence as material base becomes qi, functional activity and when qi accumulates it becomes spirit. Spirit means consciousness, mental and emotional activities. Excessive thinking, anger, worrying (seven emotions in TCM) consumes the great amount of qi and essence in the same time. That is why it is so important to understand how our thoughts and emotion can influence our health: emotions affect energy, and the Daoists believed that emotional and psychological factors are important causes of illness. One should aim for a peaceful state of mind. The traditional Chinese way is to achieve this by: cultivating moral character; avoiding greed; limiting desire; freeing yourself of worries; harmonious family and interpersonal relationships. Deepak Chopra in Quantum Healing, has discussed the therapeutic importance of apprehending this state of absolute emptiness which is uncolored by one’s passing and ever-changing emotions, thoughts and sensations. Because of very close relationship between qi, essence and spirit, its easy to see why diet, exercise and rest have are so important to achieve maintain good health.

## 3. Diet

In Chinese medicine the organs which has the closest relationship with digestion, transformation and transportation of food are stomach, spleen and pancreas (earth element in TCM). The qi energy and other essences extracted from the digestion are used by the body to create *wei* qi energy (immunity), vitality, warmth and formation of the tissues and mental functions. Persons with a balanced spleen-pancreas are generally hard-working, practical and responsible. They like to nurture themselves and others. Their appetite and digestion are good, their limbs have strength, and they tend to be orderly and careful. Those with general signs of spleen-pancreas imbalance are characterizes by chronic tiredness, physical and mental stagnation. Symptoms such as nausea, poor appetite, abdominal bloating could appear. Blood-sugar imbalance could be part of the picture. If

they have weight problems, they tend to be overweight without overeating, or thin and unable to gain weight. Two main disorders connected with Qi are: deficiency and stagnation of qi. Symptoms of Qi deficiency, especially if they are connected with weak spleen-pancreas function are: loose stools, general weakness, fatigue, anemia, pale tongue with a thin white coating and weak pulse. This qi is connected with the ‘middle qi’ of the body, and function of this qi is to hold organs in proper position. Prolepses of uterus, kidneys, and hemorrhoids are usually a result of insufficient middle qi. Recommended foods for this type of imbalance should be either warming or at least neutral in thermal nature. Such foods are basically sweet and/or pungent in nature: well-cooked rice is one of the best gradually spleen-pancreas tonics, oats, sweet-rice, carrot, garbanzo beans, black beans, leek, black pepper, ginger, cinnamon, fennel. Food must be chewed well and taken in easily digestible form. Qi has to move freely through our body. Sometimes it can become blocked. The reasons are different so are symptoms of it. Usually it could be manifested as a pain in particular part of the body, feeling of oppression, bloating and distension, depression, irritability and wiry pulse, and possible red tongue could be the part of clinical picture. Promotion qi circulation through food usually includes some pungent foods and herbs that stimulate the dispersal of qi. Foods that especially help the circulation of Qi are: basil, clove, caraway, marjoram, radish, turmeric, chive, garlic, orange peel [2].

#### **4. Rhythms and Regular Lifestyle**

The physicians of ancient China believed a ‘regular life’ to be an important condition for maintaining health and longevity. Change is the only constant in the Daoist belief system, and this change occurs in cycles that are rhythmic and regular. The most obvious of the body’s rhythms, are breathing and heartbeat. Regularity forms conditional reflexes in the cerebral cortex which means your body prepares for the daily activities, including: eating and sleeping, bowel movement etc, to maximize bodily functions. Beginning with the regular rotation of the earth creating the cycle of the day; the lunar cycle which creates weeks and months; the inclination of the earth as it rotates around the sun creating the seasonal cycle; the complete rotation of the earth around the sun which makes the yearly cycle; and then finally our life cycle from birth to death. These are microcosmic cycles within macrocosmic cycles. The Daoists believe, humans and animals are part of these larger cycles and must live out life in accordance with these cosmic cycles. Each of us is pictured as an ecosystem living within one [3]. Many people appear to have lost touch with these natural cycles, becoming entrapped in unhealthy environments and habits. Reconnecting with the wisdom contained in Daoist philosophy, rooted as it is in the observation of natural cycles, can assist us to improve the efficient working of our body/mind.

#### **5. Chinese Clock – Time Biorhythm**

The Daoists believe that there is regular movement of Qi and Blood in the human body, just like the movements of the celestial bodies. Qi is constantly moving in the body and is influenced by the movement of celestial bodies, such as the Sun and the moon that also influence the tides and the growth and maturation of plants. This theory has been the cornerstone of ‘time biology’ or the western theory of the ‘biological clock’. This forms an essential guide to establish rhythms and regularity in a 24-hour daily cycle to maximize health and longevity. In 24 hour Qi cycle Metal element is connected with Lungs (3:00am – 5:00am), large intestine (5:00am – 7:00am) and Earth element is connected with stomach (7:00am – 9:00am) and spleen (9:00am – 11:00am). Fire element is connected with heart (11:00am – 1:00pm) and small intestine (1:00pm – 3:00pm). Water element is connected with urinary bladder (3:00pm – 5:00pm) and kidney (5:00pm – 7:00pm). Pericardium is the most active in period of 7:00pm – 9:00pm and triple heater 9:00pm – 11:00pm. Wood element is connected with gall bladder (11:00pm – 1:00am) and liver (1:00am-3:00am) [4]. The ancient Chinese believe that the seasons have a profound cyclical effect on human growth and well-being-that we are influenced by climatic changes and should live in harmony of them. It means that we should know some specific diet rules and also physical behavior and actions which are connected with particular season. Our body is already aware of those changes, but the benefits would be higher if we can consciously follow them. One year ancient Chinese divided

into 24 cycles. The Five Elements system was the base of following these changes. They take step forward in the unification of person, including the internal organs, emotions, body parts and environment.

## 6. Conclusion

As a vital essence found in all things, qi has aspects of both matter and energy. Nowadays it is known that matter and energy are convertible into one another and that they actually represent one reality. As we are a reflection of the universe, the Daoists believe that there is regular movement of Qi and Blood in the human body, just like the movements of the celestial bodies. Qi is constantly moving in the body and is influenced by the movement of celestial bodies, such as the Sun and the moon that also influence the tides and the growth and maturation of plants. This theory has been the foundation of 'time biology' or the western theory of the 'biological clock'. In order to establish rhythms and regularity in a 24-hour daily cycle to maximize health and longevity, it is important to pay attention on our thinking, resting, breathing, exercises and daily diet habits.

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# ADDITIONAL APPLICABLE TECHNIQUES IN ACUPUNCTURE TREATMENT: MOXIBUSTION, CUPPING AND GUASHA

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**Abstract.** Because of its simplicity of operations, high effectivity, convenience and low cost, treating disease by using techniques of moxibustion, cupping and guasha is becoming acceptable for people all over the world. Moxibustion treats and prevents diseases by using moxa fire. The chapter Guan Zhen (Official Needling) in Ling Shu (Spiritual Pivot) says: If the disease could not be treated by acupuncture, moxibustion might be the suitable method. The herb named *Artemisia Vulgaris* (mug wort, pungent in nature and bitter in flavor) in form of moxa cone or moxa stick is being applicable to acu-points or acu-meridians. After the proper syndrome differentiation, proper body posture and area for moxibustion are chosen. One of the oldest and most effective techniques is moxa on point ZuSanLi (ST 36). It has immunity increase and anti-ageing effect. Nowadays many researches on clinical application and mechanism of moxibustion are done: they show high-effectiveness in warming and dispersing wind-cold pathogens, warming kidney and strengthening the spleen, preventing diseases and promoting health. Cupping, also called home therapy in ancient times, is method of applying a cup in which a partial vacuum is created on the skin for therapeutic purpose. There exist different material and size of cups. Also, different techniques of cupping (single, multiple, quick, retaining, moving...) could be applied depending on disease and desired result of treatment. Indications of cupping are: releasing the exterior, removing dampness, removing blood stasis, and promoting blood circulation. Guasha (to scrape) is ancient Asian technique which involves stroking, pressuring and rubbing the skin on particular places with round-edge instrument in order to promote sha-petechies on the skin. Influencing surface of the skin and connective tissues is very much related to influence the san jiao (triple burner). It is one of the biggest organs in human body, according to the basic theory of traditional Chinese medicine (TCM). TCM learns that san jiao regulates all water passages and fire in all three center in body. This is explanation how by rubbing just one part of the body, you are actually influencing the whole. Very fast, the immediate relief from cough, nausea, cough, stiffness could be experienced.

**Keywords:** *traditional Chinese medicine (TCM), acupuncture and moxibustion, guasha, cupping, san jiao*

## 1. Introduction

Acupuncture is often used in conjunction with moxibustion in Traditional Chinese Medicine (TCM). The two techniques are so closely related that they are referred to in Chinese with one compound word *zhenjiu*-acupuncture (*zhen*, needle), plus moxibustion (*jiu*, to burn). A new English word *acumoxa*, containing these two, has recently been coined. Basically, there are differences between these two words, and their origin has to be considered separately. Acupuncture is mechanical stimulation, while moxibustion is heat stimulation.

## 2. Moxibustion

Moxibustion treats and prevents diseases by using moxa fire. Moxibustion has been used for perhaps more than 3,000 years [1]. The broad sense of moxibustion means applying moxa-wool to certain locations of the human body by burning or fuming. Some other non-fire therapeutics is also included in moxibustion, such as point application with garlic or herbs. At present, mugwort was used as main ingredient of moxibustion. Mugwort has pungent warm nature as well as bitter flavor and grown in most areas of China. Mugwort leaves could be pulverized into soft mugwort wool, which has following advantages. First, it is easy to be pressed into moxa cones in various sizes and put on different areas for burning with fragrant smell. Second, it has favorable properties of gentle warm and penetration during burning. Modern research has verified that mugwort leaf satisfies raw

material for moxibustion, containing 66.85% of fibers, 11.31% of protein, 4.42% of essential oil and 8.44% of ions (including K, Na, Ca, Al, Mg).

Moxibustion might play a role via the comprehensive multisystem, multipath way and multitarget. The immune system, nervous system, the endocrine system, might participate in the regulatory procedure of moxibustion on the organism. Systematic studies from multilayer and multi-angle have essential significance making use of modern experimental technologies and methods in the mechanism study on moxibustion [2]. Nowadays there are many different ways how moxa could be apply in clinical practice: the oils of effective components can be directly apply to treat disease, moxibustion can be integrated with usage of acupoints and there are more researches and developing of new type moxibustion therapeutic apparatuses which don't produce smoke, and which are applicable for clinical practice. The integration of moxibustion and medicine with moxa warming stimulus can promote blood circulation and enhance the percutaneous adsorption of medicine and at the same time the medicine may stimulate local points and meridians, thus to activate the meridian-qi of the whole body [3]. Moxibustion can be done with moxa cone (its made by kneading the moxa wool with fingers into the shape of a grain or cone) or moxa stick. Two commonly used methods are: direct and indirect moxibustion (placing some materials usually garlic or ginger between the moxa cone and the skin). Indications of moxibustion are: cold syndromes such as rheumatism, joint aches, numbness, diarrhea, distention of abdomen, inflammations, menstrual cramps, chronic problems, and "deficient conditions" (weakness) [4,5].

### 3. Cupping

Cupping was is also called congestion therapy. In ancient times animal horns or bamboo barrels were also used as tools, and so it was also called "horn method" or "suction barrel method". After preliminary survey, there was already cupping therapy in medicine in about 3 centuries B.C. The earliest record was the treatment of hemorrhoids by animal horns as seen in Prescription for 52 Diseases unearthed in Hunan from Mawangdui Tomb of Han Dynasty. Down to Tang Dynasty there were also records about bamboo barrel treatment for diseases. Wang Shou in his *The Medical Secrets of an Official* further expounded the application of cupping therapy. The physicians in Song Dynasty also used bamboo barrels as tools and expanded the indication for internal diseases. In Qing Dynasty, cupping method was enriched and popularized. The diseases treated were expanded from department of surgery to the department of internal medicine. The medical expert of Qing Dynasty, Wu Qian, in his *The Golden Mirror of Medicine* recorded the methods of combining cupping with TCM and acupuncture. Zhao Xue-Ming had applied cupping therapy to treat the diseases as headache and dizziness due to wind-coldness, arthralgia due to wind-evil, abdominal pain and others. Cupping has been called 'vacuum drawing blood method' in Japan, 'cup method' in France, "congestion method" in former USSR, and "horn method" is still used in African mainland. After the thousands years of development, perfection and improvement, has been accepted by more and more people. Since the field of application of cupping therapy is wide, its efficacy is good, cost is low, it is called a new 'natural therapy in 21st century'. Cupping method uses cup as its tool and expels the air in the cup by burning, suction and other methods, to form negative pressure, anchoring the cup over the treated site of the body to achieve the goal of preventing and treating diseases and strengthening body. The main principles of cupping are: dredging the channels and collaterals, activating vital energy and blood circulation, bi-directional regulation and treating different disease with same therapy. The channels and collaterals of the body are internally belonging to the organs and viscera and externally connected to the extremities, inter-crossed longitudinally and horizontally, and spread over the entire body to integrate the interior and exterior, the organs and viscera and extremities into an organic unit. In clinical practice, cupping along the channels, walk cupping and pricking cupping or others are often used. This therapeutic approach is based on the theory of yin and yang and five elements in TCM, theory of organs and viscera and channels and collaterals. Many clinical studies have demonstrated that cupping therapy has bi-directional regulating action. For example it may elevate blood pressure or lower blood pressure, lower the too high white blood cell count or increase too low white cell count.

**Examples.** For common cold external wind-cold type with symptoms of nasal stuffiness and heavy voice, sneezing, nasal discharge, itchiness in throat and cough, no thirsty, chilliness and fever in severe cases, cupping

on next points is recommended: Fengchi (GB 20), Fengmen (BL 12), Waiguan (SJ 5). For chronic bronchitis of yang-deficiency of both spleen and kidney type with symptoms of cough and gasp, aggravated on exercise, clear and thin sputum which is aggravated on cold season, cold extremities, cupping on next points is recommended: Dazhui (DU 14), Feishu (BL 13), Chize (LU 5), Dingchuan (extra point). For chronic gastritis what is spleen and stomach deficiency and coldness type with symptoms of vague gastric pain, preferring warmth and pressing, aggravated when hungry and alleviated with food, loss of appetite, mentally and physically tired, cupping on next points is recommended: Pishu (BL 20), Zhongwan (RN 12), Da zhui (Du 14). Cupping should be done by educated practitioner in order to avoid side effect of cupping such as blisters. Also it cannot be done in acute severe diseases, bleeding syndromes and high fever cases.

#### 4. Guasha

Guasha is an ancient therapy associated with extraordinary therapies in acupuncture. Sha means a disease cause by attack of climatic pathogenic factors to the meridians, causing blocks and creating pain, coldness, stiffness or numbness of limbs. In the beginning, guasha was used in Asia to treat cholera, cholera like-disorders and basically any disorder involving fever or pain. In his book *Treatment of Disease with Acupuncture*, Vol II, James Tin Yao So (1987) prescribes guasha for cholera like-disorder, where there is vomiting, diarrhea and ‘unrelieved pain in the entire abdomen, with cold hands, arms, legs and feet’. In Chinese medicine there are six climatic pathogens. This is a collective term used for six kinds of exogenous pathogens of wind, cold, summer-heat, dampness, dryness and fire. Normally they do not cause a disease, but when climatic change is sharp or resistance of the body becomes weak, the six climatic factors will become pathogens, causing the body to fall ill. Then, they can penetrate deeper under the surface of the skin and influence connective tissues and muscles. The connective tissue forms an inner cover between the skin and the muscle, giving it protection and firmness. Guasha is by using a flat instrument scrape the skin to bring the pathogenic energy from the exterior tissue to the surface (gua means scrape, rub) [6]. By doing this action on the surface of the skin, redness will appear in the form of purpura (sha). According to the colour and location of sha it is possible to evaluate location of disease and severity of pathogenic factor. Most of sha will fade into 2-3 days. By influencing blood vessels, guasha is influencing blood, and as qi and blood always flow together, that’s why circulation of qi is being influenced as well. Chinese Blood is derived from food qi produced by spleen, transported by the lungs and transformed by the heart. Blood nourishes and moistens the body, ‘houses and anchors the mind’ and flows with qi all over the body [7]. As San Jiao (triple burner) is organ in Chinese medicine which is connected with connective tissue and viscera, the guasha technique directly influence the function of this organ. By influencing the connective tissue, especially on the areas of the face and neck, rejuvenation and nourishing of skin, activating fibroblasts, and collagen production can be maintained, so that is why guasha nowadays becomes the part of anti-aging treatments. The Chinese medical oil should be used while doing guasha technique. It is made of special herbs which penetrate deep into muscles, relaxing them and improving microcirculation. In the same time, pain is diminished. There are certain rules which consider speed, direction and location of manipulation how technique is performed, and that’s why guasha should be done by educated therapist. Also there are certain rules how patient should behave after treatment (drink more water, avoid exposure to the sun and wind until sha is faded). By guasha different parts of the body can be treated: face, shoulders, neck, lower back. It can also be applied just on acupoints [8].

**Examples.** For neck pain guasha on upper back, chest, shoulders and occipital is recommended together with needling of acupoints: DU 14, SJ 15, GB 20, A shi points. For headache guasha on neck, shoulders, upper back is recommended together with needling of acupoints: DU 14, DU 15, SJ 15, GB 20, GB21, BL10, BL 12. For dysmenorrhea guasha on mid-back, low back sacrum and area lateral to sacrum is recommended together with needling acupoints: BL 57, BL18, BL 23, BL31.

## 5. Conclusion

Beside acupuncture, using additional methods as moxibustion, guasha and cupping can enhance the results of therapy treatment. These methods also can be done separately by knowing the basic rules, indications and contraindications of treatment.

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# CHINESE CONCEPT OF FIVE PHASES (WU XING - 五行) IN THE LIGHT OF SYSTEMS SCIENCE

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**Abstract.** The Chinese concept of *Five Phases*, together with the *Yin-Yang* theory, has for the thousands of years been the basis for Traditional Chinese Medicine and through it demonstrated its validity. In spite that fact, the deeper theoretical understanding of the Five Phases, as a concept which reflects the simplest essential principles, parts and phases of any existence, has remained blurred in terms of Western science and reduced to its interpretation as a symbolic scheme with more or less strict adherence to the original interpretation. Obvious aggravating factor in its understanding is that the names and order of certain phases are a different than in all other corresponding ancient concepts of *Five Classical or Essential Elements*, like Babylonian, Greek, Hindu, Buddhist, Japanese, Tibetan, or the concept of Medieval Alchemy. Therefore, we first tried to unify these concepts and then to bring them in connection with certain mathematical, physical and biological systems and models, with particular reference to the meridian system. This analysis enabled the comprehension of Five Phases as a hierarchical 3D model through the self-similarity symmetry, which is consistent with the observed fractal organization in living systems and with a holistic view of the human body, providing the support for Integrative Medicine.

**Keywords:** *five phase concept, classical elements, systems theory, modelling, fractals.*

## 1. Introduction






Traditional Chinese Medicine (TCM) provided a basis for the successful health care for thousands of years. This powerfulness of TCM lies in its immanent connection to the Chinese philosophy – *Daoism* (also known as *Taoism*). The underlying philosophical (theoretical) frameworks of TCM are the ancient *Yin-Yang* (YīnYáng, 陰陽) and *Five Phases* (*Wu Xing*, 五行) theories. While Yin-Yang describes abstract dual qualities of anything at any level of complexity, the Five Phases theory considers the relationship and interaction among the abstract or real objects (entities).

Since Daoism is based on observing of the natural world and manner in which it operates, TCM is commonly used by the natural metaphors. Thus in TCM, diagnosis and medication are based on *Syndrome*, such as Cold or Hot Syndrome, and “Hot medication curing Cold Syndrome”. This is a standard therapeutic guide line in TCM, but uncommon in Conventional Western Medicine (CWM).

The differences between TCM and CWM are substantial and widely scientifically recognized with extensive effort in bridging them, mainly using an integrative approach which is characteristic for the systems science [1-6]. Since systems biology is addressed to the human health using an integrative approach and aimed towards personalized medicine, it is widely used in the establishing a scientific base of TCM.

Systems biology, and the other disciplines like quantum biology and bioinformatics, as a research tool of TCM is used for obtaining and describing of theoretical models of TCM, Yin-Yang Wu Xing dynamics and relations in human physiology and anatomy, acupuncture networks and dynamics, molecular biology and biochemistry mechanisms of TCM, system models and bioinformatics software/database of TCM, etc. In this paper, we mainly focused on the analyses of components and relations in Wu Xing.

## 2. Comparison of Wu Xing with Ancient Concept of Classical (Universal) Elements






The determination of relationship between the myriad observable things and the one universal principle has been one of the main subject of ancient philosophies and cosmologies/cosmogonies. The comparative analysis of Hindu, Buddhist, Tibetan, Japanese, Greek, and Jewish, as well as Medieval Alchemic doctrines indicates the unique model of *fivefold* nature of manifestable world, expressed as a system of *five classical (universal, essential) elements* (either of processes or structures, i.e. *phases* or *components*): *Fire* (Greek notation: ) , *Water* () , *Air* (Wind; ) , *Earth* () , and *Aether* (*Akasha*, *Void*, *Space*, *Quintessence*; ) [7]. The names of the elements are analogous to categorised experiential sensations of the natural world, so they are symbolic and key to their inherent qualities and/or modes of action by analogy. The first *four* elements describe the most obviously states-of-matter, and a *fifth* element describes that which was beyond the material world. These four coarser elements have a source and sink (the emergence and disappearance) in the fifth finer element. According to the model, the main attributes of the four coarser elements are the next:

- *Fire* is the first element that emerged from Aether by which is *causes* the rest elements, so it is characterized by the *active* principle with the properties of initiation, expansion, heat, dryness, and electricity;
- *Water* is the second element which is the *consequence* of Fire and characterized by the *passive* principle and therefore by the quite opposite properties of susceptibility, shrinkage, cold, humidity, and magnetism;
- *Air* is the third element which is acts as a direct *mediator* between complementary Fire and Water by establishing a neutral *balance* between active and passive principles, giving the quality of movement, transition, alternation, persisting, and maintaining;
- *Earth* is the fourth element which is *summarizing* the previous three elements, giving the qualities of solidity, complexity, inertness, stability, gravity, and corporeality, and as the final element can be viewed as a principle of *wholeness* and completeness.

The elements of Air and Earth is formed only as a result of the interaction of Fire and Water, wherefore Fire and Water are considered as the *basic (cardinal)*, while Air and Earth as the *intermedial* elements. Fire, Water, and Air are considered as a *primary* and mutually transmutable, while Earth as a *complex* element.

In Bön (Tibetan religion), the five classic elements are correlated to the *Five Pure Lights*, which are represent their most sublime essence-quality and constitute the *Rainbow Body* [8]. After centuries, the science is came to the similar results by Ho's research [9] which is discovered using the polarized light microscope that living organism continuously emitted coherent light in all colours of rainbow.






Such establishing of the element concept is so simple and clear that enable relatively easily systematization of abstract/real systems. Our analysis of systems on different scales is revealed the existence of a unique model of their self-organizing in a general form of *the four elements as building blocks and the fifth element as a medium* [10]. Some of the examples are showed in Tab. 1, while the correspondence of natural systems with the elements concept will be described only for fundamental life macromolecules.

At the macromolecular level, there are four main building blocks essential for all living organisms – nucleic acids, proteins, sugars and fats (Tab. 1). Providing their biological role and the virus structure, it can be concluded that the nucleic acids and proteins are more fundamental then the sugars and fats, so the first macromolecular pair can be considered as a basic and the second as an intermediate. More specifically, nucleic acids as the source of information for the continuous reconstructing of the whole living organism, correspond Fire () ; proteins as a carrier and executor of genetic information, correspond Water () ; sugars as an information and energy mediator in biological processes, correspond Air () ; fats with the dominant role in the formation of cell membrane by integrating the three previous elements, thus forming the basic functional units – *cells*, correspond Earth () . Water as omnipresent substances in living organisms which represents physical/chemical environment (medium) and thus enables communication and energy exchange for all life components, as well with other fundamental roles in organisms [11-13], correspond Aether () .

We should point out that all exposed correspondence, although viewed as the most logical from our perspective, are subject to review and possible different interpretation. One of the main reasons for ambiguous interpretation is that each entity, according to traditional cosmologies/cosmogonies, exists as combination of all five elements of which one is dominant. This means that every structure carries the characteristics of all elements, but the correspondence must be done according to the dominating element, which makes difficult an unambiguous understanding.

The presented correspondences overall indicate that self-organization in natural systems are in a coherence with the ancient element concept.

**Table 1.** The systematization of abstract/real systems according to the concept of classical elements.

					
<b>State of matter</b>	vacuum	plasma	liquid	gas	Solid
<b>Numbers</b>	0 - position	1 - first number	2 - first even num.	3 - first odd numb.	4 - first compos. n.
<b>Geometrical bodies</b>	position	point (0D)	line (1D)	plane (2D)	space (3D)
<b>Platonic bodies</b>	dodecahedron	tetrahedron	icosahedron	octahedron	hexahedron (cube)
<b>Basic moving</b>	resting	linear	cyclic	spiral	Helical
<b>Fund. physical terms</b>	space/time	information	structure	dynamics	Interaction
<b>Type of physical fields</b>	zero-point	electromagnetic	strong nuclear	weak nuclear	gravitational
<b>Atomic particles</b>	vacuum unit (?)	electron ( $e^-$ )	proton ( $p^+$ )	antineutrino ( $\bar{\nu}_e$ )	neutron ( $n^0$ )
<b>Atomic orbitals</b>	free orbital	s-orbital	p-orbital	d-orbital	f-orbital
<b>Classes of chem. elem.</b>	hydrogen	metal	nonmetal	metalloid	noble gas
<b>Basic atoms of life</b>	hydrogen ( $H^1$ )	nitrogen ( $N^{2+5}$ )	carbon ( $C^{2+4}$ )	oxygen ( $O^{2+6}$ )	phosphorus ( $P^{2+6+2+5}$ )
<b>Inorganic life molecules</b>	hydrogen ( $H_2$ )	ammonia ( $NH_3$ )	water ( $H_2O$ )	carbon dioxide ( $CO_2$ )	methane ( $CH_4$ )
<b>Acid-base reactions</b>	$e^-/p^+$	base	acid	amphoteric molecule	Salt
<b>Life macromolecules</b>	water cluster	nucleic acid	protein	sugar	Fat
<b>Macromolec. subunits</b>	Water	nucleotide	amino acid (AA)	monosaccharide	fat acid
<b>Nucleic acids</b>	water cluster	DNA	iRNA	tRNA	rRNA
<b>Natural forms of DNA</b>	water cluster	A-DNA (11 <sub>1</sub> ) rg	C-DNA (9,33 <sub>1</sub> ) rg	B-DNA (10 <sub>1</sub> ) rg	Z-DNA lg
<b>DNA/RNA nucleotides</b>	Water	py T/U =	pu A =	py C $\equiv$	pu G $\equiv$
<b>Stereochem. AA types</b>	Water	glycine	proline	valine	Alanine
<b>Tissues</b>	Lymph	nerve	epithelium	connective	Muscular
<b>Psychophysiological levels</b>	communication	will	emotion	mind	Corporeal

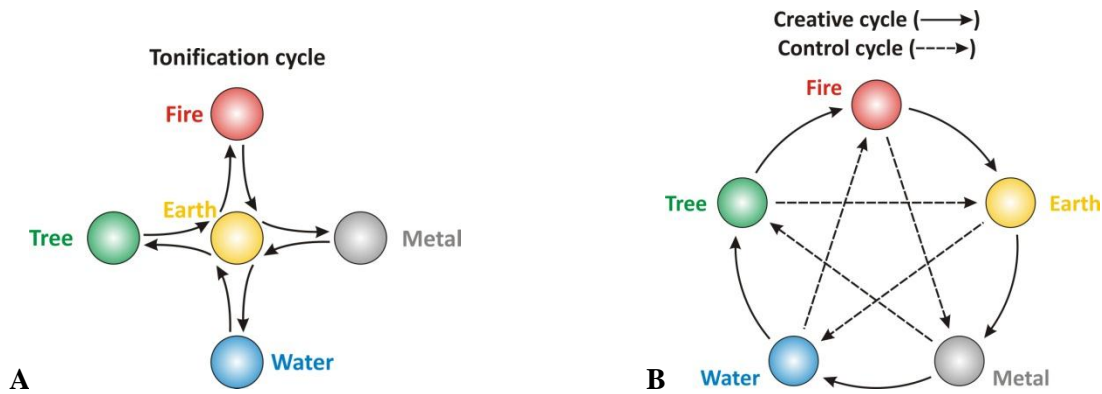
The Chinese teaching of *Wu Xing* gave a somewhat different interpretation, set and order of elements.

The Chinese word *xing* literally means something like “changing states of being”, “permutations” or “metamorphoses of being”, and so the most preferred translation of *Wu Xing* is “five stages”, “five phases” or simply “five changes” [14]. This means that Chinese were understood “elements” more in a context of processes

as different types of energy and moving forces in a state of constant interaction and flux with one another, rather than in context of structures as the basic building blocks of matter or the different components of system.

The difference is also reflected in the names of “elements”: *Fire* (huǒ; 火), *Earth* (tǔ; 土), *Metal* (jīn; 金), *Water* (shuǐ; 水), and *Tree* (mù; 木;), as well in their ordering in two basic cycles: *Tonification cycle* (Fig. 1A) and *Creative/control cycle* (Fig. 1B). In the crosslike Tonification cycle, Earth phase separates each of the other phases, so there are no direct transformation between Fire, Metal, Water, and Tree phase. In the Creative/control cycle is contrary, so Earth phase is a part of general direct transforming between phases. Inside Creative/control cycle, it can be distinguish two subcycles: a *generating* or *creation* (*Shēng*, 生) cycle and an *overcoming* or *destruction* (*Kè*, 剋) cycle.

Since the Chinese concept Wu Xing describes universal natural phenomena, it must have its counterpart in classical element concept. Summing the differences between these two concepts – Chinese and classical, indicates two main divergence: the existing of Metal and Tree phase which have not counterpart in classical concept, and the attributes of Earth phase which are mainly leading from Tonification cycle, more correspond to Aether then Earth in classical concept (see Table: Classical Elements in [7]). Thereby the first step in the bridging Chinese and classical concept is in *the finding of exact classical counterpart for the Metal, Tree, and Earth phase*. In order to realize this step, it is necessary to perceive the genesis of Wu Xing.



**Figure 1.** Two basic types of cyclic transformations inside Wu Xing: (A) *Tonification cycle* as an *indirect* type of transformations between phases through the central Earth phase, and (B) *Creative/control cycle* as a *direct* type of transformations between phases.

### 3. Hidden Fractal Principle in Taijitu and Wu Xing

According Chinese doctrine, *Taiji* (tài jí, 太極) represents the ultimate rational principle upon which all existence flows, so and Wu Xing. Taiji is also an universal principle upon which is *Qi* (chí or ch'í, 氣), frequently translated as “life force” or “energy flow”, polarized in two complementary modes – *Yang* (Yáng, 陽) and *Yin* (Yīn, 陰). This attribute of Taiji is comprised in its term, *tai* (太) – “great; grand; supreme” and *ji* (極) – “pole; roof ridge; highest/utmost point”, so one of its the most appropriate translations is *Supreme Polarity* [15]. The inherent principle of Taiji is *Li* (lǐ, 理), simply “Principle” or “Law”, and represents the fundamental order of Nature. Since Taiji and Li are rational, they can be symbolically express by a diagram, known as Taijitu (☯). Some ancient Chinese text establish the relation between Taiji and Wu Xing in the next manner [15]:

“Non-polar and yet Supreme Polarity (*Wuji er Taiji*, 無極而太極)! The Supreme Polarity in activity generates *Yang*; yet at the limit of activity it is still. In stillness it generates *Yin*; yet at the limit of stillness it is also active. Activity and stillness alternate; each is the basis of the other. In distinguishing *Yin* and *Yang*, the Two Modes are thereby established. The alternation and combination of *Yang* and *Yin* generate Water, Fire, Wood, Metal, and Earth. With these five [phases of] *Qi* harmoniously arranged, the

Four Seasons proceed through them. The Five Phases are simply *Yin* and *Yang*; *Yin* and *Yang* are simply the Supreme Polarity; the Supreme Polarity is fundamentally Non-polar. [Yet] in the generation of the Five Phases, each one has its nature.

...The two [modes of] *Qi* and the Five Phases are that by which Heaven bestows the myriad things and generates them. From the product (*mo*, 末) we can deduce the origin (*ben*, 本); thus the differentiation of the Five Phases is the actuality of the two *Qi*, and the actuality of the two *Qi* in turn is based on the polarity of the one order.”

The citation is leading to the conclusion that the genesis of Wu Xing can be understood by analyzing of hidden principles in Taijitu, and which reveals the following principles in the form [10]:

- be a dual (Yin and Yang);
- be a part (the Yin in Yang, Yang in Yin);
- be a harmony (balance of Yin and Yang);
- be a whole (the unity of Yin and Yang).

If we consistently apply these principles, then they must coherently exist at each level, e.i. at the level of *small Yang* in a big Yin and *small Yin* in a big Yang, which means that in a big Yang is not only small Yin and *vice versa*, but overall Taijitu, and all over again *ad infinitum* (Fig. 2). This implies that *Taiji principle (Li) corresponds with the principle of self-similarity or repetition of the same rules ad infinitum in a fractal figures* [10,16,17]. This means that the Yin-Yang dualism has the meaning of Plato’s “infinite dyad”.



**Figure 2.** Fractal model of classical elements in correspondence to Taiji. *Fire* and *Water*, as the primary (cardinal) and complementary elements, correspond “infinite dyad” of the primary and complementary principles Yang and Yin, and therefore the primary and complementary colours – the *red* and *green*. Air, as a primary and direct intermediated element, correspond direct Yin-Yang link and primary colour – the *blue*. Earth, as a complex and integrative element, correspond the Yin-Yang unity and composite colour – the *yellow*. *Aether* suits to either black or white colour, depends on state of other elements – unmanifest to the *black* and manifest to the *white*<sup>7</sup> [10].

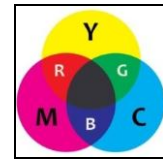
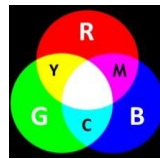
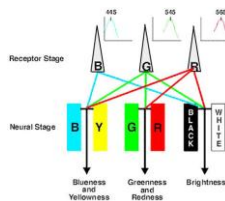
<sup>7</sup> A key reason of suggested colour assignment to the classical elements is based on “...the modern model of normal colour vision which incorporates both the trichromatic theory and the opponent colour theory into two stages (Fig. A). The first stage can be considered as the receptor stage which consists of the three photopigments (*blue*, *green* and *red* cones). The second is the neural processing stage where the colour opponency occurs [*blue/yellow* and *green/red*]. The second stage is at a post-receptoral level...” [18-20]. Each colour in the visible spectrum can be made by a mixture of three primary colours, and the human colour vision matches to *additive RGB* (RedGreenBlue; Fig. B) *model*, which is complementary to *subtractive CMY* (CyanMagentaYellow, Fig. C) *model*.

The comparing of phases arrangement in Tonification cycle with those in classical elements (given by Table: Classical Elements in [7]) guides to conclusion that central position could be occupied only by classical element Aether, so the Chinese Earth phase correspond to Aether (Fig. 3A and 3C). The confirmation of this claim we will seek in the following ancient Chinese text [21]:

“The Yi has the Great Ultimate, which begets the two dichotomies (yin and yang). The two dichotomies beget four images (the sun, moon, heaven, and earth)<sup>8</sup>. The four images beget eight trigrams. The eight trigrams distinguish the auspicious and inauspicious. The auspicious and inauspicious beget the great accomplishment.”

The Sun represents Yang and Moon represents Yin [14], and at same time Sun is higher Fire and Moon is higher Water [23]. Even more, in Chinese philosophy is sometimes considered that the universe consists of Heaven and Earth, where Heaven being made of *Qi* and Earth being made of the five elements [14]. This means that *eight trigrams represent four upper principles* – the Sun, Moon, Heaven, and (upper) Earth, and their *four lower reflections* – the Fire, Water, Air, and (lower) Earth, leading to the conclusion that *the lowest principle of the upper principles (upper Earth) is settled as the control principle of lower principles* (similar case is for the meridians; see Section 5), so it makes sense to *adopt (upper) Earth in Wu Xing as Aether*. Such *combination of lower elements with one upper element are in full accordance with Taiji, because it is reflects principle “to be a part”, i.e. the existence of small Yang in big Yin, which is just a half of Taijitu*. Thus the balancing of the one half simultaneously balances the complementary half, which is a basic of TCM.

If we link classical elements in crosslike form with Taijitu such that Fire is in the position of maximal Yang, than Water is in maximal Yin, while Air in position of Yang domination, and Earth opposite (Fig. 3A). For the clockwise direction, the order of elements suit to their developing from the first – Fire, to the last – Earth. Their anti-clockwise rotation for 90° gives the basic elements orientation in a man (Fire is masculine active principle which dominates on right side, and *vice versa* for Water; Fig. 3B). For the same initial condition of Fire in pentagonal cycles, it is provided approximately symmetrical relation between the Fire and Water, as well Earth and Aether (lower and upper Earth), while Air is the only element which has approximately balanced Yin and Yang, what is its main attribute (Fig. 3C). Anti-clockwise elements rotation for 72° gives a new elements orientation in a man, such that the elements with upward moving tendency are settled up (Fire and Air), and *vice versa* for Water and Earth (Fig. 3D). Since suggested model of elements order in many aspects supports some fundamental properties, it make sense to considered as valid, from which it follows *the final correspondence between Chinese Five Phases and classical five elements in the form: (upper)Earth ↔ Aether (☁), Metal ↔ Air*



**Figure A.** A model of normal human vision

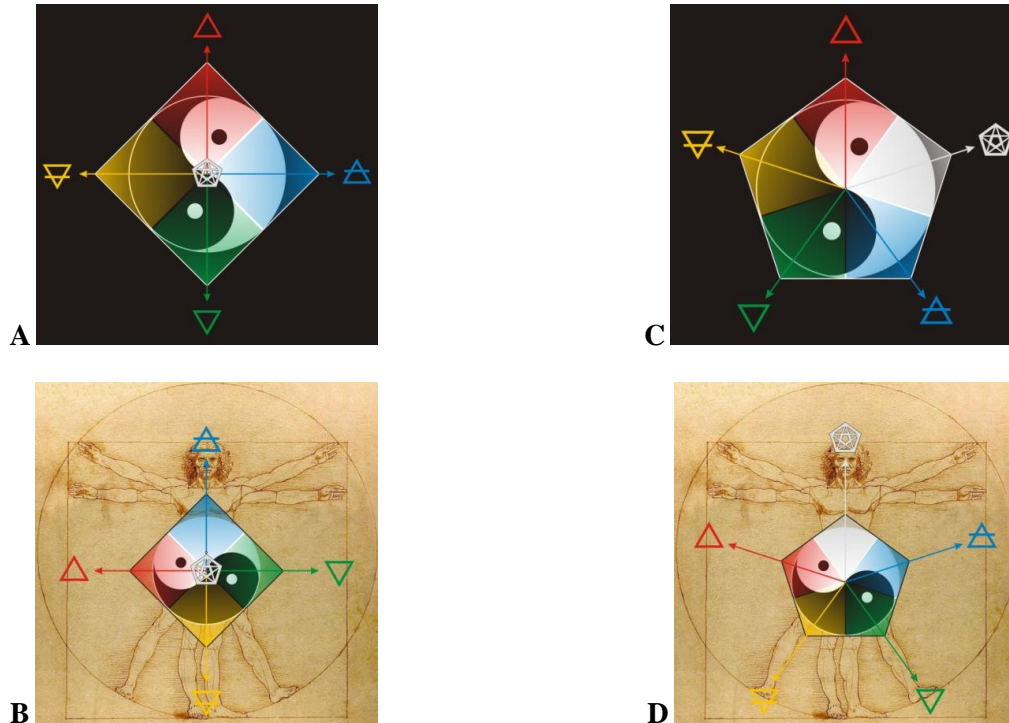
**Figure B.** Additive RGB model

**Figure C.** Subtractive CMY model

The match of RGB model and classical elements are reflected in that that three primary colours correspond to three primary elements (△, ▽, ▲), whereas complex (yellow) colour corresponds to complex element (▼). In RGB model, the absence of primary colours gives the *black* colour, while their presence the *white* (Fig. B), therefore we can Aether (☁) also interpreted or as black or as white in a dependence of elements emanation.

<sup>8</sup> “At Prasrbs in the Danube region during the Pottery Neolithic Period [5500-4000 BC], we founds the traces of beliefs that were related to natural phenomena” like belief “...in the gods of the sun, heaven, earth, and fertility and their respective idols” [22].

(△), and *Tree*↔(lower)*Earth* (▽). Thus comprehended elements indicates that *the Five Phase or five elements system not only that they describe the ordering inside a single hierarchical level – horizontal arrangement, but also the ordering between successive hierarchical levels – vertical arrangement, overall resulting in a fractal arrangement.*



**Figure 3.** Classical elements, Tonification and Creative/control cycles in correspondence to Taijitu.

#### 4. General Property of Wu Xing Dynamics

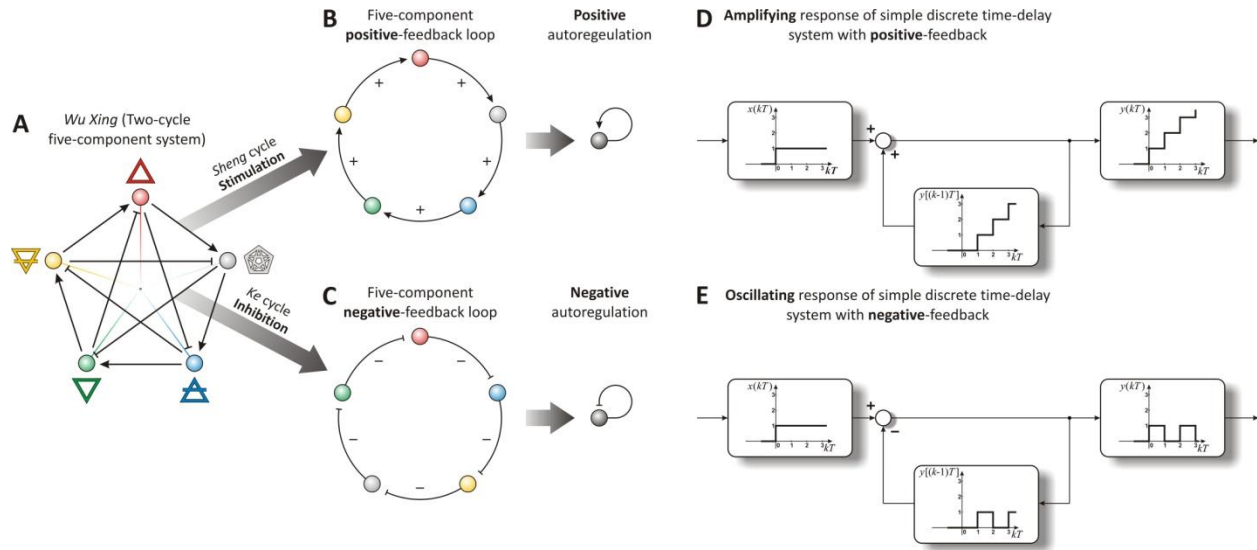
Wu Xing dynamics in a form of Creative/control cycle has a special importance in TCM since enables determination of physiological and pathological relationships between the internal organs. The main goal of this cycle is the functional coordination of various systems and organs, as well as homeostasis maintaining, which is realized by balancing two complementary (sub)cycles: *promoting* and *restraining* under physiological conditions, and *encroaching* and *violating* under pathological conditions. In the context of systems theory, these two cycles simply correspond to the *stimulation* and *positive-feedback* loop control (*Shēng* cycle), and the *inhibition* and *negative-feedback* loop control (*Kè* cycle) (Fig. 4A, 4B, and 4C).

In ideal case, these two cycles for the *five-component* system are reduced for *the stimulation to a positive autoregulation with amplifying response, and for the inhibition to a negative autoregulation with oscillating response.* (Fig. 4D and 4E). This indicates that the separate cycle, nether simulative nor inhibitor, cannot resulting in a *self-regulation*, but only their cooperative or synergetic action. In Chinese medicine, this is described by a famous ancient medical expert Zhang Jingyue: “The creation of nature requires both help and harm. Help gives birth, while harm prevents excess. Only help and harm together cause the course of nature to run endlessly. Counterparts contribute to each other” [4].

Self-regulating systems are the subject of extensive research in systems science, especially in systems biology for the purpose of understanding cell cycles [24]. Those studies shows that a single negative-feedback loop gives oscillatory behaviour with outputs that are typically fairly sinusoidal, while the adding a positive-

feedback loop gives a necessary condition for the existence of multiple steady states, in the simplest case the bistable systems with irreversible response which can function as memory modules.

Similar class of *self-adaptive systems* had been developed in the theory of *Natural control* [25,26] in which is the *optimal* control realized just by balancing of the strength of negative- and positive-feedback loops. It is important that these classes of systems can explain mechanism of omnipresence self-organization in living organisms [10].



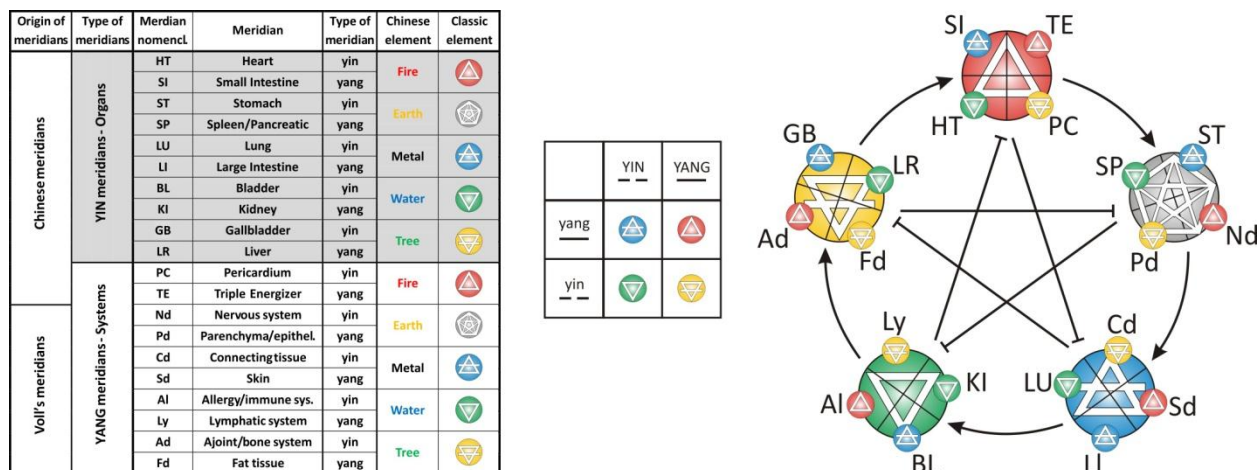
**Figure 4.** Two complementary response of five-component system for the two complementary cycles: amplifying response for stimulation cycle (A, B, and D) and oscillating response for inhibition cycle (A, C, and E).

## 5. Wu Xing and Chinese/Voll Meridians

In the late 1940's, a German medical doctor and engineer, Dr. Reinhard Voll, developed a device and method for measuring of electrical potential of acupuncture points, known as EAV (Electro-Acupuncture according to Voll) [27]. Dr. Voll was the first who discovered new meridians, described them in detail, systematized and clinically proven to be correct, so they called today *Voll meridians*.

The difference between Voll and Chinese meridians are in fact that Voll meridians are related to the *systems*, while Chinese meridians to the *organs*, except for control meridians Pericardium (PC) and Triple Energizer (TE), which are principally connected to the vascular and endocrine system (Fig. 5, left). Thus the whole meridian system can be divided into halves: 5 paired *system-type* or *YANG-dominant* meridians (Voll meridians+PC+TE) and 5 paired *organ-type* or *YIN-dominant* meridians (Chinese meridians-PC-TE) (Fig. 5, left). Each type of meridians can be divided again according to *yin-yang* polarity, which is for the organs represents criterion of solid/hollow and correspond to the internal/external meridians in the Creative cycle. *Combining the classical elements in matrix according to YIN-YANG/yin-yang polarity, it gets order of elements like in Tonification cycle* (Fig. 5, middle). In this way, *the whole meridian system can be systematized by the fusing Tonification and Creative/control cycles* (Fig. 5, right). Thus the most Yang meridians will be outside Voll meridians (including TC and TE), and the most Yin meridians will be inside Chinese meridians (excluding PC and TE).

The main reason why the Chinese are not used all 10 paired meridians, but only 5 paired organ-type meridians and one control paired system-type meridian, is the same as for Five Phase (Section 3) – the using just a half of Tijing which is consist of the big Yin and associated the small Yang.



**Figure 5.** Systematization of the Chinese and Voll meridian system according to the Five Phases/Elements concept.

Validness of suggested meridian systematization can be support by the comparing of attributes for the corresponding element/phase and meridian. The most obvious is relationship between Air () and Lung (LU) meridian. Majority of ancient doctrines Ajoint/bone system (Ad) attributes to Earth (). Fats (Fd) as inert material also correspond to Earth. Detoxification role of Liver (LR) indicates its adherences to chemical nature (also in a form of medical drugs), which in compares to cluster structure of living matter, is nearer to Earth. Aether, as element which enables vertical communication by connecting different hierarchical levels, exerts layering, which is the most obvious for Spleen (SP) meridian that are uniquely included two organs – Spleen and Pancreatic. Also Nervous system (Nd) is divided Central/Peripheral and Autonomic system, while Pd meridian is divided to the Parenchyma and Epithelium. The most compact meridian is Stomach (ST), but according some teachings, *solar plexus* is the place of inherent connection of physical and soul body through a long silver cord.

## 6. Conclusion

The suggested unifying of Five Phases and classical elements reveals that these two systems are not in adverse, but that they are addition each other which discover their new meanings and attributes, especially in sense of fractal ordering. For both Five Phases and meridian system is disclosed the same principle of ordering by using a just half of Tijitu (big Yin with associated small Yang) in form of the basic set of lower elements which is governed by additional upper element. Analyzes of Wu Xing dynamics from the aspect of system science indicates its correspondence with self-organizing and some optimal control systems. Generally it can be concluded that Taiji and Wu Xing, as well as TCM can provide a very promising method to deal with complex systems.

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## LITHOTHERAPY: KALININ METHOD

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**Abstract.** Bioenergetics is a science which explores mechanisms and laws of energy transformation during human life activities. Any natural process, including a living organism, can be represented as a system of periodic oscillations with own eigenfrequencies. To understand and improve any disorder, it is important to reveal a correlation of eigenfrequencies of an organism, and its separate organs, and even cells. Some investigations imply that a structure of some minerals enables a focusing and transformation of some frequencies which have a feedback influence on cells of a healthy organism. Bioelectromagnetic potential irradiating from a crystal, appears to be a healing factor, which helps in healing an organism, i.e. in restoring state of homeostasis. A presence of organic crystals, microelements in microdoses in pigments, proteins, lipids, and enzymes, seems to play most important role in processes of energy-exchange in living organism. Weak electromagnetic radiations from minerals seem to be in resonance with these organic crystal-like structures... Scientists from the Institute of Crystallography of Russian Academy of Sciences, were exploring phenomena in crystal finding in them some "origins of life". Their method is based on the millenia-old practice, related to registration of client's bioenergy field. There are methods of corrections of this bioenergy field: its dimension, density, and asymmetry in respect to client's body. Practical basis of these methods is medical reflexotherapy. By palpating along spine, biological active zones (BAZs), corresponding to painful muscle swellings, can be found. Then an action by mineral crystals weighted 20-50 g, is performed on the BAZs on front side of the body along the line parallel with spine. Then a massage of these painful muscle swellings is performed until their full resorption. Foll's diagnostics is an objective test for selection of minerals and their healing effects. There are three observed after-reactions, confirming positive effects: (i) local reactions – change of the minerals' colour, improved microcirculation, change in local temperature, electrical potential and resistance in the region of BAZs; (ii) segmental reactions – reflexogenic segmental response of an organism upon stimulation of BAZs, in the form of increased conductivity along nerves, an amplitude restoration of muscular biopotentials, vanishing of negative asymmetries, change in skin temperature and electrical resistance; (iii) general reactions – activation of regulating brain centers, responsible for coordinative changes in various functional systems of the organism, which is confirmed by changes in EEG, general vegetative tonus of the organism, secretory and motor functions of stomach, and endocrine-hormonal status.

**Keywords:** *Kalinin method, lithotherapy, crystalotherapy, reflexology, local reactions, segmental reactions, general reactions*

### 1. Introduction

Health and illness are two extreme poles on a long string of various dysfunctions of human organism. Somewhere around its middle, there is the point of "recovery" or neutral state. Usually, this is the final aim for the majority of overworked doctors whose reasoning behind is: the illness symptoms have disappeared and that is it. I believe that correcting the organism's functions cannot mean only achieving that neutral state, but also obtaining man's optimal health or his wellbeing. There is a vast difference between "recovery" and "wellbeing". I define "wellbeing" as a state of human organism when one lives fully, using all his bodily, consciousness and spiritual potentials. At the same time, one feels happier, healthier and looks on life as meaningful and worthwhile.

Hereby presenting method is based on the practice that has been in existence for several millennia [1]. I returned to it more than 20 years ago. For the last 10 years I have obtained only positive results. In the process of practical application of this method, the duration and number of sessions are determined by examination and experiment, depending on the patient condition. Just after the patent acknowledgement was confirmed [2], we went on to create the methods which would enable the patients to monitor the signs of their health improvement, by observing the graphics on the computer monitor. This is highly typical of transmitted viral infections, all kinds of neuroses and phobias in particular. The application of this method in the process of rehabilitation of Russian patients suffering from the most severe depressions resulted in almost 100 % rehabilitation. Underlying reasons for severe pathologies are various stresses, caused by psycho-traumatic situations. The patient does not realize the neurotic conflict and continually reports the heart pain, headaches, disorder of system of digestive organs, of support-movement apparatus etc... In order to determine the true reason for those problems the patient bio-energetic field needs to be examined. Not only has the existence of this field been scientifically proven, but also techniques for its correction. A great number of traditional healers demonstrate the ability to "see" this field. What I have is the methodology for examining the patient bio-energetic sheath, its dimensions, density and its symmetrical characteristics in relation to the patient body. Various patients' pathologies lead to the deformities of their sheath. With my methodology I am able to correct the sheath and its zones for energy exchange. This is how I dismiss the causes of pathologies and make one practically healthy, so one can enjoy his wellbeing. In the course of my long-lasting practice of the methodology in question, only positive results have been achieved. Therefore I, even in my appearances on Sankt-Petersburg's television, appealed to the patients who had been denied professional assistance for their health problems by other medical institutions, to come to me. It is exactly in those cases that I managed to help the patients, which was acknowledged by the established medical circles which eventually came to concede that many diseases can be healed only by traditional healers.

## **2. Proposed Method**

The proposed method of the renewal can be medically qualified as reflexotherapy. It includes application of medical means to biologically active points (BAPs). What is discovered afterwards, by palpating along the spine, are biologically active zones (BAZs) which correspond to painful muscular thickenings. Then comes the action on BAPs placed on the body frontal surface, alongside the line perpendicular to the spine on the level of the discovered BAZs. The action is carried out with crystals weighing 20-50 grams that are placed on BAPs, in a time period of 20-30 minutes. After that, painful muscular thickenings are massaged until they are fully resorbed. Technically, the outcome is manifested as a greater efficacy of treatment, as a result of the action on BAPs, based on assessment of the BAZs of a diseased organ.

From a medical point of view, the proposed method makes the diagnostic process considerably easier and brings about improvement in organism's pathological condition, the underlying cause of which is a disturbed mechanism as well as irregularity of energy transformation in the process of one's vital activity. The method can be subsumed as a lithotherapy. The electromagnetic field occurring as a result of vital activity of human organism and some of its parts (organs) stores all information on all processes taking place! What is set up through this field is a channel, through which the organism gets into contact with its external environment; so the organism interaction with the external field of a specific structure causes activation of biological processes on a cellular level and their shifting in the direction necessary for establishing and improving of BAZs. At the same time, what occurs is a biologically informative exchange of the energetic structure of an active element in a specific patient's organ whose vibratory characteristics are thus upgraded to an overall level, securing the normalization of biological processes in cells.

One of the characteristics of living organism is that it generates weak energy and maintains the energy exchange with the environment. Every disturbance of that energy exchange (be it its strengthening or weakening) inevitably leads to the development of a certain pathology. Therefore, a logical inference is that the organism recuperation can be ensured if a disturbed energy exchange is normalized.

Bioenergetics is a scientific study of the mechanism and regularity of energy transformation occurring in the process of man's vital activity. Almost every natural process, including a living organism, can be represented as a

system of periodic oscillations with their own characteristic frequencies. Thus, for making diagnosis and bringing about improvements in any illness, what plays an important role is the correlation of the organism frequencies, that is, the frequencies of its separate organs. Even a single cell, with its form and pathology, picks up the frequency of the objects with which medical action is taken, such as pharmaceuticals, healing herbs or minerals. There are various physical methods for measuring the animate and inanimate natural frequencies. Each of them is usable for a certain frequency range. Actually, they are all resonant by their nature. What is special are electrophysiologic methods based on direct registration of bioelectric potentials (EKG, EEG etc.). In lithotherapy this is achieved by the choice of crystals having their own characteristic vibrational frequencies of the crystal lattice.

There is research testifying that the structure of some minerals allows to focus and transform various kinds of energy that are used to influence the cells of living organism. Presumably, electromagnetic fields emitted by crystals have a healing effect helping a diseased organism to get better. As a confirmation for this let us mention the existence of microelements, which play the most important role in the processes of energy exchange of living organism and which can be found in micro-dosages in pigments, proteins, lipids, ferments. It is exactly with them that weak electromagnetic oscillations coming out of minerals start interacting.

The scientists from the Institute for Crystallography of Russian Academy of Sciences, while studying laws of nature that apply to crystals, have found some "life's early signs" in them. So, one form of the non-organic world is determined by an equal action of two opposed forces: the force of repulsion and the force of attraction of a whole atom assembly which creates a mineral. The interaction energy is basic characteristics of a crystal. Atoms get associated by means of that energy, oscillating in the lattice knots just like pendulums.

Crystallographers classify crystals by their type of lattice symmetry. According to this classification, there are seven types of crystal systems [3]:

1. Trigonal: heliotrope, grayish quartz, obsidian, achats;
2. Cubic: diamond, fluorite, garnet, hematite, ruby, carnelian;
3. Hexagonal: emerald, minerals form the group of beryl, apatite, red achat, tiger's eye;
4. Tetragonal: zircon, wulfenite, chalcopyrite, pink quartz, malachite, nephrite;
5. Orthorhombic: peridot, topaz, alexandrite, turquoise, chrisocola, aquamarine;
6. Monoclinic: azurite, amethyst, jadeite, moonstone;
7. Triclinic: rock crystal, selenite, rhodonite.

On the energy level, every basic BAZ suits one type of crystal systems. Every BAZ has its own action frequency.

The resonant characteristics of electromagnetic oscillations are typical not only of the organism as a whole, but of its organs and systems, pathological substrates and excretions such as: blood (especially erythrocytes and leukocytes), saliva, urine, tears, various tissues' particles, etc. Scientists have recently discovered that there is an array of substances and membranes existing in human body in the form of liquid crystals. They have some energetic characteristics of solid quartz, but they are also of organic origin. All bio-crystal structures in the body operate in sympathetic resonance.

What is necessary for making diagnosis and bringing about improvement in almost any organ is the agreement of the organism's (organs') resonant frequency and the resonant frequency of a medical action. It is only then that, through the process of healing, the normalization of the meridians' energetic characteristics as well as related organs and systems is achieved, that is, the rehabilitation of homeostasis can take place. Such a solution technically results in the diagnosis being more efficiently established and in the improvements of organism's pathological condition, due to aligning the organism's characteristic resonant frequency with the resonant frequency of a corresponding mineral, until homeostatic balance is achieved.

What is typical of an organism functioning in an optimal way is not so much "good" physiologic absolute data values (BAP electrical conductivity), but their symmetry and minimal data difference. Furthermore, once a disturbance in a patient's energy balance (bio-field asymmetry) is established, it is used for defining the presence of a viral infection. The presence of a viral infection strongly indicates a general energy misbalance, whose value is greater than 40%.

In order to tackle the task, painful muscular thickenings formed along the spine are detected by palpating. These BAZs whose centers are BAPs, placed perpendicularly to the spine, on the frontal surface of the patient

body. It is on them that relevant crystals, weighing 20 to 50 grams are placed, for a time period of 20-30 minutes, which is followed by massaging the painful muscular thickenings until their full resorption is achieved.

Diagnosis and treatment are carried out in 5 to 20 sessions, depending on the seriousness of the illness in question, that is, until electro-conductivity in the zone of BAPs reaches no less than 15  $\mu$ A, according to R. Voll's method [4]. A repeated course of diagnostics and treatment is performed after 30 to 40 days, when trigonal crystals are placed in the center of the first BAZ: heliotrope, grayish quartz, obsidian, achats; cubic crystals are placed in the center of the second BAZ: diamond, fluorite, garnet, hematite, ruby, carnelian; hexagonal crystals are placed in the center of the third BAZ: emerald, minerals from the group of beryl, apatite, red achat, tiger's eye; tetragonal crystals are placed in the center of the fourth BAZ: zircon, wulfenite, chalcopyrite, pink quartz, malachite, nephrite; orthorhombic crystals are placed in the center of the fifth BAZ: peridot, topaz, alexandrite, turquoise, chrysocolla, aquamarine; monoclinic crystals are placed in the center of the sixth BAZ: azurite, amethyst, jadeite, moonstone; and triclinic crystals are placed in the center of the seventh BAZ: rock crystal, selenite, rhodonite.

While making diagnosis and healing the organism's pathologic condition with crystals, by frequency adjusting BAZs located between certain vertebrae and the zone of BAPs perpendicular to the spine on the patient's frontal body's surface, what is realized is a vibratory stream action on the pathologic organ of the BAZ in question, so that its vibratory characteristics are upgraded to a common general level, while on a cellular level nourishing is provided. Massage of painful muscular thickenings together with a mineral crystal action alleviates a painful syndrome and later gradually eliminates painful muscular thickening.

In this way, the BAZ activity is renewed which is confirmed by an increase in electro-conductivity according to R. Voll in the zones of BAPs. The patient feels better, and the normal regime of toxins' elimination from the organism's pathologic organs is reestablished.

This way of making diagnosis and improvement of the patient's general health condition is entirely unique, providing some quite unexpected effects, which is why it matches the criterion "a resourceful level".

As this solution, with its characteristic and highly specified features, is nowadays not well-known in the Russian Federation and abroad, it suits the requirements to be classified as "a novelty"; as it has been used many times, this actually means that it also corresponds to the requirement to be classified as "possible to be used more than once" [2].

The procedure suggested and normally carried out is as follows: during infectious diseases, because of traumatic factors or stressful conditions, what occurs is a frequency disturbance of corresponding BAZs, that is the formation of painful muscular thickenings placed alongside the spine, from the coccyx toward the head, which can be palpated according to the subjective painful sensations or with the aid of roentgenoscopy.

A painful muscular thickening occurs around a BAZ which consists of nerves' knots, blood vessels, and organism's connecting channels. BAZs are like certain "decreasing frequency transformers", which means that every one is adjusted to its own spectrum in which the transformation of electromagnetic energy into its usable kind for nourishing cells takes place. The energy obtained is distributed on a hormonal, physiologic and cellular level of the body.

There are seven basic BAZs alongside the spine [1]:

1. The first BAZ is called the "basic one", located in the coccyx, its center being in the zone of BAPs in the upper part of Venus hill of the patient's body;
2. The second BAZ is in the sacrum, located below the umbilicus, between the fourth and fifth lumbar vertebrae, its center being the zone of BAPs perpendicular to the spine on the front surface of the patient's body;
3. The third BAZ is located between the second and third lumbar vertebrae, its center being the zone of BAPs placed perpendicularly to the spine, on the front surface of the patient's body, 3 cm above the umbilicus;
4. The fourth BAZ is the "heart one", located between the fourth and fifth chest vertebrae, its center being the zone of the BAPs placed perpendicularly to the spine, on the patient's frontal surface, in the middle of the chest;

5. The fifth BAZ is the “throat one”, located between the sixth and seventh neck vertebrae, its center being in the zone of BAPs perpendicularly placed to the spine, on the patient body frontal surface, in the lower part of the larynx;
6. The sixth BAZ is located perpendicularly to the spine, its center being in the zone of BAPs which is placed in the lower part of the forehead, between the eyebrows;
7. The seventh BAZ is the “crown one”, located on the top of the head, its center being in the zone of BAP which is placed in the region of the crown of the head.

Virtually all BAPs of the acupuncture are very special points for receiving electromagnetic energy. It is well known that food gives man only from 10 to 20% of the energy necessary to him. The rest of the food needed man gets on a remote level, with the aid of extremely clean electromagnetic energy, mostly through so-called BAZs. So, basic role is played by BAPs and connected BAZs. Together, their only purpose is not to receive and distribute the environmental electromagnetic energy which they transform into nutrients for the organism cells, but they also take care of eliminating the processed products from the cells. Together BAPs + BAZs are basic zones for the energy exchange. Their disturbance leads to the pathology in relevant organs, to the formation of painful muscular thickenings of BAZs. The connection of BAZs and BAPs with the organs closely related to them is maintained through the organism's energy channels. This has been scientifically proven with marked atoms. A BAP has the role of an indicator for a BAZ's activity condition, that is, for its tuning to its own characteristic resonant frequency.

The existence of embryo-genetic and in the evolutionary process of mankind identified informational-functional mutual connections between special BAZs and BAPs of the skin with the internal organs and tissue systems, allows us to indirectly assess their condition, as well as the condition of the passing biochemical and other processes taking place in them, with electro-acupuncture. According to R. Voll's works, “normal” data on BAPs of the skin are 50-60 provisional units, which correspond to the electro-conductivity of the skin BAPs no smaller than 15  $\mu$ A.

What is of utmost importance is the right choice of minerals coming into resonance with the patient bio-field. Minerals have their characteristic vibrations and electrical fields. Nowadays there are objective tests for the best mineral selection. It is on their application that the method of electro-acupunctural diagnosis, suggested by R. Voll, so widely used in lithotherapy, is based. While acting on BAP three kinds of reactions have been noticed, all three of them causing a positive effect in the process of making diagnosis and ensuring the improvement of the patient condition [2]:

1. Local change – of stone color, an increased blood flow, temperature, electrical potential, and the resistance of a swollen place;
2. Sectional reaction – organism's reflexive sectional answer to the stimulation of the BAZ, which is manifested as improvement of conductivity in nerves, recovery of the muscular biopotential amplitude, disappearance of negative asymmetries of skin temperature and electrical resistance of the skin;
3. Overall generalization – inclusion of regulatory integral brain centers, ensuring coordination of the changes in various functional systems of organism; this is confirmed by the EEG data, as well as by the change in the organism's overall vegetative tone, excretion and motor functions of stomach, and endocrine-hormonal system.

Painful muscular thickenings are detected in the second BAZ by palpating. The activity of the BAP in the related zone is measured as 8  $\mu$ A. This testifies to the change of the frequency adjusting within the BAZ in question. In the zone of BAP corresponding to the center of the second BAZ, one cubic mineral is placed, for example a ruby weighing 20 to 50 grams (its weight has been determined experimentally). The mineral is then fastened with a sticking plaster for a time period of 20-30 minutes, depending on how great the disturbance of the second BAZ is. After the removal of the ruby, which has now become blurry, it is stated that vibratory adjustment has taken place.

What is applied after the mineral has been taken away is the massage of the painful muscular thickening of the second BAZ until the painful syndrome is lost. This is done in the following way: gentle pressure and removal are performed with a forefinger and a middle finger, on both sides of the BAZ, close to the spine, but without touching any vertebrae or discs. The fingers pressure now gets gradually stronger. The same movements

are continually performed, away from the spine, at first to the right, then to the left. After that, what is performed with a forefinger and a middle finger is the massage of the sections of the BAZ of the muscular tissue very close to the spine. The massage is carried out for all painful thickenings, formed along the whole spine, until their full resorption is achieved.

Frequency adjustment of the second BAZ with the corresponding frequency of the mineral placed on it requires certain time, depending on the degree of illness. In this way the bio-energy of the BAZ in question is increased. Making diagnosis and treatment is done through 5 to 20 sessions, while the electro-conductivity of the skin in BAPs of the zones will not be less than 15  $\mu$ A according to the R. Voll's method.

The loss of the first BAZ balance leads to the lassitude and depression; the loss of the second BAZ balance leads to the occurrence of diabetes, disorders of kidneys and urinary tract, or impotency; the loss of the third BAZ balance leads to disorders of stomach, duodenum, gallbladder, liver, and intestines; the loss of the fourth BAZ balance leads to the disorders of heart, lungs, and thymus gland; the loss of the fifth BAZ balance leads to disorders of thyroid gland, parathyroid gland, and the back of the head part of the spine marrow; the sixth BAZ regulates intellectual faculties, yogic thinking; the loss of the seventh BAZ balance leads to neuroses, depression, and epilepsy.

### 3. Conclusion

The proposed diagnosis and treating of pathological conditions of the organism lead to a qualitative improvement in many various illnesses. The method itself is non-invasive, there are no side effects, and can be carried out ambulatory. It is necessary to clean the crystals used for medical purposes from time to time, and then to activate them again by exposure to the sunlight.

Owing to its discovery and application in recovery of informational-functional mutual connections of BAPs and BAZs of the skin with the internal organs and tissue systems, it is possible to determine their functional condition, which is how typical functional diagnostics is carried out.

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# HARMONIZATION OF HUMAN BODY SYSTEM BY HARMONIZED EM RADIATION WHICH EXCITED LONGITUDINAL MECHANICAL WAVES $\lambda \leq 2m$ IN BIO-MOLECULES

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**Abstract.** The opto-magnetic method [1] is successful applicable to skin properties determination and description. We applied method on “bio-resonant massager”, device produced and applied to bio-medical purposes by Rudolf Vojnić-Tunić, specially adapted Tesla’s coil, working with 4 W power and impetus on frequency in range kHz. How works special camera and software of opto-magnetic device, we demonstrated on example of young man with skin problems, before and after application of Tesla’s coil massager. In these circumstances positive influence of harmonized electro-magnetic radiation in frequent band 880 Hz-125 MHz appears as source of longitudinal low energy mechanical waves in bio-molecules with  $\lambda \leq 2m$ , or wave length equal and shorter than human body length. Belong to holistic concept in medicine, it assume fact that human body works as system which presumption for function are harmonization of all subsystem into human body system. According to our previous theoretical investigation [2] we concluded that mechanism of influence to bio-molecules presents non-linear process known as maser effect.

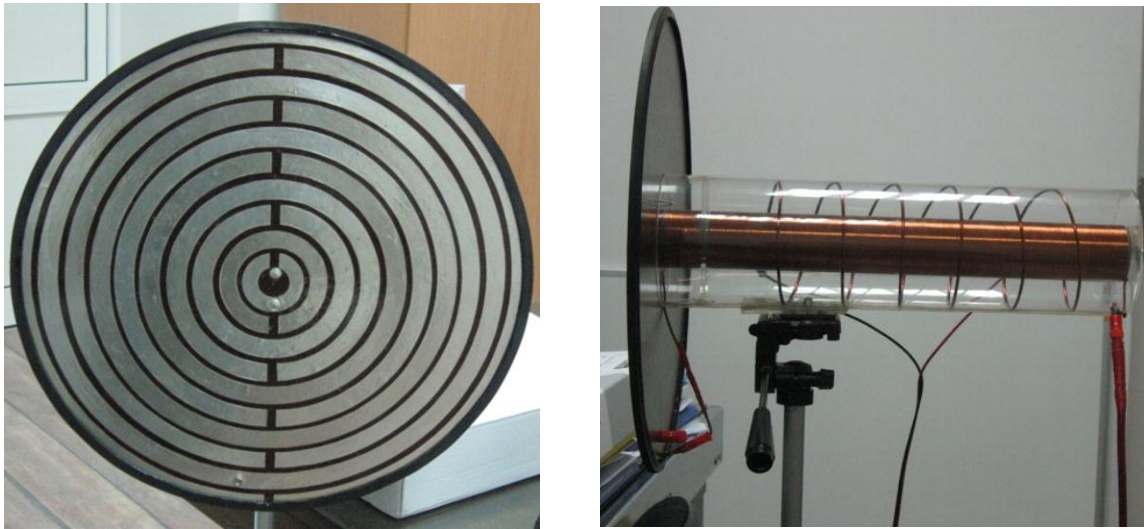
**Keywords:** *opto-magnetic method, Tesla’s coil emission, holistic approaches & techniques, harmonization, longitudinal mechanical waves in bio-molecules.*

## 1. Introduction

In opto-magnetic method for investigation of matter properties from light- matter interaction [1], we use original constructed camera and digital images in four spectral ranges. Digital image we convert in RGB spectral channels. Special algorithm extracts over 100 opto-magnetic spectral characteristic, from simplest data of amplitude and wavelength of maximum to very complex data in spectral addition, subtraction and convolutions. For purposes of estimation skin properties we applied a type of Raman spectra. For physiological white diffuse light, we use B channel and from spectrum reflected from sample we subtract B spectrum of light which exposed sample. This spectrum we denoted as WB(S-O). Spectrum amplitude is given as relative value – ratio of number pixel at selected wavelength position vs. summary number pixel in whole image.

Constructor Mr. Vojnić-Tunić possess documentation on application to patients with different medical problematic clinic status, which are clinically confirmed as improvement to the healthy position after exposition to harmonized electromagnetic waves from Tesla’s coil. Emission antenna, 62 cm in diameter (Fig. 1), is approximately at distance 1–1.5 m from the body. Exposition to radiation is 3–4 minutes. Tesla’s coil activated by tree frequency from intervals 1 kHz, 2 kHz and 3 kHz, produces harmonics up to 125 MHz, with summary power up to 4 W/m<sup>2</sup>.

We can confirm that subjective sense by exposition is very nice. What we can add after application of opto-magnetic method, follows in the next section.



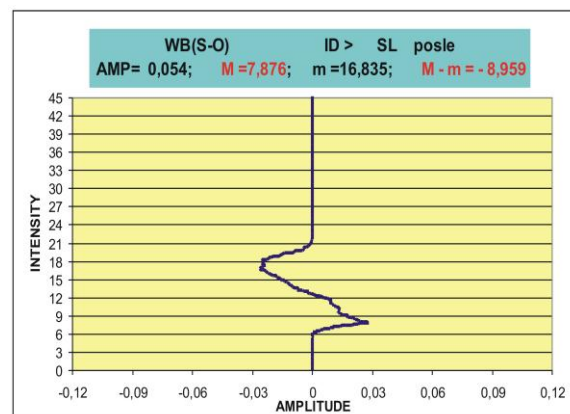
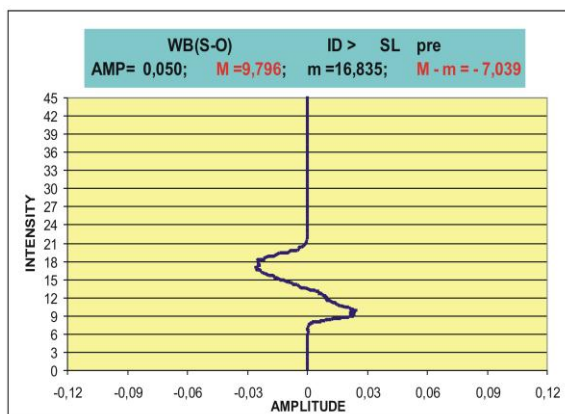
**Figure 1.** Emission antenna: left view in front, right view from side, with Tesla's coil.

## 2. Opto-Magnetic Test of Harmonized Tesla's Coil Application

Tesla's coil device we applied to young man with inflammation on face, as light recognized problem (Fig. 2).



**Figure 2.** Application to young man face with inflammation: left image before and right image after exposition to Tesla's coil emission.

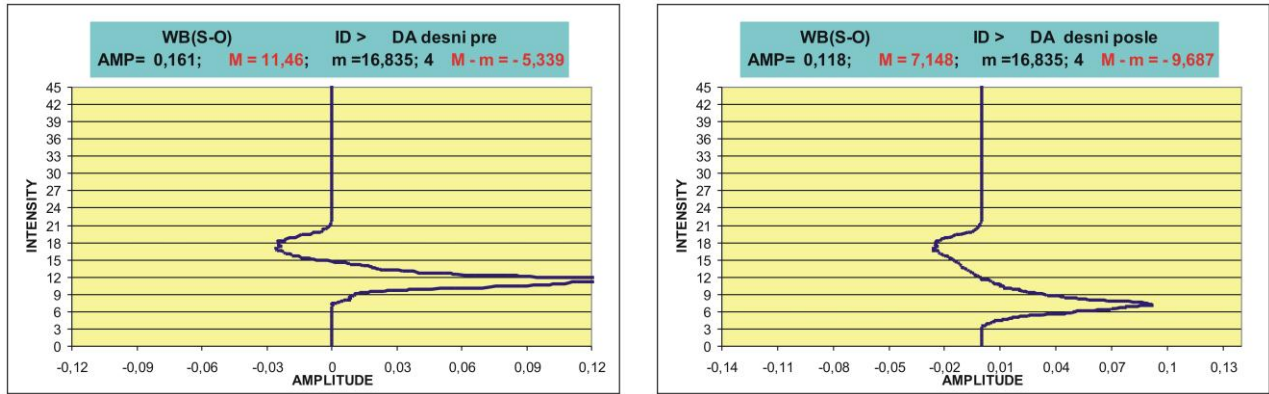


**Figure 3.** Spectral diagrams presented before (left) and after exposition (right); intensity scale is arbitrary, translated into interval 0–100. For healthy skin with small problems, position of lower maximum (to right) is present on booth diagrams, and difference  $M - m < 0$ . But, more healthy is those which number  $M$  is smaller: here on the right,  $M = 7.876$ ; for status before, it is  $M = 9.796$ ; for tumour and cancers it is  $M - m > 0$ .

Diagrams present fact that skin status after (only one) exposition to Tesla's coil is better than before. Next example is also young man, bat with pustule on face skin, Figs. 4 and 5.



**Figure 4.** Skin with pustule on right visage: left before and right after exposition to Tesla's coil emission.



**Figure 5.** Spectral diagrams are presented before (left), and after exposition (right). Here is time of exposition 2 times of 4 minutes. As face is significantly different in second image, spectral diagram shows so the same change. In Fig. 3 difference in position of reflected maximum is approximately 2 arbitrary units, in Fig. 5 it is equal 4, in other words twice a time of exposition.

### 3. Possible Mechanism of Interaction EM Emission with Tissue

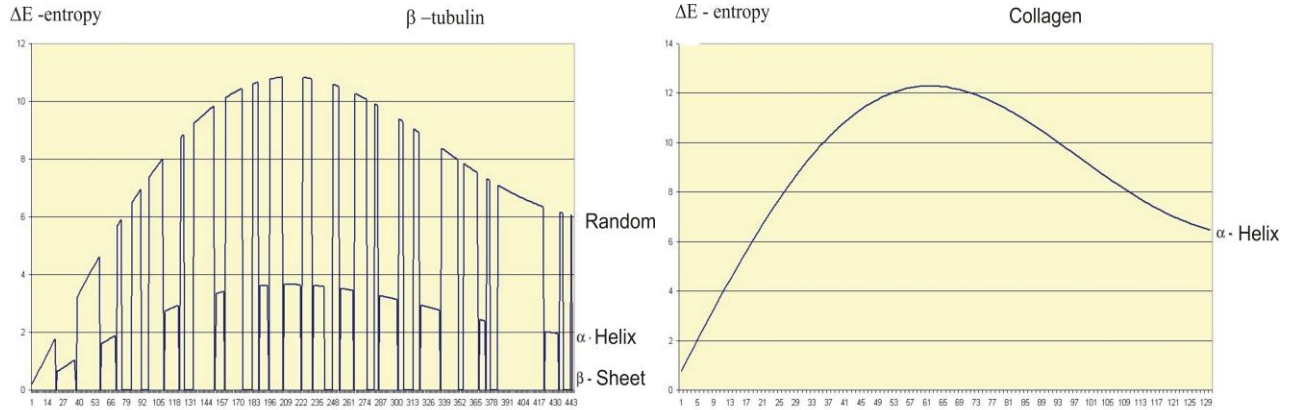
Tissue contents a lot of peptide chains ordered in space in three connected structures – random chain, beta sheet and helix. Collagen chains are mostly parallel to skin surface. Non-homogeneous electromagnetic emission (EME) of Tesla's coil is falling to peptide chains, system with small dispersion and small interaction with EME. Mean power absorbed by chain can be obtained as [3]:

$$\langle \langle N \rangle \rangle = \frac{4\pi^2 e^2}{mT} \sum_{n=0}^{\infty} n [ |C_{n-1}(a)|^2 - |C_{n+1}(a)|^2 ] \cdot f_{n\omega_0} ; \vec{E}(r,t) = C(x,y) \cdot f(\omega \cdot t - k \cdot z)$$

where  $C_{n\pm 1}(a) = C(x,y)$  are amplitudes of EME,  $m$  is mass, and  $T$  is time interval. It follows that external EME spectra that are not homogenous can insert energy in oscillating peptide chain. They can be positive or negative, i.e. different peptide plane in chain can absorb or emit energy, what is known as maser effect. If periode of wave is  $2\pi/\Omega$  one obtains

$$\langle\langle N \rangle\rangle = -\sum \frac{e^2 \cdot \Delta\Omega}{m(\Delta\omega^2 + \Delta\Omega)^2} - \sum \frac{ie^2 \cdot \Delta\omega}{m(\Delta\omega^2 + \Delta\Omega)^2}; (k\Omega + n\omega_0)^2 - \omega_0^2 = \Delta\omega; \lambda(k\Omega + n\omega_0) = \Delta\Omega$$

which confirms hypothesis on maser effect, for  $\Delta\Omega > 0$  and  $n > 0$ . Spectrum can be non homogenous in intensity, frequency and phase of EME. It presents just a possible process of homogenization in tissue, like those described here.



**Figure 6.** Distribution of entropy in peptide chains of beta tubulin and collagen. Random chain regulates heat change in peptide chain [4].

Absorption of EME energy in peptide chain manifests as longitudinal mechanical wave in chain, which speed is maximal  $c = 1800$  m/s. By this speed wavelengths for the lowest frequency are 2 m, 1.2 m and 0.8 m, and for the higher frequency 14.4  $\mu\text{m}$ . Water clusters in tissue absorbs at 4.3  $\mu\text{m}$ , i.e. Tesla's coil in these work regime is not water-heating. Critical EME frequencies start near 400 MHz.

#### 4. Conclusion

Opto- magnetic test confirmed harmonization in tissue by EM emission of Tesla's coil, realisation of eng. R. Vojnić-Tunić. Possible mechanism of interaction are maser effect and conversion of transversal EME into longitudinal mechanical wave. It can be characterized as typical holistic approaches and technique applied to human body for purpose of tissue harmonization. Device is fully beneficent, as might be concluded according to the above data.

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## MADU MAGNETOTHERAPY

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**Abstract.** The Earth magnetism belongs to one of four natural central forces that have made significant contribution to survival and health preservation of all the life. The subtle influence of permanent magnetic field increases and improves metabolic processes and thus stimulates regenerative processes. The ancient knowledge (as reflexology, acupuncture...) is very effectively used as the basis of opening gap junction channels – prainformative network in the organisms. The knowledge accumulated through centuries of human history is explained and scientifically approved in 1980s. The substitutional therapy of MADU new medical technology is based on application of two inventions acclaimed as patents and registered as medical devices. The MADU therapy is acknowledged as new health technology in 2007 by Ministry of Health, Republic of Serbia (No. 022-04-19/2006-07), and it includes the application of Trap for shell fragments (first patent) for displacement and evacuation of foreign ferrous remaining fragments, as well as MADU strip (second patent) with wide application field. The confirmed effects, based on experience in medical practice up to now, are: (i) Faster and more complete development of callus in bone fracture; (ii) Delivery of medicaments with ferromagnetic and paramagnetic properties; (iii) Non-invasive displacement and evacuation of ferrous foreign bodies; (iv) Preventive and curative of vein's system disorders; (v) Immobilization of thrombus for its faster rechanellization; (vi) More lavish oxygen delivery by blood into the areas of reduced micro-circulation; (vii) Reduced swelling in the area under the influence of directed deep magnetic field; (viii) Improved viscosity in the arterial and vein blood vessels; and (ix) Faster and improved regeneration of various tissues, especially cartilage. This was more thoroughly studied and presented in the PhD study about magnetic fields, including MADU (D. Djordjević, MD PhD, 2007/2008). The positive results are obtained in treating disorders of osteoarticular system (ISCD-10, M 00-M 99), as well as in treating disorders of peripheral vasscular system (ISCD-10, I 70-I 99). Both of these groups of common diseases, the most sucessfully treated, have huge social-economic and medical relevancy. Also, processes of cartilage regeneration, angiogenesis and neuroneogenesis are of great significance for the mankind. The MADU therapy could be applied as additional therapy together with contemporary medical procedures. Having in mind the experience gathered through application of MADU and its effects on local and global level, indicational field is getting more and more wider while contraindications and precautions are narrowing down. Thus, this type of magnetotherapy belongs to the future.

**Keywords:** MADU magnetotherapy, quantum-informational medicine, gap junction channels magneto-reflexology, ferrous foreign bodies displacements, bone and cartilage regeneration, periferal vasscular regeneration, reduced pain and swelling, improved tissue oxygenation and nourishment.

## 1. Introduction

Quantum-informational medicine (QIM) is a medical discipline promoting non-invasive diagnostics and therapy based on biophysical drivers of positive, healing changes in the body which take place at a quantum, i.e. energy level. The human organism does not function solely on the basis of biological and biochemical cellular reactions, but humans are also electromagnetic beings.

The efficiency of magnetic therapy is supposed beneficial because the Earth is rapidly losing natural magnetic field (important also as a magnetic shield for extraterrestrial charged particles) for last 100 years, and all beings are „hungry“ for the natural magnetic field. The Earth magnetism belongs to one of four natural central forces that have made significant contribution on the survival and on the health preservation of all the life on Earth.

Traditional Medicine of various cultures deals with the preservation and balancing of energy of living beings. The preservation of energy level of every living being is followed by saving the physical level and every kind of energy therapy is close to our understanding of preventive medicine. The documents of traditional medicine and the application of subtle energies available today, some of which are older than 4000 years, confirm use of acupuncture, chromotherapy, sonotherapy, aromatherapy, bioenergetic therapy [1], magnetic therapy and others [2].

MADU Magnetic Therapy is based on application of permanent (non-oscillatory) unipolar (of the same pole) oriented magnetic field which has the same quality as the Earth's magnetic field.

