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**PHYSICAL BASICS OF  
INFORMATIONAL INTERACTION**

Dedicated to 85th anniversary of the  
Academician Svyatoslav Pavlovich Nesterov

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## PSYCHOPHYSICS AS NEW PRIORITY IN MODERN SCIENCE

### V. Nesterov

*The work you are holding in your hands now is somehow epochal. It is itching to seal the cover with the stamp of "XXI century". Of course, main facts set forth therein were known much earlier. But they were scattered in hundreds and thousands of inaccessible publications, but above all their combinatorics, interpretation and understanding looked differently and added up to a tough as Procrustean bed alternative of "either — or", of course, in favor of scientific approach and to the prejudice of na?ve and old-fashioned popular illusions.*

*Nowadays, when mankind has stepped with one leg into the information age, its previous views on the world and itself therein are undergoing serious correction exceeding all previous intellectual revolutions in the scopes and consequences.*

*A phantom longing for recent perception of the customary and comfortable as worn-in shoes visual environment, genome decoding unwittingly reminding atomism of Democritus can not hide the fact that psychology of virtual realities, logic of nonlinear processes, philosophy of unstable states, hybrid structures and composite scientific disciplines are currently getting out to the field of knowledge. Active formation of natural and related thereto abstract sciences is taking place as a new philosophy of invisible.*

*The things that seemed to dissipate upon approaching to the "scalpel" of impartial scientific arguments unexpectedly start merging therewith creating a detonating mixture of new consciousness and information civilization.*

*We have to do V. Nesterov's creative impudence due honors as his uncommon work is in the course of growing tendencies.*

*The author of this fascinating work can be reasonably referred to representatives of so called deviant science — deviating from conventional orthodox criteria and views. Seemingly conflicting with established conceptions this area of science in general plays quite positive role. It not only reveals shortages of existing theoretical models but offers its own conceptions and cognitive strategies. The "Russian school" is always notable for such a scientific dissidence. The gone XX century was no exception. Just let me mention names of such thinkers as K.E. Tsyolkovsky ("Space philosophy") A.L. Tchizhevsky (heliobiology and influence of the Sun on historical processes), D.L. Andreev (metahistory), L.N. Gumilev (theory of passionarity) to make it sure... It can be said for sure that as many modern Russian scientists studying connections between natural and human things Vladimir Nesterov keeps on this tradition... Practically all work is devoted to phenomena not being explained yet by the classic science. Having wide*

*mental set and desirable erudition the author tries to fill such a gap. Upon offering a hypothesis the scientist fearlessly and, to my mind, quite correctly uses knowledge from different areas: cosmology and philosophy, psychology and crystallography, cybernetics and genetics.*

*In order to corroborate his positions the author quite often applies to the latest scientific theories and hypotheses being outside of established scientific paradigm and not universally recognized. Nevertheless, such an approach seems to be quite reasonable even by availability of serious theoretical substantiations and experimental confirmations.*

*Vladimir Nesterov is one of the scientists for whom the world is not limited by visual reality. But at the same time regardless to numerous temptations the author takes sufficiently weighted stand. A "razor blade" he is neatly balancing on lies between two everlasting extremes — ancient empirical experience quite often bungled in psychological clothes of mysticism and esoterics, from the one hand, and the science as specialized kind of human activity, from the other hand.*

*The history of scientific cognition is a field of daring suggestions and their permanent retractions. Opening new horizons of science before readers the author insensibly involves them into co-work and co-cognition as well as induces them to revision of established views not only on the problem of the human but his place in the universe as well. Psychological effect of this work is intensified by the fact that during narration the author continually touches serious problems of world view nature. This is very actually nowadays when mankind is challenged by the problem of survival in many respects related to the insistent need of urgent development of a new paradigm of existence, consciousness and activity.*

*Nesterov successfully combines carefulness of a scientist with respect to readers and understanding of their interests. This fact does not scare readers away by scientific and especially pseudo-scientific terminology. The present work is not bureaucratic philosophizing but vivid and distinct statement of own sometimes unexpected views. Precise putting questions and originality of consciousness perfectly combines with the author's ability to narrate about complex things intelligibly and clearly.*

*Academician A.N. Berestov*

*More and more scientists are inclined to the thought that our world is not only material objects and that there is another layer of reality — a certain global information field of the Universe, i.e. something like space library in which enormous volumes of information are stored. Ancient Hindus called these areas of delicate world as Akashi chronicles and modern scientists as energoinformation field or semantic field of the Universe... And an area in which human thoughts,*

*ideas, historical and personal events are stored is called noosphere, i.e. the earth part of the universe knowledge bank.*

*The cosmic archive contains information on everything: the past and the present, possible variants of the future, ideas and creative intentions... As far back as in April of 1982 academician M.A. Markov told at the meeting of the Academy of Sciences of the USSR the following: "information field of the Universe by layers and structure reminds a matreshka where each layer is hierarchically connected with much higher layers up to the absolute and except of information bank is a regulator of onset of destinies of people and mankind".*

*"Nowadays we can speak that so called Semantic Universe or semantic space co-existing with our temporary space and, moreover, revealing in it is appearing before our eyes".*

*Professor V.V.Nalimov*

*"Where from does the consciousness extract huge volumes of information? It is typical that almost all knowledge of exact sciences was obtained by intuition rather than by logical and formal way. This connection was able to be explained by existence of a certain information bank which the consciousness is interacting with...The information bank itself pretends to be a set of independent stable objects of phantom type that nevertheless are not created by individual consciousness but is reflection of universal ideas existing as if outside of time and space. And the brain pretends to be peculiar biocomputer...There is every reason to believe that new knowledge appears as a product of interaction of consciousness with the environment, a certain information field. And such interaction is psychophysical one by its nature".*

*Academician A.E.Akimov*

Scientists believe that there are certain channels and passages between our physical world and the world of ideas allowing moving both ways. So, we can get in that world and pick up some information.

Thus, a famous physician David Bome that had been cooperating with Einstein for many years thinks that our world (the one we know) is merely an aspect of reality, its evident or comprehensive order. And its generating matrix is the hidden order, i.e. the sphere concealed from us, in which time and order are rolled up.

As we have no concept of time in "those" worlds, so we have no speed concept there as well. Thus, transfer of information takes place under laws other than ones of our physical world, i.e. instantly. Probability thereof was proved by English scientists from the Royal Research Institute "Signals and radar". They designed a special device that allowed them to prove instant transfer of

information. It seems unbelievable because from the school-time the most comfortable concept of time sits in our consciousness. It can be well illustrated by habitual graphs where a direct arrow (flow) of time is always directed rightwards, i.e. from the past to the future and time itself is linear as a bridge or a board thrown across the precipice: one wrong move and you are dead. It is obvious to pupils, but not to scientists. Nowadays they are increasingly inclined to other models.

There are even the most uncommon hypotheses. Some scientists suppose that a set of worlds equal by their history but shifted in time relative to each other can exist simultaneously. Then it is enough to look into the required parallel world in order to get in the future (or the past). Others set up a hypothesis on availability of two counter-current flows of time. The first flow — coming from the past to the future and more intensive — we take it as our own. Scientists explain many chronoanomalies by interaction of these flows. Whether counter-current flows by any reason get balanced, then real bodies as if fall out of time and can even disappear from our reality. Whether the counter-current flow suddenly excess our own one, then it is possible to find ourselves in other time...

Professor of the Pulkovo observatory N.A. Kozyrev (1908-1983) developed its own conception of time. Not going into details let us make a note of the most important for us — conclusion of the scientist: "The future already exists; therefore it is not surprising that we can observe it right now".

This idea said by the scientist's mouth is stunning. But the most interesting that Kozyrev has experimentally proved its hypothesis. By pointing closed (!) by the cover telescope objective at one or other star the astrophysicist learnt out to "catch" and measure so called "flows of time" coming from them not only from the place where the star is visible (it is long ago in some other place because it moved meanwhile the light came to us), but as well as from the place of its present and even future position (!) - from a place where it will come, for example, in some thousand years. For purity of the experiment the telescope was also pointed at the place where by accounts the star shall be never. In this case there was no flow of time. So the conclusion is single: nowadays information comes both from the past as well as from the future.

The same was proved by American scientists G. Puthoff and R. Targ but in absolutely different way. Making an experiment on telepathic transfer of visual images for long distances they unmatched actions of the inductor (transmitter) and the percipient (receiver) by time without informing them. Result? By words of the researchers, the percipient received telepathic images with 80% coincidence... an hour before they were oscillated by the inductor. Research of such demonstrations of human perception which at first sight

present a sort of ability called by us as foresight has been being performed in the electronics and bioengineering laboratory of Stanford Research Institute for already three last years. The phenomenon lies in ability of some people to receive information from the sources inaccessible for common perception and considered as protected from such access as well as to describe such sources thanks to some mental processes.

More than 50 experiments were performed in controlled laboratory environment with people whose ability to perceive information from distant objects is developed so that sometimes it allows to describe in details topographic and engineering objects — buildings, roads, laboratory equipment etc.

During laboratory experiments it was established that the main phenomenon, obviously, embraces a complex of subjective states that depending on character of literature are called as "autoscopy" (medicine literature), "exteriorization" and "disassociation" (psychology literature), "clairvoyance", "movable clairvoyance" and "off-material experience" (parapsychological literature), and finally "astral foreknowledge" (occult literature).

(Puthoff G.E., Targ R. Perceptive channel of distant transfer of information. History of the matter and the latest researches // TIHER (Works of the Institute of electronics and radioengineers).USA. 1976. No.3.Vol. 64)

The work conducted by R. Targ in Stanford Research Institute showed that it was possible to train in foresight i.e. ability to predict the future within some terms (seconds, minutes and so on).

(American magazine "Electronics", 1974. No.3)

The same effect was registered by academician of the Russian Academy of Medical Sciences V.P. Kaznacheev in Novosibirsk during international experiments on distant interactions. Images of the items were received at a distance of thousands of kilometers long before being arbitrary chosen and oscillated.

In any event thoughts and experiments lead different scientists to the same important conclusion: data on future events can be read long before these events.

Does it mean that mankind and each of us are prevailed by inevitable fate?

No. Today the most of scientists engaging in this problem are inclined to the idea that the future is a serpentine road with a lot of forks rather than a direct highway. And a lot of roads and paths come out of the forks, i.e. the future has a lot of variants.

That is why delicate worlds of the "space library" are seldom called by the scientists as virtual ones. They use this word not in usual to us meaning - "seeming, unreal, unsubstantial" (as in virtual computer world), but in its ini-

tial sense. After all, "virtual" in literal translation from Latin means "possible", i.e. able to appear under certain conditions. This means that there is a certain project of the future in the energoinformation field containing different variants of developing of situations including those ones that will never occur. In this sense our physical world is a part of the Universe, its sphere where realization of variants takes (or does not take) place. Whether it is right, then it is obvious that a person somehow is a real master of his destiny and we are free to choose our way of life.

It can be said that a destiny of each of us is like a branchy tree. In a sense, we are similar to ladybirds that crawl higher and higher in order to finally fly up to the sky from the highest point. Not returning but only periodically looking back at the traversed path, we move forward by tree of destiny to our last start. But how can we choose the best way? How can we do it, if we have not the most important thing, i.e. "map of life"? How not to be tempted at the fork by alluring but hopeless side branch?

We make plans and accounts, consider and think over, seemingly, to the smallest detail... But life very often gives us surprises shattering our plans and magnificent projects. The mind is not able to foresee all steep turnings and risks prepared for us by the future. It is beyond our abilities.

Is there any opportunity to look into the future still?!

Conventional division of the world to the material and the inner ones is conditional. This is united world similar to Moebius loop, which opposite sides is united surface in fact. The world of physical objects ("commodity world") and the perception world ("world of ideas ") is a single whole in fact.

The human is a competent resident of both the worlds. In principle, he shall perceive the world in its fullness. Perhaps, it was peculiar to our ancestors. But at a certain phase the human had to focus on physical (material) objects of the United World. Trying to enjoy fruits of the "tree of cognition", to cognize these physical objects the human industriously developed his rational mind. The logic got stronger, the "ratio" filled increasingly large place in the human consciousness gradually suppressing initially laid in abilities of other (out-logic, irrational) perception of the world. We have enjoyed fruits of the tree of logic cognition. They turned out to be bitter. We got stuck in the physical world and ability to sink into the Ocean of the universe cognition had been gradually weakening and fading... but, fortunately, did not disappear at all. Sometimes each of us inadvertently looks into the stock of universe depository, although even not guessing it. Being readers of the "space library" as usual we unknowingly use it. And then we speak on intuition and striking, wonder at presentiments and prophetic dreams...

Nowadays it is established for sure that in certain situations — as a result

of meditation, extreme mental, physical or emotional pressure — the person in fact falls into some strange state. Immobilized he, as if, gets away from the external world and does not perceive the environment anymore: does not react to sounds, light, motion and speech... but this is not a dream, faint or loss of consciousness. The consciousness does not leave the person this time, it continues to work actively, but in some other than usual mode. It seems that in these so called altered states of consciousness (ASC) the very special type of perception comes to the person. Inconceivably the person obtains access to information (often absolutely reliable one) that was not able to be perceived by sense bodies anyway.

A special international organization of psychologists — Transpersonal Institute — is established for studying ASC; ASC are studied in Stanford University (USA, California), psychology department of Connecticut University (USA); Oxford and Cambridge Universities (Great Britain), West England University (Bristol), Institute of the Human Brain of the Russian Academy of Science (Saint-Petersburg), Institute of applied psychophysics (Omsk) and many other scientific centers.

Nowadays scientists use different methods of evoking ASC in laboratory environment, namely: hypnosis, specially organized meditation, hyperventilation of lungs (so called holotropic respiration), sensorial isolation, as well as application of special devices controlling brainwaves with the help of different acoustic and optical signals.

Since 1988 T. van Hoven — the scientist known for creation of physical theory of psy-interactions — has been headed the program on development of electronic devices for purposeful alternation of the state of consciousness and getting reproducible psychophysical effects of contactless obtaining information from distant (hidden) physical objects by invitation of the National Aeronautics and Space Administration (NASA) and the Pentagon.

The vast majority of experiments were performed within the precincts of Stanford International research Institute — the main laboratory studying paranormal effects. The experiments resulted in creation of the equipment functioning on the basis of principle of initiation signal multiplication upon break-up of metastable states. Later on this equipment as well as other similar designs was given common name for the whole group of devices - "brain machines" (metatrons).

Virtually at the same time such equipment was developed in the Soviet Union by academician Svyatoslav Nesterov regardless to work of van Hoven.

In the altered state of consciousness a person obtains unique ability to overpass conventional course of time. He can be carried away to the distant past, sometimes even to the time that he has never read about, seen in the

cinema or has no idea of. It is interesting that sometimes the person gets such data from his "traveling" that afterwards find its confirmation.

In the ASC a person is able to experience not only the present and the past but the future as well. And events he involved in can appear before him in uncommon way: they can turn to reverse direction or coexist simultaneously. Sometimes the person experiences years of life for just some minutes in all details. Sometimes the time stops.

Not only the time but the space as well is perceived absolutely uncommonly. Distance ceases to be an obstacle and a person can be carried in any part of the Earth.

Virtually all people that have experienced such moments unanimously claim that they had touched the reality in comparison with which the reality of common life is a dream or illusion. Academician of the Russian Academy of Medical Sciences V.P. Kaznacheev believes that "objective basis of such states relates to dipping into the field space reality, in which dimensions thereof lying outside the frameworks of the common world can be slightly opened".

But how a person can get in this multidimensional space reality? Many scientists are trying to solve this problem. And virtually all of them are inclined to the idea that in altered state of consciousness a person is dipping into the depths of his own consciousness".

But this is a paradox! How can we surpass the frameworks of the common world by dipping into ourselves? In fact there is some clear contradiction. But it can be easily solved, if we remember changes of the scientists' conception of consciousness in the XX century.

If earlier the consciousness was considered, roughly speaking, as logical thinking, then nowadays this concept includes all levels of so called unconscious mind. This is also the subconsciousness that is in charge of protective mechanisms, biochemistry processes in organism, reflexes, instincts... - all that assist the human in survival as biological species. This is also the over-consciousness providing self-actualization of personality and development of the supreme Ego. This is also the superconsciousness that allows activating latent reserves of brain in order to connect to some "transcendental truths".

Starting from Freud there is a firm conviction among psychologists that unconscious mind regulates human behavior not in lesser but, perhaps, greater extent than the intellect. Frankly speaking, in usual state our unconscious mind insensibly functions as if in the background, backstage.

We don't think over how to take just another breath, at all. Not realizing the fact we screw up our eyes upon flash of light. Without noticing we change our pose and facial expression. We don't understand why we suddenly want to



eat something particular, but bluntly refuse to eat something much tastier. At this moment our organism is under control of our subconsciousness.

The overconsciousness appears even less distinctly. If we perceive its work, then in a way of vague desires only. Sometimes they are strong but always unclear. We don't notice that our legs carry us by well-known way while we think over absolutely other problems... We don't understand exactly why we eager to make something but hate some other. Why we are ready to sacrifice our lives to one goal, but will not lift a finger for another one. Why we fall in love with somebody at first sight, but feel instant aversion to other person without any obvious reasons. All these stereotypes, passions and predilections are nothing but a program of development of our Ego in the overconsciousness.

