Proposal for the Creation of

THE BRAZILIAN
CENTER FOR CONSCIOUSNESS STUDIES

Centro Universitário Ítalo Brasileiro
CENTRO DE ENSINO E PESQUISA
CEPESq. PASQUALE CASCIN

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“Living matter gives the biosphere an extraordinary character, unique in the universe... Cosmic energy determines the pressure of life that can be regarded as the transmission of solar energy to the Earth’s surface... Activated by radiation, the matter of the biosphere collects and redistributes solar energy, and converts it ultimately into free energy capable of doing work on Earth...”

“A new character is imparted to the planet by this powerful cosmic force. The radiations that pour upon the Earth cause the biosphere to take on properties unknown to lifeless planetary surfaces, and thus transform the face of the Earth... In its life, its death, and its decomposition an organism circulates its atoms through the biosphere over and over again.”

Vladimir Vernadsky, *Biosfera*, 1926

**Noosphere Paradigm and the Planetary Whole System Design**

In the biosphere thesis, the Earth represents itself as a small particle in a gigantic Universe, a minute oasis where under some laws the conditions for life emerged, life which the Earth protects from penetration by the Sun's ultra-violet rays. (Arbatov and Bolshakov, 1987).

Vernadsky defined the future evolutionary state of the biosphere as the Noosphere, the sphere of reason. The term "Noosphere" was first coined by the French mathematician and philosopher, Edouard Le Roy (1927). "Le Roy, building on Vernadsky's ideas and on discussions with Teilhard de Chardin [they both attended Vernadsky's lectures on biogeochemistry at the Sorbonne in 1922-1923], came up with the term "noosphere", which he introduced in his lectures at the College de France in 1927 (Le Roy, 1927)... Vernadsky saw the concept as a natural extension of his own ideas predating Le Roy's choice of the term" (Smil, 2002, p. 13). Le Roy understood the noosphere as a shell of the Earth or a "thinking stratum", including various components, such as industry, language, and other forms of rational human activity (Arbatov and Bolshakov, 1987). Le Roy's concept was developed by De Chardin, who considered the noosphere as something external to the biosphere - a progression from biological to psychological and spiritual evolution. Teilhard based his conception based on philosophical writings, and was completely ignorant of Vernadsky's biogeochemical approach. Vernadsky developed his concept of the noosphere out of his theory of the biosphere, combining his biogeochemical works with his own work in philosophy of science (Grinevald, 1998, p. 24-25):

Both Vernadsky and Teilhard were cosmic prophets of globalization. If Teilhard was a "cosmic mystic", Vernadsky defined himself as a "cosmic realist"... They shared a belief...
in science and technology as a universal, peaceful and civilizing force... But in The Biosphere and in all his work, Vernadsky's scientific perspective is radically different from that of Teilhard. The divergence is perhaps best expressed as an opposition between the anthropocentric view of life (Teilhardian biosphere) and the biocentric view of the nature's economy (Vernadskian Biosphere)... 

According to Vernadsky, the biosphere became a real geological force that is changing the face of the earth, and the biosphere is changing into the Noosphere. In Vernadsky's interpretation (1945), the Noosphere, is a new evolutionary stage of the biosphere, when human reason will provide further sustainable development both of humanity and the global environment: 

*In our century the biosphere has acquired an entirely new meaning; it is being revealed as a planetary phenomenon of cosmic character... In the twentieth century, man, for the first time in the history of earth, knew and embraced the whole biosphere, completed the geographic map of the planet earth, and colonized its whole surface. Mankind became a single totality in the life on earth... The Noosphere is the last of many stages in the evolution of the biosphere in geological history.*

*"The Earth is a whole system consisting of various interactive and interdependent spheres. The operating dynamic governing the whole – from the lithosphere to the magnetosphere – does not recognize political boundaries. The sum of the whole system operations that make the Earth what it is possesses integrity to which all the subsystems contribute and support each other."* 

Common laws of cosmo-planetary geo-ecosystem

Energy/information exchange with planet

Planetary Noosphere and collective evolution of mankind
Establishment of Nucleus of Innovative Technology

The goals of the Brazilian Center for Consciousness Studies are to integrate the Noosphere paradigm into an integral educational curriculum to be promoted through University Center Uniltalo, as well as to act as a technology transfer hub for implementation of innovation in consciousness technologies.