The substitutional therapy of MADU new medical technology is based on the application of two inventions acclaimed as patents and registered as medical devices [3,4]. The MADU therapy is acknowledged as the new health technology in 2007 by The Ministry of Health, Republic of Serbia (No. 022-04-19/2006-07) [5] and it includes the application of Trap for shell fragments (awarded WIPO UN 1996 Woman World Inventor of the Year) for displacement and evacuation of foreign ferrous remaining fragments [3] (initially used to treat wounded people with foreign ferrous fragments in the body and to displace and evacuate shell fragments, and nowadays it is very useful for treating various injuries obtained at work, in sport, traffic accidents, households, even iatrogenic injuries with accidentally remained metal ferrous foreign bodies in human organism [6-18]). The second medical device (second patent) is MADU strip with the wide application field [4] (with wide medical indication areas due to basic principles and mechanisms realized on local and global levels in the organism [19-25]). WIPO UN PCT research (2000) qualifies MADU STRIP as: Novelty (N), Inventive step (IS) and Industrial applicability (IA).

The confirmed indications, based on the experience in the medical practice up till now, are: Faster and more complete development of callus in bone fracture; Delivery of medicaments with ferromagnetic and paramagnetic properties; Non-invasive displacement and evacuation of ferrous foreign bodies; Preventive and curative with vein deformations; Immobilization of thrombus for its faster rechannelisation; More lavish oxygen delivery by blood into the areas of reduced micro-circulation; Reduced swelling in the area under the influence of directed deep magnetic field; Improved viscosity in the arterial and vein blood vessels; Faster and improved regeneration of various tissues, especially cartilage.

The subtle influence of the permanent magnetic field provides the quantum-energetic level which increases and improves the biological processes in the organism [26] and as the final result it generates and stimulates regenerative processes. Out of them, processes of cartilage regeneration [27-32], angiogenesis [33-44], and neurogenesis [45-47] are of great significance for the mankind.

The ancient knowledge (as reflexology, acupuncture, ...) is very effectively used as the base of opening gap junction channels – plexiform network in the organisms [47-49]. The knowledge accumulated through the centuries [47,50-54] of the human history is explained and scientifically approved in 1980s. It was more thoroughly studied and presented at the PhD study about magnetic fields, including MADU [55].

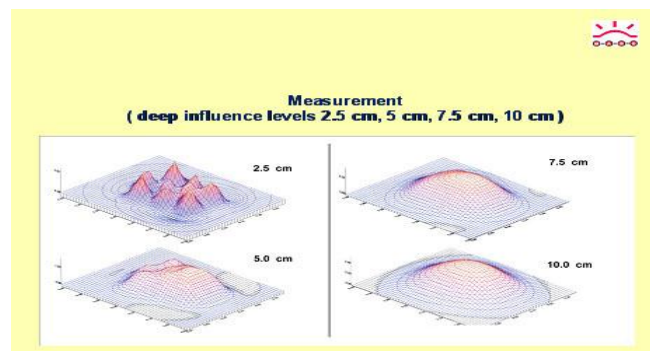
The positive results are obtained in treating disorders of the peripheral vascular system (ISCVD-10, I 70-I 99) [33-44] as well as of osteoarticular system (ISCVD-10, M 00-M 99) [56-60]. Both of these groups of common diseases, the most successfully treated, have huge social-economic and medical relevancy.

In all these cases, the MADU therapy could be applied as the additional therapy together with the contemporary medical procedures. Having in mind the experience gathered up to now, through the application of

MADU and its effects on the local and global level [19-25], the indicational field is getting more and more wider while the contraindications and the precautions are narrowing down. Thus, this type of magnetotherapy belongs to the future.

## 2. Method

MAGnetic Deep Unipolar oriented field MADU Method is new healing technology, clinically examined and registered, ecologically *clear*, environmentally *friendly*, non-invasive, painless, applicable in clinical, outpatient and field conditions. It opens new possibilities: shortened time of healing of soft and hard tissue and smaller scars; faster and more efficient rehabilitation process; achieving efficient medical protection and better quality of life with both young and old; increase of fitness level of sportsmen.



**Figure 1.** MADU magnetic field at various depths.

MADU (MAGnetic Deep Unipolar oriented field) methods include the application of two patented and acclaimed medical devices: Trap for shell fragments & MADU strips. Both devices have magnetic induction 10 to 15 times weaker (measured by Portable Proton Magneto-meter Model G-856A, EG&G Geometrics, USA, precision 50 nT) than the approved levels prescribed by the WHO UN [61]. The both applications are used as a new medical treatment which belongs to non-invasive, ecologically clear and environmentally friendly, subtle methods.

The magnetic devices retain the contact with the body for a period ranging from 24 hours to 2 or more years according to the patients' needs, determined on the basis of their clinical data. The MADU strips are applied on reflexogenic (acupuncture) zones and reflexogenic (acupuncture) points and oriented with the North pole faced towards the skin, for treating various disorders and diseases [50].

The application of MADU medical devices includes pre-treatment, prior to placing MADU, which includes local and global effects [19-25] in organism resulting in the dipole resettlement, anti-inflammatory, anti-swelling effects and increasing oxygenation which manifests in the stimulation of biochemical processes [62] in the body that stimulate the regenerative processes.

This magnetic field is created by magnetic MADU strips which consist of unipolar magnets embedded in an elastic strip. The strength of magnetic field created by MADU strips is about 90 mT, which is within limits approved by WHO (less than 2 T) [61]. Magnetic field created by those strips penetrates human body up to 55 cm with distribution presented in Fig. 1.

Those strips are placed on the surface of the skin above the diseased organ in order to achieve desired effect. The period of application of those strips, in case of joint disorders, was between six month and a year with most of our patients.

The MADU new medical method provides the conditions for the beginning of regenerative processes in various tissues under the influence of biophysical mechanisms of permanent oriented unipolar magnetic field MADU. The method provides: for metabolic conditions which will reduce acidity [62] of the area treated provide ingraduation  $\text{Ca}^{2+}$  ions in bones [62]; promotes dialogue and research among experienced professionals and then to jointly improve the treatment; enhances regenerative processes; and reduces pain. The most important achievement is the cartilage regenerative process [27-32,63].

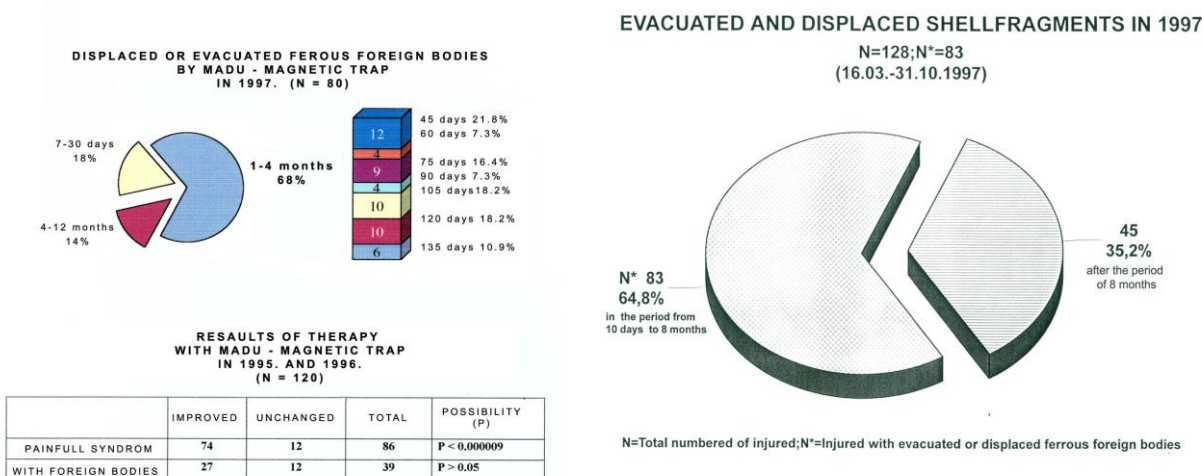
The curved flexible magnetic trap is primarily used for noninvasive displacement of ferrous foreign particles from human organism, Fig. 2. The application of the trap consists of placing the trap on patient's skin in cases of new or healed wound, when foreign body is located in an inoperable position or when causes health troubles by its presence. The trap is also stimulating at least one of the adjacent acupuncture points [6-18,64-69] in the area of

application, to achieve antidolorous and spasmolytic effects. By force of its magnetic field and gravitation the trap is gradually displacing ferrous foreign bodies along the anatomic structure (muscles, muscle sheaths, nerves, blood vessels and bones) until it reaches under skin or into that part of organism which is accessible for surgery but nearest possible to magnetic trap. Usually the time from setting the trap and achievement of result is from 5 to 40 days. The statistics of noninvasive displacement of ferrous foreign bodies and shell fragments is presented in Fig. 3.



**Figure 2.** Noninvasive displacement of ferrous foreign bodies from human organism (left and right).

The advantages of trap for foreign ferrous bodies are: displacement is gradual with minimum injury to adjacent anatomical structures; foreign ferrous bodies are brought under the skin or other more convenient place for surgical removal; both antidolorous and spasmolytic effects are achieved at the same time; with unhealed wounds foreign body escapes by the same way it entered; application is effective in hospital, ambulatory and field conditions; along as the trap is effective person bearing the trap is capable to perform usual activities. Also, the trap and the procedure do not request special power supplies; the trap and the procedure do not imperil life and health of a patient; under the influence of magnetic trap wounds are healing faster and due to improved microcirculation the convalescence time is shorter.



**Figure 3.** Statistics of noninvasive displacement of ferrous foreign bodies (left) and shell fragments (right).

### 3. Results

We have so far treated with MADU method 72 patients who had arterial disease of the extremities [55,70], cf. Fig. 4, and who would otherwise be candidates for surgery: 21 (29.17%) of them had diabetic angiopathy with gangrene, 51 (70.83%) had arterial disease which affected one of the major arteries of lower extremities and gangrene or necrosis of tissue (due to atherosclerosis 47 (65.28%) patients, nicotine abuse 3 (4.17%) patients, or jatrogenic cause 1 (1.39%) patient). The treatment consisted of non-invasive application of MADU method and MADU strips over the area of insufficient vascularization during period which lasted on average 22 months. Improvement in regeneration of tissue has been noticed in 38 (74.51%) of 51 patients who had arterial disease of lower extremities due to atherosclerosis or nicotine abuse. Such favourable results were, however, observed with only 7 (30.00%) of 21 patients who had diabetic angiopathy with gangrene.

The therapeutic effect achieved with studied patients was relief of pain due to analgetic properties of magnetic field; in some treated patients analgesia appeared as early as the first day of therapy.

The obtained results point out that application of MADU method may lead to improvement of tissue regeneration, and this therapeutic procedure may help a certain number of patients who have other contraindications for surgical intervention.

The successful results (65.70%) were achieved in patients who had been MADU treated for degenerative diseases various joints, Fig. 5.

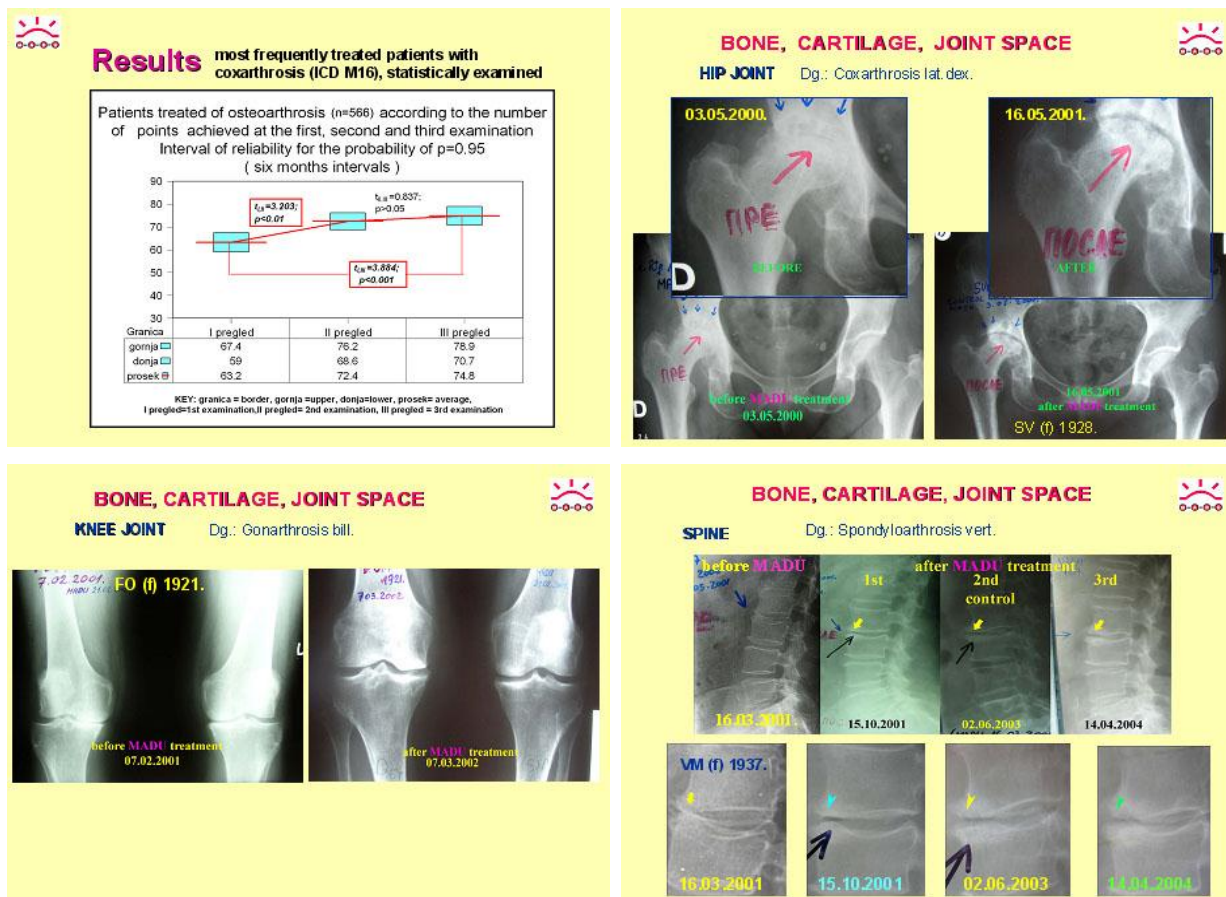
We have so far treated 1290 patients who suffered from degenerative joint disorders (648 had coxarthrosis and 642 had gonarthrosis) using this method. MADU magnetic strips were placed and fixed on the skin over diseased joints and therapeutic effects were being observed in six-month intervals. The assesment included both improvement in patients' symptoms (assessed by appropriate symptom scale) and radiography of diseased joints. Results achieved after one year of treatment were favorable. Overall, with 896 patients (69.46%) MADU treatment resulted not only in symptoms improving, but also in improved joint structure visible at joint radiographs with signs of regeneration of bone and cartilage [55,70] and enlargement of narrowed joint spaces.



**Figure 4.** Presentation of case studies of patients suffering from arterial disease of the extremities, treated by MADU therapy (left and right), who would otherwise be candidates for surgery.

Those effects were present both with patients who had coxarthrosis (452 of 648 patients, overall success rate 69.70%) and gonarthrosis (444 of 642 patients, success rate 69.16%). Condition of 238 patients (18.45%) remained unchanged, while with 156 (12.09%) disease progressed despite treatment. In the 5 years' control period, 12.50 % of patients treated against coxarthrosis got total hip prosthesis.

The successful results (65.70%) were achieved in patients who had been MADU treated for degenerative diseases of the spine as well as other joints.



**Figure 5.** Presentation of case studies of patients suffering from coxarthrosis, gonarthrosis, and spondyloarthrosis.

#### 4. Discussion

MADU principles and mechanisms are as follows [20-25,62,70-74]:

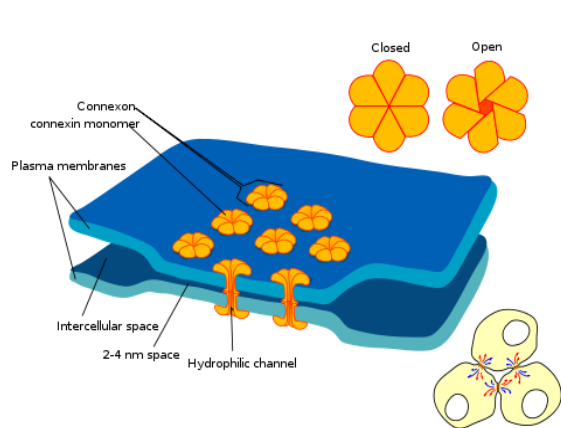
- biophysical effects at the cellular level (the impact on water and its cluster structure; ferromagnetic and paramagnetic substances; opening of ions channels);
- biochemical effects (change of membrane potentials; improvement of modulation of the potential of the K/Na (potassium/sodium) pump; synchronization of endogenous oscillations of Ca ions; enzymes activation, especially of metalloenzymes; ATP production improvement);
- bioelectric effects - bioconductivity increase (the cell's membrane is equivalent to electrical battery due to diffusible and other ions concentration).
- physiological effects - magnetized water is important for enhancing diffusion in cartilage tissue (in synovial liquid of joints, rich of proteoglycans responsible for high water intake, with hydrated cartilage tissue taking 1000 times the space of dehydrated cartilage tissue).

Therapeutic effects are as follows:

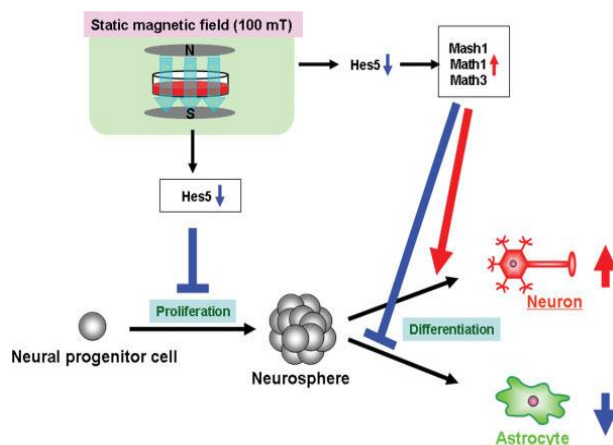
- reduced pain (analgesic, morphinemimetic effects);
- reduced inflammation (anti-inflammation and immunostimulative effects);
- reduced swelling (antiedematous effect, dipoles settlement);
- provided tissues oxygenation and nourishment (vasodilatation, spasmolytic effect, microcirculation improved, metabolism activated, acidity reduced).

The ancient knowledge (as reflexology, acupuncture, ...) is very effectively used as the base of opening of the gap junction channels – prainformative network in the organisms [47-49], Fig. 6.

Prospects for neuroneogenesis by magnetotherapy might also be expected, Fig. 7.



**Figure 6.** Gap junction channels, prainformative network modulated by magnetotherapy.



**Figure 7.** Prospects for neuroneogenesis by magnetotherapy might also be expected.

## 5. Conclusion

Our results allow us to conclude, that the treatment of degenerative rheumatic disorders with MADU is effective, resulting in improvement of conditions with majority of treated patients. Effects achieved with this form for treatment include subjective improvement, regeneration of bone in question, and regeneration of the affected cartilage.

This method is environment-friendly and non-invasive complementary medical procedure. No side effects which might be related to MADU therapy have been noticed.

Precautions should be applied in case of: pregnancy, “pacemaker” (because of the batteries), and malignant diseases. Mild increase in TA can appear with 3% of patients with hypertension during the first three days of application.

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## BONE FRACTURE TREATMENT BY MADU MAGNETOTHERAPY

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**Abstract.** The human organism does not function solely on the basis of biological and biochemical cellular reactions but humans are also electromagnetic beings. In the cases of very slow healing, the complicated fractures were treated by MADU method with aim to improve the healing of the bone. In the last century, the lowering of natural Earth's magnetic field was detected, therefore the additional MADU field is useful to promote and stimulate the calcium ion impact in bone. The bone tissue stands out for its especially rich vascularization. The gap junction channels (GJCs) net are special informational system in bones, which connect not only osteocytes but also all smooth muscle cells in blood vessels of lavishly vascularized bone tissue. The molecular mechanism of electromagnetic field (EMF) and magnetic field (MF) affect metabolism of bone cells in the course of fields' interference with signal transduction processes, included in hormonal and transmitter, particularly, cytokine regulation of osteoblast function, especially their proliferation and differentiation. The MADU inhibition of IL-1 and TNF- $\alpha$  production disable multiplication of fibroblasts activated by them from a surrounding area and thereby the replenishment of a defect. More rapid maturation of connective tissue is achieved by MADU, so that increase in osteoblasts activity and  $\text{Ca}^{2+}$  metabolism result in increase of minerals deposited into a bone matrix, not only at the surface, but also within a bone depth. In this way, through the use of MADU, restitution of perturbed normal control of MMP activation is supported by their bonds with TIMP-1 and TIMP-2 across IL-6 and *transforming growth factor beta* (TGF-  $\beta$ ) which augment them, as well as across plasminogen using *plasminogen activator inhibitor-1* (PAI-1). If misbalance occurs to the advantage of activator then stromelysin as enzyme may act destructively on its own substrates, and within the process activate latent collagenases and also decompose protein's core of PG and thus plasmin can affect plasminogen and activate latent MMP. TIMP-1 and TIMP-2 as well as PAI-1 may withhold cartilage deterioration together with synthesis increase of PG, collagen, non-collagen proteins and matrix components, whereas other cytokines, first of all, growth factors such as *insulin-like growth factor-1* (IGF-1), TGF-  $\beta$ , and *basic fibroblast growth factor* (bFGF), may secure cartilage repair process, including *restitutio ad integrum*. It is interesting that relatively short-term load may stimulate matrix synthesis, whereas mechanic static load as well as prolonged cyclic load inhibits synthesis of proteins and PG. The study spanning the period from 2002 to 2011 performed on 174 patients, statistically examined 53 patients, male 26 and female 27, with the average age of 50.90 years. The time spent from when injury occurred until the beginning of MADU treatment was 6.82 years. The healing period with the formation of calus was from 2 to 8 months. The most frequent injuries were fracture of vertebra, fracture of femur, fracture of ankle and foot and fracture of humerus.

**Keywords:** magnetic field, MADU method, fracture healing, bone regeneration

## 1. Introduction

Realization that the world around us is of quantum nature is one of the greatest achievements of modern science.

The innovator Dušanka Mandić, MD PhD, Women inventor of the year 1996 WIPO-UN, is creator of two medical devices and of the new medical technology. The second patent (1998), medical device (2003) MADU strip [1,2], has wide medical indication areas due to basic principles and mechanisms realized on local and global levels in organism.

Magnetic deep unipolar oriented field MADU method [2-4] is new healing treatment, clinically examined and registered, ecologically safe, non-invasive, painless, applicable in hospitals, outpatients and field conditions [5-7]. It opens new possibilities: shortened time of healing of soft and hard tissue and smaller scars; faster and more efficient rehabilitation process; efficient medical protection and better quality of life with both young and old; increase of fitness level of sportsmen.

In the last century the lowering of natural Earth's magnetic field was detected, therefore the additional MADU field is useful to promote and stimulate the calcium ion impact in bone. The bone tissue stands out for its especially rich vascularization. The gap junction channels (GJCs) net is special informational system [8-11] in bones, which connect not only osteocytes but also all smooth muscle cells [12-30] in blood vessels of lavishly vascularized bone tissue

The confirmed indications, based on the experience in the medical practice up till now [29-33], are: faster and more complete development of callus in bone fracture; more lavish oxygen delivery by blood into the areas of reduced micro-circulation; reduced swelling in the area under the influence of directed deep magnetic field; improved viscosity in the arterial and vein blood vessels; faster and improved regeneration of various tissues, especially cartilage [34-40] and bones [31,41-44].

The subtle influence of permanent magnetic field provides the quantum-energetic level which increases and improves the biological processes in the organism [45-51], and finally generates and stimulates regenerative processes. The processes of cartilage regeneration, angiogenesis [52-64] and neuroneogenesis [50] are of the great significance for the mankind.

## 2. Method



**Figure 1.** MADU application.

MADU medical treatment belongs to non-invasive, ecologically clear and environment friendly, subtle methods. MADU medical method for tissue regeneration is based on utilization of magnetic deep unipolar oriented field which is created by magnetic MADU strips [1,2,5-7]. This method assumes the application of number of different medical devices. The duration of treatment, before the application of MADU strips, is about 2 to 3 hours. MADU strips have magnetic induction 10 to 15 times weaker (measured by Portable Proton Magneto-meter Model G-856A, EG&G Geometrics, USA, of 50 nT precision) than the approved magnetic field levels prescribed by the WHO-UN [65].

The MADU magnetic devices retain the contact with the body for a period ranging from 24 hours to 2 or more years according to the patients' needs, determined on the basis of their clinical data. The MADU strips are applied on reflexogenic (acupuncture) zones [66-69] and reflexogenic (acupuncture) points and oriented with the North pole faced towards the skin, for treating various disorders and diseases.

This method provides: metabolic conditions that reduce acidity of the treated area promoting influx of  $\text{Ca}^{2+}$  ions in bones; dialogue and research among experienced professionals jointly improving [45-51] the treatment; enhancement of regenerative processes [29-33]; and reduction of pain [70].

### 3. Results

The MADU therapy could be applied as the additional therapy together with the contemporary medical procedures. In the cases of very slow healing, the complicated fractures were treated by MADU method with aim to improve the healing of the bone, Fig 2. The study spanning the period from 2002 to 2011 performed on 174 patients, statistically examined 53 patients, male 26 and female 27, with the average age of 50.90 years. The average age of male patients was 48.53 years (from 7 years old to 86 years). The average age of female patients was 53.18 years (from 11 years old to 78 years). The average age for both male and female patients was 50.90 years (MOD = 52 years, MED for female = 59 years, MED for male = 52 years). The 18.87% of patients began MADU treatment within 12 months after the injury. The average time spent from when injury occurred until the beginning of MADU treatment was 6.82 years. The healing period with the formation of calus was from 2 to 8 months. According to location and frequency of fractures, we derived the following: the most frequent injuries were fractures of vertebra [71-73], fractures of femur, fractures of ankle and foot, and fractures of humerus and radius.



**Figure 2.** Presentation of case studies of patients suffering from slow healing fracture, enhanced by MADU therapy (left and right).

### 4. Discussion

Bone tissue stands out for its especially rich vascularization. The molecular mechanism of EMF and MF activities consists of possible effects on bone cells metabolism in the course of fields' interference with signal transduction processes, included in hormonal and transmitter, particularly, cytokine regulation of osteoblast function, especially their proliferation and differentiation [74].

The MADU inhibition of IL-1 and TNF- $\alpha$  production disable multiplication of fibroblasts activated by them from a surrounding area and thereby the replenishment of a defect. More rapid maturation of connective tissue is achieved by the MADU, so that increase in osteoblasts activity and Ca<sup>2+</sup> metabolism results in increase of minerals deposited into a bone matrix. Thus, the influence of MADU is not only at the surface, but also within a bone depth.

In this way, through the use of MADU, restitution of perturbed normal control of MMP activation is supported by their bonds with TIMP-1 and TIMP-2 across IL-6 and *transforming growth factor beta* (TGF-  $\beta$ ) which augment them, as well as across plasminogen using *plasminogen activator inhibitor-1* (PAI-1) [75-77]. If misbalance occurs to the advantage of activator, than stromelysin as enzyme may act destructively on its own substrates and within the process activate latent collagenases but also decompose protein's core of PG and thus plasmin can affect plasminogen and activate latent MMP [75]. TIMP-1 and TIMP-2 as well as PAI-1 may withhold cartilage deterioration together with synthesis increase of PG, collagen, non-collagen proteins and matrix components, whereas other cytokines, first of all, growth factors such as *insulin-like growth factor-1* (IGF-

1), TGF-  $\beta$ , and *basic fibroblast growth factor* (bFGF), may secure cartilage reparation process, including *restitutio ad integrum* [76]. It is interesting that relatively short-term load may stimulate matrix synthesis, whereas mechanic static load as well as prolonged cyclic load inhibits synthesis of proteins and PG [75,77].

## 5. Conclusion

Magnetic Deep Unipolar oriented field applied as MADU strip with the guaranteed optimal magnetic field intensity lasting for 10 years, is providing long lasting protective activity in the area of the diseased poor tissue nutrition. The initiation of regenerative processes is performed due to known pathophysiology mechanisms which change acid reaction into alkaline [45,47-49,51,54,78] providing regenerative processes.

MADU environment friendly medical device as a noninvasive method is recommended as supplementary, with full respect of all the modern and scientific therapeutic methods.

The side effects in the case of patients with hypertension in the first three days of application were noticed in 3% of patients, while other harmful effects were not noticed. Precautions are in the case of: pregnancy, "pacemaker" (because MADU strip can influence the batteries), and malignant diseases until proven otherwise.

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## OSTEONEOGENESIS BY MADU MAGNETOTHERAPY

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**Abstract.** The possibilities of regeneration of bone tissue through the use of static magnetic field (SMF) are great, especially when the SMF is oriented to North (N) magnetic pole face turned towards the skin. We used MADU strips (70-90 mT) and magnetophore (70-90 mT) for treatment of patients with bone fractures. The 55 patients with bone fractures were statistically examined. The average of fractures was 1.18 per person. The most frequent were the fractures of femur, humerus, spine vertebra and ankle. The average age of patients was 50.80 years. In the period from 2 to 8 months fractures were healed in 69.18% (t-test,  $p < 0.001$ ). The healing result depends of the time spent from fracture to MADU treatment, as it varied from few days to more then 3 years. MADU probably acts by inhibition of proinflammatory and fibrous cytokines production, interleukin 1 (IL-1) and tumor necrosis factor (TNF) from osteoblasts, and cells similar to osteoblasts, that increase metabolic and thereby synthetic activity of healthy osteoblasts, and damaged cells' restitution as well as other types of cells, across stimulation of interleukin 2 (IL-2) production and other cytokines from normal human T-lymphocyte. Thereby osteoblasts across protein molecules signalize osteoclasts activity decrease, which leads to predomination of action factors which inhibit bone resorption over factors of bone resorption stimulation. From an aspect of SMF influence, it is important to point out that biological activity of OPG-L/ODF [osteoprotegerin ligand (OPG-L)/osteoclast differentiation factor (ODF)] is normally neutralized by binding to osteoprotegerin [OPG]/OCIF (osteoclastogenesis inhibitory factor), a member of TNF-receptor super-family, that is also secreted by osteoblast-line cells. It is possible to increase synthesis of OPG-L/ODF and OPG/OCIF by raising metabolic activity of osteoblasts by N pole of SMF, and acceleration in chemical reaction occurring between these two proteins with addition of energy, as well as by faster neutralization of their biological activity. Likewise, additional influence on OPG/OCIF, a member of TNF-receptor super-family, is possible by inhibition of synthesis and TNF production by N-pole of SMF. In this way, no matter how it affects these proteins, N-pole of SMF impedes binding of OPG-L/ODF [osteoclast differentiation and activation receptor (ODAR)/receptor activator of NF-kappa B (RANK)], to its receptor on osteoclasts, which made their biological activity impossible. The mechanism of the possible effects of MF/EMF (magnetic field/ electromagnetic field) is based on the influence of these fields on: (i)  $\text{Ca}^{2+}$  ion flux; (ii) nitric oxide synthase (NOS); (iii) NO oscillation dependent on  $\text{Ca}^{2+}$  and calmodulin. The research of the effects of SMF at various inductions of exposition of osteoblast calvary cells in culture have shown dose-dependent proliferation and growth of cells during the activation from static G1 phase to S phase, which increases synthesis of DNA and accelerates cell proliferation.

**Keywords:** static magnetic field, MADU strip, osteoneogenesis

## RHEUMATOID ARTHRITIS TREATMENT BY MADU MAGNETOTHERAPY

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**Abstract.** MADU magnetotherapy is a relatively new form of treatment, based on exposure of diseased bone or joint to MADU magnetic strips, which create magnetic deep unipolar field (shortened MADU) with penetration of 55 cm into human body. It was approved by the Ministry of Health of Serbia in 2007. The therapeutic effects include antiinflammatory and analgetic effects of magnetic field, activation of enzymes (particularly metalloenzymes), activation of K/Na pump which promotes shifting of pH value of treated cartilage towards more basic levels which in turn promotes regeneration of chondrocytes and osteocytes. Considering characteristics of magnetic water, continuous stimulation by MADU achieved long-lasting effects in patients with degenerative disease like coxarthrosis and gonarthrosis. We performed the study to find out whether same method may help patients with rheumatoid arthritis as well. 50 patients (m 5, f 45) with rheumatoid arthritis underwent the examination. They were treated by the MADU method in the controlled time period (6 months - 7 years). Before the examination, they were treated by the usual medical therapy with the rehabilitation procedures (21±14 years) and continued with it during the MADU method. After the treatment, effects were estimated (a) subjectively - decrease in the subjective discomfort and (b) objectively - improvement of the mobility and comparative analysis of the Rtg (enlargement of the joint space, lessening the cysts changes in the bone and improvement of trabecular built), NMR or scanner, observing joint borders, joint space, cysts, osteofits, trabecular built, mobility. Improvement was achieved of 24 pts (48%), and the biggest functional improvement in the period of the first 12 months (the first and the second check-up) was shown in 18 pts (36%). Subjective improvement without evident Rtg changes in comparison to the first analysis, i.e. state has remained the same, achieved in 6 pts (12%). This can be considered as an aspect of improvement, because pathological process was stopped, and this was maintained in the next years – up to seven years. No side effects of MADU therapy have been noted. In conclusion, MADU method provides the state of renewed joint space in respect of cartilage and bone and their maintenance in patients with rheumatoid arthritis. The process of reparation of the joint space with all the following benefits regarding pain and function, recommends this new non-invasive method as supplementary, with full respect of all scientific and therapeutic methods.

**Keywords:** *system diseases, rheumatoid arthritis, regeneration, MADU method, magnetotherapy, long lasting effects, non-invasive method, cartilage*

## EFFECTS AND MECHANISMS OF ANGIOGENESIS BY MADU MAGNETOTHERAPY

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**Abstract.** The MADU strip is based on Magnetic Deep Unipolar oriented static magnetic field (SMF), using possibilities of reflexogenic therapy on humans. The intensity of MADU strip is 10 to 15 times lower than level allowed by the WHO. Here we present case study of the effects and mechanisms of angiogenesis by MADU. The duration of the treatment was 2.5 years, while treatment frequency ranged from every 1 - 3 days to every 3 weeks, and later every 6 months. The outpatient male, 57 year old, suffering from dependent diabetes for 20 years, admitted with the gangrene of the foot dorsum (25 mm x 15 mm) and I, II, III and IV finger. The Doppler indexes were 0.00 and aortography showed occlusion of the arteries below iliac level. The vascular reconstructive surgery was not possible, so the high level amputation of the leg was indicated. The outpatient refused the amputation because his other leg (above the knee) had been already amputated 4 years ago. After the first treatment, outpatient had the night without pain, after 3 weeks the clinical improvement was evident, and after 3.5 months the process of epithelisation was terminated. After 2.5 years the clinical examination showed that leg was vital, with normal skin temperature and the outpatient could walk. The leg was saved due to developed microcirculation, oxygenation through new-formed small blood vessels successfully providing vitality of the leg. In conclusion, the applied MADU strips with the guaranteed optimal magnetic field intensity lasting for 10 years, is providing long lasting protective activity in the area of the diseased blood vessels and poor tissue nutrition. The initiation of regenerative processes is performed due to known pathophysiology mechanisms changing acid reaction into alkaline, providing regenerative processes. This medical device is environment-friendly, the method is non-invasive, complement to modern medical procedures. No side effects are noticed. The process of massive oxygenation is initiated and then the MADU strip is applied providing: vasodilatation; influence of ferromagnetics and paramagnetics; oxygenation; raising regional temperature; enzymes activation. The SMF has a positive effect on transforming growth factor beta 1 (TGF- $\beta$ 1)] in the peripheral part of the walls of the blood vessels. This is very important for the mechanisms of action and effects of MADU. The MADU field has influence on vascular endothelial cells, increasing the tubular formation (fields density and length tubules) in the peripheral parts of their commencement of growth. The vascular endothelial growth factor (VEGF) has a significant role in that process. The magnetic force acting under the influence of SMF as a mechanical force, arose the signal transduction of platelet-endothelial cell adhesion molecule-1 [PECAM-1 (CD31)] in endothelial cells; PECAM-1 may perform mechanical signal transduction, especially through the positive regulation of aktin/endothelial nitric oxide synthase/nitric oxide (Akt/eNOS/NO) path, facilitating and promoting endothelial cell proliferation.

**Keywords:** static magnetic field, MADU strip, angio regeneration, vascularization

## POSSIBILITIES OF NEURONEOGENESIS BY MADU MAGNETOTHERAPY

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**Abstract.** The MADU magnetotherapy belongs to noninvasive, additional and substitutional therapy, with applied static magnetic field (SMF) 10 to 15 times weaker than tested and approved levels prescribed by the WHO. One or more magnets, in the form of a strip, are placed on the surface of the body on reflexogenic zones (RZ) and focused like a magnetophore on reflexogenic points (RP), with the north face turned towards the skin [*North (N) pole or Negative pole (-)*]. The first observations of regenerative processes in sensitive and motoric function of injured nerves were detected from 1992 to 1998 while we treated wounded people by Trap for shell fragments. It was scientifically proven that medium SMF of 1-1000 mT has influence on the various biological systems, including morphology, differentiation and/or proliferation of many types of cells. The experimental research has shown that cell migration, measured by the cell's diffusion constant, depends on the exposition time and the kind of cells and does not depend on vertical or horizontal direction of applied SMF of 30-120 mT. In neural progenitor cells, cultivated under the SMF of 100 mT, exist significant increase of expression of mRNA for a few types of proneural gene activators, such as *Mash1*, *Math1* and *Math3*, together with decreased expression of mRNA for repressor type *Hes5*. The transitional increase of binding DNA nuclear transcription activation factor protein 1, formed from the members of *Fos* and *Jun* family in cultivated hippocampal neurons of the rats, was found. The rats were under the SMF influence of 100 mT during 15 min. The significant potentiation of  $Ca^{2+}$  influx mediated by N-methyl-D-aspartate (NMDA) receptors was shown, with decrease of expression microtubule-associated protein (MAP-2) neuronal marker through the expression *Ntan1* gene, which includes *ubiquitin-proteasome* proteolysis process, as so called N-end rule pathway in hippocampal neurons cultivated under SMF's influence of 100 mT but without cell death. It was detected that influence of SMF causes neuro reactions, confirmed at the maturation of non-matured cells in a culture of neurons of rat's hippocampus and achieved through the modulation of expression specially NMDA receptor's subunits. It was proven that neurite sprouting of chicken's embryonal ganglia is significantly increased in SMF of 22,5-90 mT. These discoveries give us a hope for the more efficient healing of many neurological and psychiatric disorders and diseases.

**Keywords:** static magnetic field, trap for shell fragments, MADU strip, neural regeneration

# CONTRIBUTION OF ANOMALOUS INTENSITIES OF ELECTROMAGNETIC AND MAGNETIC (EM-M) FIELDS IN ETIOPATOGENESIS OF MENTAL DISORDERS AND DISEASES

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**Abstract.** The aim of this paper is to consider contribution of anomalous intensities of electromagnetic and magnetic fields in etiopatogenesis of mental disorders and diseases. This research has been applying in past 20 years, with objective geophysical evaluation by proton magnetometer produced in USA and geological compass "Brunton". In this period we have examined a couple of hundreds patients with different type of mental disorders (sy anx-depressivum, depression, schizophrenia) both sex and all ages. We applied BPRS scale for sy anx-depressivum, Hamilton scale for depression, and PANSS scale for schizophrenia. Hereby we present several case studies. Results are excellent after the patients spent time in spaces with natural values of EM-M fields. During examination patients were receiving regular medicine (pharmacotherapy). Finally, we will present theoretical model for influence of geomagnetic field and cosmic radiation on the biological evolution.

**Keywords:** *electromagnetic and magnetic fields, anomalous intensities, mental disorders and diseases, etiopatogenesis*

## 1. Introduction

In 1988 one of the authors of this paper (N.T.) started measuring magnetism and radioactivity in places where people suffering from malignant, cardiovascular and mental illnesses lived. On the basis of these measurements, practical results, and literature consultations, he concluded the following [1-4]:

- Cause of tumor tissue appearances (both malignant and benign) are enormous artificially created magnetic field, and, ever-present variable magnetic field.
- Predominant cause of cardiovascular diseases is an enormous, mostly, artificially created magnetic field.
- Predominant cause of mental disturbances and illnesses are enormous, very distinct, variable magnetic fields in the places where people live.

Part of these revolutionary discoveries our team presents at this Symposium.

A characteristic feature of the Earth as a planet is the existence of the geomagnetic field (GF), which is a medium in which bio world lives. By GF external environment influences are transmitted to all biological species on Earth. GF is the most important factor in the interaction of the external environment – the evolution of the bio world. GF guides the cosmic ionizing radiation that has a role to create electrons and ions and then the dynamo mechanism in bio systems. GF has provided a vast variety of biological world on the Earth. All other factors (sun, water, air, earth) affect fundamentally the living world, i.e. the change of the external magnetic fields and the magnetic fields of the organ cells and the whole organism.

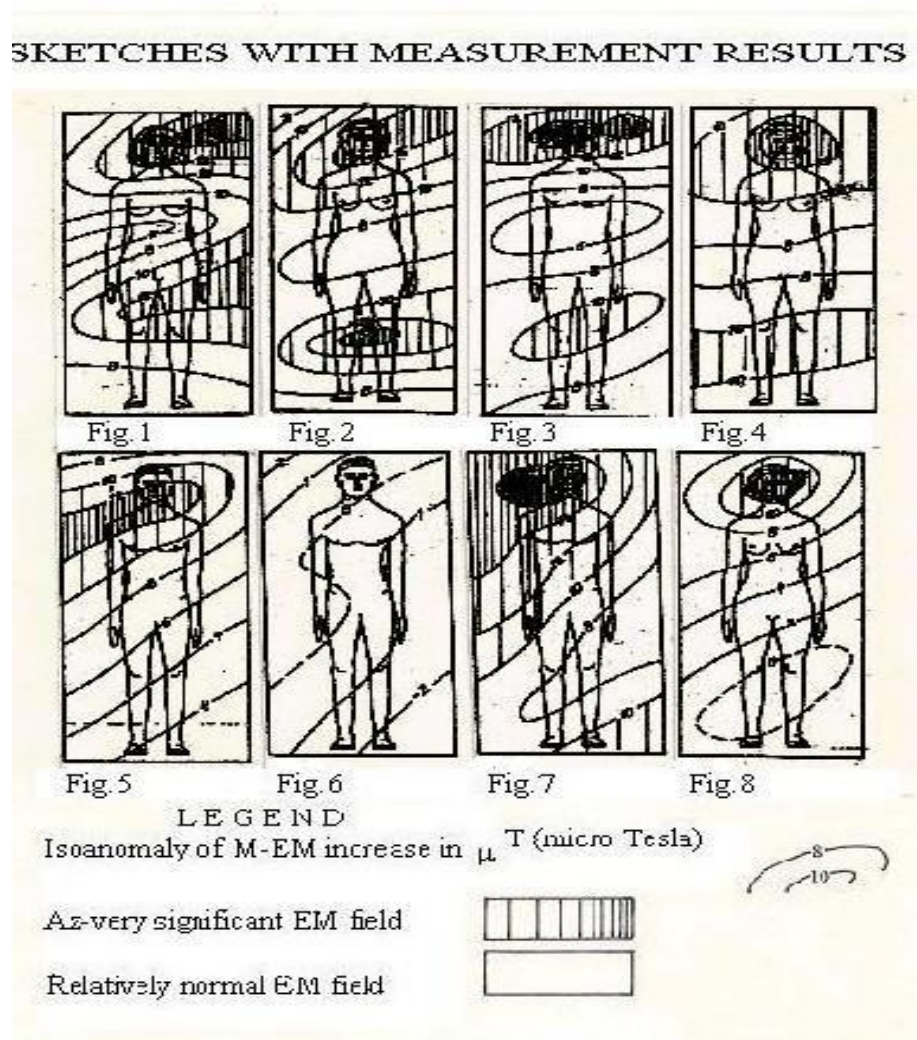
Contemporary opinion is that mental health disturbances are increasing, and the World Health Organization predicts that illnesses of this century will be predominantly Mental Disturbances and Diseases (MD&D). Modern science considers that etiopathogenesis of mental disorders and illnesses is multifactorial, i.e. biopsychosocial [5,6]. However, our opinion is that main etiopathogenic factors are enormous intensities of electromagnetic–magnetic (EM-M) fields in beds and dwelling places of mentally ill people.

## 2. Electromagnetic–Magnetic Fields (EM-M) and Mental Disturbances and Diseases (MD&D): Case studies

Enormous artificial EM-M fields are a product of our ignorance concerning life organization in our dwelling places [1]. The text that follows shows places with great changes of EM-M fields found in beds of mentally ill people. The main goal of our measurements is to determine a correlation connection between EM-M anomalous zones (Az) and the location of the person's head, which might be considered as an environmental cause of mental disturbances.

The instrument used for measuring the presence of EM-M fields is “proton magnetometer” adapted for operation in urban environment. The resulting vector intensity of the total magnetic field was measured. While the EM field, as a perturbation of natural M field, was registered as: slightly present, present and very distinct, i.e. having a relative value. The “Brunton” geological compass was also used. We applied BPRS scales for anxious depression, depression, Hamilton's scale for depression, and PANSS scale for schizophrenia.

In Figs. 1–8, the increase of EM-M fields is presented in the area of beds which the people with mental disturbances use for day and night rest. In these figures, by adequate shadowing the Az with very significant EM field are emphasized.



**Figures 1–8.** The state of increased EM-M fields in beds used by people with mental disturbances.

Fig. 1 presents the Az with significant EM, from where an ill woman was moved away in 1988. Until 1988, each year she used to have psychic crisis and she had to undergo a hospital treatment. However, from 1988 she has been using a bed with no Az, i.e. spend her night and day rest in the natural field having no recidives until today, i.e. the person has completely recovered.

Fig. 2 shows the Az where there was a significant EM, from where an ill woman was moved away in 1989. Until 1989 she had mental problems until and was, from time to time, treated in hospital. After moving away from the very significant EM fields, she has not had any psychical problems.

Fig. 3 presents the EM-M field condition in a single bed of a mental patient from Pančevo. The head area is encompassed by Az with a very significant EM field. My explicit suggestion was to move the room furniture and place a new bed into a new location where space would be with no enormous increases of EM-M field. This was done, but what is the health condition of this woman, now, I do not know.

Figs. 4, 5 and 6 belong to a three-membered family (mother and two sons) from Lazarevac. In 1992 I performed measurement of the mother's bed (Fig. 4) and found very high increase of EM-M field over the entire bed. A significant, remarkable Az with a very notable EM field was registered in the bed user's head area. This person was very depressive and nervous with frequent and strong headaches, and had been treated for many years by psychiatrists. After moving furniture and placing bed into the space with no Az, all disturbances disappeared, she stops with all the therapy and today is a completely healthy person. In the same year, I explicitly said where and how to put her children's beds, who were 9 and 10 years of age. However, from to me unknown reasons, the younger son places his bed by the opposite wall from the one I suggested to be the location of both sons' beds, and uses the space with significant Az in his bed (Fig.5), while the older son uses the space with no Az (Fig. 6). I performed these measurements in November 2002. The younger son is 18 now, and has developed, as a young man, a very bad kind of characteristics regarding his moral side, way of thinking and temper, what has been noticed as an unpleasant picture by his surrounding, i.e. his behavior has been marked as a delinquent character. The older son uses a bed in the same room, but by the opposite wall where the space is with no Az (Fig. 6). This natural field has contributed that the young man forms into a person with very diligent and nice character. He is an excellent pupil, caring towards his family members and neighbors, he won the first place in former Yugoslavia dancing competition, and wins medals at European contests. Among his own generation friends and companions, he is treated as a very respectable and admirable person. From these three examples it is not difficult to draw a conclusion.

Fig. 7 shows the Az with a very significant EM field encompassing the space in which the bed user's head is placed. This person was treated at a psychiatric clinic in Belgrade in 1944, when measurement of EM-M field in the bed he had been using until that time took place. The correlation connection of Az and the disease location is obvious. We immediately moved furniture and placed a new bed into a space with no Az. The person, until today, has not had any kinds of mental problems, and 17 years have passed.

Fig. 8 shows the Az encompassing the space in which the bed user is placed. This bed's user is a woman who used to have psychical problems each year, and several times she was treated at hospital. All this was happening until 1995, when I performed measurements and placed the bed into a space with no Az. For four years there were no recedives. The correlation connection of Az with a very significant EM field and the head location – brain, was obvious. In 2000, considering herself to had recovered, without our agreement, she went to her cottage out of town and to seaside, paying no attention in what kind of EM-M field she slept, her mental disturbances returned.

### 3. Discussion

One of the authors (N.T.) has been measuring EM-M fields in people's dwelling spaces for past 23 years. On the basis of his conversations and his observations, he has noticed the following: in the houses where very significant EM fields are present, bad influence upon CNS happens, so problems and quarells among the family members living in such houses are very frequent and obvious. That is why in such surroundings stresses and marriage divorces occur very frequently.

We have noticed a decrease of mental and cognitive abilities of the people who live in a high EM pollution, as well as an increased number of epilepsy cases, dementia, manifestations of degeneration of nerves in brain structure etc.

So, we have four examples of EM-M measurements for persons having epilepsy (diagnosed by an official health institution in Belgrade), 52, 8, 2 and less than 1 year old. With all of them an increased EM-M (not natural) field was registered. They were all moved away from these Az and used the natural EMF for their night and day rest. They had no epilepsy any more after the disposition was done. The first one: for over 15 years already, the second one: for over 10 years already, the third one: for two years, and the fourth one: for a few months, namely, until today there has been no recedives.

We have also noticed that pupils and students who spend most of their time in relatively healthy environments, i.e. spaces with natural values of EM-M field, are very diligent, caring and less nervous, compared to those persons who spend most of their time in spaces with high EM-M values. Probably optimal intensities for intellectual work are around 44,000 nT, but it is not the subject to discuss at this occasion.

Possible model explanations for influences of EM-M fields on CNS functioning are given elsewhere by one of the authors (N.T.) [4]. The above examples confirm sensitivity of central nervous system to artificial EM-M anomalous fields, with time-varying component of 0.1  $\mu$ T that could be generated by artificial currents of several  $\mu$ A, which might create MD&D.

#### 4. Conclusion

The examples presented in this paper show that psychopathological states in the places where people live are provoked by EM-M anomalous zones (Az) with a very significant fields. A longer period of living in Az can create Mental Disturbances and Diseases (MD&D).

It is also clear that moving the ill person away from Az means a great help both to the patient and to his doctor, in the process of MD&D recoveries. Therefore, it is extremely important to minimize the time spent in EM-M Az.

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# CONTRIBUTION OF ANOMALOUS INCREASE OF MAGNETIC FIELD IN ETIOPATOGENESIS OF CARDIAC-VASCULAR DISEASES

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**Abstract.** The aim of this paper is to consider contribution of anomalous increase of Earth magnetic field in etiopatogenesis of cardiac-vascular diseases (CVD): hypertensio arterialis, infarctus myocardii, insultus cerebrovascularis, atherosclerosis... This research has been applying in past 20 years, with objective geophysical evaluation by proton magnetometer produced in USA and geological compass "Brunton". We have examined a couple of hundreds cardio-vascular patients of both sex and all ages. In this paper we are presenting a few case studies. A correlation between the anomalous magnetic fields and CVD has been discovered. Influence of the anomalous zones (Az) of magnetic fields upon a specific person's organism had been discovered, and afterwards the exposed person was moved out of the anomalous magnetic field zones and his health condition was observed.

**Keywords:** *electromagnetic and magnetic fields, anomalous intensities, cardiac-vascular diseases, etiopatogenesis*

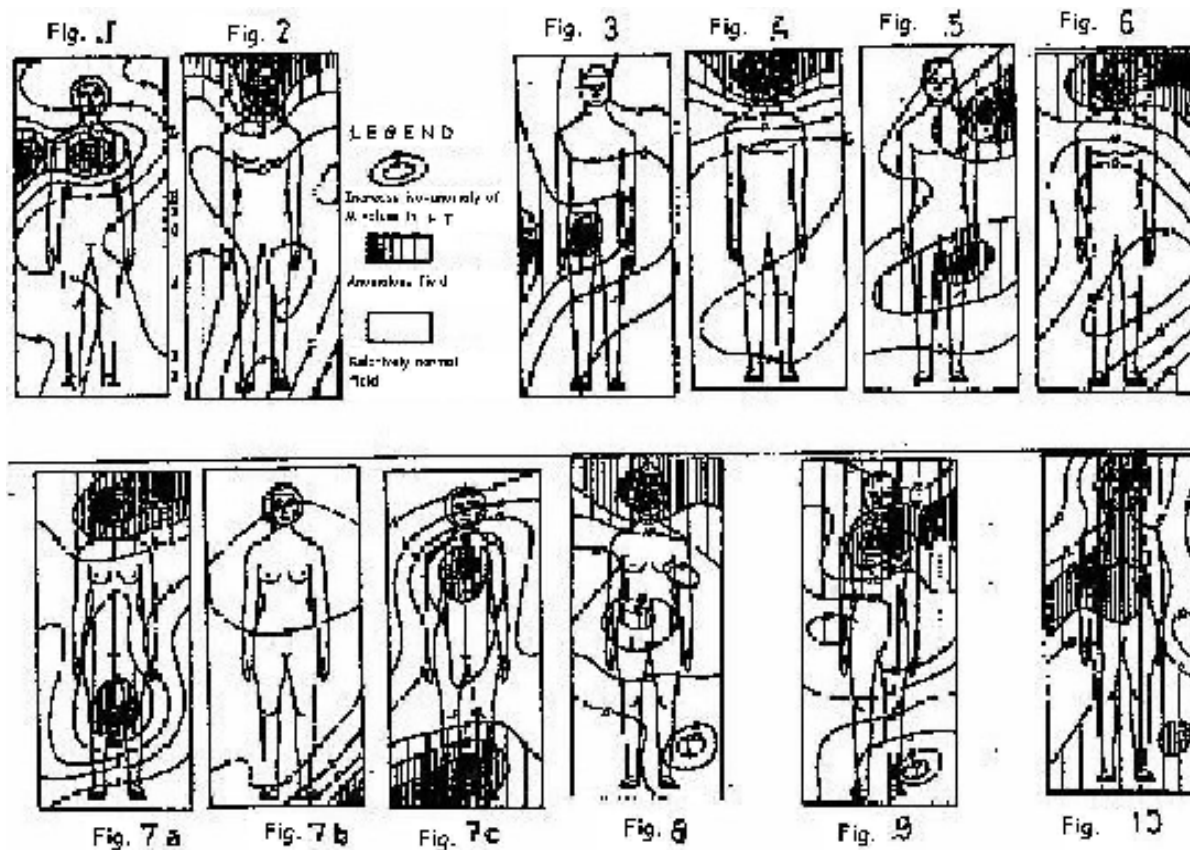
## 1. Introduction

Man was created, lives, and dies in natural Earth magnetic field (EMF). Anomalous increases (AI) or anomalous zones (Az) are differences between the measured values of total magnetic-changeable magnetic (M-CM) fields in human dwelling places and the average natural value of EMF (uncontaminated by artificial magnetics). Results of magnetic measurements are result of the vector addition of artificial magnetics and natural EMF. Spatial AI appear in very small areas at homes, and are caused by bad arrangement of magnetic objects (magnetics), particularly in beds made of magnetics: iron couches for three persons, for two persons, sofas, yogi mattresses with metal springs and the like. Ambient remanent magnetisation of an enormous intensity, as pathogenic, after a long time spent in an Az creates a body viscous magnetization in an organ or part of an organ in human body.

On contemporary stage of human biological development, cause of the origin and development of cardiovascular diseases (CVD) is generally unknown, so the new scientific research breakthroughs are searched for, with the aim of clearing up the multifactoral etiologies and geneses. Two facts are characteristic: the higher the standard of life, the higher the number of people suffering from CVD; also, growing number of young people suffering from CVD. CVD are considered the most common cause of dying in industrially developed countries (atherosclerosis, hypertension, arterial and venous thrombosis, myocardial infarction, stroke...), where with the growth of standard the number of people suffering from these diseases is growing together with risk factors such as obesity, alcohol, smoking, physical inactivity, stress, depression, genetic factors, diabetes mellitus, as well as anomalous zones (Az).

## 2. Anomalous Increase (AI) of Magnetic Field and Cardiovascular Diseases (CVD): Case Studies

The instrument used for measuring the intensity of magnetic fields is protonic magnetometer adapted for operation in the urban areas, whose factory accuracy is 10 nT. There has, also, been used a geological compass Brunton whose angle accuracy is one degree. Points of measurements were per square net at the distances of cca 10 cm, from point to point. The results obtained are graphically presented in Figs. 1–10, in the form of sketch of iso-anomalies  $A_z$  (lines with the same  $AI - A_z$  values), belonging to the region of the bed used for night and day rest; by dashed lines the significant  $A_z$  are emphasized. On the basis of compatibility of  $A_z$ -CVD their cause-effect correlation is confirmed, for people suffering from CVD (myocardial infarction, brain stroke, hardening of hip joint and thigh artery, extended veins etc.).



**Figures 1-10.** Presentation of results in the sequence of iso-anomalies  $A_z$  of M field performed in beds of people suffering from CVD ( $A_z$  in  $\mu T$ ; details elaborated in the text below).

Fig. 1 presents distribution of iso-anomalies  $A_z$  of M field in the bed region of the patient H.M. On the basis of the increase configuration of iso-anomalies of the field, it can be concluded that the area of the single bed examined is undisturbed along its major part, what can be seen from the presence of iso-anomaly „0“. A significant  $A_z$  (above 8  $\mu T$ ) was found in the area which belongs to the middle-breast region. This person was diagnosed to suffer from myocardium infarction. On this example a correlation between the pathological condition of the person and the significant AI is obvious. Our intervention was removing the cause of  $A_z$ , so that the patient uses an area for day and night rest where there is no  $A_z$ .

Fig. 2 presents distribution of iso-anomalies  $A_z$  of M field in the bed region of the patient T.R. The entire space of the single bed is encompassed by general increase of M field intensity. Characteristic  $A_z$  (above 10  $\mu T$ )

is in the part of the bed belonging to T.R.'s head region. Atherosclerosis of arterioles was diagnosed in brain causing cerebrovascular disease with brain stroke. This example shows that the cause of the stroke was just discovered Az. Moving away the bed and other furniture and objects which were source of Az was suggested. The bed was moved to another part of the room where there was a natural M field intensity. It should be pointed out that T.R. very quickly returned to his usual work and, for twenty years already, has been living as a healthy man. It is interesting to notice that measurements were taken because of his wife's health problems. On the basis of measurements of the bed, when one of us (N.T.) warned the T.R.'s wife that there were serious possibilities for her husband's head disease and to do the moving of the bed. This was not done until the above described stroke happened, and afterwards all the arrangement of furniture took place.

Fig. 3 presents distribution of iso-anomalies Az of M field in the bed region of the patient S.S. On its central part an Az was found (above 8  $\mu$ T) which encompasses hip joint region of the right leg of the bed's user. Az caused atherosclerosis on iliac artery in the hip joint of S.S.'s right leg. A correlation of Az and the location of the pathological changes is obvious. The following should be pointed out: measurement of this single bed took place because of S.S.'s wife, who got diseased of malignant uterus neck. Because of it, the moving of bed used by the wife was suggested. However, S.S. ignored the measurement's results and insisted to change beds with his wife. After seven months of using his wife's bed with significant Az, S.S. got gangrene on his right leg and, at the cardiovascular clinics in Belgrade, atherosclerosis on the hip joint of S.S.'s right leg was found.

Fig. 4 presents distribution of iso-anomalies Az of M field in the bed region of the patient N.N. On its central part an Az was found (above 12  $\mu$ T) in the head region of this single bed's user, who got brain stroke with a tragical outcome. Full correlation between Az location and the disease was confirmed. Seven months before the brain stroke of this bed user, one of us (N.T.) performed measurements of single beds of the married couple because of high blood pressure and bad health condition of the man's wife. Moving of both beds took place, so that iso-anomaly „0“ was on the entire surface of the married couple's beds. After warning them not to move the beds away from the new place, the husband, from unknown reasons, moves his bed back and 70 cm it within the space with significant Az, so, during the night and day rest, his head enters into Az. Seven months later, the husband gets a grave form of brain stroke, ending tragically at a hospital.

Fig. 5 presents distribution of iso-anomalies Az of M field in the bed region of the patient B.K. He was diagnosed from atherosclerosis of thigh artery, and beginning of leg gangrene was presented. The found Az (above 12  $\mu$ T) completely confirms location compatibility with the disease. There was, also, found one more Az (above 12  $\mu$ T) in the right top part of the bed but out of the bed user's body reach. The bed was moved to another part of the room without AI. Few months later B.K. completely recovered.

Fig. 6 presents distribution of iso-anomalies Az of M field in the bed region of the patient I.O. The bed area is encompassed by a very high M field. Characteristic Az (above 12  $\mu$ T) belongs to head region of the bed's user. Whole head and neck are in a significant Az. The user got very grave atherosclerosis of brain arteries and got stroke. Correlation between Az and disease location is obvious. On the right bottom edge of the bed there is also Az but it does not reach the body of the bed's user.

Fig. 7a,b,c presents distribution of iso-anomalies Az of M field in the bed region of the patient T.D., during various time periods. Namely, one of us (N.T.) warned T.D. a year before getting diseased that it was necessary to make a new arrangement of bed and other furniture in the house and around it, advising the house residents to use beds with no AI. However, because of the lack of understanding, it was not done. T.D. got diseased, i.e. got a brain stroke, while having for long time before that problems with extended veins on her legs. Fig. 7a shows M field status on the bed used by T.D. Two Az were registered (above 12  $\mu$ T). The first Az belongs to the head region of the bed's user, and the second Az encompasses the user's legs. Complete compatibility of Az and the disease occurrence was confirmed. After medical treatment at a hospital, the patient returned to her home with a doctor's diagnosis that the arterial pressure was impossible to lower by any kind of therapy and that the disease is in a very evolved stage, and that the best advice was that to end her life at home, what her family accepted. The patient's husband asked one of us (N.T.) to perform measurements of her bed, what was done and the bed placed into the area with no AI. Fig. 7b shows the status of M field in the bed which the patient starts to use. The presence of iso-anomaly „0“ can be seen and that the bed is with no Az, with a remark that in the right bottom angle of the bed there is a part of Az (above 8  $\mu$ T) which is, for its surface and location, negligible. After the first

night spent in a „healthy bed“ (natural EMF) arterial pressure suddenly gets lower, and one of us (N.T.) suggested the urgent invitation of a doctor who was threatening the patient. The doctor came, geo surprised with the new condition of his patient and prescribed new therapy in accordance with the new condition of the patient. According to the family members' reports, the patient in her unconscious state was turning in bed and was trying to put her head into Az (above  $8 \mu\text{T}$ ), Fig. 7b. This kind of the patient's behaviour clearly pointed to the fact that BVM existed in the patient's head, which attracted her to place her head into Az. After a couple of months, T.D. got completely recovered and returned to her everyday work. In spite of a strict order of one of us (N.T.) that T.D. should by no means use any other bed apart from the one whose M field status is shown in Fig. 7b, after two years she went back to the bed whose M field status is shown on Fig. 7a, with an explanation that she had recovered and felt good. In this bed location her head and legs were changed, so they had the position and M field status presented in Fig. 7c. Namely, the head is in a relatively healthy area; however, heart got into the significant Az (above  $12 \mu\text{T}$ ) encompassing the entire chest. After six months of sleeping in the Az shown in Fig. 7c, the bed's user died during the night, because of the myocardial infarction. This example is a clear proof that the diseases causes are Az, and, also, points their measurements to be of a great help in therapy, both to the patient and physician.

Figs. 8, 9 present distribution of iso-anomalies Az of M field in the double bed region of the married couple Z. and N.A. One year before the wife's getting diseased, one of us (N.T.) performed measurement of the M field status and requested moving of the bed to another location where there was no Az. However, the wife refuses because of aesthetic reasons to do it. She was registered to have a significant Az in the top part of the bed and encompassed the head region with the maximum above  $15 \mu\text{T}$ . Also, there was found a less value of Az (above  $12 \mu\text{T}$ ) which encompassed stomach of the bed's user from Fig. 8. On the other half of this bed, used by husband, there was registered a significant Az (above  $18 \mu\text{T}$ ) in the region of chest, what is shown in Fig. 9. First, the wife got cerebrovascular disease and brain stroke. After medical treatment, she died. The husband continued, after his wife's death, to use the same bed. After one year, in the morning hours, he got myocardium infarction and soon died. This time, too, the correlation between Az and the diseases occurrence was confirmed.

Fig. 10 presents distribution of iso-anomalies Az of M field in the bed region of the patient M.T. Space of this bed is covered by significant AI. Az is located on head region, middle part of chest and stomach region, causing pathological condition and various diseases. The diseases occurred were: cataract, abnormal functioning of thyroid gland, graver form of angina pectoris and diabetes melitus. One of us (N.T.) was persistently trying to place the bed into the area with no Az, what he, finally, succeeded supported by a cardiologist. After a certain time period of sleeping with no Az, the medical check-up confirmed an improvement of the patient's health condition. Namely, cataract got better, her sight field got broader (tested by computer measurement), attacks of angina pectoris stopped and the blood sugar level was normal. One of us (N.T.) asked the ophthalmologist how did he interpret the lessening of eye bottom hardening and sight field broadening of this patient. His answer was: „In my practice it used to happen, per cca hundred patients one gets better like this, and if I knew the reason why I would get the Nobel prize“.

### 3. Discussion

CVD diseases are the main morbidity and mortality cause in all industrialized countries, today [1]. After 23 years of measurements of M-CM fields in the region of beds of people with CVD one of us (N.T.) has found that for appearance of CVD only AI (Az) is necessary [2,3]. As M-CM fields in dwelling places are rarer than existence of AI only, this fact explains large number of people diseased with CVD.

The proposed framework could also account for etiological obscurities from literature, such as CVD dependance on: AI intensity and on the time spent in such a space, effects of geographical latitude and genetic EMF, effects of temperature, food, smoking and physical activity, with pathogenic body viscous magnetization that could be generated by ambiental remanent magnetisation of an enormous intensity – as explained by one of us (N.T.) elsewhere [2-5].

#### 4. Conclusion

The presented examples of persons with CVD, point toward the only possible answer that the cause of CVD appearance and development is increased AI in beds which the diseased persons were using for their day and night rest. One of us (N.T.) has a large number of such examples of measured M fields on the beds of CVD diseased persons, and in all these cases a strong correlation between Az and the disease occurrence was confirmed, so he has concluded that there is no CVD without Az.

It is also clear that moving the ill person away from Az means a great help both to the patient and to his doctor, in the process of CVD recoveries. Therefore, it is extremely important to minimize the time spent in Az.

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# CONTRIBUTION OF ANOMALOUS INTENSITIES OF ELECTROMAGNETIC AND MAGNETIC FIELDS IN ETIOPATHOGENESIS OF MALIGNANT DISEASES

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**Abstract.** The aim of this paper is to consider contribution of anomalous intensities of electromagnetic and magnetic fields in etiopathogenesis of malignant diseases. On this line, correlation between EMF anomalous zone (Az) and tumor locations has been ascertained. There are many examples how and why Az cause malignant diseases, and how patients recover when removed from AZs into natural EMFs. So, if magnetic characteristics of external environment are known, by theoretical studying of prokaryotic and eukaryotic cells divisions we found that the natural Earth magnetic field (EMF) is a promoter of cell division, DNA replication and RNA transcription, which can elucidate many obscurities as accelerators of malignant diseases. In conclusion, it can be stated that the cause of tumors are Az anomalous and variable magnetic fields in beds. Also, along with applied therapies, it is necessary to remove patients from Az into environments with natural EMF.

**Keywords:** *Earth magnetic field, temperature and magnetisation, anomalous zones, cells division, crossing-over, malignant diseases and metastases*

## 1. Introduction

Appearance of cancer in my family made me get interested in many kinds of diseases. I have learned from medical information that physical agencies from the external environment are probable causes of cancer, which was a precedent reason for me to start measuring magnetic and changeable magnetic (M-CM) fields of beds used by persons with malignant diseases. I notice a correlation connection of anomalous zone (Az – the area in bed with a significant increase of M-CM field) and the region of the person's body overtaken by a malignant disease.

A professor at the Pathology Institute has introduced me to a microscope preparation of a cancer cell. I have recognized the visual similarity between the cancer microscope preparations and serpentes – an ultrabasic rock whose phenocryst is a magnetite, and where the basic element is a two-valence iron.

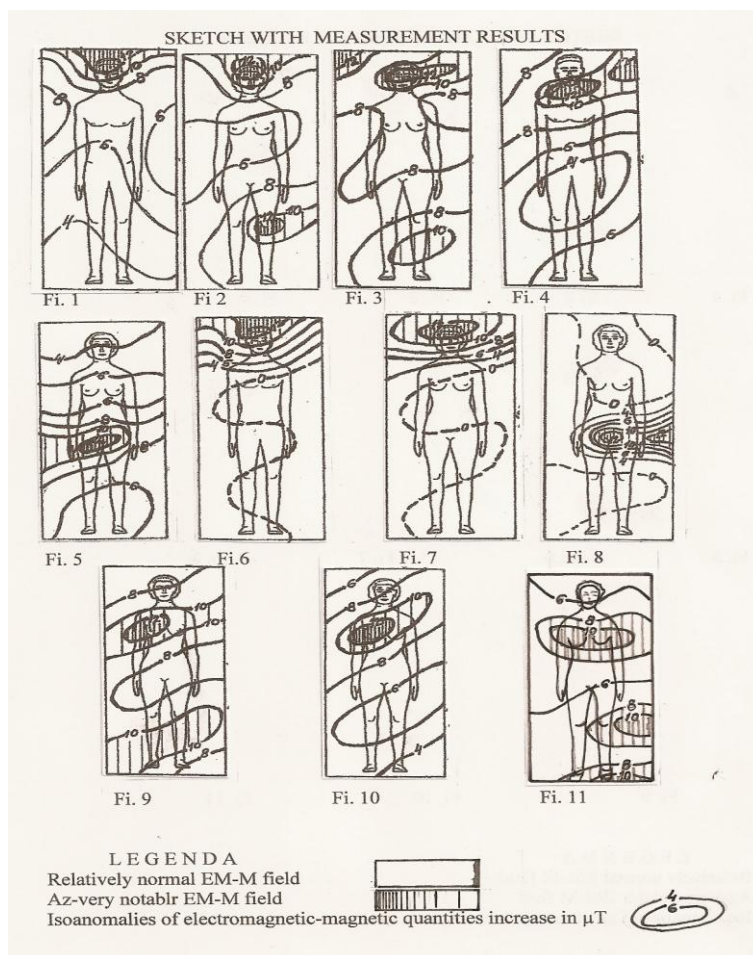
Then, I have started extensive measurements of M-CM fields in flats of people with cancer. Measurements of magnetic fields in the homes of people with malignant diseases has discovered that the prevailing cause of tumours (benign or malignant) is anomalous increase (AI) of M-CM fields in the spaces in which the patients use for their day and night rest. The same measurements have pointed the way of further researches.

## 2. Anomalous Increase (AI) of Magnetic Field and Malignant Diseases (MD): Case Studies

We have paid our attention to areas with located anomalous increment (AI) of Earth's magnetic field (EMF). Changeable magnetic (CM) fields are also present. Spatial AI is caused by wrong arrangement of magnetizing objects, as people arrange their furniture in a scattered and undirected way, carelessly surrounding themselves and their homes using materials which are contaminants of a healthy living space.

The complete resulting intensity of the total M-CM field have been measured. Measuring technics were geophysical instruments, and geophysical measurements were done as well as the measured results interpretation. Instrument used was "protonic magnetometer" with production punctuality of 100 nT. The results obtained we have shown graphically in the form of iso-anomalies, in  $\mu T$ , lines with same amounts of AI of M-CM field.

Figs. 1 – 11 show increase of M-CM field on beds used for night rest of the person with neoplasma malignant disease (Neo), as well as the diseased people with metastases (meta), diagnosed by Oncology and Radiology Institute in Belgrade.



**Figures 1 – 11.** Increase of M-CM field on beds used for night rest of the person with malignant neoplasmas.

Fig. 1 presents distribution of M-CM field in the bed region of the patient with Neo on CNS. The space of the bed is within the range of very high amounts of M-CM field. Characteristic anomalous amount is above  $10 \mu\text{T}$  and by location belongs to the head of the bed user. Forehead was on the part of the bed within the range of maximal AI above  $12 \mu\text{T}$ . A correlation between Az and the disease location is obvious.

Fig. 2 presents distribution of M-CM field in the bed region of the patient with Neo sarcoma with meta on CNS. On the basis of the configuration of AI it can be concluded that the space tested is disturbed, which can be seen from the presence of two significant Az over  $10 \mu\text{T}$ . The first Az is on the knee of the left leg of the bed's user. And exactly this part of the leg is attacked by malignant neoplasm (sarcoma of kneepit on left leg). The second imposing Az above  $10 \mu\text{T}$  belongs to the head region of the user, diseased by Neo on brain. It was diagnosed that the newly appeared disease was the meta. It is clear that location of Neo diseases coincides with Az.

Fig. 3 presents distribution of M-CM field in the bed region of the patient with Neo on the eye area. Space of this bed is significantly distracted. Two Az have been registered amounting to above  $10 \mu\text{T}$  causing no pathological changes with regard to the intensity and space of their range. However, Az above  $12 \mu\text{T}$ , ranging to the head of the user, caused the appearance of pathological state on the left half of the head and there a Neo appeared on the eye area. Az of the left upper bed's corner is also above  $12 \mu\text{T}$ , but had no effect upon the health condition of the user because of its distance. Before intervention, the user of this bed had two recidives in different time periods. After moving the bed out of the Az, she recovered completely and the disease never appeared again.

Fig. 4 presents distribution of M-CM field in the bed region of the patient with Neo in throat. On the basis of measurement results the conclusion is that the bed area is encompassed by a significant increase of M-CM field. AI above 10  $\mu$ T is revealed, and Az above 12  $\mu$ T belongs to the area where the neck of the bed's user is. Spatial correlation connection is obvious between Az and the bed user's throat. A surgical intervention on throat Neo took place, and medical prognosis was pessimistic, i.e. doctors supposed that the patient can live for another six months, maximum. After moving the bed into a natural magnetic field, where the diseased starts sleeping, he gets completely recovered and returns to his normal life and work. He lived more than twenty years after this, and died because of atherosclerotic changes on neck arteries when he was 86.

Fig. 5 presents distribution of M-CM field in the bed region of the patient with Neo on uterus neck. On the central part of the single bed an Az has been found (above 10  $\mu$ T) ranging to the genital organs region of the bed's user. The correlation connection of Az and the location of pathological changes is obvious. The user of this bed was moved into another bed where there was no Az. The user, for more than 15 years, uses this bed with no Az and is a completely healthy person now. There is an interesting case concerning her husband who ignored these results.

Fig. 6 presents distribution of M-CM field in the bed region of the patient with Neo on CNS. Space of this single bed is, mostly, undistracted because in the most part of it the natural magnetic field was registered, except of one Az that has been registered in the upper central part of the bed. The user entered a significant Az with his forehead part, with two years of sleeping in this area, after he got sick. The correlation connection has been completely confirmed. A suggestion was given what was to be done in order that the user uses the space with no Az.

Fig. 7 presents distribution of M-CM field in the bed region of the patient with Neo on CNS. Space of this single bed is, mostly, undistracted because in the most part of it the natural magnetic field was registered, except in the upper central part with a significant Az (above 10  $\mu$ T). The correlation connection between Az and the disease is obvious. We pointed out that a recidive appeared after surgical intervention, and then the person immediately started to use the bed with no Az.

Fig. 8 presents distribution of M-CM field in the bed region of the patient with Neo on genitals. Space of this bed is mostly undistracted, with a significant Az registered in the central part of the bed where during the night rest are genitals of the user. Here, too, a correlation connection was completely confirmed. The user was warned that she must remove from the Az producer, what she, we hope, did.

Fig. 9 presents distribution of M-CM field in the bed region of the patient with Neo on breast with meta. Space of this bed is significantly distracted and is characterised by high increase of magnetic field across the entire bed. A significant Az was registered in the area in which during the night rest left breast was, and which had been diseased. Here, metastases were registered, too, on lymph nodes in the armpit. Correlation connection between Az and the disease is obvious. The user of this bed has immediately entered the space with no Az. For this user is characteristic that, after a couple of years, scintigraphy registered accumulation of radioactive markers in the head's area. The cause for this was discovered and removed. After two months, medical check up showed that her health condition was normal. After some time, scintigraphy registered accumulation of radioactive markers in the area of scapula. The cause was immediately removed. The medical check up showed that everything was normal. This person has been alive and in good health for more than 15 years, now. I am informed that her nine roommates from hospital, who had the same disease, all died five years after she had met them in the hospital. Her comment was: "I am happy to have met you!"

Fig. 10 presents distribution of M-CM field in the bed region of the patient with Neo on breast with meta. Area of this bed is greatly encompassed by a high AI, with significant Az was registered in the area where the bed user's left breast was located. After a couple of years of sleeping in this bed, the user got Neo on the breast and metastases were registered on lymph nodes in her armpit. The correlation connection between Az and the disease occurring is obvious. During the treatment, the user requests that only Neo in the breast region gets cleaned up and refuses a radical breast surgery. She refuses chemotherapy, radiotherapy and hormonal therapy. I performed measurements in her flat and informed her about the healthy space in which she should spend the time of her day and night rest. She has accepted this and started to use the space with no Az. For 6 years she has lived and there were no recidives, and oncology doctors were surprised. She informed me that her eight hospital roommates with

the same diagnosis as hers were surgically operated and died in a very short time after that, and they were treated by surgical radical operation of breast and chemotherapy was applied for all of them.

Fig. 11 presents distribution of M-CM field in the bed region of the patient with Neo on breast with meta. Correlation connection of Az and location of Neo origin has been confirmed. This person informed me that her six roommates with the same diagnosis died two years after an operation at hospital. She is absolutely healthy today and her comment was: "I am fully aware that your advice for me to move into a healthy space has saved my life, I am happy to have met you".

### 3. Discussion

Our work does not explain etiological obscurities from literature, such as: various numbers of Neo and CVD patients, numbers of left and right breast disease of textile workers, differences between village and city, explanations of animal experiment results etc. Explanations of mistakes concerning Neo causes as viruses, smoking, asbestos, radioactivity, sunbathing, genetic factors etc., are also not given. It is not presented how meta occurs, how does the temperature affect Neo, and so on. Variety in behaviour of Neo during therapy is not explained. Therapy must be developed, too, regarding the cause of Neo.

However, our documentation includes a large number of measured M-CM field in the region of beds used by people diseased by Neo, with clear correlation between Az and Neo confirmed. After 23 years of measurements of M-CM fields in the region of beds of people with cancer I have not found the disease appeared in the natural EMF, and there were more than 1000 of them [2]. Hence, for appearance and development of tumours, existence of anomalous increase (AI) of magnetic and changeable magnetic (M-CM) field is necessary and for various tissues various M field intensities and characteristics of CM field. This can be of crucial help to patients and their doctors is placing of the patient into a space without Az.

From the literature about malignant diseases origin it can be learned that biology does not know sufficiently clear what is the promoter of mother cell into two daughter cells division or the cause of cancer [1]. On the other hand, our examples presented above confirm sensitivity of cells to Az of M-CM fields, which might create malignant aberrations. This has triggered an interest in us to study the cells division and tumour etiology thoroughly, based on paramagnetic nature of the cell organelles and proposed model explanations for influences of natural EMF and anomalous Az of M-CM fields as promoters of cell's division, given by the author elsewhere [2-4].

### 4. Conclusion

The examples presented in this paper show that malignant diseases in the places where people live are dominantly provoked by M-CM anomalous zones (Az) with a very significant fields. A longer period of living in Az can create Neo.

It is also clear that moving the ill person away from Az means a great help both to the patient and to his doctor, in the process of malignant recoveries. Therefore, it is extremely important to minimize the time spent in M-CM Az.

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## **B. CONSCIOUSNESS-BASED HOLISTIC APPROACHES & TECHNIQUES**

# PRAYER AND/OR PSYCHOTHERAPY

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**Abstract.** Prayer is remaining a constant natural human need through centuries. Regarding psychotherapy, although all good physicians have also been good psychotherapists through centuries, it was developed as a distinct branch of psychiatry and psychology only in 20th century. In 21st century, there are numerous worth, less worth and worthless psychotherapeutic methods, at disposal of disordered psychical life of people. But, basically, both prayer and psychotherapy (as ways of self-knowing) are necessary for (both healthy and sick) people.

**Keywords:** *prayer, psychotherapy*

## 1. Introduction

If we remind ourselves of four human needs – for roots, for belonging, for identity, and for orientation – as well as of their distortions and abuses, along to their disordered psychic manifestations, it is not difficult to agree that these needs are concerns of both religion and psychiatry (psychotherapy). It is also not difficult to agree that contemporary people are seriously harmed in all these four needs, presumably mainly due to lack of related tradition and religion. They can hardly rely on those reliable external tools which can provide them security and liberation of fear and uncertainty. Hence questions, equally important for psychotherapist and priest, are frequently raised: what is the meaning of life and does it at all exist, and more practically whom to address in trouble – psychotherapist or/and priest [1,2]?

## 2. Prayer and/or Psychotherapy

When we talk today about illnesses, it should be noted that from the time of Hippocrates it was known that human being is unity of body, soul and spirit. Hence, the goal in medicine and curing, at least of their most talented representatives, was always oriented toward holistic medicine (we remind that “holism is notion that elements of psychic life must be always considered in the framework of psychic whole”). Nowadays, presumably the best representative of contemporary holistic medicine is physician holding knowledge and experience of the essence of psycho-neuro-endocrino-immunology.

Let us now raise the basic question: When a person feels ill, psychically or physically (although we learned that there is no psychical or physical illness, which is not holistic: psychosomatic i.e. somatopsychic) – does he seek help and from whom? In case of our community, generally speaking, sick person seeks help from physician, shaman or priest, or from all of them. It might be strange what I am going to say now (although it might not be that strange even for some time), that a sick person, although fully aware of his illness (even for a long time) – does not seek for help! Why is that so? Do not forget that I am psychiatrist and psychotherapist (analytical, of Freud-Jungian orientation), and therefore I can and have to reply (again for many strangely enough): people who know they are sick, and do not ask for help – as stated by renown psychotherapists and quite frequently by Christian scholars – consider themselves (unconsciously and sometimes consciously) guilty for something and therefore need to suffer their illness, or they are narcissistically convinced that they can alone cope with illness.<sup>9</sup>

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<sup>9</sup> Several times I was writing about self-healing, as a possible but rare process of self-reviving ‘archetype of savior’, which can really help a person to overcome even most difficult disease.

Let us turn to another side of healthy and, especially, ill life of a contemporary person. We are going to talk about spiritual side of human being, its need to talk to priests, as well as of human natural need for prayer (but spiritual talk should not be equated with an act of confession) [1,2].

Is it necessary to talk about values of prayer, known in quite different modalities by all pre-historical and historical people until to date? As if a person has always known and/or believed in God (gods) and in prayer. After a very long period of sacrificing victims to gods, as a trial to mercy them (including human sacrificing), from the Christian time we have got directly from Jesus Christ an essential and clear prayer for everybody and for all times – “Pater noster” prayer.

During past decades, in American hospitals numerous and accurately led studies were conducted [3], showing that actively religious people were protected or were less exposed to psychosomatic diseases, and in case of illness and surgical interventions their recovery was accelerated. Especially impressive results were in a big hospital in Washington DC, in investigation upon a group of nearly 2000 patients, showing that after-surgical recoveries were significantly accelerated in religious compared to non-religious patients, with essential role of prayers. Even more miraculously, not only prayers of patients themselves were helpful but also prayers of others for them. European skeptics, among both physicians and theologians, have requested repeat of these investigations in European hospitals.

For two thousand years Christians (with open question who real Christian is) did not need confirmations of real effects of prayer, not only in illness but in other dangerous situations (with many examples that atheists also prayed in life-critical situations, sometimes with success!).

We already mentioned about happily chosen notion of “archetype of savior”, put by C. G. Jung in depths of human unconscious, which should be activated in cases of life-dangerous situations. Question remains, how? Well, certainly by prayer too, if it is sincere, deeply believing, almost screamingly god-searching. Before conclusion, it is an opportunity to thank Professor Dejan Raković for his long-lasting scientific efforts to demonstrate us (empirically as well, to a possible extent) values of prayer for persons, ill and healthy.

### 3. Conclusion

Arousal and life-time care of the oldest archetype in human collective unconscious, its homo religiosus, in companion with living moral life taking care of most significant Christian qualities, strengthens resistance against diseases via psycho-neuro-endocrino-immunologic system. In case of getting ill, religious practice of the patient helps in faster recovering or in complete healing of even most difficult diseases, while in cases of chronic or incurable diseases a strong Christian faith in deeper meaning of illness and its purifying value enables relatively calm and peaceful end of a dying Christian.

Life-time care of “religious person” within us offers a life-time possibility of arising “archetype of savior” (which will be presumably localized in the brain by future neurophysiologists).

On the entitled question, Prayer and/or Psychotherapy, if answer was not still given implicitly – there is no place for my doubt (based on my long-lasting psychotherapeutic experience, as well as on my twenty-year teaching of Pastoral psychology and medicine at the Orthodox Theology Faculty in University of Belgrade). Psychotherapeutic talks and spiritual talks (with the experienced educated Christian priest) are not mutually excluded. If psychotherapy is “help in development”, spiritual talk is “help in faith”.

At the beginning of 21st century, I think that time has come for West-European civilization and culture (including Balkans, definitely) to start bridging this most dangerous gap which is artificially splitting human natural need for faith and knowledge: their need for better self-recognition (via psychotherapy and spiritual talks). These trials for meeting religion and science should come from various sides: religious (from Christian Churches), philosophical, artistic (especially), and scientific (naturally; with question why such a sharpening of the relationship of evolutionism and creationism, when Secret of life and death is still all pervading?).

How and why to live (seemingly non-sense) life morally and ethically?

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# INTEGRATIVE ART PSYCHOTHERAPY

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**Abstract.** During more than thirty years of the work as a psychologist, art psychotherapist and professor of Psychotherapy and Psychology of Art at the University of Novi Sad, the author has strived to find a theoretical position which would integrate the philosophical, psychological, scientific and verbal part of herself with the artistic, religious, intuitive, symbolic, non-verbal part. In this process, the author has weighed in positions of various schools of thought and their practitioners and finally found her own way of understanding and practicing psychotherapy in the form that she calls Integrative Art Psychotherapy. The presentation will consist of two parts: (i) the first part concerns the specific theoretic position of author's Integrative Art Psychotherapy; and (ii) the second part is dedicated to examples from author's practice and psychotherapeutic work.