Meanwhile we practically don't feel action of the superconsciousness. In usual state the receiver of our consciousness works in rather narrow band: it "catches" and processes information from our physical world only. Rational and active awake consciousness has to constantly response to dynamic environment, solve arising problems. Such external hindrances surpass and deaden voice of superconsciousness low by itself. Our mind is able to catch nothing lying outside the frameworks of our common world. But sometimes moments when all practical problems of our life, everyday troubles and needs step back and leave somewhere to the background occur. It can occur when a person is entirely devoured by a single thing: accomplishing a creative task, contemplation of the beauty be it majestic view of the starry sky, marine distance, mountain landscapes or something quite insignificant — a flower, dew on the cobweb etc... But more often is takes place when a person experiences so called "psychomental crisis", i.e. when he stands on the verge of ruin because of serious illness, strong stress or physical overload... At these rare moments when all mundane things become uninteresting and unimportant, the main hero of the play, i.e. highly experienced and wise superconsciousness, comes to the scene.

If to think over this word, it becomes clear that the superconsciousness belongs not to the human only but to something much higher else. Being a part of individual consciousness the superconsciousness spreads much beyond its borders to unlimited Space. As a matter of fact, the superconsciousness is the very "channel" connecting the human with the "space archives". When the channel is open, the borders of individual consciousness in ASC diffuse. It is difficult to say what happens in particular: whether individual consciousness gets in the consciousness of the Universe or otherwise the consciousness of the Universe flows in the human consciousness. Or, perhaps, two flows simultaneously rush towards penetrating each other. Anyway

a consciousness of the space extension occurs to a person at this moment. It can be said that thanks to the superconsciousness "the consciousness of each person includes the Semantic Universe in all its infinity" as a splinter of the hologram contains its whole image. That's why in the altered state of consciousness when the superconsciousness starts to speak at the top of its voice, deep discernment and unusual revelations "much exceeding our educational and intellectual grounding" occurs to us.

In common, so called weakening state of our consciousness we perceive basing, mainly, on logic. We observe, analyze, compare with something already known to us, classify... Then we make up a general conception, i.e. build some construction. Unfortunately, the construction prepared by us may not uncover the essence of the thing we'd like to understand. So not for nothing the science continually returns to already known, refuting the previous knowledge as false or incomplete one. Apparently, logic as by all means a powerful tool of perception is not almighty.

In the ASC "the intellect is not being injured". Its activity differs from the usual one simply. What is going on with our logical mind in this uncommon mode?

The most popular idea is that it simply disconnects and stops working. It is difficult to agree with. Observations and experiments with different people obviously prove that in altered states of consciousness a person can both observe and memorize and is able to analyze and think over perceived things.

Undoubtedly, logic mind does not fail a person in the special state of consciousness. His mind does not disconnect, but transfers to another operating mode with new abilities of perception. Whether in common state our logic mind (intellect) is involved in processing information provided by sense bodies from the physical world around us, then in the ASC area of its interests is significantly widening. At these moments "the receiver of mind" widens its band and thanks to the effect of unity starts perceiving and decoding data that was not able to get before. Probably, it can be stated that exactly in the ASC our mind is able to "get in the true essence of things".

There is a reason why knowledge obtained by a person in the ASC is not expressible. This reason is symbolicalness of information pouncing upon the person. A symbol is not monosemantic but has several levels of meaning, and thus, has a great number of decoding variants. It is possible to assume that these symbolicalness and multichoice are peculiar to not only such visions but also to the Universal Knowledge in general. Thanks to such wonderful kind this Knowledge can be perceived at any level of infinite space hierarchy. But as a sense rather than a speech. Each person is able to understand and interpret this sense as well. But it is extremely difficult to communicate it.

One scientist, a friend of mine, told me on this problem as follows: "I've got it instantly but it took me two years to translate it into the scientific language understandable to my colleagues".

That's why those, who try to transfer knowledge obtained in the ASC, have to use diffused expressions, metaphors and allegories that can not be interpreted unambiguously. As a result the audience is given an impression that the person can not understand what he is speaking by itself. They think "talks nonsense", "not in his right mind", "he is crazy"... while listening to such speaker.

Just a few people have experienced such contacts with the "other", so people treat all kinds of contactors distrustfully and skeptically, sometimes considering them as mentally diseased persons. Meanwhile modern science does not consider such transpersonal states as something abnormal or pathological any more.

Thus, the famous researcher of the ASC J. Kornfield thinks that these states being directly connected with meditation shall not be referred to psychopathology. He wrote: "This experience points to rather normal alternation of perception occurring in consciousness of mainly healthy people".

Generally speaking, the ASC is not so rare event. According to scientists, eight out of ten people are open to such states. Some people automatically go to this state routinely several times per day.

Most often such spontaneous breakthroughs of consciousness occur to "delicate natures": poets, painters, musicians etc... Makers of art realize them as an inspiration. At these "blessed moments" ideas, images and words come without any efforts, by themselves, as if coming from some mysterious spring. So in one of his letters Wolfgang Amadeus Mozart (1756-1791) frankly confessed that at the inspiration moments he did not have to compose, but only had to simply put down ready compositions.

However, such states are peculiar not to the Muses servants only. A lot of scientific ideas were obtained in such a way as well. Discernments of Rene Decart and Thomas Edison, Dmitry Mendeleev (periodic table) and many other great people are the best confirmation thereto. So, psychologist J. Adamar while studying creative process of mathematicians noted that mathematician discoveries are made in a form of strikes where no words but mathematician symbols only. Only then when everything is clear a scientist translated the new knowledge into usual sign system.

It shall be admitted that the special state of consciousness, when the symbolical Universe gets in the brain, usually does not come suddenly. As a rule, it is preceded by invisible but very intensive intellectual work. At some moment the brain tired by long search does not endure huge tension and dips

in "a rest". Than "the ratio" is being suddenly substituted by a strike, i.e. in essence symbolical answer received from the universe "bank of senses".

Perhaps, some other person having seen this symbol would understand nothing. But trained brain of the searcher will suddenly give an ecstatic start: "Eureka!". And then frantic round dance of monkeys will transform into benzene formula as it was in 1865 with the famous German chemist Frederic Kekule (1829-1896), or a strange energy vortex will transform into the quantum structure of the atom (Niels Bohr, 1885-1962). Somebody as Mozart or Alfred Schnitke will suddenly hear a wonderful music that shall be skillfully translated into notation. And somebody has no choice but to write down a poem or sketch a scheme of an unusual device.

Nowadays psychologists agree that creative work is not possible without such breakthroughs of consciousness at all. Of course, nobody will deny that rational thinking plays a great role in creative process. But a computer "thinks" as well. Nevertheless, it is powerless in the true creative work. Whether it creates, then in the frameworks and under laws established by the human only. Only the human is able to surpass established things and only in the special state of spirit. Not by chance there is assumption now that "the future evolution of the human as biological species will in many respects result in intensive development of his altered states of consciousness, perhaps, deliberate and planned" (Doctor of Medicine L.I. Spivak).

It is far long marked that moonlight has some mysterious power and influences on all living beings in a strange way. Not for nothing there is a lot of folk omens and superstitions related to the Moon, e.g. "a person born in a new moon period will be enduring and long-lived", "corned beef shall be stored up until new moon period", "fish biting is the best in a young moon period" etc. The moon calendar was also followed in old times. For example, people tried to sow closer to the new moon period, they say, that in this case fair yield is able. Niceties were known as well: the flax is better to sow before a new moon period, and the spring wheat and rye — in the very new moon period. At the same time people gathered medicinal herbs as it was noted that they were stronger in that period. Timber was also chopped this time because timber chopped soon after the full moon period will decay faster: "to cut grass, timber and brushwood in a full moon is the same as to spoil: it will decay or worms will gnaw it away"...

These regularities have been being observed by people for already thousands years, and the science knows them as well. But there is no comfortable explanation to the fact still. Life cycles of herbs can be somehow related to the moon gravitation ("ebbs" and "flows" of water in stalks and leaves). But other regularities are much harder to explain. For example, the one that well



known to experienced infectiologists: diseases caused by bacteria become more intensive in a full moon period, and viral infections — in a new moon period.

Nowadays there is no doubt that activity of living beings evidently depends on phases of the Moon. In a full moon phase reptiles, animals and birds, especially nocturnal ones, become more excitable. It is for sure established that periods of intensive reproduction of many living-beings (worms, sea-urchins etc.) are dependent on certain phases of the Moon.

The Moon does not disregard the human as well. Thus, many diseases, namely: rheumatism and nervous pains, sciatica and migraine, become more intensive in a full moon period. Infants become more restless and loud. According to observations of specialists, women become more sensual and they stand a better chance to become pregnant in this phase of Moon. The full Moon also influences on mentality. Indeed, nowadays scientists ascertain that epileptic seizures, schizophrenia, maniacal depression and paranoia become more intensive with patients in a full moon phase. Even such nervous disease as stammering is aggravated. Healthy people suffer as well. Their mentality become more unstable and people become more irritable and absent-minded. According to statistics, number of accidents and incidents related to human mistakes and carelessness increases in the active phases of the Moon, especially in full moon periods.

At the same time human aggressiveness rises sharply and number of crimes increases. According to statistics of the police department of Philadelphia (USA), "people whose antisocial behavior has psychological background like incendiaries, kleptomaniacs, alcoholics and suicides are active upon ascending Moon and calm down upon descending one".

Analysis of historical events since the 18th century shows that most demonstrations of mass activity (rebellions, strikes, murders, impingements etc.) fall at periods of new and full moons.

It is well known that moonlight can specifically influence on the human mentality, i.e. it assists in dipping into the altered state of consciousness (ASC).

As far as in the 19th century scientists revealed an interesting coincidence: it turned out that polarized light has an effect on living-beings analogous with the moon one. In order to make further thoughts clear I'll try to explain the polarized light on a simple pattern (May technicians forgive me for so informal expounding of this the most sophisticated subject).

As everybody knows, the light is electromagnetic waves, i.e. it has two components: electrical (E) and magnetic (H) fields. Field vectors of these fields are always perpendicular to the light traveling direction and to each

other too. So it turns out to be such a combination of three perpendiculars as coordinate axis. Natural sunlight, from the point of view of its polarization, can be compared with a kitchen wire brush for washing of bottles: its E vector, for example, chaotically bristles extensively in different places. But it is possible to make this brush flat. In order to this we just have to make natural ("brush") light reflected from some dielectric (glass, water surface etc.). In this case the brush as if become flat from the blow. It is possible to put a filter letting oscillations as if through a slot in one plane only. The best of such filters are clear crystals of, for example, transparent quartz (rock crystal) or Iceland spar without mixture. In any case the brush will change from the cylindrical to the flat one: E and H vectors are coming right and lining up each in its appropriate (single) plane. In other words, the light becomes polarized. It shall be added that not only visible light but invisible rays from radio-waves up to gamma rays as well have a property of polarization (perhaps, "delicate" radiations of higher bands too).

And here we come to the main thing: laboratory researches proved that polarized light like the moon one influences on activity of comma and typhus bacilli, germination of seeds and behavior of animals. It is very interesting coincidence, but is it accidental?

Most likely it is not. After all, moonlight is the polarized one as well! To put it more precisely, the sunlight reflected from the moon surface becomes polarized. One of the first, who emphasized importance of these coincidences, was Russian scientist Alexander Leonidovich Chizhevsky (1897-1964) who in the thirties of the 20th century was called "Leonardo Da Vinci of the 20th century" abroad. He believed that moonlight even being 600 thousand times weaker than the sunlight thanks to its polarization "has a specific impact on organisms".

Of course, linearly polarized light shall influence on biological cell and physiology in whole in other way than the usual one. After all, it is so differs from the non-polarized one like a flat knife differs from a round metal bar which it is made of. It is the same metal and the same weight, but the first one can cut and the second one cannot. The main thing here is the form. But an impact of this "knife" on living-beings (at the DNA level?) can be different: sometimes positive, sometimes not. It is obvious as the knife is a neutral weapon. It can be used for surgery operation in order to save a person or, otherwise, can be used for murder. The same applies to the polarized light.

I think that the light with elliptic and circular polarization shall have more specific influence. After all, it is more similar to corkscrew or a drill rather than a knife. Therefore, it can "screw into" or "pierce" the most reliable protection. Besides, such a "corkscrew" can be with right or left-handed thread

(right and left-polarized light), then, its influence on physiology can be extremely different. For example, it can activate or, otherwise, depress vital functions of biological cells.

There are all grounds to suppose that impact of such light "scalpel" or "drill" on biological objects and DNA can be extremely strong — up to tissue regeneration. Of course, it will require long experiments and supercaution. Such a device, if its design proves to be imperfect, can cause undesirable new growths, after all...

It is a dead certain, readers have a question: how does moonlight (polarized) influence on people indoors? After all, moonlight can not get on them at all. That's the right question.

However, statistics is a stubborn thing. It continues to stand its ground: there is a doubtless connection between mental state of people and moon phases. Then, people even isolated from direct moonlight react on something! But what? What is this "mysterious all-penetrating agent" connecting such distant from each other factors: brightness of the Moon and human mentality? If it is not the moonlight itself, then what can it be?

We react not on the very moonlight or polarized light, but on some component thereof depending on brightness (i.e. quantity of polarized light) of the Moon. The very mysterious component is able to penetrate through barriers insuperable for the light. Discovery of such component will explain many mysterious events, including reaction of food and vine being kept in full darkness of deep chilly cellars to moon phases.

What is this all-penetration component? Perhaps, physiological and mental effects caused by polarized and moon light are connected with so called torsional (spin) fields. These instantly acting and all-penetrating fields have been being discussed for many years already. They got their name from the Greek word meaning rotation. According to researchers, torsional fields are in all places, where there is such type of motion, i.e. from an electron to the Galaxy. Torsional charges conduct themselves unconventionally: regardless of electromagnetism the same charges gravitate, and the opposite ones — repel.

Of late they start calling the energy of torsional fields as the fifth fundamental interaction in the nature. Moreover, the very torsional fields are featured as universal carriers of consciousness and thinking. According to the one of large authority in the area academician Anatoly Evgenyevich Akimov, "Consciousness and Thinking, as well as the Universal Mind within the limits are presented in the Physical Vacuum through a specific physical essence — torsional fields as spin polarized states of the Physical Vacuum, rather than abstractedly". The academician of the Russian Academy of Natural Sciences

A.E. Akimov speaks on the nature of torsional fields as follows: "uniform medium, i.e. the Physical Vacuum, can be in different phase states, to put it more precisely, polarized states — so called EGS -states. This medium in the state of charge polarization behaves as an electromagnetic field (E). The same medium in the state of spin longitudinal polarization acts as a gravitational field (G). Finally, the same medium in the state of spin transverse polarization acts as a spin field (S)".

According to the academician, speed of transmission of torsional signal significantly (perhaps, billions times as much) exceeds light speed. 'Famous experiments of N. A. Kozyrev on instant registration of visible and actual positions of stars in the sky testify thereto. By the way, he covered the optics by antielectromagnetic screen, but, nevertheless, a signal from the star went through still. It means it was a torsional field".

This very violation of one of fundamental postulates of relativity theory of Einstein is an apple of discord among supporters and opponents of reality of torsional fields. At the same time under support of the main department of space devices in the midst 1980-es Akimov created first patterns of torsional equipment. In 1986 the Interindustrial scientific and technical center of venture technologies "VENT" lead by Akimov for the first time succeeded in transfer of binary information with the help of torsional fields.

According to the scientist, torsional fields "are not shielded by common natural means". Besides, they have another unique property — they assist in self-organization of substance. Experiments on radiation treatment of slowly getting cold smelt by torsional fields were evidence thereto. The effect was surprising. It turned out that under the influence of even very weak torsional fields some formations — clusters that while expanding subdue all volume of getting cold mass to its orientation — appear in the metal.

Suppose so, torsional irradiation is able to influence not on metal structure only, but on biological objects as well. Most likely, there are the same serious changes in a living cell as in the metal upon radiation by torsional field. Anyway, scientists are conceived that directed torsional flow influences on a human organism noticeably. And according to A.E. Akimov, "the rightward field makes people fell better and the leftward one — worse".

So let us get back to polarized light — we find out its indisputable likeness with torsional fields. It can have both right and leftward spin, after all. Basing on this coincidence we can easily develop and verify working hypothesis as follows: whether right and left-polarized light influences similarly to torsional radiation, or not?

Evidently, there are a lot of common between torsional fields and polarized light. Let us add another one coincidence — the "psychotron" one.

It is well known that polarized light, as the moon one, influences on human mentality specifically — it promotes to its dipping into the ASC. Potent extrasensory individuals and hypnotists have similar impact on the human: they are able to lead other people to the trance condition, the ASC in essence, too. There is a single question arising: whether torsional fields participate in this process, or not? The answer seems to be "Yes". There is an opinion of scientists on the point: "When we speak that torsional fields are involved in parapsychological events, we mean firmly proven fact: fields generated by extrasensory individuals are the torsional ones. There are some tens of experiments to prove the point".

Well-known telepathy researcher professor Sergey Yakovlevich Turlygin of biophysics laboratory of the Academy of Science of the USSR in 1942 wrote in his work devoted to radiation of electromagnetic waves by a human as follows: "Performed experiments make us believe in existence of radiation coming out of human organism... We have to admit that some physical agent establishing interaction of two organisms actually exists... Reflections of this agent from mirrors and diffraction events make us think that this agent is the electromagnetic radiation, one wave of which lies in the range of 1.8-2.1 mm".

Seemingly, the electromagnetic hypothesis has explained everything. But almost at once different "but" destroying this well-shaped picture appeared. It turned out that by some parameters the human radiation clearly differs from the electromagnetic one. So, it is scarcely to speak on its purely electromagnetic nature. In this case metal screens would block up transfer of thought information entirely, but it is far from reality.

Existence of this feature of telepathic emissions was proved by the famous scientist, the founder of scientific parapsychology in the USSR Leonid Leonidovich Vasylyev (1892-1966). Alumnus of Petersburg University he became interested in mysterious effect of telepathy, when in 1921 he started working in the Institute of Brain with the famous psychiatrist and neuropathologist Vladimir Mikhailovich Bekhterev (1857- 1927). After the death of his supervisor Vasylyev became the head of the group studying telepathy in the Institute.