- **TECHNOLOGY TRANSFER AND INNOVATION FOR THE 21ST CENTURY**
  - Establishment of the human energy laboratory
  - Development of laboratory installation to provide interactive display of the human energy field
  - Development of integrated information system
  - Development of distributed measurement and probing system connected to the central database

- **HUMAN ENERGY AND CONSCIOUSNESS RESEARCH**
  - Research of human consciousness expansion methods
  - Research and development of human energy augmentation technologies
  - Research of human to human and environment to human energy-information transfer
  - Research of effects of sport activities on human energy
  - Research of influence of medical plants on human energy
  - Research of the effects on human energy of alternative and holistic healing treatments

- **INTEGRAL EDUCATION FOR THE 21ST CENTURY**
  - Regional integral education center with curriculum based on consciousness-energy-living systems synergy
  - Introduction to the planetary consciousness model based on macroscopic non-locality
  - Organization of international seminars and technological cooperation conferences
  - Cooperation with regional academic institutions and cooperative organization
  - Promotion of innovation and development of alternative technologies
  - Production and dissemination of information on new scientific methods
  - Internet learning platform as the future of integral education in the 21st century

To achieve these goals, an experimental interactive laboratory has to be established within the CENTRO DE ENSINO E PESQUISA CEPEsq. PASQUALE CASCIN. The laboratory is to house various sensors that can provide real time display of data of measurements of the human energy field (bio-field). The bio-field is a complex, extremely weak electromagnetic field of the organism hypothesized to involve electromagnetic bioinformation for regulating homeodynamics. The biofield is a useful construct consistent with bioelectromagnetics and the physics of nonlinear, dynamical, nonequilibrium living systems. It offers a unifying hypothesis to explain the interaction of objects or fields with the organism, and is especially useful toward understanding the scientific basis of energy medicine, including acupuncture, biofield therapies, bioelectromagnetic therapies, and homeopathy.

Development of integrated information visualization, collection and storage system is proposed. The data from the interactive experimental laboratory can be shared over internet with remote lecturers presenting. A distant distributed learning network will make virtual seminars possible through the interactive laboratory.
References:

The Biofield Hypothesis: Its Biophysical Basis and Role in Medicine- BEVERLY RUBIK, Ph.D.

COSMIC CONSCIOUSNESS OF HUMANITY - PROBLEMS OF NEW COSMOGONY, V.
Kaznavheev, A. Trofimov

THE LIVING MATTER PHENOMENON UNDER THE HYPMAGNETIC CONDITION
Kaznavheev, A. Trofimov

DISTANT INTERCELLULAR INTERACTIONS AND BIOINFORMATIONAL COMMUNICATION
Kaznavheev, A. Trofimov
A biophoton is a photon of non-thermal origin in the visible and ultraviolet spectrum emitted from a biological system. Emission of biophotons is technically a type of bioluminescence, but the latter term is generally reserved for higher luminance luciferin/luciferase systems. The typical observed radiant emittance of biological tissues in the visible and ultraviolet frequencies ranges from \(10^{-19}\) to \(10^{-16}\) W/cm\(^2\). This light intensity is much weaker than that seen in the perceptually visible and well-researched phenomenon of normal bioluminescence but is detectable above the background of thermal radiation emitted by tissues at their normal temperature.

Biophotons may be detected with photomultipliers or by means of an ultra low noise CCD camera to produce an image, using an exposure time of typically 15 minutes for plant materials. The typical observed radiant emittance of biological tissues in the visible and ultraviolet frequencies ranges from \(10^{-19}\) to \(10^{-16}\) W/cm\(^2\).

Study on biophoton phenomena for the development of novel technique extracting the biomedical information in living organisms, through highly sensitive imaging of biophoton emission, spectral analysis, and photon statistics and photon correlation analysis.