**Keywords:** *Integrative Art Psychotherapy, art, creativity, image, authenticity*

## 1. Introduction: Art Psychotherapy in Serbia

The year 1999 witnessed the beginnings of the the new Serbian Society for Integrative Art Psychotherapy. Art psychotherapy was incorporated into the curriculum of regular academic psychology studies, and has been introduced to the program of master and doctoral studies at the University of Novi Sad, Department of Psychology. As well as convening and teaching the courses, I have also been in charge of educational seminars and workshops in Art Psychotherapy within the Serbian Society for Integrative Art Psychotherapy which is one of twenty associations that belong to the SUAP (The Serbian Union of Associations for Psychotherapy), which, further, is a part of the EAP (European Associations for Psychotherapy), and have been advocating its development in our environment.

During the years I have developed an original approach and methods known as Integrative Art Psychotherapy, with si own, essentially humanistic, theoretical base, integrating elements of different psychotherapeutic approaches and techniques: psychoanalytic, transactional, gestalt, bioenergetic, psychodramatic, cognitive, systemic and artistic.

## 2. Assumptions of Integrative Art Psychotherapy

Integrative Art Psychotherapy (Milenković, S., 2000; 2002; 2003; 2010a; 2010b) is not limited to one psychotherapeutic model. It opens up doors for the integrative art psychotherapist to be effective with a wide range of individuals, with different techniques and approaches. The process involves use of creative artistic media by the patient/client, in the presence of a psychotherapist, working through issues and concerns which have led him or her into psychotherapy to the positive therapeutic outcome. It is consciousness-based multi levels holistic psychotherapy approach including soul, body and mind.

Art psychotherapy, as a separate profession, has to be (1) art, (2) psychotherapy and (3) science - all in one:

- Due to its inherent connections with art it needs to continue using its creative potential, as well as utilize multi-leveled artistic creation and communication;
- As psychotherapy it must fulfill its function in creating a change in the patients/clients in order to help them in healing, prevention and the promotion of their mental health and well-being;

- As a science it needs to prove its effectiveness as practice, as a broad-based science, which further provides the profession of Art Psychotherapy political impact through its becoming cohesive and recognized - establishing the power and value of what art therapists can offer, and what should be their goals.

One of the most prominent ego-psychologists and art historian, Ernst Kris (1970), believed that the exploration of art in all of its forms of expression was, in essence, the study of communication. Psychology is also a study in human communication, as well as the ways it can be transformed. A special place, therefore, belongs to the magical power of the image: the image gives power over something which is presented by it, but, at the same time, it represents a future plan of action.

In that way, the image in the Integrative Art Psychotherapy has multiple functions:

- It can be used as contemporary diagnosis;
- It can be used as psychotherapeutic means or de-construction or re-construction of the previous, starting image;
- It can represent the positive therapeutic goal or prognosis for the future;
- It can be a way of creating and keeping contact with the client/patient;
- It can be the base for one multi-level consciousness-based transpersonal/spiritual psychotherapy.

Art psychotherapy in this form is a powerful humane science, which can be put to work in guiding social change and preventing or mitigating the more severe expressions of the human tendency towards regression.

This presentation illustrates with examples from my practice all mentioned functions of the Integrative Art Psychotherapeutic work in which the image can be used as a powerful therapeutic tool.

### **3. One of Examples from Our Psychotherapeutic Practice**

A young man (19 years old) housed in a homeless shelter in Belgrade, at the very last of our sessions in this institution, when instructed to make a New Year's card with best wishes for his own future, along with the others in the group, refuses to do so. He chooses to voice his wish which he names "Off the donkey and onto the horse". I offer him a dramatic re-enactment of this wish. But the rest of the group has opted for the drawing of their own cards, so they can resemble "real" ones, he goes along with them and decides to draw an image. This drawing can only be described here, since G. wanted to keep it, and therefore I am unable to present it in its original version.

Following is the description of the drawing that G. named "Off the donkey and onto the horse", which represents his New Year's wish.

A path can be traced on the left-hand side of the drawing, which represents the past. G. is riding a donkey, clouds cover the sky and a bleak terrain is forming in front of him. In the right corner of the drawing G. is riding a horse, the sun is shining upon him, warming him up and revealing an entirely different terrain with its rays of light.

Because he had accepted my invitation to re-enact the drawing in dramatic form, I ask of him, applying the "two chairs" technique, to first sit on the chair that he named "G. on the donkey" and describe how he feels sitting on it.

G.: Short description: "uncomfortable", "dragged-down", "sad".

Then, I ask him to change the chair position, and sit on the "G. on a horse", and to describe what he feels there.

G.: Short description: "comfortable", "content", "happy", "successful".

Then I ask of him to move away from the chairs in the two presented positions, and to stand with me further away, on the side, and answer the following question: What does G. need to do in his life to get "off the donkey and onto the horse"?

G. answers straight away that he needs to study, in a nutshell, he needs "A BOOK"!

I further request of him to point out exactly where in relation to the two positions: G. on a donkey- G. on a horse is the book placed.

He places is right in the middle, in between the two positions.

Once more I repeat my request (which is an important element when we are dealing with the problem of ambivalence) for G. to first be the one who “wants” to be on the donkey, and then to be the G. that “wants” to be on the horse, up to the point where he chooses only one of these two positions. Verbalizing the word “want” the person assumes responsibility in relation to his wishes, feelings and behavior. G. finally decides on the position “on the horse”. He moves closer towards the chair-position “on the horse” but makes a verbal slip calling the position “on the donkey”. This is a sign that he is not yet entirely certain of his final choice.

Commenting on his behavior, I suggest that it seems to me that he has almost chosen the “on the horse” position, but that a part of him might still prefer “the donkey”.

G. smiles in response to this comment and immediately confesses that “the donkey” is somewhat appealing, because when he is riding it he can “slack about”, “have fun” and “hang around”.

Confirming this, and taking into account his wishes and the choice that he ‘almost’ made, I further ask him: How can somebody help him, or who can help him, to get off the donkey and onto the horse?

G. is scratching his head while he is “considering” the question and the meaning of this nonverbal message could be understood as need for support.

I instruct him to choose someone from the group whom he believes will give him this necessary support to “move off the donkey and onto the horse”. He chooses one girl.

The scene continues with the girl putting her arms around him, voicing her support for him, and his future, aloud, so he can hear it: “G., you are worthy!”, “You are great”, G. adds: “You’re the guy”, the girl voices everything which for G. represents what is missing in his life, and what he needs to “hear”. She mentions that these are the words she would also like to hear said about herself. While she is voicing her support, I am stroking G. on the head, as this was where he has indicated he needs it and likes it most.

Finally I ask him to stand on “the horse” chair once more, so he can fully confirm his choice, and feel more confident about it, and to view from above the G. that was previously sitting on the chair that represented G. riding “the donkey”.

G. experiences final confidence in his decision and is wondering what he was doing riding the donkey in the first place!

Following this, G. draws a new image, more precisely- he turns over the other side of the paper of his ‘old’ drawing, and on this new side he presents a different scene: G. is on the horse, he is riding it, he is treading the path which leads him home, and in front of his home he draws a swimming pool, a tambourine, a garden and a book, which, now, has a positive connotation, and which provides him an easy life, full of pleasure and all that he loves. He is finally “riding the horse” with a smile on his face.

We take a photograph at the end, and in it we can see the final scene: G. is on the horse, alongside him is his “materialized” support, i.e. the girl from the group, and they are embracing, he is standing on the chair with a book in his hand. This photo will serve to remind him of the work in which he reached his decision to study, instead of being lazy and feeling bad about it, sad and “riding the donkey”.

The entire group is enthralled by his work, they all clap, and a new girl in the group (J.) that came in for that last session, comments how she has a similar problem, as do all the others in the group.

This was the end of the workshop that finished in hopes that the work that began here will continue into the future, and the young people certainly expect it to be so!

#### **4. Integrative Art Psychotherapy (and Psychotherapy) in a New Millenium**

The European Association for Psychotherapy (EAP) was formed in 1990 on the basis of the Strasburg Declaration on Psychotherapy as a highly qualified profession in its own right, and not as a compartment of either psychiatry (medicine) or psychology. It counts over 150.000 therapists from 27 European countries. However, one question still remains unanswered: What type of psychotherapy do we need for this new century, and could it offer to help us deal with difficult social problems that we are facing?

In attempting to answer this question, the first issue that arises is the need for an effective psychotherapy that is both efficient and humane. Clearly, psychotherapy of the 21st century must balance efficiency with

humaneness. Psychotherapy is an art as well as a science. We need the best technology available, but we need to deliver it with compassion, empathy and patience.

The second major issue that I envision emerging is the necessity for a psychotherapy that addresses social matters as well as individual concerns. Psychotherapy of the 21st century must be able to both address these individual dynamics and be proactive in restructuring society to promote what is truly valuable and worthwhile in human life. I believe that we all must look for ways to intervene effectively in order to promote the health elements in society and confront the dysfunctional ones. Unfortunately, the tools that we have available as psychotherapists are seldom used on a societal level. We need political power to appropriately limit dysfunctional social behavior; individuals need to organize politically in order to have an impact on society.

Psychotherapists in the 21st century need to become more political in taking a stand in relation to what is moral and what is not. As responsible psychotherapists, we need to find ways to make the information and skills we have increasingly applicable on the societal level. The alternative, to act as bystanders in an increasingly volatile world, is self-destructive. Our basic condition as human beings is, in my opinion, anxiety. On one hand we see the unlimited possibilities of our lives, while on the other we realize that we are subject to disease, pain and death. We try to escape this predicament either by amassing enough money, power, influence, and so forth, in order to try and control it all, and thus be invincible, or, by attempting to lose ourselves in some sensual pleasure and attempt to make it all go away. Obviously neither ultimately works. It is only when we are willing to recognize and face the uncertainty of life, accept our vulnerability as human beings, and have faith and courage to live fully in spite of that uncertainty that we can truly be free.

An effective and humane psychotherapy for the 21st century, one which I believe Integrative Art Psychotherapy can be, will assist us in doing so. That is our task and our challenge and, to that end, the following is what we are both offering and proposing:

- Psychotherapy and Integrative Art Psychotherapy, as well, are human activities structured in interpersonal relationships endeavoring to foster personal growth and development. In this sense, they cannot be decontextualized from their social, historical, cultural and political environment.
- Psychotherapy and Integrative Art Psychotherapy both constitute an advanced domain of knowledge, with a multiplicity of theoretical and applied approaches but also some basic findings deriving from psychotherapy research.
- Psychotherapy research calls for a methodological multiplicity- commitment to scientific research with openness to the diversity of research methodology, so as to overcome the limits of the traditional positivist standpoint, but it should also be able to integrate results coming from quantitative as well as qualitative research. Psychotherapy research should be progressively addressed to process research and not only outcome research.
- Research results should inform and guide practice and training in psychotherapy and Integrative Art Therapy, as well. This is the only way to overcome the dogmatic position of some theoretical approaches.
- Integrative Art Psychotherapeutic practice should be a source of feedback for the Integrative Art Psychotherapy research. No research program is relevant if it does not carry implications for therapeutic practice.
- Psychotherapeutic and Integrative Art Psychotherapeutic practice both call for an attitude of intellectual, personal and technical openness. This integrative attitude should not be confused with eclecticism, that is, a random combination of epistemologically incompatible techniques, and should derive from a profound knowledge of the main contemporary psychotherapeutic models.
- Training in psychotherapy and Integrative Art Therapy calls for a knowledge of theories, methods and techniques, but it should also foster a profound experiential reflection on the psychotherapist's own involvement in the therapeutic process. Facilitating a process of growth and development among Integrative Art Psychotherapists in training is fundamental for good practice and for the Art Psychotherapist's mental health.

- Psychotherapeutic practice is a privileged form of relationship because of the intimacy that it entails, but precisely because of this it can seriously affect the therapist's emotional stability. In this sense, it is advisable to become involved in self-caring practices as a means to increase the quality of our professional role. Art, spiritual, and transcendental issues are basic in this kind of activity.
- There is no such thing in psychotherapy as a neutral position, no Archimedean point outside our investments in all the perspectives and theories we inhabit. Integrative Art Psychotherapy and psychotherapy in general promote core values: pluralism; dialogue; cooperation; nondiscrimination; democratic constitutionality; epistemic openness and exploration; tolerance of difference; search for foundation; interim tolerance of theoretical eclecticism; commitment to scientific research with openness to the diversity of research methodology; social/cultural relevance and acceptance of our political function. These are all aspects of what makes 'dialogue based on appreciation of difference' (Evans, 1996) possible.

For us as Integrative Art Psychotherapists dialogue based upon the appreciation of difference is itself a positive end. Difference is not our enemy but our opportunity, and what defines us at the level of content, as well. Our opportunity, therefore, is to move from the fear of difference, to the acceptance and celebration of difference.

## 5. Instead of Conclusion

Afterthoughts: what purpose does art serve?

As art is at the very center of Integrative Art Psychotherapy I would like to finally address this question, one dealing with the need, maybe even the necessity of art as content, but also the means of one's transformation or re-creation, poiesis instead of mimesis (Milenković, 1997).

Art is a state of mind. It represents the overstepping of current reality, the transcending of it. Art is always open to new insights, it is inquisitive and facilitates a shift from the dogmatic towards the sceptic and critical thought. It does not copy and blindly adapt to reality (mimesis), it is a form of creation of a new reality (poiesis), and that is why art shatters the aspect of immersion in the existing world, as well as the implications emerging from this aspect.

Art has an important cognitive function: it increases human capacity for flexibility and freedom (it is "an externalized dream"). A fair amount of research dealing in the neurological basis of the artistic experience attest to this end. (Ognjenović, 1997)

Ultimately, art has a therapeutic role. It supports that emerging power in humans which is fundamental in overcoming the most terrible of situations and trials. It represents one of the seven resiliences, as the married co-author couple, the Wolins (Wolin & Wolin, 1993) have observed, but it also represents the basic instrument in therapeutic practice (Art Psychotherapy).

Bergson (1993) describes its primary function quite precisely: art brings us 'face to face' with reality, but I would here add- it brings us 'face to face' with ourselves, as well. In this way art is the form of an individual's re-creation, his or her renewal, through one's own strengths, with the assistance of art.

So, psychotherapy is mind-therapy. With use of imagination & using all of the arts in Integrative Art Psychotherapy we can create our own life masterpieces-ourselves, instead of being the victims of our scripted 'destiny'.

What you do comes from what you think. Find that inside of you and you will find what the future will be. For, the future is NOW.

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## BODY PSYCHOTHERAPY AND TE-PSYNTESIS

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**Abstract.** Almost one century ago Wilhelm Reich introduced work with self-regulative processes and with cosmic superimposition. We are continuing his work here more than 3 decades, within TePsyntesis – Serbian Training School of Body Psychotherapy, founded by Prof. Dr. Ljiljana Klisic in 1976, in Belgrade, Serbia, ex-Yugoslavia. It has all characteristics of Body Psychotherapy schools, but TePsyntesis has also evolved from thirty years of research by Dr. Klisic into drives development and relationship between life force and consciousness, and it has trained more than 200 professionals. Body-Psychotherapy is a distinct branch of Psychotherapy, well within the main body of Psychotherapy, which has a holistic theoretical position. It involves a different and explicit theory of mind-body functioning which takes into account the complexity of the intersections and interactions between the body and the mind. The common underlying assumption is that the body is the whole person and there is a functional unity between mind and body. Directly or indirectly the body-psychotherapist works with the person as an essential embodiment of mental, emotional, social and spiritual life. He/she encourages both internal self-regulative processes and the accurate perception of external reality. Through his/her work, the body-psychotherapist makes it possible for alienated aspects of the person to become conscious, acknowledged and integrated parts of the self. In order to facilitate this transition from alienation to wholeness, the body-psychotherapist works with signs indicating vegetative flow in the organism, muscular hypertension and hypotension, energetic blockage, energetic integration, pulsation and stages of increasing and natural self-regulative functioning. And the phenomena of psychodynamic processes of transference, counter- transference, projection, defensive regression, creative regression and various kinds of resistance. TePsyntesis offers also a new meta-theory of drives development: aggression and sexuality. In TePsyntesis we are studying and researching evolution of the basic human instinctual drives: (i) Instinct for self-preservation (aggression), (ii) Instinct for procreation of the species (sexuality). Only in unity of mind and body that opens up a suppressed spiritual dimension, we can approach the whole scope of evolution: (i) Evolution of primitive aggression and destruction towards mature power integrated with developed value system to non-dual power, (ii) Evolution of primitive sexuality towards Bliss and supreme Joy.

**Keywords:** *consciousness-based holistic approaches & techniques, Body-Psychotherapy, TePsyntesis*

### 1. Body Psychotherapy and Te-Psyntesis

#### 1.1 Te-Psyntesis

TePsyntesis is a scientifically-based body-psychotherapy approach which combines systematic work with the body and the mind-psyche to help reduce psychological and psychosomatic suffering and to help people achieve integration on the somatic, emotional and spiritual level as well as Power and Bliss development.

*We are offering the ways to help a person to deal with his/her flow of life force, what has not only the purpose of healing, but also enabling higher level of living and enhancing creativity, freedom and fulfillment.*

Prof dr Ljiljana Klisic founded **TePsyntesis - Serbian Training School of Body Psychotherapy** in 1976 in Belgrade, Serbia, ex-Yugoslavia. Having all characteristics of Body Psychotherapy modality as its basic level, TePsyntesis has evolved from thirty five years of research by Dr. Klisic into drives development and the

relationship between life force and consciousness. It has trained more than 200 professionals. The professionals educated in TePsyntesis for 35 years of its development have made far reaching impact both in spreading its findings and methodology but also through adequate practice of TePsyntesis application paired with following its effects in the environment of health institutions, social work and psychotherapy, but also in theoretic and scientific field - as university lecturing, at schools and further independent and/or individual research projects.

*TePsyntesis* offers also a new meta-theory of drives development: aggression and sexuality.

*In TePsyntesis we are studying and researching evolution of the basic human instinctual drives:* (1) Instinct for self-preservation (aggression), and (2) Instinct for procreation of the species (sexuality).

Only in unity of the mind and body that opens up a suppressed spiritual dimension, we can approach the whole scope of evolution: (1) Evolution of primitive aggression and destruction towards mature power integrated with developed value system to non-dual power, and (2) Evolution of primitive sexuality towards Bliss and supreme Joy.

During long tradition of our praxis in *TePsyntesis - Serbian Training School of Body Psychotherapy*, lot of research have been done in measuring the effect of application of TePsyntesis. Results show that it has success in fields of dealing with depression, anxiety, all types of psychoneurotic issues; clients with psychosomatic symptoms; borderline personality disorders; victims of traumatic events, etc. Besides, TePsyntesis shows effect dealing with persons who generally wish to enhance life skills, relationships, communication skills, or psychosomatic functioning, etc.

TePsyntesis methods of treatment lead to a better integration of a person, as seen by:

- more coherent and integrated sense of self and self-confidence;
- better control over emotions, more contact with own emotions and inner senses;
- deeper consciousness of personal history and acceptance of that history;
- improvement of familiar relationships;
- more fulfilling and satisfying relationships (including marital);
- greater job satisfaction;
- greater feeling of empowerment and potential;
- ability to focus on the goals and accomplish life tasks, but in harmony with the new, more mature level of functioning.

## 1.2 Radix: Mother school of Te-Psyntesis

The most influential source of the TePsyntesis is *Radix work, founded by Charles Kelly* who was a student of Wilhelm Reich. Radix is a Body Psychotherapy studies and improves interactions between the client/patient's body and mind. It has a DEVELOPMENTAL MODEL, a theory of personality, and character typology which relates to the origins of any disturbances, as well as using a rich variety of diagnostic and therapeutic techniques within the context of the therapeutic relationship. There have been several research projects on outcomes and character types.

Radix sits within the field of Humanistic Psychotherapy and has several distinct characteristics.

Charles Kelley, a student of Reich's in the early 1950s, developed a style of work which synthesized Reichian techniques with methods from various humanistic and growth work approaches. Kelley *defines Radix like re-education in feelings and purpose*. He developed ways of working in groups to enable people to recover conscious purposiveness and reconnect with the deep feelings which are blocked by armoring (Kelley 1974). 'Radix' is Kelley's equivalent for life energy, or what Reich called 'orgone'. He stressed that Radix work is *'education' rather than psychotherapy*, although many of his followers no longer make this point. Kelley pays particular attention to developing Reich's work on the **eyes**, synthesizing it with the Bates Method and emphasizing the importance of dissolving 'ocular armoring' - tensions in and around the eyes which block not only clear vision, but also good **contact** and thinking (Kelley 2004).

**Contact** is one of the most central concepts in Radix work and the concept that makes this work so powerful.

Radix is still taught and practiced around the world, but like several other psychotherapy schools it has fallen out with its own founder, who now works independently. In many ways it is a very *traditional form of*

*humanistic Reichian work, but with its own set of terms, techniques and emphases.* In particular, it focuses on the distinction between the energetic '*in stroke*' and '*out stroke*', and divides neurotic structure into three types: the blocked in stroke (organized around the emotional polarity of fear/trust), blocked outstroke (anger/love), and *blocked pulsation* (pain/pleasure).

Out of this basic, TePsyntesis has grown into a depth psychological method with all general characteristics of body-psychotherapy work – a functional and structural approach working with *character structures, vegetative, pulsation and subtle energy processes*. Also, TePsyntesis has added new Meta-theory proposal.

## **2. What is Body-Psychotherapy?**

Body-Psychotherapy is a distinct branch of Psychotherapy, well within the main body of Psychotherapy, which has a long history, and a large body of literature and knowledge based upon a sound theoretical position.

It involves a different and explicit theory of mind-body functioning which takes into account the complexity of the intersections and interactions between the body and the mind. The common underlying assumption is that the body is the whole person and there is a functional unity between mind and body. The body does not merely mean the "soma" and that this is separate from the mind, the "psyche". Many other approaches in Psychotherapy touch on this area. Body-Psychotherapy considers this fundamental.

It involves a developmental model; a theory of personality; hypotheses as to the origins of disturbances and alterations, as well as a rich variety of diagnostic and therapeutic techniques used within the framework of the therapeutic relationship. There are many different and sometimes quite separate approaches within Body-Psychotherapy, as indeed there are in the other branches of Psychotherapy, as indeed there are in the other main branches of Psychotherapy.

Body-Psychotherapy is also a science, having developed over the last seventy years from the results of research in biology, anthropology, proxemics, ethology, neuro-physiology, developmental psychology, neonatology, perinatal studies and many more disciplines.

It exists as a specific therapeutic approach with a rich scientific basis on an explicit theory. There are also a wide variety of techniques used within Body-Psychotherapy and some of these are techniques used on the body involving touch, movement and breathing. There is therefore a link with some Body Therapies, Somatic techniques, and some complementary medical disciplines, but whilst these may also involve touch and movement, they are very distinct from Body-Psychotherapy.

Body-Psychotherapy recognises continuity and deep connections in which all psycho-corporal processes contribute, in equal fashion, to the organisation of the person. There is not a hierarchical relationship between mind and body, between psyche and soma. They are both functioning and interactive aspects of the whole.

What is ARMOURING in BP? Areas of the body where the psychological defenses have become "embodied" over time and usually with repetition of traumas and there is a resultant restriction in the natural physiological flows of energy, nerve impulses, fluids, etc. There may be increased musculature, a thickening of structure, less mobility, a deadening of tissue, or extra sub-cutaneous fat. Where energy has been deprived to a particular area, there can be decreased musculature, a thinning of structures, etc. Physical interventions in these areas (often using some sort of physical pressure, as in Character-Analytic Vegetotherapy or similar) can elicit the strong and long-held emotions associated with the original trauma and defense mechanisms against the pain. Theory suggests that with a working through of the under-lying emotions, the armouring will soften and eventually disappear. Wilhelm Reich's theory of Character Structure used the concept of armouring whereby different traumas at different times in the person's development created armouring which differed in various areas of the body to give an overall different character structure.

### **2.1 Definition of work of TePsyntesis Body-Psychotherapist**

Directly or indirectly the TP body-psychotherapist works with the person as an essential embodiment of mental, emotional, social and spiritual life. He/she encourages both internal self-regulative processes and the accurate perception of external reality.

Through his/her work, the body-psychotherapist makes it possible for alienated aspects of the person to become conscious, acknowledged and integrated parts of the self.

In order to facilitate this transition from alienation to wholeness, the body-psychotherapist should have the following qualities:

- Intuitive awareness and a reflective understanding of healthy human development.
- Knowledge of different patterns of unresolved conflicts from childhood with their specific chronic splits in mind and body.
- The ability to maintain a consistent frame of reference and a differentiated sensitivity to the inter relatedness of:
- Signs in the organism indicating vegetative flow, muscular hypertension and hypotension, energetic blockage, energetic integration, pulsation and stages of increasing and natural self regulative functioning,
- Phenomena of psychodynamic processes of transference, counter-transference, projection, defensive regression, creative regression and various kinds of resistance.

## 2.2 Body-Psychotherapy history and Wilhelm Reich

Body Psychotherapy pre-date Freud with P.Janet, R.Assagioli, etc[see David Boadella's article in Journal of Psychotherapy (Vol II, No 1)], but the most important name in the history of Body Psychotherapy is Wilhelm Reich.

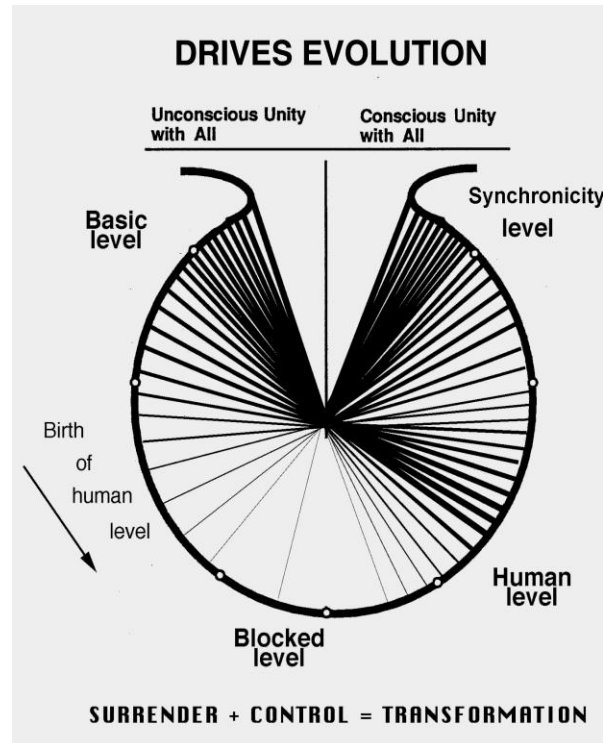
He has immensurably added to Body Psychotherapy and has also, in some instances, caused it to be rejected by other branches of psychotherapy. His early work on Character Analysis is widely accepted as a reference work by Psychoanalysis and most other modalities of psychotherapy. The next direct development of his work, Characteranalytic Vegetotherapy involves direct contact and touch with the body of the patient, but it was not accepted by the psychoanalysts. (Today we have high standards of ethics - as you might expect from a modality where practitioners work intensely and sometimes intimately with other people's bodies. We have to have these standards, and we take this aspect of our work very seriously.)

Reich's exclusion in 1936 from the International Society of Psychoanalysis is extremely significant. In 1933, Reich published a book entitled the "Mass Psychology of Fascism". Given the political situation in Germany at the time the German Psychoanalytical Society, with many Jewish members, was desperately trying to retain its standing with the (increasingly) Nazi German authorities, it is not surprising that Reich was excluded. Even if C.J. Jung is condemned nowadays for collaborating in some way with the Nazi regime, his work has never been rejected in the same way as Reich's was. Reject the man, and it seems you reject his work forever.

However, Reich's innovations and concepts have been used widely in another approaches without mentioning his name. For example, almost one century ago **Wilhelm Reich** introduced work with *self regulative* processes and with *cosmic superimposition*. TePsyntesis continues his work for more than 3 decades.

## 3. Te-Psyntesis Meta Theory (New Concepts in TePsyntesis)

After the experiences the school has gone through in the last twenty years in Yugoslavia, new theoretical concepts have also started to emerge based on these older concepts. TePsyntesis studies and researches the *evolution of the basic human instinctual drives: the instinct for self-preservation (aggression), and the instinct for procreation of the species (sexuality)*. It helps people in this evolution using both verbal and nonverbal methods and not only on a psychological level. It is only through the unity of mind and body that a spiritual dimension opens up and the whole scope of evolution can be approached (cf. Fig. 1). Firstly there is the *evolution of primitive aggression and destruction towards mature power integrated with a developed value system*, to Non-dual Universal Power. Secondly there is the evolution of *primitive sexuality towards Bliss and supreme Joy*.



**Figure 1.** Drives evolution

### 3.1 Orgasm development and function of bliss

On the basis of the holographic paradigm and quantum physics, and in cooperation with the Faculty of Electrical Engineering at the University of Belgrade, TePsyntesis is *continuing to develop the Psychoanalytic theory of psychosexual development*. Dr. Ljiljana Klisic has also developed the *theories of Orgasm Development and The Function of Bliss*. She has introduced *new terms for different orgasms* as a model for the development of consciousness and a new model for human development (cf. Fig. 2). *Bliss is seen by TePsyntesis as the most intense positive psychological experience*, which has an important function. The bliss taboo is deeper and more hidden than the sex taboo. The goal of orgasm development is to increase the degree of freedom in decision-making, which happens, step by step, at each subsequent level of orgasm development. Orgasms are classified as primitive, immature, perverse, neurotic, blocked, mature, extended, ecstatic, blissful and non-dual. In order to develop orgasm further, a person must learn to increase the degree of his/her freedom in decision-making. If successful, the reward is ecstasy. If a deeper and more complex degree is reached there is a divine reward – bliss.

### 3.2 Power development

Dr Klisic has also proposed the *theory of Power Development*. In the process of development from *primitive aggression to mature power* and towards ultimate non-dual power, it is necessary to learn to postpone (not to block, suppress or repress) reactions in order to increase the degree of freedom in decision-making. In this process blocking or impulsivity often happens, the most difficult being integrating surrender with control and cognition.

*Agrasms (a new term suggested by Dr Klisic)* are classified as instinctive, primitively aggressive, destructive, manipulative, passive, assertive, truly powerful, non-dual universal powerful (cf. Fig. 3). In her opinion, investigation into orgasms and agrasms in Power or Bliss development gives us a good model to start the exploration of consciousness and human development.

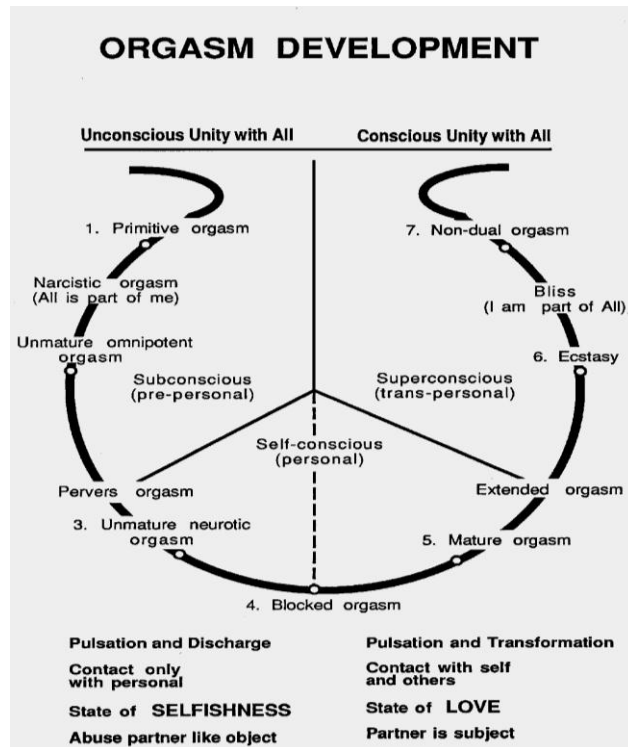


Figure 2. Orgasm development

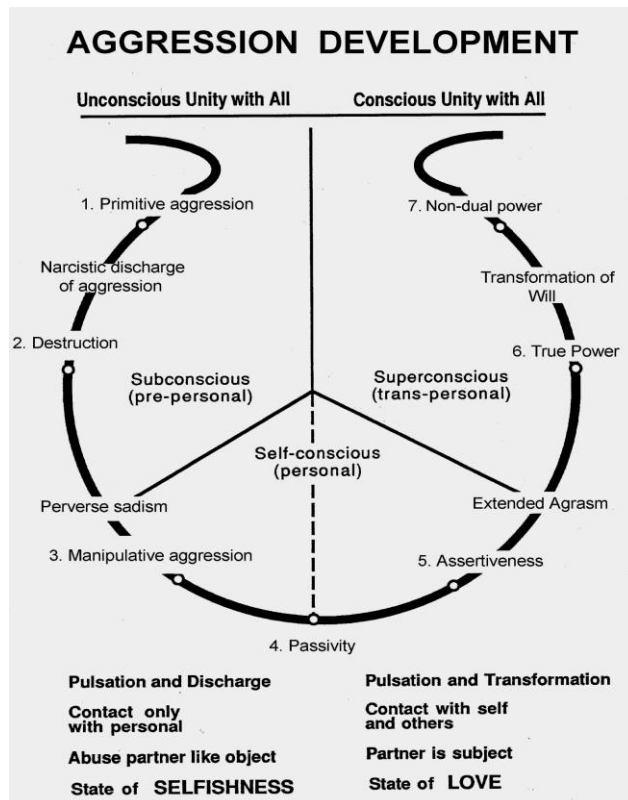


Figure 3. Aggression development

### 3.3 Psychosexual development

On the basis of research into instinctual drives development, Dr. Klisic has proposed the *continuation of the psychoanalytic theory of psychosexual development*. She sees the concept of maturity in psychotherapy as being under-developed and too dependent on the biological model. In her opinion, psychoanalysis has connected maturity to genital primacy and the genital character structure while it is only the beginning of maturity. After oral, anal, phallic and genital primacy - well-known Reichian concepts - development has to continue on to *heart and divine primacy* (Fig. 4).

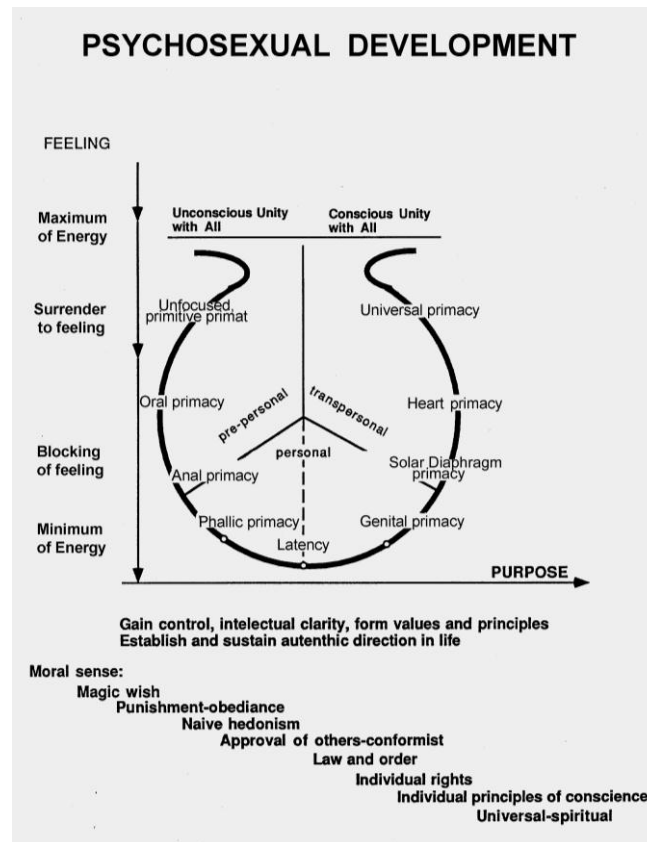


Figure 4. Psychosexual development

### 3.4 Character development

Dr. Klisic has also put forward a *continuation of the Character Development Theory*. To the oral, anal, phallic and genital character structures she *adds heart and divine non-character*. She has connected the genital character to the beginning of maturity and the ability to surrender to the orgasm reflex, meaning a freedom from the main blockages. Heart character means giving primacy to heart reactions, where all decisions are made from the heart. This is the principle of love, meaning at a higher level of consciousness. As with previous character structures, some neurotic tendencies remain. The heart character is more developed and discovers Bliss that is often the result of love actions. The most developed character structure is resolved character: no-character. In this structure there are no more frozen functions, the flow of energy is complete. There is unity with the whole universe, total freedom from blockages and from character armor, the ability to be in joy and bliss, to radiate it, to become the love principle, pure consciousness, the only reality there is, ourselves connected with the *divine no-character*.

### 3.5 Training in TePsyntesis

The above are theoretical considerations, which place the training work in a wider conceptual framework. TePsyntesis uses an organized system of methods in treatment. It is a systematic application of defined body-psychotherapy methods with some innovations. (Dr Klisić is still working on the methods, which are best for each stage of Power and Bliss Development.) The approach to each trainee is individual and accepting, with a lot of support for the stage he or she is at. This attitude, together with awareness opens the next stages of development more easily, bringing more pleasure, joy and bliss.

The training takes four years. Big part of it is general Body-Psychotherapy. The first year is experiential with group and individual work. The second and third years are theoretical, methodological, didactic, conceptual, as well as continuing with the experiential work. The fourth year emphasizes supervision.

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# INTEGRATIVE APPROACH TO TREATMENT OF STATE OF PANIC: CASE STUDY

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**Abstract.** The personality that gets states of panic (SPs), has repeated situation of dependency and excessive protection by parents, now in a partnership or other relationship, accompanied by agoraphobia, which kept the psychological dependence and realized gains. In the clinical picture there are physical symptoms - palpitations and heart palpitations, pain in the left breast, dyspnea, syncope, and from psychological symptoms sense of imminent death, depersonalization, derealization and hypochondria. The aim of this case study is to depict therapeutic possibilities of medicament, psychotherapy, and homeopathic approaches to treatment of SPs. Archeology student AV was treated from SPs at the year of 22 and in period from 26 to 29 years of life at the Institute of Mental Health with benzodiazepines anxiolytics, without much success. When she came to psychotherapy, at the time she lived with her parents, she was unemployed, with a very poor communication with family members and friends, frequent SPs and the fear of going out. She specifies numerous disappointments, disagreements, failures, financial losses, suspicions and physical punishments by parents as reasons for her great jealousy toward younger sister, her change of motives, bad results at school, leaving studies and leaving home, though without means of subsistence. Several failed relationships with married men, an unwanted pregnancy, gynecological and other health problems led to a fear of marriage. Once the pride of her parents, favorite, talented for music and painting, gradually leaves and loses in everything. Psychological findings indicate considerable neurosis with anxiety, depression, cardiovascular and obsessive tendencies, as well as the reaction of inhibition to stimuli (asthenia). Starting from the fact that she felt unwanted and unloved, she increasingly accuses her parents for the weaknesses of her personality and fear of risk, her withdrawals and uncertainty in sensual connections. Through ten-year of treatment she gets to insights into her needs, accepting responsibility for her relationships, she continues her education that enables her to find a creative job and establishes good communication with the environment. For all the time she had only two SPs, achieved business affirmation, but not emotional. She accepts homeopathic medicine Ars.alb.30CH and experiences a revelation. Firstly, through the antidepressant and sedative effect, and then through the experiencing of repressed feelings and creating a significant insight. She establishes excellent relationships within the family, gets a better job, learns Reiki and claims that homeopathy has changed her life because she is emotionally more realistic. In conclusion, pharmacological therapy of neurotic and panic conditions is not enough, and without psychotherapy there will not be growth of personality. Homeopathy makes it possible to achieve a fine vegetative balance of personality that gives it authenticity and fullness of self-realization.

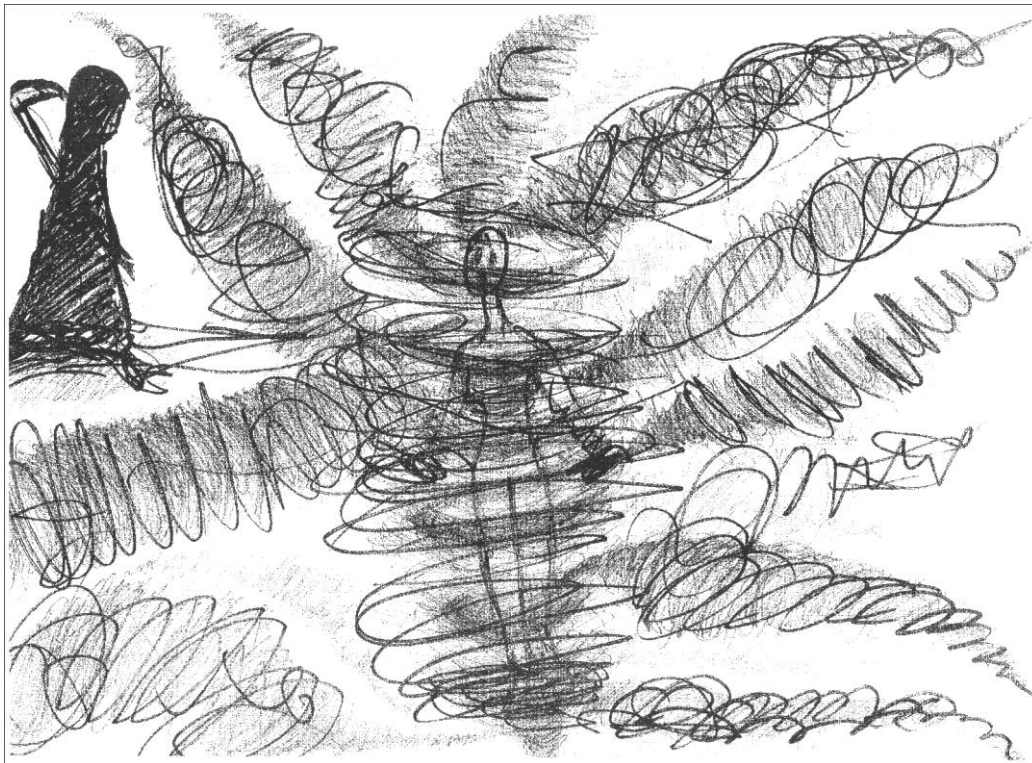
**Keywords:** *state of panic, integrative treatment*

## 1. Introduction

In a range of physical disorders followed by a state of panic (SP) and agoraphobia the patient tries to maintain his addiction, most frequently to a partner, showing a need for protection and avoiding life difficulties which are unpleasant and can lead to fear. Andrews showed as early as in 1966 that those patients are mostly women who showed great dependence on parents who were overprotective of them in childhood. As adults, they are repeating the dependency pattern now in the partner relationship, and when the partner rejects that, SP can appear and enable psychological gain from the illness, which further maintains an unchanged addiction.

SP usually starts abruptly, when the patient is tired or exhausted, intoxicated with caffeine or alcohol, or when in some specific life problem. The clinical picture includes a panic attack with an outburst of very intense fear, with a life threatening feeling and a sense of imminent death (cf. Fig. 1). Along with the thoughts of a life threatening illness, the patient also has a fear of losing control over oneself and going insane. The physical symptoms of fear, such as heart palpitations, tachycardia and arrhythmia, dizziness, shivering, nausea and vomiting, hot and cold flashes, numbness, sweating, weakness, sensory disorders and a feeling of losing one's consciousness, appear as a result of an autonomous or general nerve excitement. They can be caused by stress or continuous fear, if they cannot be either subjectively or objectively expressed otherwise, i.e. if no awareness of experiencing fear is present and awareness of bodily functions is elevated. The patient can be overwhelmed by fear without consciously recognizing that state.

SP is treated with medications (antidepressants, benzodiazepines, anxiolytics, beta blockers) and psychotherapy [1-3].



**Figure 1.** She sees herself in a black whirlwind, and Death awaits her.

## 2. Aim

The aim of this study is to show the therapeutic possibilities of the medication, psychotherapeutic and homeopathic approach in treatment of SP.

## 3. Methodology and Results

The study shows an eleven year long psychotherapeutic and homeopathic treatment of A.V., an archeology student, which was initiated at the age of 29. The patient had been treated with benzodiazepines and anxiolytics at the Mental Health Institute three years prior to that, with no success. Frequent SPs were accompanied with heart palpitations, dyspnoea, nausea and vomiting, diarrhea, anorexia and agoraphobia. She had had the same

symptoms for three months at the age of 22. When she came to psychotherapy she was living with her parents, she was unemployed, had very poor communication with family members and friends, she didn't leave the apartment. Prior to that she was living at her friend's house for 2 years, had a couple of relationships with men who were married or in another relationship. She is beautiful and has a baby face. She laughs as she speaks of her sorrow.

**Her personal anamnesis:** She was everybody's "pet", a well mannered and responsible but egocentric child, when she got a sister and turned into a "born ill-tempered, crabby person" in her mother's words. That is when hostility towards her sister, with whom she is now not speaking, started to appear. "I was feeling unwanted", she says. In primary school she was a "princess", a straight-A pupil, she had other kids carry her bag for her, the teacher loved her. At the age of 13 conflicts with parents, who wrongly accused her of smoking, doing drugs and hanging out in bad company and listening to "worthless music" arise, which hurt her badly. "They never understood me", she says. Her father, a Musical Academy teacher, expected her to have a career in music, but she drops out of third year musical secondary school "Just to spite them". She regrets it very much later on. "I just wanted my father to treat me in the same way he treated his students, I wanted my mother to help me with my history lessons, but they thought I myself was responsible for my actions". At the age of 15 she started living with her grandmother while her parents and sister moved to another apartment, expecting (wrongly) that she would inherit the apartment from her grandmother. But when grandma died they lost the apartment i.e. the right to occupy the apartment, the fact which she was unwilling to accept. She experienced "the downfall of all expectations", lost confidence in her parents, and accused them "of everything". "I was insecure and had a weak Ego because they didn't help me strengthen my personality", she would say later during psychotherapy. In the fourth grade a love relationship with a peer results in an unwanted pregnancy, abortion and a break up. There is agony and conflict with oneself because she didn't want a child and childbirth. Because of her worse grades she enrolls in archeology, but quits the studies as not interesting, regardless of the fact that she collects antiques, classifies them and wants to open an antique shop.

Her parents used to beat her a lot; she had onsets of hysterical rigidity, nausea, changed speech, screaming attacks and throwing herself on the floor. At the preschool age she experienced a tremendous fear of being killed during a tonsillectomy because the anesthesia didn't work. As an adult she was "afraid of everything", she could feel the tension in her body, she was waking up in the middle of the night because of the heart palpitation, she felt forced to rub her chest, she had depressions – felt not loved, was not interested in studying, feeling hopeless, with gloomy thoughts.

**Family anamnesis:** Has a depression, atmosphere of frequent conflicts, the father is drinking. He is verbally aggressive, the mother is egocentric and unsatisfied, and she is now accusing her daughter of being "a social case".

**Psychological testing:** A significant neurosis with anxious, depressive, cardiovascular and obsessive tendencies was found, as well as the Asthenic syndrome (reaction of inhibition on stimuli).

A good transfer has been established and Transactional analysis [4], Body psychotherapy [5-7], Autogenic training [8] and Occupational therapy by painting have been applied [9].

The purpose of the treatment is for the patient, who has low self esteem and no ability to control her future, to build her own balance and the center of life, establish independence and survive in the struggle for self realization. Beside the fear of medical institutions, interventions and doctors, difficulties in working with those patients seem to be their not being persistent, frequent quitting of treatments and changing doctors – if they decide that the doctor is not interested, if he asks them to do something they can't do, if he hasn't made an impression of a realistic and spontaneous person or if he neglects their symptoms [10].

Since the patient does not have an awareness of the fears and puts herself in the position of a passive object, the doctor has to direct her towards taking responsibility for her state and understanding her fear.

It is important that the doctor is patient, modest, compassionate and compliant with the patient, who is supposed to take the doctor to be her friend and representative, and also to know how to wait [1].

**Insights during 11 years of psychotherapy:** "I have panic fears of risk due to exposure to danger and possible gain and progress, but also of failure – which kills every motive, strength and will to struggle."

“I have given up everything in advance, when there was a “to be or not to be” situation, regarding piano, there was an invisible pressure present, some expectation both from others and from myself.”

“I feel that I missed something, that I did something that cannot be undone anymore.”

**Dream No. 1:** She didn’t finish high school and was panic stricken because she had to pass some exams in order to get a diploma and she is not familiar with the matter.

“After a physical and emotional closeness with a man and I can’t get it together.”

“I feel self confident when I don’t feel, and as soon as I start feeling, I feel like vomiting and feel panic stricken.”

“My mother has been telling me since I was 16 that nobody wants an ill tempered person like me.”

“When I fall in love, I stop being myself.”

**Dream No. 2:** “I had a dream about strangling my mother because she told me “If only you were smart enough to have a baby, so that you can have something later in life”.”

“My mother hates me because I put up a wall. I don’t love her, honestly.”

“I have a panic fear of a baby and family.”

“I am to blame for my parents’ (bad) marriage, because mother got pregnant with me.”

“All women are abandoned in a family.”

“B. (the boss) told me I was evil.”

“I haven’t let anyone explore my soul’s needs. God wanted me to achieve happiness by work and not some other kind of happiness. In order to punish me, perhaps I wasn’t good.”

“It is terrifying that by giving birth you are actually giving someone the present of death. I am not sure I like having been born. I am not loved enough – both in my family (to eliminate my sister), and in love affairs (to leave a woman)”

“I almost killed her” (her mother, because mother said that she is lying to the doctors and that she has been mistreating everyone from the moment she was born).

“Everybody sees me as strong with controlled feelings.”

“Others see me as someone who makes their day.”

“I don’t like myself, when I meet someone it is like everything is focused on him.”

“I am being kept in a showcase.”

#### 4. Discussion

During a period of 10 years she finished 2 computer seminars, started making phone calls and going out looking for a job which she finally got at an acquaintance’s, but she could not become financially independent from her parents. She made successful programs – websites. She was taking care of everyone at the firm – she helped them give up smoking, gave them advice on fighting for one’s self, she renewed friendships, family and generation relationships (gained many praises and sympathies). She had various dilemmas regarding her profession, she finished an art course, wanted to study computer art but her parents didn’t want to finance her. She established good relations with her sister, bought her a graduation ring, she tried to improve the family atmosphere and engage her parents in some psychological literature, but they wouldn’t read it. She collected valuable antiques and is preparing an exhibition with a friend. She had three affairs with married men which she maintains as friendships.

During this time she had a long term hormonal disorder, skin allergies and urogenital infections with bleeding.

SP appeared only 2-3 times at the beginning of psychotherapy, always regarding the conflict with the mother, when she asked her to hold her hand and they would reconcile. The attack would go away.

**Homeopathic medicine:** Years of work on oneself have passed with significant yet not complete self realizations. One year ago she took a homeopathic remedy Arsenicum album 30 CH and she immediately felt the antidepressant effect. Afterwards she felt panic, anxiety, cried a lot and “let it all out”, and then gradually came conciliation (“some primary feeling”). She is more composed, without panic.

The hemorrhoids are gone, her hands and feet are no longer cold. She recognized what is going on with her partners as in her life's scenario from the age of 12 ("Affection creates mental anguish and I have to destroy it. When I like someone I start looking for shortcomings and tell him "No, you are not a prince". I am wrong.")

***She concludes that "Our attitude channels others towards us."*** She decides that she will no longer enter relationships with married or taken men, wants to "clear herself of all negativities and attract normal people". She can feel some flow of energy, she is different, doesn't feel anger or rage any more, she can relate different situations from the psychotherapeutic process, her surrounding no longer has a reciprocal reaction bad for her and fears go away. She is happy. She gets along with her parents – "they are no longer in my focus". Everything is well at work. She started *Reiki*, she still feels blocked, inhibiting her display, her real emotions and she doesn't feel ready to accept love, but she wants to change that. She thinks that *Homeopathy* completely changed her life.

## 5. Conclusion

SP can basically have intrapsychological and interpersonal conflicts, a psychological gain from the disorder, existential and other problems. Regarding the patient A.V. the medication treatment (without antidepressants) had no effect, but psychotherapy stopped the panic stricken way of living, opened her up and initiated the process of self realization, which the homeopathic treatment strengthened, providing energy for getting over and integration of personality. So, there is a need for this sort of combined treatment which significantly accelerates the healing process.

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# THE EARLIEST HOLISTIC HEALING TREATMENT OF NEWBORNS: METHOD BY DR VUCICEVIC

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**Abstract.** Bio-informational system in newborns has a fresh holographic record of the Universe. It also has the highest number of brain cells ever in life with huge potential to make new synapses every second. Any damage of cells that occurs either on organic, metabolic or energetic level can be redefined, improved or restituted. In a special neurological pediatric examination – Method by dr Vucicevic – the idea is to make a special contact between doctors and baby's brain by bringing baby into initial conditions, very similar to those in a womb. We are using a manual, mind supported procedure by taking baby in doctors hands, suggesting the group of 4 acts that remind baby to 4 familiar high-potential-energetic information: (1) umbilical cord, (2) cross, (3) spiral, and (4) sustained-moving-changing-trends. The procedure is demonstrated in the way of carrying baby, supported with words of demand, encouragement, explanation, having in mind that baby understands this information. All the senses are stimulated simultaneously (and that is the way to activate the brain) combined with the overflow of information between two bio-informational systems, and emotional communication. Further examination resembles to standard neurological pediatric examination procedure, but the idea and the results are completely different. Instead of performing so called "primitive reflexes" everything is moved to the level of communication between two living beings with cognition and consciousness-based holistic approach, opening the morphogenetic field. Doctor and baby are active participants in examination. They are communicating on many levels, helping each other to repair the injuries. Dr Vucicevic named it "Talk with a baby". In fact, neurological reflexes are not primitive. They are meaningful, purposeful, already written in baby's brain, in each cell, in complete bio-field, at all energetic levels. They are parts of functions crucial for living on Earth (escape, defense, swimming, crawling, and walking). Doctor is stimulating baby to act by supporting it and putting it in constant movement, helping the baby's immature pluripotent brain to "Recall" (remember) the action by using words, creative visualization, love, emotions and power of his matured brain, already adapted to living on Earth functions. He is not a passive spectator, but a real healer in this act. The entire examination is the communication between two brains, followed by overflow of information that activate morphogenetic field, rearranges the injured area in brain, and we can see renewed action ability. The method is a real healing treatment. It is ideal for each newborn, but necessary for those with brain injuries. Decades of experience, 40 years of Dr Vucicevic's and 15 years of mine proved our method to be more than effective in practice. Our broad documentation shows many examples of children with miracle results achieved by our method, which came to us with hopeless prognoses supported by official documentation obtained in eminent medical institutions. Also, the method is ideal for early estimation and improvement of cognitive functions. The healthy children are our aim, and future, and holographic approach enables it the most appropriate way.

**Keywords:** *pediatric inspection, holistic approach, brain healing, return to initial conditions-womb, consciousness-based communication, restoration of holographic record, "purposeful" neural reflexes estimation, morphogenetic field*

## 1. Introduction

Contemporary pediatric examination has a neurological inspection as a main part. It estimates "primitive reflexes" and tonus. It is proven that in the first month's newborns have the greatest number of brain cells they will ever have in life, with huge potential of making new synapses [1-3]. If we apply the holistic approach, and start considering a newborns as a being with knowledge, we can make a special communication between doctor

and baby, which moves the pure examining to the healing process. The Method of Dr Vucicevic uses both: the context of quantum-informational brain level that includes the psycho part [4] and also a cell level, with initial memory attractor [5] as a smallest part of acupuncture system. In this special neuro-pediatric treatment: we use creative visualization, supportive words, energy of love to remind babies immature, pluripotent brain to the complete actions, were reflexes, called “primitive”, are to be used. Reflexes are actually parts of the most purposeful functions. They are not primitive at all. Nothing in the Universe is primitive. During the treatment, we remind the brain to the main purposeful function, using the number of brain cells abundance, before the pruning phase occurs. And we can restore the reflex. Simultaneously we rearrange the synapses in a brain, while we help baby to become able to restore the function. Very important in inspection by Dr Vucicevic are facts that: we first remind baby to initial –womb conditions by using 3 crucial information: umbilical cord, cross, spiral in a way of carrying baby (3 dimensional world simulation). We are using sustained-moving –trends, (time-space simulation, and 4th dimension) [6], which are activators of all senses at once. Then, doctors and baby’s electromagnetic fields communicate on a special resonant level, both recognizing Universal consciousness holographic record. Thought as the fastest and love as the strongest emotions associated (5 the dimension gate), make a connection to morphogenetic fields and uses its support. We can compare it with holopent structure [7].

## 2. Methodology and Results

‘Primitive reflexes’ become “Purposeful “. Each reflex is to be precisely defined, and considered to be reparable if damaged. We are not only putting baby in positions to provoke primitive reflexes as common pediatricians do. We are following elements of reflexes slowly, and precisely estimating each particular act, and finding the problem. As reflex is a part of the main life-saving functions, doctor is asking baby to remember each situation that demands the activation of certain reflex. And by repeated demands, moving actions, words of support and explanations, doctor is estimating the whole action ability and the reparation potential at the same time. We are stimulating initial attractor areas on acupuncture network to force weak hypotonic side of the body parts in each demand, helping baby to improve the function. It is also ideal for early cognitive functions estimation. Doctor and parents are the witnesses of initial incapability, and later on improved action. As we follow reflexes one by one, we see that everything is improving step by step: motoric ability, speed, cognitive functions.

It is very important to emphasize that common approach to the neural disability is explained often by doctors as a consequence of position in a womb. Actually, baby is not in a constant position, as it is continuously moving in a water environment. And baby is not compressed there. The idea of tortuous of body parts caused by compression in womb disables proper healing. In fact, peripheral manifestations are only showing us that brain was left without Oxygen, and Asphyxia caused the bleeding in brains area. The neural links are damaged (often as a result of medical influence to pregnancy and delivery: hormonal therapy, induction, epidural anesthesia, even diagnostic procedures ECHO, amniocentesis...). All procedures may damage baby’s reflexes in uterus. And reflexes are important in prenatal movements, delivery, and during life. They only have different purpose in each phase. Damage can happen in some prenatal infections, metabolic disorders, radiesthetic radiation too, but we have to be aware that it is not enough to force the opposite direction stimulating procedures in physiotherapy. Complete repair is to be done in the brain fields, and that will induce obvious improvement in all body parts, due to holographic framework and mental connection doctor and baby make through morphogenic fields [8].

The Method of Dr Vucicevic enables every child to amplify his bio-field by activating all senses at the same time, and reminding it of initial- womb condition. As well as it becomes reconnected to the holographic-frame record of his family origin, species origin, individual and collective consciousness baby becomes an active participant. And the healing process is supported the best possible way.

The time of inspection is very important. The best period is between 3 weeks after birth, up to 3 months. Abundance of brain cells combined with the synaptic potential is naturally highest at that period. Then the first pruning phase occurs [9,10]. Even to the period of 9 months potential is very high, and reparations are deep, although not that quick.

Instead of waiting for further diagnostic reports, which are not too helpful in prognoses, we can even verify deep and small injuries that occurred in very low but crucial parts of the brain: in pons, mesencephalon, hippocampus, where visualization in common medical procedures is not precise enough. And we are helping baby to repair it immediately.

In our long-term investigation we had a prospective study in a group of 400 babies born between 2002 and 2010. According to official medical documentation Asphyxia was registered in 21% and serious brain injuries in 7 %. In our precisely defined examination we found that prognoses rapidly improve if they were early inspected by dr Vucicevic method in first month. The intensity and speed of recovery was individual. If the child had good respond in first contact, we had to follow the phenomena of overflowing, always combined with the new functions that child could achieve. The periods of new function ability seemed to be predictable if we followed the numbers in Fibonacci code. It is hypothesis that needs further testing. There was obvious that common standards of psycho-motor development were to be moderate. It was not necessary that child manage to achieve new functions in expected order presented in common standards (first to sit, then to crawl, to stand, and walk ). Our conclusion was that each new achieved function is to be stimulated, as it is opening new fields and connecting new areas in brain. It is widening complete contact to morphogenetic fields, and establishes new abilities. Unfortunately, Doctors often forbid any new acquired function, if not gained in standard order, with the idea that child is too young for it (or that child will break or curve their bones, joints, muscles etc.)The new ability activates new zones in brain, and induces further improvements [11]. Only 3% from this group still have progressive problems. It is to be estimated why. Even children with metabolic disorders and encephalopathies had improvement. Of course, our method is to be combined with other holistic methods, and we widely cooperate with them.

There were also children with deep brain injuries without any sign of it in medical documentation. We found them in our inspection in other 23%. Dysfunctions we came across were usually not recognized. If not recognized and solved early, they may cause different problems as: epilepsy, SIDS, emotional or behavioral disorders and pathology...

### 3. Conclusions

Holistic approach to neuro-pediatric inspection especially modified in Method by Dr Vucicevic enables early diagnosis and healing process in the same act. It is using the return to the primal-womb-condition, combined with consciousness-based holistic approach. In a sustained - action movements, it activates all senses at once, and amplifies the bio-fields of baby's brain, which communicates in resonance with doctors matured brain. They form a special new powerful unit that can communicate with morphogenetic field. By giving demands, suggestions, emotional support, doctor is helping baby to restore the injured fields in brain, while restoring the functions.

It is also the method for estimation and improvement of the cognitive functions.

Each newborn is to be inspected by this method, to become aware of its potentials. It is supposed to be combined with other holistic healing methods.

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# PRENATAL BASES OF DEVELOPMENT OF SPEECH AND LANGUAGE AND PRENATAL STIMULATION

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**Abstract.** This paper globally discusses development of hearing and bases of verbal communication in prenatal period as well as postnatally, in the early prelingual phase – period of vocalization. It includes Milakovic's scheme of programming prenatal child, and discusses results of both our and foreign researches so far. It also offers critical review of psychological and linguistic theories of child's development, since none of them analyzed very significant prenatal period of development. It also points out the significance of prenatal period and stimulation of prenatal child, not only for postnatal period, but also for the entire behaviour during life. Particular emphasis was given to the relation of congenital, inbred and acquired in the development of speech and language, which indicates the necessity of simultaneous integral perception of articulation and acoustic process in speech-language communication. The paper emphasizes the significance of prenatal communication mother-child. It includes experiments which indicate that prenatal child not only hears, but listens to spoken language, moves in response to it, memorizes and learns. It indicates interconnections and correlations of listening and movements which are primary for speech-language development of a child, not only in relation to the process of listening to speech, but also the process of articulation and meaning. The paper offers short survey of the effects of prenatal stimulation and suggested activity for providing adequate staff in this field, as well as the level of organization of care of prenatal child.

**Keywords:** *prenatal development, speech and language, psychophysiology, acoustic theory, articulation theory, development theory*

## 1. Introduction

Human population mostly lives without noticing truly miraculous events which happen in our lives. Pregnancy is also experienced as something which is taken for granted. We seldom ponder upon how much it takes for all the "coincidences" to comply so that conception happens, and how great is the *MIRACLE* of a human being developed from two cells. It is fascinating that such fast and complex development of a human being takes place in only 9 months. Are we aware that during this period a child feels, communicates and learns? Researches carried out over a number of decades indicate that a child is capable of all these functions. Unfortunately, this knowledge has not yet been adequately and widely applied in the world.

There is a tribe in East Africa whose behaviour indicates existence of ancient awareness of the significance of prenatal period. In this tribe, the art of true intimacy is fostered even before birth. For these people, the birth date of a child is not counted from the day of its physical birth, nor even from the day of conception as in other cultures. For this tribe, the birth date comes the first time the child is a thought in its mother's mind. Aware of her intention to conceive a child with a particular father, she goes off to sit alone under a tree and waits until she can hear the song of the child that she hopes to conceive. Once she has heard it, she returns to the village and teaches it to the father of a future child, so that they can sing it together as they make love, inviting the child to "join" them. After the child is conceived, she sings it to the baby in her womb. Then she teaches the song to the midwife and the old women of the village, so that throughout the labor and at the miraculous moment of birth itself, the child is greeted with this song. After the birth, all the villagers learn the song of their new member and sing it to

the child when it falls ill or hurts itself. It is sung in times of triumph, in rituals and initiations. The song becomes a part of the marriage ceremony when the child is grown, and at the end of life, his or her loved ones will gather around the deathbed and sing this song for the last time.

Privilege of a man - *homo loquens* – to communicate by speech relies on his initial ability to sing. The song was the precursor of speech. In order to form a song, and later on speech, hearing was perfected. Tomatis says that “90% of energy which the brain needs is stimulated via hearing. The brain was developed from the organ of hearing and owing to the EAR, over millions of years, it became more refined and complicated in its structure“ [1].

We will focus our attention on the most complex psychophysiological function of human organism – speech and language, and point to the dynamics of their development in the prenatal period and their significance for the overall development of a child.

None of different theories on child’s development considered prenatal period in the appropriate way. It is known that preverbal communication enables a child to learn the language and that communication between a prenatal child and its mother or father begins very early during pregnancy. However, linguistic theories on language development have also neglected the existence of the prenatal period in communication development.

Surely enough, we must bear in mind that each theory marks a period in which it was created. If we remind ourselves of all the concepts, theories and most renowned names such as Piaget, Vygotsky, Vallon etc, it will be easy to conclude that each theory has its “advantages and disadvantages”. In the area of developmental psychology, each author made great progress in his own time, and in the world of psychology, each provided accepted, sophisticated concept of development.

However, according to present knowledge on prenatal development, none of the theories can be fully accepted. None of the theories recognizes real child’s potentials and cognitive abilities, nor do they mention possible influence of prenatal development and stimulation on subsequent development. That is why there is no single theory on development which can be fully accepted. New scientific facts require changes in existing theoretical frameworks. Vallon rightly emphasized the significance of the first communicational system, and Vygotsky rightly claimed that an individual cannot be separated from the social milieu. It is also known that emotional communication has significant role in human development. Some other ideas can also be acceptable, but unfortunately, there is not a single theory on development which can be adequately adjusted (having in mind prenatal aspects) to changes of reality of human development.

The most adequate approach would be to acquire from each theory everything which seems acceptable and valid according to present knowledge, in order to gradually develop new theories on human development. In new approaches, cognitive aspects of development which include speech and language should be emphasized, since contemporary literature abounds in facts on prenatal abilities and significance of speech and language for individual’s development.

Language acquisition in children is obviously very complex process and cannot be explained based solely on one theory. Nowadays, there has been a considerable increase in the number of researchers whose work indicates that language has a significant role in human development.

However, it is surprising that prenatal period was not taken into consideration, either in linguistic and psychological theories, or in the concept of language acquisition in psycholinguistics.

According to Johannes Merkel, previous researches on speech and language development in children indicate rather controversial assumptions. He lists following theories which basically designate historical order of arguments over this problem:

- Classical model of verbal development assumes that children learn to speak imitating words they can hear from people who talk to them.
- Noam Chomsky believes that language material which children listen to and imitate is not always consistent with certain language rules, but regardless of that, children can construct sentences they never heard before. Based on this, he concluded that it is the ability to speak with grammatical correctness which enables a child to learn a language.

- Opposed to Chomsky's theory were speculations which served as the basis for conclusion that people's care about children leads to language acquisition, which facilitates speech acquisition, and that without such care a language cannot be learned.
- Jerome Bruner developed a concept according to which a language is learned through mother's communication with a child, which triggered comprehensive program of experimental researches.

Johannes Merkel, analyzing only the period before beginning of speech, without including development of grammar and Chomsky's attitude, concludes that three concepts are related to certain phenomena significant for development of speech and language:

- In word acquisition, after the first spoken word, imitation obviously has an important role. Children hear words, and then adopt them and use as such.
- Interaction between mother and child, after birth has crucial role.
- If a relationship of a parent and a child is not coordinated, child's participation in the dialogue will not be successful. This also applies to pronunciation of sounds, monitoring the development from the first gesticulation until the first spoken word.

Insight into the listed attitudes shows that prenatal period was completely neglected.

However, it contains the nucleus of verbal communication, which is first realized through the connection and communication mother-prenatal child, then, parents – child - surroundings, so this period creates the basis for the development of prelingual phase which begins with the first cry upon birth, and ends when a child begins to talk at about one year of age.

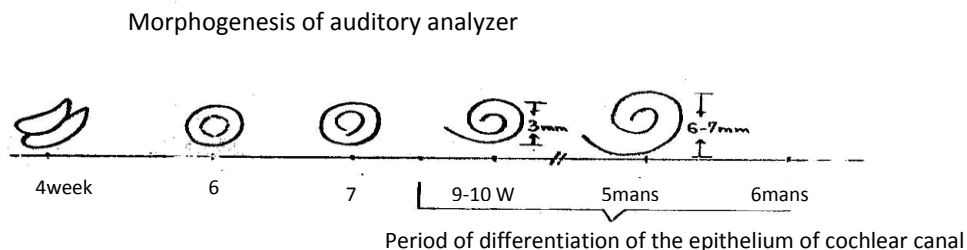
Namely, by „global perception“ of speech content, through acquisition of supra-segment structure of speech, in which a child incorporates words and sounds of mother tongue as speech matrix, with later development of time-space relations between a child and its surroundings, and with the ability to speak with grammatical correctness, a child acquires and develops speech in a very short period from prenatal period until three years of age. In this period, a child completely masters so-called functional verbal communication.

We will discuss the dynamics of the development of verbal communication from prenatal period until the early prelingual period.

## 2. Development of Listening and Programming of Prenatal Child

With the aim of observing the process of the development of prenatal communication, we will make a short survey of prenatal dynamics of hearing development, as the basis for the development of verbal communication and prenatal programming.

Researches indicated that morphogenesis of auditory analyzer begins at a very early development phase of a prenatal child (Fig. 1). In the 4<sup>th</sup> gestation week (GW), the inner ear is divided into two parts, cochlear and vestibular. In the 6<sup>th</sup> GW cochlear canal looks like a short, closed, coiled tube, in the 7<sup>th</sup> GW it forms a real coil, and in the 9<sup>th</sup>-10<sup>th</sup> GW cochlea has 2,5 coils, but its height, from the base to the top is only 3mm. The size of 6-7mm, as in an adult, cochlea reaches at the 5<sup>th</sup> month of prenatal development.



**Figure 1.** Morphogenesis of auditory analyzer (stylized scheme)

Differentiation of the epithelium which covers the cochlear canal begins at the 8<sup>th</sup> GW and ends at the 6th month of prenatal development. Development of different parts of the Organ of Corti does not happen simultaneously. The development begins from basal parts towards the apex. Process of myelinization commences in the area of cochlear nucleus and spreads centrally and peripherally. Cycle of the myelinization of the part of auditory system in the brain stem is very short and lasts from the 5<sup>th</sup> to the 9<sup>th</sup> month, whereas myelinization of thalamo-cortical projections is much slower, ending until the 4<sup>th</sup> year of age.

Analyses of prenatal development of the auditory system and numerous researches spanning a number of decades indicate that reflexive listening commences at the 16<sup>th</sup> (GW), and the reliable response to sound stimulus from the outer environment is registered in the period between the 25<sup>th</sup> and the 27<sup>th</sup> GW [2].

Tomatis says: "... everything in sensory nerve cells and vestibular system is similar to the cells of the Organ of Corti in the cochlea. It can also be said for the sensory cells in the skin. Therefore, someone might see cells in the Organ of Corti as differentiated parts of skin, or skin as a differentiated extension of the ear". He also established that vestibular and cochlear systems are in significant interaction. Development of vestibular system plays an important role in posture, balance and movements of our body. This will later enable the body to have the most suitable posture for listening and speech – vertical posture.

During the intrauterine life fetus receives the first idea of the body through vestibular system. Tomatis concluded that "in order to receive information, the whole body, as well as the complete nervous system need to be prepared for listening and focusing on sounds". Locomotion must be considered important in the child's speech development, not only in relation to the process of listening to speech, but also in the process of articulation. The connection between listening and articulation (movement of the organs in our body) is obvious through the whole life of a human being, starting with the development of hearing and speech organs of a fetus [1].

We will analyze the way a prenatal child reacts to outer sound stimuli and how "programming" a child is carried on, having in mind Milakovic's scheme of the initial stage of creating child's personality in the prenatal period. Milakovic presented this scheme far back in 1968, at the *V Congress of Biocybernetics* in Naples. The fact that after birth, a child is capable of surviving in the outer world means that this ability was acquired in the prenatal period.

He asked the following question: How can mother teach a baby in her womb to adjust to future life conditions? The starting point was Sontag's theory that child is a part of mother's psychosoma, and she transfers the states she is in via "blood excitations" i.e. she transmits her experiences to a child.

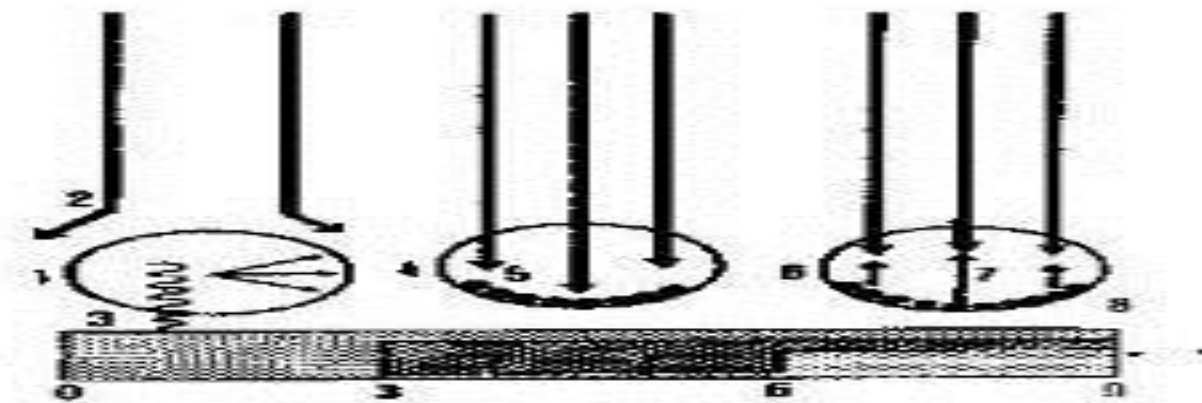
Milakovic made a step further and in the possibility of transferring mother's experience he noted the process of "fetus programming". It is via "blood excitation" that a mother teaches a prenatal child about everyday oscillations and models of frustration and satiation, which will be the content of its life after birth.

Communication mother-child in the prenatal period is both mental and verbal, and is of the utmost importance for children's development, whereas mother's voice is the "pillar" of child's personality [3].

The simplified explanation would be that learning takes place on the metabolic level, because the areas of CNS in charge of metabolic and vegetative control, are fully developed, such as mesodiencephalon, where integration centres of soma-psyche relation are situated. Via mechanisms structured in such a way in their organisms, prenatal child and mother communicate via placenta and information will be transferred from mother's mesodiencephalon to child's mesodiencephalon in a few seconds, following the principle transmitter (mother) and receiver (child). Programming of a child, according to simplified Milakovic's scheme goes through following stages (Fig. 2):

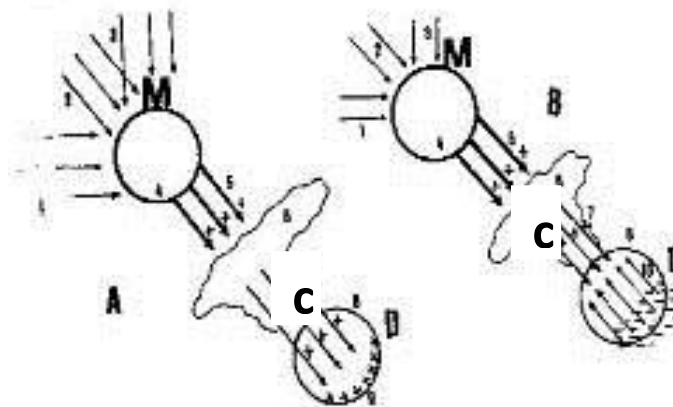
- In the first trimester of pregnancy, hereditary factors have dominant role and mother's messages do not penetrate into neurophysiological structure of a fetus. This formulation is no longer acceptable. Namely, it is certain that even at this period "communication" mother-child is present, while heredity is predominant.
- In the second trimester, mother's messages penetrate and program child's structures by their rhythms.
- In the third trimester, a child refuses mother's messages and fights unpleasant outer influences, fighting for its own homeostasis.

Fig. 3 gives a simplified scheme (A) of the process of information flow from mother into child's organism. 1, 2, 3 are stimuli which come into mother's mesodiencephalon (4) from her senses, inner sensors and memory. Via reactions of mesodiencephalon, mother's state is reflected on the composition of blood which circulates towards the placenta (5). Via the placenta (6), composition of mother's blood is taken over by child's blood (7) and then, via umbilical cord it enters its bloodstream and reaches child's mesodiencephalon (8). Received information from mother's blood is memorized as a program in mesodiencephalon and other centres, and are completely identical to the mother's. This level of programming lasts from 0 to 6 months. Scheme B shows the period during which a child creates its own program with the aim of preserving homeostasis. Via auto control (10) it reacts to any influence which disturbs its homeostasis. Thus, a child will react to mother's "messages" of thirst – by drinking amniotic fluid, to the increase of her blood sugar it will react by the increased secretion of insulin etc. In this period, communication mother-child is intensive and it can be physically detected by intensifying or reducing child's movements while verbally addressing a child, stroking the abdomen, listening to music etc. This process of programming is realized within 6 to 9 months.



**Figure 2.** Programming of a child according to simplified Milakovic's scheme

This simplified presentation of the process of programming a prenatal child shows that it consists of genetically modulated development, as well as a child's ability to adapt. A child carries one part of instinctive knowledge as heritage (congenital), whereas it has to learn the other part during the prenatal period (inbred) in order to develop adaptation mechanisms which will provide "survival" during birth and after birth.



**Figure 3.** Process of information flow from mother into child's organism, after Milakovic

Mother's sudden stresses cause recognizable chemical changes in the amniotic fluid. When a mother talks to a prenatal child in a relaxed manner, this communication is usually full of emotions. They can help a child to better understand mother's language, just like they help a baby to better learn a language. Researchers established the effect of mother's emotional speech, which is transferred through the placenta, and leads to the increase of heart activity of a fetus. It was also established that in mothers with negative attitude towards pregnancy, changes occur in their pulse, breathing and vascular rhythms. This influences the change of rhythms in a fetus, causing disharmonious, repetitive, arrhythmic discontinuity in its acoustic-vibratory surrounding. This form of communication is carried out through the communication below consciousness threshold, and is known as "emphatic connection" between a mother and a prenatal child, or "emphatic communication". Instead of the term "emphatic communication", which assumes the ability of compassion and the assessment of a person one communicates with, telepathy would be a more adequate term, since according to parapsychological definitions, it appears between very close persons.

By adequately educating mothers, this communication can be developed into a complete, conscious communication with a child in prenatal period [4].

### **3. Prenatal Communication**

As it is already known, sounds which a child hears in mother's womb come from two sources, much like a stereo system. The first comes from mother's body, such as: heartbeats, movements, breathing, blood flow in blood vessels, bowel sounds (these are predominantly low-frequency sounds), tone of her voice which is transferred through tissues, bones and fluids, whereas the second source are other people's voices and different sounds coming from the outside, which creates basis for acoustic surroundings of a prenatal child.

Sensitivity to high-frequency sounds gives fetus an opportunity to live in the womb in a relaxed manner (intrauterine sound level is about 80 to 95 dB) and the possibility to listen to its mother's voice. Fetus obviously listens to its mother and keeps her speech specificities. Newborn's first cry (crying) is similar to characteristics of its mother's speech. Newborn's first cry (crying) is unique, almost as much as a fingerprint and it is full of information about its mother's speech characteristics which coincide with the characteristics of its first cry. It is known that a newborn possesses auditory preference for human voice, and its sound influences a newborn greatly [5].

Our researches indicated that already two or three days after birth, newborns have different reactions to noise in the environment compared to speech: in the maternity ward 50% of newborns stop crying when they hear nurse's speech, whereas the other half of newborns lower crying intensity or make longer pauses between two crying instances. This preference for human voice stems from prenatal auditory stimulation to which a prenatal child is exposed via mother's voice and voices from the surroundings [3,6].

There is a number of proofs which indicate that prenatal auditory experience can be significant for postnatal perception and the development of speech. Results of different researches showed that a newborn reacts more intensely to mother's and father's voices, as well as to the story read by the mother prenatally, compared to strangers' voices and unfamiliar stories. Research results obtained in the experiment on pregnant women who read out loud the same story twice a day, six weeks prior to birth, indicated that after birth their babies "could" choose a story by changing the rhythm of sucking. They quickly learned to adjust sucking in order to get the story read by the mother before birth. All this implies that a newborn processes speech, because it kept the story in memory and compared it to the new one [7].

Over the previous years, in our researches we examined reactions of a prenatal child to a story read by the mother during the third trimester in the 7<sup>th</sup> and 8<sup>th</sup> month of the prenatal period. Experiment, based on the analysis of CTG recording, aimed to establish differences in the reactions of a prenatal child when: the mother read a story, when the same story was read by unknown female and male voices, and when an English translation of the story was read by the mother and by an unknown male voice. At the same time, rustle of water and murmur of people were used as stimuli.

Results of this experiment indicated that prenatal child reacts identically (there are no significant changes of the heart frequency) when it is stimulated by rustle of water, murmur of people and reading a story in English,

regardless of whether it is read by the mother or a stranger. Significant increase of the heart rhythm frequency appeared when the mother read a story in mother tongue. When a story was read in mother tongue by unknown male or female voices, differences appeared in the reaction to these two readers, but the heart frequency was significantly lower in both cases compared to the period when the same story was read by the mother.

The experiment was repeated after birth, at the beginning of the second month (after birth a newborn was not stimulated by this story), and newborn's reactions were monitored by quantitative EEG (maps) with a record. Again, it was unmistakably established that during the stimulation by rustle of water, murmur of people and reading the same story in English, the same cerebral regions are activated, whereas completely different regions are prompted when the story, by which a child was prenatally stimulated, was read by the mother. There is also a difference in the activation of zones between unknown male and unknown female readers.

In this experiment, which was conducted at the beginning of the second month after birth, an additional task was introduced – all readers read an unfamiliar text as well – a child heard the text for the first time. The results were fascinating. The unfamiliar text activated new cerebral zones in a newborn in response to all three readers, compared to a familiar story in mother tongue and in English. The differences appeared again in activated brain zones when a new text was read by a mother compared to unknown male and female voices. Zones which were activated during the stimulation by murmur of people and rustle of water were identical to zones which were activated while listening to an English translation of the story [8-11]. We can also conclude that a child is postnatally capable of distinguishing familiar text which it listened to prenatally from an unfamiliar text, a foreign language from mother tongue and mother's voice from unknown male and female voices. Rustle of water, murmur of people and a foreign language have the same level of meaning for a child during prenatal and postnatal period.

Having in mind that a prenatal child has perception and memory, it is obvious that this knowledge is transferred into the postnatal period. Namely, a newborn is prenatally capable of learning and memorizing acoustic characteristics which determine their target position, as well as the structure of sounds and that it can recognize them again regardless of which voice is reading them. Therefore, a newborn can again recognize rhythmic and melodic structures which it often listened to even before birth and has an "imprint" about them in its consciousness.

Obviously, a newborn manages to decode and recognize the content of the story which was read, it "absorbs" the content of the story and can recognize it based on prenatally adopted patterns, which are maintained postnatally. It is capable of recognizing not only the voice, but the text as well. This experiment indicated that engrams, formed prenatally, remained 72 days after birth, although some researches established that postnatally, memory traces of prenatal stimulation last up to 21 days.

An unborn child, on the one hand, can "receive" messages and communications through extra-sensory channels. A newborn probably adopts linguistic sequences as music cadences. It can be assumed that messages which a child receives prenatally represent the basis of linguistic signs, particularly when they are directly related to the child, so it can be assumed that besides being able to memorize linguistic sequences, a child can also connect them with feelings and messages.

In this way, telepathic communication would be paraphrased by the manner of speech (emotional speech expression and suprasegment structure of speech) and sound. Development of nonverbal and gesticulation forms of communication, which is developed after birth between a mother and a child and mostly stimulated by a mother, can be based on this. The next step after gesticulation-symbolic communication and until the first spoken word represents speech as a predominant means of communication.

#### **4. Role of Rhythm in Development of Prenatal Speech Basis**

In the prenatal period a child registers sounds, it can feel two basic elements which represent the basis for future talent for music, at the same time forming the basis for verbal communication. These two elements are rhythm and sound which is defined by duration, frequency and intensity.

In the 1970s Condon's researches indicated that listener's body moves rhythmically in relation to the speaker, which is related to changes connected with articulation. He called this phenomenon "interactional

synchrony". This does not mean that the speaker and the listener have identical body movements. Persons who communicate do not adjust to each other automatically, but they show intensity of shared communication by mutual rhythmical movements and the degree of understanding, agreement or support which the listener shows. Intensity of "interactional synchrony" depends on how much a listener is motivated and interested in a certain subject.

Condon examined interactional synchrony in newborns applying the same methods which he used in adults. He discovered that the first day after birth, a newborn makes synchronized movements based on adults' speech in the form of rhythmical movements which remind of dancing and maintains them during the speech which contains about 125 words. A newborn maintains the same body movements as long as a voice seems the same, changing the movements when a voice changes. If a child is already making some body movements, which happens in most cases, as soon as a voice changes, body movements change adapting to the changes of voices.

Adaptation of a newborn to rhythmical structures of human voices is possible because it listened to its mother's voice already in the prenatal period, since the fourth month, and thus formed the basis for sound identification. It can be proved that newborns not only mother's voice, but familiar voices from their own surrounding and that perception of these familiar sounds changes the speed of the heart rhythm. Synchronization of body movements does not depend on a voice unknown to a child, it does not even depend on whether it belongs to mother's tongue or not. For example, American newborns reacted in the same way when they heard sentences in Chinese. However, rhythmic coordination stops instantly when artificially created syllables or sounds are played.

Interactional synchrony is connected with the very nature of speech - newborns recognize human speech as such and get used to its rhythm. These results are in complete accordance with previously mentioned results from our researches that newborns react to human voice immediately after birth.

A group of Japanese researchers who examined newborns' abilities to synchronize their body movements based on human speech, confirmed by computer analysis that adult's speech influences newborns' movements.

Relation mother-child indicates that coordination from mother's side appears with different intensity. Mothers who are in constant contact with their children are more synchronized than those who are not in the constant contact with their children. Newborns show their closeness with adults based on synchronization of their movements i.e. when they are in the contact with an unfamiliar person, their movements are less synchronized then when they are near a familiar person. This decreased synchronization is connected with increased negative emotional influence on a newborn. This represents a way of child's communication – synchronization can mean "continue", and desynchronization can mean "stop".

In the prenatal, as well as in the postnatal period relation between a mother and a child can be influenced by the degree of their mutual coordination and synchronization. Since adapting to rhythms of human voices can be noticed in newborns, it is considered that this communication is definitely developed before birth. However, it seems that the level of interactional synchrony depends on the relation itself and that prenatal differences are probably developed, which later influence acquisition of language as well as on sensorimotor and general psychophysiological development.

Based on further classification of rhythmics, body movements are recognized as integrated signal units, which separate intonation from an expression and enable sounds to differ one from another, to be clearly heard, obtain the meaning and be deciphered as communication.

A child practices rhythmic schemes in a thousand ways. Prelingual phonology actually emerges from rhythmic values which are present already in the first cry. It contains all language universals, which create the basis from which any language can be developed. Acoustic structure contains all acoustic elements of human speech such as: formant, noise and combined acoustic structure, its duration corresponds to the duration of a complex sentence (1.84 sec), dynamics of its intensity is within intensity limits of pronouncing sounds (30 dB), whereas its frequency field corresponds to speech area of 0-5000 Hz.