In 1932-1937 researchers lead by Vasylyev designed a special chamber made of thick tin boards effectively blocking transmission of electromagnetic waves. In spite of such strong screening telepathic information from a human-"inductor" came through the metal freely and was correctly received by addressees even at the distance of 1700 km (Leningrad — Sevastopol). On the basis of obtained results Vasylyev made the following conclusion on the mysterious factor providing such telepathic communication: "As common

radio-waves, it acts at long distances but in contrast to radio-waves is not shielded by metal obstacles". In 1958 during experiments with atomic submarine "Nautilus" American scientists obtained the same convincing evidences. An operator (percipient) isolated from the crew was aboard. At a given time he had to tune mentally on the inductor — a person trying to transfer him information. There were approximately two thousand kilometers, water column and metal case between them. In spite of huge distance and strong screening the percipient precisely determined more than 70 percents of images transmitted.

Leading Russian researchers of torsional fields A.E. Akimov and G.I. Shipov (International Institute of theoretical and applied physics) hold the opinion that main role in data transmission is played by absolutely independent type of radiation — torsional (spin) fields accompanying, in particular, electromagnetic oscillation.

The built model allowed academician Akimov to set up a hypothesis that for each act of consciousness there is a distinctive torsional radiation of brain: "an opportunity to correlate the Consciousness and the Thinking with their material carrier in the form of torsional fields has appeared... Available theoretical and experimental base of torsional fields' paradigm allows considering them as the same reality as electromagnetism and gravitation... The important fundamental fact is that electromagnetic fields always contain a torsional component. A torsional field will be observed both in electrostatic field and electromagnetic radiation... Misunderstanding of this circumstance often resulted in unsuccessful efforts to explain events caused by electromagnetic sources by electromagnetic events".

Researches, at first glance, seemingly far from the subject of this story, can shed light on many phenomena related to the altered states of consciousness.

The topic in question is sensational results obtained by Moscow scientists Peter Goryachev and Georgy Tertyshny during their longstanding researches. It was revealed that DNA molecules, chromosomes and proteins are able to generate so called coherent radiation like lasers. By other words, they are peculiar transmitting biolasers, moreover, with retuning wave-length. At the same time they act as receiving antennas. These very amazing DNA features provide wave interchange with body genetic information, which substantial part, according to scientists, is kept in chromosome apparatus in the form of holograms. This allows each biological cell to find out instantly what is going on in each part of the organism.

Moreover, it turns out that DNAs are in charge of receiving external information as well. Thanks thereto a human organism constantly interacts with fields of other living-beings, items, and the Earth in general. Moreover, with the

help of these DNA-antennas it can receive data from the information field.

I think that the main peculiarity is that coherence of biological cell's radiation, hence coordination of their work, rises sharply in the ASC. Scientific researches prove this hypothesis. It was revealed that cerebral waves of people being in special states of consciousness are of increased energy coherence. Moreover, at these moments synchronization of cerebral hemispheres, i.e. coordination of their work increases. Most likely, it is necessary condition for stable reception of information. Those who wield methods of entering to the ASC — different extrasensory individuals and those who can skillfully concentrate attention for a long time — are the best at this point. I suppose that an external stimulation can play an important role in coordination of radiations of all body cells. For example, it can be external polarized radiations, in particular, from the Moon. Perhaps, the very increasing coherence of DNA's work causes specific reaction of all living-beings to the moon or polarized light: it can be hyperactivity of biological cells or exacerbation of nervous diseases or dipping into special states of consciousness, in which the human gets information "from above".

In ordinary state each biological cell tuned to a "virtual" wave part of its DNA receives individual tasks therefrom and following them executes its main activity: produces certain substances, interchanges information with "neighbors" etc. In general, lives its ordinary life. But in spite of the fact that our organism is an ideal coherent system, as a rule, there is no ideal coordination (supercoherence) of work of its cells. (Hence, indispositions, diseases, frustrations etc....). But let's consider a person concentrated on some problem. At once subduing to a higher command his biological cells transfer to a special working mode (the stronger and more purposeful the human will, the more powerful such a command). Though, some people with phenomenal abilities told me that concentration and volitional efforts are not the best methods as they require huge energy consumption. This is like door breaking with crow-bar instead of easy rotation of the key. They think that simply "directed attention", i.e. ability to temporarily take away everything unnecessary and minor preventing our consciousness from goal achievement, is more effective than volitional concentration. In this case DNA molecules not being distracted by side effects automatically retune their antennas to a required area of information field, receive necessary information therefrom and memorize it. But in what form?

Most likely, in the same form as genetic information was received and is being kept, i.e. in the form of holograms. Thanks to well coordinated set of billions of DNA molecules "miniholograms" received by them- extremely weak and hardly perceptible in the hindrances — are intensified repeatedly

and join to create single superhologram, which can become completely perceptible. It should be said that the hologram is not a picture, but is only its cipher image required to be decoded. This very thing is going on in our brain. And internal pictures appear after this decoding only.

I think that images received from the Space information field become available to our "internal vision" in this of like way. That is where from there are human notions on events distant in space and time.

It is supposed that torsional fields causing certain neurochemical and hormonal processes in the human organism take an important role therein. From the one hand, these processes block up some centers and channels distracting from the main task. From the other hand, they provide opening of new neuronal "paths", "networks" and "reflexes" in the cerebrum, thus allowing to increase volume and speed of data processing sharply. In particular, this explains different breakthroughs of consciousness — instant "striking", "revelations", "connections to the Universal Knowledge"...

By now it is well-known that crystals are able to accumulate huge energy stores and give it to the external world. Frankly speaking, it will be some other energy transformed by selfhood of the crystal rather than the energy accumulated from the space.

Hence are therapeutic properties of minerals: if to choose them skillfully and individually by quality of radiation, then they will supply a person with the very energy he is short of. However, upon ignorant application of crystals it is possible to get harm. Thus, decorations made of precious and semi-precious stones curative for one people can be harmful or even dangerous for others.

But meanwhile they both create an invisible force field around themselves. Austrian chemist Carl von Reichenbach was the first person who paid attention to that fact in 1844-1867. During experiments that he always tried to make more objective the scientist made sure that many most sensitive people (extrasensory individuals) quite good felt and sometimes even saw this force field of crystals.

Nowadays it is obvious that this luminescence can be observed by ordinary people. Frankly speaking, in this case they have to stay in full darkness for pretty long time: only some time after their eyes start perceiving faint colored aura around crystals. The quite astonishing thing was revealed during such experiments. It turns out that some people are able to come into a mental contact with crystals and even alternate intensity and color of their aura!

Nowadays is firmly proved that physical devices made with the application of crystals response to psychophysical influence of a person quite sharply even in spite of distance. For example, upon mental impact of a person quartz

crystals change their frequency behavior almost as upon radiation thereof by a laser beam. And, the most important for our further talk, it happens "upon initial "coming into contact" (device adaptation to the operator) in immediate proximity thereto. Their so called mutual "adaptation" within some period of time takes place".

Another very old "superstition" - crystals don't simply react to a human's thoughts, but come into a bilateral contact with him — was proved as well. By other words, a feedback is possible in the "person-crystal" system as well. In particular, this conclusion was made by the director of the American Institute of crystal studying Dale Walker basing on his experiments performed in 1970-80-es. In his book "About origin of crystals" he wrote directly that "crystals react to a human's thoughts and emotions interacting with his mind and increase energy of thought and power of his feelings".

Of course, an important condition of mental contact with a crystal is possibility of mutual resonance of their radiations. It seems, it mainly depends on both radiation pattern of a person and a type of crystal lattice, i.e. the type of mineral. A form of the crystal lattice is of certain importance as well. By all appearances, this very form mainly determines vibration rhythm and resonance frequency of the crystal. Depending on the form of crystal the same mineral will have different not only physical but "psi-properties" as well.

Let's take a diamond, for example, the hardest of known minerals. Carbon atoms in the diamond are located in units of a very rigid undistortable construction — tetrahedron (a pyramid, which all four faces are equilateral triangles). Perhaps, thanks to these very short and rigid atom connections the diamond is the best substance to react to psychological influence of a person. Coming into a resonance with him the diamond intensifies them and emits information by much more powerful stream than the received one owing to the huge internal energy.

Thanks to this specific radiation some energoinformation frame is formed around the crystal. And this frame is of our interest. The point is that the frame performs several functions, including the one of transmit-receive antenna. It will be logically to suppose that such a complex "antenna" allows crystals not only to emit their own electromagnetic oscillations (this is broadly used in radio engineering), but to perceive and retransmit foreign information, including the one that is emitted by the human both being close and at far distances from the crystal.

Getting inside the crystal external energy quanta (for example, of light or visible cosmic rays) transfer its particles to excited or even hyperexcited state for a short time. It causes so violent "internal processes" in the crystal that it starts active sharply directed emitting of energy at strictly established fre-

quency. Owing to this effect even a small crystal can give radiation comparable by intensity with radiation of a large X-ray tube. A ruby can be used as a pattern of such laser effect. All we know that crystals are broadly applied in modern lasers. But it turns out that the ruby is able to form laser radiation without any complex processing equipment. For example, "having charged" from bright sunlight it starts radiating laser rays thin as needles in the same way as an artificial device.

But all these are ordinary properties of crystals well-known and skillfully used in radio engineering. But what if this effect of intensification and "laser shooting" is right not only for electromagnetic band, but for torsional fields as well? For example, for radiations of the person being close to a crystal. In this case the crystal is really obliged to become a psi-laser!

Generally speaking, there is nothing extraordinary in this assumption. We can even imagine a probable action of psi-intensification. It is not improbable that the main role in conversion of a crystal in a psi-laser is played by its crystal lattice. This very lattice forms numerous energy frames-matrixes and creates some mirror walls and corridors for mental energy tossing inside the crystal. As a result each cell of the lattice transforms into a microscopic psi-laser, and the crystal, as a whole, summing up all their efforts — into a short-distance psi-laser. Having received mental radiations coming out of a person and having become excited thereby the crystal intensifies and "shoots them back" but being much stronger. After that a mere trifle remains: to perceive all this and make it visible for consciousness. And, as we have already understood, it is necessary to come into the altered state of consciousness previously. Another important property of crystal radiation will help us in this matter. It turns out that it can be not only sharply directed, but polarized as well. And whether our hypothesis on influence of polarized radiation on human mentality and physiology is correct, it is easy to imagine the effect able to be created by crystals emitting such polarized flows. For example, under their influence human consciousness can transfer to another working mode, i.e. retune its band and start receiving information from the information field. And, as we have already repeatedly told, it is possible to receive knowledge on the past and the future, the distant present, as well as works of art and scientific data.

Not long ago researches of atomic nucleus and cosmic space seemed to be the most important and intriguing. Nowadays our attention is paid to riddles and ability of human mentality. Scientists fixed their eyes on the matter discovered that the "internal Universe" of an individual is not less complex and mysterious as the world around us. Professors V.N.Pushkin and A.P. Dubrov claim that "in none of material bodies properties and traits of micro- and



macrocosmos are interlaced in such amazing way than in a living organism, and they expressed so clearly in nothing but in psychical activity of the human".

It is not surprising that representatives of various areas of knowledge are trying to solve a mystery of human consciousness. Those who have been plunged into this problem quite deeply are not doubtful that consciousness not simply reflects, but in much degree forms the world not only in the sense that ideas generated by a person are being realized in technologies, works of art, conflicts or friendship... All these were known before. Now the point is that thoughts or feelings seemingly not shown neither in action nor a word are able to directly influence on the environment and the person itself. Scientists mean this idea when they say that "the consciousness is a physical reality".

This dare conclusion of scientists radically altering our views on the world is a result of doubtless facts, long-term observations, scientific experiments as well... They directly say that each organ, each cell of organism directly responses to human thoughts and emotions. Astonishing events traditionally called as paranormal also testify to the fact that our consciousness is able to influence on objects of animate and inanimate nature.

"We made sure that there are unknown areas in the human. Parapsychology offers us a method of their research... This research has been just started, and we think it will be one of the greatest tasks of the nascent civilization" (L. Pauwles, J. Bergier).

The time when denial of these phenomena was a sign of good form among scientists and necessary condition of scientific respectability becomes a thing of the past. Doctor of physico-mathematical sciences G.I.Shipov speaks that "nowadays there is no doubt in existence of telepathy and clairvoyance or that consciousness energy plays a certain role in physical processes".

The most astonishing thing is inconceivable power displayed by the human in all that. How amazing are the effects caused by single effort of thought as reduction of weight of items, alternation of internal structure of substances equivalent to heating up to 5000 C, conversion of one chemical elements into other, etc. These things are real ones in spite of the fact that they are beyond our comprehension.

Of course, only a few people are able to comprehend it. However, this is enough to make sure of the richest abilities and reserves of human mentality. Most likely, these abilities are inherent to many (if not to all) of us in a latent form. By the way, the latest researches prove it. For example, doctor of biological sciences S.V.Speransky claims on the basis of long-term experiments as follows: "Telepathic abilities are inherent to a great deal of people".

Moreover, it has been already proved that these abilities could be activated by using special electronics - "brain machines". Nature of these events is not clear still, but we ought not to ignore it without a risk to destroy the science (academician V. A. Trapeznikov).

The fact that paranormal events are rare and hardly explainable by already known conceptions confuses researchers progressively less. They are convinced that events of human mentality "have certain material basis that not only is able to, but should be discovered". Current efforts of many scientists around the world are focused on this problem. They develop new research methods, set up new hypotheses; formulate new conceptions and physical ideas. In essence, formation of a new science — physics of psychical events (psychophysics) - is going on.

Solution of mystery of mental energy will be not simply a next step towards world cognition. The true revolution in life of mankind will occur. "Psyche as real manifestation of substance, energy and information, can be a powerful tool in hands of its holder". Let's talk about the simplest and obvious: a person is able to control processes in his own body. This means a transfer to higher physical and psychical health. There is nothing to speak about other nascent prospects... They simply take our breath away!

Each motion, including the one of thought, echoes in the entire Universe. These conclusions were made before the others by the greatest scientists of the gone century. The eminent physician Niels Bohr (1885 — 1962) told frankly that "future physics shall include the consciousness".

All Cosmos is rational and full of rational forces. Eminent scientists have been talking on that for a long time. For example, academician A.D. Sakharov (1921 — 1989) told: "I can not imagine the Universe and Human life without some intelligent basis or source of mental "warmth" lying outside the substance and its laws". Hierarchy of rational forces is endless. The human is a level of consciousness only, and the Earth is one of its islets that was, is and always will be connected with these forces. And we have to make these connections more conscious and harmonious.

Of course, such ideas are not common property of the broad masses yet. This is the way of thinking of the social elite still. But the process is going on. And any day now these new world view positions will become generally accepted. From the phase of "it is impossible" we, as it often used to be, will imperceptibly come to another one of "everybody knows it". When it will happen we will not only stop rushing aside of "non-traditional" methods of receipt of knowledge (including from "non-traditional" sources), but will add them to our arsenal as well.



## THEORY OF QUANTUM ENTROPY LOGIC — TRIUMPH OF MODERN NATURAL SCIENCE

**Svyatoslav Nesterov**

Nowadays international science has reached the new level of its development characterized by creation of integral knowledge obtained at the expense of development and active work of special complex scientific trends, synthesizing knowledge, principles and methods of several scientific disciplines as key problems of modern natural science can be solved on such basis only.

The theory of quantum entropic logic of Professor Theodore van Hoven, the quantum physicist and specialist in electronics, has become this very synthesis science.

The theory of entropic logic is built on the basis of unlike knowledge, principles axioms and postulates of modern science: from information theory, quantum mechanics, thermodynamics, relativity theory to philosophy, psychology, sociology, ecology, catastrophe theory and other disciplines.

Theoretical foundations of data exchange were laid by C. Shannon, who had offered statistical value of quality of information. Information theory of Shannon has limited area of application as information function is considered by Shannon as some mathematical abstraction without interrelation with other fundamental functions of substance and does not allow to describe principles of obtaining initial information in the process of scientific cognition.

In his theory van Hoven considers information function as material category reflecting level of internal structural organization of the object and interrelating with such basic characteristics as energy and mass of the object.

Whether to consider electron-positron vacuum model offered by Paul Dirac in the form of spatial structure consisting of a set of electrons and positrons, then appearance of the source mass perturbation declares itself as lack of inertial compensation of these particles, taken as gravitational field. But at the same time lack of spin compensation that declares itself as some physical field and therefore is a component of gravitational field possessing identical orientation (convergence) in space-time continuum appears as well.

Professor H. Tokugawa (Tokyo University) was the first one to suppose that spin of particle characterizing rotation on its axis is corresponded by a specific physical field further known as "quantum field of entropy" or "torsional field".

S. Torn and E. Walton tried to detect the field conditioned by spin interaction empirically. Availability of such field would be a "guarantor" of preservation of moment of motion quantity just as gravitational field existing in the

outskirts of any system of bodies is unambiguously connected with preserved mass of the system.

According to Geizenberg principle of uncertainty it is impossible to determine exact values of coordinate and impulse of a quantum object. Zero value of negative entropy of vacuum is "prohibited" by the principle of uncertainty, as in this case coordinate and momentum vector of the object are known simultaneously. Number of freedom degrees in vacuum is infinite; therefore a value of fluctuation of density of vacuum entropy can be infinite as well. So, states, in which vacuum has extremely high level of organization, determined by van Hoven as "an analogue of superconsciousness or similar states" can take place.

General theory of relativity of Albert Einstein connected gravitational fields with distortion of four-dimensional space-time. Basing on principle of convergence of gravitation and entropy Professor van Hoven created a mathematical model of quantum field of entropy representing a quasi-field generated by caused deformation of space-time.