References:
- Measurement of bioluminescence and thermal fields from humans: Comparison of three techniques for imaging biofields (Katherine Creath, Gary E. Schwartz) College of Optical Sciences, University of Arizona
- Bio-photons and Bio-communication R. VANWIJK, Department of Molecular Cell Biology, Utrecht University, Utrecht, The Netherlands; and International Institute of Biophysics, Neuss, Germany
- Imaging of Ultraweak Spontaneous Photon Emission from Human Body Displaying Diurnal Rhythm: Masaki Kobayashi, Daisuke Kikuchi, Hitoshi Okamura
Prof Konstantin Korotkov confirmed earlier observations of other researchers, such as Semion Kirlian, Dr Mandel from Germany and Prof Milhomens in Brazil, that the stimulated electro-photonic glow around human fingertips contained astonishingly coherent and comprehensive information about the human state - both physiological and psychological.

For example, by analyzing correctly stimulated and recorded Kirlian images it seems possible to quantify whether a person is stressed, tired or unwell and determine bioenergetic electro-photonic performance of the body and mind.

In brief, stress and other negative factors seem to disrupt the uniformity, coherence and the magnitude of the human electro-photonic glow measured with the GDV instrument.

References:
- Application of Electrophotonic Capturing (EPC) Analysis Based on Gas Discharge Visualization (GDV) Technique in Medicine: a Systematic Review
A new method of monitoring water properties – dynamic Electrophotonic (EPC) analysis – has been developed. It is based on measuring water by using computer processing programs to gage how the water surface has been stimulated by electromagnetic field photon emissions. The technology is based on the well known gas-discharge visualization (GDV) method. Numerous experiments demonstrated high sensitivity of the EPC analysis for detecting weak transformations of water under the influence of electromagnetic fields, air, light, and other subtle factors. The EPC method was used to detect the difference between natural and synthetic liquids. Different liquids, such as blood, saliva, microbiological cultures, and oils may be studied by this approach as well. There is evidence that allows us to propose that EPC image properties are determined by the structure of the near-surface clusters, which means that the electrophotonic method is one of the informative methods for studying structural properties of liquids.

Examples of EPC glow of different samples of water. 
\(a\) – distilled water; \(b\) – tap water; \(c\) – structured water.

References:
- Analysis of Stimulated Electrophotonic Glow of Liquids – Korotkov, K ; Orlov, D
- Avaliação da agricultura biodinâmica por meio da bioeletrografia: estudo de caso QUIJANO-KRÜGER, Fedra Gidget; CÂMARA, Francisco Luiz Araújo
Integrated laboratory system development process

Phase 1
1) Development of integrated, real-time human bio-field measurement information system with diagnostic database
2) Development of interactive human biofield and biofeedback installation

Phase II
3) Development of mobile human biofield and biofeedback system
4) Development of a distributed data collection system from macroscopic non-locality detector probes
Experimental evidence for a non-chemical and non-contact cell-to-cell communication can be traced back almost 100 years ago and has also been reported by many recent studies, as reviewed in detail by Rahn, Salkind, Wainwright, Gurwitsch, Popp et al., Nikolaev, Trushin, Cifra et al., and Reguera.

As reviewed by Reguera et al. there are at least three physical cell-to-cell communication channels: sound, electric current and electromagnetic radiation. Since the cell cultures of the experiment performed by Chaban et al. are not in direct contact with each other and since signaling based on electrical currents needs a direct connection between the cells or an exchange via a medium, this type of signaling can be excluded as a possible cause of the observed effect. In addition, sound is fairly unlikely to be the physical communication signal in the experimental setup of Chaban et al. since sound would be greatly damped by the used setup involving different damping media (i.e. water, plastic). Thus, these physical conditions highlight the involvement of electromagnetic radiation, rather than electrical current or sound.

Intensive research started in the 1920s with the work of Gurvitsch whose 200 or more experiments revealed that when pointing the tip of an onion root (inducer) to another onion root (receiver), separated by quartz glass, the receiver root surprisingly shows an increased rate of mitosis (approx. 20-25%). Since this effect was absent when using ultra-violet (UV)-opaque glass, he concluded that electromagnetic radiation in the UV range was responsible. He termed this type of radiation "mitogenetic radiation".