Nobody teaches a child how to cry, which will be followed by speech and singing which will have the same basis proto-rhythms. These are organized elements and without their repetition a child will not be able to develop speech and singing. Present are the rhythms of: breathing between two crying instances, gasping, coughing, sneezing, sucking etc.

In the prenatal period, besides rhythm, suprasegment structure of speech is adopted (SSS), as a matrix for sounds, words and sentences. SSS implies intensity, frequency and duration of sounds, syllables, words and sentences.

Prenatal child perceives speaker's SSS and that is the initial step towards communication, it becomes familiar with the range of human voice, on the level of frequency and intensity range and duration. It then perceives segments, then it deciphers, and then adopts harmony, adapting to the speaker's voice – all this is a prerequisite for communication i.e. basic process for language acquisition.

When words and sounds are separated from continuous flow of perception, they can be recognized as semantic units and then rhythmic structure enables selection and distinguishing of individual segments. Mutual synchronization mother-child-surroundings provides an initial pattern based on which any sound or word can be inserted in the speech matrix with which a newborn is born as an inbred speech level. Through the formed pattern, as a bearing component, flows emotional speech expression. Prenatal child perceives its mother's language and surroundings both in its phonetic form and on a certain level of semantic- emotional content.

## **5. Connection of Patterns of Prenatal and Postnatal Reaction to Verbal and Sound Stimulation**

A prenatal child and a newborn are sensitive to sound intensity, pitch and duration. Even a praematurus born in the seventh month responds automatically and behaviorally to numerous acoustic variables. In the first moments of life, a newborn can identify a source of a sound and make difference between true, real crying compared to computer-simulated crying. It also reacts differently to sounds of its own crying compared to other newborns' crying, or older children's crying. Children stopped crying when they heard a recording of their own crying. The message is probably recognizable and it sounds familiar, being similar to the one they are producing. Similar experience is also present when a newborn listens to its mother's speech. There are differences in listening to her voice outside, compared to listening in the womb, when a child experiences different sensations caused by changes in mother's body which happen while she is speaking [4].

Both a prenatal child and a newborn react motorically to acoustic sensations. Sound with a corresponding pitch, intensity and distance will lead to immediate movements of a prenatal child. In the application of the prenatal hearing screening, developed at our Institute, which is carried out after the 28<sup>th</sup> gestation week, 75% of prenatal children react to sound stimulus by increasing the speed of blood flow in aa.cerebri media, and by decreasing flow rate by 25%, which is probably connected with two types of psychosomatic reactivity – introvert and extrovert.

Newborns react globally to sudden changes. One of the well known postnatal reflexes, known as Mohr's reflex, shows global effects which sound can have on newborns: they react to sudden loud noise or discord, first by spreading arms, then by putting them together, while the hands open and close into a fist, and the spine and legs stretch. These reactions are not accidental and they are not symptoms of learned reactions to sounds and feelings – they represent a newborn's attempt to control its reactions.

Researches established that a newborn moves in the precise rhythm of mother's vocalization and that changes in movements of body parts are in accordance with changes in speech syllables and even that certain body movements are connected with particular sounds. These parallels are not obvious at first sight. These reactions have prenatal basis in the movement of prenatal child in the rhythm of its mother's speech [7].

## **6. Prenatal Movements of Speech Organs and Development of Speech Communication**

Some authors are of the opinion that fetus has a far larger number and a far wider distribution of gustatory connections in its oral cavity compared to a child or an adult. Fetus is in contact with fluids in its surroundings. Amniotic fluid enters its mouth at 9.5 weeks, whereas swallowing and tongue movements are noted at about the 12<sup>th</sup> week. Fetus has differentiated preference for different tastes. It prefers sweet taste and doubles the swallowing when it feels it. The taste of amniotic fluid changes depending on mother's state, her feelings and attitudes [4]. In this period, besides the development of swallowing, a child also develops sucking effect and an ultrasound often shows it sucking the thumb, sticking out its tongue etc. This is just another different fact about

basis of the development of verbal communication which needs to be reviewed. Organs which are active in speech and listening are multifunctional.

Production and perception of speech is only one of their functions. They are formed in such a way so as to enable utilization of other functions in learning a foreign language even since the prenatal period. Having in mind these facts as well as both our own and foreign research results on the development of vocalization during the first and the second month after birth, which indicated that nuclei of vowels are the first to develop in all languages, including research on the dynamics of vocalization development, we can conclude that basic movements for pronunciation of vowels are developed prenatally, because these are actually movements of sucking, swallowing and opening and closing the mouth (Fig. 4). This is confirmed by the order of appearance of vowel nuclei during the first and the second month upon birth - A, E, U, i.e. baby opens the mouth, takes the mammilla - A, it squeezes the mammilla between the palate and middle part of the tongue - E, it draws the mammilla and the tongue backwards, raising the root of the tongue towards soft palate - U and swallows. In homeostasis, a newborn repeats these movements alongside with laryngeal voice, forming nuclei of these three vowels.



A – medium, low    E – anterior, medium    U – posterior, high

**Figure 4.** Movements of sucking, swallowing, opening and closing the mouth as a basis for pronunciation of vowels

Our researches on speech development in prelingual period [6] indicated that vowel nuclei are developed during the first month in the following order: A, E, U. If this order of vowels is compared to the movements of sucking and swallowing, it can easily be observed that during vocalization these movements produce sound, conditioning the production of nuclei of the listed vowels. Our researches showed that the order in which vowels appear in speech follows the order of sucking movements in the following order:

- A – opens the mouth, the tongue is at the bottom of oral cavity, accepts mammilla,
- E - raises body of the tongue towards the palate, squeezes mammilla,
- U – raises root of the tongue towards the palate - draws milk and swallows

Direction of tongue movements in the act of sucking and swallowing is identical to articulatory movements:

Vowels I and O appear in the second month and it is evident that movements needed for pronunciation of these vowels are not primarily included in the movements of sucking. Phonology of children's speech is later formed from primary rhythmic network (proto-rhythms) of physiological origin: rhythmic vowel sequences which have genetic basis, and then language is formed in the social context of these proto-rhythms.

This approach clearly indicates that speech and language are at the same time congenital, inbred and acquired, and that connection between hearing and speech is essential, which completely eliminates any dilemmas whether main characteristics of sound are its acoustic or articulatory properties. Of course, articulatory properties are easier to control. First sound experience of a prenatal child via mother's speech, as well as speech from the outside surroundings, transmitted by kinesthetic, bone and water ways indicates that both acoustic and articulatory processes must unavoidably be respected and that there are no reasons for classifications and different theoretical approaches. This can also be explained by the origin of listener's ability to decode acoustic patterns.

This ability is applied in the development of language during the period of prelingual development, when a newborn first develops perception in atmospheric conditions, and then practices its articulators and develops motor and cerebral control over voicing, relying on adopted and inbred prenatal models. A congenital model implies movements of sucking and swallowing, inbred model implies the development of prenatal suprasegment matrix of mother tongue, whereas acquired model is developed postnatally in atmospheric conditions through the development of prelingual suprasegment structure of speech, voicing of sucking and swallowing movements and development of sounds, syllables and words.

It is known that basis of a foreign language can be established during prenatal life, just like in the case of Indian people, where English and Hindi are used parallelly in higher castes, so a child starts speaking in both languages.

Our researches indicated that mothers who spoke a foreign language during pregnancy, gave birth to children which in the postnatal period stopped crying, cooing or moving when mothers addressed them in that foreign language. At a later preschool age, those children were more interested in learning a foreign language in which their mothers stimulated them during the prenatal period [6].

Tomatis described a four-year autistic girl whose understanding was better when her parents addressed her in English compared to French, her mother tongue because her mother, while pregnant, spoke English at work [1].

## **7. Prenatal Stimulation of Speech and Language Development**

Existence of prenatal basis of speech and language imposes adequate prenatal stimulation, i.e. adequate utilization of this period for promotion of verbal communication development and thus the overall psychophysiological development of a child. Contemporary literature abounds in models of prenatal training and education.

Stimulation mainly flows through communication below consciousness threshold, which is known as empathic or telepathic relation between a mother and a prenatal child. However, results of the application of prenatal training and education, spanning over a number of decades, indicate that by educating a mother this communication can develop into a full, aware communication with a child in prenatal period.

Different programs of early stimulation of prenatal children have been designed, but most of them contain general stimulation modules, such as: auditory, vestibular, visual, sensorimotor and tactile stimulation, relaxation, breathing, massage.

One of the main goals of prenatal stimulation is to educate and encourage parents, brothers, sisters and members of a wider family to develop positive conscious relation with a prenatal child and to realize conscious communication with it as a present family member.

Development of mother's positive emotional attitudes releases endorphin in mother's limbic system, which positively influences: growth of a fetus, development of its immune system, its intelligence, sensorimotorics, cognition, reasoning, language abilities, emotional development, as well as formation of prerequisites for establishment of adequate relation mother-child after birth and during the whole life.

Prenatal training and education implies education of fathers, which further develops triad relation mother-father-child and provides father's complete participation in child's development and essential development of strong, harmonious family. In education, special attention is given to creative visualization, which helps realization of essential communication with a prenatal child.

One of the significant factors of prenatal training and education is to train parents to adequately use emotional speech expression as major components in verbal communication. Addressing prenatal child, as well as addressing a newborn in the postnatal period must be followed by adequate expression of emotions in speech. Speech should be slow, with variations of speech melody, it should abound in nice words addressed to child's appearance, talents, virtues etc.

Comparative researches on music stimulation and music therapy showed that music, both instrumental and vocal, positively influences development of the brain both in prenatal period and after birth. Nowadays, application of music stimulation has a special role in the neonatal intensive care unit, positively influencing the development and recovery of children [12].

Generally, music encourages harmonious communication in the triad mother – child – father, both in prenatal and postnatal period. The kind of musical experiences influence prenatal child in different ways. Symbiotic connection between mother and child is carried out in different ways depending on the position of a child, mother's posture and musical stimulation. Stimulation by songs provides higher social and interpersonal awareness, whereas lullabies tend to develop inner, self-centred awareness, awareness of oneself.

The same differences are present both in speech and language. If speech stimulation is directed more towards sound structures, it should contain variations of tones, syllables, accents (tone, duration, length) intonation and rhythms. If it is directed towards the stimulation of meaning, different texts should be used: lyrical, epical, dramatic, spiritual, fictional, or stories about real life. Around the world, comprehensive researches in the area of assessment of the influence of prenatal stimulation of the development of a child indicate that in stimulated children, compared to those who were not stimulated, the following develop faster and in greater scope: language 38%, memory 47%, social intelligence 51%, reasoning 82%. Also, motor development is faster, intelligence quotients are higher and permanent, birth weight and length are better, Apgar score is higher, teething commences earlier, as well as verbal and cognitive development..

## **8. Instead of a Conclusion**

Researches on prenatal and perinatal language communication indicate the existence of the ability of prenatal child to listen, learn and memorize speech-language contents, starting with suprasegment structure of speech, up to "absorbing of certain speech contents" which are primarily emotionally coloured. Inbred patterns which are developed in prenatal period and acquired in prelingual period should be the subject of researches of different scientific areas and disciplines in order to adequately study the nature of the development of speech and language, its role in modelling and development of behaviour, the role of language in noetic process, as well as significance of emotional speech expression for the development of adequate behaviour. Prenatal period abounds in dynamic processes of the development of verbal communication and behaviour, which implies active inclusion of this period of development into researches and theoretical considerations of linguistic, psychological and sociological theory.

Prenatal period implies activation of new approaches in psychology, pediatrics, defectology, pedagogy, with the aim of spreading knowledge and designing programmes and strategies to organize prenatal training and education. Developing and cherishing awareness of the role and significance of prenatal training and education, and verbal surrounding in particular, will provide advancement of general development of a child through speech-language development, cognitive development, development of creative and inventive thinking, as well as the increase of child's learning potentials.

Prenatal language communication is not limited exclusively to mother's speech, but also applies to premises by which her thoughts, language, attitudes and understanding can be transferred onto a prenatal child without a sound. This fact offers new views of different language levels and the very notion of mother tongue, whose development begins in the prenatal period, which is the only period when mother's language has a predominant influence on a child.

Rhythm has an outstanding significance for the development of verbal communication. Without rhythmical structure, it is not possible to segment and decipher speech or intelligible speech. Rhythm is extremely significant for speech, starting with pronunciation of sounds up to body movements during the speech act. As it was already mentioned, getting accustomed to rhythms of human voices is developed before birth, and the degree of mutual synchronization depends on the relation child - mother, which later influences language acquisition and development of an individual on the whole. Particularly significant aspect in this relation is emotional speech expression in the communication with a prenatal child, as well as in the postnatal period.

Results of the researches in prenatal psychology and prenatal medicine provided the development of different methods of upbringing and education of a prenatal child. At some of the universities around the world, prenatal psychology is studied as part of basic studies, or within postgraduate studies of psychologists, gynecologists, medical doctors etc. However, existing knowledge has not yet been widely applied. For the organized care about prenatal education and training it is an imperative to educate staff that will master multidisciplinary knowledge

which includes medical, psychological, pedagogical and defectological aspects of a child's development in prenatal period, and its influence on psycho-physiological-sociological development of a human being.

Adequately educated staff would carry out three levels of prenatal care about children's development. The first level is education of all levels of profiles of experts who look after children's development, upbringing and education, such as: gynecologists, neonatologists, pediatricians, kindergarten and primary school teachers, psychologists, pedagogues, social workers, defectologists etc. The second level is education of: adolescents, young people who are about to get married and education of married couples who want to have a child (preconception education). The third level implies direct work with parents and a family which expects a baby, from the moment of conception until birth, and from birth until the first year of life.

Only societies and states which responsibly, in an organized manner and with long-term goals approach the increase of the development of entire physical, mental and spiritual potentials of their posterity compared to their ancestors, are the only ones which can provide development and progress.

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# HOLOTROPIC BREATHWORK

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**Abstract.** The observations from the research of non-ordinary states of *consciousness* showed that the sources of emotional and psychosomatic disorders were not limited to traumatic memories from childhood and infancy, but that their roots reached much deeper into the psyche, into the *perinatal* and *transpersonal* region. The new map of the psyche that emerged out of this research (Grof 1975) added to the current model of the psyche two large transbiographical domains – the *perinatal* level, related to the memory of biological birth, and the *transpersonal* level, that, among others, includes the historical and *archetypal* domains of the collective unconscious and spiritual experiences. Grof developed a powerful therapeutic mechanism to operate on these deep levels of a psyche, named Holotropic Breathwork. This experiential approach to therapy radically changes basic concepts of psychotherapy, putting client's own inner healing wisdom 'in charge', and therapist just being facilitator of a client's process.

**Keywords:** *transpersonal psychology, Holotropic Breathwork, healing, holotropic experience, consciousness, non-ordinary states, perinatal, Basic Perinatal Matrices, transpersonal experiences, archetypal.*

## 1. Introduction

### *History of Transpersonal Psychology and Holotropic Breathwork*

In *Holotropic Breathwork* [1,2] the field of mental health and therapy is expanded. Most of the medical modalities of Western psychology have been limited to the study of pathology. While new understandings of psychopathology are discovered in this work, the Grofs offer a comprehensive vision of mental health and of human growth potential that extends the range of psychology to dimensions of the *perinatal*, the transpersonal, the transcultural, and mystical. Their work organically incorporates the indigenous wisdom of shamanism and the natural world, the cultural and historical basis of *consciousness*, and the far-reaching breadth of modern physics and systems theory. In it, the personal and the universal are equally valued, the physical and the biographical, the cultural, evolutionary, and spiritual dimensions of our humanity are included.

The vision behind *Holotropic Breathwork* also radically redefines the role of healer, shifting from "the healer as expert," the doctor who knows best treating the ignorant patient, to the "healer as midwife." In this role, the healer safeguards, facilitates, and supports the patient's own profound natural *healing* process. In this revision it is not the therapist or psychiatrist or healer who is wise, but the psyche of the individual whose wisdom is tended and brought to flower.

### *The 4th Force in Psychology*

In the middle of the twentieth century, American psychology was dominated by two major schools – behaviorism and Freudian psychoanalysis. Increasing dissatisfaction with these two orientations as adequate approaches to the understanding of the human psyche led to the development of humanistic psychology. The main spokesman and most articulate representative of this new field was the well-known American psychologist Abraham Maslow. He offered an incisive critique of the limitations of behaviorism and psychoanalysis, or the First and the Second Force in psychology as he called them, and formulated the principles of a new perspective in psychology. Maslow's main objection against behaviorism was that the study of animals, such as rats and pigeons, could only clarify those aspects of human functioning that we share with these animals.

In his criticism of psychoanalysis, Maslow pointed out that Freud and his followers drew conclusions about the human psyche mainly from the study of psychopathology and he disagreed with their biological reductionism and their tendency to explain all psychological processes in terms of base instincts. By comparison, humanistic psychology focused on healthy populations, or even individuals who show supernormal functioning in various areas (Maslow's "growing tip of the population"), on human growth and potential, and on higher functions of the psyche.

A serendipitous discovery of Albert Hofmann, a Swiss chemist conducting research of ergot alkaloids in the Sandoz laboratories in Basel, introduced into the world of psychiatry, psychology, and psychotherapy a radically new element—the heuristic and *healing* potential of non-ordinary states of *consciousness*. In April 1942, Hofmann discovered the psychedelic effects of LSD-25, or diethylamide of lysergic acid, when he accidentally intoxicated himself during the synthesis of this substance. In clinical research and self-experimentation with LSD, many professionals discovered that the current model of the psyche, limited to postnatal biography and the Freudian individual unconscious, was superficial and inadequate. The new map of the psyche that emerged out of this research (Grof 1975) added to the current model of the psyche two large transbiographical domains – the *perinatal* level, closely related to the memory of biological birth, and the transpersonal level, harboring among others the historical and *archetypal* domains of the collective unconscious as envisioned by C. G. Jung (Jung 1959a). Early experiments with LSD also showed that the sources of emotional and psychosomatic disorders were not limited to traumatic memories from childhood and infancy, as traditional psychiatrists assumed, but that their roots reached much deeper into the psyche, into the *perinatal* and transpersonal regions (Grof 2000). This surprising revelation was accompanied by the discovery of new, powerful therapeutic mechanisms operating on these deep levels of the psyche.

In the 1960s, the observations from the research of non-ordinary states of *consciousness* – analysis of experiences from psychedelic sessions and Maslow's study of spontaneous mystical experiences ("peak experiences") – revolutionized the image of the human psyche and inspired a radically new orientation in psychology. In spite of the popularity of humanistic psychology, its founders Abraham Maslow and Anthony Sutich grew dissatisfied with the discipline that they had themselves fathered. They became increasingly aware that they had left out an extremely important element – *the spiritual dimension of the human psyche* (Sutich 1976).

In 1967, a small working group, including Abraham Maslow, Anthony Sutich, Stanislav Grof, James Fadiman, Miles Vich, and Sonya Margulies, met repeatedly in Menlo Park, California, with the purpose of creating a new psychology that would honor the entire spectrum of human experience, including various non-ordinary states of *consciousness*. During these discussions, Maslow and Sutich accepted Grof's suggestion and named the new discipline "transpersonal psychology."

### ***Holotropic States***

In its theory and practice, *Holotropic Breathwork* combines and integrates various elements from depth psychology, modern *consciousness* research, transpersonal psychology, Eastern spiritual philosophies, and native *healing* practices. It differs significantly from traditional forms of psychotherapy, which use primarily verbal means, such as psychoanalysis and various other schools of depth psychology derived from it. It shares certain common characteristics with the experiential therapies of humanistic psychology, such as Gestalt practice and the neo-Reichian approaches, emphasizing direct emotional expression and work with the body. However, the unique feature of *Holotropic Breathwork* is that it utilizes the intrinsic *healing* potential of non-ordinary states of *consciousness*.

These are the states that novice shamans experience during their initiatory crises and later induce in their clients. Ancient and native cultures have used these states in rites of passage and in their *healing* ceremonies. They were described by mystics of all ages and initiates in the ancient mysteries of death and rebirth. Procedures inducing these states were also developed and used in the context of the great religions of the world – Hinduism, Buddhism, Taoism, Islam, Judaism, and Christianity.

The importance of non-ordinary states of *consciousness* for ancient and aboriginal cultures is reflected in the amount of time and energy that the members of these human groups dedicated to the development of *technologies of the sacred*, various procedures capable of inducing them for ritual and spiritual purposes.

By far the most effective tool for inducing *healing* and transformative non-ordinary states has been ritual use of psychedelic plants. Mainstream psychiatrists initially dismissed and even ridiculed native ritual events as products of primitive superstition based on ignorance and magical thinking. They relegated non-ordinary states of *consciousness* of any kind into the domain of psychopathology. This situation gradually changed in the course of the twentieth century, particularly in its second half, when Western scientists actually made some major contributions to the armamentarium of the technologies of the sacred. Clinical and experimental psychiatrists and psychologists had the opportunity to acquire firsthand experience with chemically pure psychedelic substances and with a variety of laboratory mind-altering procedures from sensory deprivation to biofeedback. They also witnessed the effect of non-ordinary states of *consciousness* in various forms of experiential therapeutic techniques using breathwork and bodywork, such as neo-Reichian approaches, Rebirthing, and *Holotropic Breathwork*. Those open-minded enough to take on the challenge of these revolutionary tools thus had a chance to discover their power and their great therapeutic potential.

When Grofs recognized the unique nature of this category of non-ordinary states of *consciousness*, he found it difficult to believe that contemporary psychiatry does not have a specific category and term for these theoretically and practically important experiences. Because they felt strongly that they deserve to be distinguished from altered states of *consciousness* and not be seen as manifestations of serious mental diseases, they started referring to them as *holotropic* (Grof 1992). This composite word means literally “oriented toward wholeness” or “moving toward wholeness” (from the Greek *holos* = whole and *trepein* = moving toward or in the direction of something).

The name *holotropic* suggests something that might come as a surprise to an average Westerner—that in our everyday state of *consciousness* we identify with only a small fraction of who we really are and do not experience the full extent of our being. *Holotropic* states of *consciousness* have the potential to help us recognize that we are not “skin-encapsulated egos” – as British philosopher and writer Alan Watts called it—and that, in the last analysis, we are commensurate with the cosmic creative principle itself. Or that – using the statement by Pierre Teilhard de Chardin, French paleontologist and philosopher – “we are not human beings having spiritual experiences, we are spiritual beings having human experiences” (Teilhard de Chardin 1975).

Therapists who were open to these approaches and used them in their practice were able to confirm the extraordinary *healing* potential of *holotropic* states and discovered their value as goldmines of revolutionary new information about *consciousness*, the human psyche, and the nature of reality.

However, since the very beginning, the mainstream academic community has shown a strong resistance to these radical innovations and has not accepted them either as treatment modalities or as a source of critical conceptual challenges. In a sense, this resistance is understandable, considering the scope and radical nature of the conceptual revisions that would be necessary to account for the rich array of “anomalous phenomena” encountered in the study of *holotropic* states. These extraordinary observations could not be handled by minor adjustments of the existing theories (technically called “ad hoc hypotheses”), but would require radical revision of the most fundamental concepts and basic metaphysical assumptions, such as conceptual move from Newtonian to quantum-relativistic physics. In a sense, it would represent a logical completion of the radical change in understanding reality that has already happened in physics.

The changes introduced into our thinking by research of *holotropic* states are radical and fall into several large categories. To account for the observations from modern *consciousness* research, the model of the psyche currently used by psychiatrists and psychologists needs to be vastly expanded and include new areas previously unrecognized or misinterpreted by academic circles. This is associated with a new understanding of the nature of emotional and psychosomatic disorders and with the recognition of the depth of their roots. This sobering finding is balanced by the discovery of new mechanisms of *healing* and positive personality transformation operating on deep levels of the unconscious.

Probably the most exciting innovation that has emerged from the study of *holotropic* states is the shift from verbal to experiential approaches to self-exploration and psychotherapy and from the guiding role of the therapist

or facilitator to the utilization of innate *healing* intelligence of the client's own psyche. The recognition of the critical role of cosmic *consciousness* (C. G. Jung's *anima mundi*) in the universal scheme of things and acceptance of the existence of the collective unconscious logically lead to the conclusion that the spiritual quest based on direct experience is a legitimate and vitally important aspect of human life.

## 2. New Cartography of Psyche

Traditional academic psychiatry and psychology use a model of the human psyche that is limited to postnatal biography and to the individual unconscious as described by Sigmund Freud. According to Freud, our psychological history begins after we are born; the newborn is a *tabula rasa*, a clean slate. Our psychological functioning is determined by an interplay between biological instincts and influences that have shaped our life since we came into this world – the quality of nursing, the nature of toilet training, various psychosexual traumas, development of the superego, our reaction to the Oedipal triangle, and conflicts and traumatic events in later life. Who we become and how we psychologically function is determined by our postnatal personal and interpersonal history.

In the work with *holotropic* states of *consciousness* induced by psychedelics and various non-drug means, as well as those occurring spontaneously, this model proves to be painfully inadequate. To account for all the phenomena occurring in these states, we must drastically revise our understanding of the dimensions of the human psyche. Besides the *postnatal biographical level* that it shares with the traditional model, the new expanded cartography includes two additional large domains.

The first of these domains can be referred to as *perinatal*, because of its close connection with the trauma of biological birth. This region of the unconscious contains the memories of what the fetus experienced in the consecutive stages of the birth process, including all the emotions and physical sensations involved. These memories form four distinct experiential clusters, each of which is related to one of the stages of the birth process. We can refer to them as *Basic Perinatal Matrices* (BPM I–IV).

- BPM I consists of memories of the advanced prenatal state just before the onset of the delivery.
- BPM II is related to the first stage of the delivery when the uterus contracts, but the cervix is not yet open.
- BPM III reflects the struggle to be born after the uterine cervix dilates.
- BPM IV holds the memory of emerging into the world, the birth itself.

The content of these matrices is not limited to fetal memories; each of them also represents a selective opening into the areas of the historical and *archetypal* collective unconscious, which contain motifs of similar experiential quality.

The second transbiographical domain of the new cartography can best be called *transpersonal*, because it contains matrices for a rich array of experiences in which *consciousness* transcends the boundaries of the body/ego and the usual limitations of linear time and three-dimensional space. This results in experiential identification with other people, groups of people, other life forms, and even elements of the inorganic world. Transcendence of time provides experiential access to ancestral, racial, collective, phylogenetic, and karmic memories. Yet another category of transpersonal experiences can take us into the realm of the collective unconscious that the Swiss psychiatrist C. G. Jung called *archetypal*. This region harbors mythological figures, themes, and realms of all the cultures and ages, even those of which we have no intellectual knowledge (Jung 1959a). In its farthest reaches, individual *consciousness* can identify with the Universal Mind or Cosmic *Consciousness*, the creative principle of the universe.

In view of this vastly expanded model of the psyche, we could now paraphrase Freud's simile of the psyche as an iceberg. We could say that everything Freudian analysis has discovered about the psyche represents just the top of the iceberg showing above the water. Research of *holotropic* states has made it possible to explore the colossal rest of the iceberg hidden under water, which has escaped the attention of Freud and his followers, with the exception of the remarkable renegades Otto Rank and C. G. Jung.

### 3. Strategy of Psychotherapy and Self-Exploration

The most astonishing aspect of modern psychotherapy is the number of competing schools and the lack of agreement among them. They have vast differences of opinion concerning the most fundamental issues, such as: what are the dimensions of the human psyche and what are its most important motivating forces; why do symptoms develop and what do they mean; which issues that the client brings into therapy are central and which are less relevant; and, finally, what technique and strategy should be used to correct or improve the emotional, psychosomatic, and interpersonal functioning of the clients.

The goal of traditional psychotherapies is to reach intellectual understanding of the human psyche, in general, and that of a specific client, in particular, and then use this knowledge in developing an effective therapeutic technique and strategy. An important tool in many modern psychotherapies is “interpretation”; it is a way in which the therapist reveals to the client the “true” or “real” meaning of his or her thoughts, emotions, and behavior. A serious flaw of this approach to psychotherapy is that individual therapists, especially those who belong to diverse schools, would attribute very different value to the same psychological manifestation or situation and offer for it diverse and even contradictory interpretations.

To our knowledge, there are not any scientific studies showing clear superiority of some schools of psychotherapy over others. If anything, the differences are found within the schools rather than between them. In each school there are better therapists and worse therapists. It is interesting to see how therapy using *holotropic* states of *consciousness* can help us to avoid the dilemmas inherent in this situation. The alternative that this work brings actually confirms some ideas about the therapeutic process first outlined by C. G. Jung. According to Jung, it is impossible to achieve intellectual understanding of the psyche and derive from it a technique that we can use in psychotherapy. As he saw it in his later years, the psyche is not a product of the brain and is not contained in the skull; it is the creative and generative principle of the cosmos (*anima mundi*). It permeates all of existence and the individual psyche of each of us is teased out of this unfathomable cosmic matrix. The intellect is a partial function of the psyche that can help us orient ourselves in everyday situations. However, it is not in a position to understand and manipulate the psyche.

What a psychotherapist can do, according to Jung, is to create a supportive environment, in which psycho-spiritual transformation can occur.

The use of *holotropic* states for therapy and self-exploration essentially confirms Jung’s perspective and follows the same strategy. The facilitators create a protective and supportive environment and help the clients enter a *holotropic* state. Once that occurs, the *healing* process is guided from within by the clients’ own inner *healing* intelligence and the task of the facilitators is to support what is happening.

This process automatically activates unconscious material, which has strong emotional charge and is available for processing on the day of the session. This saves the facilitators the hopeless task of sorting out what is “relevant” and what is not that plagues verbal therapies. They simply support whatever is spontaneously emerging and manifesting from moment to moment, trusting that the process is guided by intelligence that surpasses the intellectual understanding that can be obtained by professional training in any of the schools of psychotherapy.

### 4. Essential Components of Holotropic Breathwork

#### *Breath*

The psychosomatic response to faster breathing, the so-called *hyperventilation syndrome*, is considered a pathological condition, rather than what it really is, a process that has an enormous *healing* potential. When hyperventilation occurs spontaneously, it is routinely suppressed by administration of tranquilizers, injections of intravenous calcium, and application of a paper bag over the face to increase the concentration of carbon dioxide and combat the alkalosis caused by faster breathing.

In the last few decades, Western therapists rediscovered the *healing* potential of breath and developed techniques that utilize it. In *Holotropic Breathwork*, people are encouraged to begin the session with faster and somewhat deeper breathing, tying inhalation and exhalation into a continuous circle of breath. Once in the process, they find their own rhythm and way of breathing. Unless one has witnessed this process or experienced it personally, it is difficult to believe on theoretical grounds alone the power and efficacy of this approach.

### **Music**

In *Holotropic Breathwork*, the *consciousness*-expanding effect of breath is further enhanced by the use of evocative music. Like breathing, instrumental music and other forms of sound technology – monotonous drumming, rattling, and chanting – have been used for centuries, or even millennia, as principle tools in shamanic practice, *healing* rituals, and rites of passage in many different parts of the world. Carefully selected music serves several important functions in *holotropic* states of *consciousness*. It mobilizes emotions associated with repressed memories, brings them to the surface, and facilitates their expression. It helps to open the door into the unconscious, intensifies and deepens the *healing* process, and provides a meaningful context for the experience.

In *Holotropic Breathwork*, one has to give full expression to whatever the music is bringing out, whether it is loud screaming or laughing, baby talk, animal noises, shamanic chanting, or talking in tongues. It is also important not to control any physical impulses, such as bizarre grimacing, sensual movements of the pelvis, violent shaking, or intense contortions of the entire body.

### **Bodywork**

Physical manifestations that develop during the breathing in various areas of the body are not simple physiological reactions to hyperventilation. They have a complex psychosomatic structure and usually have specific psychological meaning for the individuals involved.

The tensions that we carry in our body can be released in two different ways. The first of them involves *catharsis* and *abreaction* – discharge of pent-up physical energies through tremors, twitches, various movements, coughing, gagging, and vomiting. Both catharsis and abreaction also typically include release of blocked emotions through crying, screaming, or other types of vocal expression.

The second mechanism that can release physical and emotional tensions plays an important role in *Holotropic Breathwork* and other forms of therapy using breathing techniques. It represents a new development in psychiatry and psychotherapy and equals or even surpasses the efficacy of abreaction. Here the deep tensions surface in the form of unrelenting muscular contractions of various duration (tetany). By sustaining these muscular tensions for extended periods of time, the breathers consume large amounts of previously pent-up energy and simplify the functioning of their bodies by disposing of them. The deep relaxation that typically follows the temporary intensification of old tensions or full manifestation of previously latent ones bears witness to the *healing* nature of this process.

The general strategy of this work is to ask the breather to focus his or her attention on the area where there is a problem and do whatever is necessary to intensify the existing sensations. The facilitator then helps to intensify these feelings even further by appropriate physical intervention from the outside. While the attention of the breathers is focused on the energetically charged problem areas, we encourage them to find spontaneous motor or vocal reactions to this situation. This response should not reflect a conscious choice of the breather, but be fully determined by the unconscious process. It often takes an entirely unexpected and surprising form—talking in tongues or in an unknown foreign language, baby talk, gibberish, voice of a specific animal, a shamanic chant or another form of vocal performance from a particular culture unknown to the breather.

Equally frequent are completely unexpected physical reactions, such as strong tremors, jolts, coughing, gagging, and vomiting, as well as various characteristic animal movements – climbing, flying, digging, crawling, slithering, and others. It is essential that the facilitators encourage and support what is spontaneously emerging, rather than apply some technique offered by a particular school of therapy. This work continues until the facilitator and the breather reach an agreement that the session has been adequately closed.

### ***Supportive and Nourishing Physical Contact***

In *Holotropic Breathwork*, we also use a different form of physical intervention, one that is designed to provide support on a deep preverbal level. This is based on the observation that there exist two fundamentally different forms of traumas that require diametrically different approaches. The first of these can be referred to as *trauma by commission*. It is the result of external influences that had damaging impact on the future development of the individual. Here belong such insults as physical, emotional, or sexual abuse, frightening situations, destructive criticism, or ridicule. These traumas represent foreign elements in the unconscious that can be brought into *consciousness*, energetically discharged, and resolved.

Many people have a history of emotional deprivation, abandonment, and neglect that resulted in serious frustration of the anaclitic needs. The only way to heal this type of trauma is to offer a corrective experience in the form of supportive physical contact in a *holotropic* state of *consciousness*.

For this approach to be effective, the individual has to be deeply regressed to the infantile stage of development, otherwise the corrective measure would not reach the developmental level on which the trauma occurred. Depending on circumstances and on previous agreement, this physical support can range from simple holding of the hand or touching the forehead to full body contact.

Use of nourishing physical contact is a very effective way of *healing* early emotional trauma. However, it requires following strict ethical rules.

### ***Mandala Drawing and Sharing***

In ritual and spiritual practice, mandalas are images, which can be drawn, painted, modeled, or danced. In *Holotropic Breathwork* sessions drawing mandalas helps participants express what they experienced, before it is verbalized. Mandalas drawn immediately after session sometimes carry additional message or content important for the integration.

Important part of integration of experiences in *holotropic* states is sharing in smaller or bigger groups – participants are encouraged to talk about the most important parts of their experience in a supportive, non-judgmental environment, where others just listen carefully, with presence, without analyzing.

## **5. Conclusion**

The beneficial effects of *Holotropic Breathwork* conducted by trained facilitators cover a wide range. The most obvious positive results that Grof has observed over the years were related to various emotional disorders and to conditions traditionally seen as psychosomatic, such as psychogenic asthma, migraine headaches, and pains in different parts of the body that do not have an organic basis. However, on occasion, major improvements have occurred in individuals suffering from conditions that are usually seen as purely medical problems, such as Raynaud's disease and various chronic infections. Positive effects of repeated sessions of *Holotropic Breathwork* typically go beyond the amelioration of the emotional and physical condition; they may include distinct changes in the breather's personality, worldview, life strategy, and hierarchy of values.

Individuals who have chosen responsible systematic self-exploration with *holotropic* states as their spiritual path experience in the process profound personality changes. As the content of the *perinatal* level of the unconscious emerges into *consciousness* and is integrated, it results in a considerable decrease of aggressive tendencies and leads to greater inner peace, self-acceptance, and tolerance of others. The experience of psychospiritual death and rebirth and conscious connection with positive postnatal or prenatal memories tends to reduce irrational drives and ambitions. It causes a shift of focus and emphasis from the ruminations about the past and fantasies about the future to fuller experience of the present. This leads to enhanced zest, *élan vital*, and *joi de vivre*—a greater ability to enjoy life and draw satisfaction from simple circumstances of life.

„We are currently experiencing a dangerous global crisis that threatens the survival of our species and life on this planet. In the last analysis, the common denominator of many different aspects of this crisis is the level of consciousness evolution of humanity. If it could be raised to a higher standard, if we could tame the propensity to violence and insatiable greed, many of the current problems in the world could be alleviated or solved. It seems

that changes regularly observed in people who have undergone the transformation described earlier (Holotropic therapy) would greatly increase our chances for survival if they would happen on sufficiently large scale” [2].

## References

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2. [www.grof-holotropic-breathwork.net](http://www.grof-holotropic-breathwork.net)

## PEAT AND ENERGETIC AND SPIRITUAL (PSYCHO)THERAPIES

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**Abstract.** Energetic (Psycho)Therapies is a common term covering a group of new alternative (psycho) therapies created in the past two decades, which are also called Meridian (Psycho)Therapies. They are based on the common observation of majority of practitioners that psychological and emotional problems can be understood as manifestations of energy disruptions of energy configurations in the human energetic field. In essence, systems of Energy and Spiritual (Psycho)Therapies represent an application of the energy and Spiritual 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, behaviorally and spiritually. The introduction of the energy/spiritual paradigm into the fields of psychotherapy and represent a quantum leap in the understanding of these important areas, since it makes us look at them from an entirely different viewpoint. Psychological traumas, persistent phobias, allergies, post-traumatic stress and other psychosomatic disorders, are resolvable far faster if we approach them as if they were disturbances in energy and spiritual 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 and spiritual fields that are at the roots of problems is enough to create healing or a shift in the Spiritual Consciousness. In this paper we shall mention few main systems of Energy psychotherapy and our method of Primal Energy Activation and Transcendence (PEAT), an expansion of consciousness and spiritual maturity and development. The most important discovery, which we demonstrate in PEAT is that every human being has one pair of most fundamental polarities – his/her Primordial Polarities or his/her Personal Codes. Without their integration there can't be the true psychological, emotional and spiritual freedom.

**Keywords:** *energy (psycho)therapies, PEAT, spiritual psychotherapies, traumas, persistent phobias, allergies, post-traumatic stress, integration of Personal Codes, getting to void as the core of human being, raising up the levels of consciousness etc.*

### 1. Principles and Practice of Spiritual Technology

There are two fundamental possibilities for us as conscious human beings to experience this world and ourselves: dualistic and unified consciousness. Most human beings live predominantly on the dualistic plane, in which they see, perceive, and experience everything in opposites. It is always either/or, good or bad, destroying or creating, advancing or retreating, freedom or slavery, love or freedom, life or death, I or you... endlessly. These polarities, opposites or complementaries make our lives what they are, which means full of problems.

Connected with this dualistic consciousness is this strange fact: We all have numberless problems in our lives, but everybody has got one fundamental problem in one's life. Mystic masters say that if we do not resolve this problem we will have to return to work on it many times as long as we finally resolve it. Now, using the methods of Spiritual Technology it is possible to solve that fundamental problem almost permanently.

Eleven years ago (1999) I created PEAT [1], which is an abbreviation for Primordial Energy Activation and Transcendence, from various systems of energy psychology, touching of acupuncture points and mostly out of my own systems as Gnostic Intensive and Alternative Technique. PEAT as a system is alive – it has been developing all these 11 years, so it is very different then what it was in the beginning. Shortly after its creation I made an essential creative breakthrough which allows one to transcend dualistic consciousness and to effectively

solve hard-core problems – most importantly, one's core fundamental life problem. I lead many PEAT Processors Training Workshops in USA, Canada, Russia, Ukraine, Bosnia, England, Italy, Slovenia, Hungary, Croatia, Germany, Macedonia and Turkey.

PEAT system has got 4 levels [1-4]: **Basic Peat**, **Deep PEAT**, **DP2** and **DP4**.

Its basic level, **Basic PEAT**, is a kind of energy psychology but is dissimilar to any and every other system. It involves touching only 3 points around an eye, concentration on the problem and dramatizing it (feeling it as strongly as possible) and **Alternative Technique**. It is quicker and more effective than any other energy psychology system.

In **PEAT Deep Processing** you start with a problem and you uncover deeper and quite different contents on the chain of contents leading to the highest cause of the problem you started with. An average session lasts from 10 minutes to 45 minutes. When you get to the deepest core of your being, the problem vanishes for good.

Most importantly, in one to three sessions of **PEAT Deep Processing**, you uncover, make conscious and integrate your **Primordial Polarities**, or **Primes**. They are also called your **Personal Codes**. It happens most often in the first session. At the moment when you discover your own Personal Codes there is a neutralization or integration of opposites. You see one Primordial Polarity in another and vice versa. They become ONE.

Neutralization of your Primes solves your most fundamental problem forever. If you follow the procedure correctly, you can't avoid this resolution even if you want to. This process liberates a human being from the deadly grasp of fundamental forces of duality. Very few people, usually well advanced, know anything about this result.

Just before the moment of integration there is usually a short confusion. You may become a bit dizzy and disoriented. This is natural, of course, because the playground on which you played your fundamental game for the whole of your life vanishes. It is like a sudden vanishing of walls of the jail you have lived in for all your lifetime.

The Personal Codes are very simple and basic. Here are some examples: Creating and Destroying, Approaching and Retreating, Light and Darkness, Pain and Love, Potential and Actual, Active and Passive, I and Others, Small and Big, Power and Powerlessness, Material and Divine, Material World and Spiritual World etc.

What is the value of this experience? Exaltation doesn't last long, it's true. But the important part of your whole life becomes clear to you. You realize the game of life you used to play in many different variations **unconsciously and compulsively**. You are set free from your main compulsions. You could still play the same game, but now you can choose other games as well. You have **freedom to something...** and **freedom from something...**

Further, after uncovering and integrating your Primes you become more conscious of new and old problems, but all your problems are solved much more quickly. Their structure often follows your fundamental game of life in endless variations, which you will now be able to perceive.

Until recently, only a small number of selected people knew about the importance of integration of Primes. The reason for this is simple. Neutralization of one's Primordial Polarities was a secret for many centuries, within systems such as Tarot, Middle Age alchemy and 19th century occultism. Taoism and Zen clearly appreciate this process. The whole of Kabbala is mainly about neutralization of opposites. You must neutralize all polarities and bring your own consciousness to the central point encompassing both sides, to the called Middle Pillar. In its quintessence, alchemy is about neutralization of polarities as well. This is the biggest secret of that middle age science. Advaita Vedanta, one of the most profound systems of practical philosophy, speaks only about getting to non-duality. "Advaita" means **non-dual**.

This is the reason that until recently only a few selected individuals knew about the possibility of solving their most fundamental problem in life. This is no longer the case.

Since I created PEAT more than 3000 people neutralized their Primes and freed themselves from the most fundamental, unconscious and compulsive problem of their whole life. Changes in their lives were profound and substantial.

Being's Primes are the highest goals Being wants to attain again and again. They are Being's most powerful attractors. Different human beings have different Primordial Polarities, though some have the same ones. A principal characteristic of being's fundamental game of life is that it is unconscious and compulsive. Primordial

Polarities make his/her life seesaw. In endless situations of life being oscillates unconsciously and compulsively between Primordial Polarities. They are not fixed values, but are like alternative electric current. For a period of time, one polarity seems to be the positive goal (Being strives with all his/her power to attain it) and another is negative (and Being does his/her best to avoid it). But after some time their values change.

This is most important for Spiritual development and for everyday life as well: you can't solve your most fundamental problem in life until you attain neutralization or integration of Personal Codes. Practicing different psychological, psychotherapeutic and spiritual disciplines you can disengage from or de-energize that problem for a short time – truncate it, so to say – but sooner or latter it gets restimulated again. When you address it with PEAT Deep Processing, you become acutely aware of your earlier life as a series of compulsive and unconscious oscillations from one Personal Code to another. Of course, neutralization of Primes doesn't solve all your problems, just the most fundamental one. There are many others problems based on dualities, but they will be solved much more easily and quickly with the same Deep PEAT process.

Between the creators of certain Spiritual, therapeutic or self-developing systems and the systems themselves, there is a reciprocal relationship. Starting from the previous research on the human mind and perhaps owing to a touch of luck, a man (the creator) creates a system of development having therapeutic intentions. When applied, the system changes the consciousness of people. After some time spent applying that system, the people who were changed are able to observe the system from a new, higher standpoint, as less burdened beings, with a sharpened perception and better understanding of occurrences inside themselves. They are able to notice the limitations of the system and to correct some of its elements. This is the way the original system becomes advanced, perfected and more efficient. After it is changed and becomes more efficient, the system will influence people changing them again for better. Changed people are able to continue developing the system, transforming it in an even more efficient instrument of human consciousness. This process of mutual influence between the system and man will last until the system stop changing, coming to a stand-still and losing its ability of changing further.

While applying and improving my systems of Spiritual Technology I noticed the different operative principles they are based on. The principles are:

- ***A Holistic Approach to the Phenomena (based on the insight that there are always whole, not separate polarities);***
- ***The Alternating Technique;***
- ***Solve et Coagula (dilute and condense);***
- ***The Hologram Principle (the whole ocean exists in a drop of water);***
- ***Immobility in Time (the reduction of the whole event to one shortest moment of it in which there is no movement)***
- ***Duplication and Dramatization of Unwanted Experience (which we want to eliminate).***

You will probably have the impression that all these principles are different approaches to the overall holistic view of certain experiences. Such impression is true. All afore mentioned principles are just different paths to reach the same goal – to embrace all our experiences and all the phenomena of this world as undivided wholes, as they truly are.

## **2. A Holistic Approach to the Phenomena**

In this world of ours we automatically and unconsciously direct our attention just to half of the entire experience! To that half, which attracts our attention. Whether that half of experience is pleasant or unpleasant it does not matter much. While in the experience, we forget the other half and believe that it does not exist and we behave as such. As long as we are healthy we do not think about sickness, when we are in the middle of disaster we are not able to think about the happy moments we had.

A holistic approach to life phenomena requires us to include all sides and all elements, which participate in our experience. It directs our attention to the other side of our experience, which was pushed into the shadow, and to the full and complete experience of ourselves as the undivided part of the whole world.

### 3. The Alternating Technique

The Alternating Technique is an extremely valuable contribution to the rapidity and success of therapeutic and Spiritual processing. In it we try to approach and solve every experience from all sides, holistically. In current methods such attempts are rare, but they are necessary if we want permanent results and to shorten the time of processing. The Alternating Technique directs our consciousness to the neglected, forgotten and suppressed parts of the experience. The weak point of many spiritual, psychological and emotional therapies, is the narrow and one-sided approach to phenomena, especially when related to the problems they try to resolve. In such attempts one always and exclusively wants to realize positive states, forgiving the other side of the coin.

When one applies Alternating Technique, in other words when one confronts with the positive as well as the negative polarity, mind masses are emptied much quicker and the desired goal is quickly attained. It is even more evident in the DP4 method. Instead of hours, process lasts minutes. Therefore, whenever it is possible one should apply Alternating approach.

### 4. Solve and Coagula (Dilute and Condense)

From the earliest times eminent thinkers tried to discover the fundamental model of occurrences in social phenomena. Efforts to explain everything with one and only element are too ambitious, because there is more than one key element. I will point out to one of them, which seem to be omnipresent, because we find it in middle age alchemy, spiritual development, psychotherapy and even in modern physics.

In quantum mechanics one of most fundamental phenomena is the duality of the wave and particle. Modern physicists say that light exists simultaneously as waves of light and the particles of light. Physics is able to see it, but is not able to explain it. A wave has no limits, it spreads to all directions at the same time and we are not able to measure it. In the moment we try to measure it, it dematerializes from the whole space and appears as a particle, which has got definite characteristics.

But long time before quantum physic, alchemy pointed out its most important operation: *Solve et Coagula*. Solve refers to the breaking down of elements and coagula refers to their coming together, in the process of transmuting base metals into gold or arriving at the Philosopher's stone. But it was a literal meaning. As a matter of fact, "solve" referred to the dissolution of hardened positions, negative states of mind and dissolution and disappearance of negative energetic charge. "Coagula" referred to the coagulation of dispersed elements into an integrated whole, representing the new synthesis on a higher organizational, psychological, emotional and Spiritual level.

Therefore, the real meaning of these three words ("Solve et Coagula") is a formula that the alchemists used to carry out this transformation. It could be described as a process in which something is broken down into its elements, which produces energy, and after that, its reconstitution in a more evolved form.

The same meaning is found in the well-known terms of science: analysis and synthesis. We first break something in its parts and then make a new, better or more acceptable whole. During this process, there is a release of energy.

What all this has to do with Spiritual technology, therapy etc.? Very much! We are not able to work with a wave; we must transform it into a particle. We can't work with some indefinite problem, for example a fear. We do it after observing it and "measuring it". We ask our client, what is the location of his fear? What kind of fear is it etc. Doing it, for example with certain types of fear, we will see that the endless and formless wave changes into quite concrete "particle", which is something we are able to operate with.

Asking for the details of our client's problem is coagula phase. After this phase, applying an adequate method, we disperse it freeing its energetic charge (solve) and again we come out of the process with a "particle", which is a state that is positive and desirable.

If you want to throw a stone far away, you must squeeze your hand, but the moment you want to throw the stone away you must open your hand.

Countless examples from literature and the biographies of many creators point out to the fact that such approach is well based. When, after long straining, they relax, they solve the problem. The old saying, *A morning is wiser than the evening*, points out to experiential observation that after making efforts relaxation is needed.

## 5. The Principles of Hologram

The Principles of Hologram are:

- ***Whole ocean exists in a drop of water, and***
- ***Immobility in time: The reduction of the whole event to one shortest moment of it in which there is no movement.***

These two principles are sub-elements of previously described ***holistic approach*** to experiences, problems and goals. Because they are tightly connected, I will describe them together. In the field of Spiritual Technology they are very important because their application caused a great shortening of time in my processes and to an exceptional success.

Simply said, this is what they mean. Instead of great number of processed experiences, which we find in the majority of other systems (which make ***the ocean of possibilities***), we do just one efficient process on one selected experience (which is just one ***drop of water***) in "***frozen***" moment of time and all similar experiences vanish at once!

In other words, not only we choose just one experience out of the many possible ones, but also we shrink the time of the experience in just one narrow moment, lasting just a second, without any movement or changes in it. So, in a way, it is "***frozen***" in time.

Second, ***immobility in time***: not only we choose just one of the many experiences, but we limit its time to minimum, to just one short moment. In other words, we coagulate the experience and stop the time of its existence.

The basis of this approach is the knowledge of the nature of human consciousness. ***As long as we make changes in certain experiences, and movement is the change, the experience will persist.*** Preventing the change of some experience gives us the optimal situation to eliminate it.

Therefore, whenever it is possible we try to reduce all unpleasant experiences (the ocean) to one, and then reduce it to one representative moment frozen in time (a drop of water). When we empty all the emotional charge from it, we have emptied all similar experiences.

## 6. Duplication Or Recreation Of Unwanted Experiences

We ask our Client not to resist negative experience. On the contrary, we ask him/her to duplicate it and to feel it as strong as possible. In advanced methods of psychotherapy it is cold ***paradoxal intention***. Viktor Frankl was first to use that term. I call it ***dramatization***. All these principles exactly applied make Spiritual Technology what it is and it is extremely efficient.

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# SELF-REINTEGRATION, AN QUANTUM-BASED ENERGY (PSYCHO)THERAPY, FOR THE TRANSCENDENCE OF DUALITY

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**Abstract.** The author presents a new therapeutic technique, which fits in what are called Energy (Psycho)Therapies or Meridian (Psycho)Therapies. Based on scientific studies by various authors and her own clinical experience, author discusses the new paradigm of science, which accepts the consciousness as the creator of matter and its importance to a renewal in the way we think about health and illness, the various states of consciousness with which we are affecting and being affected constantly, and the duality of mind that is characteristic of all quantum objects and responsible for various fragmentations of the human psyche or mental creations.

**Keywords:** *energy (psycho)therapies, meridian (psycho)therapies, duality, paradigm, self, reintegration, fragmentation, mental creations*

## 1. Dual Paradigm X Unified Paradigm

The human imaginary has always searched for answers to the psychic events. Everything that exists in society today, from simple rules of living to a high technology, results from the expression of the human soul in mental, emotional and physical levels.

René Descartes [1] influenced Western thought by considering the human being as a mind-body duality. This materialistic paradigm had and has a role in the construction of beliefs that are the building blocks of many diverse cultures and their productions.

At the same time that the materialistic paradigm resulted from beliefs of the past time, it was either the basis for the construction of new beliefs and so on, forming a sort of web, where it is not possible to affirm the beginning nor predict an end.

From the world of Descartes, people stayed for a long time, stuck to the idea that the psyche was nothing more than an epiphenomenon of the body, specifically of the brain, probably a subproduct of the synapses produced by neurons, that is, from the material interactions. Any other statement would be of a religious or mystical order, so disposable to the status of modern science. Science and Spirituality here did not mix.

The problem is that, scouring the history of humanity we find numerous reports of mystical experiences that shake the structures of materialistic thought, showing glimpses of other realities that individuals are able to reach and to interact with (as described in Castaneda's books [2,3]).

The fact that science has denied the realm of the spiritual and mystical, and the spiritual has denied the science, somewhat delayed human evolution. At a time, humanity was locked in a concrete reality with regard to the macro mechanical world. In other, it was locked in an exaggeration of mystical and religious dogmas, with no plausible explanation.

But, in the middle of this ballet of extremes, there have always been sensible and visionary people who left us their base of investigative and courageous thinking.

The physiologist Richet, Nobel Prizeman in physiology in 1913, has declared at that time (as quoted by Yogananda in [4]), that "(...) The science of today is a light matter; the revolutions and evolutions which it will experience in a hundred thousand years will far exceed the most daring anticipations. The truths – those surprising, amazing, unforeseen truths – which our descendants will discover, are even now all around us, staring us in the eyes, so to speak, and yet we do not see them. But it is not enough to say that we do not see them; we do not wish to see them; for as soon as an unexpected and unfamiliar fact appears, we try to fit it into the framework of the commonplaces of acquired knowledge, and we are indignant that anyone should dare to experiment

further." Interestingly, the posture of positivist science has not changed, remaining focused on a clear game of power by its "owners". Even with a large number of new tools, formulas, researches, unquestionable evidences and several renowned researchers from various areas have embraced the new paradigm, continues a process of discredit, which hasn't actually done any transforming purpose for humanity of planet Earth.

Today, with the advent of Quantum Physics, this is very clear! From one side, researchers who insist in embedding the new science only in the mechanistic world, on the other hand, researchers whose look bows to the greatness of the Laws of Nature that they still do not know and which implies a teenager reading for many of the laws already known. Quantum Physics allows to consider the world as from submicroscopic phenomena. That is, those that are not visible to the physical eye, and many are not even noticeable in supersensitive devices. From this science we can assume many things, because it states that the fact of not having experienced a certain phenomenon does not block its existence.

From this science we can assume many things because it says that the fact of not having experienced a phenomenon does not prevent it of existing. After all, "what would be if Nature depended on the human belief to move itself in its own laws?" (Sri Yukteswar, quoted by Yogananda in [4]).

This new science states that reality exists only from the interference of an observer (see, for instance, Wolf's book [5]), that is, nothing, no universe or nature, nor even people would exist if there had not a consciousness capable of causing the collapse of the wave and make the existence possible. This is so true that if someone tries to imagine the emptiness, thinking in a vacuum, with nothing manifesting in it, yet this someone will be watching it. The new science also allows that the dogmas of faith of the religions and the extrasensory experiences of mystics can be known, explained, demystified and experienced from theoretical and scientific concepts (as revealed in Rakovic's monograph [6]). So, everyone wins with this interaction. And that changes the way you perceive yourself, others and the world.

As previously mentioned, the beliefs form the basis of thought. An example is the individuals known as mediums, people who have psychic abilities beyond the ordinary. For the mechanistic, either these people would be fantasizing for unknown reasons, or suffering from a collective outbreak, with symptoms of schizophrenia and / or psychosis, for example. Just read in the DSM – Diagnostic and Statistical Manual of Mental Disorders [7], that the description of the symptoms of these diseases and others is very similar to certain psychic experiences that mediums use to report. An individual with symptoms of schizophrenia in Western culture would probably not be considered mentally ill by a shaman tribal (for example, see Overbye's transcultural study [8]).

It is interesting to have in mind, that through this web of beliefs, we create, maintain and destroy what we want. Fact is that many observable and compelling phenomena, especially psychic phenomena, if they cannot be embedded in materialist theories, they are given as unreal, false, fanciful, hallucinations, delusions, symptoms of mental illness, madness, and others.

## **2. States of Consciousness**

Weil in his book [9] notes that there are "different levels of reality that can be lived in different states of consciousness, and possibly some of these are specific to certain levels of reality." For example, "in a state of wakefulness, the levels of reality are perceived as we know them; in the dream state, a dog's bark becomes a siren bombing and it is possible to receive direct messages about a disease that is affecting yourself, or a telepathic message from a friend who is thinking of us at this time. In a state of cosmic consciousness, we can see, simultaneously, the dog in its subatomic and dense structure, as well as its bark will be perceived by the ear at the same time we "see" sound waves of the same bark, all this along with the vibrancy of its affective relationship with its owner (and vice versa)."

Without a doubt, when a person allows to realize herself in a state of consciousness different from the watchfulness state, other realities come into being as they are now being realized. In fact, these realities have always been there, working all the time unconsciously, as part of the individual and collective whole from each of us and affecting our actions, reactions, decisions, health and disease. But they had to suffer the collapse in order to come out. In every state of consciousness we perceive the same reality in different ways.

The systemic theory of Weil [9] points out, at least seven states of consciousness: (1) State of consciousness of deep sleep, (2) State of dream consciousness, (3) State of consciousness of reverie, (4) State of waking consciousness, (5) State of awakening (6) State of transpersonal or cosmic consciousness and (7) Other states, which can be induced from outside (whether by drugs, by the direct action of another person, etc.). Studies have been conducted in this area, but it is not the focus of this article. In each of these states of consciousness we can experience different levels of reality, according to the state of consciousness we are experiencing.

According to Wolf and Toben [10] each construction of an individual universe contains equally an indefinite number of other universes with all the variations and all other possibilities. In patterns that vary constantly, each universe is connected with each other and with all others and the connection can occur at different levels. The connections that change continuously between the individual universes, and the configuration of all individual realities are a continuous process. There is no beginning and no end. Each reality is constantly forming and affecting all other realities beyond time.

In the technique that will be presented in this article, it is proved by experience that the ordinary reality we perceive is not a unique universe. We are affected by and also affect, an infinite number of universes constantly. The great mystics have always known this. And meditation is a practice that allows access and traffic to these universes. So, connecting to the I, becoming aware of unconscious contents presented in these universes, is approaching ourselves to the control of our destiny. In this destination health and disease are included.

### **3. The Beginning**

I started my work, which I now call Self-Reintegration (SR), in 1998 when I met the Italian physiotherapist Giuseppe Chieppa. In his daily practice he developed his own method of work that took into account the emotional experience and life situation of each person, as well as the biomechanical and physiological aspects of various pathologies. Through a process of self-observation, patients increased their level of attention, giving priority to the vitality, integrating and unifying awareness to the body. This greatly improved the clinical picture with which the patient came to him.

I remember well that Chieppa told us during the course called Corpocoscienza that he knew that, what he was experiencing with his patients was just the beginning. And he wished that this technique could be improved with the participation of professionals of psychology, so that they could advance the field of the psyche, something he did not venture to do. I am very grateful, because this opened an immense field of work for me. At that time I was just Reiki therapist, and enchanted with the possibilities of working on the human psyche. And, as from Chieppa's technique, I decided to do a graduation in psychology.

The years passed and many were the experiences I have gained with patients who came to me, many recommended by doctors and psychologists who understand that the medication and the analysis worked with the patient only to some extent. I evolved my work, but always with the desire for scientific explanations of the phenomena I witnessed in my clinic.

In 2001, I knew the work of Amit Goswami, through his book "The Self-Aware Universe" [11] and became enchanted with Quantum Physics. I began to study it and make assumptions about my work, at the same time, I added practices which I found interesting to it. In 2009, knowing the work of Dejan Rakovic [12], I knew that this would be the best and safest time to write about this technique.

As knowledge does not belong to me, but to the universe, to the collective, at some point it becomes necessary for us to share our experiences. Then, in my country, psychology does not have much space to these issues in the academic world, much less scientific publications. So I was very adrift without papers that could support my ideas and experiences. And finally, we need to grasp from the universe some opportunities. And this was given to me by Dejan Rakovic, whose encounter with me made me realize the similarity between our approaches and brought forth the possibility of using well-known papers to give me a subsidy to the writing of this text.

#### 4. The Technique

I am a clinical psychologist and my job is to assist the patient to find a cure in himself, scanning the various dimensions of the psyche. By psyche I understand the human soul, the "It" by Georg Groddeck [13,14], The "Nothing" of the Vedanta Wisdom [4], the Self by Carl Gustav Jung [15,16] and the Consciousness that affects quantum objects, from Amit Goswami [11]. To do this, I take the patient to contact his essence, through deep breathing, using an asana of Yoga called Savasana and positioning my hands on two chakras - the crown and solar plexus. As I am a channel Reiki, I remain myself always connected on that energy. Without contact with the Self is very difficult to get to what really is the cause of complaints and the person remains itself at the mercy of confusion.

The SR works first, with the reconnection of the subject with his energy center. In just a few breaths the person begins to perceive itself at a level beyond the physical. This "be aware" takes the individual to a reconnection with itself. Without that happens, you should not work to evolve the perception of other realities. It would not be safe for the patient. It could lead to further fragmentation of the psyche. Once the patient finds itself in deep relaxation, but conscious, I use simple and direct questions to get patient to realize its biofield.

Here, at this point, it is possible to read the mental state of that individual, and the interferences that are being carried out in the physical, mental and vital expression, based on the answers he provides. This practice makes the same effect as the grounding of Bioenergetics. It is absolutely necessary that the therapist is prepared to act from its own self, as therapist is interfering with patient's biofield. It is a process of non-local and simultaneous interference, between patient and therapist.

Yogananda, the famous guru, founder of the Self-Realization Fellowship, in his book "Autobiography of a Yogi" [4], citing Lahiri Mahasaya, his guru's guru, says that "health accompanies exactly the subconscious expectations." So, give the patient the opportunity to access the subconscious to extract the origins of evil and give a solution for him, should be the work of any psychologist. And also adding the restless investigation of the movements of the human soul and the psychic phenomena it produces.

Another exercise I use is to get people to take possession of an "imaginary" and self-sustaining substrate, an internal place in our subconscious where the essence resides and rests, even when all of our subjectivity, ego and consciousness collapse (as stated by Hillman [17]). Here in this place, I help them to absorb themselves and have special meetings with several buildings of the soul or "psychic entities", including the mind creations or thought-forms and other realities, and breaking barriers of time between past, present and possible future in holography.

The reports on the experience of individuals with SR show that they realize themselves in more than one reality without losing total contact with any of them. Only that the experience is actually stronger where the focus of attention is directed to at that time. From there, it is possible to dive inside many "wormholes" that the patient will pass through during treatment in order to achieve self knowledge and healing in a transcendental level. It is this reconnection that opens the possibility of a new choice, free from the conditionings of past experiences, as the individual goes traveling through himself. SR, above all, works the spiritual and transcendent awareness of being, and for this, seeks to take the patient to achieve a state of Cosmic Consciousness, where "the perceived reality is no longer a dual perception, but an experience of unity" [9]. Here, the person is constantly aware of what is happening.

I remember one of my clients, 22 years, who came to the clinic with a diagnosis of schizophrenia, given by the psychiatrist. Her situation was serious because she could not continue with any subject, no matter how simple it was. She passed from one idea to another in minutes, without any relationship between them. She also had a great fear of the "voices" which were chasing her all the time, and not even let her sleep, despite high doses of drugs. During psychotherapy she was taken to access the psychic reality of the voices which they belonged, and talking with "them", she could solve a matter of charging from a past life.

The other day she woke up lucid, speaking coherently, and never returned to freak out. We worked for two years on a weekly basis. Today she is married and has two children, works and lives her life according to what we call a normal way.

In another experiment, a nine year old boy started to have a psychotic disorder that affected his thinking, left him quite disordered, shook his affective responses and compromised his ability to perceive this reality. At

school, he stopped following the teaching and his colleagues distanced themselves from him, afraid of his unpredictable reactions, ranging from violent reactions to peaks of depression and isolation. During a work of SR, he got in touch with the internal reality where he was, psychologically speaking, and found himself in a cave, with four years of age. This place was damp and dark, and the feeling that something would violate him was imminent. He could not access the reasons why he was in the cave, but I worked in order to help him get stronger and have the courage to get out to a better place. The detail, is that, in this collective reality that we call “waking reality”, he was never in any cave. The cave and all the elements were part of the inner reality in which he was also inserted. When he left the cave, he saw a place of great nature and could experience the Divine Essence redemption, his I, his Self and re-connected with this waking reality, more dense. There were 13 sessions of 60 min each. Today he is a teenager of 17 years old, studying and singing in a choir, and did not have any more picture of the outbreak.

The nine year old patient perceived himself in the litter of my office and in the cave, where a fragment of him was manifesting as himself in his four years old. Although he had more awareness of the cave and what was around the cave at the time of experience, he heard my voice and was sure that he was at my office. The possibilities of the human psyche are unimaginable in its entirety, and I feel as if I was in the kindergarten.

## **5. Mental Creations and Fragmentations of the Soul**

In SR the range of Mental Creations that we can access is unimaginable. According to Tibetan Buddhism, there are over 84,000 “psychic entities” or thoughts [18], or mental creations built from the fragmentation of the psyche, through conflicts of all kinds poorly solved: obsessions; destructive thoughts; compulsions; traumas; memories of past lives; memories from this life; spiritual implants placed by entities with a special purpose; known diseases; unknown diseases; personality of past lives; inner child of the individual; the inner wise man; adequate and inadequate entanglement with the ancestors; “boxes” with different contents; family curses; limiting beliefs, etc.

The fragmentation of the essence of Being is a phenomenon of the action of Maya, the power of illusion, according to the Vedic scriptures, or principle of relativity and duality of quantum objects, according to quantum physics. Maya puts us in the dance of polarity, for example, health and disease. Therefore, achieving a cure is to transcend Maya, rise above the duality of creation to perceive the unity of the Creator. According to Hawking [19] all of us and everything around us are quantum objects. And in the case of this particular feature, there is no distinction between waves and particles. Particles can behave as waves and vice versa. When one quantum object behaves as a wave, it is spread, moving, and exists in more than one place at the same time. You cannot specify exactly where it is located. When we stopped to observe it, it suffers the collapse of the wave, and starts to behave as a particle. And then, we can suppose the region of highest probability to find it. Thus, it is possible to do more checks in this quantum object in particular.

Quantum physics describes matter as waves of possibility [11]. And consciousness is the agent that turns the possibility in the act. The collapse of the wave is exactly the time when the possibility becomes action. Consciousness, which is transcendental in its own nature, chooses a superposition of waves of possibility, this superposition becomes the act and passes from act to experience. That is what we call perception. So Maya works. It is important to note that everything that occurs with a quantum object affects its internal and external universe. Therefore, we can say that quantum objects are singular and collective at the same time, but not individual. And that includes humans.

The Unit has always been the aim of science. Einstein, before his death, developed the Unified Field Theory, convinced that the laws of electromagnetism and gravity could be expressed in mathematical formula; with the theory of relativity to explore the possibilities of atomic nature expanded, reaching the demonstration that the atom is energy rather than matter (as quoted in Yogananda [4]). And renowned scientists of that time, as Sir Arthur Stanley Eddington, British astrophysicist, came to say that atomic energy is essentially mind-stuff [4]. Today, using the new paradigm, that consciousness creates matter, we can move forward in curing diseases of all kinds, just helping people to seek unity in themselves.

Over the centuries we have been fragmenting ourselves by focusing on the material phenomena as essence to existence, for what we call life. But in fact, we have reports all over the planet of mystical experiences that led to the cure of disease and spiritual elevation. This, in many different cultures, from different times, passed by people who learned to think about it, each in their specialty. Ancient wisdoms like Vedanta, Theosophy and Kabbalah, for example, have been rescued by scientists as the basis for an undeniable explanation of psychophysical phenomena. We have evidence of that in the writings of brilliant researchers and professionals, such as Carl Gustav Jung, Jagadis Chandra Bose, Paramahansa Yogananda, Wilhelm Reich, Deepak Chopra, Bert Hellinger, Rupert Sheldrake, Amit Goswami, Dejan Rakovic, Francisco Di Biasi, Fred Alan Wolf, Richard Amoroso, James Lovelock, Vladislav Lugovenko, and many others.

## **6. Energy (Psycho)Therapies, a New (Psycho)Medicine**

The advent of Energy (Psycho)Therapies and the new paradigm, of a science within consciousness [11], has been leveraging our progress in this area.

According to Rakovic and Slavinski [18], the Energy (Psycho)Therapies and the Meridian (Psycho)Therapies are based on secular teachings about the energy field inside and around the human being, the meridians within that field and vital energy (chi, prana, etc) that flows through them and all this integrated with modern psychological knowledge. Their goals are the elimination of emotional, psychological and physical unwanted states. And some, like the PEAT (Primal Energy Activation and Transcendence, developed by Slavinski [20]) is also an expansion of consciousness, spiritual maturity and development.

Unfortunately, until now, there is no scientific validation that supports the material, but the results obtained on the day-to-day are the reason why these (Psycho)Therapies are increasingly attracting attention, so large and growing, thus opening new possibilities of healing and revolutionary paradigms for our understanding of human beings. Here the psychological problems can be understood as manifestations of energy interruptions of the configurations in the human energy field and the organic diseases, that are embodiments of these disruptions that manifest neurologically, biochemically, cognitively and behaviorally. In this therapeutic approach the psychological problems are resolved much faster. Just change the structure of the information contained in the elementary particles forming the energy fields, which is at the root of the problems to provide a cure or change in Spiritual Consciousness.

The nonlocal behavior of consciousness, including the potential of transferred data about quantum discontinuity, are the basis for the understanding what the SR makes possible to the client access, because it explains the various psychic phenomena that we are able to accomplish: telepathy, precognition, past life regression, future progression holography, conscious out of body travel, mental creations, etc. That is why yogis, in a state of meditation, can experience the ecstasy, remaining alert, awake to this reality.

In the SR, as well as in the PEAT [20], there is the current release of blocked energy in the aura of being, without the need for intense catharsis. The idea is that the person become aware of blockages and can decide for a new energy pattern. About catharsis, I believe we can modify the sick standards in a more elegant and subtilized way, without passing again through all the emotional and sensory charge presented in the experience that culminated in a trauma, for example. We can use the memory, because these contents are stored in it with all its nuances, such as files in a folder. We can access them without "revive" faithfully what happened. And, once accessed and (dis)integrated, the contents stop disturbing us. Catharsis by itself, as has been used by certain body approaches does not solve the problems. It is necessary to modify the basic pattern, or the energy will accumulate again. The practice of releasing is good, but not permanent. To change the pattern is necessary to face it, changing the internal mechanisms that create these energy blockages, which repress it and cause us to be angry, sad, depressed and neurotic. Release this energy is simple, but (dis)integration of the pattern is hard work. My experience of 12 years of work has proven this and my physical body thanks for not having to be weakened by this particular stress.

Through a deep breath, which directs the person's focus of attention to itself, we allow the unconscious content, which is in motion, behaving like a wave, to collapse and start to behave as a particle. Thus, we can work effectively upon this acting content, consciously and deeply, reorganizing the entire internal universe of the

individual. In fact, "there is no real unconsciousness; it is possible that consciousness sleeps or rests, but it can never be unconscious. During sleep, consciousness rests, that is, it is inactive. The soul is never unconscious." (Yogananda, quoted by Sri Daya Mata [21]).

Of course, everything that has been worked within this internal universe, in particular when the unconscious comes back to behave as a wave and spread itself, will undoubtedly modify it, and the environment around it. It will act, thereafter, in a new standard, making these changes almost immediately noticeable, as the remission of symptoms, for example.

## 7. Conclusion

With the SR I have learned that the human psyche creates numerous forms that act in a variety of ways to accomplish some larger purpose of the Universal Order. The SR is an Energy (Psycho)Therapy that does not work with guided imagery, like most of the work of active imagination. It makes the person actually find a "wormhole", cross it, step into the "other side" and transit by those other realities that are unique, at first, and go to see them, as well as all huge range of fragmentations that are manifested in them, understanding the interactions that are present between the singular and collective, finding a unification and assuming a greater power of choice in such called "unaware" actions of the ego.

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## BIOLOGICAL DECODING

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**Abstract.** Sometimes in past, it has been thought that physical and psychical changes or illness is a result of damnation, or evil faith which affects us from external illness causes. Today we have a rather different view on that particular problem. With latest scientific discoveries it has been proven that sickness is a direct response on *stressful situations*, which in that given moment can't be processed on mental or emotional level. We do not become ill by coincidence, illness always has a direct link with things going on in our life. If it comes to resolving the problem, we do not get ill, if not, it becomes biological stress (stress of direct life endangerment) which can be an illness generator apropos symptom on physical level. Illness or dysfunction of organism is influenced by very precise biological laws. Two-phased progression of every illness can be traced (Dr. Hamer): sympathicotony and vagothony. This knowledge serves us in apprising direct course of illness (why this illness and not any other one), as it shows a logical flow on emotional, mental and physical level. Our behavioural patterns have crucial part in shaping our way of responding on stressful situation (just that and not any other way). When in stressful situation, our brain begins searching for every kind of data, information and programs which could bring to its solution. In that moment brain chooses the best possible reaction, and influenced by experience - best behavioural pattern, having only one aim and that is to empower further existence. Our brain memorises primarily three types of data which it uses in stressful situations (*Useful Biological Program*): (i) all experiences and circumstances since birth to this very moment, followed by emotions and perceptions; (ii) all that we have experienced before we were born, since the moment of conception, even our moment of birth are completely integrated in our system; (iii) everything that our ancestors have experienced is also available to our brain. *Decoding* can be established by endeavouring toward two directions. First course is establishing and explaining crucial cause of stressful situation, therefore it is of at most importance to take precautions against objective circumstances being the trigger for genesis of a disease, but emotional feeling of the individual itself, so as which behavioural pattern will occur in certain stressful situation (different person react differently on the same kind of stress). Second course is releasing old behavioural patterns and gaining new mental pictures which awake new emotions annulling the old ones at the same time. Images from the past are always the cause of our illness. If we could manage to transform our mental images and to them related emotions, we could live healthier in future. Often just the realisation that there is a *choice* is enough: Stay devoted to old pattern (which in some cases can represent death) or establish new ones. We are not able to become new people, but we can learn how to control old mechanisms which made are ill in the first place!

**Keywords:** *causing stress situation, illness, emotion, Useful Biological Programs, decoding, choice*

### 1. Introduction: Theoretical Basis

All processes in our body are directed, coordinated and controlled by our brain. It can be compared to a big computer which constantly collects and processes information obtained via the senses and the nervous system, both inside and outside our body. At any given moment, it chooses the best possible action and reaction in response to outer influences with the aim of providing further existence. Action and reaction of the brain completely rely on the experience acquired in the past, which creates certain behavioral patterns. Practically, the brain memorizes each situation we experienced and which enabled further existence and puts it into a 'file' with other patterns important for survival. Alongside with the memorized image, the brain also remembers the

emotion connected with it, as well as all other emotions registered by the senses. In the given situation, when the brain uses a behavioral pattern which already proved as useful, it becomes a *Useful Biological Program* (UBP), which can be applied in countless situations. Although it may sometimes seem that UBP are pointless, illogical and difficult to understand, we can still rely on them completely. From the aspect of Biological Decoding, we can say that the brain never makes mistakes.

What does a UBP consist of [1]?

- All our experiences, from birth onwards, as well as associated emotions and feelings are perceived via all senses (e.g. a particular sense can bring back memories of a certain experience; these are the so-called Tracks).
- All our prenatal experiences, from the moment of inception, as well as the very moment of birth, are fully integrated into our system; the fetus brain remembers everything happening in utero; via mother's hormonal cocktail, it unmistakably sympathizes with the mother [2]; even then, the fetus is creating its own UBP; based on the mother's reaction to a certain situation, it learns to react to certain stress in exactly the same way. *Then established UBPs are of great importance and can appear and be used throughout one's lifetime.*
- Whatever our ancestors experienced is memorized in the form of UBP and is at our disposal. With the aim of better and more efficient development of an individual, they are 'genetically' passed onto the next generation. UBPs which proved efficient with our ancestors became integral part of our programs. However, we often have 'outdated' programs or programs which are no longer important and in some cases may even hinder further development or make us 'ill'. Via these programs, we can monitor the effect of the so-called 'family loyalty' [3].

Therefore, 'diseases' are not accidental! When discussing the method of biological Decoding we always talk about the biological, but not about psychological stress. A 'disease' has a biological purpose and is always closely connected with the things that happened or are happening to us. An actual emotional shock-situation without a reasonable and satisfactory solution on the mental and psychological levels causes a certain 'disease'. Therefore, biological conflict, shock-situation or stress represent a conflict in which survival of an individual and his offspring is endangered (stress of direct life threat).

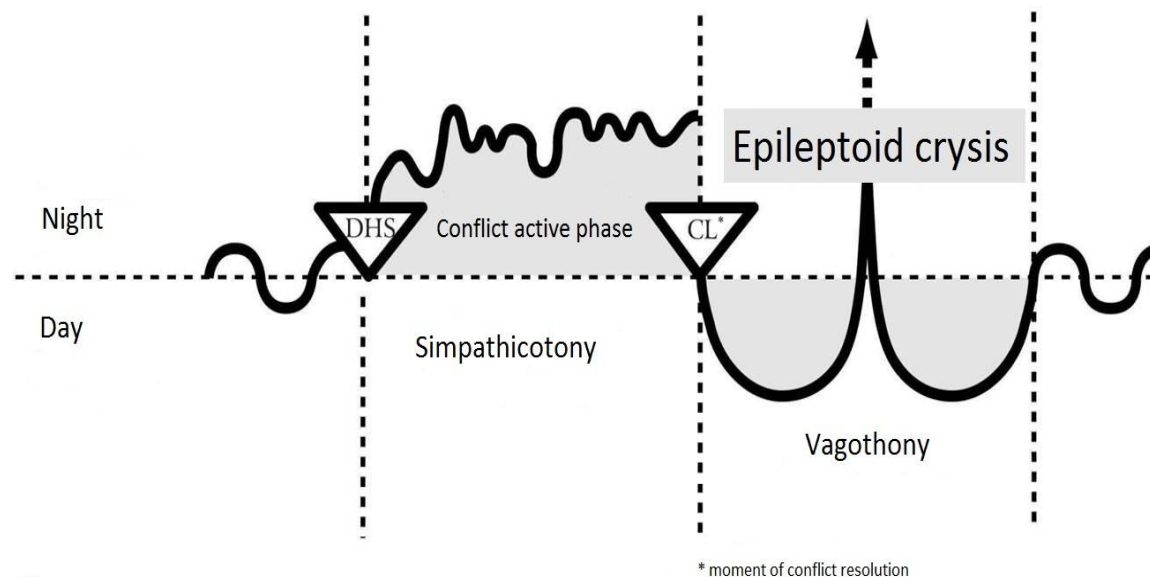
Experiencing a shock-situation we can monitor changes on three levels: psychological, cerebral and organ. If changes are restricted only to the psychological level, we do not get 'ill'. As long as the conflict is on the level of psyche (re-think) we can act and find the way to solve it (Ratio), verbalize it, discuss it, consciously make decisions about the change of our convictions, so the influence of a stressful situation decreases and we remain in balance, i.e. we do not get 'ill' [1].

On the organ level, we notice changes on a particular organ or part of the body, whose intervention was or is useful when solving that actual conflict. A very simple example will explain this: a person standing at the pedestrian crossing wants to cross the street. As he is stepping on the white lines, he sees a bus and thinks that it will not be able to brake. The brain immediately registers a life-threatening situation on an unconscious level, which induces the state of stress and the brain immediately makes the decision which enables further course of life. Namely, the person makes a decisive step backwards. What happens on the organ level at that moment and which organ is supposed to react fastest and in the most adequate manner? A biological impulse makes the person inhale a larger amount of oxygen which leads to imperceptible alveolar dilatation, aimed at transporting the largest amount of oxygen possible to the muscles which need to enable the step backwards. Once this has been accomplished, alveoli return to the original state, because there is no need for dilatation any more. Since the state of the stress lasts only for several seconds, it takes just as much time for alveoli to return to the initial state. This means that the amount of stress is proportional to the course and duration of the change in the organ i.e. the 'disease' or the symptom. Conventional medicine would diagnose this change of alveolar volume as alveolar hyperventilation. If a period of stress is prolonged, there are bigger changes in the organ, the cells of the same tissue divide faster in order to increase their function, with the aim of improving functions of that organ, which conventional medicine diagnoses as cancer.

Changes appearing on the cerebral level are related to the creation of the so-called 'Hamer foci' (HF) [4]. On a CT scan, circular shadows (in the shape of a target) can be noticed in the part of the brain which reacts in the case of conflicts and which controls the symptom. The location of the focus always corresponds to the position of the organ directed by that part of the brain. HF reveal changes and possible future changes on a particular organ. HF are surrounded by a cerebral oedema, or a swelling which separates the 'affected' area from the remaining cerebral mass. In therapeutic work, HF enable us to precisely detect the causal stress situation in the past and to determine which conflict was experienced.

According to Dr Hamer [4], in every disease we can monitor a two-phase 'movement'. As already mentioned, if a conflict is not solved on the psychological level, a stressful situation becomes an acute dramatic shock, stress, which Dr Hamer called DHS (Dirk-Hamer-Syndrome after his tragically deceased son). Stress then causes a conflict which can be of different nature e.g. a conflict of existence, motor conflict, conflict of loss, conflict of endangered territory... An individual experiences DHS, thus entering the phase of sympathicotonia. This is a conflictolytic active phase in which the vegetative nervous system is no longer capable of maintaining an individual in the state of the normal rhythm of the changes of active (day) and resting (night) phases. The signs of a conflictolytic active phase are: permanent brain activity (attempts to solve the problem), cold hands and feet, loss of appetite, increased blood pressure, anxiety, and sometimes even weight loss, insomnia, changes on a particular organ... (cf. Fig. 1).

The practice showed that if the phase of an active conflict (sympathicotonia) lasts longer than 9 months (!) the system usually does not have enough stamina for selfregulation genesis and return to the state of a healthy individual. Unfortunately, under such circumstances death can be expected.



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**Figure 1.** Schematic presentation of disease "movement" (UBP)

When problems and conflicts are resolved an individual enters the second phase - the conflict resolving phase (*vagotonia*). The signs of the conflictolytic phase are: fatigue, increased appetite, swellings, increased body temperature, decreased blood pressure, gaining weight... At this phase, an individual usually sees a doctor, feeling worse than in the phase of sympathicotonia. Not knowing that this is already the phase of recovery, selfhealing, a diagnosis can be set, triggering a new DHS (the so-called vicious circle).

Vagotonia includes a very important, so-called epileptoid crisis when an individual experiences the same symptoms as during the DH. It is as if he needs to take the same way back to the state prior to DHS. This is when

cerebral oedema is decomposed and its content (water) is eliminated from the organism via the system of the excretory organs. This is the so-called urinary phase. It usually passes unnoticed, but can also be severe (e.g. a heart attack is an epileptoid crisis).

It is also interesting to mention that in the precisely defined ontogenetically conditioned microbe system, Dr Hamer explains that the presence of microbes in our organism is indispensable because they decompose the excessive cells which were created in the conflict active phase, or they promote creation of new cells. Microbe mass is always proportional to the mass of produced cells. He classified them into three groups according to the ontogenetic age: the oldest microbes (fungi and mycobacteria) 'process' organs of endodermal origin (they decompose cells), bacteria 'process' organs of mesodermal origin, and viruses 'process' organs of ectodermal origin (they promote creation of new cells). Without these microbes in our system, excessive cells cannot be decomposed, because their role is only to 'clean' the organism. We systematically destroy them by antibiotics, because our understanding of nature as an integral system is based on the constant need for wars and the battle between good and evil. Dr Hamer says that the immune system, the way we understand it today, is actually nonexistent. There is a system of selfregulation and selfhealing of the organism.

## **2. Method**

The method of Biological Decoding has a two-phase influence:

- The first phase detects causality of stress related situations, so that an individual can understand causal-consequential connection between himself and his 'disease'. Why that particular disease and not something else? What matters is an emotional experience of an individual, and not actual circumstances of the causal stressful situation. The same stress may cause two individuals to create completely different conflicts and possible subsequent elimination of a future shock after the diagnosis, isolation of programs connected with the 'disease' which were created in utero, and finally, recognition of family 'hereditary' programs and explanation of the 'loyalty'.
- The second phase consists of acting on two levels: The first is an elimination of a conflict situation and the change of an emotion attached to it. This is practically an outer change and it does not require drastic changes of our convictions. It acts on the surface and does not require great mental or physical strain. The second level is a deeper inner action which requires the change of UBPs in unchanged conditions, even in the phase of a prolonged conflict situation, i.e. DHS. It requires the change of convictions and larger mental and physical strain, penetrating to deeper levels of consciousness. The change takes place when mental images and related emotions are replaced with new, positive ones, because it is not the past, but negative images and ideas about the past that make us 'ill'. The influence of a mental image on an individual has an effect on the complete organism, as if it is part of reality. E.g. when we imagine riding a bike, we can trigger a series of activities in the organism, bringing it into the state of physical fatigue. This is our great potential [5]!

There are mainly three reasons for the blockage of the genesis process. The first is fear of change, fear of changing our convictions and beliefs. Those 'waiting' to be healed live in their past and fear their future. Their personal truth is their reality and they constantly transfer their past into their presence. The second is inability to forgive, be it a person or 'vis major'. It is forgiveness that releases negative images and related negative emotions from the past. The third is pride, belief about the loss of one's self, despite the fact that the beliefs were wrong.

## **3. Application of the Method: An Example of Diabetes Mellitus**

Here, we shall apply the method on an example of diabetes mellitus [1], where an increased blood sugar level is in question. In diabetics, we can determine a changed way of blood sugar metabolism: it decomposes blood sugar in the muscles anaerobically, i.e. without oxygen. Why do we need blood sugar? The brain and muscles need sugar as a form of energy. Without oxygen, i.e. anaerobically, consumption of blood sugar is increased 19

times compared to aerobic phase, i.e. in the presence of oxygen. Out of 40 glucose units, only 2 are converted into energy, whereas the remaining 38 are converted into heat. This is very interesting!

Joint researches of doctor Gerrard Adias and veterinary Maude Dumont discovered that what is described as the art of survival in the animal kingdom represents a disease in humans. Namely, they carried out experiments on frogs who were able to survive a -40 Canadian winter owing to the increased blood sugar level which was above 400 at the beginning of winter, and went back to normal at the beginning of spring. Therefore, the whole purpose of diabetes is to preserve us from freezing. For this reason, decomposition of blood sugar in diabetics is anaerobic (without oxygen) so that the body could warm up on the inside (antifreeze liquids we use in our cars mostly consist of sugar!).