Van Hoven managed to surpass interdisciplinary barrier and to connect mechanics of Newton, Einstein and Planck, electrodynamics of Maxwell and thermodynamics with fundamental quantum-entropic characteristics of vacuum.

Theodore van Hoven set up a hypothesis initiating the true revolution in natural science. The sense of the hypothesis lies in the following. A magnitude of loss of system organization of a material system interrelated with electromagnetic radiation can not take on arbitrary or zero values. Density of entropy field of elementary systems must be equal to an integer divisible by certain quantity of energy of the system.

Thus, van Hoven determined interaction between degree of system destruction and maximum quantity of energy able to be radiated or absorbed by the system.

Each material system has selective interaction with electromagnetic radiation of certain wave-length, which energy of quanta is adequate to energy of destruction of the connection (entropic potential) of main components of the system.

During interaction of components of the system with quanta of electromagnetic field a value of density of entropy field of the system changes and this leads to gravitation-statistical disbalance in external environment. In its turn alternation of gravitation field gradient causes alternation of space curvature (dimension) that leads to change of value of entropy of the system, which every component is characterized by strictly established (quantum) states of magnitude of entropic field. Entropic heterogeneity of the medium

of the material system conditioned by electromagnetic and gravitational fields serves as the source of internal energy of the system that declares itself in the form of generation of a terminal field for electrically charged particles.

Thus, information exchange of elementary components of the system is executed distantly, associatively and selectively at the expense of quanta of electromagnetic radiation having energy adequate to energy of destruction of the connection (entropic potential) of elementary structure of the system. Static gravitational and electromagnetic fields lead the system to mechanical shift and polarization; dynamic gravitational and electromagnetic fields induce its entropic potential.

Any material system (mechanical, physicochemical, biological or social) can only be in such stationary states, in which energy of internal connection of components exceeds energetic background of entropic fields of the ambient environment.

According to postulates of quantum-entropic logic, any event even in the smallest scale of time, with seeming continuity happens discretely by means of changing phase state of the system. Whether value of the stimulus, i.e. any external influence, exceeds critical threshold, then the value of entropy of the system increases in spurts.

Thus, some "terminal" state of the system, where upon transfer the stimulus of critical threshold makes a break of internal dominant connections so terminating existence of the given system as united functional whole, shall exist. From the positions of quantum mechanics, true break — a final result of infinitely small change — is unobservable in principle: one can never say with confidence that the reason, indeed, was larger than any finite quantity established in advance.

Validity of law on conservation of general level of structural organization of system allowed van Hoven to explain existence of so called "paranormal events" from materialistic and natural scientific positions without using mysterious or religious conceptions. Thus, various paranormal phenomena (with the attraction of basic principles of the theory of quantum entropic logic) can be successfully brought to a narrow circle of physical events available for natural scientific studying. With the help of the theory of entropic logic such paranormal events as clairvoyance, telepathy and adjacent thereto practically important trend of rod detection (radiesthesia) can be easily explained.

Theory of quantum entropic logic admits principal probability of prediction of forthcoming events under absence of any initial information (nonlinear forecasting). From the point of view of ordinary trivial logic the future does not exist, and predictions of forthcoming events are similar to invasion of absurd to sacred bounds of common sense. There is an Abrahamson theorem on inher-

ent inevitable uncertainty of phase states in the theory of entropic logic. The theorem proves impossibility to characterize a moment of breach of internal connections upon excess of critical value by the stimulus by unified time scale. At the moment of breach all phase states come to a single center existing beyond the time. Such state of the system corresponding to the phase of terminal breach can be naturally called a "time focus". In the time focus all phase states merge and entropy density of the system tends to infinity. Thus, the system being at the terminal stage can be concurrently registered in any other phase of its existence. Reliability of the forecast of the system's state will be proportional to its entropic potential in the given time phase.

Registration of extreme values of entropic potential on the time scale allows determining conditions of stable existence of any material system (object).

The theorem of uncertainty of phase states allows predicting with some likelihood appearance of unsteady metastable states, in which probability of destruction of the system increases significantly.

Experimental confirmation of the principle of uncertainty of phase states had been being provided by G. Sheppard (Stanford University) in controlled laboratory environment during tests on prediction of future events formed by random number generator.

High level of correlation between parameters characterizing speed of densifying entropic field of metastable system and forecast reliability is discovered.

Metastable system can be imagined as a family of elements, in each of which gradual increase of density of entropy that leads the system to unsteady critical state (nonlinearity, plurality of states, chain and avalanche processes appear) takes place. Metastable systems show high sensitivity to extremely weak external influences upon sufficiently great number of active elements (N). The larger N value, the weaker influence, which can lead the system to the terminal state. Fluctuation of density of entropy of metastable system is accompanied by generation of flicker effect that is characterized by increase of signal power in unit frequency interval upon underfrequency. The simplest physical elements generating flicker effect will be corresponded by defects of internal structure, namely: tectonic fractures in geological structures, defects of crystal lattice of semi-conducting elements or impurity centers in biological substrates.

By invitation of the National Aeronautics and Space Administration (NASA) and the Pentagon Theodore van Hoven headed the program on creation of electronic devices for purposeful alternation of the state of consciousness and obtaining reproducible psychophysical effects of contactless

obtaining information from distant (hidden) objects. The most of experiments was performed within the precincts of International Stanford Research Institute (SRI) - the major laboratory studying paranormal effects. Experiments resulted in creation of equipment functioning on the basis of the principle of multiplication of initiating signal upon decomposition of metastable states. Later on this equipment, as well as analogous designs, was called as "brain machines" (metatrons). From the physical point of view, "brain machines" are a system of electronic oscillators resonating at the wavelength of electromagnetic radiation, which energy is adequate to destruction energy (entropic potential) of dominant connections maintaining structural organization of the system researched.

The theory of quantum entropic logic of Theodore van Hoven allows to answer primeval philosophic question — why is the world around us so imperfect, why do accidents, disasters, catastrophes and wars occur, what is good and evil — from the physical positions.

In spite of variety of accidents, catastrophes and disasters they have single general mechanics — autooscillation processes of density of fields of entropy of vacuum related to alternation of gradient of gravitational and electromagnetic fields. At the certain moment corresponding to the terminal phase critical level of stable existence of the system in the given stationary state is being exceeded and this fact leads to increase of destructive processes, decrease of organizational level, and as a result — to full destruction of the system.

Formation and evolution of substance is an organic consequence of formation of quantum fields of entropy that regulate all physical processes. Processes of vital functions, including higher nervous activity of the human, are no exception.

Periods of high tension of terminal fields in respect of biological and social objects can appear in the form of weakening of adaptation systems of living organisms, asthenization, delinquent behavior and inadequate sexual reactions, growth of sickness and death rate, epidemics, mass psychoses, increase in crime, economic and social crises, armed conflicts and wars.

But these are periods of high "information induction", the time, when genii are born and epochal discoveries in science and technology are made as well.

As any material object interchanging information with ambient environment the human generates an entropic field in wide range of frequencies and energies. A biological system with high field tension is able to destabilize ambient physical bodies by its radiation. Thus, the organism with huge entropic potential literally decreases durability of all ambient items (architectural constructions and mechanisms) and oppresses vital functions of

other biological structures. A lot of minor troubles that start chasing us and, as a rule, no more than annoy us (muddied dress, broken heel, breakages of household equipment or car, petty losses or even theft) can be evidences of entering into the preterminal phase and serve as indicator of more stern events.

Thus, there is no evil will of the fate in occurrence of a tragic situation; just periods of high tension of entropic fields caused by objective physical processes in the external environment take place.

The theory of entropic logic by Prof. Theodore van Hoven points to the true reason of any events hidden from us. A person armed with knowledge of basic provisions of this discipline and having necessary equipment that allows him to know a program of interlacing of high and low potentials of terminal fields (run of good and bad luck) of any person, social or other material structures with the regard for their mutual influence, is able to control and manage any events in his own interests.

## ENTROPY LOGIC THEORY OF THEODORE VAN HOVEN AND EXPANDING HORIZONS OF CONSCIOUSNESS

### Edward Krick

*Edward Krick was born in 1945 in India. In 1968 he graduated from Puna University. He worked on probation in Cambridge (England) by invitation of the Nobel Prize winner P.Krick, in the University of the Sussex shire (England) by invitation of B. Goodwin, in Nagasaki University and many other places. In 1978 he was awarded in Stanford University (USA) with PhD degree. He is a member of the American Physical Society.*

*Nowadays Edward Krick is the head of department of psychophysical researches in International Stanford Research Institute.*

*His scientific researches are focused on a frontier subject between psychophysics and sociology — study of anticorrelation behavior of thermal fields during social crises and military conflicts.*

*Edward Krick is a live person keen on different exotics: he likes rafting and has got a pilot license. He scientific works have been published in the most prestigious magazines of the world (Nature, Scientific American, Physics today etc.), he has three scientific monographs published.*

*His youthful wife Simla Jarmapuri introduces a spirit of Oriental wisdom in his books.*

**Svyatoslav Nesterov  
New York, December, 1995**

Many spiritualists, shamans, clairvoyants and parapsychologists had astonishing paranormal ability to "scan" information from different items — stones, clothes, photographs and curls — on destiny of their owners.

This ability was called Psychometry (psyche — spirit, soul and metron — measure (from Greek)) by its pioneer and first researcher New York anthropologist and physiologist professor J. Buchanan. After multiple experiments with petrifications, minerals and relics prof. Buchanan discovered that each inanimate item had a property to "memorize its destiny". Silent items act as a certain gramophone record filled by feelings of their former holders.

As long ago as in ancient Egypt people were convinced that everything called by a person as his own inconceivably was a part of him. Not only cut nails and hair remain connected with him further, but all items which he had ever touched remain "impregnated" with his personality. Geologist professor Denton of Nantes (France), one of disciples of Buchanan, even claimed that

it is possible to extract more data on the Age of Pharaohs from "a single pea-size splinter from Egypt" rather than from all researchers of antiquity taken together. After Buchanan other French researchers, first of all, Riche and Austin were engaged in psychometry phenomenon very intensively. Time and again it had being discovered that a simple body contact with any item was enough to call the most tremendous backstage data on events related thereto. And there is no difference, whether events of the present, the past or the future in question.

At all times priests and sages, witch doctors and oracles, astrologers and foretellers used plummets and willow rods for obtaining data from the past or the future as well as for search of treasures.

In ancient China using of the plummet was a privilege of lords and aristocrats. Emperors always took a silver or golden plummet along and used it upon making important decisions. In India a rod had been used as early as in year 3000 B.C., and the history tells that ancient sages used the rod for searching groundwater. From China and India this craft came to Egypt, then to Greece and later to the Rome.

The oldest tradition of rod detection or radiesthesia (radius — beam (Latin) and aesthesia — sensitivity (Greek)) is an ability of unintentional reception of information from distant (hidden) objects and its transmission by means of plummet oscillation or deviation of a rod in hands.

This event presumes influence of some physical field on biological system, which response manifests in the form of alternation of position of an indicator (rod, plummet) being in hands of an investigator.

Moses is considered as the first rod detector in Europe. He hit the rock with a stick and water appeared out of the rock in response thereto. Plinius Senior (I century A.D.), Paracels (1493-1541), Mesmer (1734-1815) and some other authors had mentioned this effect in their works. In the Middle Ages this effect was successfully used for searching portable water and ore deposits in countries of the Western Europe.

In 1556 Georgius Agricola described the fact when medieval German miners searched mineral and ore deposits with the help of a "magic rod". According to European archives, about 70% of mineral deposits were discovered by the very method.

The founder of the British Royal Scientific Society Robert Boyle, English mineralogist William Price, founder of electrochemistry Richter and famous chemist Glauber were engaged in studying this effect and they estimated its abilities very highly.

In 1911 in Hanover the first congress on rod detection was held. International Union of rod detectors was established at this congress. In 1913

the second international congress of experimental psychology was held in Paris. At this congress a commission consisting of scientists of different specialties examined more than one hundred people claiming their abilities to search ore, water and cavities in the interior of the Earth. Conclusions of the commission emphasized doubtless existence of rod detection phenomenon (in scientific circles called as biophysical or biolocation effect) and necessity of its further development. In 1973 the International Society on Research of Psychotronics (psyche — spirit, soul and tron — measurement device (Greek)) - instrument study of possibility of supersensitive perception — was established. Problems of rod detection are being handled at the congresses of this society.

Upon results of complex researches UNESCO and UN expert on geology prof. S. Tromp published his work in which he proved objective character of existence of biolocation effect on the basis of large statistical material. Sensors of a cardiograph and a device for measurement of skin potential were fixed on blindfold students going with a metal frame instead of a rod by long profiles. All students reacted by the frame to the same zones being marked by the cardiograph and the potentiometer.

Professors Chadwick and Jensen (USA) performed analogous researches on 150 employees and students of Utah University. Statistical magnitude of results of application of a metal frame was checked with the help of the "Chi-square" test, and the level of fortuitousness was in the range of 6.0- 0.05% of cases.

Thus water, mineral oil, ore, coal as well as missing people, animals and inanimate items had been being searched for many centuries. And even nowadays one of the largest pharmaceutical manufacturers in the world Swiss concern "Hoffmann la Roche" gives orders to its permanent rod detectors to search water required for production before construction work at locations of new branches is started.

Famous rod detector Gottfried Mayer of Allensbach (Germany) had determined location of a thermal spring in Constantza that was discovered afterwards during well-boring at a depth of 400 meters. The fact made a profit of DM600 000. The boring company "Vik Drilling" headed by V. Tompson gets very high percentage of productive wells upon using biolocation for searching underground water-bearing zones; this fact allows the company to increase volume of drilling from year to year.

The US union of rod detectors includes more than 25 thousand people. In Vietnam specially trained GIs had been successfully searching unexploded bombs, grenades and high-explosive shells with the help of rods. Nowadays there are very successful attempts to use rods and plummets for

accomplishing different tasks in geology, archaeology, paleontology, medical diagnostics and other areas of human activity.

Thus, "a magic stick in skillful hand" (Goethe) has remained its significance till our days.

Researches of supersensitive (perceptive) channel allowing some persons to perceive distant or hidden items not affecting any of known sense bodies are of a certain interest.

This problem is currently being under consideration in the best university laboratories of the world: USA, Germany, England, Netherlands, Austria, France and Italy. Work on studying parameters of a field causing biolocation effect are being carried out; different theories on mechanism of reception of information from different objects of animate and inanimate nature by the human are being developed; electrophysiological processes at a moment of reception and decoding of information in cerebral structures are being investigated; attempts to use supersensitivity features of living-beings are being made.

Psychometry and radiesthesia are two main forms of supersensitive perception (clairvoyance or cognition (cognitio — cognition (Latin))). The only difference between radiesthesia and psychometry is a method of indication of things being perceived, as these are two forms of the same function, but not two different functions. Psychometry and radiesthesia differ from each other only by the following: in first case extrasensory information is being cognized directly in the frontal cortex in picturesque or quasi-sensory form, meanwhile upon radiesthesia information is being perceived unconsciously and gives out its content only through ideomotorally driven indicator.

Radiesthesia can be determined as a method of presentation of information received by contactless way from distant hidden objects as the expense of ideomotor motions realizable upon deviation of a rod (frames) and plummets. An indicator in hands of an operator (as if independently from the operator's will) objectivizing intuition moves due to tremor and micro motions of hands, arising as a result of tonic muscle activity. Rod detection process is human motoric reactions perfect only after long-term and exhausting training. Fair results can be reached by a few especially gifted people. Their small number impeded broad application of this method for accomplishing everyday tasks and did not allow making craft of rod detectors a mass profession.

In spite of the fact that physical laws in classical science until recent times had not been related to the clairvoyance phenomenon, exact description of these processes and evidences of this rear unusual human talent have been existing for many thousand years. Clairvoyance ability can be also reached



with the help of narcotics. Clairvoyance ability can appear in one's sleep, during hypnosis or with the help of conscious suggestion or as congenital gift (very often it takes place in Ireland, Scotland, as well as in some eastern countries of Europe and Asia).

Clairvoyance promotes perception of events in the present (cognition), in the past (retrocognition) and in the future (precognition). Up to now classic science has been denying the very process of clairvoyance. However, serious researches performed in many universities and institutes of many American states allowed admitting existence of this absolutely unique natural phenomenon.

Professor Joseph Benk Rayan, an American psychologist in Duke University in Darham (North Carolina) proved objective existence of the clairvoyance phenomenon by scientific and statistical methods. He used so called Zener cards (a test used for quantitative studying of parapsychological phenomena).

On the basis of experiments performed in laboratory of Stanford University a fundamental conclusion was made as follows: each person has a potential ability to perceive spatially distant topographic and engineering objects (buildings, roads, technical equipment) as well as biological structures (animals, plants and other people). In this case the given phenomenon does not depend on the distance. According to researches, substantial increase in test effectiveness happens upon using statokinetic indicators (rod, metal frame or plummet).

Results of tests performed in laboratories around the world allowed to finish off with unsubstantiated denial of this event by scientific orthodoxies. Thanks to positive experiments scientific community managed to finally make sure of existence of the effect of supersensitive perception and the fact that all people can possess such abilities and that they can be strengthened as a result of training or, quite significantly, application of the latest special equipment.

Explanation of phenomenon of supersensitive perception is possible basing on materialistic conceptions without exceeding the frameworks of scientific paradigms.

For own explanation ability to perceive distant (hidden) stimuli irrespective of ordinary sensory processes has required certain researches in the frameworks of such disciplines as neurophysiology, information theory and quantum theory.