In the 1960s-1980s the research group of Dr Vlail Kaznacheev (Director of the Institute for Clinical and Experimental Medicine in Novosibirsk) continued to investigate the topic by performing a large number of experiments with different cell cultures. They used a specially designed device to perform the experiments consisting of two flasks, which were connected by a window of either quartz glass or a UV-opaque glass plate (with a depth of about 0.2-2 mm). An “inducer” cell culture was placed in one flask and a “receiver” culture in the other. It was investigated how the treatment of the inducer culture with different stressors (e.g. viruses, chemicals or UV-radiation) affects the receiver culture. For example, experiments using inducer cell cultures consisting of monkey kidney tissue treated with adenoviruses demonstrated that the receiver cell culture also shows morphological signs of infection in 72% of performed trials (total number of trials: 170) after 2.3 days of contact. The observed effect was termed the “mirror cytopathic effect".
Phenomenon of quantum nonlocality may play an important role in some macroscopic brain processes. But as a matter of mechanism of persisting of entanglement on macro-level is very difficult, it is reasonable at the beginning to study macroscopic nonlocality on simple non-living systems. Nonlocal dependence of dissipative processes is described as relation of the entropy productions in a probe process (detector) and environment and probably has in its foundation quantum nonlocality. Its peculiarity is availability of unusual advanced correlation for noncontrolled by an observer processes. The natural process of geomagnetic variations gives a convenient possibility for study of this effect. A long-term experiment allows to estimate the cross-section of nonlocal transaction and to detect advanced correlation. The possibility of employment of the latter for geomagnetic activity forecast has been demonstrated. Similar advanced transaction might take place in the dissipative processes in some brain structures.

The experimental problem is to establish a correlation of the entropy changes in a probe-process under condition of suppression of all classical local impacts (temperature, electromagnetic field, etc).

**Determining the influence of country-wide magnetic anomaly environment on living systems**

The South Atlantic Anomaly (SAA) is an area where the Earth's inner Van Allen radiation belt comes closest to the Earth's surface dipping down to an altitude of 200km. This leads to an increased flux of energetic particles in this region and exposes orbiting satellites to higher-than-usual levels of radiation. The effect is caused by the non-concentricity of the Earth and its magnetic dipole, and the SAA is the near-Earth region where the Earth's magnetic field is weakest relative to an idealized Earth-centered dipole field.

Experimental evidence of increase of UV radiation has been registered by detectors in the center of the South Atlantic Anomaly. Possible influence of trapped electrons should be considered during periods with disturbed magnetosphere. **Country wide study of influence on living systems is proposed, and the possible increasing of effects of energy-information transfer in human to human and human to environment interaction.**
References:

- Regular variation of the fine structure of statistical distributions as a consequence of cosmophysical agents – S EÂ Shnoll, T A Zenchenko, K I Zenchenko, EÂ V Pozharski, V A Kolombet, A A Konradov
- A SUBSTANTIAL INTERPRETATION OF N.A.KOZYREV’S CONCEPTION OF TIME A. P. Levich
- Experimental evidence of macroscopic nonlocality of the dissipative processes. Serguei Korotaev (Geoelectromagnetic Research Institute, Russian Academy of Sciences), Vyacheslav Olegovich Serdyuk
- Macroscopic Quantum Effects in Biophysics and Consciousness – Dejan Rakovic, Miroljub Dugic, Milan M. Cirkovic
- FORECAST OF SOLAR AND GEOMAGNETIC ACTIVITY ON THE MACROSCOPIC NONLOCALITY EFFECT, S.M. Korotaev, V.O. Serdyuk and J.V. Gorohov
- Cosmic ray Implications for Human Health, M.A. Shea, D.F. Smart
- UV night background estimation in South Atlantic Anomaly, PAVOL BOBIK, MARIAN PUTIS
- GROUND-BASED OBSERVATIONS OF SOLAR UV RADIATION IN JAPAN, BRAZIL AND CHILE, Hiromasa Nozawa, Hiromasa Yamamoto
Noospheric Education

“The explosion” of creative energy demonstrated by the people of science, culture and education is determined by the demand of harmonization both in value, spirituality and practical relationships between people and the environment. Only deep awareness of the current changes in the common world-view, as well as mastering both the new methodology and instruments for its realization, will allow man to enter the new phase of our planet’s spiritual evolution: NOOSPHERE. The transition to holistic ecological thinking is a turning point in the history of humanity on its way to Noosphere, the sphere of reason and is the essence of Noosphere transition.