Diabetics who e.g. spend their holiday in Africa mostly do not need insulin, because the fear of freezing is practically non-existent.

***The cause of diabetes.*** Which actual stressful situation did a diabetic have to experience so that his blood sugar level increases and why must blood sugar decomposition be anaerobic? It is a situation in which an individual believes that he will not be able to endure a certain strain, particularly physical one. It is mostly an actual body and muscle strain where relaxation or retraction was not 'allowed', so the muscle had to sustain without oxygen for a while.

***An example of a client, 30-year-old male.*** He went for a carriage ride with his pregnant wife and a two-year-old son. Just as they were leaving the village, the coachman did not make a timely turn, so the carriage keeled over and fell into the canal. He was desperately holding his son, being conflicted with the fact that he could not help his wife who fell out of the carriage. He said: 'I was holding my son so that he did not fall under the wheels!'

After this incident, he was diagnosed with Diabetes mellitus and had to take insulin every day. At that moment, the brain "caused" diabetes, to make him hold his son for a longer period and with more strength, because he was convinced that he could not do it. Thus, biological purpose of diabetes is a possibility or a guarantee of better preservation of one's offspring. As a matter of fact, he really was an exemplary father, because his father never looked after him, or cared for him. They had no contacts for three years. After the first treatment, he understood the purpose of his diabetes, and was even proud to realize what he is capable of doing to protect his child, unlike his father, and how much his raised blood sugar level helped him. Thereby, his need for insulin decreased day by day.

The next treatment solved his fear of freezing: his uncle (his mother's brother) was thirty when he once got drunk and was going home by bicycle. It was wintertime and he went off the road, fell and spent the whole night in the canal. In the morning, they found his frozen body. His uncle was the second child in the family, just like himself (unconsciously, we have the same programs as our ancestors, even in the order of birth!). Now he understood: when I fall in the canal I can easily freeze to death, so as a natural protection, I unconsciously 'cause' diabetes, which enables me to survive the stress. After the second treatment, the need for insulin was still decreasing.

The third treatment was cancelled by his wife, who phoned and thanked for everything, saying that her husband needed much less insulin. However, they both thought that it would be fatal if he discontinued taking it.

Everything was clear: unbelievably enough, his wife unconsciously did not want a healthy husband for her children because he had already been an excellent father and she did not want to give up on that. Later on, it turned out that her father was also a diabetic, and they proved to be good fathers!

#### **4. Conclusion**

Very often, all it takes is to understand old survival strategies, to respect them because they successfully enabled our existence, and to slowly let go and replace them with new ones. When applied in children, this method proved to be beneficial and simple, because children believe what they are told and do not have developed 'filters' for what is and what is not possible in reality.

The method of Biological Decoding can be applied independently, or in combination with other methods, because there are no risks, side effects and contraindications. This method represents a different view of disease

and it actually opens new possibilities for healthy life and self-healing in a given case, since we all have an immense potential.

I cannot become a different person, and I need not, but I can recognize and learn how to control my behavior patterns which caused my disease.

Allow more of the fifth element, LOVE, into your life and observe things from that perspective. Only LOVE does not judge and is always available in abundance.

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## INTERGRATIVE MEDICINE

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**Abstract.** Integrative medicine helps to understand nature of man's energy. Medicine is currently in a paradox, on one side there is an increasing amount of apparatuses, which are increasingly close to perfection, but on the other hand it is also increasingly difficult to diagnose and even harder to treat the patient. Curing a patient means *permanent curing* in case of acute or infective disease, or *cure and maintain* in case of chronic diseases. The main mistake of western medicine is one-sidedness and a mechanistic approach. One-sidedness is shown in seeing a man only as his physical body within the boundaries of Newton's physics. Mechanistic approach is shown in diagnosing and treating the organ which shows symptoms, without, or with very little view on the problem as a whole, or the real reason of the disease. That is why a combination of eastern view on a man and some western diagnosing and therapeutic methods of rationalization and efficiency is needed. Integrative medicine was made as an expression of those tendencies in merging both concepts of healing. That means that the doctor of integrative medicine sees a man as a system of physical, emotional and spiritual values, in synergy with his environment as an important factor of both sickness, and healing. In integrative medicine a lot of effort is given in positioning consciousness of the therapist (doctor). "Left brain" helps us to see a problem rationally, but doesn't give us a clear view of the source of the disease, or the right way of treating it. By working on the "Right brain" and developing senses one can determine a correct diagnosis and a timely therapy. An important element of this medicine is *identity*. Each person has his own identity, but each organ has one as well. So, each of our cells needs to know it belongs to us, but at the same time, it must have the knowledge of belonging to a tissue, and an organ. *Losing any of those identities leads into disease*. So, at the beginning the doctor *must* be in "his own identity" so he could correctly diagnose and determine the ideal scheme of patient, while being conscious of the energetic imbalance. A positioned consciousness of the doctor/therapist minimizes the possible mistake in diagnosing the energetic level of patient's imbalance. The term *identity* is actually programming our cells, and can be mistakenly imbalanced for a longer or shorter period of time. The first task is to return the patient into his own identity, and then to establish a normal transfer of energy through the energetic centers, their belonging organs, and by doing that, return to normal the function of cells and organs. The basis of our physical body is made out of 7 energetic centers, and 5 elements. Each center has its own color and quality of action, which can be positive or negative. For example: Orange color includes the solar plexus with its organs – liver, stomach, spleen, pancreas, adrenal gland and spinal vertebrae Th6 to Th12, and the quality of this center and color are: Courage, motivation, conceptual creativity and organization. Negative qualities are laziness and self-esteem problems. Knowing this, if someone has stomach problems, we shall connect that with unaccomplished creativity in life, and we'll know that this is the essential problem of the patient. The 5 elements are Ether, Fire, Air, Water and Earth, and they are all connected to our senses. Ether with touch, fire with sight, water with hearing, air with smell, and earth with taste. Also, in an energetic sense, we shall take care of 12 even and 2 odd energetic acupuncture meridians with which we test the balance of Yin and Yang. All of this a therapist tests using therapist's tubes and heart rate or muscle tests. I will attempt to demonstrate the diagnostics and the healing process using two real life examples. Micro-nutrients are used in therapy – herbal, mineral and vitamin supplements which are in micro-granulated doses level 1c to 3c (homeopathic doses which show that there still is material cure in the dilution). Each of these supplements is micro-food for cells, and as such is completely harmless. These micro-nutrients are also tested with therapist's tubes to determine what exactly the patient needs. That is how cure, or a combination of cures is determined to restore patients shaken identity. An addition to this method is the so-called nutritional acupuncture which uses a combination of 3 to 5 acu points to open each centre and element. The patients in the case studies are of different genders, they have different causes of the diseases and of course, different symptoms. The duration of disease is over 20 years in each patient. From those case studies, I will show that some of the symptoms were lost during the very first therapy.

**Keywords:** *integrative medicine, holistic remarks, diagnostics and healing*

## IMPORTANCE OF PRANAYAMA

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**Abstract.** The paper points out that most of the human population are unaware of breathing. Breathing is one of the most important vital functions, taking place under the control of the autonomous nervous system. Pranayama is one of the most important parts of Yoga. Pranayama involves special breathing energy exercises that create in the body and soul of man the status of balance, confident energy and calm relaxation. Pranayama is the fastest way of replenishing energy and boosting energy levels. In 5,000-year-long history of pranayama, the breathing exercises have not changed, and today they are performed in the same manner as they used to be practiced in ancient times. In addition, these exercises are very simple, and people of all ages may feel the changes even after the first exercise. Pranayama practice affects primarily the center for respiration rate, and, through a series of biochemical processes, also promotes the well-being of the entire organism. Pranayama effects can be considered from several aspects. From the medical point of view, it influences the physical body balance and health. And from spiritual and psychological standpoint, it promotes psychological stability and spiritual development and creates a path to self-realization. And the third aspect means that the results can be seen also at the energy level, which is actually the real essence of pranayama.

**Keywords:** *breathing awareness, pranayama techniques, manner of practicing and safe practicing, pranayama effects, application in Western medicine and physical rehabilitation*

# YOGA AND EVOLUTION OF CONSCIOUSNESS

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**Abstract.** In this lecture we will review ancient yoga teachings about the evolution of supreme consciousness. As a part of that consciousness, consciously or subconsciously we are heading towards the recognition and realization of our Real Self. Beforehand we have to realize various levels of our existence, from subtle to gross, rediscovering our real refuge: (1) Universal Consciousness as Sat Chit Ananda; (2) Awakening of the Logos; (3) Desire (Kama), as a wish to be many - primordial motivation force to create; (4) I-ness (Aham) and That-ness (Idam), as the fundamentals for each experience; (5) Cosmic memory (Samskara) as the Universal Matrix in the form of potential Cosmic point (Bindu), ready to create; (6) Levels of manifestation (Tattwas) within the Pure Undivided Universal Consciousness (Shuddha VidyaTattwas); (7) Instruments or sheaths (Kanchukas) of Illusion (Maya), that cause the Universal Consciousness to become the subject of differentiation as the separate entities as subject and object; (8) Time as the first cause of division of the Supreme Consciousness; (9) I-ness as subject (Purusha) and That-ness as an object (Prakriti) as the fundamentals of the Individual Soul (Jivaatma); (10) Antahkarana (Inner Instrument), as the vehicle of perception and recognition, and its constituents; (11) Further division of the Supreme Consciousness through the Cosmic Elements (Tattwas); and (12) Tattwa or Bhutta Shuddhi yoga practice as the way back to our Source.

**Keywords:** *Sat Chit Ananda - Supreme Consciousness; Tatwas - elements of Existence; Aham and Idam - the two essential pillars which forms each and every experience; Samskaras - memories of the whole Universe; Atma - Cosmic Soul, and Jiva Atma - Individual Soul; Purusha(Sa) and Prakriti (Ham), as a two wings of the Cosmic Bird; Sa - Ham Universal Breath; Bhutta Shuddhi - practical method tracing the way back to our supreme source*

## 1. Cit - Consciousness Aspect of Universe

The whole Universe is an ocean of infinite, compassionate, pervasive, consciousness – **Cit**. It is the soul of the whole Universe. *Each living creature and “non-living matter” are manifestations of its numerous forms.*

The Cosmic Consciousness – **Cit** can be described with the words like **Consciousness**, **Feeling** and **Experience**. **Cit** is eternal, changeless substratum - **changeless principle of all our changing experience**.

Cosmic Consciousness is not only *pervasive (Ishavasyam Idam Sarvam)* [1], but it is *all-transcending, beyond time and space*, due to which it is said to be *unconditioned* by anything. It is an endless ocean on whose surface *countless varieties of life* manifestations, like waves, move, penetrate and sink through eons of time [2].

In Vedanta philosophy it is called: **Sat** (Being), **Cit** (Consciousness) and **Ananda** (Bliss or Love). It is *information and power, wisdom and love*, soaked in experiences of all ever existed nations and civilizations.

It is a *matrix of wisdom, knowledge and memories* of the whole Universe.

It is called **Shakti**, the *Mother* of the whole Universe, because it is the one that drives *creation* and *nourishes* the whole Universe.

The **Power**, or active aspect of the *immanent God*, is called **Shakti**.

**Shiva** is the **unchanging Consciousness**, and **Shakti** is its changing Power appearing as *Mind. Life and Matter*. **Shiva-Shakti** is therefore Consciousness and Its Power. This is the **love of the Self for its Power** and for the Universe as which such Power manifests [3].

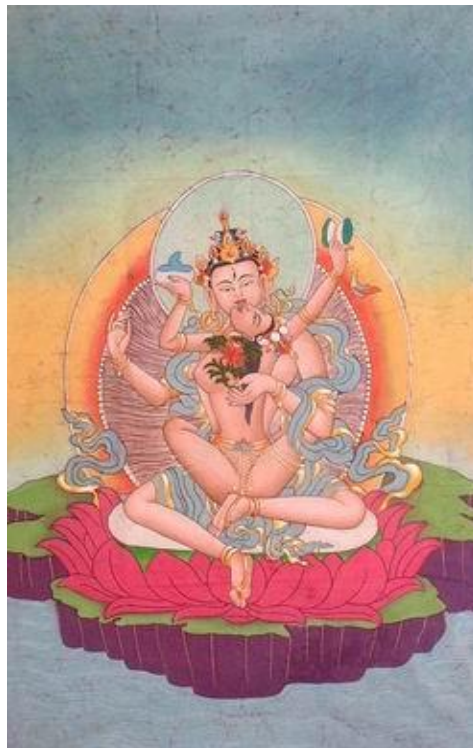
The union of **Shiva** and **Shakti** is symbolically represented in *Hexagram (Shatkona)*. The *downward triangle* symbolizes **Shakti**, the sacred embodiment of femininity, and the *upward triangle* symbolizes **Shiva**,

representing the focused aspects of masculinity. The mystical union of the two triangles represents *Creation*, occurring through the divine union (cf. Fig. 1).

**Tantra says: "She is the Heart of the God" (*Hridayam Parameshituh*).** Shiva and Shakti are the *seed* and *womb* of the whole universe [2]. **"Only when Shiva is united with Shakti does he have the power to create" (*Saundaryalahari*)** (cf. Fig. 2).



**Figure 1.** Mystical union of Shiva and Shakti, represented in Hexagram



**Figure 2.** Only when Shiva is united with Shakti does he have the power to create

## 2. Awakening of Universal Consciousness

Once the Cosmic Consciousness was in its deep sleep (*sushupti*). Then all contents of the Cosmic Consciousness, in the form of *countless experiences and memories were drawn down deep into its womb. All its activities went into silence, and the energies that were driven by* neutralized each other. All that is left, of ever existing worlds, are memories stored in the depths of causal consciousness. In that state of cosmic dream *Mahaasupti*, all souls in the world fall in a deep sleep losing the glimmer of self-awareness [2].

Nobody knows what caused the awakening of cosmic consciousness from its deep sleep. It remains the eternal mystery. Some philosophers compared this awakening to a man who, accidentally, and in semi-darkness, saw a rope on his way, thinking it was a snake. He did not do it deliberately. *It derived from him, but not of him.* It is *desire for the life of form* which produces the universe. This desire exists in the collective *Vasanas (impressions)* held like all else, in inchoate state in the Mother-Power, which passes from Its own (Svarupa) formless state gives effect to them. The *"Will to become many"* is the creative impulse which not only creates but reproduces an eternal order. Upon the *expiration (dissolution - Pralaya)* of the vast length of time which constitutes a day of Brahma, the whole universe is withdrawn into the great *Causal Womb (Yoni)* which produces it. The *limited selves are withdrawn into it*, and again, when the creative throes are felt, are put forth from it, each appearing in that form and state which its previous Karma had made it for it. It was a *creative blink (spanda)* that happened *in the depths of consciousness*, but without any effect on *immutable state* of the very same *Consciousness*. What He sees are the recalls (memories) of previous universes, which exist in the form of impressions - *samskaras*. The whole world becomes a "memory", consisting of what is remembered from before. And here, in this case, the cause and effect are really the one.

## 3. Divisions within Universal Consciousness

Before "seeing" happens, Consciousness has to *obscure its true nature first*, and it is then when it begins to face itself as a *cognitive* and *subjective* part that sees and recognizes - *Aham* as well as the part in itself which is seen and recognized (previous memories and experiences), or *"The other"* or *"This"* - *Idam*, for they are *unrecognizably united in the state of complete unity*. The *cognitive part* of consciousness *"Aham"* is named as *the male principle* or *Shiva*, while its *power* by which he is able to perceive his own self as well as what he recognizes and sees within himself, i.e. numerable former experiences and impressions, or *"The other"* - *Idam*, is appointed as a *female principle*, or *Shakti*. That is *Consciousness* that resides within its ownself (Svarupa), and it is deprived of any action.

*Shiva* is *Illumination* and the *"I"* (Aham) side of experience. *Shakti* or *"This"* (Idam) is objective side of experience. The *"This"* here is nothing but a mass of Shiva's own illuminating rays. These are reflected in Himself as Shakti, who is called the *"Pure Mirror"* of Shiva (*Kama - Kala - Vilasa - Tantra*). The *Self* sees the *Self*, the rays being thrown back on their source. *The entire universe is, in fact, the cosmic imagination (Shrishti kaplpana), of the Exalted Space Thinker (Ishwara)*. It all leads to *subjectification of the whole Universe*, when the entire consciousness collapses into one *point - Bindu*. This level of consciousness development is called *Ishwara tattva*. The Ishwara consciousness has fully subjectivised the entire Universe. It recognizes everything that exists, and what constitutes the entire universe (only in its potential form, as yet, it has to develop and express itself), as a whole, and that entity is He himself. "The other self" - *Idam* is introduced to Consciousness by Shakti [2].

## 4. Maya Shakti - Illusion Power

After awakening, the process of evolution continues to be carried on, and under the influence of so called *Maya Shakti* - the illusion, *Aham* and *Idam*, *temporally and spatially, separate from each other*. Under the influence of *Maya Shakti* and its instruments of action - *Kanchuka (layer)*, Shakti takes increasingly gross manifestation, and coming levels of its manifestation, are called *Ashudha* or *impure tattvas*. And now under the

influence of *Maya Shakti*, the cosmic consciousness and its power are getting increasingly limited and squirmed (they contract). *Maya Shakti* is the power that creates forms in Formless (*Cit*). It is a form of Formless.

*Kanchukas* are factors that limit the Supreme and Almighty Cosmic Consciousness (*kanchuka* - squizeer), that once used to be eternal, but now under the influence of the *kanchuka of Time - Kaala*, they became limited in time. Considering the transience of objects in the Universe, which are no longer part of it, and noticing how they come and go (life and death), consciousness itself becomes time-limited. It is trapped by temporal way of thinking. The *eternity* is now, apparently, divided into *past, present* and *future* time. We say apparently, because it has never ceased to be Eternity. As it is said: "*Time leads me through the Time*" (*Ahimbudhnya*).

Under the influence of *kanchuka* time, consciousness, called *Purusha* after the effect of *Maya Shakti*, being currently limited in time, is increasingly under pressure to get, for her important things, done in that same time, thus exposing itself to the slavery of the next *kanchuka* called - *Niyati*. The same *Shakti* that once was characterized by complete independence and freedom, now due to the increasing contraction force has exhibited awareness for the need that it has to do certain things in its time-limited life. This *compulsion*, or urge, is called *Niyati*.

The awareness that was previously *achieved - Purna*, and pleased because it lacked nothing, now, due to *Maya Shakti* action, sees the objects, that used to be an integral part of it, as spatially beyond it. The wish to be complete again, as well as the desire for objects, creates the increasing connection of awareness for them, and that is the next *kanchuka - Raga*.

The objects are still *One Self*, but under the influence of *Maya Shakti* illusionist powers, it only seems that they have something distinct and special. Consciousness has the experience of duality, when perceiving objects both beyond and separate from it. Behind each and every desire, there is a natural need for, once existing wholeness. Thus, the knowledge of new born *individual soul (Purusha)* is limited, and reduced to the depth of its perception of reality. This *limited knowledge* is the following *kanchuka - Vidya*. The supreme consciousness used to be all-powerful, omnipotent, but due to the limitations of the above mentioned *kanchukas*, its ability has declined, and now being able to do only some things, is said to be of the *limited capacity - Kimcit*. This state is known as *Kalaa*, and it represents the fifth *kanchuka*. If the power and experience of Self are limited, then the objects are faced in a limited way, too, *in spite of the fact they have never stopped being one Self*. *Maya* is the *sense of difference (Bhedabuddhi)*, or *that which makes man see the world, and all things and persons therein, as different from himself*, when in essence he and they are the one Self.

## 5. Purusha and Prakriti (Individual Soul and Its Instruments)

Under the influence of five *kanchukas*, as the instruments of *cosmic illusion - Maya Shakti*, the Self or *Cosmic Soul (Atma)*, adds up to the *individual soul - Purusha* [4]. The *individual soul - Purusha* is, in fact, a *cosmic soul - Atma*, that is hampered by the limitations of cosmic illusion. It is, at the same time, the next *tattva - Purusha tattva*, where the sense of being is based on experiencing "*I am*", surrounded by the objects that make up the Universe, which it perceives as something beyond. At this level of consciousness, existing, that has its own refuge in the feeling of "*I am*", *requires the necessary instruments through which it will continue to grow and manifest*. That *instrument* is called *Prakriti tattva*. *Prakriti* is the negation of *Purusha*, as *Shakti* is the negation of *Shiva* at the level of pure *tattva* existing (*Sudha tattva*). *Shiva's* original desire to be the multitude (in order to enjoy the sensual world of objects again, for *Shakti*, owing to whom the whole process of creation started, is *His wish*) requires, at the *Purusha* level, the instrument in order to make *Him (Shiva)* able to enjoy things, that he, now, feels are beyond himself.

That instrument (*Prakriti tattva*), is active in the further blurring of Consciousness, which is here, at the *Purusha* level, manifested as the sense of "*I am*".

*Prakriti* is translated as *Nature* and *It* represents all that can be perceived by a separate Consciousness (in the form of existing, "*I am*"), and these are all *thoughts, feelings*, and the whole, *material world*.

*Purusha (Individual soul) wakes to the world experience under the influence of Maya Shakti*.

In the order of awakening he first experiences in a *vague* general way without consciousness of limited self, *like the experience which is had immediately on waking after sleep*. It then refers this experience to the limited self and has the consciousness "I am so and so".

At this stage "**I**" - **Aham** and "**This**" - **Idam**, are completely severed.

Each consciousness regards itself as a separate "I" looking upon the "This" whether its own body or that of others as outside its consciousness. Each **Purusha** - **Individual soul** (and they are numberless), is mutually exclusive the one of the other. Consciousness *loses the knowledge* that it is itself its own object.

**Shakti** becomes more and more gross until physical energy assumes the form and becomes as embedded in the "crust" of matter *vitalized by Herself as the Living-Principle of all things*.

Despite not facing that way, the objective material world has never ceased to be the *Unique Cosmic Consciousness*. All the time, It retains its own undisturbed nature, and, at the same time, exists as the object of its Own experience (the whole phenomenal world).

Recognition of our own nature and realization of that truth liberates us from the Duality, and all fears. For he who sees Duality, he alone fears.

To see Duality means not merely to see otherness, but to see that other as alien non-self.

As the Essence is imperishable, so in the deepest sense is its form as Nature. For whatever exists can never altogether cease to be.

In the process of Cosmic Dissolution (Pralaya), either man's consciousness expands into that Lordliness which sees all as Itself, or he and all lower beings are withdrawn into the Womb of Power, in which they are conserved to reappear in that Blossoming which is the Springtide of some new world.

Maya Shakti, as the Prakriti, continues its deceptive game, in which consciousness increasingly identifies itself with its contents, at the level of mind- body, thus considering them the ultimate reality.

Consciousness as **Shakti** continues to manifest itself as mind and matter. The instrument, that **Purusha** manifests itself through **Prakriti**, is called **Antah karana** [2].

**Antah karana** is an *individual mind - Ego*, while **Purusha** is - an *individual soul*.

**Antahkarana** consists of: **Buddhi**, **Ahamkara** and **Manas**.

- **Buddhi** is the state of mere presentation; consciousness of being only, *without thought of "I" (Ahamkara) and unaffected by sensations (Manas, Indriyas) of particular object which do not yet exist. It is impersonal consciousness.*
- **Ahamkara** of which **Buddhi** is the basis is the **personal Consciousness** which realizes itself as a particular "**I**", the experiencer. **Individual soul** thinks of himself as a **particular person** who is in relation with the objects of his experience. When, therefore, a *sensation is perceived by Manas and determined by Buddhi*, **Ahamkara** says: "**It is I who perceive it**".
- **Manas** is the desire which follows on such experience and the senses and their objects are the means whereby that enjoyment is had which is the end of all will to life. **Manas** *has not an independent power to reveal itself to the experiencer.*

Before the things can be so revealed and realized as objects of perception, they must be made subject to the operation of **Ahamkara** and **Buddhi**, without whose intelligent light they would be dark forms unseen and unknown by the experiencer, and the efforts of **Manas** but blind groupings in the dark. Nor can the images built up by **Manas** affect of themselves the experiencer identifies himself with them by **Ahamkara** - that is, by making them his own in feeling and experience. It is **Buddhi** which is the basic of all *cognition, sensation and resolves*, and makes over objects to **Purusha** (Individual Soul), that is, Consciousness.

It is said that **Buddhi**, whose characteristic is *determination*, is the *charioteer*; **Manas** is the *reins*, and the Senses (**Indriya**) are the *horses*. **Purusha** is the *passenger*, the Enjoyer, that is Self (**Atma**) *conjoined with body, senses, Manas and Buddhi.* (**Kathopanishad**)

## 6. Cosmic Mind and Cognitive Experiments

The *cosmic mind* projects its content as ideas and desires on to the gross sensual plane and there the individual mind enjoys them as such.

As stated in *Vishvasara Tantra*: "*What exists here, exists there, as well. What does not exist here exists nowhere*".

Mental impressions in the subtle levels of existence exactly correspond to the physical objects, for the physical object is in fact, but a *projection of the cosmic imagination*, though it has the same reality as the mind has, no more, and no less. The *mind* is thus both *cognizer (Grahaka)* and *cognized (Grahya)*, *revealer (Prakasha)* and *revealed (Prakashya)*, *denoter (Vachaka)* and *denoted (Vachya)* [3].

When the mind perceives an object it is transformed into the shape of that object.

Mental phenomena such as *thoughts*, although always manifested in *form* (described by *attributes* such as *feature* and *association*) *between manifestations* thought exists as transcendent coherent superposition (wave), as an archetype, and manifest one-faceted (particle) aspects. The mind consists ultimately of the archetypes of mental objects (very much like Plato called ideas). They are made of the same basic substance that material archetypes are made of [5].

In cognitive experiments (Benjamin Libet and Bertram Feinstein), that involve receiving and responding to a stimulus, *subjects are typically able to ring a bell before they have self-awareness of the awareness of the stimulus and before they are able to verbalize this awareness of the stimuli* [5].

This capability suggests that there are primary (Buddhi) and secondary – awareness experiences and that the Ego (Ahamkara), is associated with the secondary experiences of self-awareness but not with the primary experience.

*Libet's experiment* supports the concept that the *normal classical ego-self* arises from processes of secondary awareness of conscious experience.

The *nearly half-second* between the behavioral response and the verbal report is the time for processing secondary awareness. It is the (subjective) *reaction time* taken for the I-am-this (Ahamkara) type of introspection. *Our preoccupation with the secondary processes (Indicated by the time lag) makes it difficult to be aware of our quantum level of our operation.*

You know how we see a motion picture. Our brain-mind instrument *cannot discern the individual still pictures that race before our eyes at a speed of twenty-four frames per second* [5].

Similarly, what *seems to be continuity* to a human observer watching himself is *really a mirage consisting of many discontinuous collapses.*

Heed Erwin Schrodinger's reminder: "*Observations are to be regarded as discrete, discontinuous events. Between there are gaps which we cannot fill in*" [5].

*Phenomenologist Edmund Husserl* in describing the inherent association of self-awareness and the *ability to direct attention (of which ability we are not self-aware)*, has coined the phrase *Pure Ego* (Buddhi) to denote a unitary self of which self-awareness and the director of attention are two aspects: two sides of the same coin.

*Quantum physicist Amit Goswami* indicates that in quantum theory of self-reference, the *Self acts in two modalities*:

- the conditioned, classical ego-modality (*Ahamkara*), referring to secondary experience that include self-awareness; and
- the un-conditioned quantum modality that is associated with primary awareness experience, such as *choice* and *direction of attention without self-awareness* [5].

By yogic and buddhist meditation we are no longer interfering with the secondary awareness through introspection. This enables us to experience the *suchness (Tathata)*, or no-selfness, of the witnessing consciousness. In meditation the suchness of the experience is amazing, because this suchness gives us a *glimpse of a primary consciousness (Purusha)*, which is *beyond the murmurings of the secondary ego (Ahamkara)*.

In consciousness, *archetypes* (*Sukshma Artha*) or coherent superpositions are transcendent objects. They are brought into *immanence* only when consciousness, by the *process of observation*, chooses one of the many facets of the coherent superpositions.

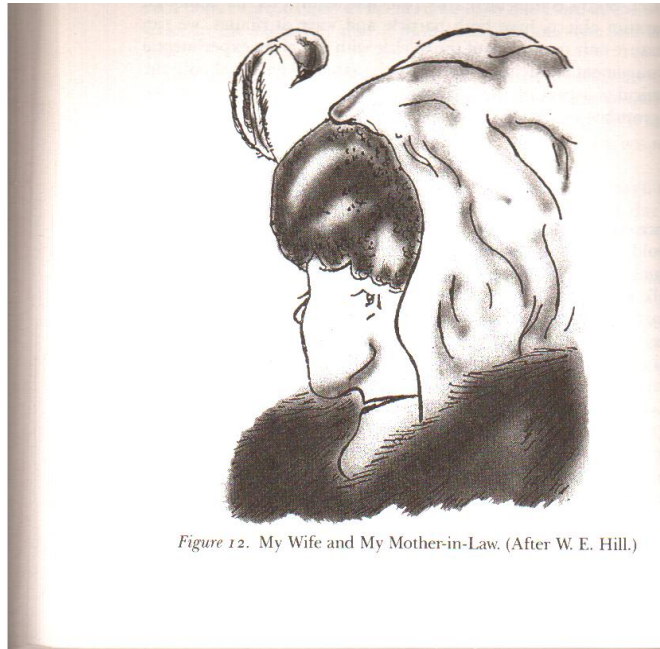
According to *monistic idealism*, objects are already in consciousness as primordial, transcendent, archetypal possibility forms. The collapse consists *not of doing something to objects via observing, but of: choosing and recognizing the result of that choice* [5].

When we see the wife (or the mother in law, cf. Fig. 3) *we are not doing anything to the picture*. We are simply choosing and recognizing our choice. The process of collapse by consciousness is something like this. *Before collapse, the subject is not differentiated from the archetypes of objects of experience - physical (Sthula Artha) or mental (Sukshma Artha)*. Collapse brings about the subject-object division, and that leads to the *primary awareness of I-am-ness ("Aham" of Purusha)* that Amit Goswami call the *quantum self*. Like Platonic ideas, archetypes, coherent superpositions exist in the never-never land of the transcendent order until *we collapse them bringing them into the world of manifestation with an act of observation*.

When we look, the wave of a quantum object (archetype, suksma artha) collapses instantly, thus the wave could not be in space-time.

According to *idealist metaphysics*:

- *There is no object in space-time without a conscious subject looking at it.*
- *Consciousness is the agency that collapses the wave of a quantum object, which exists in potentia, making it an immanent particle in the world of manifestation* [5].



**Figure 3.** My wife and my mother in law [5]

## 7. Conclusion

Further are gross levels of existence - **Bhutas**. These are five *cosmic elements* - **Maha Bhutas**, as follows: **Akasha** or **Ether**, **Vayu** or **Air**, **Agni (Tejas)**, or **Fire**, **Apas** or **Water**, and **Prithvi** or **Earth** [6]. Through these levels of events - **Bhutas** or **Tattvas**, Prakriti is getting concrete. In the sense of dynamics and development, these existence levels, starting from Akasha, represent the speed of consciousness particles. Prakriti becomes more differentiated through them.

As we can see, the matter or the gross level of existence - *Sthula Sharira*, is nothing but a condensed form of God himself. Since everything is created from the Emotional Consciousness, then everything is the Emotional Consciousness. Our earthly experience, our whole life is like the reverse reflection of overall life events that are reflected from the causal surface water of Maya (illusions, or as they are translated: "*the sense of distinction*" - *Bhedabuddhi*).

In the Maya world, any self excludes other selves, while with the superior experience there is only one Comprehensive Supreme Self which faces Self.

"Identification of the Self with the *Non-Whole or Partial* is Disease and the sole source of every misery" (*Yogini Hridaya Tantra*).

The "*Disease of the World*" refers not to the World itself, which is the Mother in form, but to *that darkness of vision which does not see that it is Her*. Man's identification of the self with its particular form, with its imperfection, is Disease, *just as the knowledge that he is one with the whole is Healing lasting*.

"*Other beings live on a fraction of this great Bliss*" (*Brhad Aranyaka Upanishad*).

It must be ever remembered, that Consciousness as it is itself never evolves. It is the *Immutable Essence*.

Evolution is thus a gradual release from the *limitations* of Form created by Being - Power.

Transcendent God, that is pure Bliss, is the very same, immanent God, the Life, the Spirit and the Matter. Shiva is both unchangeable as Shiva, and changeable as Shakti. How possible is that One can be Both, remains a true mystery.

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# HEALTH AND EXPERIENCE OF HIGHER STATE OF CONSCIOUSNESS (UNIFIED FIELD)

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**Abstract.** The identification of the unified field by modern physics is only the first glimpse of a new area of investigation that underlies all disciplines of knowledge, and which can be explored not only through objective science but through a new technology of consciousness (Transcendental Meditation, TM), based on capability of human mind to settle into a state of deep silence while remaining awake, and therein to experience a completely unified, simple, and unbounded state of awareness, called pure consciousness, which is quite distinct from our ordinary waking, sleeping or dreaming state of consciousness. This experience is not on the level of thinking, theoretical conjecture, or imagination, but on the level of direct experience. So, even though is a common belief that the unified field of physics is an objective reality of nature while consciousness is a subjective experience, and that the two belong therefore to different categories of existence (one is material another is mental and the two cannot be equated) – we see them as two different modes to approach same reality, unified field or pure consciousness. Each individual nervous system, when refined through practice of TM technique is an instrument through which Unified field becomes accessible for inquiry and investigation through direct experience. Thus, modern physics through its objective method of inquiry has glimpsed a unified field as underlying all of nature, source of order in nature, while by direct experiencing it via TM technique we get influence onto our physiology, which starts working in a more balanced and ordered way. So, we see that TM technique has an important practical application in the area of health. According to Ayurveda (traditional science of life and health) all sickness comes from imbalance. In terms of physiological functioning this means perfect integration and balance from the biochemical and molecular levels to the macroscopic, organismic level.

**Keywords:** *quantum medicine, holistic medicine, holistic health, consciousness based health, collective consciousness, individual consciousness, TM technique, Maharishi Ayurveda approach to health*

## 1. Introduction

Surveys show that great majority of people is dissatisfied with modern medicine and recognizes for major changes. There are many reasons for that, maybe too much symptomatic approach in treating diseases, or lack of prevention, and education, death caused by modern medicine due to side effects, or just too expensive for budgets of most of the countries. Whatever is the reason, it has huge impact on health of the people, and their understanding of life. To improve this situation first we need to understand what is at the basis of health.

According to Ayurveda (traditional science of life and health), word used for health is *swasta*. Swasta means wholeness, so health is wholeness, and the wholeness in humans is consciousness. So consciousness is basis for health.

Ayurveda recognizes seven states of consciousness. Every state of consciousness has its own state of physiology, and its own state of reality. Reality of one state of consciousness is not same in other states of consciousness. So to jump from one to another reality the shift in consciousness is needed.

We all have experience of sleeping, dreaming and waking state of consciousness, but full range human development according to Ayurveda is in development of higher states of consciousness, and the first step is to experience fourth state of consciousness – pure consciousness.

By regular experience of pure consciousness during Transcendental Meditation the nervous system adapts to a new style of functioning. The alternation of experience of pure consciousness along with dreaming, sleeping

and waking states, produces gradual refinement of neurophysiological functioning and give rise to fifth state of consciousness.

This experience of pure consciousness make change in brain functioning showing increased EEG coherence, in alpha waves (frequency about 8-10 cycles per second), theta waves (5-7 cycles per second), and beta waves activity. These changes were reported in frontal parts of the brain. More than 500 scientific studies conducted at more than 200 universities in 30 countries shows benefits of TM practice on physical, mental and social health.

The most important discovery in physics is identification of pure consciousness with the unified field by Dr. John Hagelin one of the world's leading physicist in the area of unified quantum field theories. He explains that unified field has definite structure in the lagrangian of the unified field, constitution of the universe, as home of all the laws of nature. The nature of unified field is immortal, as well as the laws of nature. They never change, principles governing universe are immortal, never changing.

If we are enlivening unified field (unity), we are enlivening longevity in our physiology, and balance between different components of our physiology. So, all physical structures that reflect the unified field and constitution of the universe are more stable, more perfect. This is a basis of perfect health. Technology to experience unified field (pure consciousness) is Transcendental meditation technique [1-4].

## **2. Collective Health**

Maharishi Mahesh Yogi was physicist, founder of Transcendental Meditation program, who predicted in early 1970ies that individual consciousness influenced collective consciousness and vice versa, and developed Technology of Unified Field (TM Sidhi program) to create coherence (health) in the collective consciousness of the population.

His formula was that if square root of one percent of population practiced Maharishi Technology of Unified Field together, they would produce rise in collective health (consciousness) by enlivening the unified field in collective consciousness and as result crime rate, hospitalization, conflicts would all significantly drop down.

Few such experiments were conducted in different parts of the globe, and successes in these experiments inspired him to introduce creating disease free society program, to eliminate disease, stress and conflicts from the collective consciousness of the society.

## **3. Conclusion**

Maharishi Technology of Unified Field (TM Sidhi Program) is technology capable of bringing the health to the society, by experiencing unified field, and enlivening quality of unity in the individual and collective consciousness. This simple effortless natural technique is capable of bringing coherence and orderly functioning of the human mind, making actions of people more in tune with natural law.

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# WESTERN MEDICINE AND TRADITIONAL HEALING

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**Abstract.** Western (official, allopathic, scientific, orthodox) medicine is based on science; traditional healing (alternative, complementary, energetic, holistic, traditional, spiritual medicine) is based on spirituality. Science is based on *materialism* and assumes that life appeared by chance. Spirituality is based on *vitalism* and is convinced that life has a deeper purpose. Therefore illness is considered by western medicine as useless and has to be destroyed, removed, repaired; on the other hand healing knows that illness has a purpose, a message to the patient and the patient has to accept the full responsibility for it, understand it and with deep transformation inside the need for the illness disappears. In last few decades there has been many scientific confirmations of the effectiveness of alternative medicine, especially acupuncture, homeopathy, bioresonance, yoga, meditation, and even praying (on distance). The latter studies excluded the suggestion (placebo) and were published in leading scientific medical journals. The result of these studies is that physicians can prescribe the patient, instead of tablets, that *a healer should pray for their health*. Western and complementary medicine should be joined into an *integrative medicine*. Physicians need to recall the spiritual viewpoint of human beings and the purpose of life. Humanity needs the connection (union) of science and spirituality: they complement and direct each other. As Albert Einstein (1940) said: *Science without faith is lame, religion without science is blind*.

**Keywords:** *science, spirituality, praying, complementary medicine, integrative medicine, purpose of life*

## 1. Introduction

Western (official, allopathic, scientific, orthodox) medicine is based on science; traditional healing (alternative, complementary, energetic, holistic, traditional, spiritual medicine) is based on spirituality. Science assumes that humans emerged from matter, spirituality claims that humans emerged from (universal) consciousness. Of course, the true spirituality takes into account the discoveries of science. Science is based on *intellect*, spirituality is based on *heart*. Intellect uses *rational (logical) mind*, while heart uses *intuitive mind*. Rational mind wants to be *objective*, intuitive mind is necessarily *subjective*. Objectivity is the basis of science, subjectivity is the basis of spirituality. Scientists recognize and investigate (only) *matter*, mystics investigate *consciousness* and are aware of different levels of human beings: *spiritual (free will, unconditional love and universal intelligence)*, *psychic (mental and emotional)*, and *physical (pranic (informational-energetic) and material)*. Western medicine considers that humans are biochemical machines, healing, on the other hand, considers humans as conscious and multilayered beings, where the physical body is just one of the layers.

Science is based on *materialism* and assumes that life appeared **by chance**. Spirituality is based on *vitalism* and is convinced that life **is a chance** and therefore has a deeper purpose which can be fulfilled by the development of ethical and spiritual values. This is the origin of basic differences between the two approaches to healing:

- reductionist versus holistic approach;
- general knowledge of the human body versus uniqueness and non-repeatability of every patient;
- non-sense/pure chance of illness versus meaning/message of the illness;
- responsibility of physicians versus responsibility of the patient.

In the following sections we first describe the spiritual viewpoint on life, Section 2, and then in some detail the differences between science and spirituality, Sections 3 and 4. In Section 5 we discuss basic differences between the approaches by western and by traditional medicine to healing, while Section 6 is devoted to scientific

investigations of the influence of the remote prayer on patients' health, which were done in double-blinded experiments that exclude the possibility of suggestion (placebo). Concluding section emphasizes the need for the union of western and complementary medicine into holistic, integrative medicine.

## 2. What is Spiritual Viewpoint of Life?

Spiritual model of the world is the basis of all teachings of famous wise men, important philosophical schools, holy texts from the West as well as from the East (Kononenko and Roglič-Kononenko, 2010): Socrates, Heraclitus, Seneca, Pythagoras etc. as well as Buddha, Zarathustra, Lao-Tzu, Lord Mahavir; Stoic and Pythagorean schools, Alchemy, Astrology, as well as Brahmanism, Yoga, Taoism, Sufism; Egyptian Book of the Dead as well as Indian Bhagavadgita and Tibetan holy text, described in the "Sound of silence". Although different in details and in the approaches and methods for following the spiritual path, all teachings have equal grounds and main common principles: A human being consists of personality (ego, lower nature), the individual soul, and the united spirit (higher nature). Personality consists of a physical body, a life energy (prana, energetic body), emotions (emotional body), and the intellect (mental body). The spirit consists of (higher, pure) intelligence, (unconditional) love (goodness), and (free) will (power). The soul is an intermediate link between personality and spirit (some teachings avoid the word "soul" and most of the teachings avoid the word "God" because the intellect cannot recognize them).

The purpose of life is learning of wisdom, the cultivation of spiritual values: *simplicity, modesty, the right level of humility, acceptability, tolerance and patience, sincerity and courage, faith and trust, love and compassion*. The ultimate goal is to know yourself and via *enlightenment* (blissfulness, nirvana) to unite material with spiritual, when the learner becomes the *master of the wisdom* who overcomes the ego, controls his/her personality, lives spiritual values and becomes a *Teacher*. Wise men expand their heart over all humans and do not make any difference between people. Their consciousness widens and they are aware that everybody is connected with everybody else.

The basic principle that enables learning and progress on the spiritual path is the *reincarnation*: soul enters into the body again and again, learns, accumulates experiences until it masters its personality and achieves enlightenment. Of course, reincarnation should be understood in a flexible way and not as a strict rule. For understanding wisdom of great teachers it is not enough to apply only logic and intellect, but rather it has to be felt by heart, by intuition. Nowadays philosophy retained only the former and is therefore very limited and cannot reach ancient wisdom.

Most probably, with the spiritual model of the world are related phenomena, which are not recognized by nowadays science, however, we can include them into broader (nonscientific) model, that includes matter (physical body) on its lowest level which is definitely necessary for the accomplishment of the purpose and goals of higher levels (energetic, emotional, mental and spiritual). Of course, science cannot progress faster and it tries to explain particular phenomena step by step (Kononenko, 2000, 2002, 2007; Kononenko and Jerman 2003; Tucson 2002). Science is nowadays very close to the recognition of the energetic level. More and more scientists investigate the energetic biofield around living organisms (Detela, 2002, Korotkov, 2002), which is popularly called "aura" (Brennan, 1989).

## 3. Boundaries of Science: Continuous and Discrete World

When I intentionally started several years ago to occupy myself with spirituality I had serious problems because of persistent wish to explain every phenomenon that I met. Namely, many years I believed that logic can explain the purpose and the functioning of the universe. Also, I believed that each living being, which includes also a human being, can be described with a computer program. My research area is Artificial Intelligence (more specifically: Machine Learning (e.g. Mitchell, 1997; Kononenko and Kukar, 2007)). Besides developing more "intelligent" computer programs the utmost goal of these investigations is the development of a computer program that would act as or even more intelligently than human beings. In spite of optimistic announcements at

the very beginning of the computer era the research did not have great successes. For some time this was really bothering me.

Mathematics did help me during the search for an answer. Mathematics in fact determines very strictly the limitations for all formal symbolic languages that are today used in science. These languages are, for example, mathematical logic, computer programming languages, recursive functions and formal grammars. All those formalisms have equal expressive power and all have the same limitations (Manna, 1974; Hopcroft and Ullman, 1979; Osherson et al., 1986): they can (partially) describe the events inside the discrete world (mathematically speaking, the discrete world corresponds to the set of rational numbers  $\mathbf{Q}$ ). However, they can describe only a negligible part of the continuous world (that corresponds to the set of real numbers  $\mathbf{R}$ , which are in great majority irrational, i.e. incomputable and indescribable and therefore unreachable by rational mind). Therefore, if the world is actually continuous then it is **not describable** with any formalism used by today's science. This means that the knowledge that can be provided by science, books, teachers, is never final as it is **always** only an approximation and cannot completely describe the reality. It is a **theory**, while the real life is **practice**. In other words, the existence or nonexistence of God is not provable – science cannot answer to this question. And that is all right: it is the task of each individual!

*If the world cannot be described, maybe, we can feel it, because we are a part of this (continuous) world. In the computer terminology I would say that we are »continuous machines«. Of course the word »machine« is not appropriate anymore as the limitations of machines, as we know them in the discrete world, in the continuous world do not hold anymore. If we are continuous "machines" then we are potentially omnipotent: we can (potentially) solve any problem in an arbitrary short amount of time and we can store in an arbitrary small amount of space an arbitrary large amount of information. Such "machine" could be named (again in the computer terminology) a "universal computer" or simply God.*

*Words, although important, are only an approximation of reality. Therefore, it is the same if we say god, omnipotent love, universal intelligence, nature, or continuous machine. Also, it is all the same if we say Christ, master of wisdom, angel, guide, or higher self. It is important, however, what we feel. The truth cannot be **objective** in the usual sense of objectivity as science cannot describe it. It is necessarily **subjective** and everybody has to find the truth by him or herself (has to feel it inside him or herself). And this is probably our life-task.*

The relation between science and spirituality is the relation between intellect and heart as described in the next section and outlined in Table 1.

#### 4. Harmony of Heart and Intellect

Spiritual masters define the common goal, the enlightenment, as the ultimate goal of every human being: "Enlightenment is a transition from darkness of *ignorance* into the light of deeper *understanding and awareness*." Therefore a spiritual seeker is searching for the **truth**. I shall talk about two polarities, which we use for searching the truth:

- **Intellect** which uses *rational mind*, and **heart** which uses *intuitive mind*.
- Rational mind wants to be *objective*, intuitive mind is necessarily *subjective*.
- **Objectivity** is the basis of science, **subjectivity** is the basis of spirituality.
- Scientists investigate *matter*, mystics investigate *consciousness*.
- Investigation of matter is based on *doubt* and uses *verification with experiments*, while investigation of (your own) consciousness is based on *faith* and uses *relaxation of mind, meditation*.
- Science is looking for *knowledge*, spirituality is looking for *wisdom*.
- **Knowledge** is based on (*scientific*) *theories*, **wisdom** is based on *spiritual virtues*.
- **Science** describes reality, **spirituality** feels, is aware of reality.
- Knowledge describes existence, wisdom is aware of the purpose of the existence.

The outline of both polarities, extended with several aspects, is provided in Table 1. Both polarities, heart as well as intellect, are inevitably needed during the search for the truth.

About 60 years ago mathematics placed strict limits on what is describable by logical propositions, formal grammars, mathematical functions and computer algorithms (see previous Section). Actually, it confirmed, that the reality can only be described approximately and never completely. Any description in symbolic language, which is nowadays used by science (intellect), is necessarily only an approximation.

And this is exactly what wise men have been telling us for millenniums, in the West as well as in the East. The truth is indescribable and has to be felt by heart, inner sense, intuition. Approximate, intellectual descriptions are of course inevitable on the path of comprehension of the truth and are useful instruments, however, they cannot provide the final answer. Everybody has to find the final answer by him/herself, inside. As Jung said: “Learn well the rules, rituals and techniques and use them actively, however, at the right moment be prepared to discard them.”

**Table 1.** *An outline of the relation between two polarities*

SCIENCE	SPIRITUALITY
scientists	mystics
<i>intellect</i>	<i>inner sense, heart</i>
<b>objectivity</b>	<b>subjectivity</b>
measurable, describable	non-measurable, non-describable
describing reality	conscious sensing, awareness of reality
logical, rational mind	intuitive mind
HOW? describing	WHY? searching purpose
studies <b>matter</b>	studies <b>consciousness</b>
life appeared by chance	life is chance
doubt, verification	faith
logic, experiments, statistics	relaxation, meditation, ceremonials
analysis, differentiates	synthesis, joins
reductionist, parts	holistic, whole
discrete, <i>rational world (Q)</i>	continuous, <i>real world (R)</i> , irrational, transcendental
objective, <b>indirect experience</b>	subjective, <b>direct experience</b>
theory, approximation of reality	practice, reality itself

SCIENCE	SPIRITUALITY
active, violent free will	passive, harmonious free will
subordination, control	cooperation
taking, profit, ego	giving, sharing
separation, <i>space-time dimension</i>	all is one, <i>spectral dimension</i>
causality, thinking of past and future	no causality, now!
<b>knowledge</b>	<b>wisdom</b>
scientific theories: quantum physics, relativity theory, thermodynamics, evolution theory, ...	spiritual virtues: love, compassion, patience, tolerance, humility, modesty, sincerity, spontaneity, faith, courage, ...
scientific branches: mathematics, natural sciences (physics, chemistry, biology,...), sociologic sciences, philosophy, technical sciences, ...	spiritual movements: yoga, tantra, tao, zen, alchemy, cabbala, theosophy, anthroposophy, sufism, institutional religions, new age, ...

Intellect is a necessary support on the spiritual path in order to help us follow our heart. Mere leaning on the intuition can heavily mislead us, the traps of ego are very attractive and soon we can find ourselves in a trap of self-satisfaction and self “truth”. Such “wise men” are not aware of the limitations of the logical intellect. They accurately describe their “truth” and define it as the only “right” – in the extreme eagerness and enthusiasm they forget that for the same reality there can be an infinite number of different descriptions. This is of course the origin of *many dogmatisms of world religions*, as well as the dogmas supported by many scientists and, unfortunately, also by physicians.

All great wise men were aware of the limitations of the intellect and were pointing it out. Either enlightened masters avoid description of the Truth or their description is intentionally contradictory: once, from one point of view, they give very consistent, attractive and inspirational description of the Truth but then from the other point of view they discredit the former with different description of the Truth, of equal quality but non-consistent with the former description. Masters don’t want that their writings would become the only “truth” (dogma, religion).

Humanity needs connection (union) of science and spirituality. On the spiritual path we need both, intellect as well as heart: they complement and direct each other. Without one or the other we cannot progress. As Albert Einstein (1940) said: ***Science without faith is lame, religion without science is blind.***

The relation between science and spirituality is the relation between intellect and heart, as outlined in Table 1, and in turn it is the relation between western medicine and traditional healing which is analyzed in more detail in the next section.

## **5. Differences Between Two Approaches to Healing**

As we already mentioned in the Introduction, western medicine originates in *materialism* while traditional healing in *vitalism*. Materialism assumes that life appeared ***by chance*** and therefore does not have any deeper meaning or purpose. If life has no deeper meaning then the only purpose is survival, which means that neither ethics nor ecology counts. What counts is fighting for survival, fighting for supremacy, fighting for the profit. All those lead to violence. Today the world leaders have this level of consciousness: *profit of military, pharmacy and oil industry at any price!*

*Vitalism*, on the other hand, assumes that life ***is a chance*** and therefore has a deeper purpose which can be fulfilled by the development of ***ethical and spiritual values***. These values are personalized by some spiritual leaders, such as Dalai Lama: regardless of what is going on in the physical world, they stay faithful to the principle of nonviolence and spiritual values.

Illness is considered by western medicine as useless and has to be destroyed, removed, repaired. On the other hand traditional healing is aware that ***illness has a purpose***, a message to the patient: a warning that he/she diverged from the path and that he/she forgot about the purpose of his/her life (the message can be also for broader class of people which are related to the patient, such as parents, closer relatives etc.). This means that ***the patient has to accept the full responsibility*** for the illness, and has to actively participate in the healing process. The help of the physician and/or the healer is of course necessary and welcome, but it is only a help, a support, a waymark. Every patient has to make steps towards the full recovery by him/herself. The responsibility of the physician or the healer is only to carefully help and support the patient but not for the outcome of the healing process, which is mostly the responsibility of the patient (and his/her actions/decisions from the past).

The western medicine considers the illness as a defect of a biochemical machine, which has to be repaired. It (still) uses a reductionist approach which assumes that the functioning of the whole (body) depends on the (quality) of parts (of the body). Therefore, it considers that we can heal different parts of the body independently from one another.

Traditional healing, on the other hand, searches for the causes of the illness and takes into account that body is a non-divisible unity where each part influences every other part, because they are inherently connected and interrelated. It concurrently considers all levels of the human being. It is not enough to remove the signs of the illness. A defect of the physical body is (most probably) only a consequence of the causes from higher levels. Therefore, for any disease it is necessary to devote the attention to all the levels and never to only a single one. Different levels are interrelated and by influencing one level the therapist can in fact influence more levels at once.

***Each patient is unique and unrepeatable***, therefore for people with equal symptoms completely different approaches to healing could be effective. As the human is a multilayered being there exist many different approaches to healing various levels of the human being. Some approaches are devoted more to some levels and the others more to other levels, however, most of the approaches to traditional healing are aware of the multilayered structure: Acupressure, Acupuncture, Aromatherapy, Astrology, Ayurvedic Medicine, Bioenergetic Analysis, Bioenergetics, Bioresonance, Body-Oriented Psychotherapy, Chi Kung, Chiropractic, Clairvoyance, Crystalotherapy, Dowsing, Bach and other Flower Essences, Herbalism, Homeopathy, Iridology, Kinesiology, Kirlian Photography, Light/Color Therapy, Shiatsu and other types of Massage, Meditation and various Relaxation Techniques, Music/Dance Therapy, Naturopathy, Nutrition Therapy and various Diets, Osteopathic Medicine, Reflexology, Reiki, Spiritual Healing with Prayer, T'ai Chi Chuan, Therapeutic Touch, breathing techniques and various types of Yoga, Regression, etc.

In last decades a number of scientific confirmations of the effectiveness of traditional healing are increasing rapidly. The most studies confirm the effectiveness of Acupuncture, Bioresonance, Homeopathy, Meditation, Yoga, and others. In last few years several researchers studied the influence of distance praying on the patients' health status. All those studies proved the effectiveness of remote prayer. The studies excluded the effect of suggestion (placebo) in the same way as is done during testing of new medicines. The results were published in leading medical scientific journals. The results are described in more detail in the next section and they in fact confirm that a *physician can, instead of tablets, prescribe for the patient that a healer should pray for his/her health.*

## **6. The Influence of Remote Intercessory Prayer on Patients' Health**

Millions of people pray every day. Prayer for the sick has been a common response to the illness of a loved one. In some societies and among certain religious groups, prayer is believed to be the most important therapy that can be offered to a sick person, superseding even medical intervention. Nevertheless, intercessory prayer (praying for others) has rarely been subjected to scientific scrutiny, as religious rituals are considered to be subjective and therefore not related with outside, objective world, which is interesting for science (and western medicine). In the past, many studies have been performed that show the positive effect of religion on health (see Apologetics, 2002). However, those studies did not exclude the placebo/suggestion effect. Only in recent several years the researchers have published in several leading scientific medical journals a number of studies of intercessory prayer on distance, that were done in strictly scientific scenarios with double-blinded experiments to exclude the effect of placebo (Byrd, 1988; Harris et al., 1999; Cha et al., 2001; Lebovici, 2001). In those studies the patients were randomly divided into experimental and control group, professional healers or "ordinary" followers of certain religion prayed for the health of patients from the experimental group. However, prayer was done on distance, without any physical contact with the patients. For each patient from the control and from the experimental group the set of parameters was recorded, which characterize the health status of the patient, before and after the experiment. In all studies the differences between the health status of patients from control and from experimental groups were statistically significant in favor of the positive effect of the prayer.

In the study by Byrd (1988) 393 cardiac patients from the San Francisco General Medical Center were randomly divided (using a computer-generated list) into two groups: 192 in the experimental group and 201 in the control (placebo) group. The names of the patients in the "test" group were given to a group of Christians, who prayed for them while they were in the hospital. The "placebo" group received no prayer. Neither the "test" nor the "placebo" group of patients knew if they were receiving prayer. Likewise, the hospital staff, doctors, or nurses were "blinded" since they did not know which patient belonged to which group. At the beginning of the experiment between the two groups of patients there were no significant differences in the health status. The results demonstrated that patients who were prayed for suffered less congestive heart failure, required less diuretic and antibiotic therapy, had fewer episodes of pneumonia, had fewer cardiac arrests, and were less frequently intubated and ventilated. Statistics demonstrated that the prayer group had a statistically significantly lower severity score based upon the hospital course after entry ( $p < 0.01$ ).

In the study by Harris et al. (1999) 990 cardiac patients from the CCU at the Mid America Heart Institute (MAHI), Kansas City, Mo, were randomly chosen and assigned to control (524) or prayer (466) groups. In this study, patients were not told about the prayer study and doctors did not know which patients were assigned to which groups. Unlike the Byrd study, here the intercessors were given no details about the medical conditions of the patients, but were only given their first name. Statistics demonstrated that the prayer group had a statistically significantly lower severity score based upon the hospital course after entry ( $p < 0.04$ ).

The study by Cha et al. (2001) was designed as a prospective, randomized, double-blind study in which the efficacy of intercessory prayer was assessed in patients undergoing treatment for in vitro fertilization-embryo transfer (IVF-ET), who were unaware of the study. In planning and conducting this trial in as rigorous a fashion as possible, they set out with the expectation to show no benefit of IP. None of the authors are employed by religious organizations, and they were not asked by any religious groups to conduct this trial, nor did they seek religious advice at any time. 219 women, aged 26–46 were prospectively but blindly enrolled into the

randomized trial to test the effect of intercessory prayer on IVF-ET. These women were consecutively treated between December 1998 and March 1999 at the Cha General Hospital, Seoul, Korea. No intercessory prayer group obtained a pregnancy rate of 26%, which is average for IVF-ET. However, the prayer group had nearly a doubling in their success rate (50%). These results were extremely significant ( $p = 0.0013$ ). In addition, the implantation rate was significantly higher in the prayer group (16.3% vs. 8%,  $p = 0.0005$ ), and a greater number of preembryos reached the eight-cell stage in the prayer group (66% vs. 45.5%,  $p = 0.0001$ ).

The objective of the study by Lebovici (2001) was to determine whether remote, retroactive intercessory prayer, said for a group of patients with a bloodstream infection, has an effect on outcomes. The study was double blind, parallel group, randomized controlled trial of a retroactive intervention. Included subjects were all 3393 adult patients whose bloodstream infection was detected at the hospital in 1990-6. In July 2000 patients were randomized to a control group and an intervention group. A remote, retroactive intercessory prayer was said for the well being and full recovery of the intervention group. Results showed that the length of stay in hospital and duration of fever were significantly shorter in the intervention group than in the control group ( $p = 0.01$  and  $p = 0.04$ , respectively).

## 7. Conclusions

Science does not even try to answer the basic questions: *why the universe exists and what is the purpose of life*. Because of the ignorance of these two basic questions many scientists assume as the basic principle, that the universe and life emerged by chance and therefore have no deeper meaning. Great masters of wisdom teach us that everybody has to confront with him/herself and has to know him/herself. Everybody has his own responsibility, everybody is important, unique, different from the others. Spiritual knowledge stems from ancient cultures as a result of insight and intuition of many famous thinkers and philosophers. Great teachers *initiate and support us but they cannot do anything instead of us*. Therefore, the philosophy (in the original meaning of the word) is a necessity – always and right now, for every human being, so that they can search for the truth by both heart and intellect. Spiritual model is consistent with scientific facts, but till now, and maybe even in principle, cannot be scientifically proved in the same way as anything that goes beyond the intellect cannot be described – first of all intuition and the purpose of your life, which you can feel in your heart.

Humanity needs the connection (union) of science and spirituality. Western and complementary medicine should be joint into an *integrative medicine*. Physicians need to recall the spiritual essence of human beings and the purpose of life. Traditional healers need additional medical education in order to be able to effectively cooperate with physicians with the main goal *to help patients to recover from illness and to eliminate the causes of the illness and to encourage them to have more faith, sincerity and courage to follow their spiritual path so that they will express more love and compassion for all living beings and more humility towards nature and the whole creation*.

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## QUANTUM EVALUATION OF NOOSPHERE-ECOLOGY PARAMETERS

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*“All the history of technique demonstrates how humans gradually learned to see the source of natural power in environmental subjects being considered as inanimate, inert and non-necessary. We witness and participate in the creation in biosphere of a new geological factor, not existing before. Creation of the noosphere from the biosphere is a natural event, more deep and powerful than all the human history.”*

V. Vernadsky

**Abstract.** For more than 70 years that passed from the writing of above lines scientists of many countries have been trying to develop approaches for measuring the noosphere parameters. Researches have proven that these parameters are being determined not just by the properties of the local environment, but by the Cosmo-physical factors, as well as by the influence of human consciousness, both individual and collective. Insights by philosophers of the school of “Russian Cosmism”, and first of all by N. Fedorov, N. Berdjajev, K. Tsiolokovsky, revolutionary works by A. Chigevsky, L. Gumilev and S. Shnol, have created the conceptual and practical basis for the ideas of V. Vernadsky. It is now time for the experimental study of the noosphere processes. The very first testing of the “5<sup>th</sup> Element” instrument demonstrated the effectiveness of the selected approach. Field testing at the Far North of Russia, in Venezuela, Colombia and England demonstrated that the instrument is sensitive to the change of environmental parameters. Results allowed to start a new scientific line of the instrumental investigation of geoactive zones. In this field, the cultural aspect of the problem is of particular interest. The idea that from the ancient times historical monuments have been correlated with the “places of power”, areas having some specific geophysical properties, specific influence to the human condition, has been experimentally approved. The perspectives of this study are exciting for everybody interested in the spiritual history of humankind. We may define a whole new international research line: development of the maps of energy parameters of sacral subjects (places) and the program of study of their influence to the human psycho-physiological condition, in relation with the environmental situation, health and psychological type of people. This type of research may be a public domain, contrary to the archeological excavations, they do not need any official allowance, and results may be exchanged and published through the Internet. This approach opens up a broad field of activity. Not just sun-bathing at the beach or wandering around with photo camera, but participating in the international project on the development of Geoactive Zones Database. The only condition for this is the ability to operate an EPI/GDV Camera. We need to pay attention to the fact that for getting adequate results one needs to follow a well-defined protocol of measurements. This protocol was developed by D. Orlov for different applications. Together with the “Adis-Group” company we began developing a complex instrument for the evaluation of environmental conditions. It would allow measuring the main ecological parameters: high-frequency electromagnetic fields, background radiation, low frequency magnetic fields, negative gases, and the level of energy. Based on measurements an ecological profile map of the territory, house or an apartment would be created. This would allow to choose an optimal living place and, in particular, position for a bedroom. Special corrective techniques would allow changing the present situation to the positive side in many cases. A surprising aspect of the “5<sup>th</sup> Element” application was the ability of distant registration of both individual and collective

emotional excitations. This effect was first revealed in 2007 by measuring a distant influence to water. Later it was found that antenna sensor has the appropriate sensitivity as well. The latest modifications of this sensor have significantly increased its sensitivity. The experiments allowed recording of both the individual and the collective emotional excitations. A lot of experimental data should be collected to make results presentable and publishable. Measurements may be done in a theater, concert hall, church or lecture auditorium. It is interesting to take measurements even during a sport event. But for one single group it is difficult having many different experiments, we need the collective efforts of researches from different countries. The advantage of this approach is that any researcher operating with EPI/GDV Camera may take part in the research. In this part we present papers on different applications of the “5<sup>th</sup> Element” instrument. We invite all the researches of the GDV family to join this interesting and important research line.

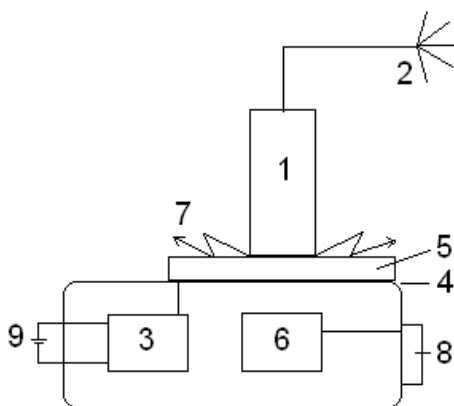
**Keywords:** *noosphere-ecology parameters, quantum evaluation, local & distant measurements consciousness, emotions, remote detection, collective emotions, collective consciousness, Electrophotonic Imaging, Gas Discharge Visualization (GDV) technique.*

## 1. Introduction

Noosphere includes both the Earth, all life forms of the Earth and Human consciousness as a separate specific entity. We believe that we are created on the Earth to give Consciousness to the Universe [1]. That is why we consider the study of human emotions and their influence to physical world as a part of Noosphere investigations. We begin presentation of results from this particular topic and by the end present examples of environmental studies.

## 2. Method

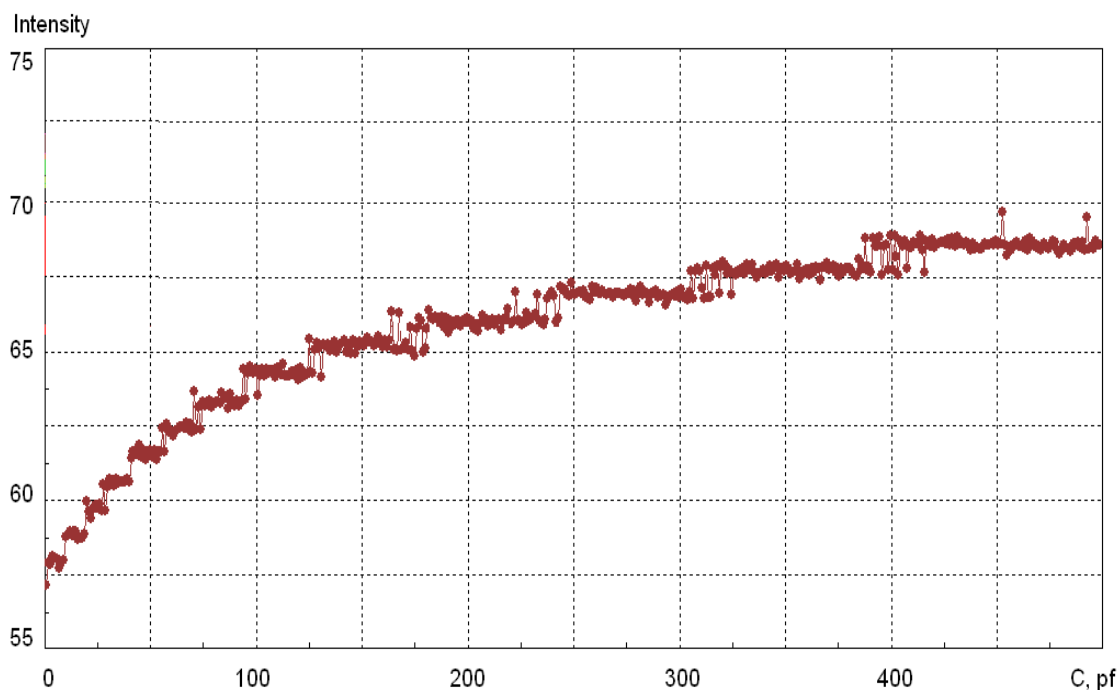
The method of Electrophotonic Imaging (EPI) based on Gas Discharge Visualisation (GDV) technique is well known for applications in medicine, sport and water testing [2-6]. It is based on computer processing of images of gas discharged glow around subject under study in high intensity electromagnetic field. For calibration the instrument we are using titanium cylinder 15 mm (0.6 inch) in diameter connected to the grounding jack of the instrument. (Titanium is very stable and does not oxidize in gaseous discharge). The principle of the EPI/GDV instrument was being used in the “Electrophotonic Sensor”. The principles of operations are as follows (Fig. 1).



**Figure 1.** The schematic design of the “Electrophotonic Sensor”. 1 - titanium cylinder; 2 - special antenna; 3 - impulses generator; 4 - transparent conductive layer; 5 - quartz electrode; 6 - TV system; 7 - gaseous discharge; 8 - memory stick; 9 - 12 V rechargeable batteries.

For detection emotions cylinder 1 is connected to the special antenna 2 designed to create non-homogenous electromagnetic field. Generator 3 produces impulses of voltage 7 kV amplitude, 10 mcs duration, coming with 1 kHz frequency in 0.5 s packs every 5 s. Voltage is applied to the transparent conductive layer 4 on the quartz electrode 5. Due to the bias current from antenna 2 a gaseous discharge 7 between cylinder 1 and electrode 5 is generated. The glow of the discharge is detected by a special TV system 6 and after digitizing is kept as series of image files on a memory stick 8 connected to the instrument. Instrument runs on 12 V rechargeable batteries 9 for more than 100 hours in automatic mode. Files are kept in memory with time marks, which allows correlate parameters after data processing with time sequence of the events under study.

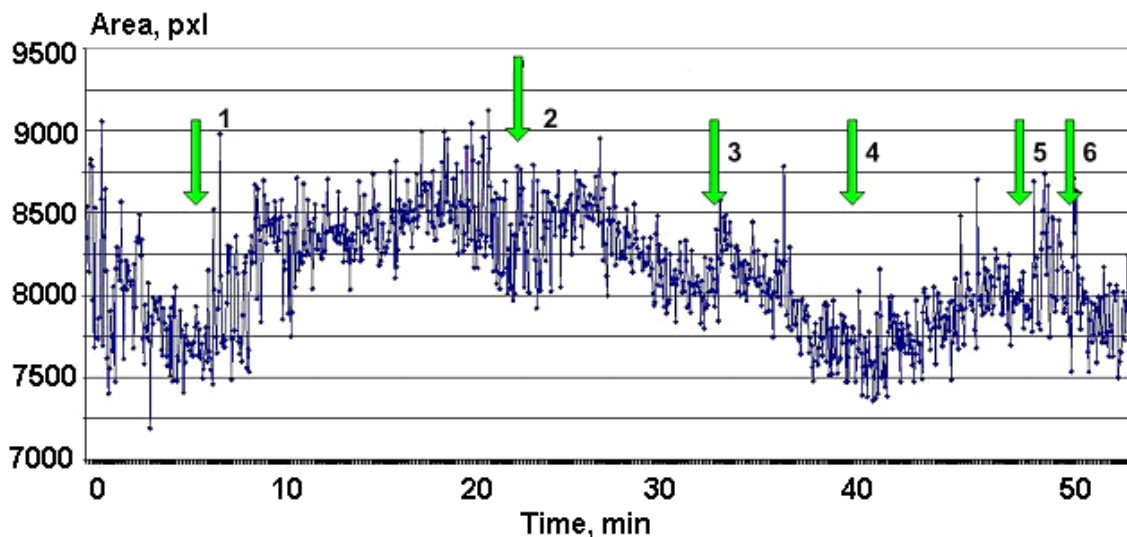
Bias current in the electrical chain depends on the capacitance of space between antenna 2 and environmental grounded and electroconductive subjects. Fig. 2 demonstrates experimental dependence of the glow area of metal cylinder from capacitance. Oblique section of this graph correlates to the most sensitive parameters of the instrument which may be regulated by the amplitude of the applied voltage. Emotions are related to the activity of the parasympathetic division of the autonomic nervous system, which changes blood microcirculation, perspiration, sweating, and other functions of the body, resulting in the changes of the overall conductivity of the body and the conductivity of acupuncture points in particular. So the presence in the vicinity of the instrument of the emotional people may change the conductivity of space and, hence, the signal of the sensor. At the same time in laboratory conditions at night without presence of people variability of data during 6 hours was at the level 0.5 – 1%. Before the measurement instrument should be “warmed up” by operating for 30-50 minutes with cylinder connected to the grounding jack of the instrument.



**Figure 2.** Experimental dependence of the glow area of metal cylinder from capacitance

### 3. Experimental Results

The very first testing of the “Electrophotonic Sensor” instrument demonstrated the effectiveness of the developed approach. Measurements conducted during religious ceremonies, yoga meditations, public lectures, demonstrated that the signal of the Sensor statistically significantly changes during measurements and these changes are correlated with the course of event. Let us discuss some examples.



**Figure 3.** Time dynamics of the “Electrophotonic Sensor” during Dr. Emoto ceremony: 1. Beginning of ceremony. Explanations by Dr. Yasuyuki Nemoto, Secretary-General of the Ceremony and Assistant to Dr. Masaru Emoto. Big group of people came to the shore to participate in ceremony. 2 – Beginning of first meditation led by Dr. Nemoto and Irina Pantaeva. 3 – Presentation by Dr. Masaru Emoto. 4 – Dr. Emoto begins blessing of the waters with collective meditation. 5 – Dr. Emoto sings a song and offers all the people to join him. 6 – The End of the event.

03 August 2008 Dr Masaru Emoto had conducted the ceremony of blessing the water at Olkhon Island on lake Baikal in the South-Eastern part of Siberia. Graph of Fig. 3 demonstrate time dynamics of signal amplitude and Intensity recorded from antenna in power units which characterize the power of a signal. Arrows mark different stages of a ceremony.

As we see from the graph, all significant moments in the ceremony were followed by picks of the Area. The gradual decrease between points 2 and 4 might be explained by people's gradual loss of their intense concentration. Variations of Intensity graph correlate with the moments of ceremony, but not as precise, as Area graph. Other parameters had smooth character of variations.

13 and 14 September, 2008 in Los Angeles a series of measurements have been conducted during Reconnection Healing workshop led by Erick Pearl and Dough DeVito.

Figs. 4 and 5 demonstrate time dynamics of the Antenna sensor parameters for the first and the second day of workshop with marked moments of interest.

The most interesting moments of the presentations 09/12 were as follows:

19.31 - Doug DeVito on podium “Essence Lecture” and then introduces practitioners – jump in Intensity, strong variations in Area. (sector 2).

20.35 - Eric arrives – increase in Area, which lasts till the end of Eric’s presentation (~22.10). Variations at Intensity curve during different phases of presentation. (sector 6).

22.10 – 22.31 Eric recaps and summarizes + conveys practical processes for day 2...always laughter and then concludes. – strong peaks at Intensity curve. (sector 7).

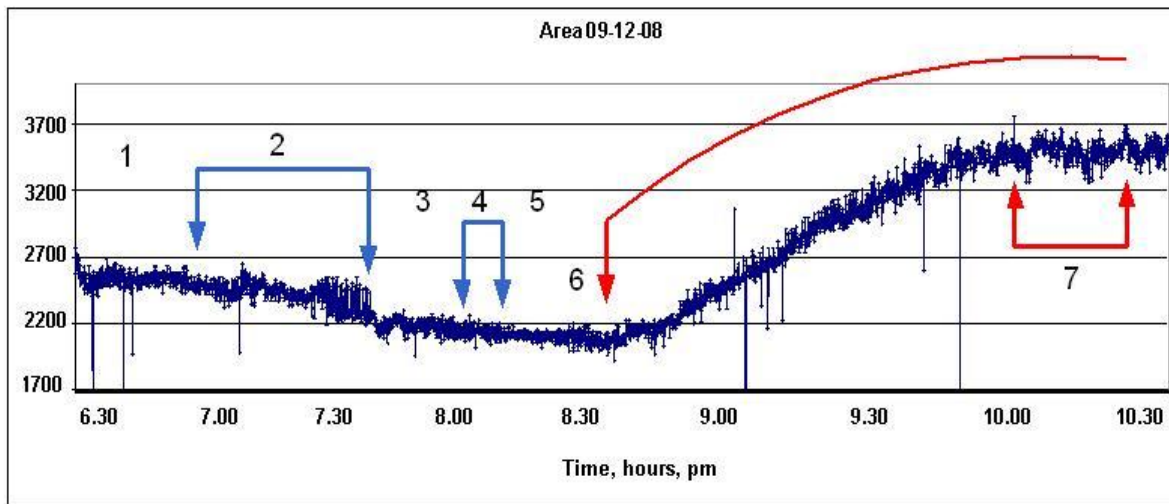
During the day Area decrease in the first half of the day, and increased in the second half of the day. Intensity increased practically all the day.

The most interesting moments 09/13 were as follows:

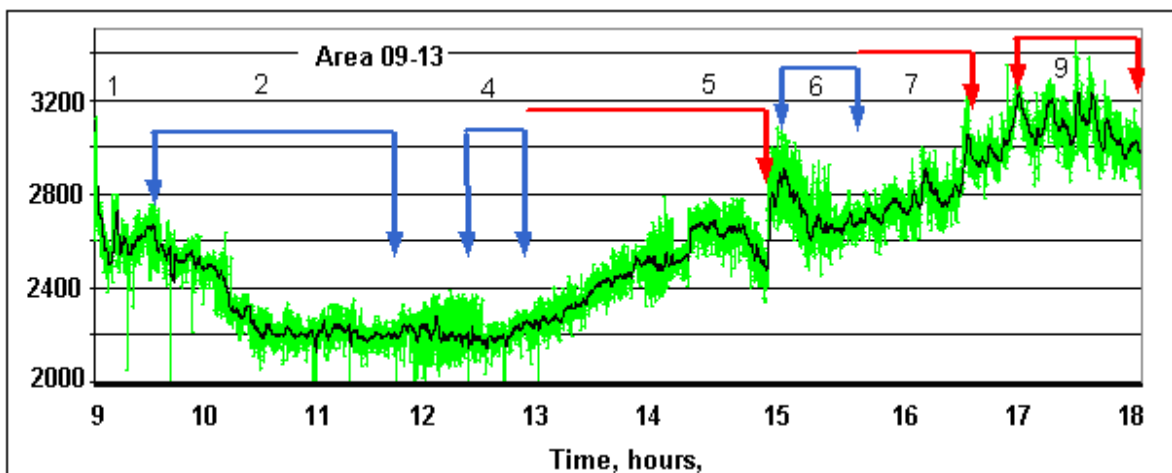
15.04 – 15.43 - Doug with participant demonstrating practical process of healing (sector 6).

17.05 – 18.02 – Doug and Eric addresses overall process (sector 9).

During the day Area decrease in the first half of the day, and increased in the second half of the day. Intensity increased all the day.



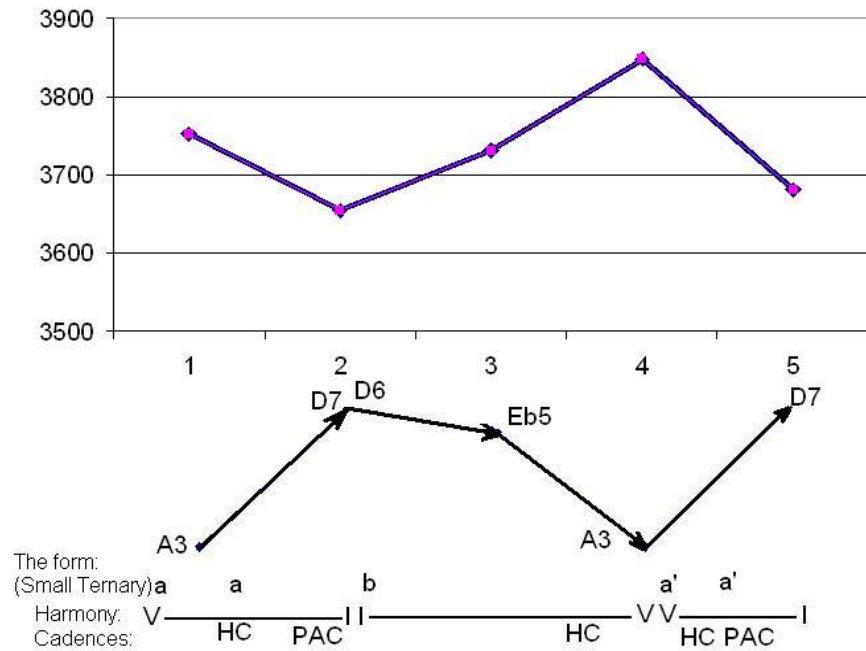
**Figure 4.** Time dynamics of the “Electrophotonic Sensor” parameters for the first day of workshop (September 12, 2008) with marked moments of interest.



**Figure 5.** Time dynamics of the “Electrophotonic Sensor” parameters for the second day of workshop (September 13, 2008) with marked moments of interest.

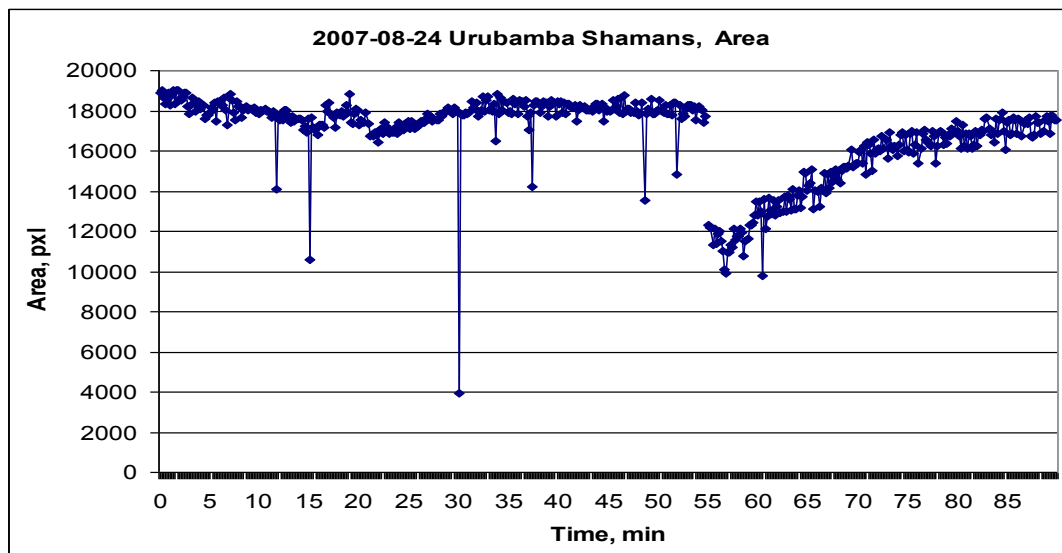
Parallel measurements at this workshop were conducted by the group of professor William Tiller with a special PH water sensor [7]. They were able detecting the change of signal during speaker on-stage presentations to the audience, which correlated with our data.

A series of experiments with musical performance were conducted. The one discussed in this paper took place at the Children’ Music School named after N. A. Rimski-Korsakov in St. Petersburg on May 22, 2009. A selection of pieces from four stylistic periods (Baroque, Classical, Romantic, and 20<sup>th</sup>-Century) has been performed by Dr. Ildar Khannanov. It has become apparent from the graphs, received from the “Electrophotonic Sensor” that the levels of signal distinctly vary from style to style. It was possible to compare elements of musical form with the segments of the graph. For example, the graph of area presents the following trend for the opening page of Piece No. 1 in Schumann’s Kreisleriana mirrors the melodic directionality (Fig. 6). The higher the melody reaches, the more intense is musical condition, the smaller is the area of the signal. This comes in strict agreement with other observations presented above.



**Figure 6.** Comparison of the changes of the “Electrophotonic Sensor” parameters (upper graph) with melodic direction for the opening page of Piece No. 1 in Schumann’s Kreisleriana.

In August 2007 we participated in a trip to Peru. Two shamanic ceremonies were held during the trip. One was held at Amante Island of Titikaka Lake in the morning on the top of the hill. When we tried to turn on the equipment, all the batteries were found to be empty. The batteries were replaced for fresh ones the previous night, but at the top of the hill the charge was totally gone. Second shamanic ceremony was held at the bank of Urubamba River nearby Cusco. Fig. 7 demonstrates the graph of parameters recorded during the ceremony.

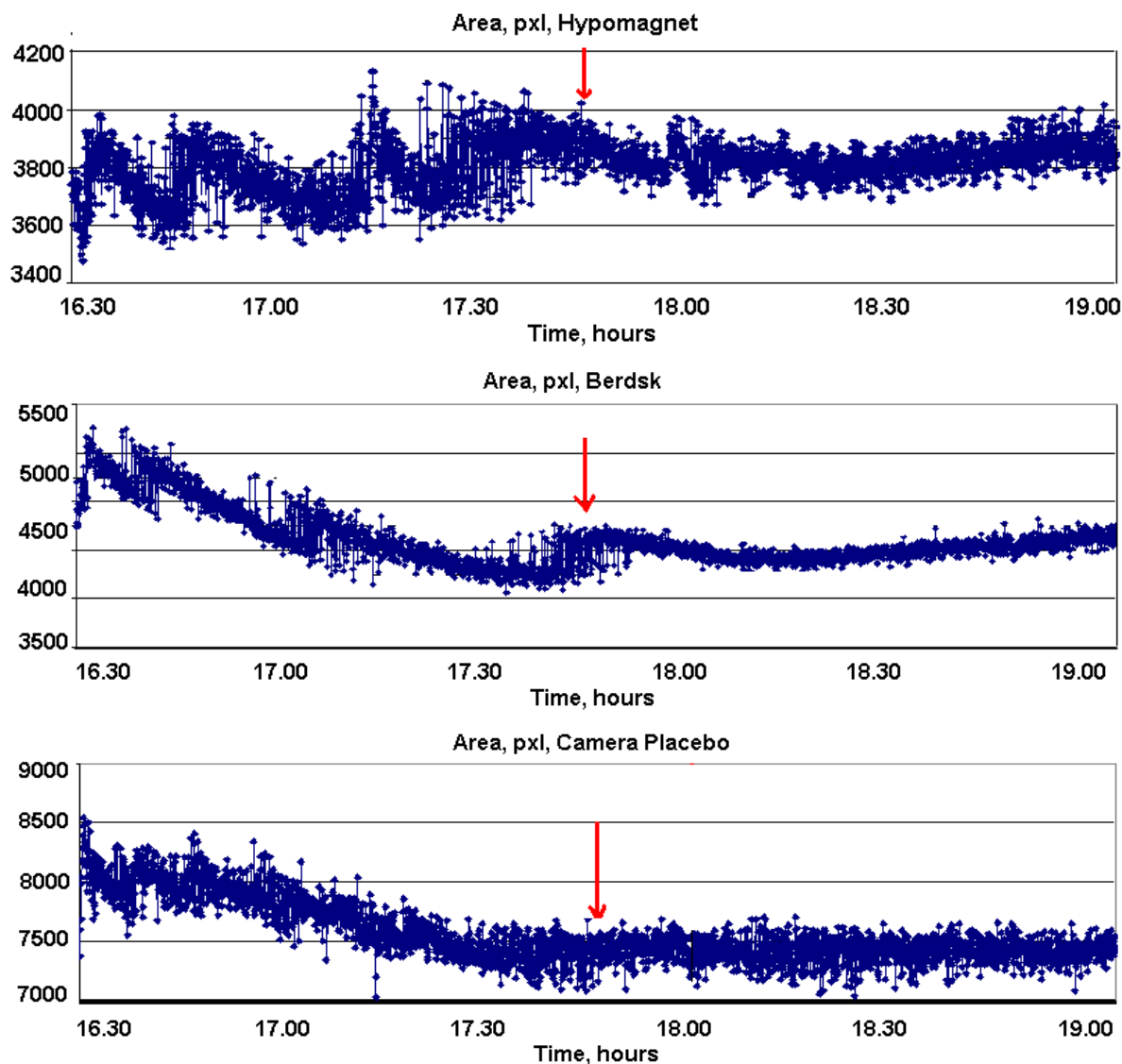


**Figure 7.** Time dynamics of the “Electrophotonic Sensor” parameters during shamanic ceremony in Peru 24 August 2007.

As we see from the graph, in the process of ceremony parameters change dramatically. It is difficult attribute these changes either to the emotions of the people or to the environmental conditions. Ceremony was held about 50 meters from the river, weather was mild, slight wind was blowing, and people were standing at some distance from the sensor. Unique character of this experience did not allow repeating it.