Not long before discovery of electromagnetic waves by physician Kruks and chemist Ostwald set up a hypothesis on radiations lately called as a "radio of cerebrum". A group of researchers tried to explain the effect of supersensi-

tive perception from the positions of "animal electricity" discovered as far back as during test performed by L. Galvani and A. Volt. In 1902 a theory of biopotentials was created; in 1925 G. Fricke offered to consider cell membrane as an oscillation circuit. Events of generation of wave oscillating processes by human body, animals and plants were discovered. At the level of brain nerve cells they are being registered in the form of ElectroEncephaloGrams (EEGs). It is proved that a nerve cell of living organism is a generator of electromagnetic radiation in ultrahigh range of frequencies with the wave length comparable with linear dimensions of the cell itself.

W. Aidee supposed that weak magnetic fields of brain neurons played substantial role in the process of data perception and processing creating the second signaling system in addition to the synaptic one. H. Puthoff and R. Targ had established influence of weak magnetic fields on the cerebrum leaving aside sense bodies. In their experiments they proved that upon transmission of information under absolute absence of sensory contact the role of intermediary was played by electromagnetic oscillation of very low frequency. It should be noted that experiments of Puthoff and Targ were successfully reproduced in many laboratories of the world. In the G. Schnoll's opinion, interaction of radiations of different cells under absence of an external signal takes place at the expense of resonance events (interference) between waves of different length provided that both ultrahigh harmonic (sinusoidal) and low frequency nonlinear (stochastic) oscillations are available. Their synchronization is provided by nervous system, and their coherence — by tissue specialization of cell structures. Upon weakening control of nervous system, for example, as a result of a mental disease or impact of neurotropic toxins these processes can be put in order by external stimuli, namely: visual, acoustic and chemical ones or electromagnetic radiation. Interaction of radiations is executed at molecular level as a result of alternation of relative position of molecules creating the cell in space (conformational transfers). At that an effect of resonance intensification of cumulative signal is achieved.

The given event was called as biological feedback and currently is broadly used for rapid achievement of the state of deep relaxation (meditation).

In excited cell structures electric tensions (so called "membrane potential") within the range of from 8 mV (rest potential) through 60 mV (action potential) are caused by nerve impulses. We can consider nerve cell as rhythmogenic center with exogenic modulated frequency.

Whether we are in a normal (and even excited, nervous or scared) wakeful state, then EEG will display mainly beta waves. Their frequency mostly does not exceed 20-25 Hz, and their amplitude lies in the range of 2-20



microvolt. Upon visual or acoustical stimulation wave pattern of this so called "background activity" of brain is being changed radically. Some higher points reach amplitude of up to 200 microvolt. Whether activation impulses from reticular system weakens, then "background activity" decreases significantly and gives way to a type of waves known as alpha waves with the frequency of 8-12 Hz and amplitude of 5-100 microvolt.

Almost all authors of books and tutorials on methods of relaxation, autogenic training, transcendental meditation or yoga call production of alpha waves a prerequisite for reaching self-hypnotic state. However, relaxation reached in such a way has nothing common with self-hypnotic state as the frontal cortex still exercises its typical beta activity.

Self-hypnotic state and access to subconscious areas of central nervous system appear only when the brain produces theta-waves with the frequency of 4-7 Hz and amplitude of 5-150 mV. Now consciousness and subconsciousness "speak" the same language, and unhindered information exchange is possible between them.

The brain uses an opportunity of "interbrain communication" mostly for its own programming: genetic information and content of subconsciousness (archetypes) come into communication with and are processed along with individual empirical data accumulated in memory. These programs are required for unhindered performance of vegetative functions, development and maintenance of genetically fixed behavior, as well as for execution of "human — environment" connection.

It should be noted that problem of interaction of consciousness and subconsciousness is one of the most complex and the least developed problems of modern science. Only one of 10 million bits of information is cognized. The rest mass of perceived information is not cognized and is fixed in the area of subconsciousness. Some authors refer events of foresight and creative intuition expressed in generation of new scientific hypotheses to this very area.

J. Sarfatti and G. Barra suppose that the area of subconsciousness is connected not only with separate individuals, but is common for all human population. They think that "functionally large and thin systems thanks to interaction of subsystems-individuals being parts thereof can possess consciousness immanently inherent to them or its analogues as an integral functional mean of displaying reality and antientropic influence on the outer world and themselves". By content this theory is close to the theory of "cooperative subconsciousness" by C. Yung. According to M. Talbot's ideas, function of consciousness is a field, resonance of continuum of fields that control the substance structure. C. Pribram offered holographic model of consciousness, according to which each particle of the hologram characterizes the

whole picture. In his opinion, whether human brain and physical Universe are under holographic principle, then the consciousness shall represent whole visual environment.

The beginning of changing of thinking towards cognition of supersensitive perception is sooner being happened with physicians since models with the help of which they are trying to explain behavior of elementary particles have specific properties and depend on the state of an observer in respect to the test subject.

In the late 70-es physicians Helmut Schmidt and Evans Harris Worker published their theory of paranormal function relying on concepts of quantum theory. It stated that such paranormal events as clairvoyance refer to areas of quantum physics, in essence. Thanks to Schmidt-Worker theory an elegant mathematical model of supersensitive perception containing physical prerequisites and including physiology of spiritualist was formulated. Further, Evans H. Worker started working with these two areas and offered a new perception of the "hidden variety" based, in his opinion, on quantum reactions. Worker had researched the role played by consciousness in observation of physical processes. The scientist thought that nerves subduing to consciousness are connected with each other at the level of interaction of elementary particles rather than through ordinary reaction of chemical conductivity. Thus, entire unity of connected particles, which is, in the Worker's opinion, of extremely complex state, is being created. Worker thought that human consciousness is equivalent to variety of states of elementary particles. Thus, a portion of power of this cerebral system processing information is always ready to stop "collapse" of uncertain states of elementary particles outside the system. Such a process was called by Worker as "regulating function of consciousness". With the help of consciousness it is possible to psychokinetically influence on our world and this will a source of all paranormal effects. As consciousness is able to influence on nonlinear variety of the system the system's activity is limited neither by space nor time.

Concurrently, but independently, with H. Worker, O. Kosta de Borgar offered an analogous idea. In his opinion, conscious brain activity is corresponded by ordinary (trivial) logic, whereas subconscious activity is the basis of intuitive discernments and is performed pursuant to quantum (entropic) logic. Upon connection of subconsciousness stochasticity of conclusion and decisions equivalent to stochasticity upon quantum-mechanical measurements appears.

State of any quantum system is being determined by probability laws of distribution of proper physical values being determined through wave functions. Two quantum systems are called as quantum-correlated ones, if prob-

ability characteristics of one of them depend on proper characteristics of the other. It happens when systems has been contacting with each other at some moment in quantum sense, i.e. they wave functions have been crossed. Possibility of quantum correlations follows from the main postulates of quantum mechanics being observed experimentally. Thus, there is a transfer of alternations (reduction) of wave function between quantum-correlated systems. According to quantum-mechanical description, influence of one of the systems on the other is being transmitted instantly and does not depend on distance and availability of electromagnetic or other screens. These properties of quantum-correlated systems with account of their initial "contact" coincide with features of interaction of an operator with distant (hidden) material objects. Influence of the operator on physical system is being exercised through his "influence" on wave functions of quantum objects, and this influence is being exercised in the same way as in quantum-correlated systems, i.e. has a character of magnetic, electrical or acoustical influence.

Professor of physics Dr. D. Bom as a hidden parameter offered to introduce some mathematical field, transmitting alternations (reduction) of wave functions (called in quantum mechanics as "informational function of system" or -  $\psi$ -field).

According to concepts of quantum entropy logic (an adjacent discipline at the borders of quantum mechanics and information theory), informational function of the system is divergent to the system's energy and has orthogonal projection of impulse in space-time continuum in respect to the later and is convergent to the mass of physical objects comprising the system being researched.

Dependence between a state of informational function (channel width and density of signal transmission) and a mass of the physical body can be described by the formula of finite increments of Lagrange.

General theory of relativity of Albert Einstein connected gravitational fields with distortion of four-dimensional space — the time. In order to vividly imagine this connection the space often is sketched out as a stretched film or trampoline in which pits are being punched by massive bodies ("gravitational craters"). A particle passing by the massive body slides down to such a crater and we interpret it as gravitation. Within the frameworks of such analogy the work of Svyatoslav Nesterov and Yakov Zeldovich on "zero Lagrangian" can be considered as explanation of some "resilience" of the space. By conception of quantum mechanics an oscillation system (for example, a ball in a hollow) can possess only strictly established energy — roughly speaking, the ball can rise up to some strictly established points only without experiencing intermediate states at that. Besides, the ball can not

motionlessly lay at the bottom, because it will contradict to the uncertainty principle stating that it is impossible to unambiguously determine exact value of coordinate and impulse of a quantum object (and the coordinate of the ball laying at the bottom is determined exactly, as well as impulse that is equal to zero — entropy of the system takes on a maximum value).

Thus, even vacuum possesses some organization at the expense of oscillation of different fields.

Basing on the principle of convergence of gravity forces and entropy professor T. van Hoven developed a mathematical model of "entropy fields" (black belts) being quasi-fields generated by caused space-time deformation.

It is easy to find explanation of delicate mechanism of interaction of quantum-correlated systems in the theory of entropy logic. Transmission (reduction) of wave function to the system (information induction) causes alternation of curvature of four-dimensional space-time analogous to influence of a massive body, appearance of "gravity temporal crater" or "entropic depression", if to speak in figurative terms of van Hoven.

Thus, mechanism of information induction is being realized upon increase of quantum values of entropy of correlated systems.

In order to explain existence of many paranormal human properties and a range of phenomena of supersensitive perception, which realization is hard to explain from the view of orthodox scientific paradigm (for example, for cooperative subconsciousness claimed by C.Yung or clairvoyance in the past, present or the future) it is necessary to deepen into a thrilling area of elementary-particle physics for detailed researching of properties of electrons and other particles.

Atomic electrons move by quantum passages around their nucleuses, simultaneously rotating around their own axes. This own rotational impulse, or spin, characterizes all other elementary particles as well. Thus, all electrons, protons and neutrons rotate with the value of spin (S) in  $1/2$  ( $s=1/2$ ), and all bosons, gluons and photons with the spin of 1 ( $s=1$ ).

But how can rotational motion contain information at all? In this case it is possible to produce not one, but even two fundamental possibilities. First, information might be presented by a value of rotational impulse that depends on speed of rotation, mass and form of a particle. Second, this information might be encoded along the lines of rotation of the particle.

The first supposition is unfortunately pulled down due to inconsistency with laws of nature. While particles can take absolutely any impulse along the lines of distribution, it is impossible for them due to presence of an universal natural constant (Planck constant) unlike, for example, planets, stars or a whipping top to rotate with any speed. They shall adhere to one rotational

speed strictly established for each type of particles, and value of this speed shall be half-integer of integer multiple value of  $h/2$ , where  $h$  — is a quantum of Planck's action.

This value equals to  $1.0546 \cdot 10^{-2}$  erg-secs and is the most little action ever detectable.

From electronic data processing we know that for producing and transmitting information we shall have at least two different levels of semantic expression (bit) that are usually denoted by 1 and 0 symbols. United into groups (bytes) 1 and 0 levels of semantic expression allow to represent any large quantities of numbers on the basis of binary system of numeration. For example, all numbers between equals sign and 255 ( $1+2+4+8+16+32+64+128=255$ ) in 8 bits in 1 byte as used in computer engineering. Whether letters or signs go with certain numbers as, for example, in American ASCII code, then it is possible to depict all letters from A through Z and all punctuation marks as well as wildcard characters.

In data processing systems 1 and 0 levels of semantic expression can be depicted with positive or negative tension or with that current propagates or nor; whereas in data storages they temporarily exist as the expense of presence or absence of magnetic field (hard-disk drives) or electrical tension, or at the expense of transparency of crystals of metal oxides (optical plates).

Similarly to that fact elementary particles can also have two opposite levels of semantic expression: rotational impulse of a particle is orientated in space in parallel (directed "upwards") or in antiparallel (directed "downwards") with direction of its movement.

Whether we proceed from the assumption that parallel (marked with "+") spins correspond to 1 in binary system and antiparallel (with the sign of "-") to 0 in the same system, then it is especially obvious that elementary particles are able to communicate the spin, i.e. modulated semantic information.

Four main forces determining physical structure of the world and responsible for all interactions between particles and thereby for all physical events act between structural elements of substance (elementary particles). They are weak and strong interaction, gravitation and electromagnetism. Two of them — weak and strong interaction — are not able to be directly perceived in macroscopic sphere: they have just narrow ranges that are less than radius of atomic nucleus (10-8 cm).

By contrast with this gravitation and electromagnetism due to endless range refer to our everyday empirical world.

As all elementary particles possess both properties of particles and waves, we can consider interaction between particles either according to the theory of standard field as a consequence of interpenetration of their relevant fields

or to the theory of quantum field as a result of exchange of the third virtual particle.

With due account thereof we can gain vivid (but extremely simplified) insight of quantum mechanical processes inside material objects.

Separate quantum particles constantly emit field quanta. Whether the later come across with a particle able to interact with them, then they are being absorbed by it and hand it over their energy and rotational impulse (spin).

By means of medium — carrier — virtual particle — material objects are able to receive information from the environment and radiate actual information on the state of objects.

The way, by which electron "processes" information contained in the spin of absorbed virtual particles and accumulates it in the form of discrete quantities, can be explained by the theory of quantum entropy logic proposed by Prof. Theodore van Hoven.

In his theory T. van Hoven develops success of works by E. Vitchinsky and L. Beadley, in which in a single theory weak and strong interactions of elementary particles, electromagnetism and gravitation (nowadays known as absolute unity theory (AUT)) were united.

Van Hoven pins the AUT theory with baryon asymmetry of the Universe. This work made large impression and caused a great deal of new researches, in which, in particular, a role of x-particles and other bosons was described in detail.

By now conception of structure of baryons as component particles consisting of three "more elementary" particles — quarks (antibaryon consists of antiparticles — antiquarks, accordingly) become firmly established. In Van Hoven's theory quarks and leptons (collective name of electron and neutrino) are considered on equal terms and can transform into each other. As a consequence, reaction with alternation of rotational impulse (spin) can be performed.

Decay process takes place with formation of so called x-boson as well as other similar by properties vector (terminal) particles at the intermediate stage. For shot we will talk on x-bosons only; let me remind you that vector fields are the ones able to exist in any states of polarization. The simplest example is an electromagnetic field.

Probability of this decay reaction is extremely doubtful. The point is that mass of quark is certainly less than the one of x-boson. Thus, this reaction does not take place in common (classical) sense of the word. Just some slight "swinging" of such level of vacuum liberty (resiliency) that corresponds to x-boson takes place. X-boson can decay by two ways — into antiquark and

positron or into two quarks; anti-x can decay into quark and electron or two antiquarks, accordingly. Integrated probability of decay of x equals to integrated probability of decay of anti-x. But upon decay of x-boson more pairs of quarks than upon decay of the same quantity of anti-x pairs of antiquarks are being formed and less antiquarks and positrons than quarks and electrons upon decay of anti-x. It is essentially that x-decay takes place without balance and with some "procrastination". Otherwise baryon asymmetry won't be able to be formed by general theorems.

Formation of baryon asymmetry implies global spontaneous symmetry breakdown for many properties of the space.

Thus, there are huge areas (billions of light years) with space division of substance with positive and negative polarization and proper physical fields thereof conditioned by transfer of moment of rotational impulse (terminal fields) in the Universe.

At the further stages of cosmological expansion of the Universe annihilation of antiquarks with quarks, then — merging of excess quarks into baryons takes place, and then excess electrons come into atom structures. This is the way of origin of the substance.

Further development only proved van Hoven's theory that includes so called quantum chromokinetics, i.e. dynamical theory of electromagnetic gravitational (entropic) interactions.

According to this theory, upon decay reaction quarks are given additional level of liberty, conjugated with electromagnetic radiation of light spectrum, thus called as color. Quantum chromokinetics (abbreviation — QCD) is very successful in description of quantum-correlated interactions of hadrons. Its character is ability to retain quarks! They can not be extracted from baryons or mesons in the same way as electrons are being extracted from atoms. The reason is creation of some "chord" retaining quark with the force not reducible depending on distance.

Some successes obtained upon researches of supersensitive channel of information transfer, were conditioned by scientific strategy based on conceptions of physical mechanisms of initial interaction of a field with some elementary structures acting as biological receptors being a part of nerve cells. In the opinion of O. Reiser, mechanism of signal detection can be conceived as a result of resonance interaction between fields generated by nerve cells of the cerebrum and hydrogen-helium plasma of the ambient space. In the scientist's opinion, nerve cells of the cerebral cortex can be considered relatively to a stable aggregation of colloid structures of quantum-mechanical nature able to extract proper information using "Fourier transformation" and put it in good order and sufficiently represent it though a communicative (linguis-

tic) language with the help of mechanism of wave encoding (modulation).

In electrons of cortical nerve cells supersensitive information encoded in the spin in the form of discrete magnitudes transforms into analogous neuron impulses and is being processed into quasi-sensitive impressions like other information of sensory impressions. O. Reiser supposed that quantum spin states acting as information carrier are being realized at the atomic level in hydrogen bonds of protein.

It was shown in works of Prof. Arthur T. Winfrey of Arizona University devoted to study of three-dimensional modes of distribution of electrochemical waves and executive centers in excitable mediums, that magneto-hydrodynamic waves (Alphen waves) spreading at that in tissues cause rearrangement of nuclear configuration of macromolecules and influence on energy of nerve cells. In the opinion of G.Lashaet and A. Morrow the following principle lies in the heart of supersensitive perception: decomposition of spectrum lines of magnetic field conditioned by presence of nucleuses having their own magnetic moment.

Seko Idzava of Nuclear Research laboratory of Nagasaki University (Japan) established that upon influence of weak electrical fields a whirl magnetic field appears inside the volume of nerve cells, their structures of different geometrical dimensions, not excluding dimensions of molecules.