The type of thinking is a conscious orientation of preferred use of brain functions. Ecological thinking (synonyms: harmonious, natural, universal, biospheric, healthy, holodynamic) is determined by conformity with the natural laws of the Universe, i.e., both cerebral hemispheres are involved in work. Such thinking does not cause any disturbance in the biosphere.

The Noosphere concept provides a feasible conceptual base to build an Integrated Conceptual Framework for Education for Sustainability and to create a team of diverse educators who are attempting to integrate sustainability into their curricula. We apply the health concept to the Noosphere idea and use the resulting Sanosphere (Healthy Biosphere or the sphere of health) concept as an integrating concept for our research and other activities.

Noospheric development is consciously controllable value-oriented codevelopment of man, society and nature when living needs of the population are satisfied without detriment to the interests of future generations and Universe.
Hardware needed for the laboratory

**The Princeton Instruments VersArray: 1300** is a high-performance, full-frame digital camera system that utilizes a front- or back-illuminated, scientific-grade CCD. With a 1340 x 1300 imaging array, 100% fill factor, and 20 x 20 μm pixels, this system provides a very large imaging area with very high spatial resolution. Dark current is reduced through a thermoelectrically cooled option for easy maintenance or a liquid-nitrogen cooled option for long exposures. The large field of view, exceptionally high quantum efficiency, low readout noise, and low binning noise make this camera ideal for a variety of low-light applications.

**The 600 Series** CCD camera system is a precision, multiport digital camera designed for use with large area scientific CCD arrays in demanding imaging applications. A 600 Series system can be configured with one, two, or four analog processors/digitizers to accommodate CCDs with multiple output ports. Using multiple ports permits higher image frame rates in applications where the absolute lowest noise and highest precision is necessary. The 600 Series system uses either a unique mechanical cryocooler or liquid nitrogen to optimize the performance of the CCD. Dark current is practically eliminated by cryocooling to below -100°C, making the 600 Series cameras ideal for very low light level imaging.

The "**GDV CAMERA PRO**" complex consists of hardware and software for the direct computer registration and processing of a subject’s energy field. GDV pictures are created by a unique patented optical system and CCD camera in daylight conditions with real-time processing enabling us to visualize record and computerize the glow of any object. The GDV Camera Pro is a research instrument that makes it possible to visualize changes of the human body state in time and to study various biological objects, such as water and blood.

The EEG neuroheadset provides access to raw electroencephalography data. The EPOC brain helmet has eighteen sockets and can hold sixteen nodes or sensor pads. The remaining two sockets are known as the secondary reference sensors, which are located immediately below and behind the ears. The primary reference sensors, are located immediately above and behind the ears. The sensors pads detect electrical activity on the surface of the brain. Open-source Matlab toolboxes such as EEGLAB, Fieldtrip, and the Neurophysiological Biomarker Toolbox (NBT) can be used to process data from the electroencephalography.
Software needed for the laboratory

Biofield Viewer system is founded by Dr. Thornton Streeter (U.K.) and is developed by John Catchpole (U.K.) The Biofield Viewer software combined with the controlled imaging environment allows for visualization of the light photon interactions between the light source and the human biofield. The Biofield Viewer program has to compare the reflected rays with the incident rays and then re-codes them and produces a biofield image. The system identifies the intensity of light within the image and then gives the photons a designated number relating to a color in the visible spectrum. Thus it is a digital encoding system and the smallest differences in density of photons is recorded and viewed on a computer screen using color coding. Light striking the physical body may be reflected or absorbed. The various intensities of light differ on and around the body and Biofield Viewer allows these differences to be seen.
Proposed partners of the Brazilian Center for Consciousness Studies:

**International Scientific Research Institute of Cosmic Anthropoecology**
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[http://www.isrica.org](http://www.isrica.org)

**Noospheric Public Academy of Sciences**
(Ноосферная Общественная Академия Наук)
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**The BioInternet School**
[http://thebiointernet.org/](http://thebiointernet.org/)

**Dr Korotkov Laboratory**

**Institute of Noetic Sciences**
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