At the same time it was found that the “Electrophotonic Sensor” reacts to the change of the environmental geophysical conditions. Field testing at the Far North of Russia, in Venezuela, Colombia, England demonstrated that the instrument is sensitive to the change of environmental parameters.

Novosibirsk, Russia, during Sun Eclipse 1 August 2008 six “Electrophotonic Sensor” instruments positioned in different locations of the area recorded statistically different signal in different phases of sun eclipse. Statistically significant difference of readings before and after with probability 99.9 ( $p < 0.00001$ ) both for Area and Intensity was found. Fig. 8 demonstrates time dynamics of the signal from one of the instruments. Arrow signifies the moment of total sun eclipse.



**Figure 8.** Time dynamics of the “Electrophotonic Sensor” parameters before and after Sun Eclipse in different locations of Novosibirsk 01 August 2008.

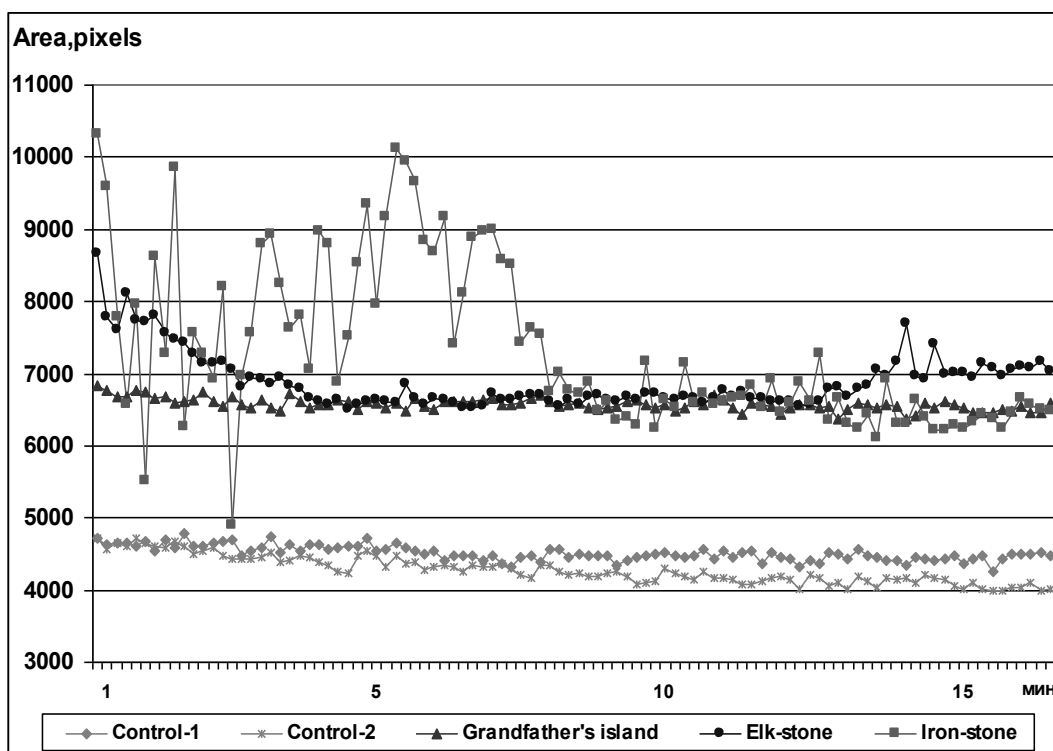


Figure 9. Area of glow of test-object, connected with air antenna

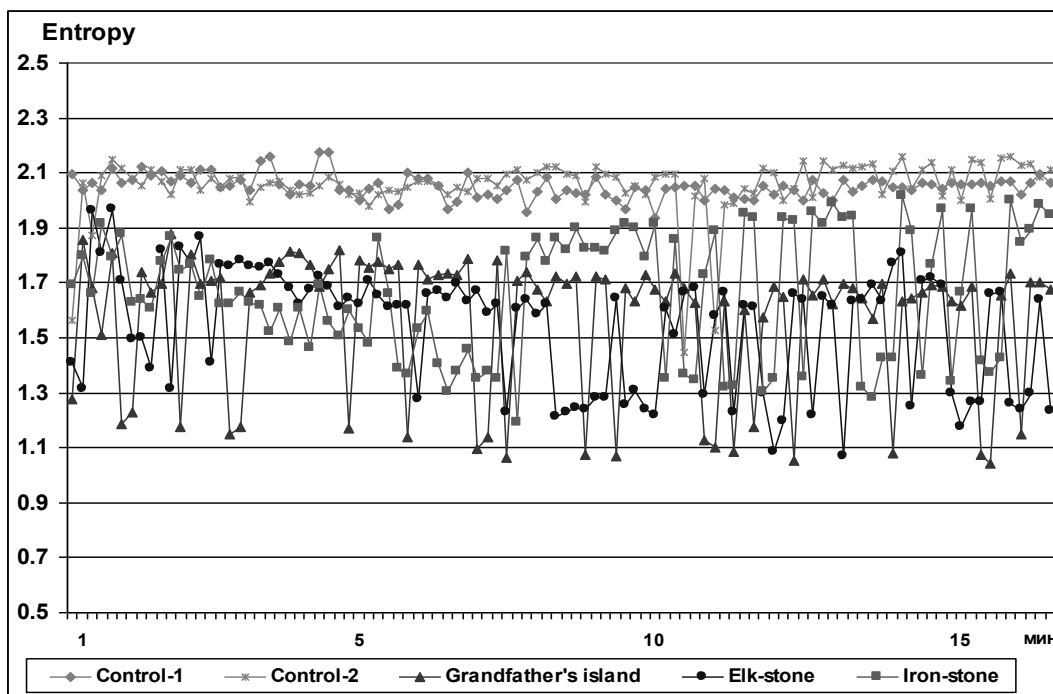


Figure 10. Entropy of glow of test-object, connected with air antenna

In June, 2008 the GDV/EPA measurements with air antenna were made in “places of power” of Vologodskaya area. Measurements were made in the following places with high level of energy, revealed by preliminary dousing investigations: the Grandfather’s island, the Elk-stone and the Iron-stone. Control measurements were made in the hotel in the same conditions (temperature 19-20<sup>0</sup>C, RH 58-65 %). The results are presented in Figs. 9 and 10. Area of glow and the variability of area were higher in “places of power” in comparison with control measurements. The most significant differences were observed for parameter Entropy. During the GDV measurements with air antenna Entropy had much higher variations, then during the control measurements. It is significant that multiple measurements in places with “normal” activity had shown that entropy was very stable and reproducible parameter.

#### 4. Discussion

As we see from the presented data, experiments allowed recording both the individual and collective emotional excitations. A lot of experimental data should be collected to make results presentable and publishable. Measurements may be done in a theater, concert hall, church, lecture auditorium. It is interesting to take measurements during sport event. But for one single group it is difficult having many different experiments, we need collective efforts of researches from different countries. The advantage of this approach is that any researcher operating with EPI/GDV Camera may take part in research.

We may construct several models explaining observed effects – from chemical and physical ones to quantum electrodynamics and esoteric. From our point of view this is not important at the moment. First of all we need to collect a big database of observations in different situations by several research groups.

We should take into consideration the following ideas of prof. Tiller [8]:

“The periods of audience-focused attention upon the on-stage speaker signals that group entrainment leading to significant growth of group coherence is occurring. This leads to high information production rate events,

Macroscopic spatial information entanglement due to simultaneous use of multiple measuring instruments appear to be generating reduced contrast in the magnitudes of various event signatures. This probably occurs via the addition of out-of-phase vector components (a type of data randomization)

As a closing remark, if all the subsystems of the experiment are included in the analysis, it certainly strengthens the statement regarding “only trends” from our experimental measurements can be expected to be meaningful at this time. Further, with Dr. Korotkov’s team making experimental measurements in the same room as us, one should expect information entanglement to occur between their measurement system and ours”!

To prove or disapprove these ideas we need to have a series of further experiments with different modalities of healing.

At any rate, without being concerned on physical explanations, it is clear that the effects of human emotions are strong and measurable. We may definitely tell about conditioning of environmental space in the workshop room. In the further stages of experiments we need to study the following topics:

- Correlation between several similar instruments installed in the same room of the workshop and in different rooms. It will help us to answer the question of space conditioning and the area of the influence.
- Comparison with effects of a group of people at the music concert, political gathering.
- Effect of age and gender of participants.
- Influence of geophysical conditions.
- Dependence of effects on the experience, training and other qualities of practitioners.

Correlation of results between Dr. Tiller and Dr. Korotkov teams makes them especially significant and opens perspectives for further understanding of the enigmas of consciousness.

Results allowed to start a new scientific line of the instrumental investigation of the geoactive zones. In this field culturological aspect of the problem is of particular interest. Idea that from the ancient times historical monuments have been correlated with the “places of power”, areas, having some specific geophysical properties, specific influence to the human condition, has been experimentally approved.

The perspectives of study are exciting for everybody interested in the spiritual history of humankind. We may define the whole new international research line: development of the maps of energy parameters of sacral subjects and the program of study of their influence to the human psycho physiological condition, in relation with the environmental situation, health and psycho-type of people. This type of research may be a public domain, contrary to the archeological excavations, they do not need any official allowance, and results may be exchanged and published through the Internet.

This approach opens up a broad field of activity. Not just sun-bathing at the beach or wandering around with photo camera, but participating in the international project on the development of Geoactive Zones Database. The only condition for this – is ability to operate with EPI/GDV Camera.

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# MAN AS A QUANTUM-WAVE PSYCHOSOMATIC SYSTEM

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**Abstract.** The author considers the Man from a position of the theory of *wave-particle* duality of a matter. This has opened existence in a nature of ways of interaction and information interchange between genes, cells, and persons, about which we did not suspect or knew a little. The concept of duality has allowed understanding the wealth of information contained in the man that has enabled to consider him as a *psychosomatic system* and to explain some features of thinking and behaviour of the people, sources of their talents and problems, and also feature of functioning in a society and relations with each other. To certain extent the concept of duality gives an explanation of reasons of diseases and gives interpretation to methods of treatment, which (despite of their efficiency) are ascribed as alternative ones, being not accepted by official medicine. As an example, the author describes the uterine myoma as a psychosomatic process, manifesting itself in ischemic uterus disease. He substantiates and uses the holistic approach and nonstandard method of psychoelectroregulation in these patients, which offers the long-term results.

**Keywords:** *theory of duality, genes, wave genetics, memory of water, cellular memory, biofield, man as a psychosomatic system, uterine myoma, psychosomatic disease, psychoelectroregulation*

## 1. Introduction

The term "psychosomatic disease" assumes that in pathological process both psyche and soma are involved. But it means also that we know about existence of psyche and mental illnesses separately. Such classification was quite true for a certain stage of development of science. Contemporary the Man is considered as complete psychosomatic system [1]. Certainly, one can have a temptation to determine it by traditional representations: as the aggregate consisting of the brain (the biological predicate of psyche), and organism (the biological predicate of soma). However, from a position of modern knowledge and philosophical representations it is not quite correct. Why?

Our representations regarding structure of the world began to vary with appearance of the theory of corpuscle-wave duality of a matter. In the beginning of 20th century Einstein by his early discoveries [2,3] has shown that light can be interpreted as a flow of energy quanta (i.e. the corpuscles), which in many physical effects also show properties of electromagnetic (EM) waves. Bohr with the colleagues has tried to rescue the Maxwell's wave theory of light, but should surrender and confirm Einstein's correctness. Subsequently de Broglie, developing these ideas has put forward a hypothesis about universality of corpuscle-wave duality of a matter [4]; after de Broglie, the electrons and any other particles of a matter (not only photons) have both corpuscular and wave properties.

The Russian geneticists Gurvich [5] and Beklemishev [6], on the basis of new paradigm, have put forward a hypothesis about the wave properties of genes. The Russian geneticist of a Chinese origin Dzang Kangeng [7] showed this experimentally, by his device for transferring the wave property of genetic information, when he received hybrids of plants and the hen-ducks. These data were confirmed by further research of the Russian geneticist Gariaev [8-10], who together with the colleagues successfully continues to develop wave genetics.

A little bit earlier Kaznacheev (not being fixed exclusively on genes) has published results [11,12], in which has shown that carriers of the information in biological systems can be quanta of EM field, or bio-photons. He believed that the EM channel of information communication in the alive substance carries universal character and is widely used between cells.

## 2. Cellular Memory

Each cell is a multi-component organism, which includes a membrane with set of receptors, and cytoplasm with set of organelles and nucleus. The nucleus contains a complete set of genes containing the information on morphological structure and *function* of a cell, organs, and whole organism.

The investigations by LSD-25, other psychedelic drugs, and holotropic breathwork, have shown that the man can comprise in his memory the events experienced by previous generations, the steady psychological features of ancestors and certain modes of their behavior [13-15]. The researchers believe that the intelligence of the man and his mentality are connected to a heredity [1,16,17]. That is, the genes are the carrier of both morphological-functional and mental features of the man.

The researchers working in area of prenatal and perinatal psychology have found many data on inclusion within memory of prenatal child (PCh) the events experienced most emotionally together with the mother during pregnancy and labor, and even her thoughts, emotions, and feelings. They are reflected (sometimes as in mirror) in thinking and behaviour of the born child. The prenatal stress can cause mental disorders in a wide range: from unusual habits and psychological discomfort to the heavy mental diseases such as schizophrenia. Besides mental disorders the child who has experienced prebirth stress, as a rule, receives somatic disorders accompanying him during life [18-27]. This pre- and perinatal information can be transferred to the following generation. This is confirmed experimentally [28,29] and most likely is connected with regulating processes investigated by epigenetics.

It is possible to assume, that a genome contains both somatic and mental information and is able to include new data of such quality. From this view on the genes each cell of organism is the carrier of quasi-consciousness and memory, and is an original psychosomatic structure.

However, this information is incomplete, because we have said nothing about water. Each cell of the body includes more than 90% of water. The various organs contain various quantity of water, for example, the brain contains up to 90% of water, bones up to 22%, etc. The content of water in organism of the man depends on age. So, embryo in the age of 6 weeks contains 97% of water, the prenatal child of 16 weeks up to 92%, newborn near 72%, and adults near 60-65% of water [30].

I mentioned about water, as numerous investigations in last years have shown that water has information properties: it is the original generator of EM waves of MM range, can perceive, carry and transfer the wave information, carries out a bio-informative role, has high biological activity, can perceive psychic energy and the thought information, executes a role of the synchroniser, and standard of time in bio-systems [31-36].

This is confirmed in fact by long-term homeopathic practice. It is important that both structure and properties of water and the water solutions can change under influence of the mental information [34,37,38]. This gave us the opportunity to advance the hypothesis that owing to the fact of the bio-information properties of water, it is an environment for information interchange between the mother and her unborn child [39].

At last, each cell of organism contains the molecules of proteins, which also are carriers of the information [40]. Peter Gariaev [8,9] has experimentally proved that cells, chromosomes, DNAs and proteins pass the hereditary information within the space of organism – via physical fields, electromagnetic and acoustic waves.

It is possible to assume that such cellular structures as DNAs, the molecules of water, and proteins – can generate, receive, save and pass both corpuscular and wave information.

The large support to idea of information properties of water was rendered by research of the Nobel winner Luc Montagnier and his team [41]. They have shown that water is capable to include the information from DNAs. In our opinion, this can mean more: between DNAs and molecules of water, and possibly proteins, at a level of the cells there is a constant information interchange, and therefore the cell represents the information unity.

So, it is possible to believe that every somatic cell of organism contains DNAs, molecules of water and proteins, and due to them includes the coded information, both somatic and mental.

If to take into account researches by Gurvich, Kaznacheev, Gariaev and other scientists, the cells are the carriers of the information both as particles and waves, and therefore it is possible to speak about the cells as the psychosomatic structures.<sup>10</sup>

From a position of considered paradigm of the matter duality, the billions of cells in multi-cellular organism are in instant wave-like contact among themselves. As a result of such close interaction, each cell of organism in the same time receives the information on a condition and needs of all other cells. At the same time cells, their subcellular elements and genes, are under influence of the external factors and can accumulate the physical and mental information, save it, and pass to each other.

The wave amplitudes of separate molecules can be superimposed among themselves, forming the general coherent EM wave. In a similar way, there are probably superimposing waves of subcellular elements and cells of separate organs, forming a resonant frequency specific to the given organ. So, the frequency of electrical activity of heart is within the limits of 1 Hz, of brain within the limits of 5-40 Hz, etc.

It is possible to assume, that the superimposing of waves of cells, tissues, and organs, at the end forms a man's *biofield* with resonant frequency specific for the particular person. The traditional view on the biofield as a surrounding environment of the man should be changed. A wave informative cloud as a product of functioning of the alive cells wraps and penetrates the man. It includes the knowledge at a quantum level about his physical and mental components and relates to both consciousness and unconsciousness of the man.

I think we should support the idea that the memory is not an exclusive prerogative of a brain. It is a function of the whole organism, the whole man. The brain in these conditions carries out the major function of acceptor and converter of the coded information in clear for us images, symbols, pictures, words. Sir Charles Sherrington, Sir Jon Eccles, Wilder Penfield, Stanislav Grof, and David Chamberlain advanced these ideas during 20th century.

In confirming this idea I would like to remind the phenomenon of change of some character traits and preferences at the people with the replaced organs [42]. Also, Karl Pribram has found out that many people which experienced traumas of a head brain with partial (and even significant) loss of its part, have not lost their memory. He has assumed that the centers of memory are in all brain, and subsequently he has offered a holographic hypothesis of the brain functioning [43].

Speaking about this function of a brain, *I do not exclude* participation of its neurons in perception of the information, accumulation and usage of this memory, because the nervous cells also contain genes, molecules of water, and proteins.

Of course, the function of a brain is not limited by participation in mental processes. The brain not only controls the emotions by neurotransmitters (catecholamines, serotonin, morphine-like opioids). The brain carries out the very important functions of regulation of all organs and systems of organism: cardio-vascular, breath, digestion, endocrine, etc.

So, we can summarize: the man represents complete psychosomatic system (PSS). This composite PSS is a closed system in its aspiration for self-regulation. On the other hand, it is an open system, because it is in constant communication with the external world: by what we breathe, what we are eating and drinking. It is not less important that this system is in interaction (including the wave interaction) with other people, and even other alive essences, including flora.

From here, any illness of the man should be considered as the psychosomatic disease, though undoubtedly there is an essential difference between diseases caused by the infectious agents or emotional stress. The consideration of the man as PSS is a substantiation of the holistic approach to health, or to restoration of it. I would like to explain this on one example. In my practice and researches I attracted a special attention to the study of such mysterious disease as uterine myoma (fibroid, fibromyoma).

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<sup>10</sup> The experts in the field of quantum physics warn that the quantum objects are neither classical waves, nor classical particles, getting their properties only in some approximation. These terms were taken from classical physics, and methodologically more correct is the formulation of the quantum theory through integrals on trajectories (propagators), free from usage of classical concepts.

### 3. Uterine Myoma

The investigations of uterine myoma are carried on more than one hundred years; however, there are no considerable results in conservative therapy of patients with such pathology. The estrogenic theory was the leading conception of myoma, while new concepts (immunologic, oth.) have not serious supporting. Perhaps, it is useful to consider some other aspects? Our investigations showed that patients with uterine myoma simultaneously had many extragenital diseases of psychosomatic genesis: mainly the diseases of cardio-vascular system (arterial hypertension, myocardial ischemia, oth.) [44]. Maybe the uterine myoma is a psychosomatic process too? The clinical observations became a foundation for carrying out investigations by complex methods, such as: closed clinical interview, psychological, electroencephalography, reflexometry, hormonal, biochemical studies, electrolytes (Na&K) in erythrocytes, plasma, urine, and tissue of uterus, electrocardiography, ultrasonography, electron microscopy, statistics, and other methods of research. We examined 373 patients who were suffering from uterine myoma and 231 women without pathology of the genitals (control group) aged from 24 to 54. The results of our investigations showed that the prolonged relapsing conflict situations, provoking negative emotions, psychological peculiarities of a woman, and her reaction on psycho-traumatic situation resulted in the appearance of chronic psycho-emotional stress, which clinically reveals itself as a syndrome of ***psycho-emotional tension*** [45]. This syndrome becomes a system-forming factor and forms a ***pathological functional system*** (PFS), which involves mainly central nervous, autonomic nervous, blood circulating, neuro-endocrine, and reproductive systems with the uterus as a target-organ. Our complex investigations showed that the processes, discovered in the uterus, have displayed the picture of ***ischemia***. The latter can develop as the result of activation of the sympathico-adrenal and neuro-endocrine systems.

Activation of the ***sympathico-adrenal system*** can lead to ischemia of uterus along some ways. The first way: increasing monoamine secretion (adrenaline, noradrenalin), activation of adreno-receptors, which cause intensification of contractility of smooth muscular cells (SMC), including vessels, which result in arterial spasm and the increasing of blood pressure. The second way: degranulation or lysis of labrocytes with yielding of heparin, histamine and proteolysis enzymes, which leads to local microcirculatory disorders and ischemia. The third way: activation of lipolysis, which is followed by the damage of lipid-bi-layer of membranes of endotheliocytes and SMC, which lead to electrolytes disorders and hyperhydratation and damage of the cells. This may be connected with the activation of adreno-cortical system.

In the reaction of the ***neuro-endocrine system*** the three variants may be isolated. The first variant is connected with formation of anovulative circle with hyperestrogenia, which is accompanied by an increase in secretion of antidiuretic hypophysis hormone. It leads to the delay of sodium and water, the rise in the circulating blood volume, the dilatation of capillaries and arterioles, injury of the endotheliocytes, which are followed by an increase in vascular permeability, and this leads to the edema of the cells and interstitium, plasmorrhage, hemorrhage, lymphorrhea. The second variant can be explained by the well-known feature of estrogen hormone retain sodium and water in the organism, to provoke the dilatation of vessels with the increasing of blood filling, damage of endotheliocytes and pericytes. All that lead to the condition of edema appearance and percolating of plasma and lymph, which impregnate the walls of vessels, fill in the interstitium and this, perhaps, plays a definite role in the developing of sclerosis including vascular sclerosis of myometrium. The third variant is connected with general stimulation of ovaries, which provides proliferation of SMC. Therefore, there are many functional damages that lead to microcirculatory disorders and tissue hypoxia. The factors reflecting the ischemic state of uterus myomatosis include: microcirculatory disorders, arterial spasm, venous congestion, lymphostasis, the weakening of oxidizing-reducing process, reduction of glycogen level, the increasing of glycosaminoglycans, the decreasing of level of nitrogen exchange, intensification of lipolysis with lipoidosis, prevalence of metabolism of anaerobic type, intensification of collagen formation, inclusion of SMC into the process of collagen formation, sclerosis of the vessels and interstitium, and hyalinosis [46]. The literature data and carried out investigations gave us the possibility to put forward a conception of etiology and pathogenesis, which considers ***uterine myoma as psychosomatic process, manifesting itself in ischemic uterus disease***. This is a systematic disease, in which the mentality, nervous and cardio-vascular systems are involved. The uterine myoma is a brightest, though it is possible not main display of pathological process.

As each patient has an individual combination of etiologic and pathogenetic links we may say that "each woman with myoma has her own myoma". However, the high frequency of psycho-emotional stress was the reason for the usage of psychoelectroregulation (PER) as basic therapy for patients with uterine myoma. It included the *individual rational psychotherapy* with the following actions on the central nervous system by impulse currents by means of the apparatus LENAR (for the destruction of the developed stable PFS).

The investigations showed that only PER exerted a tranquilizing effect, decreasing of level anxiety, promoting a normalization of the functional condition of the nervous, endocrine, blood circulation and reproductive systems, restoration of electrolyte balance, and decreasing level of morbidity in the different classes of disease. The growth of the uterus is stopped or its sizes are even diminished immediately after the course of treatment at the half of 76 patients. The stabilization of uterus sizes or diminishing of it took place in 72.1% of patients [47].

Why does uterine myoma decrease in size? Before we answer this question, we must consider the other question: what causes the increasing of uterus when there is myoma? Our morphological and electron-microscopy investigations showed that there are the following factors: the increasing of SMC at the expense of the increasing of new active organelles (quantity, volume), edema of the cells and of interstitium, venectasia, plasmorrhage, hemorrhage, lymphostasis and lymphorrhea, calcinosis of the cells and interstitium, hyalinosis, vascular and interstitial sclerosis, lipoidosis, and proliferation of SMC. Of course, sclerosis or hyalinosis do not disappear, but the used treatment (PER) removes disorders of microcirculatory and metabolism, decreases ischemia and edema, and stops the growth of myoma and later on helps its diminishing [48]. It is necessary to add: acquainting with social and psychological situations of the women gave us the opportunity to individualize the psychotherapy, to improve the results of treatment, and to give the recommendations for prophylaxis of illness recurrence. In our opinion, such holistic approach to the patients with uterine myoma as a psychosomatic disease is more productive than separating the patient and her uterus.

#### 4. Conclusion

In conclusion, we argue that the man represents the quantum-wave psychosomatic system. Any disease of the man should be necessarily considered as a psychosomatic process irrespective of its origin. The holistic approach in treatment as well as prophylaxis should assume the obligatory inclusion of individual psychotherapy along with special methods of official or alternative medicine, as we demonstrated by treating uterine myoma as a psychosomatic process, with the long-term results.

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## QUANTUM-INFORMATIONAL MEDICINE: BRASILIAN EXPERIENCE

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**Abstract.** In the pursuit of integral health, we have taken as a reference when we are happy, because happy person rarely get sick and even when it happens, his/her recovery tends to be faster. To this end, we encourage persons to take care of themselves at all levels: physical, emotional, mental and spiritual.

As we know that everything is energy and that all energy brings informational content, associated with the frequency, we seek guidance on the quality of food eaten (dense material), the quality of thoughts and emotions (subtle energy) associated with limiting beliefs and the spiritual dimension of the individual. Learn to use good energies associated with good frequencies is the aim. In the II Symposium On Quantum Health and Quality of Life, to be held in Brazil in September 2011, we will be providing health care from the perspective of a quantum informational model and for this will make use of various therapeutic techniques like acupuncture, homeopathy, flower therapy, EFT, NLP, Quantum touch, Reiki, frequencies of light, auriculo therapy with radionics crystals, aromatherapy, color therapy, herbal medicine, and harmonization of the environment with feng shui. Our intention is to provide for society a non-invasive health model capable of investigating the real cause of disease and able to empower individuals in order to learn to take better care of their health at all levels.

**Keywords:** *integral health, happy person rarely get sick, energy brings informational content, non-invasive health model, real cause of disease*

# QUANTUM-HOLOGRAPHIC ENERGY SYSTEM & RESONANCE BIOFEEDBACK

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**Abstract.** According to the recent theory by professor Dejan Rakovic, the human mind-body system is constructed in such a manner as to produce vibratory electromagnetic energy patterns that add up to a holographic field that can be described by quantum mechanical formalism. This is also in accord with practical experience of the author who for 10 years has used electro-acupuncture and resonance-biofeedback to diagnose and treat diseases. Our technical equipment shows us that the information system of the human body is arranged as a hierarchical holographic system that is reflected in the electrical activity of the meridians and in frequency patterns in organs and tissues. This paper investigates an important aspect of the quantum holographic information system: the self-regulatory, quantum level, vibratory signals-system known as the meridians. It also investigates their fractal nature known as the ECIWO principle (Embryo Contained in the Whole Organism). The quantum nature of the system is reflected in the fact that the human bio-energy system reacts to ultra weak energies either taken from the body itself that are weaker than the -120dB noise-level of our technical equipment; and from radiation from substances and homoeopathic dilutions!

**Keywords:** *quantum-holographic body-mind energy system, ECIWO, resonance biofeedback, energy medicine*

*“Make beliefs into known“*

Robert Monroe,  
Founder of Hemisync Technologies, USA

## PART I: HUMAN BIORESONANCE ENERGY SYSTEM

### 1. All Medicine is Energy Medicine

The year 2000 I started a 10 year long project, called: The most efficient way to heal. The reason was that I myself was sick and had little hope to ever get well again. My project was therefore based on pure self interest plus competing against time; if not finding a way to better health my days as a MD would soon be over.

Having scanned most books on conventional medicine in my library my eyes fell upon the work of professor Hans Selye, Dr. John C Lowe, Dr. Broda Barnes, and Dr. Paul Eck. Their common interest was: How is biological energy produced in the cells and controlled by the neuro-hormonal system, called The Grand Adaptive System (GAS).

The end product of the GAS is controlling how the cells convert fat, glucoses and proteins into energy. And energy in question is the capturing of high energy electrons bound to these substances. In the Mitochondria inside the cells these electrons are ripped off in the respiratory chain called the Cytochrome chain by the use of Oxygen. The high energy electrons are then transferred to Phosphorus and then sent to each part of the cell as ATP for use by enzymes that runs the chemical processes! This leads to observation:

*I: Metabolism is converting material substances into electrical energy.*

Since electrons in movement produce magnetism this leads to second fact of life:

*II: Biological energy is (also) electromagnetic.*

Both observations are substantiated by scientific measurements. All living cells are surrounded by a measurable time changing electromagnetic field; in other words a radiating electromagnetic field obeying the field equations of Maxwell. The question is: Is there more to this field? Yes of course, frequencies.

The concept of frequencies to be discussed is a much complicated topic. As always what we observe is the interaction between a field and a technical instrument of some sort. If for instance we use photon-multipliers such as in the experiments of professor Popp back in the 1960ies, we transform a narrow band of the field into electrical current by the photo-electric effect. We will then recognize light, photons. Popp did this and discovered that there is coherent emission of photons in the vine red part of the spectrum (ca 630 nm).

## **2. The Idea of Energy as Information**

However trying to analyze the field otherwise has proved frustrating! Except for rather strong fields around muscles, heart, nerves and brain giving rise to so called Action Potentials in the skin, measuring the information bearing unites of the field frequencies by attaching antennas to the body and sending signals to a amplifier and then to an oscilloscope has proved nothing but “noise”. That is random frequencies with equal probability of appearing on the screen, thus carrying very little “information” [1].

This does not mean that the information we can detect in the field (apart from the macroscopic signals as picked up by EKG etc) is thermal noise, it only means that thermal noise from random movement of atoms is far stronger than that of the information bearing signals generated by the sum of living cells and carried through the channels to the skin where they are picked up. Effort to extract such weak signals in noise is according to Kennedy and Chung possible with digital, nonlinear filtering [2]; however, understanding their biological meaning is something else, the same goes for implication of their methods into commercial technical instruments!

For my part, the instruments, amplifiers and scopes I have access, are not implementing Chung and Kennedy`s algorithms. They are simpler tools with a -120 dB signal to noise ratio which only means, whatever field signals are, they are more than -120 dB weaker than thermal noise of our instruments. Either these signals are as Chung and Kennedy assume variations in the noise levels like: Amplitude modulated noise where amplitude is the signal: They could be sudden spikes hidden in the signal, or they could be frequency modulated signals, even going beyond that as will be seen later on. For the moment enough to say:

*III: Bioenergy field contains information with field-vectors that are extremely weak, most of the activity happens at signal strength weaker than thermal noise in most advanced technical equipment of the commercial market.*

## **3. Abrams Principle**

There is however a simpler path around the problem: In early 20th century Dr. Albert Abrams in California discovered that the human body can react with involuntary muscle to the extreme weak fields of biological tissues. By simply taking a suspension of bacteria in a glass vial and holding it close to the body, Abrams observes muscle contractions in the abdominal muscles of subject if these bacteria were already in the patient [3]! If not the body would not recognize them as a possible danger. The startling discovery lead to the theory that the human body is surrounded and permeated by an invisible ultra weak energy field that reacts to emissions from objects; living or dead. In accord with the vocabulary of the epoch, “etheric“ was adopted to the dismay of materialistic medicine of that time, where the knowledge of the language of physics were at an absolute zero [4].

The discovery of Abrams was soon forgotten and stamped quackery by medicine men of the day [5]; except for a small community of researchers who despite ridicule continued to investigate the etheric energies, or simply the human energy field (HEF).

Later on users of the Abrams method left the problematic percussion of tensions in the abdominal muscles arising when in contact with a toxic substance and moved over to radesthesia using a pendulum, moving due to involuntary actions of the hand of the practitioner [6]. By doing so Abrams method moved into borderland science. However, ridicule put aside, the Horder Commision [7] in 1925 put the method to the test by giving a

certain practitioner W. E. Boyd a number of patients to be tested. The commission declared that the results were a great success. Chance of results being pure accident and concussions of the mind was judged 1 / 333 554 432, and later published in the prestigious British Medical Journal [8]! The following year a sceptic out to disclose quackery; Dr. E. J. Dingwall had to admit defeat; neither he nor Lord Horder could disclaim Boyd and the Abraham method as quackery, a sad fact for those who hate research into energy phenomena.

*Iva: The field reacts to similar weak signals from substances if these signals have a biological meaning for the survival of the organism. A condition seems to be that the organism must have had contact with the field of the substance beforehand and thus has a memory of its effect on itself.*

Out of curiosity I bought a later day version of Abrams books and equipment made by a certain inventor, author and researcher Bruce Copen, PhD, from England with whom I exchanged letters for some time [9]. We agreed the best way around was to buy equipment and test it on volunteers. After some weeks I could produce diagnosis that could later be verified by conventional medicine; however, being a MD in a small town where prejudice is flourishing, lead me to put the method aside for some future research. Compared to sceptics and non-believers, I hold my own investigating attitude more scientific than just rejecting a discovery. First hand experience is what makes us better scientists.

#### **4. Voll Unknowingly Verifies Abrams Principle**

Sometime later a German neurologist Reinhard Voll from Munich, also trained in acupuncture and the controversial art of homeopathy, stumbled upon the Abrahams phenomena in a different manner. According to the lore he had a patient Werner in his office and measured the electrical activity in the acupuncture points on the finger; a method later adopted by Russian space agency medicine for testing astronauts health, marketed later on the name Prognos.

As Voll tested Mr. Werner, he noticed that all the so called endpoints, known to reflect the energy flow in the meridian system, suddenly became normal despite Werner's ill health, the very moment Werner put on his jacket. Taking on the jacket the end point values normalized! The mystery was solved by the fact that Werner carried his medicines in one of the pockets on his jacket! The energy radiation effect was rediscovered again, by chance and some luck. Only this time a serious medicine man had a tool for observing energy fluctuations in the body far more advanced than the primitive method of Abrahams, still yielding results in hands of a trained MD!

Summing up years of experience Voll and colleges in the electro-acupuncture trade came to the following observations concerning what we in this lecture have called the "field", the sum of all energies arranged in a hologram as expressed by professor Dejan Rakovic [10].

Let us say: If a person has a disease of a certain organ that has been caused by a substance X, this may be detected as described below:

- The endpoint of the meridian belonging to that organ or any other structure supporting the organ will show a non-normal reading on the GSR-meter, hereafter called an acupuncture-meter such as Acucheck from Holimed.
- When substance X is brought in contact with the patients's body; certain endpoints of totally normal meridian-points will start to show instability called "zeigerabfall"; the electrical resistance starts to increase and the voltage drops!
- If the substance X is put in a metal box made of copper or similar and connected to the patient through a wire the same results appear. The field remembers the substance X radiation /field energy as harmful!
- But now: if the same signal taken from X is fed through a phase inversion filter, "mirrored" and fed to the body, the previously abnormal readings turn normal as if the field is put back in order. All that was needed was to feed the field the inverted signals from X into one single point of the human body and that minute signal normalized the field and thus the human energy, at least as long as contact lasts!

*IVb: The field reactions to a meaningful signal from a substance or a source (of any kind) is immediately reflected in the electromagnetic activity of the meridians.*

This means, the field inside the body has a sort of memory of what has happened. How this can come about is to be speculated upon; but we know crystals has such nature and according to research by numerous biophysicists the human cellular system behaves like a super crystalline structure. This research is already beyond the speculation stage.

The explanation for this will be given later on. I want the reader to focus on one simple fact: The field has memory and acts on input in a meaningful manner which is precisely the nature of consciousness! As will be explained later on, consciousness is thus not what is going on inside the brain; more the brain is the interpreter of what is coming through our senses and what going on in the field. But because average person is not trained to convert field signals to social consciousness, 99.99% of people seem to be ignorant of field input, whereas people who are more sensitive utilize the field information on daily basis and are termed “special”, “psychic” or “gifted”.

## 5. Exploring Field with Resonance Biofeedback

This method /technology was discovered in late 1970ies by engineer Erik Rasche and Dr. Fritz Morell [11]. Morell later broke with Rache and teamed up with Brugeman, making his own equipment under the brand BICOM. Members of the Church of Scientology to which Morell subscribed, today owns the company. The third company to utilize the same principle is Holimed, established by Peter Barski and Wolfgang Bialas.

All three companies use the same method, based on the original MORA method: Taking energy from the human energy field by antennas made of brass, copper and gold, and sending back the energy to the field by antennas or even small probes held to acupuncture points. Doing so one can measure alterations in the field, acupuncture points and even the chemical composition of the blood . What kind of alterations/response depends upon what kind of signals (information) is extracted from the whole field.

This is done in technical terms by manipulating information from the whole field by use of amplifiers and filters. Reactions can be tuned as to exhibit the effects observed when people take therapies of any other type (none mentioned to avoid making the lecture too long). To achieve these effects known as Resonance Feedback or Bio Resonance Therapy one must utilize hardware such as:

- Linear Amplifiers with a certain bandwidth. The first feedback amplifiers from MORA and BICOM had bandwidth of 100 kHz, improving over the years. However the state of the art that we now use, Holimed Remiwave Pro, has 1MHz bandwidth which is 4 times better than what is commonly used.
- Use of frequency windows by application of filters: low pass, high pass, band pass.
- Stable or sweeping band pass filters.
- Wobbling band pass.
- Pulsed or stable output from amplifiers to human body.

Adding up 34 years of Bio-feedback according to the MORA protocol, the community of practitioners now know:

*V: The Sciences of biofeedback has so far charted biological meaningful frequency windows (transmitting noise + embedded biological signals) within the field ranging from 0 Hz to the photonic level. These windows are open for the correct combination of frequency and amplitude [12].*

All these frequencies seem to arise within the material generator of the material human body. We say “seem” because there are field observations that go beyond mere materialism [13]. According to German theoretical physicist B. Heim these extra-material phenomena are projections into the 4th dimension (space-time) of energy phenomena taking place in higher dimensionalities of existence [14]. Heim called these higher energy-realms the organisation realms, the information realms and the G4 realm; realm of pure ideas. The fundamentals of these realms are today mathematically described by Heim and his students.

## 6. Eddies and Densities of Field

Because the body generates the field, various parts of the field has varied frequency patterns and field-strength. The strongest field strength is found over the heart, a much weaker but still significantly strong field is found around the head, the 7 locations [15] of the glands, the hands and the feet. Scientific data also show that these fields have identifiable signal patterns typical for their structure. This makes scientific methods like EKG and EEG possible.

*VI: Various parts of the body generate their own field strength and frequency patterns (Adey windows), that adds to the total field. They can be influenced by information using the same Adey window in which they send.*

These frequency patterns, strength plus frequency composition in space and time, that is in 4-dimensions, in other words their topology contains unique information of the biological processes and the function of each part. Experiment to prove this:

If we by an antenna pick up a part of the field, over the body surface, filter this and send these signals back to the whole body by the method of Resonance-feedback, the whole field reacts in a way that seems to promote healing/normalisation of that body part. We may also do the opposite, information from the whole field may be picked up from a hand, then filtered and certain signals unique from the heart may be extracted from the whole field information, and fed to example given: The heart for healing. Such experiences from Resonance-Feedback show that each organ/body part adds something unique to the whole field, and that these unique qualities may be isolated from the field and fed back to the body part we like, by proper filtering techniques.

*VII: The whole field contains the sum of all parts, and each small part of information is to be found at any part of the field. This means: Each singular part is permeated by all the information of all the parts plus the part it generates itself.*

Since this is a practical experience by practitioners, we may deduct that each part has all the vibrations of the field, but is only using a part of it and thus react to only a part of Adey Windows [16].

## 7. Information Lost Due to Crudeness

In nature electromagnetic frequency patterns we in our technical equipment reduce to the term signals, have a deeper meaning. Ordinary medicine, which is a more primitive version of advanced science puts no importance on the human bio-field except as a tool for deducting some simple information from the heart (EKG), the brain (EEG), the muscles (EMG) and nerves (Neurography). The only real utilisation of the field in medicine, but on a cruder scale, is the use of the MRI which by using strong pulsating external fields up to 4 T can analyze the energy densities in the human body. The technology behind MRI is based on holographic mathematics, but apart from these necessary but crude machines, conventional medicine has no relationship to the field where signals are analyzed in their own energy domain.

We have mentioned one such technology resonance-feedback, more often called Bio-Resonance or the MORA-technology or lately renamed Human Software Engineering by Tom Stone in USA, using the recent wideband feedback system made by Peter Barski and Wolfgang Bialas and sold under name Holimed. Whatever name, it is a Field-Feedback system with waveforms extracted from the field. So far this has been a very happy method to look deeper into the field in its own energy domain. The proof of these ultra weak signals is as previously mentioned the reaction of the body itself to manipulated signals extracted from the field.

*VIII: The whole field is composed of some strong and unknown number of ultra weak signals, the latter not detectable with current measurement instruments, but are recognized by living beings/cells as being meaningful for life. They can be picked up from living beings by proper antennas/probes, fed through copper wires and sent back (feedback) and still give meaning to the entity (works on animals too).*

Actually what we are doing is taking multidimensional field phenomena: electricity, magnetism, photons, volume, time etc. and transform them to signals that has less variables, only voltage, current density, and time variation, then manipulate these few phenomena and sending them back [17]. More will be said about this later.

## 8. Field Spin!

Using such methods a few astonishing facts have been discovered about the field. One is Spin. In Quantum physics Spin is a central concept. Since the human field is arranged out of spinning particles arranged in a solid crystalline structure called the human frame by philosophers or simple the body or body-mind, we could expect there to be spin present. This can be demonstrated by a very simple, yet astonishing method developed by research scientist Buryl Payne in USA [18]. By using a spin-detection antenna, one can observe how the spin of the human field couples to the material in the antenna and moves it clockwise in a healthy subject. The more healthy and energetic, the more clockwise the antenna will move.

If however exposed to a harmful outer field like that emitted from mobile phones put to the head, being close to radio antennas, high voltage power lines or standing over/living over areas in the earth where there are fields harmful to health, the antenna will show a counterclockwise rotation. The same goes for people when being poisoned by toxic substances, having acute infections, or when there is much electrical disturbances in the atmosphere or using a mobile phone [19].

*IXa: The whole field has an intrinsic spin. The spinning axis goes when standing, from a point between the legs, through the perineum to the top of the head. In a healthy subject the spin direction is towards right (+1) (Clockwise)*

and

*IXb: The human energy intrinsic spin direction is +1, but under certain condition may temporary reverse : -1*

Reversing factors known to the author through practical first hand observations and the research community are [20]:

- Fields/radiations from radio masts, high voltage lines, transformers, mobile phones etc.
- Atmospherics
- Solar flares causing abnormal atmospherics
- Acute infections
- Toxins
- Great anxiety, fear, terror

*Xa: The human energy field is an open field, interacting continuously with the environment through multiple pathways, some known and some yet to be explored (e.g. extra sensory perception etc).*

## 9. Field Listens to Molecular Spin!

The spin nature of the human field goes very deep into how the field listens to energies around it. It has for some time been known to science that all matter is composed of particles out of which most have an intrinsic spin. When a spinning particle exists in the magnetic field of the earth all particles will exhibit a wobble that leads to emission of spin frequencies. This is today common knowledge in nuclear science. As early as 1975 the two German scientists, physicist Strube and Dr. med. Aschoff made a revolutionary experiment. They put forward a hypothesis that all elements and “things”, dead/living in nature, has a spin resonance structural field around them: a spin resonance structural hologram.

Further their hypothesis was that signals from the spin hologram was what the human body (and other living entities) “listen to”. To prove their point they set up a simple experiment [21]:

- A piece of mineral was put in contact with the body through a copper wire and alterations in the field were registered by means of altered Galvanic Skin Response. This is what electro-acupuncturists do every day to find substances that may be used for diagnosing or treating human sickness.

- Then the mineral in question was replaced by a signal generator producing the same frequencies as the known, measured spin resonance frequency of the mineral. The measured Galvanic Skin Resonance response was the same!

The spin resonance generated structural field hologram may thus be the answer we are looking for!

*Xb: The human energy field is a macroscopic holographic spin resonance structure that interacts with the environment through spin resonance with the spin holograms of “things” around it. These spin resonance emissions/signals all belong in the subtle field of energy emissions.*

## 10. Aura: Shape and Colours of Field

Going from microcosmic spin resonance hologram to the macroscopic world a very provoking and revolutionary question arises within the inquisitive mind: What shape does the macroscopic field have? Or going back in history to the stories told by seers and medicine men/shamans around the globe: The macroscopic field can actually be seen to the trained eye or to those borne with certain abilities termed “paranormal”.

Several investigators have gone to work by various means. Inventor-scientist Harry Oldfield has for years explored the Russian Krilian Technique, known as “electro-photography” where the body is subjected to high frequency current and starts emitting electrons and photons; creating a synthetic aura that is a mixture of the subtle field and a more “gross field”. By using a proper scanner, Polycontrast Interference Photography (PIP), Oldfield and his researchers could actually “see the field”. The field consists of photons, electromagnetic waves and even sounds (solotrons). The key to health according to Oldfield is to keep the body in a state of being that produces coherent wave-patterns. Oldfield even goes so far as to recommend chakra-meditation using mantras. Others researching in the same field prefer music like the Solfeggio music – project based upon the scales of old Gregorian Church Music [22] or the Monroe Institute Hemisync Technology [23] using binaural beats!

As for myself, like many others doing similar things, I trained myself using certain methods to “see the field” in the same manner as shamans and yogis: After some period of training, man, animals even plants can be “sensed” as having an energy-envelope that represents their “true self” or intrinsic energy radiation particular to that species, strain and individual. None are alike, most are similar.

Adding up data, the energy field extends several meters from the body. There are several layers and the most dense layers forms like a cocoon around the body like luminous sphere with vibrating colours. To substantiate my claims I have over years made drawings of my patients auras, then tested patients in my biophysics lab or the hospital. Comparing data my aura diagnosis has proved strikingly correct in several situations if not all. Distance from the subject seems to be of no importance [24]!

*XI: The human energy field appears as a layered cocoon around the human body structure with various colours that change as the patient person changes his/her mental attitude or frequency-patterns within the self, as a structure of being here.*

For those who would like to explore more, I recommend the Gateway Training CD home study-program created by the Monroe Institute.

## PART II: HUMAN GENERATIVE MATRIX

### 11. Human Liquid Crystalline Nature

According to conventional level of thinking within Western commercial society, the human body is studied as the material/chemical sum of its desiccated parts down to the cellular level. Little if any interest is shown as to the structural science of medicine and its electromagnetic properties. Researcher in the West and especially in USA who has looked for medical knowledge based on structural and electromagnetic properties of the human body, has more than often ended in the court accused of “quackery” by colleges representing the ordinary wisdom of the day in the commercialized “school medicine”!

Most of the science of structural and electromagnetic medicine therefore is either to be found the science of smaller groups of scientists within closed university communities, military research or research done in countries with a strong tradition for energy-science like certain Eastern nations, USSR and certain East European Countries.

The state of scientific knowledge so far is briefly summarized as:

The human body is permeated by a living matrix (connective tissue) that fills cells, surrounds them and behaves as one singular continuum. This matrix has a liquid crystalline nature. This liquid crystalline matrix is mainly composed of proteins, water and minerals, with embedded fibres of proteins and cytoskeletons with quantum like antennas. The electromagnetic properties seem to be able to produce sustained noise free quantum coherence that enables the body as an organism to function as “a whole”!

Properties of this structural nature of the living has a number of verified properties [25]:

- It can sustain quantum coherence of its parts behaving as one whole. Thus any cell within the matrix can be in communication with any other cell simply by being in tune with the matrix locally (non-local properties of cells) [26].
- Frequency and phase angle dependent Amplitude trains (“signals”) can move through the matrix with zero resistance like superconductors. Any part of the matrix can therefore add to the field properties of the matrix without loss of information for any other part.
- Specific signals move through the matrix, making the matrix behave as a signal conducting system.
- The matrix is self-organized through pan-cybernetic feedback loops.
- The matrix has semiconductor properties.
- The matrix has pilot-electrical properties.
- A major part of its nature is organized macromolecular clusters of water.
- Certain signals are even magnified, so that their field strength gets increasingly strong as the signal moves from A to B.
- The understanding of the various observed 4-dimensional energy-properties of the matrix can only be understood by the 12-dimensional physical theory of Burckhardt Heim [7].

These are but a few properties of the matrix where the various organs and parts of the human body are literally “permeated by (intercellular matrix)”/“covered by (facie and dense connective tissue)”/“immersed into (soft connective tissue)”.

In a way of expressing: Each part is but more condensed part of the matrix having a specific location, form (topology), mass, charge and vibratory nature (eigenfield or signature field). According to recent Russian theory the topology of any organ in the matrix is but a subclass of topologies expressed by one set of formulas describing the whole human embryonic form, which again is a subset of a set of equations describing the earths ecliptic movement around the sun over the course of several billion years. Man is thus strangely enough the “child of the solar system” or a “solar being” as envisioned by ancient masters in the Eastern lore of Yoga.

*XII: The human energy is generated by cells in and by the matrix that permeates the whole body. The matrix has organized, liquid crystalline, semiconductor like properties (varying from location to location). A theory of these phenomena might be similar to the quantum-holographic framework of Rakovic and further advancement may include the 12-dimensional unified theory of Heim [7].*

Such facts are so far not accepted in the commercialized medical system of thinking about their own creed “to help, alleviate and comfort”. How more comforting would it not be if each man had an idea of myself as an energy being with countless abilities and possibilities hidden within the science of energy, instead of a simple materialistic building with limited abilities and just a few locations to be.

## 12. Meridians

Although the matrix functions as a holistic communication system or may indeed be the true “inner being” (not denouncing the importance of the brain), there are certain parts of the matrix that has specialized properties of purely signal conducting and data computing nature. The exploration of the nervous system is today main

stream in neurophysiology, however the “other nervous system” called the “meridians” first described by Indian Yogis and Chinese doctors more than 3000 years ago is however viewed with disdain abate some curiosity by men “of science”. This is not only peculiar, since the very men of science each day utilised the meridian system to move their bodies, since parts of it is matrix pathways in the dense connective tissues covering all muscles.

The meridian system has proved its worth in practical acupuncture therapy for thousands of years. In the mid 1960ies the Chinese government encouraged Chinese hospitals and universities to start a systematic research to prove the reality of the system of “lines” along the body. After 10 years and more than 60,000 tested volunteers it was discovered [27]:

- When stimulating certain points on the body with square or sine wave 10-100 Hz cca 20% of test persons experienced a “creeping”/“crawling”/“tingling”/“flowing cold“ sensation that moved along a linear system. When asked to draw these lines on their own bodies, the lines were identical to the ancient “meridians”.
- The sensation moving along the channel is however very slow compared to nerve signals, only 1-2 cm per second.
- When heating or massaging the joints over which the meridians went, more than 80% of the volunteers had PSC (Progressing Sensation along a channel). This was also described to be expected in 3000 year old books on acupuncture.
- Certain brain tumours lead PSC, proving there was a neurological mapping in the brain equivalent to the “meridians”.

*XIII: Wavelike and ionic signals in the field flows through certain structures known as meridians. Their existence is clinically proved, although they are not neuronal signals, but their existence is sensed by neurons!*

But what were the meridians “made of”. Several ideas were put forth, but it had to wait until 1980 and later to get some ideas. Here are some facts/explanations:

- The location is in the connective tissue covering all the muscles and organs and structures of the body.
- There are no visible macrostructures for singular meridians in these “wrapping” of the body (none has been found yet).
- The main function of each singular meridian seems to be “transmission of information”.
- Each meridian carries information about the tissues along its course, the status of a certain segmental part of the spine, a certain organ, a certain sense quality, a certain number of glands, a certain number of nerve plexus, and a certain mood/emotion one can be in.
- Meridians can further be classified according to their influence on the autonomic nervous system and the 7 “glandular centres” in Asia known as “chakras”.
- When activated, meridians influence the parts from which carry information and stimuli, to activate a certain “meridian effects” ranging from mere touch, stroking, massage to needles and all the way to coloured lights, lasers, electrical signals, magnets and finally thought and best of all(?) signals taken from the field by means of resonance feed-back.
- Signals seem to flow on a sub molecular level through certain low resistance pathways in the Matrix, with semiconductor or even superconducting properties. For certain electromagnetic windows there seem even to be amplifying properties explaining why certain extremely low signals lead to certain strong reactions in the body.

The nature of all the meridians taken as a whole seems to be “self regulation” of the human organism of a more fundamental nature than the nervous system. James Oschman finds clear similarities between a distributed computer network and the meridian system, the same does Rakovic [26] who contrary to Oschman not only proposes a schematic for such a network, but describes it as a part of the human quantum-holographic bio-energy system that can be described by a set of formal equations similar to the formalism of wave mechanics of Feynman.

The similarity between meridians and a distributed computer network has a number of interesting facts to it [17]:

- Meridians are bidirectional signal lines transmitting “control information”.
- Signals are picked up by nodes (acupuncture points) capable of receiving the message, identify the source and transmit further its own signals. This makes each node capable of knowledge of all nodes.
- Each node has topological knowledge of certain other adjacent nodes, but not all, although having knowledge of the energy signature of all nodes.
- All signals seem to have start and stop messages.

*XIV: Meridians are molecular structures in the matrix that serves as pathways for signals, with quantum region information operating similar to computer logic. These signals have a vibratory nature. All in accord with Rakovic's theoretical model for the bio holographic quantum field of the human body.*

### 13. Frequency Logic of Meridians

Using filter techniques and extracting signals from the field by means of antennas, a modern Resonance feedback system like that produced by Holimed in Germany can manipulate the meridians.

Remember what is “taken out” are sub-noise signals of electromagnetic nature with molecular signal components that lie in the quantum level, and must be described by Heim's 12-dimension mathematical and according to Heim needs at least subspace X5-X6 of the total R12 dimensional space [7]. Using proper filters one has discovered, from the beginning of Resonance Feedback back in 1970 when Morell and Rasche started it all, that certain qualitative manipulations of the Field lead to certain predictable results:

- All pass filters makes all weak meridians more active, but with a cost: Abnormal meridian readings tends to get more abnormal, while patients complain the problems have gotten worse!
- Phase inversion fed through all pass filters makes overactive meridians “calm down”. Patients feel better. Like having taken a sedative.
- Selective phase inversion of unipolar signals (D for disharmonic) has a function similar to an anti-toxin that makes meridians influenced by toxins more normal. Effects much like an antidote to your disease. Patients feel better.
- Selective amplification of healthy bipolar signals (H for harmonious) activates body energy, activates all weak meridians without the problem of making symptoms get worse, like taking a “tonic”.

*XV: Meridians and the field information have vibratory nature explored by the signals from the field itself, up to 1 MZ by bio feed back. The information embedded in the signals can be understood in terms of frequency windows, phase angles, moving bandpass, wobble and amplitudes. The real significance of the information may be understood as both digital and analogue.*

By introducing low pass, high pass or band pass filters, after filtering one can “direct” energy to specific locations in the body, even to certain meridians or one meridian, although the signal is fed back to the whole field through lets say a foot, a hand, or a part of the back or in more extreme cases through one single point contact! Once the signal taken from the field is filtered and manipulated, the “tailored” signal will “find its way” to the part of the body the therapist so desires.

The saying: “...Take a healthy dose of your own energy” is a reality.

The measured frequency windows of each meridian is to be found in the Appendix 1 of the paper.

### 14. Behind the Scenes: Higher Logic

The use of filtering, phase inversion, signal manipulation and even use of more exotic techniques such as sweeping band pass: A part of the energy spectrum caught by a band pass that wanders up and down at a certain speed, has helped bioresonance-feedback researchers to understand some of the field-logic:

- Healthy body parts /organs /tissues /vessels/nerves/glands etc. emit coherent bipolar signals within certain frequency ranges called “windows”.
- When diseased the same sources emit additional unipolar, chaotic signals that are typical for the cause of the disease and the source that is affected.
- Healing takes place when the field identifies the chaotic unipolar signal, generates phase inverted mirror image of the disease signal and feeds it back to the diseased source. Phase inverted version of the “disease signal” add up to zero if properly tuned.

Field logic is thus based on body parts receiving and sending information through narrow frequency ranges (windows), phase angles and pulsations. Logic of the system as understood through the science of bio resonance-feedback seems like a simple binary logic: Either functioning or not functioning. However, when analyzing the data over years, simplicity is very soon lost. The overall logic is far more advanced; it is based on the principle of maximum cost/effective energy-production and utilisation relative to the environment, demands for activity, food supply and of course age, sex and overall health of the body. Disease is not a linear process from unhealthy to sick but goes through a series of stepwise adjustments. US researcher Paul Eck [28] has identified no less than 12 distinct steps: Three stable hyper-active states, three stable hypo-active states plus no less than six meta-stable states, where the body may end up either in a hyper- or hypo-active condition.

*XVI: Meridians and the field base interpretation of information on amplitude, frequency windows, phase angles and wave symmetry or absence of such. Signal mechanism on the cellular levels appears to be based on molecular quantum spin resonance phenomena*

## 15. Holographic Nature of Meridian System

Electronic analysis of the 12 bilateral meridians and their reaction to tuned bio-feedback signals (and other tuned signals) reveals the total holographic field and its status and the cause of the present state. The system is so effective that the USSR Space Agency has used this method of diagnosing their cosmonauts for several decades. It is currently marketed in the West as Prognos Diagnostic System and has to date been tested on 14 million test runs.

By using bio-feedback together with diagnostic similar systems like Prognos, we get a clear information of the following facts [29]:

- What part of the body is currently most “out of order” causing the field to react or adjust in a specific manner = the meridian whose energy is such that when its flow is corrected, all other meridians are corrected.
- Why that part is out of order, the very cause(s) of the disturbance = the substance(s) that gives off such signals that when phase inverted 180 degrees the causative meridian gets corrected when brought in contact with the signal.
- How that part influences the other parts = see point 1.
- What kind of signals must be fed into the disturbed part to adjust the whole field = see point 2.
- What kind of shift that takes place in the field after temporarily eliminating the disturbed part with proper signals = retest after feeding the most disturbed meridian with the phase inverted signals from the substances that are linked to cause.

As we do this we discover that having adjusted on imbalance (state), the whole field jumps to a new and more stable state that reveals a new cause-effect situation, much like peeling an onion.

Summing up we get a clear situation picture: The meridians are an important part of the field. They work as a secondary “nervous system”. They contain all together all the important frequencies in the field, whereas one meridian alone contains some of the information but is connected to all the other meridians plus that the energy in the meridian is influencing all the other meridians. How this is done is to be explained since each meridian works in its own frequency window, but a simple mechanism is proposed: The whole field gets informed by one meridian and then informs back to the other pathways.

## 16. Fractal Nature of Meridians

In a holographic field any part of the field contains all the information of the field. This is quite well documented in cases of so-called “sensitive people” who by merely holding their hand a few centimetres above any body part can “read the whole situation in the field“. Many groups teach such techniques today like for example Latin American psychologist Silva’s Ultra-mind courses or USA psychologist Joe Gallenberg’s sync-creation courses.

But if the field is holographic some degree of holography should be expected in the material construct of the body. The most striking of these holographic constructs must truly be the discovery of Chinese professor Yingqing Zhang who discovered the ECIWO system of points situated along the bones of the extremities, an abbreviation for Embryo Contained In Whole Organism, meaning a set of acupuncture points arranged such that they seem to form a map of a miniature human embryo on the surface of the whole body [30].

Similar system of “all of the body projected on a part of the body” is known to be located where the body “ends”: soles, palms, face, ears, scalp. These terminal area point systems have been known before in Ear-acupuncture, Foot Zone therapy, Hand Acupuncture, Facial Acupuncture and Scalp Acupuncture. The strange thing about the ECIWO system of the bones however is their fractal nature. Each bone from the upper arm down to finger have exactly the same repetitive patterns of points, point to a fractal pattern in the construct of the body: The same basic design repeating all over. When comparing it we see it all as a repetitive pattern of the segmental organism whose major structure is the spinal column with its end structures: The head and the pelvic.

The accuracy of diagnosing disease with the ECIWO system is stunning! In one experiment testing 1710 patients Zhang quotes  $p < 0.01$  for therapeutically effects varying between 81.3-100%, with average degree of success quoted 92.9% of problems investigated.

Zhang claims in his book *ECIWO Biology & Medicine* that the fractal nature of the body explains all of the meridian effects. The smallest area to diagnose and influence the whole as for cm is then undoubtedly the metatarsal of the second finger. This answers the question: How small a physical part on the body is needed to know the whole field, the answer is cca 8 cm, the metatarsi of the 2 finger of the hand. If including the ear, the next answer is to the question: What is part of the body giving that has the most detailed representation of the whole body? Equivalent to: Which material part in the field gives best access to the whole material part bringing forth the field? Equivalent to: Is there any substructure that has such a vibratory nature that is containing a complete, discrete map of the whole body? The answer is the ear-system known as ear-acupuncture:

*XVII: Meridians contain specific, unique measurable points that refers to certain set of structures. When studied in more detail each meridian along the limbs is composed of subsets with identical topology. Each subset of points refers (maps) the segmental nature of the axial being (head-spinal columna-pelvic). Subsets taken as a whole is thus of a fractal (repeating the same pattern) nature.*

Explaining these sub-systems of the body where one part contains information about the whole would take a whole day or two. But we end the story with a few thoughts to remember [22]:

- The ECIWO system of the bones of the extremities is a repetitive (thus fractal) representation (mapping), that is an isomorphic representation of the whole body in a manner similar to the axial skeleton (cranium, vertebral column and pelvis).
- When there is a disturbance in some part of the body that is innervated by a certain segmental level of the spinal column, the same energetic disturbance appears in the point of each ECIWO map along the bones of the extremities.
- In the ear the map of the whole is even more detailed. Disturbances are not only segmental, but are split into various sub-maps, each representing morphological sub-structures of the human body. On the ear there is thus a complete map of the muscle-skeletal system, the nervous system, the sense organs, the endocrine system, the vessels, the inner organs, and even parts of the brain!

All these complete sub-maps on the body surface cannot be explained in any conceivable manner by the traditional nervous system. There is not enough knowledge yet of the sensory pathways on the micro-level to explain these phenomena. However certain vibratory phenomena cast some light to the holographic nature of the

sub-systems. If signals are taken from the whole field, amplified and sent through an all pass filter, split into Disharmonic and Harmonic waves, inverting the Disharmonic, then pulsed and sent back to points on the sub-maps, the whole field responds!

Example: A man had his leg broken. He got a big scar tissue on the outside of his injured leg after the operation. This caused pain. When measuring the energy of the meridian it was found that the electrical activity of the gallbladder meridian point through the injured area was the cause of all the disturbances in the body. On the ear the point of the hip plus that of the gallbladder was disturbed. When sending energy there to these two points, not only did the pain get somewhat less, the gall bladder meridian got temporarily corrected. The signals sent to the ear were so weak that this could not be explained by current knowledge of the nervous system, however using the crystalline nature of connective tissue and the inter- and intra-cellular matrix things can be explained by wave theory, obeying quantum field properties.

## **17. Instead Conclusion: According to Rakovic and Heim**

Due to limited time my lecture stops here. The facts presented are based on mostly empirical data derived from what I do every day in my laboratory. The theoretical explanation is provided by various authors. The major understanding that binds all the pieces together has been provided by Rakovic's quantum-holographic theory of human energy-information system (related to acupuncture system and consciousness) and its implication for bio-energy [26].

The other contribution is provided by Heim's 12 dimensional unified theory (explains QT + macroscopic properties of space/gravitation and forces). According to this theory reality has four levels:

- Dimension  $X_1$  - $X_4$ : Material space + time (according to some clock).
- Dimension  $X_5$ : Structures or arrangement of events, when added time as a dimension forms a plane called the entelechial dimension.
- Dimension  $X_6$ : Is according to Heim the aeonic dimension.
- The remaining dimensions are non-material.

The outcome of the theory when adjusted to measurements is a 100% correct prediction of 100 known elementary particles, plus unification of Quantum Physics, Theory of Relativity as explained by Einstein and the laws of Newtonian physics. When this theory is added to Rakovic's theory of quantum holographic body-mind energy system we move into a territory where we are approaching a unified theory of the phenomena of man on several planes: physical, mental, spiritual. We are also approaching a "Weltanschauung" of a multilayered world: The seen and the unseen. This new concept/paradigm of existence may not be a support for a specific theory in the past. It may not be a support for a known ism. Instead it may be a blueprint for an exploration of reality: For once man's mind accept a belief system based on certain facts, new realities seem to start to manifest according to what we believe is possible. Not out of wishful thinking, but because we dare to chart new lands!

An another promising research direction related to human torsion fields is to be found in the Appendix 2 of the paper.

## **Appendix 1. Frequency Response of 12 Meridians using Body's Own Energy as Input**

In the Table below are presented the response charts obtained by Morell and Rasche using band pass filtering of the patients own unique field energy, extract from a hand-probe or foot-plate, then filtered by a band pass, then split into an amplified harmonious component, and an 180 degree phase inverted disharmonious component, that was then summed and pulsed with 7 seconds on and 3 seconds off. Using this set up and feeding the altered signal into the body on any part of the body, a unique response was attained from a specific meridian. The third column shows equivalent band pass filtrated signals from substances fed to the field, compared to a homeopathic dilution of the same substance!

Frequency window kHz	Meridian	Homeopathic potencies
0.01 – 0.025	Small Intestine	
0.025 – 0.050	Urinary Bladder	
0.050 – 0.10	Endocrine (3Heater)	
0.10 – 0.20	Gall Bladder	D3
0.25 – 0.50	Large Intestine	D6
0.50 – 1.0	Stomach	D8 (0.5-0.7) D10(0.7-1.0)
1.0 – 2.5	Heart	D12
2.5 – 5.0	Kidney	D15
5.0 – 10.0	Circulation-Sex	D30 (5.0-7.0) D60(7.0-10.0)
10.0 – 25.0	Liver	D100
25.0 – 50.0	Lungs	D200
50.0 – 100.0	Spleen	D400

## Appendix 2. Human Torsion Field

Each molecule in the matrix has an intrinsic spin and a wobble caused by the fact that we live in a sea of electromagnetism created by the earth, its biosphere (the living things immersed in the electromagnetism and gases of the atmosphere) and the influx from energies from the planets and the sun. Since sun and several planets have electromagnetic spinning fields their spin will create holographic spin field resonance in the biosphere. More and more scientists who deal with energy research in conjunction with biology are coming to believe that the energies, especially from the sun may be the major driving force behind all living beings on the earth [31]! Going along this road of reasoning spin fields must play a major part in creation.

Russian scientists have for several decades, going back to early 1980ies, been investigating spin fields, known also under the term: torsion fields. According to Akimov there are three distinct T-fields: E(electrical)-field, G(gravitation)-Fields and S(spin)-Fields. Common to the T-fields is the fact that they are “subtle”, not belonging to classical fields and cannot be shielded for [32]. They have a number of qualities: they move faster than light, more than 109 faster, they interact with material and biological objects and change their behaviour and affects local gravitation fields, and have thus been subject to military research as a method for antigravity propulsion.

Substantiated rumours have largely confirmed that such vehicles now exists at least in USA and been the cause of the UFO-sightings around the world.

The biological implication of T-fields is vast: They are generated within all living beings, cats, dogs, elephants, humans. They are emitted from all living things. They move at superlumious speed. They create holographic spin fields around things and beings, and beings interact with each other and things by selective coupling of spin-fields from other “generators”, “dead” or living, as has been shown in this lecture. Living beings influenced by a T-field is temporarily or permanently alerted as is shown by the Abrams-Voll effect and explained by Sturm-Aschoff experiments; to quote a few sources.

Living beings thus function as T-field “recorders” and what we emit is thus not something that rests with our free will; but also largely depends upon our field-environment. Studying various religions and their distribution over the globe makes one notice that various environments with their population structure, climate, geomagnetic patterns and life-forms have created various languages, belief-systems and religions in accord with the enviromental factors. Strangely enough, the only common with all religions are the importance of trances: Making shamanism with its trances the universal language of man. Seen from this angle, shamanism is the basic religion of man. It is not based on evolution, but simply upon ability to go into trance and there experience whatever is to be gained by a mind trained to transform energies into meaningful pictures and emotions.

Summing it all up, we may suggest this:

- Humans have a material form that reflects in the energy it produces.
- The field is a holographic, vibratory, torsion field with quantum physical nature.

- The field has 7 major centers related to the neuro-glandular centers of the body; previously known as “chakra system” of Asia.
- The field is also created by and reflected in a system of self-regulatory lines in the human matrix known as “meridians” in the Orient.
- The field and its various parts are influenced by and influence the function of the brain (thinking)/heart (emotion) electromagnetic system.
- The field is a partly open system which emits and receives information from the total environment and is a sum of a number of inputs. Not all inputs are accepted and absorbed; but certain “windows” related to survival of the entity.
- The torsion field emits signals faster than light containing information about electricity, spin and gravitation of the entity. It should therefore be possible to obtain information about an entity environment, body and thought if receiving these super-luminous 100 times faster than light signals!
- According to Heim’s Unified Field Theory, now proven in more than 100 special cases, the field is multidimensional. In the later Heim’s theory of 12 dimensions it is possible to account for physical dimensions, structure dimensions, information dimensions and intelligence information.
- According to Heim a part of the Field can survive the death of the physical part of the entity!

Summing up: Man and all animals, man in particular, is an energy being worth studying with the same intensity as today vested into studying material man. Since man is a partly open energy system with a wide range of self-regulatory sub-systems, we may sustain a stable life-form under various conditions. However, being partly open, the concept of a totally free will seems beyond any reasonable doubt impossible, since our “consciousness”, being “here”, is but a variable structure maintained in relationship to total environment plus whatever free will we have to counteract surroundings. Scientist philosophers as Heim clearly supports on a scientific basis determinism and not free will. This is open to debate!

Also study of the fields structure of the world and humans opens for supporting a growing evidence that matter is but a manifestation of energies and that part of the energies contained in a being can continue after its material counterpart is decayed and then “dead”. Field science thus seems to bridge into the realm previously reserved only for religion.

**Acknowledgements:** With this I thank professor Rakovic for his wonderful symposium. A truly renaissance man has risen in the East to bring more youthful explorer’s spirit into exploration of “reality as we may know it”.

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## BI DIGITAL O-RING TEST

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**Abstract.** Bi-Digital O-Ring Test (BDORT), or resonance diagnostics, is based on the resonance of electromagnetic waves, the phenomenon discovered by the famous physicist, a scientist of Serbian origin, Mihajlo Pupin. The idea to apply phenomenon of resonance in diagnostic purposes and to introduce it into medical clinical practice, came from Prof. Dr. Yoshiaki Omura, inventor of BDORT method. His research concerning the implementation of BDORT was highly indexed in the medical journal: Acupuncture & Electro-Therapeutics Research, The International Journal. In 1993 he received U.S. patent for an invention: Bi-Digital O-Ring Test for Diagnosis and Imaging of Internal Organs of a Patient, Patent no. 5,188,107. BDORT is non-invasive diagnostic and therapeutic method. BDORT mechanism is based on the change in muscle strength in the grip of the fingers, which is changing due to changes in activity of the enzyme N-acetyl-serotonin transferase and neurotransmitter serotonin concentration in the pineal gland, by activation of receptors for the resonance. Diagnosis takes on average 30-60 minutes, by using reference substances produced in Japan. Sensitivity and specificity of the data is estimated to reach 90%. All data got by BDORT, we try to confirm by standard laboratory and clinical tests. Due to the diagnosis of certain diseases before the onset of symptoms, many see this as a preventive method for early diagnosis and prevention of many chronic diseases such as endocrine (diabetes, thyroid disease...), neurological, rheumatic, gynecological, malignant, and others. BDORT is a method that combines knowledge from the scientific and complementary medicine. It is now the trend in the world of medicine to create so-called Integrative medicine, which should not only be a simple compound, but a new quality in the diagnosis and treatment. Applications of a BDORT: (i) Early diagnosis of many chronic diseases; (ii) Discovering the cause of many intractable diseases and their treatment; (iii) Detection and testing of appropriate drugs, determination of optimal doses and testing individual interactions (positive or negative) of drugs used to treat; (iv) Selective Drug Uptake Enhancement Method - a method which we refer drug to infected area, increasing the effect of treatment and reducing the harmful effects of drugs in the body; (v) Detection of intolerance and allergies (inhaled, nutritional, and contact allergens); (vi) Detection and localization of pathological changes in the body, particularly infections, the type and activity (viruses, bacteria...), which is difficult to diagnose with standard tests, especially in inaccessible parts of the body (central nervous system...); (vii) Detection and localization of toxins in the body (Autism, Alzheimer, MS, malignant diseases, rheumatic diseases, endocrine disorders, infertility and sterility...); (viii) Detection of toxins in the patient environment (apartment, food, clothes, makeup, hair dyes countries, children's toys...); (ix) Detection and evaluation of health effects of various types, primarily non-ionizing radiation in the environment: at home, workplace... (radiation from cell phones, computers, various electronic devices, radiation of base stations, power stations, geopathogenic radiations...); (x) Accurate detection and localization of acupuncture points and acupuncture channels, etc.

**Keywords:** BDORT, resonance, diagnosis, EMFs, intractable diseases

# BIOENERGY, BIOFIELD, AURA: WHAT KIND OF ENERGY THEY ARE, AND WHETHER IT IS POSSIBLE TO MEASURE AND TO VISUALISE THEM

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**Abstract:** There are a variety of doctrinal descriptions of the bioenergies and biofields in different AM systems, which are expressed in different terms and vocabularies, because their origins belong to the different culture traditions. This variety of doctrinal descriptions leads to the irreconcilable differences between the different AM systems, as well as between the majority of them and actual science. However, the supporters of some AM systems exert a trend to express the contents of their doctrines using the terms and vocabulary of actual science. In this way, they facilitate the beginning of a dialog with actual science, as well as the reaffirmation of many serious scientific investigations of the phenomena in alternative medicine, which are accomplished during last almost five decades on the periphery of the actual science. In the further, it will be considered the variations of AM doctrines which manifest an interest to establish a dialog with actual science by accepting the terms and vocabulary of actual science, independently on the manner by that the doctrine content is expressed. The main objective of this paper is to show that a small effort will help to achieve consensus on the terminology used in the AM doctrines with scientific terminology. This will help to terms with the same name means the same, although we cannot expect that it will obviously speed up the convergence of doctrine and scientific views about the AM phenomena. Nevertheless, this progress can be expected because the large difference is between felt and measured bioenergy, between seen and photographed. Therefore, the attention is devoted to experimental techniques that allow any type of detection or visualization of the *subtle entities* of alternative medicine (bienergy, biofield, aura). For reasons that will be later explained, particular attention will be devoted to the PIP (*Polycontrast Interference Photography*) imaging, which is the unique real time imaging technique. Certainly the most important result of the application of PIP imaging system is the visualization of the energy changes in the human aura, which may be due to bio-energetic, or any other AM therapeutic treatment. It should be noted that the PIP system provides information that enables qualitative analysis but not quantitative analysis of the bio-energetic phenomena. In addition, it is recommended as a diagnostic tool also. However this recommendation must be accepted very cautiously, as will be discussed later.

**Keywords:** *bioenergy, biofield, aura, absorption, emission, spectrum, electromagnetic, field, coherence, PIP, imaging*

## 1. Introduction

The penetration of the Eastern traditional medical systems, which belong to the alternative medicine, into the Western medical practice has induced the arising of many other alternative medical systems, where only a part of them are officially accepted. Anyone of these alternative medical systems, as well as anyone of the Eastern traditional system, is based on its particular doctrine, that role is to give theoretical explanations of the applied medical system. It is evident, even on the first sight, that the most fundamental concept in the theoretical doctrines of practically all traditional, as well as new alternative medical systems (AM system in the farther) concerns some particular subtle energy. Therefore, all these AM systems could be joined to the energy medicine, what means that alternative medicine is in fact part of the energy medicine. This subtle form of energy is known under different names in different AM systems, such as vital force, life force, etheric energy, orgone, odic force, Qi, Ki, Prana, Mana, Doshas, homeopathic resonance, etc. The AM practitioners believe that illness results from disturbances of the corresponding subtle energy and their therapy is believed to act to reinstate health by

correcting energy imbalances, because the unperturbed flow and balance of subtle energy is necessary for maintaining the health.

Nevertheless, mentioned set of AM system dealing with bioenergies could be divided in two subsets. The AM systems which belong to the first subset have rigid persisting doctrines, what means that although their vocabulary belongs to the far past, it remains unchanged and therefore completely inappropriate for any reasonable communication with the actual medicine and science. On the other side, to the second subset belong the AM systems which have flexible doctrines, which means that they accept (at least!) to express their content using the terms of the contemporary science, although their meanings are misinterpreted. In this way, these AM systems manifest an interest to establish a meaningful dialog with actual science that is always useful for both of the parts.

There are numerous attempts to translate the Eastern traditional theory on the language of the actual science, although it is evident that it is not possible to translate the esoteric explanation written a few thousand years ago on a language of the contemporary science [Uritam 1975]. For example, let us mention the attempt to explain the basically properties of five elements as a manifestation of the particular energies: warm, soft, cool or slippery energy [Dong 1998]. The Eastern five element or yin yang theory is in some sense the gnosis, expressed in terms and vocabulary of metaphysic. Therefore, although there are no suspicions that Eastern medical tradition is very effective in some medical areas, and therefore accepted as alternative medical treatments in the Western medicine, remain a lot unanswered questions and suspicions about the theoretical explanations of the origin and fundaments of the oriental medical methods.

## 2. Physical and Pseudo-Physical (putative) Energies

If one take into account that have been identified almost 100 different bioenergies, corresponding to as much different culture traditions and local putative medical systems, it could be easily understood the actual situation in alternative medicine. Therefore there is a variety of doctrinal descriptions of the bioenergy in different AM systems, which are expressed in different terms and vocabularies, because their origins belong to the different culture traditions. This variety of doctrinal descriptions of the bioenergy, being the fundamental entity of any AM system that uses it, leads to the irreconcilable differences between the different AM systems, as well as between the majority of them and actual science. In the further the differences between the actual science and the most popular AM systems will be considered only.

Taking into account the properties of the energies that they use, the medical systems or subsystems, alternative and official as well, could be divided in two sets. The first is the set of official medicine subsystems which deal with physical, measurable energies (mechanical, thermal, magnetic, electric and electromagnetic energy). There are many established application of these energies to diagnose or to treat diseases (magnetic resonance imaging, ultrasound, pacemakers, radiation therapy, magnetic therapy, sound waves therapy, millimeter waves therapy, light therapy, etc.). To the second set belong practically all traditional AMS systems, as well as some relatively modern AM systems (homeopathy, neural therapy), where all of them deals with pseudo-physical (putative) energies (bioenergies in further).

Although there has always been an interest to detect the variety of bioenergies by the physical equipment and to describe their properties using the terms and theories of modern physics, the supporter of the majority of the traditional AM doctrines claim that they are too subtle to be measured by any scientific equipment. This means that the unique *equipment* for this purpose is the sensitivity of some human being – extrasens having particular abilities to see or to feel the bioenergies. However, if the bioenergies could not be measured by scientific equipments, it means that the essential truth concerning their properties is inaccessible for *ordinary* human being. Such a truth belong to the scope of metaphysics, having the contents which are inaccessible for the human being, because there are behind the endmost border of the mind and scientific borders, which are always determined by the scope of the scientific experiments. In other word, the claim that some bioenergy is out of the scope of science, means that it is metaphysic entity. Therefore any statement concerning the properties of a bioenergy perceived in this manner is not the announcing of a usual human cognition, but a promulgation that is reserved for Prophets only, because they could reach up the contents belonging to the scope of metaphysics. Belief that the

therapists of some AM system have supernatural ability, often described by the science vocabulary, creates confusion that causes theology to be mistaken for science.

In this chapter will be mentioned and shortly discussed the statements and data concerning the bioenergies, which are either obtained in the scientific experiments, independently of its origin, or if they are expressed in terms of actual science. In the second case it is necessary to take into account that the majority of the modern versions of the traditional doctrines, being assigned as *scientific*, contain confusing and mystical concepts which, and that is only novelty, are expressed using the vocabulary of actual science mostly with false interpreted terms. However, it should be mentioned that the majority of the papers and books devoted to the AM systems and their doctrines bring the hypothesis and the experiment results concerning the physiological correlates of the therapists, what means that the object of the investigations was not the therapy itself and their effects, but the particular physiological and physical properties of the therapists.

- Kirlian photography, accidentally discovered in 1939, which is the photo-imaging of the gas discharge in a high-voltage electric field, remains up to now days very often assigned as a crucial scientific evidence of the aura and biofield existence, although it is many time repeated that what is recorded is due to natural phenomenon, depending on the known way of the known quantities: electrical field, ionized gas, moisture and temperature. Namely, if a photo is taken in the vacuum, where ionized gas and moisture are not present, Kirlian image does not appear [Hines 2003]. The differences between the Kirlian images taken before and after energetic therapeutic treatment [Oschman 2000], which could be explained in a same way, are relatively new argument of the supporters of the still persistent belief that the bioenergy field of each living being extends beyond the surface of the body and generates an aura. Although the Kirlian corona, previously assigned as aura, is misinterpreted in alternative medicine, my opinion is that should not be ignored its importance in the history of energy medicine. It shows that any life system, due to its evident electric properties, interacts with the external electromagnetic field and that interactions depends on external ambient conditions (air electric properties, air moisture, pressure, temperature). These facts has indicated that the starting points in the scientific investigations of the AM systems, which belong to the energy medicine, must be the energetic properties of human body and the influence of the external fields on them.
- In the measuring during the non-contact therapists were found body-potential of negative polarity ranging from 4 V to 190 V [Beal 1996], while the temperature of the therapist emitting palm is decreased comparing to the temperature of his contra lateral palm [Tanaka et al., 2001].
- Measurements taken during the therapeutic touch sessions, show that gamma radiation levels markedly decreased during the sessions at every body site of 100% tested subjects and It has been hypothesized that this is consequence of the self-regulation energy process within the body and the surrounding electromagnetic field, induced, as it was assumed, by the body's primary gamma emitter, potassium-40 (K40) [Benford 2001]. It is known that the measuring of the human skin properties are not reproducible, and therefore they could not be accepted as the scientific acceptable. Namely, the results of these measuring depend on some factors their influence on the results could not be predicted and controlled. Let us mention, for example that the measuring of the electromagnetic quantities strongly depend on the skin moisture that depends on some uncontrollable factors (the psychic state).
- Concerning the mechanism of the therapeutic touch healing, it should be mentioned the studies which show that energy fields from one person can interact with energy fields of other people. When one person touch another one, the touch is registered on the second person's electrocardiograph and electroencephalogram [Russek 1996], what is accepted as evidence that energy fields from one person can interact with energy fields of other people. Bioenergy healers and their patients often report that they feel prickly skin, localized skin temperature increases and energy flowing through their bodies and hands during healing sessions. These subjective sensations may have some physical correlate in unusually high surges in body potential (electrostatic charge build-up and release) that have been measured from some healers.

- Elmer Green and his associates constructed a room with electrically isolated copper walls and then placed subjects in the room on an insulated platform that isolated them from electrical ground [Green et al.1991]. The body potential surges measured from experienced mediators did not exceed 4 volts, while the frequency of these surges increased during therapeutic sessions.
- Numerous studies indicate that attentive humans can mentally influence living systems. The range of systems affected runs the gamut from groups of cells [Baumann et al, 1985] to whole animals [Grad1965] and human subjects [Braud & Schlitz 1991; Benor 2001].
- At the end let us mention the biophotons, firstly introduced 1922 by Alexander Gurvich, which, as it was assumed, serve as the main communication means and regulator of all life processes. There are the experiments which demonstrate that separated living cells by quartz glass are still able to communicate vital cell information by biophoton transfer [Rubik 1993]. Biophotons are constantly released and absorbed by the DNA in every cell, tissue and organ within the body [Yanagawa 2000]. Their emission have been demonstrated in many species, with a spectrum ranging from infrared to ultraviolet – from 200 nm to 900 nm. However, there are not the differences between the role of these biophotons and the electromagnetic waves (EMW in the further) of the previously mentioned biofield (human energy field).
- Although it was not mentioned, the listed experiments data concerns the bioenergies used in different AM systems, because the therapist of different systems have been included in the realization of the these experiments. On other side, it is worth to note that the Kirlian images have been used as scientific proof of the existence of a few bioenergies in some traditional AM systems, which have metaphysical doctrines. This is curious because to accept the proof of this type is same as to accept that the corresponding bioenergy is not putative, but physical electromagnetic energy. Finally, it should be also mentioned that are omitted all bioenergies which have not be investigated in some partly or completely relevant experiments, like Sheldrake morphogenetic field and the torsion electromagnetic field, where both of them, as it was postulated, that convey information without transmitting energy.

### 3. The Influence of External Radiation on Human Body

Let us consider the results of the scientific investigations of the influence of the EMW on live beings. All results which will be mentioned in the further are taken from the references [Ismailov1987] and [Presman 1968], where Presman is known as founder of *Electromagnetic biology*, which has three main parts: influence of the external electromagnetic radiation on live beings, the influence of the electromagnetic processes on the processes in live beings and mutual electromagnetic interaction of live beings.

The live beings, as well as all parts of the human body, including the cell parts, have particular electric properties which are very important in the maintaining of all vital activities. The biomolecules (macromolecules), the proteins, cell membranes and many other more complicated biostructures are electric dipoles, because they have asymmetrical distribution of the electric charges. The intercellular liquid is an electrolyte, the electric charges (K and Na ions) permanently migrate through the cell membranes, as well as the nervous electric impulses are permanently driving along the neurons in all parts of human body and, finally, there is not a process in the human body in which the electric properties could be neglected. Contrary to this, the experimental data show that the magnetic properties of all these systems and subsystems could be completely neglected.

The influence of EMW on the live being, especially on the human body tissues, is determined by the frequency and energy of waves, as well as by the electromagnetic properties of irradiated tissue and the proper frequencies of its parts, cells and macromolecules. Namely, any brief exertion of the electric field on the charged part of the macromolecules or cells enforces their proper oscillations with corresponding proper frequency that is determined by the mechanical properties of these oscillators. In Table 1 are given the proper frequencies of some biostructures, free water molecules and linked water molecules, i.e. the molecules which are, due to the dipole-dipole interaction, linked to the biostructures, like it is the cell membrane.