Upon certain alternation of wave functions of magnetic electrons of substances being in labile state (a state of instability both to strong and weak disturbances) a phase change of spins of magnetic electrons (spin re-orientation transfer) can occur in them. As a result of spin-spin interaction of nucleuses a hyperfine structure in spectra of magnetic field appears.

As energy jumps in atoms are proportional to their ionization energy, then a role of receptors perceiving field changes can be successfully played by impurity atoms. Their distinctive feature is extremely low energy of ionization and long life-time.

Scientists of California Institute of Technology (USA) have detected impurity atoms in nerve cell of the human brain in the form of inclusions mostly consisting of magnetite ( $\text{FeO}$  or  $\text{Fe}_2\text{O}_3$ ) with the size of up to 100,000 angstroms.

In the temperature range of 301.5-321.3 K magnetite is in labile state, and upon disturbing influence on its crystal lattice, a spin re-orientation transfer accompanied by alternation of values of magnetic resistance and magnetic susceptibility takes place in it. At that the value of hyperfine decomposition of spectra is not much dependant on values of external magnetic field. In this case obtaining of zoned structure of energy spectra at the expense of the system of delocalized p-electrons of  $^{57}\text{Fe}$  isotope of impurity centers of nerve

cells of the brain becomes available. Thus, mechanism of quantum-correlated interactions of biological system can be realized at the expense of energy increment by electron upon inducing and alternation of diamagnetic moment of impurity atoms contained in nerve cells of cerebral tissues.

Low reproducibility is the main difficulty of using parapsychological phenomena in general practice. In order to increase reproducibility different methods of forming specified bioelectrical activity of the brain, upon which human paranormal abilities can be successfully realized are used.

Required organization of cerebral activity can appear either as a result of organic changes or by the way of purposeful training resulting in functional reorganization.

In the first case these are brain injuries (including birth traumas), ischemic disease, atherosclerosis, congenital features of brain composition, a number of psychical (epilepsy, schizophrenia) and neurological diseases.

In the second case these are different methods from the practice of yoga, rebirthing, hypnosis, eidetics, medication methods and methods of active forming of established cerebral activity by direct influence on the cortical part of the brain and peripheral sensory systems.

In 1975 R. Monroe patented the method of potentiation of paranormal state of the human brain at the expense of stereo sounds being entered into the right and left ear of a probationer with the difference of 4-7 Hz.

For increment of effect of supersensitive perception R. Richards and J. Ruddle (Oxford University) offered to use a weak alternating magnetic field resonant to theta-rhythm of the brain in combination with photic and sound stimuli. In the opinion of Prof. Rudolph Kapelner (Neurological Institute of Vienna University), excited by magneto-light-acoustic impulse cerebral hemispheres "become a source of new-type mentality and new knowledge".

None other than Nobel Prize winner in physics Danny Gabor, the discoverer of principle of holography, made an interesting conclusion that ultra-weak photon emission observable with all animals and plant organisms examined, sharply increases when the biological system starts dying (regardless of death type — whether as a result of, e.g. mechanical destruction, intoxication, overheating or freezing). Performed in parallel parapsychological researches (Right test) have shown significant increase of test effectiveness with probationers.

Dr. Siros Murphy, who has performed his studies of supersensitive perception in mental and cancer hospitals, states that high paranormal abilities were discovered both among patients of the hospitals and their medical staff.

Unique researches performed by Prof. Henry Abarbanel (Institute of Nonlinear Science, San Diego) in San Diego federal prison during death

penalty by electric chair are of a special interest. Prof. Abarbanel marks anomalously high results of parapsychological tests (guessing of Zener cards) among prison officers participating in the death penalty. And these results lasted for the next two days. Thus, an officer who turned on knife-switch feeding the electric chair has correctly guessed the most (64-72 cards) of one hundred Zener cards containing five different geometrical figures (square, triangle, circle, cross and two parallel lines) in all tests. And before the death penalty, this number was about 22-26 cards.

Physics professor John B. Hayed of London has been studying psychometry during his researches of breaking of a metal bar. Thanks to that fact relying on large statistical material he discovered an increment of supersensitive perception effect among probationers upon destruction of metal.

These and other experiments in the area of psychophysics allowed developing devices switching human normal perception by sensory interpersonal psychological reactions. With the help of these devices an intentional expansion of perceptual sphere (subconsciousness) controlled by researchers can be executed; a barrier between layer of consciousness and the area of subconsciousness carrying infinite quantity of information on visual environment is being destructed.

In 1988 the US Congress assigned USD 145 million for research work on development of psychotron systems that allows determining location of pits of underground nuclear launchers and submarines with nuclear weapon aboard from stationary objects at the territory of the USA.

Tests confirmed by space photographs have shown effectiveness of the detection system developed.

CIA's claim that the USSR performs large-scale researches on development of psychotron arms systems and more than 30 laboratories in Moscow, Leningrad, Obninsk, Sverdlovsk, Chelyabinsk, Omsk and Novosibirsk take part in so called "supersensitive arms race" made American Congress worry and allowed to provide new investments into research work. In the further budget projects a share for this purpose was increased up to USD 450 million per annum.

Doubtless success of developers of psychotron location systems is detection with the help of "Titania" equipment of collapse point of the top secret Stealth fighter "Lockheed F-117AE" with two nuclear bombs B-61 aboard crashed in winter of 1991 during the "Desert Storm" operation at the territory of Iraq.

Similar new generation equipment is used by NASA (the US National Aeronautics and Space Administration) in distant space communication systems. During space flight on the "Discovery" space shuttle American astro-



nauts performed tests of the "Ariel" system aimed for emergency communication with the Earth in case of disabled radio communication or other emergency situations. The US Navy also tries to use similar equipment called "Umbriel" for communication with submarine crews.

This equipment is already out of military care. After the veil of secrecy was lifted from such equipment large group of devices called as "brain machines" becoming very popular in the USA, Japan and Western Europe was created.

The "Boeing" company has been already using systems of nonlinear control in aircraft construction very intensively. The computer that controls assembling projects images of separate units and details to monitor. The system of nonlinear control will report information on defective units in the most natural intuitive form.

"We need an advanced technology to fundamentally change methods of designing and manufacture. We consider "brain machines" as an obvious next step". (G. Hobbit, president of Boeing Technology Services).

The same Boeing has developed extremely original system for testing new aircraft models. Developers vary details of construction and with the help of nonlinear analysis obtain proper information on "weak points" in yet unbuilt aircraft.

Californian VPL-Research Company has developed and is continuously improving the most complicated procedure that allows obtaining three-dimensional graphic presentation of abstract massifs illustrating multifactor intuitive forecast of financial situations. The computer program simulates different probable extreme cases, while probability of their occurrence and credibility value of the forecast are being estimated with the help of systems of nonlinear analysis. According to postulates of entropy logic, situations of danger, risk or catastrophe are easily detectable in model experiments with the use of systems of nonlinear forecast.

In any case practical application of "brain machines" for prediction of development of situations and making decisions under deficit of initial information results in additional profit to companies using such equipment.

The developer of very successful designs of "brain machines" is the professor in psychology of Vienna University, specialist in electronics Rudolph Kapelner.

Thus, with the help of "AGM-Medium 12/60" device developed by AGM Corporation company (Linz, Austria) in collaboration with Vienna University a large accident at the nuclear power plant in Norway was successfully prevented.

Experience of using "brain machines" in archeology is very interesting. With the help of device of the same AGM Corp. Dr. Solomon Poppelarous

discovered previously unknown Greek colony established approximately in 1800 B.C. at the hill Assiros-Tiumba in Asia Minor.

The latest developments of HGY Inc. firm in the area of computer supersensory medical diagnostics systems merit a special attention. Computerized tomographic systems and ultrasound scanners show stereoscopic picture of internals in any perspective required. Reference color imposed on the picture allows a doctor to intuitively determine areas of dyscrasia at the body's projection.

Each of these achievements is a result of long-term researches and significant efforts of developers and manufactures of such equipment. They all widely demonstrate unlimited abilities of systems of nonlinear analysis, search and forecast.



## **PSYCHOTRON WEAPON - NEW STRATEGIC DIRECTION OF DEVELOPMENT OF ARMS SYSTEM OF THE U.S. ARMED FORCES.**

*Members of the commission of the American Physical Society \* resumes conclusion of the commission on possibilities of creation of psychotron weapon and decision of the U.S. Government to deploy such weapon.*

*BY C. PATEL, T. JOHNSON, E. KRICK*

In January of 1996 the American Physical Society started studying the state of development of psychotron arms systems in the USA. The results of the study published just at the end of February 1998 represent extensive estimate of possibilities to use such weapon for tasks related to matters of the country defense.

The commission consisted of 21 members (the authors were its members as well) set itself an object to prepare a report to be technical basis for creation of deployed network of psychophysical weapon according to plans of supporters of using psychotron systems for solving applied defense problems.

The commission was composed of specialists in different areas of science and technology playing an important role in development of psychotron weapon.

They represent wide spectrum of scientific and industrial laboratories, many of which directly relates to creation of psychotron weapon and auxiliaries.

During the study we had access to secret information. Publication of the present report was delayed for seven months during which it had been being examined by DOD officers. As a result of such examination the report was reduced by more than one third.

In general published results confirmed previous estimates of some leading American scientists that at the present stage psychophysical arms systems (PAS) can be used for meeting wide range of military challenges.

The commission has concluded that PAS can be used for creation of principally new means and methods of prosecution of war, including creation of new-type strategic weapon.

Creation of the physical theory of psi-phenomena by T.van Hoven was a condition of significant progress in development of the given type of weapon.

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*Editor's note: \*American Physical Society (APS) is one of the largest and most authoritative American organizations uniting leading physicians of the USA, including many Nobel Prize winners.*

Nowadays it is hard to fully estimate consequences of creation of psychotron weapon. A country first making decisive breakthrough in this area will obtain such superiority over its potential enemies that can be compared with monopolistic possession of nuclear weapon only.

Although conclusions of the given study are not a step forward in estimation of the program aimed to provision of the US long-term superiority in researches in the area of PAS announced by G. Bush, the study is of significant interest due to fundamental, comprehensive character of the work.

This fact gives to estimates and conclusions of the APS a special weight, which, seemingly, previous works of the same type were short of.

This explains the reaction manifested by opponents of PAS development upon publication of the given study. Its appearance once again exacerbated debates on the matter in the Congress. But in general, main conclusions of the APS study were not prejudiced during disputes, and this fact is of very importance. It could be said that publication of the given report and its central conclusions virtually exhausted debates on scientific and technical aspects of the PAS creation program, and ultimately made clear positions of the most authoritative in the given matter American scientists.

And what are the conclusions of the commission? In comparison with the report's volume (639 pages) they are very laconic. Let us quote from the very report:

"In the recent years gigantic steps in development of psychotron arms systems were made. In this connection new alluring opportunities to obtain inaccessible information by using psychotron devices as well as methods of telekinetic influence on technical systems with the purpose of their distant destruction appear.

A 3-4-year program of military application studies performed by organizations co-executors by order of the U.S Department of Defense is taking shape. The ultimate goal of this program is assured application of PAS in solving applied problems of the state defense.

At the same time the study group still sees significant problems in scientific and technical comprehension of many matters in this area. Successful solving of these problems plays a key role in achievement of technical characteristics required for creation of effective system of psychotechnological weapon.

Characteristics of the most important PAS components shall be improved by several orders of the value. As these components are interrelated with each other their improvements shall be mutually coordinated. Decision of important matters related to integration of the PAS with already existing weapon systems in general also substantially depends on information, which is lack-

ing still, as we know". The commission subjected many essential aspects of the PAS relating to systems of management, control, communication and reconnaissance.

Already existing psychotechnological systems give satisfactory results in distant reconnaissance; upon organization of communication with important distant objects, namely: submarines, aircrafts, spacecrafts etc.

Electrical screening of the given equipment, placing of the later in the Faraday chamber, in a spacecraft or a submarine does not impede high-quality control of the distant model.

The other area of application of this equipment is forecasting and modeling of results of military operations and political actions, intuitive decision of analytical tasks, choosing one of several possible outcomes in absence of any initial information. Patterns of successful application of the PAS in creation of space-time distant system of prevention of accidents and catastrophes are also available. The equipment allows making forecasts on some sections: natural disasters; wars and international conflicts; air and marine catastrophes; civil unrest etc.

Other important subject of our study is possibility to use the PAS for the purpose of destruction of living organisms or electronic physical objects (so called "magic weapon").

It is certainly important for the U.S. Army to know whether such devices are able to influence on people and to disable machinery and weapon at the distance of thousands of kilometers.

Of all types of devices presumably able to serve the given purposes and currently being at the development stage the most interesting one is low-frequency quantum resonance Krick oscillator, which refers to the most approved systems. Experiments with the Krick oscillator (the oscillator and the recipient were divided by 1.5 through 30 miles between them) confirmed possibility of distant influence on complex electronic devices and higher psychic functions of living organisms.

As high-quality radiation beam is free of distortion, has minor divergence angle and is not absorbed or dispersed by atmosphere, it is possible to place the Krick oscillator at a space platform. In spite of so high characteristics of the beam, possibility to use the Krick oscillator as effective weapon for disabling machinery and armament and direct attack on troops in the first place depends on experimental verification of several physical ideas so far being considered only theoretically. If to look at this problem from the technical positions, then the mentioned obstacles can be insuperable. Events that can occur around these experiments in the nearest future will directly relate to the matters of creation of strategic weapon of new type.

*Among other problems meant, but did not considered are level of expenses, control over arms and strategic balance, as well as matters of home and foreign policy related thereto. Research group of the American Physical Society that had prepared the report "Scientific and technical aspects of development of psychotron arms systems":*

*N. Blumbergen, AT & T Bell Laboratories.*

*C. Patel, Harvard University.*

*P. Avisonis, USAF Arms Laboratory.*

*R. Clem, Sandia National laboratory.*

*A. Geriberg, Washington University.*

*T. Johnson, US Military Academy.*

*T. Marshall, Columbia University.*

*W. Morrow, Lincoln Laboratory.*

*A. Holecome, Mancind Unlimited Inc.*

*E. Vitchinsky, Cornell University.*

*E. Sessler, Lawrence Laboratory, Berkley.*

*G. Sallivan, Illinois State University.*

*G. Vayant, Arizona University.*

*E. Yariv, California Institute of Technology.*

*T. Dressler, HGY Inc.*

*R. Zeir, Stanford University.*

*E. Krick, International Stanford Research Institute.*

*R. Jan, Princeton University.*

*R. Morris, Syracuse University.*

*A. Feyber, VPL Research.*

*S. Brown, J&J Inc.*

*The research has a long history. The decision on creation of the research group was made by the American Physical Society on January 20, 1996; the group was created in May 1996. Preparation of the report took 21 months (as Patel said, "elephant gestation"); it was published on February 24, 1998. Within seven months the report has been being examined in the US Department of Defense as to secret information contained therein.*

RUSSIAN AGENCY  
ON PATENTS AND TRADEMARKS

**(12) DESCRIPTION OF THE INVENTION  
to the patent of the Russian Federation**

(21) 96117021/14 (22) 21.08.96  
(46) 10.10.98 Bulletin No. 28  
(72) Nesterov V.I., But Y.S.  
(71) (73) Nesterov Vladimir Igorevich,  
But Yury Stanislavovich

**(54) METHOD OF INCREASING RELIABILITY  
OF BIOLOCATION STUDIES**

(57) Method of increasing reliability of biolocation studies refers to medicine, namely to labour physiology. The invention allows to increase degree of reliability of output of biolocation operators by impulse low-frequency unipolar magnetic field with adjustable values under condition of selection of characteristics of actuating magnetic field by the biolocation operator itself, provided that a biological object (an organism, a system of organisms) or its components (organs, tissues, cell elements, including blood and sperm) in the phase of irreversible changes (death) acting as initiator of the operator's intuitive abilities is placed between field source and temporal region of the operator. Using of biological initiators of high-level specific and biological organization actively functioning before starting of the initial phase of destruction with the application of methods of destruction of biological initiators with rough prolonged phases of final death thereof is possible. Formed by a generator magnetic impulses influence on both hemispheres of the brain of the biolocation operator synchronously with influence of factors causing irreversible destructions to the biological object used as initiator of intuitive abilities of the biolocation operator leading to its death.

The invention refers to medicine, namely to labour physiology, and can be used by biolocation operators for increasing reliability of biolocation studies being performed. Biolocation studies are performed with the application of special indicators (accessories) - bifurcated tree twig,  $\Gamma$ -shaped frame, pen-

dulum etc. (Mizun Y.G. Biopathogenic zones — threat of disease. - Moscow, 1993). A method of "rod detection" that lies in fact that such accessory as, for example, a twig of hazel-tree or willow, deviates or rotates in hands of some people coming over water-bearing, ore deposit or other abnormal zones. (Malakhov A.A. Along with the rod for minerals. - Questions and answers, 1973, No.3).

According to some researchers this ability is inherent to from 15 to 95% of people researched. Nevertheless, good results can be obtained by gifted biolocation operators after long-term painstaking training only. (Sochevanov N.N., Matveev V.S. Biophysical method in geological studies. - Geology of ore deposits. 1974, vol. 16, No.5; Bakirov A.G. Geological capabilities of biophysical method. - Collection of reports of the conference on psychotronic studies. Vol.1., Prague, 1973; Bondarev B.V. Biophysical effect and its application in exploration activity. - Scientific works of Tashkent State University, 1970, issue No. 372).

There is no equipment and methods increasing reliability of output of biolocation operators. This fact impedes broad application of biolocation testing nowadays.

It is highlighted in guides on rod detection that in order to get maximum reliability of prospecting works the tree twig used as accessory shall be newly-cut (Lomonosov M.V. About prospecting forks. - First foundations of metallurgy and ore craft. - 1763; Blaumang M. Why does the fork rotate? - Science and engineering, 1975, No.1; Morish Y.I., Turobov B.V. Rod detection without mysticism. - Nature, 1986, No.11).

The authors became interested in this claim and rod tests performed allowed to formulate working hypothesis that synchronized interaction of the biolocation operator with any actively functioning biological system or components thereof exposed to intensive destruction significantly increases reliability of biolocation studies. Percentage of increased reliability depends on intuitive abilities of the operator and level of biological organization of dying system or functional importance of used components thereof.

The authors analyzed historical data on appearance of "prophets" in the years of social or geophysical shocks, ritual features of sacrifices, shamanism and witchcraft from the positions of the theory of entropy logic by Theodore van Hoven.

The is a method of increasing working capacity of operators of aviation description and a device for its realization by influencing with series of mechanical stimuli with the help of needles on reflexogenic zones of the skin of breast, back, abdomen, hips and shoulders (author's certificate of the USSR No.738226, A 61 No.1/32, 1981).

The given technical decision is not acceptable for biolocation operators due to peculiarities of their workplace, special equipment and operating algorithm. Besides, the prototype device does not allow to adjust degree of influence of mechanical stimuli on the organism of certain operator and does not exclude traumatism of cutaneous coverings.

There is a method of increasing working capacity of an operator of aviation description by affixing to the skin of back and hips electrodes connected to the generator of electrical impulses regulated by individually selected frequency and amplitude. Two working modes are possible: periodical engaging of stimulation upon sleepiness and muscular discomfort or constantly in the working process (Russian patent No. 2,006,234 C1, class A 61 No.1/32).

There is a method of prophylaxis of peoples' overfatigue and increasing their working capacity by deepening and increasing time of natural sleep at the expense of influence of electromagnetic oscillations on the brain in the form of impulse signals adjustable by form, frequency, duration, porosity and amplitude (author's certificate of the USSR No. 700140, class A 61 No.1/32, 30.11.79, the U.S. Patents No. 3,989,051, 4,334,525 dated 15.06.82, No. 4,383,522 dated 17.05.83 - "Lenar"-type devices).

The closest to the claimed one is the method of influence of pulse current on central nervous system (author's certificate of the USSR No. 904,720, class A 61 No. 1/34, 15.02.82, author E.M. Kastrubin) through four electrodes affixed to the skin of the frontal forehead and mastoid region.

The main drawback of the above prototypes is subjective setting of working mode by selecting strength of actuating current basing on unpleasant feelings of the specific probationer in the points of affixing of electrodes.

As a result of analysis of engineering level it was established that the task of increasing reliability of biolocation studies by using any physical factors has not been being solved yet.

The goal of the invention is to develop a method increasing reliability of output of biolocation operators by more than 80%.

The goal set is achieved by influence on both hemispheres of the brain of the biolocation operator by impulse low-frequency unipolar magnetic field with adjustable parameters under condition of selection of characteristics of actuating magnetic field by the biolocation operator itself, provided that a biological object (an organism, a system of organisms) or its components (organs, tissues, cell elements, including blood and sperm) in the phase of irreversible changes (death) acting as initiator of the operator's intuitive abilities is placed between field source and temporal region of the operator.

The method is based on discovery of the Nobel prize winner in physics Danny Gabor that regardless of type of death (mechanical destruction, over-

heating, undercooling or intoxication) at the moment of its death the biological object rapidly increases emission of photons, whether it is animal or plant organism (Parapsychology: Study course of Munich Institute of Parapsychology. Moscow, 1992).

Formed by a generator magnetic impulses influence on both hemispheres of the brain of the biolocation operator synchronously with influence of factors causing irreversible destructions to the biological object used as initiator of intuitive abilities of the biolocation operator leading to its death.

The essence of the invention lies in the following. The probationer tested as biolocation operator preliminarily selects optimal values of parameters of magnetic impulses causing maximum influence on him formed by inductors: polarity of magnetic field for right and left hemispheres, values of carrier frequency, magnetic induction, interruption frequency and porosity of generated unipolar magnetic impulses filled by current of carrier frequency.

For the purpose of objective control over the value of reliability of output as biolocation operator the probationer was offered to guess one of three or five Zener cards containing different geometrical figures (square, triangle, cross, circle and two parallel lines).

Each card was previously placed to the envelope made of heavyweight opaque paper and then the envelopes were mixed in absence of probationers. This method is also known as the Right test.

Then the biological object used as biological initiator (solitary microorganisms or their colonies, different plants and animals) or parts thereof (biological liquids, cell elements and their homogenates) was placed between temporal region of the probationer's head and one of the magnetic inductors. The biological object shall be functionally active, but in the initial phase of irreversible destructions, that are inevitably shall end by its death.

The authors used already known influence factors leading to destruction and death of biological objects: mechanical injury, including decapitation and models of blood-letting, freezing, intoxication, multiple burns (thermal and acid ones), starvation, dehydration, hypoxia and asphyxia, influence by electric current, hard ionizing radiation and some own methods such as, for example, influence by laser beam.

Main test and statistic processing of the results obtained were performed against the background of artificially triggered destruction and death of the biological object or system used.

The essence of the invention is proved by the following examples.

A group of probationers ( $n = 12$ ) was offered to perform the Right test in order to provide objective control over reliability of their work as biolocation operators, i.e. to determine one of five Zener cards containing different geo-

metrical figures (square, triangle, cross, circle and two parallel lines). Each card was previously placed to the envelope made of heavyweight opaque paper and then the envelopes were mixed in absence of probationers.

Upon control determination of Zener cards the biolocation operator preliminarily selected optimal values of parameters of magnetic impulses formed by inductors causing maximum influence on him by deviation angle of  $\Gamma$ -shaped biolocation frame. Then Petri dish with *Escherichia coli* culture of microorganisms in the nutrient medium was placed between temporal region of the probationer's head and one of the magnetic inductors. Then Petri dish was filled by 10 ml of 1% phenol solution as antiseptic. The main study was performed in 5 (five) minutes after beginning of sterilization against the background of mass death of solitary specimens and all colony of microorganisms used. When using this method the quantity of reliable information made up 68.4+/-6.18% under mathematical expectation of 20%. Control studies showed 51.34+/-10.27% accordingly under the same mathematical expectation of 20%. Probability of accidental obtaining of this result turned out to be less than 0.05. In the next series of tests decapitation of laboratory animals (white mice, rats, guinea-pigs and dogs) was performed.

For decapitation of animals the authors constructed special guillotine which design philosophy is the subject of own invention.

Carcasses of agonizing animals and their cut-off heads were placed between one of the magnetic inductors and the head of the operator and then the Right test was performed. Control studies, when live animals were placed between inductor of magnetic field and operator in comparison with the initial control test — without using a biological object as biological initiator of abilities of the biolocation operator — were performed preliminarily.

When using this method the quantity of reliable information made up as follows:

Upon slaughter of white mice: 69.22+/-6.31% (in control experiment, upon using live animals — 52.16+/-9.26%),

Upon using white rats: 80.14+/-6.42% (in control experiment, upon using live animals — 64.53+/-8.17%),

Guinea-pigs: 69.89+/-8.41% (in control experiment, upon using live animals — 55.34+/-7.13%),

Rabbits: 76.18+/-7.64% (in control experiment, upon using live animals — 56.45+/-8.06%),

Dogs: 82.64+/-7.88% (in control experiment, upon using live animals — 67.13+/-8.32%).

Experimental part of the work was performed in the laboratories of the chair of topographical anatomy and operative surgery of Omsk Medicine

Academy (head of the chair professor, corresponding member of Academy of Medical-Technical Sciences doctor of medical-technical sciences Elomenko S.N.).

The highest results — 84.82+/-8.14% (in control experiment, upon using live animal -66.48+/-7.71%) - were obtained during the experiment with rhesus monkey provided by a representative of HGY Company in Omsk financing studies of the authors.

The Right test without using biological objects as initiators made up 50.07+/-12.34% in average.

Upon analysis of results obtained the authors paid their attention to the fact that the Right test was in all cases higher with operators directly performing decapitation, upon slaughter of young actively functioning and healthy animals and depended on level of specific organization of the biological object used.

The Right test was maximum effective upon synchronization of the biolocation operator's work with influence of factors of destruction of biological system, i.e. upon using just slaughtered animals. Then the results have been gradually decreasing and rapidly declined in 1.5-2.5 days (with different species) provided that corpses were kept under indoor temperature.

The authors concurrently performed researches on studying possibilities of application of different organs, tissues and cell embryos taken from human and animal bodies, as well as tissues of embryos (fetal tissues after abortion) and newborns died in childbed or within first hours or days after the birth.

Animals were used as slaughtered and died as a result of modeling of fatal disease (peritonitis) or intoxication (overdose of narcosis) ones. Analogous researches were performed with organs taken from bodies of people died as a result of crash, accident, murder or suicide, as well as a result of serious incurable disease (oncopathology).

This part of work was performed on the base of pathologoanatomic building of Omsk Medicine Academy conjointly with employees of chairs of pathological anatomy and forensic medicine under control of the city department of Internal Affairs and Federal Security Service.

The lowest results were obtained upon work with bone tissue as biological initiator, the highest ones — with blood, cardiac and brain tissues.

As an example results of the Right test obtained upon using different tissues of rhesus monkey as initiator can be cited: bone tissue — 54.47+/-11.18%, muscular tissue — 56.34+/-12.31%, skin and hair — 67.13+/-12.59%, liver tissue — 67.84+/-12.64%, testicles — 74.69+/-18.35%, blood — 78.43+/-18.49%, cardiac tissue — 80.21+/-19.17% and, finally, brain tissue — 82.93+/-20.12%. The results turned out to be higher upon work with



fetal tissues, an organ's homogenate washed by concentrated sulphuric acid or placed under laser beam or between carbon electrodes periodically generating electric corona discharge synchronically with the work of the magnetic inductor and the biolocation operator rather than entire organ.

The highest result of the Right test was obtained upon work with the corpse of Mr. S., 36 years old. His death occurred as a result of multiple gunshot wounds in the area of abdomen and lower extremities from loss of critical volume of blood. In 9 (nine) hours after the death the Right test made up 96.42+/-12.34%, in a day its effectiveness decreased to 88.34+/-11.24%, in three days — up to 74.82+/-10.18%.

Upon work with the corpse of Mrs. Y., 76 years old pensioner, died from multiple metastases to mesenteric lymph nodes against the background of high-grade cachexia, with the clinical diagnosis of IV-degree cancer of stomach, the Right test performed in 4 (four) hours after the death made up 79.47+/-10.21%, in a day — 71.13+/-9.97%, in three days — 56.39+/-8.75%.

Finally, possibility of using patients with serious chronic (cancer) brain diseases was evaluated.

Thus, with patient N., 49 years old with the diagnosis of IV-degree cerebrum medulloblastoma (died in 9 weeks after research) the Right test made up 79.13+/-10.17%.

Upon work with patient C., 54 years old (diagnosis: extracerebral tumor of the brain) the Right test made up 72.26+/-10.11%.

Thus, the following conclusion was made. The younger and functionally more active the biological object used as biological initiator of intuitive abilities of biolocation operators the harder its destruction and death, then the higher percentage of guessing Zener cards by probationers as biolocation operators. Whether the biological object used as biological initiator of intuitive abilities of biolocation operators is functionally incomplete or has chronic diseases or intoxications or mechanism of its death is transient, then the lower percentage of guessing by probationers as biolocation operators.

In order to facilitate statistical processing of obtained data at the moment of adjustment of magnetic inductors the authors have developed a special software program. In the work the authors used a conventional generator of magnetic impulses of "Gradient" type equipped with current breaker in the chain of magnetic inductors modified for separate adjusting parameters of N-S inductors and conjugated with computer control program and sound card.

The claimed method was tested by the authors during medical biolocation diagnostics with the purpose to determine possibilities of diagnosis verification of patients with oncopathology confirmed on surgical table and progno-

sis of lifetime of the patients tested (cancer of stomach, breast, head of pancreas, uterus and lungs). These researches were performed in pathological-anatomic building of Omsk Medicine Academy by lecturer of the chair of topographical anatomy and operative surgery But Y.S.

Obtained increasing of reliability of biolocation studies using the claimed method allowed authors to successfully test it upon guessing winning numbers of cash and prize lotteries. Number of winnings in the group of probationers subjected to influence of magnetic field in the presence of a biological initiator (corpse material) was 3.7 times higher than in control group.

## FORMULA OF THE INVENTION

1. Method of increasing reliability of biolocation studies by influence on both hemispheres of the brain of the biolocation operator by impulse low-frequency unipolar magnetic field with parameters adjustable by the operator himself, provided that between one of field sources and temporal region of the operator the biological indicator of his intuitive abilities in the form of a biological system, biological object or components thereof in the initial phase of irreversible changes, inevitably ended by destruction and death of the used biological initiator, is placed; and the work of the biolocation operator shall be synchronized with the moment of maximum destruction of biological initiator.

2. Method as in clause 1 differing by selection of biological initiators of high-level specific and biological organization actively functioning before start of the initial phase of destruction and by using methods of destruction of biological initiators with rough prolonged phases of their final death.





Patent No.: US 6,549,805 B1  
Date of Patent: Apr. 15, 2003

The  
United  
States  
of  
America

**TORSION DIAGNOSTIC SYSTEM  
UTILIZING NONINVASIVE BIOFEEDBACK  
SIGNALS BETWEEN THE OPERATOR, THE  
PATIENT AND THE CENTRAL PROCESSING  
AND TELEMETRY UNIT**

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U.S. CL.: 600/545, 600/546

Field of Search: 600/545, 546

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**TORSION DIAGNOSTIC SYSTEM  
UTILIZING NONINVASIVE BIOFEEDBACK  
SIGNALS BETWEEN THE OPERATOR, THE  
PATIENT AND THE CENTRAL PROCESSING  
AND TELEMETRY UNIT**

**ABSTRACT**

**BACKGROUND OF THE INVENTION**

The present invention relates generally to a biofeedback medical diagnostic system. More particularly, the system of the invention utilizes remote noninvasive biofeedback signal between the operator, the patient, and the CPT (central processing and telemetry) device to determine a pathological condition of the patient. The biofeedback signal is generated subconsciously and is based on device enhanced intuition.

A variety of medical diagnostic systems are known in the art to determine the patho-physiological status of the patient in general and to diagnose a variety of ailments and their state of progression. A simple example of such a system is a visual diagnostic device based on critical fusion frequency such as described in the U.S- Pat. No. 6,129,436 by Treskov or the Russian Patents No. 339,280 and 1,076,087. In a self-administered test, the patient can gradually increase the frequency of a blinking light until the point of fusion is reached and the patient is unable to distinguish between individual bursts of light. The frequency of that fusion is indicative of the state of the patient's nervous system and can be tracked over time to monitor its changes. An improvement is described in the Russian Patent No. 814,337 wherein the test is administered before and after a physical exercise. Such systems have generally limited ability to indicate the variety of patient's conditions due to the fact that only a part of the nervous system responsible for processing a visual stimulus is involved with the test. Such complex phenomenon as a change in working ability or the state of tiredness of a patient frequently results from other changes in the nervous system that would go undetected by such a device.

The situation of playing a dynamic game is used in various psycho-physiological evaluation devices to determine the state of a variety of body functions. Examples include such functions as attention, memory and vision (Russian Patent No. 825,001); sensing and motor reactions (Russian Patent No. 850,043); ability to choose (Russian Patent No. 929,060); the function of following a moving object (Russian Patent No. 827,029); ability to find the ways out of the difficult situation (Russian Patent No. 878,258) and even the predictive abilities (Russian Patent No. 839, 488).

A more comprehensive biofeedback device is described by Schweizer in the U.S. Pat. No. 4,195,626 and includes application of a variety of audible, visual, electrical or tactile stimuli in a specially designed biofeedback chamber. Moreover, a microprocessor controlled rhythmical pattern of these stimuli is proposed and is adjusted based on the patient's own reactions.

Ross et al. in the U.S. Pat. No. 4,690,142 suggests electro-neurological stimulation of specifically described places on the skin of the patient. Production of such tactile stimulation of the skin is used to generate electrical characteristics of the organism responsive to a particular condition. The system of the invention is also used to train the organism to change its reaction to the stimuli by concentrating on increasing or inhibiting the tactile sensation.

An even more sophisticated system involves detecting the patient's electrical brainwaves via electroencephalogram or EEG as measured from a number of electrodes attached to the patient's scalp. Several examples of EEG based biofeedback devices are worth mentioning here among a large number of such systems described in the prior art.

A multiple channel biofeedback computer is described in the U.S. Pat. No. 4,031,883 by Fehmi et al. which contains a number of monopolar electrical contacts applied to the scalp and the body of the patient and a computer for collecting, filtering and amplifying the electrical signals therefrom. The overall feedback signal is then presented back to the patient to create awareness of the function being monitored or for other purposes.

Ross et al. in the U.S. Pat. No. 4,800,893 describes a kinesthetic physical movement display in which a number of electrodes feed their respective signals to an EEG apparatus equipped with a video display. Generation of kinesthetic physical movements allows the user to produce desired thought patterns.

A method for treating a patient using an EEG feedback is described by Ochs in the U.S. Pat. No. 5,365,939 and involves selecting a reference site for determining a brainwave frequency and entraining it in both directions until a predetermined stop point is reached. Flexibility assessment is then con-

ducted with respect to the ability of the patient to change the brainwave frequency. A method and device for interpreting concepts and conceptual thoughts from a brainwave date of a patient and for assisting in diagnosis of a brainwave dysfunction is described is proposed by Hudspeth in the U.S. Pat. No. 5,392,788. A system is described to include a transducer for transmitting a stimuli to the patient, EEG transducers for recording brainwave signals, and a computer to control signal presentation, EEG signal recording and analysis. A comparison is made between the recorded EEG signals and a model of conceptual perceptual and emotional thought or as an alternative to the known EEG signals from healthy individuals to diagnose a brain dysfunction.