Free water molecules	$10^{10}$
Linked water molecules	$10^8 - 10^9$
Polar phospholipide head in cell membrane	$10^9$
COO-, NH3 and other functional groups	$10^{10} - 10^{11}$

Table 1.:The proper frequencies of water molecules in some biostructures (Hz)

The permanent exertion of the oscillatory time dependent electric field, like it is the electric field of the electromagnetic wave, enforces any oscillator to oscillate with the frequency of the electric field (forced oscillation). The maximal amplitudes of these forced oscillations are in the case of resonance, when the frequency of the electric field is equal to the proper frequency of the oscillator.

All irradiated human tissues absorb the EMW energy, but not equally, because the absorption depends on the electromechanical properties of tissue and on the EMW frequency. This is illustrated in Fig 1 that represents the absorption spectrum of DNA components and DNA itself (absorption is in relative units).

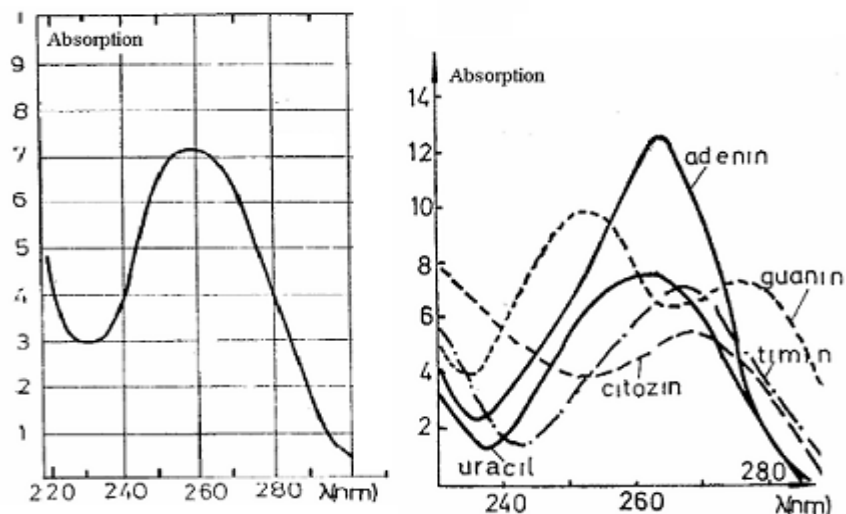


Fig. 1.: The asorption spectrum of DNA and its components

Frequency (Hz)	Wave length (nm)	The same dimension has:
$10^8$	$10^9$ (=1m)	Human body
$10^{10}$	$10^7$ (=1cm)	Some glands
$10^{12} - 10^{14}$	$10^3 - 10^1$	Cell
$10^{14} - 10^{16}$	$10^1 - 10^2$	Molecule, Amino acid
$10^{16} - 10^{19}$	$10^{-2} - 10^1$	Nucleus

Table 2: The correlation between the wave length of absorbed EMW and the system dimension

The absorption spectrum is a particular inherent property of any system, alive or not, that determines how it absorbs the different parts of the spectrum. As it can be seen, DNA has the maximum of absorption for EMW having wavelength 260 nm. This means that the EMW having the frequency of about  $10^{16}$  Hz exerts the most intensive influence on the processes in DNA. It is worth to note that the order of magnitude of that wavelength is of the same order as the magnitude of DNA. However, this is not a curiosity, because it is, in some sense, a general rule: the most intensive influence of the EMW on a particular system arises when the magnitude of the EMW wavelength and the dimension of the system are of the same or near order, as it is shown in Table 2.

The main role in the process of absorption of EMW in human tissues has the water. Thus, as it can be seen in Table 3, water absorbs 90% - 98% of the total absorbed energy in tissue if the frequency of the EMW is  $10^{10}$  -  $10^{11}$  Hz. However, this energy is not absorbed by free water molecules, but by the water linked water molecules. These linked water molecules are dominantly responsible for absorption of EMW that results in thermal heating of the human tissues. The rest of the totally absorbed energy, i.e. the non-thermal absorption, is a resonant absorption that is consequence of the resonant interaction of the electric field with the intrinsic tissue oscillators.

Frequency (Hz)	$10^9$	$10^{10}$	$10^{11}$
Wave length (cm)	$10^1$	1	$10^{-1}$
Photon energy (ev)	$10^{-5}$	$10^{-4}$	$10^{-3}$
Absorbed energy by water	50%	90%	98%

Table 3: The absorption of EMW energy by water into human tissues (cm)

The absorption decreases the penetration depth of the EMW in tissues. As the absorption rate depends of the properties of the absorber, therefore the penetration of EMW is different in different human tissue, as it is shown in Table 4.

Frequency (Hz)	$10^8$	$10^9$	$10^{10}$
Wave length (cm)	$10^2$	$10^1$	$10^0$
Photon energy (ev)	$10^{-6}$	$10^{-5}$	$10^{-4}$
Skeen	3.8	1.6	0.19
Fat tissue	20.5	6.4	1.1
Muscles	3.45	1.5	0.31
Bone	22.9	11.9	0.34

Table 4: The penetration depth of EMW into human tissues (cm)

It is important to note that the penetration depth of EMW waves which frequency is in the range  $10^8$  -  $10^{12}$  Hz, which are verified to have the most intensive influence on live systems, are absorbed in dermis, what means, consequently, that they cannot affect the processes in the internal somatic structure of the human body.

As it was mentioned above, the most intensive influence on the biological processes in live systems have the EMW which frequencies are in the interval from  $10^8$  Hz (wavelength 1m) to  $10^{12}$  Hz (wavelength 0.1 mm). As it can be seen in Fig. 2, these EMW belong to the invisible part of the spectrum that is between the far infrared and FM waves. The irradiation of the tissues with EMW having the frequency from about  $10^8$  Hz increases the tissue temperature, what means that these EMW dominantly exert the thermal influence on the human tissues. Dominantly because besides these thermal effects, the non-thermal effects are present as well, induced by the resonant and non-resonant, that means selective, interaction of the cell membranes, proteins, biomolecules and other functional groups with the electric field of EMW.

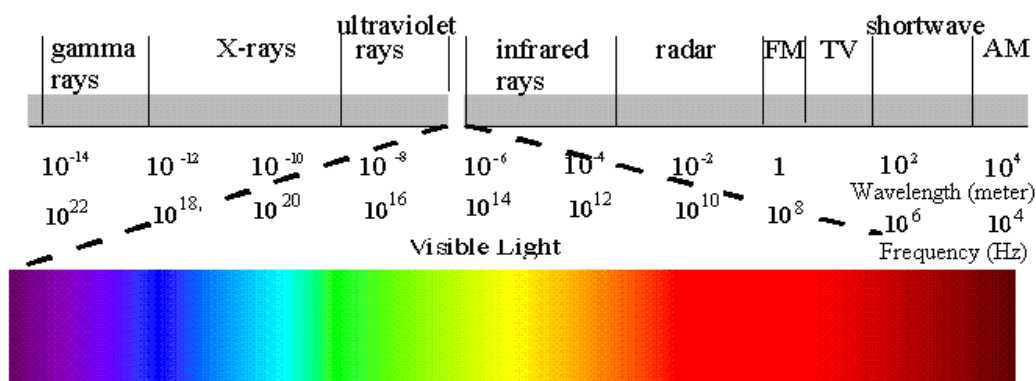


Fig. 2.: The spectrum of EM waves

The non-thermal influence of EMW on human tissue, as it is confirmed, does not depend on the energetic properties of the EMW, but on its wave properties (frequency, modulation frequency, etc.). Finally, it is important to note that the photon energy of the EMW-s which frequencies belong to the biologically relevant range from  $10^8$  to  $10^{12}$  Hz do not exceed  $10^{-12}$  eV, what means that in the tissues irradiated with these waves could not arise the quantum processes, like photo inactivation, photo denaturation or photo destruction, that changes the structure and function of the biomolecules.

The collected experimental data shows that the most important influence on the biological processes have the non-thermal and low-energy EMW. Thus, the irradiation of the neuron with EMW, with frequency in the range  $(1,5-4,5) \times 10^{11}$  Hz, being modulated by the sinusoidal wave with frequency in the range (1-20) Hz, during 20 minutes could decrease the threshold potential and amplitude of the nervous impulse from 30% - 90%. The irradiation of the human brain with the same waves provokes the migration of calcium ions  $^{45}\text{Ca}^{2+}$  from neurons.

#### 4. The Bioenergies: Many Names for a Unique Electromagnetic Energy

As it was asserted, the doctrines of many AM systems imply that the main properties of bioenergy are: it is tight connected with life itself, it is dynamical quantity that vibrates, it is subtle and therefore inaccessible for the scientific equipments.

However, as it was mentioned previously, these assertive statements are going to change, because a numerous experimental data, which are obtained in the scientific measurements of the energies, that means EMW, are accepted as relevant proofs that bioenergy really exists. This, first of all, is a direct agreement that the bioenergy is accessible for the scientific equipments and, more precisely, that bioenergy is in fact the energy of the quite usual EMW! In other word, bioenergy = energy, and biofield = electromagnetic field.

Of course, there are yet many rigid supporters of the traditional doctrines, which do not accept these conclusions, first of all among them the most crucial conclusion that the bioenergy is accessible for the scientific equipments. Nevertheless, they accept, because it is their assertion, that the bioenergy vibrates, i.e. it changes in time and space. This means that it is the energy of some biowaves, very subtle biowaves but waves. As any other waves, these subtle biowaves have some frequency range and therefore a corresponding place in the spectrum presented in Fig 2. Strictly speaking, that frequency range is not presented on that figure, because it contains the frequencies of the non-subtle waves which are accessible for the scientific equipments. Consequently, their place in that spectrum could be somewhere on the left side only, that corresponds to the extra high frequencies, because on the right side there is no place - the most low frequency is 1 Hz. The energy of the corresponding photons (biophotons) of these biowaves will be extremely large (at least  $10^7$  eV), higher of the energy of gamma radiation, and therefore they will be very danger and destructive. In other words, if the biowaves are such or similar, it will be very healthful to be in or near the nuclear reactor, what is out of mind.

These facts are not given to assert the statements that the biowaves do not exist at all. Of course, there are many experimental evidences, they exist, but they are not some particular form of waves, because all their known properties show that they are EMW.

There is one possibility more: to accept that biowaves are the EMW, because there is no other real possibility, but to refuse to accept that they are accessible for the scientific equipments, what means that they have extremely low intensity. It is possible, but even in that case their existence could be indirectly confirmed by the investigations of their effects during the therapeutic sessions. This must be carefully considered, because, as it was mentioned in the previous part of this paper, the most important influence on the biological processes have the non-thermal and low-energy EMW-s. Even more, there are experimental data which show that the devices which emit the EMW with extra low intensity of about  $10^{-20}$  W/m<sup>2</sup>, have impressive therapeutic effects [Sit'ko & Mkrtchian 1994].

## **5. The Human Energy Field (HEF) and Personal Aura**

As it was mentioned previously, the absorption spectrum is a particular inherent property of any system, alive or not. Thus, all human tissues, as well as all cells and cell parts absorb the EMW of different frequencies and therefore have different absorption spectrum pattern, because its form depends on the physical and chemical properties of the corresponding physical or biological structure. Therefore the absorption spectrum is, in some sense, the unique fingerprints of the corresponding system that can be used not only to identify it, but also to determine its composition (structure).

Besides the absorption spectrum, all physical and biological systems have the emission spectrum as well. Namely, the accelerated movement of any charged particle generates the electromagnetic wave that consists of alternating electric and magnetic field. This is valid for the movement of all ions in the human body, as well as for the restricted movement of charged subgroup in the complex biomolecules. Therefore, practically all parts of the human body, all organs, all cells and all cell parts as well radiate the EMW of different frequencies which form the emission spectrum of the human body. This spectrum, as well as the absorption spectrum, is inherent system property that is an unique fingerprint of the corresponding system. Even more, there are strong similarities between these spectra (emission and absorption), because the peaks of the absorption and of the emission are on same place in the spectrum, i.e. the EMW which are mostly absorbed, they mostly emitted as well. This similarity is noticeable in the case of the line spectra, which are characteristic for the chemical elements and simple structures, because the absorption lines associated with a given system occur at precisely the same wavelengths as the emission lines. Both sets of lines bring the same information about the composition of the system.

Every cell, cell part, tissue and organ within the body emits radiation with a spectrum ranging from infrared to ultraviolet [Konev et al 1966; Yanagawa 2000]. It is evident that the human body radiation, as well as the emission spectrum of any live system, depends on the all internal metabolic and physiological processes, which are followed by any energy transformation. On other side, the experimental results [Cohen & Popp 1997] show that it depends on the state of health, time of day and time of the year. Finally, the emission spectrum depends on the penetrated external radiation, which is the most important external cause of the spectrum changes. The mechanical and chemical means could alter the emission spectrum also. It is experimentally confirmed [Salin & Bridges 1981] that there are similarities between emissions from mechanically injured plant and root tissue and emission from leukocytes in animals, what is consistent with the increased oxidative metabolism of wounded tissue as the tissue responds to the injury. Namely, the EMW radiation from plants was detected also, which is between 400-1000 nm, i.e. it belongs to the deep red and near infrared part of the spectrum [Creath & Schwartz 2005]. It is worth to note that injuring of plants leads to more intensive emission. For example, more radiation is emitted from mechanically wounded plant parts [Salin & Bridges 1981], as well as from plants stressed with poison [Gu & Popp 1992].

The cited experimental data, as well as the most non cited relevant results, which could be accepted as scientific ones, strictly speaking could not be considered as data which give a real explanation and description of the human body radiation spectrum. Namely, the human body is not a simple aggregate of cells, tissues or

organs. It is a coherent and consequently nonlinear system [Scott 1996] and, therefore, its properties could not be derived by the analysis of the properties of its parts – structural elements. This means that the properties of the human body radiation spectrum could not be derived by the analysis of the radiation of its cells, cell parts, tissues and other structural elements. As it was mentioned previously, it is correlated with the:

- Physical, chemical and biological properties of its internal structure elements (cells, cell parts, tissues, organs), because different elements emit EMW of different frequencies and therefore they have different radiation spectrum pattern.
- Physiological and metabolic processes in which these elements are included, because different processes leads to the different energy changes, followed by the radiation of different EMW.
- Interference processes of the plenty of different EMW emitted from the internal sources, which mutual interference determine the distribution of the energy of the electromagnetic field in the human body, as well as the radiated energy (EMW) in the surroundingg.
- The external radiation (electromagnetic field), which penetrates into human body and interacts (resonant interaction) with the internal structural elements and enforces them to emit EMW.

Therefore the human body radiation spectrum is, in some sense, its unique dynamical *personal spectrum identity card*, which is usually assigned as *personal aura*:

- Personal aura is determined by the interaction of the endogenous and exogenous field, where the first one is the electromagnetic field produced by the interference of EMW emitted by sources within the body (internal electromagnetic field), while the second one is produced by the interference of EMW emitted by sources outside the body (external electromagnetic field).
- Each personal aura is unique, because there are not two live system, which have identical radiation spectrum.
- Personal aura only partially reflects the properties of endogenous electromagnetic fields (HEF), because its properties are strongly impacted by the exogenous radiation, which has weak influence on the endogenous field, due to its small penetration in the human body.
- Personal aura is a dynamical energetic halo, because the variations of the internal and external circumstances affect its electromagnetic structure.
- Personal aura depends on the internal physiological and metabolic processes and changes, and therefore it can be used for diagnostic purposes.

## 6. The Measuring and Imaging of the Human Energy Field (HEF)

There is very little relevant data on measurements of HEF and aura. If one excludes the previously mentioned measurements of biophotons [Rubik 1993, Yanagawa 2000], because they relate to emissions emanating from the cell and its components, in literature one finds only a single relevant data of HEF and aura measurements [IPCS, Ref. 15], according to which the human body emits electromagnetic fields at frequencies of up to 300 GHz at a power density of approximately  $0.003 \text{ W/m}^2$ .

It is much more experiments devoted to the visualization of HEF or aura, where, methodologically speaking, two approaches stand out. In the first approach the image of aura is obtained directly, using non-contact and real-time recording of the human body or body parts. In the second approach the drawing of aura is generated, by a computer processing of the collected data, which are obtained by measuring some physical parameters, on some parts of the body. We will consider only methods that belong to the first approach, in what will be the focus of the PIP imaging method.

*Kirlian imaging method:* This method, which is partly described previously, is the first real time imaging method based on the direct recording of some parts of the human body (fingers), without subsequent processing of the obtained images., However, the subjects (finger) is placed in the unnatural conditions on a photographic plate, which is electrically isolated and positioned above an aluminium electrode, while the another electrode is connected to the subject. The resulting image, which is burned onto the photographic plate, is described as life energy, or (shortly) aura. The serious problem of this imaging method is the interpretation of the obtained image.

Namely, in fact, it represents well known and scientifically described corona discharge effect. On other side, there are not acceptable evidences that it depends on the health state of the object (finger => body), i.e. that it represents a human aura.

*Infrared photography:* The third real time imaging method is based on the direct recording of the human body, without subsequent processing of the obtained images. More precisely, the human body is not placed in the unnatural conditions, tied in some circuits, or exposed to some fields. An infrared photography, which is usually taken with a conventional camera which uses infrared sensitive film, shows the heat radiation from the human body. This radiation is certainly part of the aura, but the aura contains radiation that cannot be registered in this way as well.

*Polycontrast Interference Photography (PIP):* The fourth real time imaging method is based on the direct recording of the free human body, with subsequent processing of the obtained images. Free human body means that it is not placed in the unnatural conditions, tied in some circuits, or exposed to some fields. The unique example of this method is PIP imaging method [Solomon J. & Solomon G. 1998], introduced by a British inventor Harry Oldfield. Strictly speaking, this method can get pictures or video clips of the total electromagnetic field, which arises as superposition of electromagnetic waves emitted by the human body and the ambient electromagnetic field in which the body is. More precisely, PIP imaging method use a full-spectrum light to produce the interference effects. The person being scanned is against a white background screen (white paper, canvas or wall). The picture is taken with a video camera, which is connected to a computer. The computer software will display the interference image of the bioenergy field which interacts with full spectrum lighting. In fact, the image taken by a digital camera is processed by a particular software program, which converts RGB colors pixels to indexed grayscale palette with 256 shades of gray, where each pixel has an index, which corresponds to its brightness (index 0 corresponds to black and 255 to white). On other side the program has a prepared color palette, which has 256 artificially designated colors<sup>11</sup>, which are grouped together according to Oldfield's system of correlating levels of brightness with levels of energy balance in organisms. This indexed grayscale palette is then replaced by this artificially palette, where the intensity of the each color is determined by the intensity of the corresponding gray shade. The final result is an image visible on the computer screen, buttons configured in the form of bands of color and light. As we don't distinguish grey-scales well, the PIP image can show up subtle contrast gradients and highlight useful data in human body, which are not visible for naked human eye. It is reasonable to assume that in this way become visible some differences in the shades that the human eye cannot register. However, taking into account the way of transition from the grey pallet to the color pallet, it is difficult to determine which colors on the screen correspond to the invisible ones.

In each PIP image of the human body the following three areas clearly can be distinguished:

- The area which is relatively far from the body, where does not reach the body radiation, represents an ambient electromagnetic field picture. The separated visible bands indicate the existence of some intereference effects (interference bands) of the waves of ambient field.
- The second is the area which is directly to the the body, which is usually misinterpreted as a personal aura. In fact, it is a result of superposition (interference) of the ambient field waves, body radiation waves and the ambient field waves which are reflected by the body. It is important to note that in this area the direction of propagation of the body radiation waves mainly lies in the plane of the image, so few stretches in the direction of the camera. The deformations of the above mentioned interference bands near the body (in the aura area) is an indirect indication that the body has an aura. However, it could not be recognized, because these deformations are result of the superposition of the mentioned 3 types of waves. Therefore, there is (in some sense) an evidence that aura exists, but it could not be separated and seen on PIP image.

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<sup>11</sup> The image processing technique of applying a colour scale to monochrome data is known as *false color technique*.

- The third area is on the surface of the human body itself, which is, as in the previous case, a result of interference of the ambient field waves, body radiation waves and the ambient field waves which are reflected by the body. However, in this case the direction of propagation of the body radiation waves mainly lies in the plane which is orthogonal on the plane of the image, so they mostly stretches in the direction of the camera. Therefore, this is the area in which the impact of the body radiation waves on the interference image is most pronounced. This area of the PIP image is the most important achievement of the PIP imaging system, although it is questionable how the colors on the image are linked to the energy states of the human body and its parts.

There are statements that PIP method is error prone, since little changes in object's may produce strong changes in image colors [Leskovar et al, 2003], which changes could be misinterpreted using Oldfield's diagnostic system as a indication of a health problem. However, this can be understood as a critique of the diagnostic interpretation of PIP image, instead of as a critique of the PIP imaging method itself. Namely, the PIP image registers all time changes of the person position, as well of the energies (electromagnetic waves) which can be seen on it. If one takes into account the impact of small changes in the direction of waves on the interference picture, it is not unexpected that small position changes of an object can cause visible changes in image of the field in its vicinity, as well as on the object itself. Such changes are registered by the camera on the real time image, and therefore they must be accepted as an undeniable reality. On other side, the remarks that these changes could be misinterpreted using Oldfield's diagnostic system, do not concern the validity of the PIP imaging method itself. In fact this means that the correlation of colors on PIP image with the energy balance or state of a person should be (probably), partially revised and reinterpreted. However, there is no doubt that this problem can be resolved through careful empirical analysis of sufficiently large number of PIP images.

Finally, it should be mentioned the snide comments that PIP image animates the unanimated objects, because the image of inanimate object is colored and has an aura, like the living objects. However, different parts of an inanimate object are different colored, because of their different physical and chemical properties. Namely, the PIP image of each inanimate object represents, besides other, the interference of ambient waves, the waves which are emitted by the object and the waves which are reflected from its surface. As the properties of last two types of waves depend on the physical and chemical properties (chemical composition, homogeneity, shape, surface color) of the object, different objects are differently colored as well as aura must be present also.

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# THERMOVISUAL MONITORING OF YOGA NIDRA PRACTICE

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**Abstract.** *Yoga nidra* is a state of sleepless sleep where one is on the borderline between sleep and wakefulness. During this practice occur physiological changes in the body such as: deep breathing and reduction in the oxygen requirements of the body as a consequence of the reduced metabolic rate; both systolic and diastolic is reduced, as well as the heartbeat; there is a dampening down of the sympathetic activities of the body and the lactate level in the blood. Some research shows also a skin temperature changes during suggested heat in hypnosis. The aim of our experiment was to measure the skin temperature changes during *yoga nidra* practice. Methodology: The digital thermovisual camera Wohler IK 21 and SnapView Pro v.2.1. software package were used to measure the changes of maximal skin temperature at the acupuncture *Yintang* zone of one experienced yoga practitioner. Results show the temperature changes only when the practitioner practices *yoga nidra*, but smaller oscillations in sleep state, as well as changes in accordance with subject of instructions. We conclude that increase of the temperature at the end of practice could explain the better circulation and some benefits of this relaxation technique.

**Keywords:** *yoga nidra, thermography, thermal imaging, skin temperature, relaxation*

## 1. Introduction

Yoga is a set of practices with aim to achieve the physical and mental balance. To get the maximum benefits of yoga one has to follow practice of *asanas* (prescribed postures), *pranayamas* (breathing techniques), *yoga nidra* (relaxation technique, meditation) and *mantra* (meditation with chanting). Regular practice can help to achieve ability to consciously control autonomic or involuntary functions, such as temperature, heartbeat and blood pressure. Research shows that yoga produces measurable physiological changes in the body, including a decrease in the respiratory rate and blood pressure. It improves physical fitness and circulation, and it could be the reason of temperature changes.

*Yoga nidra* is a state of sleepless sleep where one is on the borderline between sleep and wakefulness [1]. Practice of *yoga nidra* systematically soothes away tensions at physical, emotional and mental levels [2]. In this state, one can develop inner awareness and make a contact with the subconscious and higher consciousness. In psychology the state between the states of waking and dreaming is called the *hypnagogic state*. It lasts 3-5 minutes, and is characterized predominantly by alpha waves brain activity. In *yoga nidra* an intermediate platform of alpha wave predominance and total relaxation is developed between the beta predominant wakeful state and the slow delta rhythm pattern of deep sleep [3]. Other physiological changes which occur in the body are: reduction in the oxygen requirements of the body as a consequence of the reduced metabolic rate - there is slow, deep breathing; the blood pressure - both systolic and diastolic is reduced, as well as the heartbeat; there is a dampening down of the sympathetic activities of the body and the lactate level in the blood. Some research shows also a skin temperature changes during suggested heat in hypnosis [4].

The practice is comprised of several stages:

1. Preliminary physical relaxation
2. Breath awareness
3. Sankalpa

4. Rotation of awareness with Aum
5. Intensification of feelings
6. Story visualization
7. Sankalpa
8. Externalization of consciousness and end of practice.

It is recommended for beginners to use the tape with voice of narrator's directions. Later, one can practice alone. This is a relaxation technique, done in *Shavasana*, in lying position. It relaxes the whole body and one could feel the cooling effect during the practice. That is the reason why the body is usually covered with blanket during the practice of *yoga nidra*.

*Infrared Thermography* is the technique that uses an infrared imaging and measurement camera to "see" and "measure" invisible infrared energy being emitted from an object. Infrared radiation is not visible because its wavelength is too long for the sensors in our eyes to detect. This part of the electromagnetic spectrum the human sensors perceives as heat. Everything with a temperature above absolute zero emits infrared electromagnetic energy. The higher the temperature of the object, the greater frequency of the infrared radiation emitted. The Infrared camera allows us to see this emitted radiation. It converts emitted radiation into a two-dimensional visual image and displays this on a standard monitor [5].

## 2. Aim

The aim of this paper was to measure the skin temperature changes during *yoga nidra* practice.

## 3. Methodology

One experienced yoga practitioner was followed in two days experiment of thermovisual monitoring of *yoga nidra* practices. The room conditions were the same in both measurement periods: indoor temperature - 23°C and relative humidity - 64%.

The practices were performed in lying position, body covered with blanket. For this experiment we used *Yoga nidra* tape with Swami Sivamurti Saraswati's instructions, part 3.

The period of photo monitoring was 132s. The time interval was defined as average 8 periods of relaxed breathing cycles. One zone of interests was detected: the area of the frontal expression of *ajna* chakra, the "third eye" location or in acupuncture one of extra points named *Yintang* (Figs. 1, 2).



Figure 1. *Yintang* (Extra point)

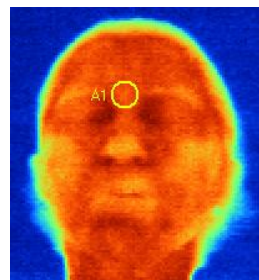


Figure 2. Thermogram - *Yintang* zone of interest

The digital thermovisual camera Wohler IK 21, with resolution of 128x128 pixels, screening time 15s and sensitivity of 0.1°C has been used for a thermovisual recording. Its working mechanism is based on no cooled germanium thermoelectric in line detector. Chosen camera itself has an integrated infrared optics, IR radiation detector, a monitor and data storage card. It forms a thermal image by measuring IR radiation of a certain body part. Recorded thermograms have been processed using SnapView Pro v.2.1. software package, which has enabled processing, thermogram analysis and reports creating.

The software performs a correction during the conversion of thermal image into a thermogram, that represents an approximation of the exact body temperature and temperature distribution on the skin surface. The camera has a wide temperature interval (0-350°C). Images are displayed on the LCD color screen, with a 10.2cm diagonal. Temperature distribution of a recorded surface is represented by variety of colours. The warmest body parts are displayed in white colour, medium temperatures in red and yellow, while blue presents cold surfaces.

A chosen yoga practitioner has been properly prepared according to the thermography recording protocol. The basic conditions were satisfied: the room temperature was maintained in the comfort zone (23°C), relative humidity (64%), the subject spent 30min at room temperature before experiment, without taking any food or drugs that may affect bloodstream and blood vessels.

Standard clinical thermographic practice stipulates a skin surface temperature difference of 0.5°C or greater as an indication of a physiological significant change [5]. Differences higher than 0.5°C are significant in clinical meaning [6].

#### 4. Results

Two measurement series results of maximal skin temperature show differences higher than 0.5°C (Table 1). In the second experiment subject slept from the half of practice and didn't have consciousness of instructor's voice (Fig. 3). The maximal temperature in both experiments shows some similarities. There is the difference from maximal temperature measured at the beginning and at the end of practice and it shows an increase (1.5°C) in first experiment.

Table 1. Skin temperature distribution in *Yintang* zone at first and second measurement

	$X_{\text{mean}} \pm \text{SD}$	$X_{\text{min}}$	$X_{\text{max}}$	Range
Yoga nidra 1	$36.07 \pm 0.44$	35.20	36.60	1.40*
Yoga nidra 2	$35.45 \pm 0.28$	35.20	36.00	0.80*

\*Significant temperature difference

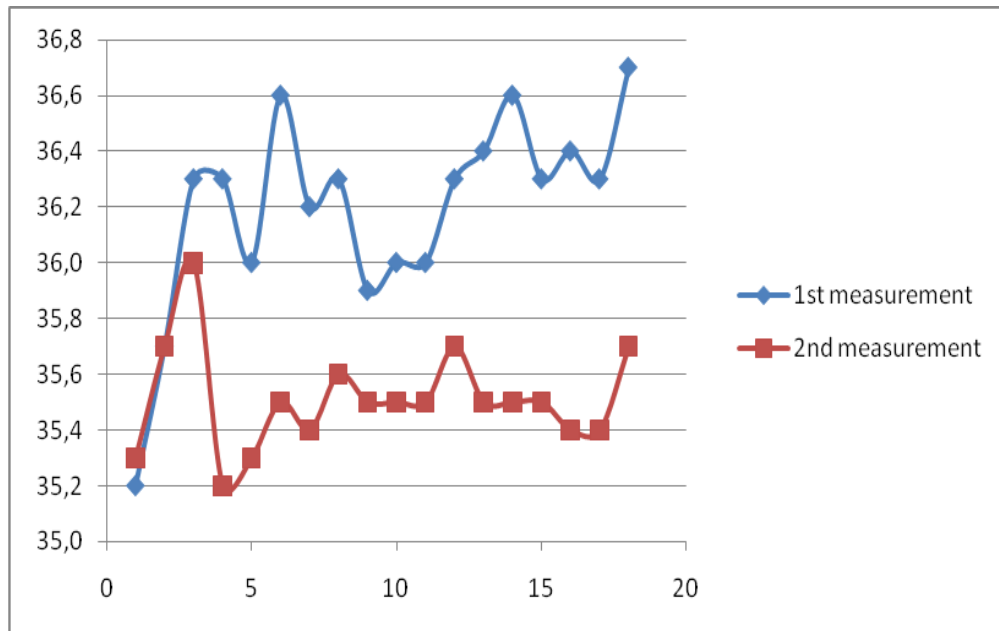


Figure 3. Distribution of maximal temperature in *Yintang* zone during yoga nidra practices

The analysis of temperature changes in correlation to instructions shows that during the breath awareness skin temperature increases, as well as in rotation of consciousness at the left side of the body, heat sensation, lightness sensation, pain sensation, breathing through center between eyes, spine and chakras visualizations and externalization of physical sensations. The maximal temperature decreases during the instructions in rotation of consciousness at the right side of the body, visualization of big body parts, cold sensation, visualization of important person, lotus flowers visualizations (Fig. 4).

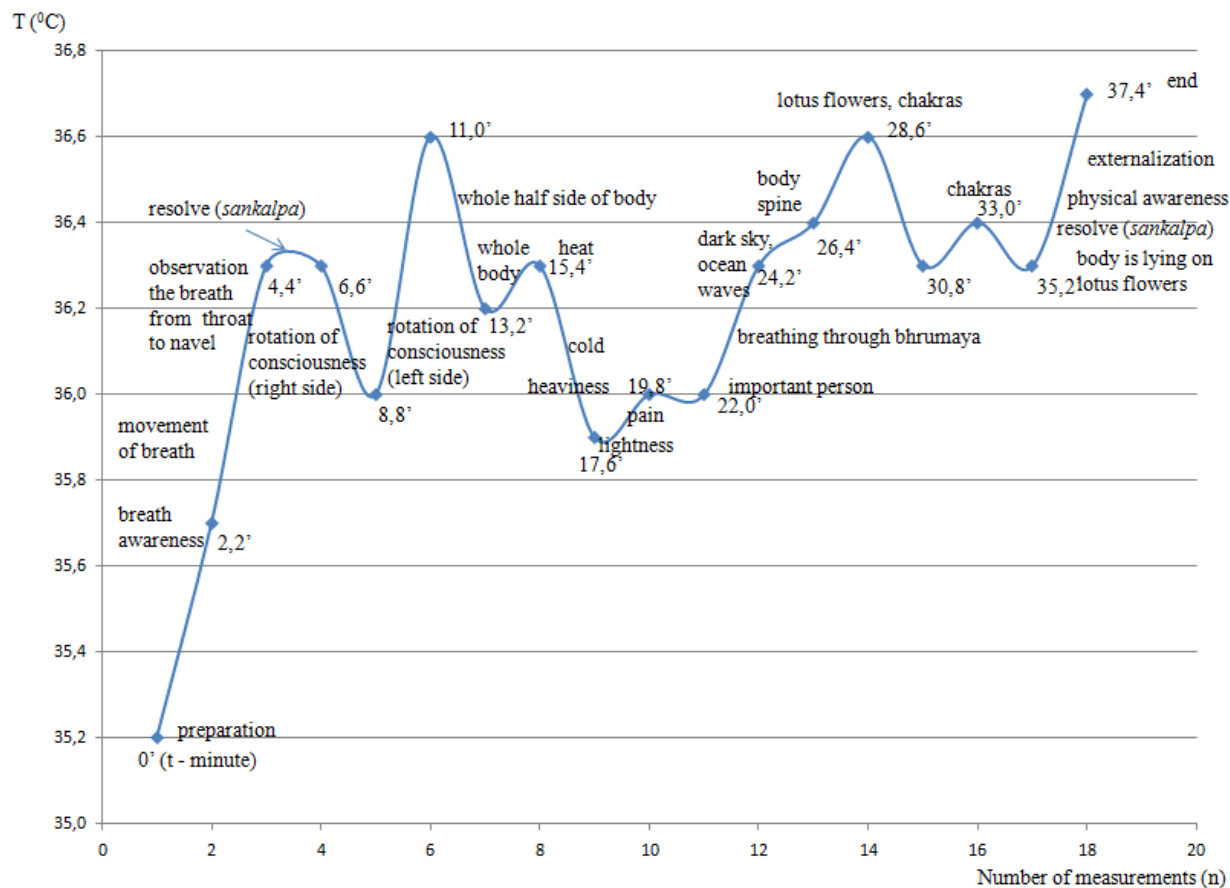


Figure 3. Correlation between skin temperature and narrator's instructions during yoga nidra

## 5. Discussion and Conclusion

Temperature changes show the difference between *Yoga nidra* practice and sleeping state, when the temperature oscillations are smaller and do not follow the instructions. Increase of the temperature at the end of practice could explain the better circulation and some benefits of this relaxation technique such as: pain reduction, rejuvenation of the body and mind, regulation of blood pressure, removing of psychological blocks and deeper perception.

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# SKIN CONDUCTANCE PSYCHO-PHYSIOLOGICAL CORRELATES OF NOVEL HOLISTIC TRANSPERSONAL DIAGNOSTICS AND HEALING

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**Abstract.** The subject of this paper are biofeedback skin conductance (SC) psycho-physiological correlates of novel transpersonal diagnostics and healing, applied to 9 volunteers with more or less significant psychosomatic problems, at the beginning and during next few months consecutively, in order to make control of extended effects of the treatments. SC was measured in order to get data about autonomic nervous system excitability during process of healing. The obtained pilot results might be interpreted in terms of non-verbal holistic transpersonal psychosomatic communication, revealing holistic interaction of acupuncture system/consciousness (of healer) and vegetative nervous system (of volunteers).

**Keywords:** *transpersonal diagnostics and healing, non-verbal holistic psychosomatic communication, psycho-physiological correlates, biofeedback skin conductance measurements*

## 1. Introduction

Nowadays it becomes more and more acceptable and appropriate to search for and receive the treatment for various diseases throughout holistic healing methods. Holistic approach to health requires the integration of body, mind and spirit (Schrauth, 1992 in Bednarowski et al, 1994; Raković, Škokljev, Djordjević, 2009). Spiritual healing comes from the belief that we all belong to the natural energy of the Universe, whereas the healer is a person who is channeling that energy for the wellbeing of others (Patterson, 1998). Among the first results from the research in this field, were the data obtained by Brennan (1988), who as a researcher at NASA found scientific proof of human energy field (commonly called aura). The importance of prayer for Mind/Body Healing is emphasized in all times. Praying is a practice present in all faiths, by all people. Saying prayers for another person is a form of praying called intercessory prayer, and as such it can be done for a person in close proximity or someone at great distance. These prayers transcend time and space, but the effects stay the same, even though the people receiving it do not know others are praying for them (Dossey, 1993; Byrd, 1988, in Madeline 2004; Schlitz, 1997, in Madeline, 2004; Harris et al., 1999; Cha et al., 2001; Lebovici, 2001).

The skin conductance response, also known as the electrodermal response (and in older terminology as "galvanic skin response", GSR), is the phenomenon that the skin momentarily becomes a better conductor of electricity when either external or internal stimuli occur that are physiologically arousing. Arousal level tends to decrease when a person is sleeping and high in activated states such as rage or mental workload (Yerkes and Dodson, 1988). Because many different kinds of events can elevate your skin conductance (strong emotion, a

startling event, a demanding task, etc.) it is impossible for an outsider to tell what made your galvactivator glow unless you participate in a highly controlled experiment (Stevovic and Stokic, 2011). Due to relatively simplicity of measurement and a quite good repeatability, GSR can be considered to be useful and simple method for examining autonomic nervous system function, specifically the peripheral sympathetic system.

## 2. Materials and Procedures

### 2.1 Objective

Objective of this experiment was to measure skin conductance response changes during novel transpersonal diagnostics and healing, comprising elements of on-line radiesthesia-like transpersonal diagnosis and control of Reiki-like and prayer-like transpersonal healing (Bedričić, cf. <http://agencijaizis.com>).

### 2.2 Subjects

Sample comprised of 9 adults with more or less significant psychosomatic problems, at the beginning and during next five months consecutively, in order to make control of extended effects of the treatments.

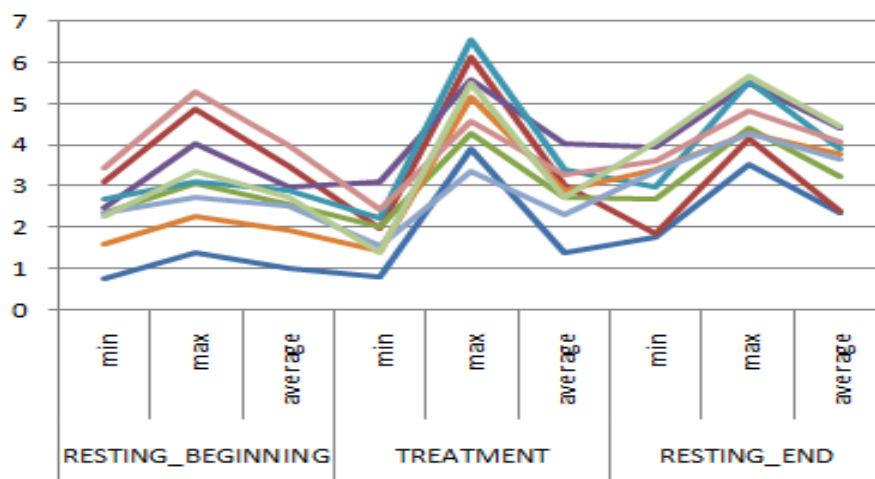
### 2.3 Procedures

Subjects were sat in a comfortable position in quiet room. Two electrodes for skin conductance (SC) measurement (Biofeedback – ProComp 2, Thought Technology) were placed on lower surface of second and fourth finger of the subdominant hand. Resting period (3 minutes) was measured first. Second part of experiment was healing process. Third part was measurement of SC during resting state at the end of experiment. In the next 5 months procedure was repeated and process of healing was measured in order to get possible extended effects of the treatments. Average skin conductance amplitude was recorded and analyzed offline.

## 3. Results

Fig. 1 shows the amplitude value of SC for 3 periods in: resting state (beginning), treatment process, and resting state at the end of experiment. We can see that there is an increase in SC during period of treatment and resting state at the end of experiment, when compared to resting period at the beginning.

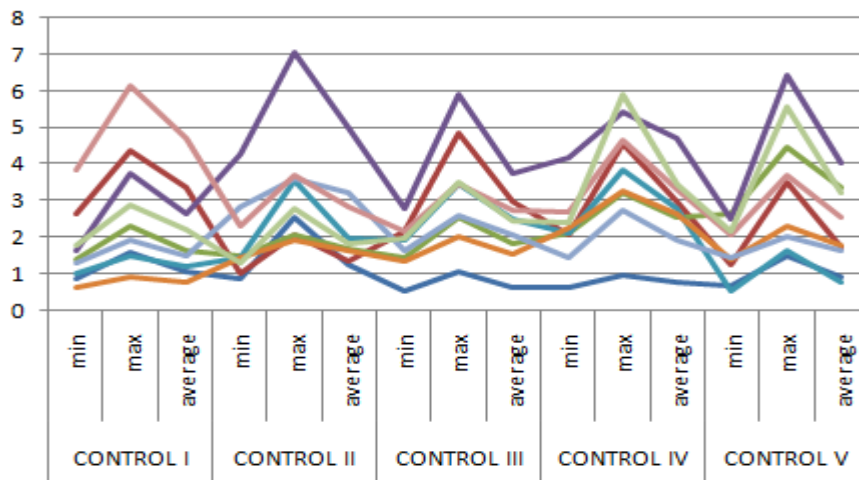
ANOVA (SS4.0756, df2, MS2.0378, F7.33, P0.01) test showed statistically significant differences between three periods with increase during treatment and resting period at the end of experiment when compared to resting period at the beginning.



**Figure 1.** SC measurements during first healing session.

Fig. 2 presents results of SC measurements during 5 consecutive months of treatment. We can see quite homogenous results with no statistically significant differences between each of the 5 experimental situations in 9 subjects.

ANOVA (SS2.4028, df4, MS0.6007, F1.07, P0.39) test showed no statistically significant differences between 5 control recordings during 5 consecutive months of treatment.



**Figure 2.** SC measurements during five consecutive months of healing sessions.

In both Figures there are differences between minimal and maximal values, but they cannot be interpreted properly due to sensitivity of autonomic nervous system to either external or internal stimuli and they must be observed as a measure of entire process of healing (average value).

#### 4. Conclusions

The subject of this paper is non-verbal holistic psychosomatic communication in novel transpersonal holistic diagnostics and healing, applied to a pilote groups of 9 volunteers with more or less significant psychosomatic problems, at the beginning and during next few months consecutively. Skin conductance response changes were measured in order to get data about autonomic nervous system excitability during process of holistic healing, showing statistically significant differences during first holistic healing session (but with no differences among each other during 5 consecutive months of control holistic healing).

The obtained pilot results during first holistic healing session might be interpreted in terms of non-verbal holistic transpersonal psychosomatic communication, revealing holistic interaction of acupuncture system/ consciousness (of healer) and vegetative nervous system (of volunteers).

In further, these investigations are extended to another pilot group of 30 volunteers, with monitoring EEG psycho-physiological changes, to explore holistic interaction of acupuncture system/consciousness (of healer) and central nervous system (of volunteers), which is the subject of another paper reported in QIM 2011 (Bedrićić et al, 2011).

**Acknowledgement** – This research study was supported by the Ministry of Science and Technological development of the Republic of Serbia under project no. 178027. The authors are indebted to Marija Bedrićić, for her participation in transpersonal diagnostic and healing experiment, as well as to all our volunteers.

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# EEG PSYCHO-PHYSIOLOGICAL CORRELATES OF NOVEL HOLISTIC TRANSPERSONAL DIAGNOSTICS AND HEALING

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**Abstract.** The subject of this paper are EEG psycho-physiological correlates of novel transpersonal diagnostics and healing, applied to 30 volunteers with more or less significant psychosomatic problems, at the beginning and during next few months consecutively, in order to make control of extended effects of the treatments. EEG was measured in order to get data about central nervous system excitability during process of healing. Also, a health state questionnaire is organized in order to collect data about how participants perceive different areas of their well being. The obtained pilot results might be interpreted in terms of non-verbal holistic transpersonal psychosomatic communication, revealing holistic interaction of acupuncture system/consciousness (of healer) and central nervous system (of volunteers).

**Keywords:** *transpersonal diagnostics and healing, non-verbal holistic psychosomatic communication, psycho-physiological correlates, EEG measurements, health state questionnaire*

## 1. Introduction

Holism is a term very frequently used in alternative or complementary practices, and within the healthcare system it can only be interpreted in relation to an individual's perception of holism (Patterson, 1998), which requires the integration of body, mind and spirit (Schrauth, 1992 in Bednarowski et al, 1994). Among the first results from the research in this field, were the data obtain by Brennan (1988), who as a researcher at NASA found scientific proof of human energy field (commonly called aura). She describes this field as a manifestation of universal energy which is involved with human life. Healing of this kind is focused on balancing of energies within the energetic centers and allowing the incoming energy to continually flow from one center to the other. The balance in these energetic centers can easily be disturbed by negative thoughts and feelings, which if accumulated can occur as physical illness in the particular area where the imbalance is. The importance of prayer for Mind/Body Healing is emphasized in all times, transcending time and space, with effects staying the same, even though the people receiving it do not know others are praying for them (Dossey, 1993; Byrd, 1988, in Madeline 2004; Schlitz, 1997, in Madeline, 2004; Harris et al., 1999; Cha et al., 2001; Lebovici, 2001).

Our previous investigations demonstrated that EEG may be applied to monitor psycho-physiological correlates of different states of consciousness (Raković et al, 1999; 2009). Particularly interesting is the alpha rhythm, which refers to EEG activity within the 8–13 Hz range. In healthy adults, alpha activity typically has amplitude between 10 and 45  $\mu$ V, and can be easily recorded during states of relaxed wakefulness, although

large individual differences in amplitudes are not uncommon (Niedermeyer, 1993). Topographically, alpha rhythms show their greatest amplitude over posterior regions, particularly posterior occipito-temporal and parietal regions. The physiological role of alpha rhythm remains largely unknown. In recent years alpha synchronization has been described during information processing (Cooper et al., 2003; Klimesch, 1999). Further complicating the physiological interpretation of alpha, emerging evidence indicates that different alpha sub-bands may be functionally dissociated, in particular with increasing task demands (Fink et al, 2005). Specifically, in cognitive tasks, lower alpha (e.g., 8–10 Hz) desynchronization (suppression) has been associated with stimulus-unspecific and task-unspecific increases in attention demands (e.g., Klimesch, 1999). Upper alpha (e.g., 10–12 Hz) desynchronization, on the other hand, appears to be task-specific, and it has been linked to processing of sensory-semantic information, increased semantic memory performance, and stimulus-specific expectancy (Klimesch, 1999).

## **2. Materials and Procedures**

### **2.1 Subjects**

Thirty adults with mean age of 40 and more-less developed psychosomatic disorders participated in this experiment. No subjects used any medications that may influence EEG signal at the time of experimental procedure.

### **2.2 Procedure**

During the experiment the subjects were placed in a comfortable sitting position in a sound isolated room (quiet room). Participants were sitting in the chair surrounded by the white non-transparent curtains, and they were watching black square on the white background. The first part of the each experimental recording consisted of the recording period named „resting period“ for 5 min during which they had a task to visually fixate a black square on a white background. Participants were asked to minimize their movements (eye blink, head and limbs movement) as possible in order to eliminate artifacts in raw EEG trace. All EEG recordings during healing process were conducted at the beginning, then two months and sixth months later. The treatment itself comprises holistic energy work in which energy is used to increase personal energy and energetic balance. Health questionnaire, specially designed for this research, has been organized in order to collect data about how participants perceive different areas of their well being.

### **2.3 EEG recording**

EEG was acquired using the Nihon Kohden Corporation, EEG 1200K Neurofax apparatus with Electrocap (model number 16 755) International, Inc., Ag/AgCl ring electrodes filled with electro-conductive gel, providing 16 EEG channels. Electrodes were positioned according to the 10/20 system in longitudinal, bipolar montage. Additional EOG electrodes were used in order to register horizontal and vertical eye movements and disk electrodes for detection of jaw muscle movements during recording session. Also ECG electrodes were placed on the lower surface of both hand wrists in order to get heart rate. The reference electrode was set to A1 and A2 (ear lobes) and C3 and C4 creating longitudinal bipolar montage. Resistance was kept below 5k $\Omega$ , lower filter was set on 0.53 Hz and upper filter on 35Hz. Sampling rate was 256 Hz. According to International 10/20 system of electrode positioning following cortical regions are covered: Fp1-Fp2 (frontopolar), F3-F4 (mid frontal), F7-F8 (inferior frontal, anterior temporal, frontal-temporal), T3-T4 (mid temporal), T5-T6 (posterior temporal), C3-C4 (central), P3-P4 (parietal), O1-O2 (occipital), Fz (frontal midline central), Cz (vertex) and Pz (parietal midline). Odd numbers represent left hemisphere and even numbers right hemisphere.

### **2.4 Signal analysis procedure**

Fast Fourier Transform (FFT) was used in order to separate Alpha band from the raw EEG trace and to divide it into 5 ranges – 8 Hz, 9 Hz, 10 Hz, 11 Hz and 12 Hz. First task in signal analysis was to choose artifact-free epochs. Before computing FFT each epoch was multiplied by an appropriate windowing function (Hamming

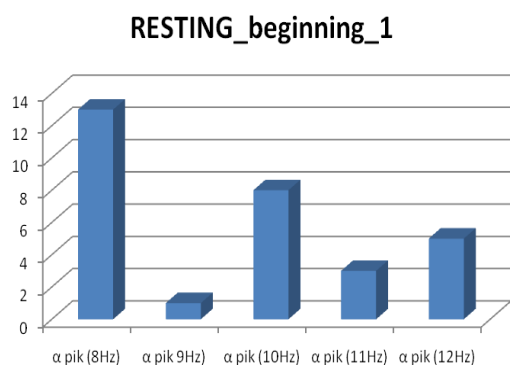
window was used) in order to avoid border problems (leakage). Then FFT was computed in order to get spectrograms of selected artifact-free epoch of resting state at the beginning of the experiment, then period of diagnostics, then treatment, and finally resting state at the end of experimental procedure. Alpha sub-bands were further analyzed by determining the amplitude peak of each sub-band in order to get one peak and to follow its shifting during each epoch. Amplitude value was statistically analyzed in order to determine statistically significant differences (Student's t-test) among each epoch. In addition, cortical shifting of Alpha sub-bands peak was analyzed.

### 3. Results

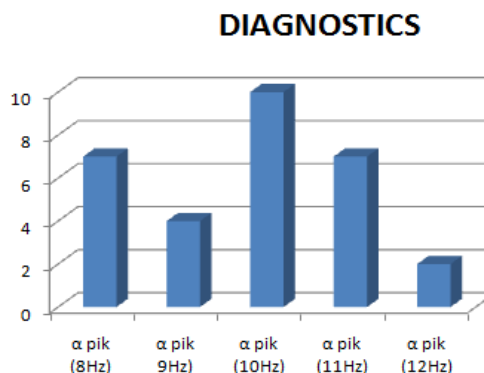
#### 3.1 Distribution of EEG Alpha band

Figs. 1 represents EEG alpha band distribution during selected resting epoch 1, before periods of holistic diagnostics and treatment. We can see alpha band distribution, divided into 5 sub-bands (8 Hz, 9 Hz, 10 Hz, 11 Hz, and 12 Hz). Most of the Alpha sub-bands were in the range of 8 Hz and 10 Hz.

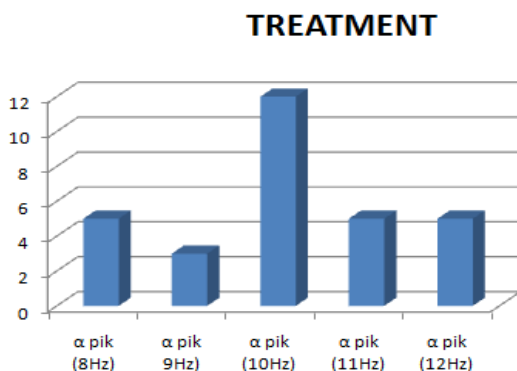
Fig. 2 represents EEG alpha band distribution during period of holistic diagnostics. We can see an increase of the 10 Hz alpha sub-band with a decrease of the 8 Hz sub-band when compared to resting epoch 1 from the beginning of the experiment, when no influence by the healer was present. But, no statistical differences were found between diagnostic period and resting epoch 1 ( $t = 0.658$ ,  $p = 0.516$ ,  $P = 0.484$ ;  $t = 0.092$ ,  $p = 0.928$ ,  $P = 0.072$ ).



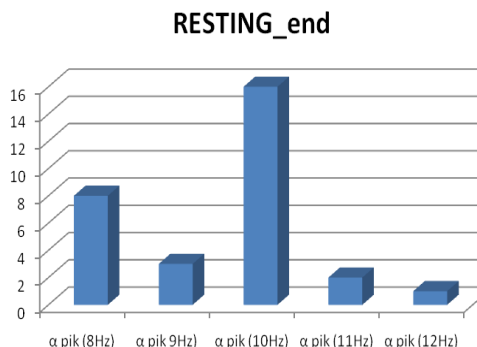
**Figure 1.** Distribution of EEG alpha band during resting period 1 at the beginning



**Figure 2.** Distribution of EEG alpha band during holistic diagnostics



**Figure 3.** Distribution of EEG alpha band during holistic treatment



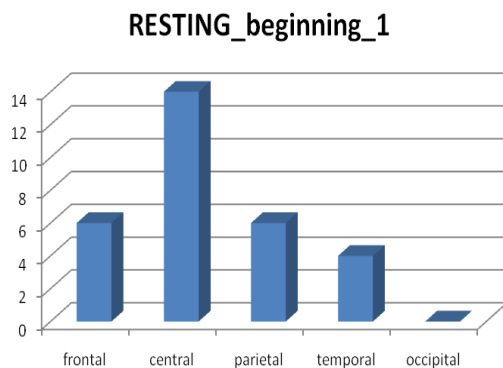
**Figure 4.** Distribution of the Alpha band during resting period after treatment

Fig. 3 represents EEG alpha band distribution during period of holistic treatment. We can see an increase of 10 Hz alpha sub-band and a decrease of all others when compared to holistic diagnostic period and resting epoch 1. Statistically significant differences were found between holistic treatment period and resting epoch 1 ( $t = 1.861$ ,  $p = 0.073$ ,  $P = 0.927$  with confidence of 92.7%), but between holistic treatment period compared holistic diagnostic period no significant differences were found ( $t = 1.223$ ,  $p = 0.231$ ,  $P = 0.769$ ;  $t = 1.087$ ,  $p = 0.286$ ,  $P = 0.714$ ).

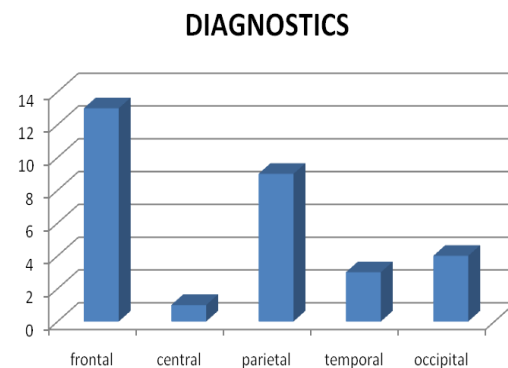
Fig. 4 represents EEG alpha band distribution during resting period after holistic treatment. We can see decreases of 11 Hz and 12 Hz alpha sub-bands. Statistically significant differences were found between resting state after holistic treatment and the treatment period itself ( $t = -2.169$ ,  $p = 0.038$ ,  $P = 0.962$ ).

### 3.2. Cortical localisation of EEG alpha band

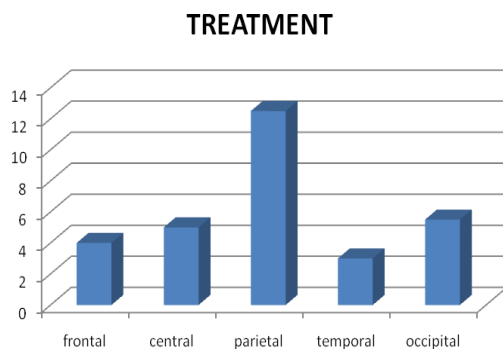
Figs. 5-8 represent cortical re-distributions of EEG alpha band. We can see that during resting epoch 1 alpha band peak is localized in central and parietal cortical regions. During holistic diagnostics there is a decrease of the alpha band in central regions and an increase in frontal regions compared to resting epoch 1. During holistic treatment there is return to parietal alpha band localization and this form remains during resting state after holistic treatment.



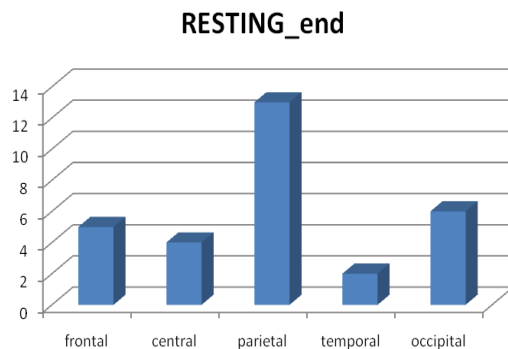
**Figure 5.** Cortical localisation of EEG alpha band during resting period 1 at the beginning



**Figure 6.** Cortical localisation of EEG alpha band during diagnostics



**Figure 7.** Cortical localisation of EEG alpha band during treatment



**Figure 8.** Cortical localisation of EEG alpha band during resting period after treatment

### 3.3. Health survey data analysis

In this survey a sample of 30 subjects (23 female and 7 male), with mean age of 40 years, participated in the study of effects of holistic energy work aimed to increase personal energy or to establish energetic balance in the

body. For the purposes of this study the questionnaire was designed and entitled Health Survey, which contains 32 statements about various psychosomatic complaints that a person can at some point in their life feel. Participants were asked to rate (from never to always) how often do they feel some of these symptoms, and then to indicate the intensity of symptoms they feel (high, medium and low). Since the Health Survey questionnaire was given only in the beginning of the research in order to scan their initial state, the data can be used only for describing the participants, and not as originally intended for monitoring the effects of treatments that are conducted on them. As a general answering tendency in all participants, it is observed that they mark the intensity of the symptoms present as low or medium (except in cases where they didn't respond anyhow). These data tells us important information about individuals in the sample, which with regard (because of the nature of introspective data) we could say belong to normal population. More details on the questionnaire will be given elsewhere (Bedričić et al, 2011b).

#### 4. Conclusions

The subject of this paper is non-verbal holistic psychosomatic communication in novel transpersonal holistic diagnostics and healing, applied to a pilote groups of 30 volunteers with more or less significant psychosomatic problems, at the beginning and during next few months consecutively. EEG changes were measured in order to get data about central nervous system excitability during process of holistic healing, showing some statistically significant differences between holistic healing session and resting periods before and after holistic treatments.

The obtained pilot results of EEG psycho-physiological correlates of the applied novel holistic healing might be interpreted in terms of non-verbal holistic transpersonal psychosomatic communication, revealing holistic interaction of acupuncture system/consciousness (of healer) and central nervous system (of volunteers). This is in accordance with our previous pilot results of skin conductance (SC) correlates of the applied novel holistic healing, revealing holistic interaction of acupuncture system/consciousness (of healer) and vegetative nervous system (of volunteers) (Bedričić et al, 2011a).

As ideas for next survey, in addition to the monitoring methodology for high quality data, it would be useful to correct the sample itself, including equally both sexes and a wider range of age, create experimental and controlled groups, and only then to interpret and make some generalizations about the effects of holistic treatment. Also, standardized psychological tests could be beneficial for following the status of the participants from the beginning till the end of research, and also to make the comparison with some previous research or the ones that are going to be conducted in the future.

**Acknowledgement** – This research study was supported by the Ministry of Science and Technological development of the Republic of Serbia under project no. 178027. The authors are indebted to Marija Bedričić, for her participation in transpersonal diagnostic and healing experiment, as well as to all our volunteers.

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# QUANTUM TRANSFORMATION

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**Abstract.** Quantum Transformation is a practical application of the Two Points Method in the field of healing and life issues solving. Two Points Methods has its roots in the ancient Hawaiian spiritual technique of Huna, rediscovered independently by Dr. Richard Bartlet (Matrix Energetics) and Dr. Frank Kinslow (Quantum Entrainment), with a great contribution of Andrew Blake (QCT-Quantum Consciousness Transformation). Not only because it is easy, simple to use, and at the same time very effective, but also because of the possibility of combining it with other therapeutic and healing techniques, Two Points Method is spreading through Europe very quickly. When two distinct points on the body or aura get connected, Quantum waves are produced, initiating huge changes on all levels and in all areas of life. Quantum Waves initiation makes changes on a deepest level, altering our Matrix. The Matrix contains our deepest beliefs, in other words, fixed attitudes originated from individual consciousness and different life stages (the childhood, the prenatal period, the birth process, conception or inheritance - karma) and fixed attitudes derived from group or collective consciousness. Those subconscious beliefs are often opposed to our conscious beliefs and they are the main cause of our psychological and physical suffering, as well as many diseases. Faster transformation of subconscious beliefs can be achieved using Quantum Waves, which leads toward change of our reality. The essence of Quantum Transformation is pure consciousness. Pure consciousness is actually pure love. Quantum Transformation is a method that uses love energy for healing purposes. Quantum Transformation workshops, using quantum waves, meditation, music, movement and body work “teach us” through experience how to use the energy of love in healing and combining this method with other healing and energy based methods.

**Keywords:** *quantum transformation, two points method, quantum waves, quantum matrix, the matrix, the field, individual consciousness, group consciousness, collective consciousness, love, energy*

## 6. Introduction

### *What is Quantum Transformation?*

*Quantum Transformation is a practical application of the Two Points Method in the field of healing and life issues solving.*

Two Points Method has its roots in the ancient Hawaiian spiritual technique of Huna, rediscovered independently by Dr. Richard Bartlet (Matrix Energetics [1]) and Dr. Frank Kinslow (Quantum Entrainment [2]), with a great contribution of Andrew Blake (QCT-Quantum Consciousness Transformation [3]).

Easy and simple to use, and at the same time very effective, Two Points Method is spreading through Europe very quickly.

### *What are Quantum Waves?*

It is one blink of the eye or a vibration felt when two distinct points on the body or aura get connected. This is the reason that receiving Quantum Wave [1,2,3] produces swinging or loosing balance in many people.

## 7. Energy of Love

The biological explanation behind this method is the following: in the moment of the receiving Quantum Waves, the nervous system is entering a state which provides destruction of the old and construction of new neural connections.

Quantum Waves can initiate huge changes on all levels and in all areas of life.

### *What is the Matrix?*

Modern science or quantum physics encounters spirituality more and more, confirming what ancient cultures has known for thousands of years: the universe is one inseparable unity. Matter is actually energy and all the elements are integrated in this unity or energy. Our physical body, as well as our physical reality is energy, in other words – light and information.

The Quantum Matrix [1] is a biological information field that dictates our reality. Quantum physics speaks about “zero field” or just “field”. Albert Einstein has stated: “The field is our only reality.”

Quantum Matrix contains our thoughts, emotions and life scripts.

We always create our own lives, whether conscious or not. Fixed attitudes, in other words, our deepest beliefs and convictions, followed by our emotions, dictate our reality, producing programs which direct our life. Fixed attitudes can be created in early childhood as a result of traumatic experiences; in the prenatal period, during the birth process or in conception. Of course, there are also fixed attitudes on the soul level, that we carry as an inheritance from past lives; as a part of family inheritance, with origin from our ancestors; and fixed attitudes derived from group or collective consciousness. Every human has its own personal karma (Karma is a Sanskrit word meaning “action”), and so does every state, city or village, and this karma is influencing the development of group consciousness.

Those subconscious beliefs are often opposed to our conscious beliefs and they are the main cause of our psychological and physical suffering, as well as many diseases. Maybe we are not successful because we have the subconscious attitude, saying: „Flying high, falling low“; or we have low quality relationships because of the subconscious attitude, saying: „Love hurts“; or we are not satisfied with our financial situation because of the subconscious attitude, saying: „Money is dirty“; or we have a disease because of the subconscious attitude, saying: „Disease is love“.

Faster transformation of subconscious beliefs can be achieved using Quantum Waves, which leads toward change of our reality.

All these fixed attitudes initiate certain emotions. We communicate with the universe with the language of the heart, the language of emotions, so every emotion we radiate in the universe is coming back in the shape of our life script.

### *Why is it so?*

Electromagnetic field of the heart is the most powerful in the human body. It is 5000 times more powerful than the field of the brain. We communicate with the language of the heart, the language of emotions.

When we feel gratitude, peace and love in our heart, we produce strong signals that not only have positive influence on our physical body, changing our genetic code, but also are emitted in the universe and as a response universe are returning joy, happiness and abundance to our life.

### *How to use the energy of love?*

For a start it's necessary to increase the love that we carry/feel inside. Quantum Transformation workshops, using quantum waves, music, dance and body work “teach us” through experiences how to use the energy of love in healing.

The essence of Quantum Transformation is pure consciousness. Pure consciousness is actually pure love. Quantum Transformation is a method that uses love energy for healing purposes [4].

### ***Case studies using Two Points Method [5,6]***

**Case No. 1:** B.M, 35 years old, married with two children 4 and 6 years old. Symptoms: stomach pain, back pain, medical test normal, but often feeling vomiting urge and pain, insomnia, and disturbing dreams. She had problematic relationship with her 4 year old son, who is also hyperactive. Goals: to bring more peace in life, to increase health level, to increase the quality of her relationship with her husband and her son and to find professional fulfillment. Therapy: ten sessions, 120 minutes long, Two Points Method applied. Results after the last session: vomiting urge and pain almost gone, no insomnia, relationship with her husband and son improved, feeling more joy in life. Quote: “I feel happy, I am singing in the house and I enjoy life. It is certainly not some kind of euphoria; it is a quiet, fulfilling joy.”

**Case No. 2:** J.D. 25 years old, student, suffering from depression and panic attacks for 2 years, under psychiatric control for 1 year, taking prescribed medicament Asentra. Medical treatment has decreased the intensity of the panic attacks, and she rarely has them. But, on the other hand, she notices that she is not feeling anymore as before, no sexual wish, no orgasms, and she often feels indifferent. Relationships with her parents and her partner with whom she is living for the last 3 years are far from satisfaction. She has a wish to share with them her innermost values, but also has a feeling of not having strength to do so. Goals: Life without Asentra or any other antidepressant medicaments, because she has a feeling of numbness, and life without panic attacks. She wants to increase the quality of the relationship with her parents and her partner. Therapy: she attended one 4-hour Quantum transformation workshop and two sessions of Integrative breathing [7] with an example of Two Points Methods, 120 minutes long. Her statement from the last session: “My breathing is easy, as my lungs are open, I feel free and after a long time happy. I had a phone conversation with my mother and it was very pleasant. I am finally ready to communicate with my parents. I am ready for communication with my partner too. I feel like some huge burden has come out. Very soon I will ask my psychiatrist to decrease the dose of Asentra and to slowly drop it. I feel strong and free. I am happy!”

**Case No. 3:** N.D. 44 years old, divorced with two children of 15 and 18 years old, suffering from migraine since she was 18. She has made all medical test, psychotherapy, physiotherapy, massage. On the short term she feels better, but very soon she experiences recurrence of the symptoms. Goal: Healing the migraine headaches. Therapy: she attended one Integrative breathing [7] workshop with Quantum waves, after one month she had one session of Quantum transformation 120 minutes long. After three months she called me and informed me that during that three months period she only once had a headache in a very stressful situation, in a “lighter” form than before. Such a long period without headache she did not have for years.

### ***Quantum Transformation workshop***

Quantum Transformation [5,6,7,8] workshops offer less theory and much practice. Two Points Method can be learnt in a few minutes. But precisely because of this simplicity and yet great effectiveness, our logical mind tends to resist and reject it, due to our belief that we should study hard, work and sweat to learn something that has such huge effects. So, it is very useful to attend Quantum Transformation workshop, as a chance to have this experience. The Workshops “teach” non-logical learning, how to use other resources than mental to learn and apply this method.

The main future of this method is *simplicity*: no initiation from the teacher/master, no working patterns that should or must be followed, no specific schedule or thinking.

Quantum Transformation workshops also offer instruction about combining Two Points Method with other healing and therapeutic techniques.

### ***Workshops attendants comments [5]***

“I feel forever careless, hurtles, I feel that whatever happened in the past was with a reason, to bring me in this situation and to make me love myself. Now I have the magic wand in my hands, which I have imagined and

wished for all my life. I wish to give one big THANK YOU to Sonja for this experience of joy and happiness that I feel in this moment.” [M.N. psychologist]

“Even more love, relaxation, life joy. Great insights, letting go. Thank you!” [A.K. professor]

“The most important insight for me was that when we are thinking and feeling we are just sending the copy of us, the original stays in us. The feeling of being connected with the Universe, the whole, is beautiful. Enormous presence. Feeling of unity.” [E.B. student]

### ***Already in therapeutic field?***

Huge number of therapists through Europe includes Quantum Waves in their work, due to the fact that this method can be applied independently, but also combines well with other forms of therapeutic and healing practices.

Quantum Waves are increasing and deepening the processes initiated by any therapeutic method.

The learning of the method is easy and quickly and allows working with clients, with or without their physical presence, in other words distant healing is possible.

## **8. Conclusion**

### ***What can be achieved with Quantum Transformation?***

- Releasing of destructive life scripts
- Self-healing activation
- Releasing of the influences of traumatic experiences from the childhood, the prenatal period or past lives
- Releasing family and collective karma
- Aura scanning & cleansing
- Overcoming addiction
- Increased vitality
- Increased life joy
- Relationship improvement
- Professional fulfillment
- Increased energy for self realization
- Increased creativity
- Success & Abundance

### ***Some examples of methods that combine very well with Quantum Waves:***

- Family and systemic constellations by Bert Hellinger
- Massage
- Physiotherapy
- All form of energy practices
- Coaching
- Psychotherapy
- Rebirthing [7]
- Integrative breathing [7]
- Clearing [6]
- Astrology
- Homeopathy

and many more.

Quantum Waves initiation makes changes on a deepest level, altering our Matrix, which provides discovery of our true nature, our essence. Our true nature is living in joy, love and abundance.

At this point of time the field of healing and therapeutic methods is in permanent evolution. Quantum Waves practice increases the creativity of the therapist and enables deepening of the existing methods and the developing of new therapy and healing methods.

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## THE RECONNECTION – HEAL OTHERS, HEAL YOURSELF

**Eric Pearl**

President & Founder, The Reconnection

*Presented by Ronen Levy, Market Manager Europe,  
Personal Assistant to Dr. Pearl*

[www.TheReconnection.com](http://www.TheReconnection.com)

**Abstract.** Internationally recognized healer Dr. Eric Pearl has appeared on countless television programs in the US and around the world, spoken by invitation at the United Nations, been interviewed in various publications including The New York Times, and most recently featured in the film, The Living Matrix. As a doctor, Eric ran a highly successful chiropractic practice for 12 years until one day his patients began reporting that they felt his hands on them – even though he hadn't physically touched them. Patients soon reported receiving miraculous healings from cancers, AIDS-related diseases, epilepsy, chronic fatigue syndrome, rheumatoid and osteoarthritis, birth disfigurements, cerebral palsy and other serious afflictions. All this occurred when Eric simply held his hands near them – and to this day, it continues. Based in Los Angeles, Eric and Reconnective Healing elicit great interest from top doctors and medical researchers at hospitals, colleges and universities worldwide. These include Jackson Memorial Hospital, UCLA, Cedars-Sinai Medical Center, the VA Hospital, Tel HaShomer (Tel Aviv), Quality of Life Research Center (Copenhagen), Memorial Hospital (Istanbul), University of Miami Medical School, Kent College of Osteopathy (UK), RMIT University (Melbourne), St. Petersburg State Technical University (St. Petersburg), The University of Oslo, and the University of Arizona. New research programs are presently underway at multiple facilities internationally under the guidance of such renowned research scientists as Gary Schwartz, PhD, William Tiller, PhD, Konstantin Korotkov, PhD and others. Join Ronen Levy, Eric's Personal Assistant who will provide you with insight into accessing this all-inclusive 'new' spectrum of healing comprised of energy, light and information known internationally as Reconnective Healing®. Bring a new level of healing and evolution to your friends, your loved ones... and yourself. Ronen will also provide demonstration of the work with attendees. The Reconnection brings in "new" axiatonal lines that reconnect us on a more powerful and evolved level than ever before. These lines are part of a timeless network of intelligence, a parallel-dimensional system that draws the basic energy for the renewal functions of the human body. This plenary talk will provide an introduction to how to bring in and activate these new lines, allowing for the exchange – beyond energy – of light and information, the reconnection of DNA strands and the reintegration of "strings" (simultaneous – or parallel – planes of existence). Find out what's baffling the medical community. Discover why hospitals and universities around the world are investing time and money in an attempt to explain these healings, and how you, too, can master this extraordinary work!

**Keywords:** *The Reconnection, Reconnective Healing, practice, education, research*



*"If I were sitting on a cloud scouring the planet for just the right person upon whom I could bestow one of the rarest and most sought-after gifts in the Universe, I don't know whether I would have reached through the etherium, pointed my finger through the vast multitudes of people – the shepherds, the shopkeepers, the righteous and the self-righteous – and said "Him! That's the one. Give it to him."*



*Now maybe it didn't happen quite that way, but that's the way it feels. Except when it doesn't. I mean, except when someone else comes up with an entirely different and convincingly plausible explanation. "Oh, no," some well-meaning person may exclaim, incredulous at my obvious lack of understanding of how the Universe works, "you've clearly done this before in your past lives." Now what I want to know is this: how is it that they're so privy to my past lives when I'm still trying to figure this one out?"*

Excerpt from the book  
 "The Reconnection Heal Others, Heal Yourself", by Eric Pearl

## 1. Introduction

Internationally recognized healer Dr. Eric Pearl has appeared on countless television programs in the US and around the world, spoken by invitation at the United Nations, presented to a full house at Madison Square Garden, been interviewed in various publications including The New York Times, and most recently featured in the film, The Living Matrix.

As a doctor, Eric ran a highly successful chiropractic practice for 12 years until one day his patients began reporting that they felt his hands on them – even though he hadn't physically touched them. Patients soon reported receiving miraculous healings from cancers, AIDS-related diseases, epilepsy, chronic fatigue syndrome, rheumatoid and osteoarthritis, birth disfigurements, cerebral palsy and other serious afflictions. All this occurred when Eric simply held his hands near them – and to this day, it continues.

His patients' healings have been documented in six books to date, including Eric's own international bestseller, "The Reconnection: Heal Others, Heal Yourself" [1], now in more than 36 languages [2]!

Based in Los Angeles, Eric and Reconnective Healing elicit great interest from top doctors and medical researchers at hospitals, colleges and universities worldwide. These include Jackson Memorial Hospital, UCLA, Cedars-Sinai Medical Center, the VA Hospital, Tel HaShomer (Tel Aviv), Suburban Hospital, Quality of Life Research Center (Copenhagen), Memorial Hospital (Istanbul), University of Minnesota, University of Miami Medical School, Kent College of Osteopathy (UK), RMIT University (Melbourne), Parker College (Dallas, TX and Melbourne, Australia), St. Petersburg State Technical University (St. Petersburg), The University of Oslo, and the University of Arizona. New research programs are presently underway at multiple facilities internationally under the guidance of such renowned research scientists as Gary Schwartz, PhD, William Tiller, PhD, Konstantin Korotkov, PhD and others.

Eric travels the globe extensively throughout the year bringing the light and information of Reconnective Healing onto the planet. He teaches you how to activate and utilize this new, all-inclusive spectrum of healing frequencies that allow us to completely transcend "energy healing" and its myriad "techniques" to access a level of healing beyond anything anyone has been able to access prior to now! To date, he has taught this new level of healing to over 60,000 people in more than 60 countries, bringing about a spontaneous generation of healers worldwide.

## 2. A Glimpse into the Universe

Reconnective Healing is a form of healing that allows the universe to communicate with the physical body via axiatonal meridian lines, similar to traditional acupuncture lines. It is considered to be able to reconnect us to

the fullness of the universe and to our very essence through an entirely new bandwidth of healing frequencies. The reality of its existence has demonstrated itself clearly in practice as well as in science laboratories.

The Reconnection is the umbrella process of reconnecting to the universe, which allows Reconnective Healing to take place. These healings and evolutionary frequencies are of a new bandwidth brought in via a spectrum of light and information. It is through The Reconnection that we are able to interact with these new levels of light and information, and it is through these new levels of light and information that we are able to reconnect. This is something new. This is different. This is real – and it can be entrained in each of us.

The difference between Reconnective Healing and The Reconnection is basically one of intent. The intent of Reconnective Healing is essentially that of healing, be it physical, mental, emotional, spiritual or on any other level. And, of course, to achieve the degree of healing brought forth via Reconnective Healing, you will, to some extent, experience reconnection as part of the process. It's this "Reconnection" that allows Reconnective Healing to be so dramatically more comprehensive than the healing "techniques" we've had up until now. The intent of The Reconnection is to bring us into the fullness of our inherent connection with the universe. This is done via a two-session experience, commonly referred to as receiving your Personal Reconnection. And, of course, to achieve the degree of reconnection brought forth via The Reconnection, you will, to some extent, experience healing as part of the process.

### **3. The Science of The Reconnection**

Reconnective Healing is having an impact on the scientific and medical community. Traditional science and medicine can no longer approach health and healing in the same manner as they previously have and remain in step with the rest of the world. And now, we know that the impact of Reconnective Healing is not just about healing from disease, it is about improving your life on all levels.

Scientific exploration into the field of Reconnective Healing by Drs. Korotkov, Bill Tiller, Gary Schwartz, Ann Baldwin, Melinda Connor and others, as well as what is documented in Dr. Pearl's internationally bestselling book, "The Reconnection: Heal Others, Heal Yourself", are validating the powerful effects that this new spectrum of healing is having on people. It may also be opening a doorway to the next level of human evolution, where instantaneous healing and regeneration are simple, everyday facts of life.

The University of Arizona's Human Energy Systems Laboratory, under Gary Schwartz, PhD, has performed six major controlled experiments that have substantiated the electromagnetic transference in The Reconnection.

William A. Tiller, PhD, Professor Emeritus of Stanford University was able to gauge a huge energy upsurge in The Reconnection workshop rooms.

Dr. Richard Hansbury, a brain researcher from the UK discovered that when a person received Reconnective energy during an EEG, brainwaves began to organize, harmonize and go into a state of coherent, peak performance state.

And there are many more studies by internationally prominent researchers demonstrating the reproducible effects of Reconnective Healing.

A new science is emerging that is changing the traditional understanding of health and healing. The latest scientific research is focusing on experiments which are quantifying the effects of energy, light and information on human beings. Leading the way are an international team of world-renowned scientists, William Tiller, PhD, Gary Schwartz, PhD, and Konstantin Korotkov, PhD (also presenter at the Symposium QIM 2011), with their studies of the Reconnective Healing® frequencies, first discovered by Eric Pearl, DC. The powerful and profound results of this research is attracting the attention of the best and brightest in the scientific community.

#### **3.1. Bioenergetic Studies Conducted on Reconnective Healing Practitioners & Those Being Treated**

**Study.** Studies conducted by Prof. Konstantin Korotkov. Reconnective Healing was taught to a group of doctors, researchers, therapists and Olympic athletes in Russia. The design of the study provided the test subjects with merely six hours of teaching and interaction with the Reconnective Healing frequencies over the course of

two days. Each of the participants was measured before, during and after the experiment, with various testing methodologies, including the use of the EPC device, which measures the bio-energy fields around a person's body.

### **Konstantin Korotkov, PhD**

**Credentials:** Deputy Director of Saint-Petersburg Federal Research Institute of Physical Culture. Professor of Computer Science and Biophysics at Saint-Petersburg Federal University of Informational Technologies, Mechanics and Optics. Professor of Research in Saint Petersburg Academy of Physical Culture. President of the International Union for Medical and Applied Bioelectrography. Member of the Editorial Board: Journal of Alternative and Complementary Medicine and Journal of Science of Healing Outcomes.



**Results.** The effects of the Reconnective Healing on the athletes and their energy levels were “hugely significant,” according to Korotkov. Each of the athletes and test subjects experienced a significant boost in their energy levels, with an average increase of 22% or more. The athletes reported that they could clearly feel the frequencies and the benefits they were experiencing in their bodies. One athlete with a recently broken leg injury, who walked only with difficulty and on crutches, was able – after the two session experiment – to get off the table and walk on his own with little pain. His doctor, who was present during the experiment, re-x-rayed the athlete the next day and was stunned to see that the sever bone break had somehow now become a slight sprain.

**Comments.** Dr. Korotkov said, “The results were very, very strong and very, very different” than anything else he had seen in his extensive bio-energetic research.

## **3.2. Coherence Studies Conducted on Reconnective Healing Practitioners**

**Study.** Studies conducted by Prof. Gary Schwartz with Dr. Ann Baldwin, Laboratory for Advances in Consciousness and Health at the University of Arizona. Using the Laser Profusion device, the study set out to look at the heart rate and heart rate variability of Reconnective Healing Practitioners, comparing them with previous studies measuring people in meditation, Qi Gong grand masters, Reiki masters and marshal artists.

### **Gary Schwartz, PhD**

**Credentials:** Director of Medicine, Neurology, Psychiatry, Psychology, and Surgery; and Director, Laboratory for Advances in Consciousness and Health, University of Arizona. Former Director of the university's Human Energy Systems Laboratory. PhD from Harvard University in 1971; assistant professor of psychology at Harvard until 1976; professor of psychology and psychiatry at Yale University and director of the Yale Psychophysiology Center. Co-director of Yale Behavioral Medicine Clinic.



**Results.** During sessions, both the Reconnective Healing Practitioners and their subjects go into dramatically enhanced healing states. The practitioner experiences a state in which marked and significant brain and heart activity occurs. This state, called “emotional quiescence,” is associated with extreme awareness, feelings of peace, connection to the universal energy field, and the ability to perceive on enhanced levels. This far exceeds any the state that is typically seen with other energy healing modalities. It in fact is a very different state than has been seen in yoga, meditation, Reiki or any energy healing. This documents clear evidence the Reconnective Healing is something new and different that what has been on the planet before now.

## **4. The New Frequencies of Reconnective Healing in *Your* Life**

The Reconnection Has Taught This Skill to More Than 70,000 People Around the World.

Perhaps you have a calling to help people heal, but don't want to spend eight years in medical school and residency. Maybe you have experienced disease and illness and you yearn for a fuller expression of health. Or possibly you have a loved one who suffers and you feel helpless to alleviate the pain.

For any of those reasons, you may find your answer in Reconnective Healing®, an extraordinary opportunity and invitation to learn how to heal others, yourself and your loved ones by engaging with scientifically measurable new frequencies that researchers are calling the forefront of "Information Medicine."

As researchers say, Reconnective Healing is a form of healing that science shows is very likely here on the planet for the first time – and uses a bandwidth of vibrational frequencies to convey corrective information. Stanford Professor Emeritus Dr. William Tiller says that when information carried through these frequencies is introduced it creates coherence and order to the field and the body. The result: dramatic reports of regeneration instead of degeneration and account after account of apparently unexplainable, often instantaneous and lifelong healings.

"Reconnective Healing is not just energy healing, but instead a more comprehensive spectrum of healing composed of energy, light and information," explains Eric Pearl. "Anyone can learn to access these energies once you interact with them. Reconnective Healing is not something we do. It's something we allow and help facilitate. It works by itself, as well as greatly expands the results of the modalities that today's healing and healthcare practitioners are already using."

Pearl and his staff travel constantly, teaching Reconnective Healing to eager tens of thousands on six continents – the lay public, medical students, and healthcare professionals. They include Reiki master teachers and massage therapists, housewives and students, doctors and nurses, clergy-members and construction workers, scientists and engineers, schoolteachers, computer analysts, government officials, plumbers and electricians, bankers, lawyers, and CEOs. They come from all walks of life, demographics and socioeconomic classes. "And, in most seminars, you'll also find the person who didn't want to come sitting next to the one who dragged them along!" laughs Pearl.

Reconnective Healing reconnects people to their original fullness as human beings and seemingly restores to them a more complete connection with the Universe, an essential connection lost to humanity for some reason since ancient prehistory. "More than a modality," Pearl explains, "it's demonstrated itself to be its own genre of healing, with its own means, method, manner and approach, its own form of conveyance and transmission, its own delivery system, its own intelligences, mechanisms and consistently reproducible forms of expression in the human body."

After 15 years of practicing and teaching Reconnective Healing, Pearl recognizes from thousands of cases, that it is astonishingly effective with virtually any known health challenge. Yet he's still not certain why – or for that matter, even how – it works. "What's important is that Reconnective Healing works," affirms Pearl, "even if we don't know exactly why ... even if we don't ever know exactly why."

## **5. Inside a Reconnective Healing Session**

What is a Reconnective Healing session like? First, the practitioner accesses this expansive spectrum of healing frequencies and works with them, tending to start, at face value, with his or her hands. Then, generally, from a distance of one to several feet or further, continues to feel these frequencies that surround the recipient – the patient or client. The practitioners often walk around their clients, varying their distance and playing with the sensations in their hands, as they observe the visibly clear and distinct physical effects it has on the recipient, until the session is complete. People who receive a Reconnective Healing usually find their eyes flutter uncontrollably, eyes rapidly dart from side to side, and fingers and/or feet twitch during the session, with other readily observable physical responses – all involuntary – often outside their conscious awareness and outside of their ability to consciously control.

They may have visions, or see colors – brilliant blues, vibrant greens and incandescent purples as well as intensely bright whites and luminous golds. "Most report that these are colors they've never seen before," says Pearl. Sometimes they may have no recognizable experience at all. Or their experience may emerge hours or days after the session. Everyone's experience is unique, yet there is an incontrovertible thread of continuity in virtually

each of these experiences that identifies them as that of Reconnective Healing. “Yet whether or not they’ve come back with conscious recall of the experiential aspect of their sessions, the actual reported healings experienced are remarkable,” observes Pearl.

One of the most exciting benefits for the Reconnective healing practitioner is that oftentimes he or she finds that the healing frequencies correct, balance and heal not only the person on the table, but also heals the practitioner in the process.

“You would think it would take more than a weekend to teach something as profound and life-changing as Reconnective Healing, but healthcare professionals who have invested years in specialty training report that they find this refreshingly brief and yet inexplicably powerful,” explains Dr. Pearl, “People are astonished at the results they achieve with their patients after only a weekend’s worth of instruction.”

Working with these frequencies is often a life changing experience. During a seminar, you are literally “immersed” in the frequencies, and often continue to experience the healing vibrations well after the seminar has finished. Once activated by this work, your own healing and evolution continue at its own rate, every day, for the rest of your life.

*You, too*, can learn the work and gain an edge in your life, in just one weekend! To find out more about Reconnective Healing visit our new website at [www.TheReconnection.com](http://www.TheReconnection.com). See the latest scientific research on Reconnective Healing. Find out about the latest program offerings from Reconnective Yoga™, Reconnective Animals™ and Reconnective Kids™!

Connect with us on Facebook and YouTube. Engage with practitioners and follow The Reconnection's worldwide events. Our pages share updates, healing stories and event pictures and videos. Share these links with others!

In Love, Light, and Abundance.  
All of Us at The Reconnection!



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# RECONNECTION – ON THE EXAMPLE OF HASTENED HEALING OF BONE FRACTURE AND RUPTURED MUSCLES

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**Abstract.** Reconnection re-connects broken axiatonal and axial lines in the quantum field. These lines are the extensions of the acupuncture channels, and are used to power the body at the atomic level. Unlike previous healing energies that arrived to earth and touched-shined only a few individuals, or a group of people, lately through Reconnection we witnessed that anyone can feel, but also work with this healing technique. These energetic manifestations act in a way completely opposite to electromagnetic waves. They increase their strength with distance, and have highly personalized manifestations: eyes flickering, swallowing, sighing, borborygm, crying, laughing, sleeping, or moving limbs, fingers or head. What was different and interesting was that Reconnective energy was also transmitted to anyone who is in contact with the book that speaks of Reconnection, or watches a TV show about this form of energetic healing. So the new concept is that anyone can use it to heal himself or others around him. Reconnective healing can be harmlessly used on all patients, and has no counter-indications, except our prejudices, misconceptions and fears. In this paper we present three case studies of hastened healing of bone fracture and ruptured muscles upon reconnection healing, which display a few characteristic cases out of several hundreds of patients cured. Based on that, we could say that reconnection is the perfect addition to the regular medical therapy, and is sometimes an essential factor of psychical balance and faith in healing, and is oftentimes the only therapy that can be performed.

**Keywords:** *Reconnective healing, energy healing, bone fractures, muscle damages*

## 1. Introduction

Reconnective Healing is a form of healing that occurs for the first time on this planet (according to Dr. Eric Pearl) [1].

Reconnection re-connects broken axiatonal and axial lines in the quantum field. These lines are the extensions of the acupuncture channels, and are used to power the body at the atomic level.

From the moment when the mankind began to move away in its mind more and more from the concept of the Heaven and forgot *who we are and why we are here* – there began to appear the attempt to return to the paradise and the bliss (the attempt to fix the errors in the quantum field).

There appeared the religious orders, gurus, teachers, seers, clairvoyants, in one word – the people who have managed use their energy to exalt and lead the masses. Themselves they were gifted with a strong energy and could heal and work miracles but few of their students managed to reach the same or at least approximate level of the radiance of their energy.

When such a man died and they would usually get killed, or rather when they "transferred to another energetic reality" invisible to us he was declared a saint, a deity – he was worshiped and adored but often disputed as well until the appearance of another strong individual. This resulted in a misconception passed on for thousands of years that strong energy is available only to few selected individuals. Today it is time to raise the general awareness of humanity and that is why, as Dr. Eric Pearl explains, new energy came to Earth – *Reconnection*.

When the Reconnection happened to Dr. Pearl he was initially taken by surprise with the force of the energy in him and around him. Later he realized that the energy works on a distance and miraculously heals. It still was not revolutionary because same could be achieved with other energy therapies – such as Reiki.

What was different and amazing is the fact that the Reconnective energy is transferred to anyone who is in contact with the book which tells about the Reconnection or watches a show on TV about this form of energy healing.

Revolutionary was the fact that everybody can use it to treat themselves and treat others around them. It is so powerful in manifestation that it causes involuntary movements of the body – and those movements always have their function, they are always justified, and ultimately show that the persons are healed and have a good Reconnective quantum field around them.

So unlike previous energies that came to Earth in waves and touched (enlightened) *only a selected person or a group of people, in recent times we became witnesses through the Reconnection that everyone* can feel and work with this healing technique. These energetic manifestations act diametrically opposite from the electromagnetic waves. For example – they increase in power with distance and in each person they lead to the same physical body movements and phenomena such as eyes blinking, swallowing, sighing, growling gut, raising of fingers, limbs and head, crying, laughing and sleeping.

Due to the identical reaction Dr. Pearl calls this method *the true remedy* which causes the identical responses in every person in contrast to classic pharmaceutical drugs that can help one person but not the other and there is no way to determine in advance what the reaction will be. Therefore according to him medicine as we know is virtually a non-scientific method, because the experiment may not always be repeated.

Reconnective Healing can be safely used for everyone and there are no contraindications (except our prejudices, misconceptions and fears).

## **2. Hastened Reconnective Healing of Bone Fracture and Ruptured Muscles: Case Studies**

In this paper, I have chosen to display two case studies of bone fractures and one case study of Achilles tendon rupture which were treated with Reconnection. All patients were treated with standard procedures provided for in such cases: cast immobilization, bed rest and physical therapy later. The advantage which was brought by a reconnective treatment is the speed of healing, speed of rehabilitation and lack of any consequences.

### **2.1. First case study**

The first case study is a 50 years old patient, with comminutive fracture of her left shoulder.

Due to the complicated general condition, chemotherapy which was completed six months earlier and hormone therapy, patient was treated palliative and was immobilized. She came to reconnective healing after a month because the pain was still present at rest and even with analgesics, and the healing went very slowly. The swelling was still present, and the movement was very limited in all directions.

During the first reconnective treatment, patient reported pain in the point of fracture, which was alternately weak and strong. During the second treatment, easy involuntary twitches in the shoulder joint occurred, which were painless and were a good prognostic sign of healing. The patient came happy and much better looking overall to the third treatment, the swelling was completely gone, sleep was good and she did not take analgesics. In this therapy, the movements were intensified and resembled the exercises for the shoulder strap: forward and backward rotation and stretching with rotation of the hand. After the reconnective healing the patients are usually fascinated by the intensity of sensation and movement that are not under the influence of their will or the will of the therapist and often last for some time, even when they go home.

After a week we repeated one more treatment that was more "rapid" in intensity of movements and feeling of energy throughout the body. The range of motion increased in all directions for about 50%, the pain disappeared and the patient returned to work.

Control screenings were made as demanded by doctors who led the screenings and showed a significant improvement, although not as much as it is shown in the subjective sense of the patient.

Today, two years later, she has a full range of motion, tactile sensation and motoric movements of fingers are better than before the fall, and the general situation in relation to the primary damage is great.

## **2.2. Second case study**

The second case study is a 28 years old patient, who fell on the right elbow during a soccer match and had an elbow fracture and another one along the head radius.

He had no open injuries, but had swelling and hematoma in the area of the elbow and pain on movement, while the fingers were moveable. He was repositioned and a cast was placed on the upper arm. He came to me, just a day after the accident, because he had already been reconnected for insomnia, which was by then successfully healed. Now there are a lot of pains that do not go away to therapy with analgesics, they spread to the shoulder, especially while at rest.

In the first reconnection treatment, hand movements appeared that moved his hand from the body to the side, which did not appear in previous reconnection sessions, so he was surprised. Before the second treatment we temporarily removed the cast, to allow easier movement. Now the movement was rotating the arm in the shoulder upwards, overhead, and the movements of supination and pronation. In the beginning it was painful but after a few minutes it became bearable and in the end, painless. The third treatment was alike to the second one, only less painful.

On the control screening, a week later, you could see that everything healed faster, there was no swelling, and the doctors decided to take the cast off, and start physical therapy a week later.

In the following two weeks, alongside the physical therapy, two more reconnection treatments were performed until the shoulder could move completely, which appeared to be a more persistent problem.

## **2.3. Third case study**

The third case study is a 50 years old patient, who ruptured his right Achilles tendon while pushing a car.

His injury was about 30 mm wide, was askew, and covered a big part of its circumference. A cast has irritated the patient greatly, and he complained that he had bigger pains because of it, and was terribly distressed because he should be going to a vacation he expected for a long time soon.

After the first reconnection treatment, the nervousness decreased and the pain reduced. After the second treatment, the swelling disappeared, the cast was replaced by a bandage, with the recommendation of bed rest. The third treatment led to gentle shaking of the foot and leg during the therapy, and the patient felt lightness in his leg.

After two weeks, control screening showed scar tissue, with no swelling. Rehabilitation lasted for two more weeks, acupuncture with electro-stimulation was included, which resulted in walking on toes being as easy as it is in the left foot.

Today, three years later, controls show that the scar cannot be seen, and walking on both heel and toes is equal in both feet.

This case was chosen, because it is a relatively often injury, which is successfully healed by reconnection. This is the Achilles tendon rupture, but also any other tendon injury is healed in the same manner, as well as ankle tissue and the tissue around the ankle. It is very comfortable and painless for the patient, and it is often ad integrum – that is a complete recovery.

## **3. Conclusion**

This is a short display of a few characteristic cases, out of several hundreds of patients cured [2]. They were chosen for this essay because there is documentation, like the screenings before and after therapy, and because many internal diseases treated by reconnection waves are not as physically obvious, because they are oftentimes psycho-somatic and the achieved results can be interpreted differently. But after all, patients with such diseases are most often in our field of work, and the stories of those people and their fates, which reconnection changed for the better, can be enough material for several books.

Based on that, we could say that reconnection is the perfect addition to the regular medical therapy, and is sometimes an essential factor of psychical balance and faith in healing, and is oftentimes the only therapy that can be performed. If there was more consciousness, and less vanity of the doctors themselves, if they opened up to

these methods of healing, there would be more scientifically examined cases, which would lead to an objective view, and a realistic attitude towards the ranges of reconnection and other methods of alternative medicine.

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## REIKI AND SPIRITUALITY

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**Abstract.** Reiki is an ancient spiritual-energetic method of healing, usually considered to be Japanese, and it is applied along with methods of modern medicine in health care institutions around the world. For many years now Reiki has been considered to be No 1 method of self-help in the world. Reiki primarily helps with reduction of stress, with relaxation, and is also used for mobilizing/activating all defense mechanisms in the human body. It improves the efficiency of all bodily functions, and allows us to reach a state of harmony between the physical, mental and emotional levels of our being. The highly developed, non-standard approach to Reiki allows everyone to acquire selected techniques and use them successfully for self-help, without having to attend traditional training classes, usually required for the Reiki method. Combining of Reiki techniques with acupressure, with breathing and stretching exercises, as well as with mechanisms of the human reflexes and mental orientation, can allow everyone to find their own ways to prevent further development of various health problems, caused primarily by stress. The use of self-help to reduce stress, to relax, improve concentration and memory capacity, to improve one's mood in general and increase the energy potential of the body, is necessary and easily applied in everyday life. Association Reiki of Serbia is founded in 2001 and has several hundreds members, actively participating in continuously organized educations and seminars. In 2008 Reiki was formally acknowledged by Committee for Regulation of Traditional Medicine, in Serbian Ministry of Health, as a method of improving general health of people. By establishing these regulations it was officially enabled to introduce Reiki therapy into medical institutions in Serbia.

**Keywords:** *Reiki, energy-informational medicine, education, self-help, anti-stress, relaxation, wellbeing*

### 1. What is Reiki?

Reiki is a spritual and energy method of traditional medicine which is officially listed as the means for improving health and rehabilitation [1,2]. It is legalized and approved by regulations signed by the Serbian Ministry of Health.

The basic characteristics of Reiki method are:

- Natural,
- Simple,
- Non-invasive,
- Wide range efficiency,
- Practically confirmed effects.

Reiki is probably the oldest method for improving health known to humanity and it is based on the skill of channeling the universal life energy. Its aim is significant strengthening of the vital energy capacities and body's defensive capability, improving health and quality of life, as well as spiritual development. In Japanese, Reiki has the following meaning: *Rei* means Universal, Divine, Life, and *Ki* means Energy.

Many world nations and religions, as well as many important scientists were aware of the existence and significance of Life Energy. It has many different names:

- Hippocrates - Healing Power of Nature
- Chinese - Chi
- Hindu - Prana
- Russians - Bioplasmic Energy
- Egyptians - Ka
- Galician - Pnevma
- Indians - Wakan, Wakonda
- Iroquois - Orenda
- French - Élan vital
- Jewish - Iesod
- Indonesia - Sahala
- Madagascar - Hazina
- Christians - Holly Spirit, Light
- Sufism - Baraka
- Alchemists - Life Elixir
- Kings and Kaisers of Europe - Royal Blessing
- Dr. Brunler - Biocosmic Energy
- Dr. Wilhelm Reich - Orgon

Many other scientists referred to this life energy as the Force X or the Fifth Power.

Reiki enables the flow of life energy necessary for balanced psychophysical well-being through human energy channel, and thus, through the human body.

The channeling and directing of life energy is done by placing palms on specific place on the body. There is also a method of palm healing at distance.

That skill exists in all of us as a genetic code for self-healing. The proof is that everyone unconsciously places palms of their hands on the place that hurts whether it be head, teeth, stomach, heart, injury or something else.

Einstein's formula  $E = mc^2$  is a scientific proof that energy becomes material substance and vice versa, the substance becomes energy. It is also the proof for the logical connection between human beings and life energy, and humans' unity with nature and the universe.

Millions of people around the globe of different age, nationality, religion, profession and education use Reiki for improving their health, quality of life and, above all, their spiritual growth.

Information that confirms the existence of the skill of using the universal life energy dates back to 2500 years ago. Reiki is mentioned in Sanskrit sutras, in Tibet, Indian and Chinese monks' writings, as well as in the works of important spiritual masters around the world.

Some of the countries that use the skill of channeling the life energy are: India, Tibet, China, Egypt, Latin American countries, Greece, Rome.

In the beginning of the XX century, Japanese Buddhist Mikao Usui, a man of extraordinary spiritual values and intellectual capability, spent almost 10 years researching and traveling around the world to find various resources that led to that "magical" human skill.

Based on his collected data and personal research, Mikao Usui had invented a simple technique of using the skill of channeling the universal life energy he called Reiki.

## 2. How Does Reiki Work?

The essence of Reiki method is in adjusting human being with the vibrations of life energy to enable its free flow through all the levels of the body.

The process of opening and attuning (traditionally called *initiation*) is led by Reiki Master Teacher with the help of a special technique of energy channeling. Even though the practitioner can obtain other skills independently through education and practice, it is not possible to lead the initiation process alone. Reiki passes from the teacher to the student. That is why this method is unique.

Reiki allows the initiated person to activate intensive flow of life energy through his or her body in 10 seconds to 5 minutes (depending on the practitioner's degree).

The energy enters human body from the head, slides down the spine, through the so-called energy channel, that consists of seven inter-connected energy centers known as chakras. After reaching the first chakra, the energy makes a kind of circle and partially returns to the fourth chakra from where it goes to arms. In continuation of the process, the energy spreads in the body and goes out through minor chakras on the palms and feet, especially through palms. By placing palms on the body, the reinforced energy is concentrated on the specific area. Reiki practitioner can direct the energy to his or her own body or any other direction outside of the body, to other people, things, animals, plants or spaces.

In his research of Reiki method during 1980s, professor Robert Becker (USA) had proven that electromagnetic waves, which the therapist received during Reiki treatment, went to hypothalamus and spread through the body via chains of neurons only to concentrate in his hands. In the moment of the first direct contact of the therapist and his patient, the waves were directed to the patient's body, synchronizing with his or her hypothalamus and stimulated all functions in the body thanks to its frequency.

During research of the electromagnetic changes occurring during Reiki treatment, he noticed that the field therapist and patient made together was a thousand times stronger than the one in usual physical contact between people. That difference is possible only thanks to the energy all humans have.

In his work *Reiki Healing*, doctor L. Barberis, Reiki Master, cardiac surgeon and medicine professor, writes that Reiki energy is a reaction on the quantum level, where life grows its roots. In esotery, that is called subtle level energy. The waves or frequencies sent by Reiki practitioner are self-healing impulses that improve patient's health.

Complex electromagnetic fields define the organization of all biological systems. As the Russian biologist, doctor and scientist, Dr. N. Artemjev said, people are more electromagnetic than chemical creatures. The influence of the waves is the key to defining the biological structure of humans as well as their optimal functioning. Biological systems are sensitive to natural and artificial electromagnetic fields. Therefore, the changes of those fields can provoke certain changes in the body. Frequencies and amplitudes of the field affect biodynamic condition of people, which explains the positive effects of Reiki on the living humans.

It should be emphasized that the energy does not flow only through the body, but also through all the subtle levels of human beings, which allows for the complete harmonization of the body. It heals psychosomatic causes of various conditions and illnesses, and improves the quality of thoughts, emotions and spiritual growth.

Reiki practicing stimulates spiritual growth and develops traits such as compassion, well intentions, tolerance, healthy self-love, love of others, and love for all the living creatures, environment, country and planet.

Based on philosophy and tested in practice, Reiki is a holistic method of natural healing that is harmoniously adjusted with the universe we live in.

In his book *Reiki Symbols*, N. Artemjev concludes that Reiki energy awakens in our bodies what lies beyond human dimension. Reiki makes humans in resonance with whole of the Universe.

### **3. Reiki and Spirituality**

Reiki was primarily defined and used as a technique for spiritual growth, as a subtle process of uniting the Spirit, the Soul and the Body in one. The result was harmonization of human being and improving of the psychological and physical health. For that reason, modern Reiki method consists of two aspects: therapeutic and spiritual. Without its spiritual aspect, Reiki would be incomplete for various reasons. One of them is that all sorts of deterioration of physical and psychological health come from subtle mental, emotional and spiritual levels. That is a well-known fact. Removing symptoms does not mean healing. If an illness is a task, its solution is a

serious process of personal transformation all levels. The writer B. Siegel describes this process in his book *Love, Medicine and Wonders*.

The state of happiness people are trying to reach is a spiritual welfare that has love at its core. Unconditional love is the energy that should fill souls of people, if they want a long and harmonious life. Love is the only energy we leave behind us and the only energy we take with us to the infinity when we leave this physical world. Love is the energy we leave to our descendants. It affects their destinies and moves life on Earth and in the Universe. Love is born in our souls and its influence on others becomes the purpose of life. One reaches the state of happiness and complete physical and psychological welfare. Reiki is very good means for reaching that goal, because life energy works through:

- Harmonizing of mental and emotional processes through relaxing and stress reduction.
- Altering levels of consciousness through harmonization and growth of subtle levels, and through calming and training one's ego.
- Producing big quantities of love energy by nurturing relation with life energy source and universal field of divine love.

A famous Russian healer and psychologist S.N. Lazarev, in his books *Karma Diagnostics* and *A Man of Future*, keeps returning to Universal Field of Divine Love, where we are all one, all brothers and sisters and we all come from the same source. Going out of this field cuts the quantity of energy that is necessary for harmonious life. This happens when the universal laws and Reiki principles are violated and when an individual lives in harmony with human logic and forgets the divine logic.

Human logic is the defense of personal interests and, often, superiority. Divine logic is love. To live in accordance with the universal laws and Reiki principles means to combine the two logics, human and divine. Put another way, it is the skill to defend human interests without superiority and with love.

Separating oneself from the Universal Field of Divine Love is similar to processes that take place in human cells. S.N. Lazarev has confirmed, by the means of his unique method, that every cell has two types of programs. One deals with the very cell, and another one with the human organism. When this cell "forgets" to work in the program that involves the whole body and concentrates only on itself, it develops malignancy. This leads to separation of the cell (or the group of cells) from the body so that the organism could function properly.

In another words, every human being should gravitate toward continuous relation with the Universal Field of Divine Love. It is necessary to concentrate on spirituality so that our humanity, and each individual in it, could survive.

Training one's ego and keeping from superiority (whether in physical, intellectual or false spiritual sense) as well as cherishing good thoughts and emotions, allows us to enlarge the energy of love in our souls. Reiki is one of the methods for reaching that goal.

#### **4. Reiki Principles – Spiritual Aspects of Reiki**

Reiki principles are the reflection of spiritual direction of Reiki method and the key for keeping the harmony.

Dr Mikao Usui introduced five basic rules every Reiki practitioner should respect during his or her life. Thousands of years old Reiki principles are the secret recipe for happiness and magical cure for all illnesses. These principles help keep our thoughts and emotions clean, and consequently, they influence our health and life.

Reiki principles are usually repeated in the morning and in the evening or during the day, when the need arises. They are the motto of every Reiki practitioner, a special goal to reach.

The beginning of this process is never easy. Every principle is essentially the opposition to bad habits, which are normally part of everyone's life. Those habits form obstacles on the way to progress.

It is sometimes very difficult to notice that process, because the habit eventually becomes part of the character. Accept these principles, live by them and you will become witness to magic transformations you will continue to revive.

- Just for today, I will not worry! Just for today, I will expect the best!
- Just for today, I will not be angry! Just for today, I will rejoice at everything!

- Just for today, I will be grateful for everything!
- Just for today, I will do my work honestly! I will work on myself!
- Just for today, I will be kind to every living creature!

Why "today"? We do not have "yesterday", because it is in the past. We do not have "tomorrow", because it has not come from the future yet. We only really have "today". If everyone lived in accordance with these principles, harmony and love would rule the world.

If you can promise yourself to live in conformity with Reiki principles, every day will be special and your spiritual growth will be apparent.

#### **4.1 "Just for today, I will not worry. Just for today, I expect the best!"**

As Indian philosopher Osho said: "When you are born, God does not ask you whether you would like to be born or not. When you are dying, he does not ask you anything. If two most important things, life and death, don't depend on you, why should you worry about other things?"

What will be, will be. Our worrying is not a positive influence. Whatever happens, it is for our own good. We realize that much later. Negative thoughts have negative content. Since there is attraction between similar things, we can attract something we fear. Worrying is counterproductive. It is better to face one's worries, analyze them and find solution.

We can influence our life by positive changes within. By changing ourselves, we change our lives. That is not a small thing.

Worry is a sign of distrust in our unity with the Universe. When Reiki practitioner connects a person to the source of life energy during initiation process, he forms a sense of protection. That feeling is not false.

That is why just for today you should not worry, but expect the best!

#### **4.2 "Just for today, I will not be angry! Just for today, I will rejoice at everything!"**

Anger is a destructive emotion. Its energy causes disharmony in the whole human being. Anger towards oneself or someone else, even if only in thoughts, destroys our subtle bodies, which can cause illnesses.

That imprudence can cause bigger damage than any reason for anger. Anger comes from ego. One's soul is never angry. Listen to your soul. Anger steals a part of the energy potential from your body.

Anger is a filthy habit. Reiki can help you get rid of that destructive habit. Control anger. Develop its opposite pole, happiness. Keep down your ego and give joy to your soul. Make your life and lives of people around you happier.

Reiki offers the possibility of transforming negative to constructive energy. Letting go of anger can help you keep your precious energy and make it into something creative and productive.

That is why just for today you should not be angry but rejoice!

#### **4.3 "Just for today, I will be grateful for everything."**

Every day we are surrounded by things we should be grateful for, but sometimes we don't think of that. Certainly, some things could be better, but turn around and thank for what is good in your life. This is the beginning of the process of positive changes.

If we image Universe as a living creature similar to us, the people, and we swap places, would we continue to give anything to an ungrateful person?

Gratefulness makes special energy that attracts prosperity. People are made to live in prosperity, but they make obstacles by being jealous, unsatisfied, gluttonous, pessimistic and ungrateful.

Expressing gratefulness for everything we possess helps the development of our being and strengthens our relation with the Universe, which holds the secret to the absolute well-being. The forms of gratefulness are health, love, friendship, creative endeavors, and money. In it, there is enough for everyone.

Be thankful to your parents, even when you think they don't deserve it. They are the roots of the tree, you are the treetop, and your present and future children are the fruits. Thankfulness to parents (even when it is not expressed) is the energy that holds the roots. It is the juice that gives life to whole of the tree.

Be grateful to every person who hurt you or caused negative emotions. They are your therapists (even though they are not aware of that). The pain you felt cleans your soul, just like any other pain. They are our teachers, because they, unconsciously, point to the places that need healing and change.

Be thankful for every critical situation, because it brings new tasks or solving of old ones. It will be reflected in your destiny and destiny of your descendants. When you feel gratefulness in hard times, you have finished a part of that task and you can move to the next level.

The skill of being grateful for difficulties raises your consciousness to a higher level and the amplitude between happiness and misery, or success and failure is considerably shorter. Life is slowly reaching its balance.

Gratefulness in critical situations can be explained realistically. One can never know what can happen in that moment. There is always something worse.

Be grateful for your physical appearance. It is most certainly appropriate for your karmic heritage and, as such, it is necessary for solving the tasks in the school of Life.

Your body is the temple of your soul. Everyone gets it as a gift. We continue to improve it. The way we look now is not only God's creation, but also our own.

If you are not satisfied with your "Temple", you can change its appearance. It is all in our hands, but we should not be ungrateful because we could have gotten something much worse or none at all and lose the opportunity to live.

Be grateful for every new day (be it sunny or rainy) because many will never experience the birth of a new day.

Gratefulness gives a feeling of joy, better health; it brings happiness to people, prolongs our lives and gives a chance for positive changes.

#### **4.4 "Just for today, I will do my work honestly. I will work on myself!"**

The truth is crucial aspect of harmony. It is one of the laws of the Universe. The truth manifests itself in various ways. One of them is honesty.

Honesty in all matters, and in work, is very important. Pure consciousness is the prerequisite on the road to spiritual development. Honesty with ourselves projects honesty onto others.

It is wrong to believe that dishonest work won't harm anyone or will not be revealed. If you know about it, it will damage you personally because it leads you off the road of harmony with the laws of the Universe.

If you want to live in accordance with yourselves and the Universe, be honest in every moment and fulfill your duties as if it were the last thing you do.

Be honest with yourself about unemployment. One can never really be unemployed if one truly wants to work. One can be forced to do something one doesn't like or doesn't consider worthy (having in mind one's education, principles, habits, etc.) or a job that is underpaid, but one can never be unemployed. Analyze reactions of your ego regarding your job, train with Reiki method and you will get new positive opportunities.

If you don't like the job you do, be sure to find positive sides. Although it might seem otherwise, they surely exist. Think about changes and take necessary steps, but also give the best you can.

Dishonest work can cause negative energy in a human being that turns into destructive obstacles for health and prosperity.

Honesty is crucial part of the Truth, the same as the Truth is crucial aspect of Harmony we all strive for.

That is why you should do your job honestly today.

#### **4.5 "Just for today, I will be kind to every living creature!"**

We all come from the same source. We are all, in one way or another, brothers and sisters, not strangers. Good will should come from the heart. It is a natural thing. It is also a cure and protection from many misfortunes, as well as an index of the quality of your soul and self-improvement. Being well intentioned to oneself means being well intentioned to others. You can go the other way too. If you start being well intentioned to others, you will feel the need to be good to yourself.

Kindness and well intentions are positive and productive energy that often precedes Love. Moreover, Love, as we know, is the main goal and purpose of life.

Expressing kindness to others builds a kind of Energy Bridge. The positive reactions of others find their way to you.

In that way, you can touch someone's heart and make a difference, but you can also inspire someone to be a better person.

Knowing that there is a Divine Light in all of us, and showing kindness and good intentions to everyone around us is a way of expressing love to the Creator and the Universe.

## **5. Conclusion**

Life energy, which during Reiki treatment or auto treatment flows in human body, harmonizes mental, emotional and physical levels. Regular use of Reiki helps raising the level of consciousness and spiritual growth. It all raises the quantity of love energy in the soul, which is the main condition for reaching spiritual well-being.

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# THE ABIKU PHENOMENON: SPIRITUAL ORIGIN AND TREATMENT OF SELF-DESTRUCTIVENESS

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**Abstract.** The philosophy of Ifa with its origin in Africa, where it has been preserved to this very day by the people of Yoruba, contains the entire opus of understanding a human life, character, predestination, destiny and nature. One of the toughest challenges is how to treat (*heal*) someone, who is born with the energy of Abiku – born to die prematurely (*born to experience premature death*). Ifa considers the individual top priority, using all the knowledge and instruments it deals with making the individuals life good here and now, in this life. Everyone is born with some sort of predestination. It is not fate, because if something is fated, then the individual has no way of affecting that. But when something is predestinated, someone can realize that or not, because everyone is responsible for his own life. In life we have all that which we can call good luck: progress, longevity, health, luck... But good goes hand-in-hand with destructive energy, and if we wish to achieve the good, we have to neutralize the bad. We can classify destructive energy into four basic destructive elements: death, sickness, failure and confusion. When we consider a person who has the abiku syndrome, it means that these destructive energies are constantly stalking him and that he is under heavy influence in at least one area by some of these elements. When everything seems to go well, and suddenly it seems as if one of these energies got activated, and it gives out the impression of being out of the person's control. Spiritually it is considered for people with this energy, that they have been heavily involved in a parallel spiritual world. It is considered that they have their own group in the parallel world, which constantly pulls the person back or make his life here unbearable, and make him wish to leave from here sooner. This phenomenon is in Ifa treated with using the energy Egbe – the energy of a spiritual society, with which it is necessary to stop excessive embroidery, pacts and similar connections, so that someone could live a good life. A person with this energy is not treated as problematical, but is understood and treated to maintain the positive elements of this energy. In fact, almost everyone who has this energy present, probably has an exceptional talent and capabilities which he could, with the right treatment, develop better than other people. This preserved knowledge can contribute a lot in the process of education, as well as treating people. People with this syndrome often go to doctors, but that kind of treatment does not help, and in a different extreme situation someone with that energy can live through and recover when it is no longer expected.

**Keywords:** *African Yoruba tribal tradition, Abiku phenomenon, Ifa life, Egbe energy, self-destructive tendencies, spiritual source, spiritual treatment*

## 1. Ori Concept of a Human Being

The Philosophy of Ifa, with its origin in Africa where it has maintained to this very day within the people of Yoruba, containing the entire opus of understanding a humans life, character, predestination and nature, provides one of the toughest challenges, how to treat (*heal*) someone, who is born with the energy of Abiku – born to die early (*born to die an untimely death*) [1-5].

In order to understand at least a little about this energy, we must first look into the concept of a human being and how he is understood by Ifa as well as other spiritual practices. The time concept of life starts with the concept of a human being in his Ori. Ori is symbolized by our head and is at the same time a symbol of our fate. What is important for fate is our place in life, the cycle of life of this moment; another thing that is important, is

the question of how to discover our own time. Ori is the essence of a human being, Ori is the guide and guardian of our life with one specialty – Ori has been with us since before we were even born, he follows us through our whole lives until death and beyond. Consequently, all our accidents, mishaps we encounter, are all reflections of our Ori. We can consider Ori as the source of everything, the foundation of everything we experience in life. It is the energy that motivates us at everything; it is responsible for our dynamic energy, for our achievements, our mistakes, our consistency, and all our emotional momenta. We know:

- Ori Ire – good fate, good Ori,
- Ori Buruku – bad fate, bad Ori.

This is all very visible in our life. We can recognize the people who have good luck, are in good mood, and certain people with a bad, negative fate.

For us to understand the energy of Abiku it is important to understand the basics of Ori and the concept of fate. If we wish to understand why one child in a family has a positive attitude, while its siblings have a negative approach, we must understand Ori. If we wish to understand why in a certain life period of a certain person an accident, a negative turn in life occurred, we must understand what Ori stands for.

Ori is an individual choice of a human life. Everybody has the right to own choice, be it bad or good, from experience or without, with risk or without it. Sadly, that same Ori can turn against us. In fact, our most vital energy is what can let us down when we need it the most. When we work for ourselves, it is actually our intelligence that can fail us. Our life resources are also our experiences, our personal security and self-confidence – all the resources we need in order to survive. All this can collapse. That leads us to destruction, to negative experiences. Accidents happen because of this; we make wrong decisions, we get angry for no reason, or we fall into a deep depression. We can regard this as failure of our Ori in a certain cycle of life.

This is beyond the concept of any religion. This is the concept of a human being. Ori is the nature of a human being, the power of fate. Ori is the personal guardian, responsible for all our noble deeds, our vitality, our achievements and for our failures. It is our essence.

Ori is the principle that serves the basic human needs in order to have a worthy life. The basic needs are: common sense, knowing our own restrictions, responsibility, and fear. Fear is also needed, because if we did not have it, we would go beyond our restrictions. Every time we go beyond our limitations, we expose ourselves to greater risks. When people with this kind of energy expose themselves to extreme risks, it often leaves them with irreversible damage. That is when we tend to say: “This was his destiny“. However, fate is actually only an aftermath of irresponsibility towards oneself. Experiences that follow usually are not satisfying. Our Ori is responsible for all the energies that are needed in order for us to protect our lives, to ensure our survival and the possibility of another life. But our Ori is also responsible for all the energies that lead us to our deaths. If we do not use all our natural resources with adding positive things into our lives, we can encounter a large number of negative experiences. The paradox of life is that a lot of people actually do not even care whether they take risks, they do not care if they are protected or not, and that they are actually digging their own graves.

When we talk about Abiku we can see that a lot of people like to suffer and they do not care that they are suffering. Their feelings and their activities are always connected with suffering. If we look at the lives of people critically, we can easily see this. This is a trend for everyone that has Abiku energy. The reality of Abiku is connected to their Ori. Abiku is someone, who does not care about their own suffering, they suffer with a smile. Sweetness and bitterness are two extremes that are present at all times. This is the energy of Abiku’s Ori.

## **2. Abiku’s Biggest Problem**

Ori is the only deity that can never abandon us. Our character and our personality go with us to the end; our wisdom and knowledge never leave. The energy of our Ori is also the energy which hosts all things in our lives. Ori is the base of all positive and negative experiences in life. That means that we are in the center of attention, that we have the energy that is responsible for everything. Our Ori is our best friend, but at the same time Ori can also become our worst enemy. Our Ori can save us, but can also stand in the way of our salvation. Our greatest enemy is our inner conflict. When we have external enemies, we can easily deal with them: leave our friends,

change our jobs, move away or break up with our partners. We have the possibility to choose, the possibility to throw away that what we no longer need. However, when my worst enemy is something within myself, the gradual process of self-destruction can start. Our inability, our exaggerated courage, our lack of restrictions, all this can create an enemy within us. These are energies that are not friendly to us.

The most dangerous thing is to have this energy within oneself and believe that it is positive. For example: “I am strong, capable and can drive fast, go on without any restrictions”. For this kind of people this energy becomes something they believe is their advantage and they are proud of it. Each behavior, each relation towards things, situations that expose the person to danger and risk, is Abiku. When something happens to this kind of person, people consider this as an accident, something that was meant to happen to him. But it does not work like that, it happened due to the fact that the person did not respect his restrictions. If a person cannot swim, or is aware that he is not a very good swimmer and jumps into a deep river despite that and drowns, this is not accidentally but is actually a self-condemnation. Sometimes, people are not aware that they are condemning themselves to death, to self-destruction, because they are risking too much. Certain people are so stubborn that everything that is normal to other people is not normal to them. Abiku does not accept normal, steady life. Abiku is stubborn and there are always strong feelings and different tastes for life present.

The fact that stands behind this is the potential of Abiku’s Ori that can bring forth destruction. Abiku’s Ori is a very increased energy that causes Abiku to have an extremely intuitive personality, to be a person with an exceptionally high intuition, high intelligence, and strong trust. And Abiku is always well aware that anything there is too much of can become negative. All positive energies can become negative if we do not find a point of balance, harmony. Learning about Abiku energies presents a great challenge on how to understand and harmonize these energies. If we have Abiku children or relatives it is a challenge to understand these energies and find the best way to restrict them within these energies or put them in some sort of at least minimal balance.

It is a fact that some people come to this world with a positive Ori and some with a negative one. To put it more clearly, Ori means that when we show the door to someone and say to him: “there is the door”, the person turns and goes in the opposite direction. There are many people like this. They see the path, they see the opened door, but they go in the opposite direction. This does not belong to any mythology, it is the plain reality.

This is all that we try to achieve with the Abiku phenomenon – to soften the tough, problematic, hard (*heavy*) Ori so that someone would become less stubborn, loose passion for provoking death or being exposed to danger. Our Ori is the foundation of everything in life, because the source of everything in life is formed since from the beginning. When we accept our Ori, our fate is somehow decided. There are many resources that can help us change what is negative into positive. A human being can be completely renewed. We do that with the phenomenon of Egbe, Abiku and Ibeji.

### **3. What Does Abiku Mean?**

Literally Abiku means: born to die, born for premature death. In life, there exist two extreme points – birth and death; same as happiness and sorrow, positive and negative. They present a one of a kind feeling for the truth because the only truth is that we are all born to die. This is logical. But it is not logical to die before our time, that we experience a tragic death, that we have a miserable life, full of suffering, sadness and worries.

We will all die some day as we are all Abiku. The only difficulty here is that we do not accept and do not acknowledge a premature death. We all know that life is a big challenge; we are also aware that we are all capable of facing with the challenges of life and become the winners in life. We all have the right for happiness, joy, peace and satisfaction. The challenge to create this is how to get to it. When we talk about natural energies and manipulation of energies of a parallel world, we use the energy so that we neutralize or completely destroy our inner enemy, which destroys our humor, our courage, our self-confidence, our passion for life, our wish for peace and pleasure in life. At the same time, this has to become a daily celebration. Things that give us good luck and happiness are firstly our ability to understand life. If you donate a car to me, my happiness cannot be any bigger because of this, I can only be more satisfied. My good luck, happiness, my feeling of joy is the supreme energy within me and has nothing to do with things I do or receive. My achievements are solely my satisfaction and are not a foundation for happiness. If it were any different, than those who do not have money, love, those

who are ill or live in poverty, would not be able to show a happy, smiling face. Some Abikus are depressive or prevent themselves from being happy. They deny themselves the right to be happy and they really are not happy.

When a child is born to a “normal” family; in a healthy family birth represents a moment of joy, presents something we can call a demonstration of love. A child is born, everyone is happy and satisfied. Although often we make mistakes as we do not detach ourselves from the joy and satisfaction. The child grows and starts to disturb us, the severity is based on the level of our understanding. They begin to show their individuality. At this point grown-ups start to restrict them. And so it happens that with time we persistently destroy the child’s personality, because the word “No” is the word that the child hears most often. When we grow up the reality of life is still telling us: “No, no and no”. As if we actually do not have the right to a life, as if we do not have the right to make mistakes, to risk. The word “No” nests itself deep into our personality, definitely to the extent where none of us want to hear the word no. We always want to achieve our dreams; we want our dreams to become reality. We are not prepared to hear the word “No” and do not even try at least a bit to understand its meaning. When our partners tell say “No” – that is a problem; when our boss says it – also a problem. This is the systematic destruction of a person’s personality.

A child that is not a “radical” Abiku is born normally after 9 months of pregnancy. If it belongs to the “real” Abikus which do not want to be born, it will be born before time, before the end of normal pregnancy (after 6-8 months). After the birth of the child many things start happening; the forming of its character, its personality. In this period of growth the child recognizes the people who love it and reject it. But it begins to understand the definition of its life. It begins to distance itself from people and begins to fear the life. When we look at a person within our family or among our friends we sometimes fear for him – what is their life going to be like in the future? Will this person even live long? We know people who get ill from different diseases every six months and it is normal that we ask ourselves this question at that time. What is that thing, which makes some people get ill over and over again while others do not? Why do some people like risking and yet others never want to risk anything in their life? What is it that leads people into tragic experiences on special dates or in special cycles in life (just before graduation, marriage, on honeymoon)? Why in this period and not in another? All this is what creates the universe of Abiku.

If we go back to pregnancy and birth: some experiences of spontaneous abortion, premature death, constant illnesses or mothers decision to make an abortion – these are all actions that only Abiku can afford. There are Abiku actions that are called Emere. Emere is a child with a hidden behavior: at times very stubborn, rebellious, disobedient, with a passion for accidents, bold, constantly provocative, takes risks, a child who loves revenge, often gets ill (always with a high temperature or hypothermia), often cries without reason, always talks with itself, plays alone or simply does not want to play with other children.

Sometimes Emere creates a stage for himself and also plays all the roles himself. Those who have this sort of energy often talk to their imaginary friends, complain to them and fight with them. Such manifestations are possible. When they reach the school age most of the time they do not have a traditional way of life. They stand out of the traditional system. That is why we say they are stubborn, rebellious. It is not true, however, that they are rebellious only out of malice, because Abiku loves to be different than his peers. At the same time Abiku presents a set of many positive characteristics. We need to understand the following: What counts is not what we have, but what we make with what we have. That is the problem of Abiku. Those who have this energy, which we consider supernatural, need a spiritual grip so that they could turn this energy to their own advantage. Abiku is highly intuitive and the question is how to prevent him from using this intuition for self-destruction? When someone has too much energy, too much power, it is not good because he comes to the point when he does not know what to do with all these resources.

#### **4. Abiku Phenomenon and Egbe**

There exists a society of Abiku, the universe of Abiku actually. One of the most dangerous Abiku aspects is the one that Abikus are always highly connected with the spiritual world. They are in the visible and invisible world at the same time. They live in both these worlds at the same time. They have nightmares, some always sleep with their eyes open, they can sleepwalk, can go to the kitchen in the middle of the night to drink water etc.

At night Abiku can manifest itself in a way similar to a dream, but in their being they do not dream anymore, they actually travel into another world where they meet their friends. Sometimes when they return into this world, they remember this when they wake up, but they also often do not. Sometimes they have many confused information about what happens to them at night. But that actually are not dreams but rather Abiku transformations, because Abiku always lives a parallel life. Sometimes they wake up on the other side of the bed, sometimes they even keep falling off the bed. Abiku is in both worlds at all times. Just like children, adult Abikus can also wet their bed.

There are many nightly and daily manifestations, that is why we call them Emere which means supernatural relationship – simultaneous communicating with the visible and invisible worlds. That is a positive peculiarity in a being although there are always difficulties about what Abiku does with his energy. If we do not support Abiku with enough energy, with a resource of knowledge big enough, it can come to the abuse of his abilities. That is why we try our best to understand the Abikus. Theoretically speaking there exist two groups of Abiku and they are both members of Egbe, because Abiku is the physical aspect of the Egbe phenomenon. People who are born with tendency towards fear, challenges, supernatural energies, mysterious energies, which have a mysterious, different relation towards the world, some sort of mysterious forms of life, are not like that because they are trying to hide something, but are like that because of everything that is happening in their lives. A group of this kind of people form a society called Egbe. Abikus always have some sort of agreement with their families. Some of them have a pact so strong that they actually already have a date set for their death, the leaving from this world and returning to the universe of Egbe.

If we look at a circle of our friends when some have died, especially if they died young, we will see that a tragic death is in question; sometimes the reason for it is also complete nonsense, stupidity or it is illogical. Somehow they left this world too easily.

Sometimes they do not die but live with the consequences of the moment that should have taken them to the other world. Abikus very often tend to have signs on their bodies and it is common that children like this are born with a lot of birthmarks on their bodies. Some get the marks on their bodies only after an accident has occurred.

Abiku experiences periods where negative experiences are more intensive. In most cases this happens during important periods of an Abiku's life. Imagine that someone dies the night before his wedding, graduation, moving into a new house, on some important date. All this happens with the intention to prevent happiness in the life of the Abiku and all the people around him. Abiku's age is a very decisive factor. Before the Abiku is even born, he accepts his fate or chooses it. Before he is born he somehow separates himself from his family that is somewhere else, in another universe.

Abikus have a pact, an agreement with their families, that they will in a certain period bring suffering into the lives of their parents in the visible world, have an accident, fall ill, disappoint them, commit suicide or die from some disease. At the same time they have an agreement to be in constant contact with the spiritual friends in their families. Egbe is a society of spiritual friends and the Abikus are always in their debt.

But only those who do not care about life can be Abikus. Abikus wake up in the morning and say: "Today, I am not leaving the house". This way they deny themselves the possibility of life. Abikus are only those who deny themselves the possibility of life. Imagine someone who punishes himself, who condemns himself, who says "no" before he even heard the end of the sentence, will not do it, even though he knows that it would bring him joy, happiness and satisfaction. He accuses himself and condemns himself. Abiku is capable of this. They deny themselves the right for joy and happiness. He is capable of destroying anything that is good and if he does not have a problem, he creates one. If there is no unpleasant situation, he will create one. When something good is happening, like a celebration, he will prevent it or avoid it. Abikus tends to be revengefull. If someone loves to revenge, likes to make fun of it. It is different from a mere joke, it is cynicism.

All of these are possible forms of Abiku, the Abiku energy manifests itself this way. That is how we spot them; and it is important that we cut their roots by changing their energy, that we cut the pact before it is too late. Fact is that parents can devote time to an Abiku while still a small child, but when he grows up with all his abilities that are not used correctly he will be regarded as problematic. People do not have the knowledge to understand and to point the right direction to someone who has this energy.

## 5. Abiku Action and Qualities

When we treat an Abiku we must also treat the parents and the entire society, otherwise there will be no results. Abiku has his way that can lead to many unpleasant occurrences because of the pact, which he has with the spiritual world. This pact can be broken.

At the same time people have a lot of understanding toward destruction. We believe that destruction is something normal, although it is not. Spirituality, it is the only way to protect the bad actions of an Abiku. Abiku is someone who is very faithful and loyal to his group that is called Egbe. Egbe is a spiritual community, they are his spiritual friends. Abiku has an agreement with Egbe about what he will do in his life, about everything that he will provoke in his life, about the cycle of life – how he will begin it, live it and how he will end it. We know that death is something that awaits everyone. If someone decides to die today, he can do so. And if he fails, he will not succeed just because it was badly executed. To gain the courage to commit suicide is nothing more than to lose fear of it. If a person keeps saying how we would like to die and we do not do anything about it, one day he will wake up and that day will seem like the perfect one to die, especially if that person is emotionally unstable. This is part of what Abikus love to do. Only an Abiku laments by saying that he got sick of everything. At the same time we need to be careful with another Abiku action: those who commit suicide and survive have their lives devalued by their beings. They did not commit suicide physically but in a way that they stopped living. They have no ambitions, no dreams whatsoever, no challenges, no risk – they are dead although they are still alive. They only breathe. To be a living dead means to be active without caring about results or achievements. Some kill themselves despite fear, not caring that they will also kill themselves physically.

Our life is full of expectations. While we are still children the expectations from the universe towards us are still minimal. The risk of the Abiku energy to show itself is minimal. A small child still has not been introduced to a single challenge. The only risk it faces is illnesses to which the child is prone to, if by chance it is an Abiku. Afterwards there are the so-called home accidents: falling over, collisions and such which are dangerous for children. The child's energy is the one that leads to accidents. When we grow up we have all the justification to put the Abiku energy into action. We begin with feelings of inferiority, disobedience, fear or exaggerated courage. We have many such positions towards life that weaken our attitude toward life, which always shows itself through illness. When they wake up it is normal for some to say: "Today, I do not want to do anything, I do not care about anything, there is nothing to encourage or that interests me, and it is not even worth it to try". No one else can love you. Fact is that you are the only one required to love yourself. If I cannot make myself happy, I cannot make anyone else happy either. Because I do not even know what it is like. This is the foundation. I can only give others what I have; and if I have too much of it and if it is something that I know.

We are talking about human destruction at this point, about the illogical aspect of life, about surprises in life. These are situations where many negative things happen to someone who is Abiku. This always leads to suffering and illness. The less we understand spiritually, the more we suffer.

Abiku is always active. Abiku Agba always has critical moments in life and makes sure that these critical events occur exactly in the important moments of our lives, often on our birthdays, just a bit before the birthday or a bit after, on graduation, on weddings, at some important achievement, maybe at birth; most commonly when it is about some kind of social event: In short, at the most important moments of our lives.

With Abikus it is important to understand their struggles for life. Some people renounce themselves from their life, they do not want it. They will find some sort of excuse, be it depression, nervousness or something else. When we have such an excuse we do not have to do anything, we do not have to trouble ourselves. I am not talking about natural restrictions. Sometimes depression and nervousness are something natural, a biological phenomenon, sometimes these terms are mistaken for foolishness. It is easier to bring someone into balance that has a true mental problem than those who are incapable of having a good attitude toward themselves. Such a person has no will left for life. A surprise is the only risk that we can have with this sort of people. We can consider ourselves "normal" but still act destructively toward our friend – some day he does something that we do not like and we decide that it is necessary to destroy him. How am I any better in this case, why would I be more normal than those who have mental difficulties?

Abiku destruction has many faces, many aspects. Wherever there is a tendency toward destruction we can find the Abiku energy. The only difficulty is that there is no scale to measure the level of destruction. In many cases we cannot do anything by ourselves, but we need someone who will show us the reality, someone who will keep us under control. We can only do this with love and patience. Otherwise we cannot comprehend that what is different from us.

With Abikus it happens very often that something similar depression appears – lack of taste and passion for the things they do in life. Sometimes they have a wonderful home, a house, from a material point of view they have everything they need to lead a good life, but they are not happy, and we call it “depression”. Abikus are often tagged like this, although it is not a depression. It is a fact that if someone wants to deny everything good he has in his life, he needs some sort of excuse and depression is a very convenient excuse in times like this. In certain cases, if we are on the opposite side towards the interests of an Abiku, we have to know that Abikus have a very determined mind. Most of them are very determined people. That is where Abikus get their good qualities from. It is good to have a strong personality, it is good to know how to say no, even if we say it for no reason; it is very positive, because it builds up our self-confidence. Most Abikus are very confident, that is why they risk too much. Because their confidence is too big, they often forget about restrictions and that leads them to risk.

The next Abiku quality is intuition. Abikus know when they will have an accident, they often know that they will break their arms or legs before it even happens, they know they will die, some of them can tell the exact date of their deaths. They have unusual qualities that give them the possibility to manipulate life. Because of that, most inventors or people that achieved something very special in their lives are Abikus. Some of them have the blessing, the ability to compensate for too short of a period of life through achievements that they reach very quickly, and in relatively short time achieve a lot, as if they would actually live too fast. The characteristic of an Abiku is that if he wants, he can punish you or bless you. They can wish you good or bad, you can believe anything you want, it will happen.

## 6. Conclusion

Abiku, from a spiritual aspect, is constantly maintained, supported by Egbe. Fact is that Egbes are always friends with Abikus, just as they are with everyone else. There exists another parallel life, a parallel spiritual world. Every one of us has a parallel life in the spiritual world. Our spiritual friends have a decisive impact on our lives, positive or negative. They affect our good and bad behavior, make it easier for us when certain difficulties occur and prevent us from falling into new ones. We work together with these spiritual friends so that we are balanced with ourselves and with the energy that leads us and has an impact on our lives. These two worlds are strongly entwined with one another. Each of them has an impact on the other.

If someone wants to be happy in the visible world, he must be in balance with his friends from the spiritual world. Without that, he cannot be happy. In life, many logical things you talk about do not bring any results, because a tree can only stand if its roots are deep enough. A human can survive only because he has spiritual energy that supports him, that maintains his time. That is why each and every one of us must discover his spiritual energy, care for it, support it and nurture it.

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# ENTHEOGENIC SHAMANISM: ANTHROPOLOGICAL CATEGORY, TRANSPERSONAL DIMENSION OR PSYCHOTHERAPEUTIC MODEL

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**Abstract.** The most significant dimension of (psychothropic) entheogenic shamanistic ritual, being an essence of therapeutic practice in isolated groups of Amazonia, is that dimension which touches universal themes, from person's identity to its place in cosmic scheme. This experience is described as transcending borders of empirical reality, coming out of the framework of profane existence and entering into realm of cosmic existence and meeting with most supreme principle. In psychology literature it is frequently called transpersonal experience, as being denoted a mystical experience in religious terminology. The question arises on characteristics of this experience (if it exists) in the framework of shamanistic concept, as according to many experts on shamanism it does not have this (mystical) component being exclusively oriented to practical purposes of healing. According to shamanistic practice in observed groups, these categories are not excluded mutually. On the contrary, they are complementary, with mystical or transpersonal experience in direct function of healing, if this healing is comprehended in the context of shamanistic concept of disease. As in this mystical experience a person is continuously returning back to his mystical trans-subjective roots and beginnings, a shamanistic return into myth past with myth scenes and symbols achieving significant relationship between a person and universe is completely reasonable. This transition from "here and now" into "there and then" means experience of transcending space and time limitations, i.e. coming out of narrow profane human framework and entering into realm of transpersonal experiences. In this context a shamanistic "road" which basically is searching for absolute, undoubtedly does have elements of mystical. Mystical, however, does not exclude practical goals of this road. On the contrary, mystical or let us call it transpersonal or integrative experience, is *complementary* in respect to these goals. In other words, this experience is in direct function of shamanistic action, in first place of healing.

**Keywords:** *entheogenic shamanism, anthropology category, psychotherapeutic model, transpersonal dimension, transpersonal healing, mystical experience*

## 1. Introduction

Psychotherapeutic system which is applied by shamans in tropical rainforests of Amazonia is a complex therapeutic process which functions on many levels. However, the most important dimension of this type of (psychothropic) entheogenic experience, the one that basically represents the very core of therapy methods from the isolated groups of Amazonia, is the dimension that refers to the universal subjects ranging from the questions of an individual's personal identity to the ones concerning the individual's place in the cosmic scheme. This experience is often described as an experience of "transcending the boundaries of empiric reality, stepping out of the frames of profane living and entering the spheres of cosmic existence and encountering the highest principle there is" and it is often referred in literature as a transpersonal experience, since - most of the time, religious terminology classifies it as a mystical experience [1-12].

## 2. Transpersonal as Psychotherapeutic in Entheogenic Experience

A question that arises is the one about the characteristics of this experience (as well as the question of its existence as one) in a shaman concept which, according to many experts on shamanism (among whom is Eliade) doesn't encompass this (mystical) component given that it is exclusively directed towards practical goals of treatment. Judging by the shaman practice in the groups I've been in, these categories are not mutually exclusive. On the contrary, they complete each other although it should be noted that mystical or transpersonal experience

has a direct function of treatment (if we perceive the term 'treatment' in the context of shamanistic concept of diseases).

However we define the mystical experience, it always comes down to - an experience of immediate contact with the highest forces, be they called God, Spirit, the Absolute or other. It is always defined as "interaction with the world which is not conditioned by anything" or, to be perfectly concise "a realization of someone's consciousness with the Absolute".

Moving along the cosmic spaces in an ecstatic state, a shaman strives to make a contact with the beings that possess the absolute knowledge and the absolute power. From this contact, he tries to elicit the answers to questions such as: Who am I? Where do I come from? Where do I go? Who do I belong to? and what is my position in the Universe? – questions that are rooted at the base of every mystical search.

The comparison with the Christian mystique is a matter that might come across as blasphemous or at least distasteful to many, but if we close our eyes before this comparison – when we open them, we will face the same question on both sides. "Through the mystical diagnosis", Berdjajev used to say, "I hope I will find the secret of my own persona, I hope it will reveal my true self and where I come from. I hope that the secret of the world to which I am connected - in, to me, unknown ways, will reveal itself to me." Since, through this type of adventure, an individual always tends to go back to his mystical trans-subjective roots and beginnings, it is completely understandable for the shamanistic tendencies to go back to the mythical past and scenes/symbols which actualize such an important relation between a man and the cosmos.

In this context, the shaman "path" which basically represents the search for the absolute, undoubtedly has elements of mystical. The mystical, however, doesn't exclude the practical goals of this path (many authors agree, among them our professor Jerotić, that the mystical doesn't always have a religious character). On the contrary, the mystical or so-called transpersonal/integrative (the name is optional) experience is in a complementary relationship with these (practical) goals. In other words, this experience is in direct function of the goals of shaman actions – primarily, treatments.

Following the idea of the unconscious content which is released during entheogenic experiences, we could presume that, on this level, deeper layers of unconscious material belonging to the category of 'collective unconscious' are released. This would refer to the assumption that entheogenous substances in certain respect, or perhaps dosage, awake certain layers of unconscious material. Transpersonal experience would, in this context, correspond with the waking of archaic content "that has origin buried so far back into the mystery of past that it almost seems as if it doesn't even come from humans".

The whole issue could be observed from another viewpoint that would be consistent with the biomedical model.

First of all, what should be mentioned in this context is that these types of psychothropic substances affect directly the brain tissue and not the emotional or abstract contents. It can be claimed with considerable certainty that hallucinogens (or these types of psychothropic substances) affect the synaptic transmission which means that they, basically, "modify the brain and not the soul".

This modification can be reflected in loosening and losing the ties between psychological functions and current reality. In other word, a certain gap would occur: ideas, feelings, thoughts, imaginations etc. would cut loose out of the control of immediate and often painful reality. It could, therefore, be claimed that these substances disburden the brain from many stimuli and information that are put upon by reality. The consciousness, as one of the functions of central nervous system, is set free from the tyranny of current reality.

In some ways, by closing the canals which deliver the information from the immediate reality – entheogens set consciousness free. Being set free, consciousness can run away from everyday activities and current problems and focus on universal questions. These universal questions, from an individual's point of view, imply this individual's attitude towards self, a group and the Universe. Every type of awareness begins with the attitude towards oneself i.e. with self-consciousness. The next important relation is the one with a group while the third important attitude is the one towards the Universe.

With disappearance or at least dramatic reduction of the presence and meaning of current reality, the "spiritual world" becomes the only real reality. In this reality, the shaman (or his follower) turns into a thinker who has to face himself, his group and the Universe. However, the question persists – does he dispose of any

other type of knowledge (piled up collective experience, for example) for this kind of confrontation, other the one he gained during his individual life?

Therefore, if we were to question a shaman's/follower's hypothetical collective knowledge, these symbols and notions with which he operates would come to him through the exchange with his fellow tribesmen. In everyday life he may be unconscious, or better yet – incapable of working with so-called individual, group or cosmic symbols and concepts. The substances that remove the obstructions originating from current reality, awake the contents that, without the help of a shaman, would probably stay forever hidden or out of the individual's consciousness. They, as it appears, disrupt the realistic awareness but set the spirit free.

To put it simply – during this experience, a “primitive” hunter becomes a thinker who is searching for a lost spiritual balance, not in the practical activities which he is used to, but through the spiritual effort which should integrate him into the world on which he depends.

Some authors agree that the aforementioned substances allow individuals to embark into the world where visions, memories, images, and fantasies dominate. These adventures (referring to visions, images, fantasies etc.) can be a product of, on the one hand, elements of an individual's experiences and, on the other, processes that are mutual for all people. Radonjić says “if there is something that goes beyond individual knowledge and represents collective property of humanity, then it's probably the activeness comprising of psychological operations.” According to these authors, similar contents that exist in various cultures (and especially in individuals) could be interpreted rather as a result of brain function that is common for all people than as a consequence of collective archaic knowledge.

I mentioned these external interpretations in order to illustrate the ways to interpret the technique applied by shamans.

Disregarding our own interpretations, a shaman estimates, based on the knowledge acquired, which of the mental images belong to the individual experience and which have a universal character, no matter what the explanations for that universal dimension are. Therefore, he directs his patient “turning his consciousness around” from the field of current reality towards “another reality”, that is, towards “a spiritual world” (if we are to use the biomedical explanatory model), leaving the patient with his impressions and following him on this path.

We already mentioned that this path implies three important levels. The first level represents a relationship with oneself and comprises questions such as: who am I? To whom I belong? How can I persist in this world? The central subject here is identity. However, by posing questions of identity, one will quickly reach the next level which is nearly inseparable with the first one. The most important dimension of an individual's identity is located on this next level – the individual's attitude towards a group. Remember how Macigeneka and Aguaruna explained their path. “We drink ayahuasca in order to become one with the beginning. Ayahuasca teaches us where the beginning is, along with the sky and the earth. It teaches us where our own place is. It shows us where you come from, where all the Machigengas that ever existed and that exist now – come from...” There is no need to doubt that similar experiences happen to other groups as well. After all, very distant Haicol Indians stated nearly the same thing, embarking upon this entheogenic path: “We are searching for our new life. We are looking to find out what it means to be Haicol.”

What is crucial on this level is comprehension of the order of things, the way the tribe functions and, in this context, the need of an individual to place itself into the tribe structure. Only when they feel integrated into the group/tribe, the individual will dare meet the absolute forces. The goal of a shaman on this path is precisely to point his patient onto a direct encounter with these forces that own the absolute knowledge and power.

The question of cosmic forces, the Absolute and the deities, didn't arise from an academic need to grasp the infinity of time and space (I'm not saying that a shaman doesn't have that need as well, but here – he uses it in a therapeutic sense) as well as the origin of the Universe. The question of cosmic forces is an expression of weakness and need for protection and encouragement. All speculations about time, origin and infinity are more or less a mask for the unstoppable human need for protection and support. A shaman is, perhaps, more curious than his fellow tribesmen and more confident in his search for the omnipotent cosmic powers, but his deep interest for the beginnings and the final sense has, in its basis, the same need for protection, encouragement and security, as well as the effort to connect a personal sense with a sense of universal classification and with it – to gain sense of

being integrated into the world of absolute forces because without that integration – his fate and the fate of the entire group would be left to the helpless ways of ordinary people.

His therapy is directed precisely towards this goal – to confront people with the absolute forces, and during that process make them believe in their benevolence and the almighty protection they offer. In therapy, when this level is reached, the individual - as well as the group - is given a definite value that strengthens self-confidence and faith in oneself.

### 3. Conclusion

From the shaman point of view, it is completely irrelevant if cosmic forces which he confronts come from collective consciousness and long ago buried experiences or if they're based on elaborate universal psychological processes. These issues can be the subject of our own ponderings and professional ideologies. But for a shaman – the only thing important is that these forces exist, that they can be communicated with and that one can gain their benevolence and protection.

This is the central spot and the core of the entheogenic shaman treatment. In their therapeutic methods, shamans use universal and global forces – such as community and higher, deictic forces used for solving individual problems. Moving from global to specific, a shaman starts with the most general “collective consciousness” and applies it to a specific case, unlike psychiatrists and therapists – who start with a specific case, an individual – and strive to make that individual ready and adapted to collective and general demands.

A member of a native culture sees an ally and support in the general, in Pantheon. A member of western culture sees general and collective as a rivalry force hard to reckon with.

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## **C. WORKSHOPS**

## DETERMINATION AND PRESERVATION OF BIOLOGICAL YOUTH

Workshop by Dr. sci. Alla Ivanovskaya

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- Research into bioelectrical properties of nuclei using *intracellular micro-electrophoresis method*, which has shown that most suitable are epithelial cells, especially of the buccal mucosa. The sampling of cells is completely harmless, non-traumatic and non-invasive method. The cells are studied in their natural state, without the use of fixatives and stains. On the tested preparations, besides the quantitative characteristics, the *qualitative changes on buccal epithelium cells* and *changes in microflora lining of the oral cavity* are observed during the treatment methods of quantum medicine.
- The correlation between the changes in the amount of electro negative nuclei and the changes of qualitative characteristics in buccal epithelial preparations (external appearance of a cell and micro flora quantity) was determined during the healing process. We can compare the patient's subjective feelings and objective results of the treatment. It gives the basis for intracellular microelectrophoresis evaluation, as an objective efficiency control method, both during and after the treatment. It therefore gives the possibility to change the therapy during the application or to confirm its efficiency.
- This method has achieved a wide recognition in the medical practice for determination of human life span, the degree of exhaustion and toxic pollution, radiation and other causes of physical damages, and also for application in surgery, cardiovascular treatment and other medical branches. In fact, it has become the most recent issue on adequate method for the *treatment process control*, which gives the ability to completely evaluate the overall health status by showing the dynamics of the functions that return to normal levels.

Dr. Alla V. Ivanovskaya, PhD, is a physicist working in Scientific Research Center of Quantum Medicine "Vidhuk", Kiev, Ukraine. Her current research interest is particularly related to methods of on-line diagnostics of the patient during the treatment methods of quantum medicine: cellular microelectrophoresis, infrared thermography, and differential reflectometry.

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Dr. Zlata Jovanović Ignjatić, MD, is a specialist in physical medicine and rehabilitation. During 1990ies and 2000ies she passed several internationally certified educations in acupuncture, quantum medicine, microwave resonance therapy, and homeopathy. From mid 1990ies holds Private practice in physical and quantum medicine, acupuncture and homeopathy in Belgrade. She is president elect of Acupuncture Medicine Section in Serbian Medical Society from 2006, president elect and co-founder of associated Quantum Medicine Subsection from 2008, and co-founder and first president elect of Quantum Medicine Association - Quanttes from 2006. During 2006-2008, made significant contribution to passing Regulations on traditional medicine in Serbia, as a member of Committee for Regulation of Traditional Medicine, in Serbian Ministry of Health. She is an author of the book Quantum-Holographic Medicine: Via Acupuncture and Microwave-resonance (Self)regulatory Mechanisms, printed by Quanttes, Belgrade, 2010, in Serbian.

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Prof. Dr. Konstantin Korotkov, PhD, is a biophysicist from St. Petersburg, Russia. His invention of the EPI/GDV modernizes Kirlian photography and creates a functional visualization of all our body's systems uniquely and non-invasively. According to Prof. Korotkov, the proper use of EPI/GDV technology has the ability to raise both physical alert consciousness and spiritual consciousness. Prof. Korotkov has published over 200 papers in leading journals on physics and biology, and he holds 17 patents on biophysics inventions. He is international health care consultant (USA, Europe, Japan, Latin America). Prof. Korotkov is deputy director of Saint-Petersburg Federal Research Institute of Physical Culture and Sport, professor of computer science and biophysics at Saint-Petersburg Federal University of Informational Technologies, Mechanics and Optics, professor of adaptative physical culture at Saint-Petersburg Federal University of Physical Culture and Sport, and founder and president of International Union for Medical & Applied Bioelectrography.

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Kiran Schmidt, BS, is German biophysicist, living and working in USA, founder of Inergetix Inc. In 1984 he got 1st price in the German competition “Young inventors”, and in 1986 he founded the Instrument Systems Corporation in Munich. Discovering the power of homeopathy in 1989, one year later he sold his share in Instrument Systems and went to India for 5 years to study and practice homeopathy. From India he moved to California in 1995, and started developing the Inergetix CoRe system. In 2003 he started working with Electrodermal screening, and in parallel adding the energetic components to the Inergetix CoRe system which until then had been a purely informational (radionic) system. Then in 2004 he discovered the principle of Dynamic Labile Equilibrium, and in 2006 he became aware of holographic nature of our existence. From 2006 he started his perpetual seminar tour to all countries of the world.

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Dr. Dušanka Mandić, PhD MD, primarius of labor medicine, was visiting professor in subtle energies and energy medicine at the ECPD (1991-1999) and IASC (1999-2011), Belgrade. She is innovator of two medical devices and the creator of the new medical treatment. First patent (1995) - medical device (2000) Trap for shell fragments (awarded WIPO UN 1996 Woman World Inventor of the Year) was initially used to treat wounded people with foreign ferrous fragments in the body and to displace and evacuate shell fragments, and nowadays it is very useful for treating various injuries obtained at work, in sport, traffic accidents, households, even jatrogenic injuries with accidentally remained metal ferrous foreign bodies in human organism. Second patent (1998) - medical device (2003) MADU strips have wide medical indication areas due to basic principles and mechanisms realized on local and global levels in organism.

Dr. Drago Djordjević, PhD MD, specialist of physical medicine and rehabilitation, is assistant professor at the Faculty of Medicine, University of Belgrade ([dragodj@med.bg.ac.rs](mailto:dragodj@med.bg.ac.rs)). He had presented his PhD study about magnetic fields, including MADU, and he had studied pathophysiological mechanisms in human organism and biophysical and biochemical effects in both humans and animals. He is coauthor of the book: D. Raković, A. Škokljek, D. Djordjević, "Introduction to Quantum-Informational Medicine, With Basics of Quantum-Holographic Psychosomatics, Acupuncturology and Reflexotherapy", printed by ECPD, Belgrade, 2009, in Serbian.

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<http://www.reiki.rs/>

Join us for a special event – self-help by quick achievement of a satisfactory mental and physical state, with use of selected Reiki techniques adjusted for every individual. Reiki is an ancient spiritual-energetic method of healing, usually considered to be Japanese, and it is applied along with methods of modern medicine in health care institutions around the world. For many years now Reiki has been considered to be No 1 method of self-help in the world. Reiki primarily helps with reduction of stress, with relaxation, and is also used for mobilizing/activating all defense mechanisms in the human body. It improves the efficiency of all bodily functions, and allows us to reach a state of harmony between the physical, mental and emotional levels of our being. The highly developed, non-standard approach to Reiki allows everyone to acquire selected techniques and use them successfully for self-help, without having to attend traditional training classes, usually required for the Reiki method. Combining of Reiki techniques with acupuncture, with breathing and stretching exercises, as well as with mechanisms of the human reflexes and mental orientation, can allow everyone to find their own ways to prevent further development of various health problems, caused primarily by stress. The use of self-help to reduce stress, to relax, improve concentration and memory capacity, to improve one's mood in general and increase the energy potential of the body, is necessary and easily applied in everyday life.

#### **In this workshop, you will:**

- learn and practice various Reiki techniques including Reiki breathing, used alone or combined with stretching exercises, Reiki meditation, Reiki mudras, the energetic Reiki techniques combined with acupuncture;
- learn to understand the true meaning and purpose of regular use of the 5 Reiki Principles;
- learn how to apply these techniques and knowledge in your everyday life in order to improve its quality.

#### **The main benefits are:**

- Reduction of the level of your stress within 5-10 minutes
- Quick relaxation
- Letting go of your destructive emotions
- Improvement of your mood in general within 5-10 minutes
- Improvement of your concentration and memory capacity within 5-10 minutes
- Increase of your body's energy level within 5 minutes
- Regular improvement of your immune system
- Regulation of your appetite
- Regulation of your metabolism

Margarita Milenković, BA, is Usui-Thibetan-Karuna Reiki Master teacher, with 13 years of experience. She is founder and president of Association "Reiki of Serbia" with several hundreds active members, and author of the book "Reiki – A Way to Yourself", printed by Booking, Belgrade, 2010, the first one in Serbian. From 2011 she is a member of International Association of Reiki Professionals, USA.

## **QUANTUM TRANSFORMATION**

### **Workshop by Sonja Simonovska**

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[www.sonnenaufgang.co.at](http://www.sonnenaufgang.co.at)

Join us for a special event – workshop on Quantum Transformation, which uses practical application of the Two Points Method in the field of healing and life issues solving. Two Points Method has its roots in the thousands years ancient Hawaiian spiritual technique of Huna, rediscovered independently by Dr. Richard Bartlett (Matrix Energetics) and Dr. Frank Kinslow (Quantum Entrainment), with a great contribution of Andrew Blake (QCT - Quantum Consciousness Transformation). Not only because it is easy, simple to use, and at the same time very effective, but also because of the possibility of combining it with other therapeutic and healing techniques, Two Points Method is spreading through Europe very quickly.

#### **In this workshop, attendees will get...**

- Individual treatment, and will be able to feel the effect of the Quantum Waves.
- Group treatment, because of the spreading of the field in the surroundings at the time of individual treatment.
- Work on some personal theme/issue or problem, which doesn't have to be stated loudly, with possibility to transform their present state of being.
- Strong feeling of the effects of the field of the group.

Sonja Simonovska, BS, BA, was born 1963 in Serbia, she has grown-up in Macedonia, and since 2002 she is living and working in Vienna as Psychological counsellor and energy therapist. She is a member of Austrian Association of doctors, therapists and counsellors in the health sector, Austrian Association of Energy therapists, and Atman - Austrian Association for Integrative Breathing. Since her youth she is interested in spirituality, mathematics and psychology. After finishing the Faculty of Mechanical Engineering at University of Skopje, in the field of thermo-energetic, she is occupied by studying different energy healing techniques. Besides her natural, inborn talent for energy work, she has a wide educational range in the field of psychology and energy work, done in Austria and Germany. She is a member of Atman - Austrian Association for Integrative Breathing, and of Austrian Association of Doctors, Therapists and Counselors in the Health Sector. During the search for more effective healing methods, she encounters the Two Points Method. Thrilled by the results of this method she started to use Quantum healing on her clients, combining it with already known and practices techniques. Wanting to share this effective method with more people possible, she started to teach and to held Quantum Transformation workshops. Her teaching style is easy and simple, using meditation, music and body work. She is teaching in Austria, Serbia, Croatia and Macedonia ([www.kvantna-transformacija.com](http://www.kvantna-transformacija.com)).

## **THE HEALING ART OF QI GONG**

**Workshop by Vladan Vidović**

[birba.new@gmail.com](mailto:birba.new@gmail.com)

[www.koru-pozitivnaenergija.com](http://www.koru-pozitivnaenergija.com)

Join us for a special event - workshop on the healing art of Qi Gong. Certified China's pre-eminent energy-healing approach after a 19-year government survey, Zhineng Qi Gong (the cultivation of intelligent energy) has demonstrated an incredible 95% healing effectiveness rate on over 450 serious and terminal disease conditions, with ten million practitioners worldwide. In general, through the regular practice of Qi Gong, every aspect of one's life will be improved: old health issues clear (sometimes seemingly miraculously), patterns of stress and negativity disappear, natural vitality and good health increase, leaving one with a sense of deep happiness and wellbeing which originates from within.

### **The purpose of this workshop is to:**

- Introduce you to the scientific system of Qi Gong known as Zhineng Qi Gong;
- Learn some basic exercises of Qi Gong: squats, lift Qi up - pour Qi down, La - Qi and Fa - Qi;
- Give you an understanding of the purpose and benefits of Qi Gong practice;
- Help you understand the critical role that Qi - the fundamental substance of life - plays in our health;
- Understand how the quality and quantity of Qi impacts all levels of our wellbeing - mentally, emotionally, physically and spiritually.

### **Become the master of your own health and life:**

- Become aware of and awaken your internal energy (qi, chi, life force energy, prana);
- Learn practical, easy exercises which you can use on a daily basis to enhance your wellbeing;
- Enhance the ability of your mind to stay calm, relaxed and in control at all times.

### **The main benefits of Zhineng Qi Gong:**

- Mental – improving concentration and mental focus, improving brain power, ability to think clearly, improving observations skills, improving memory, improving decision-making, promoting a calm mind, stopping mind - chatter, reducing stress, improving communication skills, finding calmness and happiness and much more;
- Emotional – sharpening intuition, ability to stay calm under pressure, calming emotions, enhancing emotional intelligence, clearing negative emotions and mental patterns and more;
- Physical – preventing illness, enhancing health, maintaining good health, promoting the body's self - healing mechanisms, improving posture, increasing energy and vitality, increasing strength and flexibility of the spine, improving joint flexibility, improving digestion, strengthening and toning muscles, improving cardio-vascular health, relaxing muscles, improving back problems, strengthening immune system, increasing longevity and more...

Vladan Vidović – LaoShi has been teaching and studying Qi Gong for over 10 years. He is a director of Wellness Edu Center in Belgrade Serbia, organization for development and research of energy techniques, Qi Gong and expansion of human potentials. His personal mission is to help people improve their life and wellbeing through practice of Qi Gong and by following the law of nature and Tao. At the end of 2008 Qi Gong was formally acknowledged by the Ministry of Health, Republic of Serbia, as a method for improving general health of people.

## **PRANAYAMA – YOGA BREATHING TECHNIQUES**

### **Workshop by Dragan Lončar**

[srividya@eunet.rs](mailto:srividya@eunet.rs)  
[www.vidyayoga.net](http://www.vidyayoga.net)

Join us for a special event – workshop on ancient yogic breathing techniques – Pranayama. We will explore the yogic breath and abdominal breathing. This workshop will provide instruction and practice of pranayama techniques that you can integrate into your practice. Pranayama, the practice of ancient yogic breathing techniques, consciously controls the flow of breath, and thus enhances the flow of energy in the body. A regular, balanced pranayama practice increases prana (life energy), thereby inviting greater mental clarity, heightened healing potential and deeper self-understanding.

#### **In this workshop, you will:**

- learn and practice various pranayama techniques including ujjayi, bhramari, kapalabhati, bhastrika, nadi shodhana;
- understand the basics of the yogic philosophy behind pranayama;
- learn how to engage the bandhas in your pranayama practice.

#### **The main benefits are:**

- Blood pressure will be maintained at a healthy level.
- Improved circulation, taking oxygen efficiently around the body.
- Increase of oxygen to the brain reduces fatigue, eases depression, improves concentration.
- Increase of oxygen to the digestive system improves digestion and metabolic rate.
- A strong, healthy heart will reduce the risk of heart disease and maintain healthy, elastic arteries and veins.
- Reduction in stress levels.
- Deep breathing promotes relaxation.
- Healthy lungs will reduce such issues as asthma.
- Strengthened immune system as the toxins will be removed from your body when you are completely emptying your lungs.
- Increased longevity.

Dragan Lončar – Swami Shreevidyananda is a student of Swami Satyananda Saraswati – Bihar School of Yoga. He has been teaching yoga for 27 years. He is a director of Vidya Yoga School in Belgrade, Serbia. He was the first in Serbia to set European and world standards of training yoga instructors. Together with doctors in Traditional Medicine Committee, within the Ministry of Health of the Republic of Serbia, Dragan Loncar made significant contribution to passing the Regulations on alternative medicine (the chapter referring to yoga itself) at the end of 2008, by which yoga was formally acknowledged by the Ministry of Health, Republic of Serbia, as a method of improving general health of people. By establishing these regulations it was officially enabled to introduce yoga therapy into medical institutions in Serbia.

## **AUTOGENIC TRAINING**

**Workshop by Spec. Dr. med. Milka Čosović**

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[www.dejanrakovicfund.org/iasc.html](http://www.dejanrakovicfund.org/iasc.html)

Join us for a special event - workshop on Autogenic training. This is a medically widely applied auto-suggestive technique of relaxation of muscles and blood vessels, recognition of the body feeling of breath and heart, and exercise for concentration, based on Schultz's idea of the equivalence of muscular and mental strain. Autogenic training is acting primarily from the state of alertness, but with careful sinking in deeper levels of consciousness, as auto-suggestive short relaxing messages are softening one's undesired psychosomatic reactions in daily stressful situations. Experience has shown that this is more efficient if emotional flows are more freely engaged, this being the reason that auto-suggestive messages include the words: perfect, relaxing, calm, pleasant, easy, good, free, happy, friendly, bravely, strong, far, quickly, highly. The technique of Autogenic training is not only recommended for everyday anti-stress self-aid, but its short morning and evening exercising at home is necessary condition for its success. In the near future it might be expected that Autogenic training will emerge outside the medical framework, with a wider spectrum of applications, as excesses of psychophysiological and social tensions are becoming more and more a problem of civilization at the borderline of the second and third millennia, which will be less and less resistible by unconscious self-defending automatism. One of the ways of self-defense is Autogenic training and related methods, based on the millennial tradition of Eastern meditative techniques.

### **In this workshop, you will learn more about:**

- Suggestion and power of autosuggestion;
- Relaxation as a bridge between spirit and body;
- Five channels for detoxification of human organism;
- Mental and body hygiene as a tool for stress reduction;
- Control of stress by breathing;
- Emotions and heart rhythm;
- Changes and fear of changes.

### **The main benefits are:**

- Relaxation of the muscles of face and extremities;
- Control of the state of blood vessels;
- Recognition of the body feeling of breathing;
- Recognition of the body feeling of heart;
- Relaxation of the abdominal muscles;
- Control of concentration.

Dr. Milka Čosović, MD, is specialist of Ophthalmology, and worked in Hospital "Dragiša Mišović" in Belgrade until her retirement. She has a long practice in popular educations on Autogenic training and Bates exercises for healthy eyesight, at the International Anti-Stress Center (IASC) in Belgrade, and also conducted humanitarian IASC anti-stress courses in autogenic training, before and after NATO bombing of Yugoslavia.

## **CHANGING YOURSELF THROUGH INTEGRATIVE ART PSYCHOTHERAPY**

**Workshop by Professor Snežana Milenković**

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<http://rs.linkedin.com/pub/snezana-milenkovic/2b/31a/314>

Join us for a special event - workshop on knowing and changing yourself through Integrative Art Psychotherapy. How are you to know yourself? You can only know yourself in your relationship to others. So relationship acts as a mirror in which you know yourself. In Integrative Art Psychotherapy it can happen that by 'talking about', the person can stay in his/her left side of the brain, and not connect with repressed material on the right side of the brain - the very material needed for integration. By introducing imaging, made visible in art-form, and working with it in a person-centered mode, integration can occur. Images contain messages from the unconscious - perhaps hopes and fears - needing to be known. With art we can rediscover our creative force which releases such an amazing array of symbolic images. They come to us, bearing their gifts. And a psychotherapist can help us recognize such gifts. Somehow, by thinking less, it is possible to know more. Working with art is, in itself, a creative spontaneous process, as the psychotherapist moves from words to image, to feelings, to body language, to wider reflections. Wherever the focus of the moment, psychotherapist and client/person proceed on a journey into the unknown, a magical mystery tour.

### **In this workshop, you will learn more about:**

- Theory of growth and change behind Integrative Art Psychotherapy.
- Methods and processes of doing Integrative Art Psychotherapy - work with images in four stages:
  - Imagining - allowing images to present themselves to the inner eye. The image manifests itself within the person.
  - Making those images visible in art-form. Simply, the process of externalizing the image to art-form illustrating some event or feeling can, in itself, be healing.
  - Trying to elicit the meaning of the image with a psychotherapist. The image is projection of the self, made visible. Thus, when incorporated into the psychotherapeutic dialogue, the meaning of the symbolic aspect can emerge, and contribute significantly to the therapeutic process.
  - Working on the emerging issue in psychotherapy. Then it may be necessary to work on the revealed meaning.

### **The main benefits are:**

- How are you to know yourself better.
- How to free yourself from the intellectual constraints and concepts of your upbringing and your professional training.

Prof. Dr. Snežana Milenković, PhD, is professor of psychotherapy and psychology of art at the University of Novi Sad, Faculty of Philosophy, Department of Psychology. She is honorary president of Serbian Union of Associations for Psychotherapy (SUAP), and founder and president elect of Serbian Society for Integrative Art Psychotherapy. She is serving as a board member of European Association of Psychotherapy (EAP).

## TE-PSYNTESIS BODY PSYCHOTHERAPY

Workshop by Professor Ljiljana Klisić and Anja Djordjević

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[www.tepsyntesis.org.rs](http://www.tepsyntesis.org.rs)

Join us for a special event - workshop on TePsyntesis Body Psychotherapy. Body Psychotherapy has a rich variety of *diagnostic and therapeutic techniques*, as indeed there are in the other branches of Psychotherapy. In TePsyntesis Body Psychotherapy Training school there are methods to facilitate awareness of body and mind, our blockages and flow of life force. Our mother school is Radix with wide number of techniques, and workshop is planned to give an introduction to this approach.

### In this workshop, you will learn:

- TePsyntesis and Radix method are based upon the principle that each individual is a *whole person* consisting of mind, feelings, and body. For personal growth to be effective and lasting, it must touch and transform all of our levels. Given there is a mind/body unity, lasting psychological change can be affected by also working with the body.
- By itself, intellectual understanding, such as that offered by purely verbal counseling techniques, does not penetrate to and transform the deeper levels of our being. If we deal with conceptual content, and leave unchanged the *deeper emotions*, physical *blockages* and armor, then the roots of our problems remain untouched, allowing those problems to again manifest with the same or different symptoms.
- Instead, each kind of blockage must be dealt with on its own level. TePsyntesis therefore uses a diversity of mind (verbal), feelings (affective), and body (somatic) counseling techniques to bring lasting change to each level of the whole person.

### The main benefits are:

- As the work progresses, clients resolve their issues (e.g., anxiety, depression, trauma). Typically they also begin to experience, becoming more fully alive and more authentic. Of course, TePsyntesis is applied differently to clients according to their individual needs, and yet common themes underlie the work, such as mind/body integration, grounding, centering, boundaries, containment of feelings, expressing of deep feelings, ego strengthening, pulsation, charging, discharging, pulsation, relaxation, intimacy, pleasure, choice, purpose, self-direction and awareness.

Prof. Dr. Ljiljana Klisić, PhD, is a clinical psychologist, and professor at European University, Belgrade, Serbia. She is founder and president elect of the Serbian Association for Body Psychotherapy, and licensed Radix trainer. In 1976 in Belgrade she founded TePsyntesis - Serbian Training School of Body Psychotherapy, which has trained more than 200 professionals.

Anja Djordjević, BA, has got her degree in adult education at the University of Belgrade, She is a member of Serbian Association for Body psychotherapy – TePsyntesis, participant and organizer of numerous Body Psychotherapy seminars, courses and conferences, and editor and co-author of numerous books and articles in this field. She is also author of a book “Peace education - Between East and West”.

## **KNOWLEDGE FEDERATION DIALOG BELGRADE 2011**

**Workshop by Associate Professor Dino Karabeg and Professor Dejan Raković**

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[www.knowledgefederation.org](http://www.knowledgefederation.org)

Join us for a special event – Knowledge Federation Dialog Belgrade 2011. Imagine a world where the insights and methods of quantum medicine are integrated in mainstream healthcare; and where the experiences and the wisdom of healing and spiritual traditions are allowed to inform the conventional lifestyle and culture. What can we do to help this natural and needed development become reality? In Knowledge Federation we have turned this question into a collection of collaborative strategy games. We create projects that are game-changing, each in its own domain, and we provide just enough structure to allow individual contributions to add up to a shared goal, which is characteristically a change of practice. So, the strategy behind our Tesla and the Nature of Creativity (TNC) project may be understood by analogy with the way how large improvements to legal practice are commonly made in the US and Canada (an example is the court case that tobacco industry lost recently at the Supreme Court of Canada): a certain specific law suit is carefully prepared and taken all the way to Supreme Court. In the TNC project ([http://www.knowledgefederation.org/TNC\\_Prototype](http://www.knowledgefederation.org/TNC_Prototype)) we develop a case for quantum medicine and the corresponding worldview by focusing on a specific academic result – Dejan Raković's model where quantum-informational medicine is used to explain the 'deep creative insight' – a phenomenon manifested in unusually high degree by inventor Nikola Tesla. Around Raković's result we develop a complete methodology and infrastructure by which an academic result from any specialized area (here quantum-informational medicine) may be

- explained in terms that are accessible to general public,
- expressed as an idea in an idea graph and made available online for everyone to comment and work with,
- linked with other related ideas and results,
- developed into general insights that can inform policy- and lifestyle change,
- brought to the attention of academic and other communities where it may have large impact,
- brought to the attention of the media and the public,

or in one word, we are developing a method by which an academic result may be *federated*. As participant in this workshop you will be invited to give your creative contribution to the TNC project. The dialog technique we will be using is an adaptation of the dialog technique developed by physicist David Bohm; we loosen the usual academic constraints on discourse and allow our human voices and our lived experiences to shine through. The authentic anecdotal material that will be contributed in this way will be an asset in our undertaking to make a good case for the media and the public. At the same time, this less constrained and more personal meeting will help us augment our own sense of reality and purpose; and it will also strengthen our personal ties and community.

Prof. Dr. Dino Karabeg, PhD, is Associate professor at the Institute of Informatics, University of Oslo, Norway. Since 1995 he has been developing an approach to put systemically suitable knowledge work into practice, through an international community and project called Knowledge Federation.

Prof. Dr. Dejan Raković, PhD, is Professor at the Faculty of Electrical Engineering, University of Belgrade, Serbia. Since early 1990ies he has been developing a quantum-informational framework for consciousness and acupuncture, with significant psychosomatic-cognitive implications.