A method for determining the intensity of focused attention is proposed by Cowan et al. in the U.S. Pat. No. 5,983,129 and includes obtaining a frontal lobe brainwave EEG signal and subtracting it from a separately obtained reference EEG signal to produce the attention indicator signal.

Finally, an electroencephalograph based biofeedback system is described by Freer in the U.S. Pat. No. 6,097,981 in which a computer animation is maintained by the computer and presented to the patient while EEG response signals are simultaneously being obtained and analyzed. Results of the analysis are then used to control the animation. A provision is made to send the EEG signals from the head of the patient or user to the machine by remote infrared transmitter.

All the above systems suffer from a number of common limitations, which stem from their dependence on the conscious state of mind of the patient. Another limitation is that the patient himself is used to interpret the biofeedback signal rather than an independent entity such as an operator. Finally, hardware is used to obtain the EEG signals and transmit it via a wire or infrared method to the main data collection and computing apparatus.

One further improvement in the accuracy of biofeedback analysis is described in the Russian Patent No. 759,092 in which various biofeedback signals are assigned a certain value of relative weight by a dedicated designation unit acting based on individual characteristics of each patient or a test subject. Varying these weight factors allows the apparatus to customize the results of analysis for each individual user.

The use of magnetic and electromagnetic fields is also known in the art to remotely and non-invasively assess certain conditions of a patient or to influence his state of fatigue and abilities to perform certain functions.

Farmer et al. has described a device for monitoring a magnetic field emanating from an organism in the U.S. Pat. No. 5,458,142. It includes a magnetic field sensor containing a ferromagnetic core surrounded by a multi-turn

fine wire. The sensor is used to record the magnetic fields of an organism for diagnostic purposes as well as to control a magnetic field generator in order to produce a therapeutic magnetic field complimentary to that of an organism.

A bio-magnetic analytical system is described by Zanakis et al. in the U.S. Pat. No. 4,951,674 and includes a number of fiber-optic magnetic sensors to obtain information about the magnetic field from various tissues in the body including the brain.

A device for influencing an organism is proposed by Hein in the U.S. Pat. No. 5,108,361 and involves exposing the patient to a number of short pulsed signals supplied with increasing or decreasing frequency to stimulate the cerebral waves.

U.S. Pat. No. 5,769,878 by Kamei suggests a device for non-invasive enhancing the immuno-surveillance capacity of a person by supplying a pulsed light to his forehead (while shielding the eyes) in the frequency range between 0.5 to 13 Hz and preferably in the frequency of the alpha wave band as measured from the EEG signals.

Finally, our Russian Patent No. 2,342,826 describes a method and device for increasing non-invasively the accuracy and output of an operator of a bio-location device by using a low frequency unipolar magnetic field.

The need therefore exists for a non-invasive diagnostic system excluding the conscious influence of the patient and his own interpretation of the biofeedback signal.

## SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to overcome these and other drawbacks of the prior art by providing a novel non-invasive diagnostic system using a central processing and telemetry device and an operator to interpret the biofeedback signal from the patient.

It is another object of the present invention to provide a diagnostic system capable of processing the biofeedback from both the patient and the operator. It is a further object of the present invention to provide a diagnostic system in which the biofeedback from the patient is collected non-invasively.

It is yet a further object of the present invention to provide a diagnostic system in which a device is provided to enhance the intuition of the patient to facilitate the formation of the biofeedback signal from to the patient to the apparatus.

The diagnostic system of the invention includes a central processing and telemetry (CPT) device capable of providing a predetermined series of stim-

uli to both the operator and the patient. Such stimuli can be chosen of various types depending on the purpose of evaluation. They can be of optical (such as a screen of a monitor, a series of light diodes, etc.), sound (via headsets or speakers), or magnetic nature. A triggering sensor facilitates the biofeedback formation and transmittal from the patient to the CPT device via an analog-to-digital converter. Another biofeedback loop is formed in parallel between the operator and the patient. It is therefore the operator who is actively participating in the evaluation and interprets its results. To further increase the ability of the patient to intuitively cause the triggering sensor to send the feedback signal, a device called "cadistor" provides an intuition enhancement. This device subjects the patient to a series of small level energy bursts with the 5 frequency preferably coinciding with the theta rhythm of the patient's brainwaves.

## BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the subject matter of the present invention and the various advantages thereof can be realized by reference to the following detailed description in which reference is made to the accompanying drawings in which:

FIG. 1 is a general block-diagram of the diagnostic system of the present invention, and

FIG. 2 is a general block-diagram of the triggering sensor of the diagnostic system.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

A detailed description of the present invention follows with reference to accompanying drawings in which like elements are indicated by like reference letters and numerals. FIG. 1 shows the main block-diagram of the proposed system of the present invention.

A CPT device 10 contains a situation-generating block designed to output a predetermined series of stimuli, also called "information codes" and transmits it through a dual peripheral device to both the operator 20 and the patient 30 (shown as dotted lines on FIG. 1). A number of appropriate peripheral devices can be employed with the system depending on the nature of the information code. Examples of such peripheral device include but not limited to: a magnetic induction coil for modulated magnetic field transmission, headsets or speakers for audio transmission, video monitor or a light

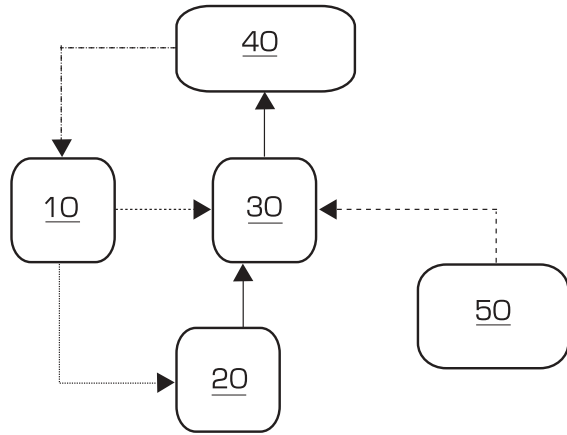


Fig.1

display for visual signal transmission such as an image of the evaluated organ for example, etc. It is essential to point out that such information codes are transmitted to both the operator 20 and the patient 30, a unique feature of the diagnostic system of the invention.

A triggering sensor 40 collects the biological response from the patient 30 as an analog signal (solid line on FIG. 1), converts it into a digital one and sends it back to the CPT unit (dash-and-dot line on FIG. 1) as will be described in more detail below. The CPT unit is also equipped with the designation block for assigning specific relative weights in the input signals from the sensor 40 depending on individual characteristics of the patient.

Cadistor 50 is designed to work directly with the patient 30 to facilitate the work of the triggering sensor 40. It consists of a silicon-based semi-conductive transistor crystal acting as optoelectronic radioelement when illuminated by a light source such as a laser. Preferably, a silicon field-effect transistor is used in which a control area is in the form of a thin flat channel. When a laser light is directed at cadistor, an abrupt temporary short circuit is formed in the semiconductor and a small level of energy is released. Repeating of that process with high frequency caused periodic releases and accumulation of the energy. It has been established that the preferred wavelength of laser light is between 630 and 680 nanometers, the laser power should be below 5 MW and most importantly the light pulsation has to coincide with the theta-rhythm of the patient's brainwaves. The cadistor is placed on the forehead of the patient about 1/2 of an inch above the nose and the eyes and symmetrical there between. Appropriate eye shielding and other precautions are recom-

mended to avoid damage by the laser. The laser source is located only about 5-6 inches from the patient's forehead and is directed onto the cadistor placed on the patient's head as described above. Activation of periodic illumination of the cadistor with the laser light causes periodic release of the energy, which in this situation was clearly shown to increase the intuitive potential of the patient. It is also important to orient the cadistor properly in a space relative to one of the elements of the triggering sensor 40, namely its antenna.

In the above-described situation, both the electromagnetic and the torsion components of the laser Sight are directed at the patient. To block the electromagnetic component, a cavity resonator is deployed which prevents the electromagnetic component from getting through while forming and directing the torsion component as the only stimulus to effect the patient (dashed line on FIG. 1). The cavity resonator is typically made of metal and has a volumetric chamber with the size selected to be a multiple of the wavelength of the incoming signal, preferably about 1.45 GHz.

FIG. 2 depicts the general block-diagram of the triggering sensor 40. It consists of a sensing element 41, integrator 42, source of electrical current 43,

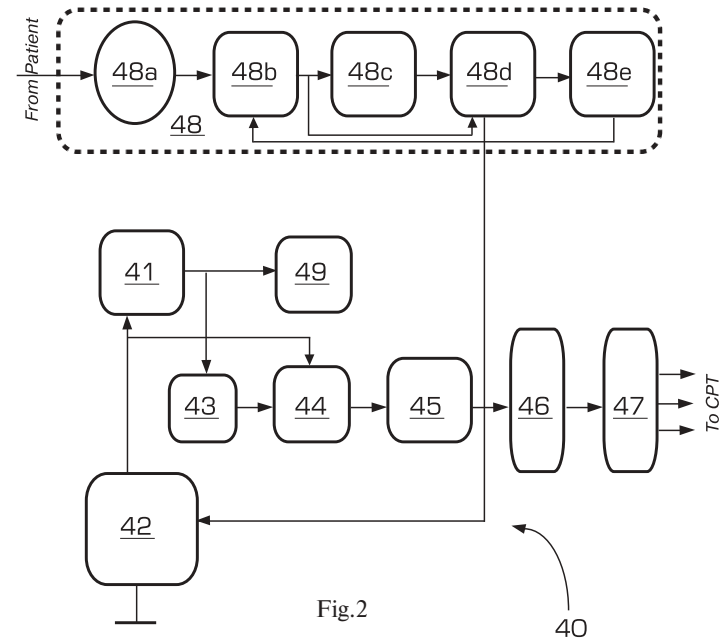


Fig.2

differential amplifier 44, amplifier 45, comparator 46, galvanic decoupling unit 47, and detector channel 48 designed to increase the influence of the patient on the sensing element 41. The detector channel 48 in turn consists of a logoperiodic antenna 48a, mixer 48b, rectifier 48c, discriminator 48d, and heterodyne 48e.

The function of the triggering sensor 40 is to sense the response produced by the patient in reaction to the information codes supplied by the CPT unit, transform them into a digital signal and send them back to the CPT unit 10. The sensing element 41 is the noise generator based for example on the radioelement 2G401V that is remotely subjected to the influence of the patient's brainwaves. A direct electrical current of an optimized value in the range of only several microamps, preferably between 1 and 5, is provided to power this element by power supply 49. This current is adjustable and is determined individually during the fine-tuning of the device in-vitro.

Electrical current source 43 consists of an operation amplifier such as for example the type UD25A (made by Voshod company in Kaluga, Russia) and an adjusting element such as a bi-polar transistor with low noise coefficient, for example the model KT3107L (made by Eleks company in Alexandrov, Russia) capable of supplying a consistent level of electrical current which is not effected by fluctuations of the power source voltage. The choice of low levels of such current is dictated by the desire to increase the sensitivity of the device to the outside disturbances.

The information signal is obtained from the sensing element 41 and taken through an amplifying phase consisting of a differential amplifier 44 and an amplifier 45. As a result, the signal is amplified with a total amplification factor of about 30 dB. The sensing element 41 is influenced by both the useful disturbances and random disturbances such as those from static electromagnetic fields. To eliminate such random disturbances, a precision differential amplifier 44 is used as a first phase of amplification. One possible type of such an amplifier may be INA 128UB by BUR BRAUN in which the signal voltage from the sensing element 41 is fed onto one input of the amplifier 44 while the other input is supplied with the same voltage after feeding it through the integrator 42. As a result, only the useful disturbance signal is allowed to go through to the next phase of amplification in the amplifier 45 while the noise signal is filtered out. Any appropriate commonly known amplifier can be used as an amplifier 45.

Comparator 46 can be of the type 521SA3 (made by NIIME company in Zelenograd, Russia) and is designed to transfer the analog signal from the amplifier 45 into a series of impulses such as for example in an A-D converter and then transmits it onto a galvanic decoupling unit 47 for further trans-

formation. The need for a galvanic decoupling unit 47 is dictated by the presence of random fluctuating electromagnetic noise fields from the power supply lines of the device itself as well as from other nearby located electrical devices. This device is designed to separate alternating component from direct current and contains an optical channel including a photo diode PhD265A and an emitter AL107B made for example by Diode company in Moscow, Russia.

The detector channel 48 is designed to increase the influence of the patient to the sensing element 41. Reception is conducted in the short wave range, preferably at a frequency of 1.45 GHz, which is known to be in the range of radiowave transmission by human organs and tissues. Reception element is made with the help of logoperiodic antenna 48a which has a multi-turn spiral tapered design to ensure narrow direction of reception but in a wide range of transmission frequencies. The taper is oriented with the help of the laser pointer in such a way that its narrow portion is aimed directly at the middle of the front forehead of the patient about 7 inch above the eyes.

The mixer 48b is mounted preferably directly onto the antenna 48a and comprises a series of diodes (such as the type AA123 made by NIIPP company in Tomsk, Russia) onto which a voltage is fed from the heterodyne 48e. Such heterodyne is typically a sine voltage generator and is widely used in radio receivers. It is tunable simultaneously with the tuning of the oscillatory circuit of the receiver, to which the antenna is connected. This makes it possible to mark a stationary value of difference at a frequency between that of the received signal and the heterodyne signal in any position of the settings of a radio receiver. An example of an appropriate heterodyne is the one based on the diode of the type KA717B-4 produced by Nalchik's PP factory in Nalchik, Russia.

The rectifier 48c is designed to separate the low frequency phase from the useful signal, which is in turn fed into the discriminator 48d such as for example a differential amplifier INA128UB. Discriminator 48d subtracts the integrated signal from the raw signal and arrives at informational voltage bursts. Such voltage bursts are then fed back into the integrator 42 and further into the current source 43 which changes the value level of the current and shifts the power current of the sensing element 41. Such fluctuations of the current of the sensing element 41 ultimately effect the frequency spectrum of its operation and the frequency range of the useful signal produced thereby.

The diagnostic system of the present invention functions in the following way. Upon initiation of the test sequence, the CPT unit 10 generates information codes as electromagnetic, radio, audio, or light signals depending on the nature of evaluation. Such signals or stimuli influence the recep-



tors of the nervous system of the operator 20 shifting it to a highly sensitive and reactive state and therefore increasing the strength of a biological feedback between the operator 20 and the patient 30. The action of the cadistor 50 assists the patient 30 in generating his influence as a useful disturbance signal for the sensing element 41 of the triggering sensor 40 thereby completing a second biofeedback loop between the CPT unit 10, the patient 30, and the triggering sensor 41.

## EXAMPLE OF OPERATION

**TABLE 1**  
**Peripheral Device**

	Магнитные индукционные катушки	Видеомониторные раздражители	Стереонаушники
	Электро-магнитные импульсы	Цвет	Звук
Последовательность	Частота катушки прерывания	Визуально	Аудио (муз. ноты)
1	1.66	Красно-коричневый	ДО
2	2.49	Красный	РЕ
3	3.32	Оранжевый	МИ
4	4.15	Желтый	ФА
5	4.56	Зеленый	ФА-диез
6	4.98	Светло-синий	СОЛЬ
7	5.81	Синий	ЛЯ
8	6.64	Фиолетовый	СИ
9	7.47	Темно-фиолетовый	ДО

Table 1 presents one example of various stimuli to be generated by the CPT unit 10 of the diagnostic system of the present invention. The moments in time when each stimuli sequence begins are all coordinated with each other and with the initiation of the triggering sensor and cadistor so that the operator and the patient receive the stimuli and both loops of biofeedback are formed.

As a result, the CPT unit accumulates a response of the patient and the operator so that a database is formed of such responses for each series of individual stimulus. In case of electromagnetic impulses, a left part of the patient's brain is subjected to the North portion of the magnetic impulse, and a right part of the patient's brain is subjected to the South portion of the magnetic impulse. The studies conducted by the inventors have shown that the effect from the patient on the triggering sensor is more reproducible when the

frequency of interruptions of electromagnetic impulses is close to that of the theta rhythm of the patient's brainwaves. That frequency tends to fluctuate towards increasing or decreasing depending on the state of health of the patient. In fact, a relationship is determined between the deviation in that frequency and the specific pathological conditions of certain body systems, selected organs, and even separate cells and chromosome fragments. Such relationship allows for specific diagnosis of a variety of pathological conditions. Examples include diagnosis of protrusions of spinal disks, remote metastases of various cancerous tumors, broken bones and trauma in general, blood vessel thrombosis, acute and chronic hepatitis, cirrhosis of liver, and a large variety of other pathological conditions. It is important to highlight that such diagnosis is possible to conduct using the subconscious level of brain function and therefore is independent of the patient's influence.

Another possibility of using the apparatus is to collect the digital signature of an organ as obtained by the triggering sensor with the library of available signatures collected previously from normal volunteers. Such comparison allows determining the degree of pathology and the state of disease development of the organ.

Further characterization of the disease state is possible using the following classification method developed by the inventors:

Class 0-ideal correlation of the digital signature of the organ under evaluation with the normal signature on file. Example-human egg cell at the beginning of the division process;

Class 1-the tissue of a healthy embryo before birth (without any body functions or toxins present);

Class 2-the tissue of a healthy newborn at the beginning of its life outside the mother, tissue functioning at the beginning stages;

Class 3-actively functioning tissue without toxins present;

Class 4-tissue with impaired function, toxin accumulation is just beginning;

Class 5-tissue with organic changes in which the toxins are accumulated within the cells of the tissue and actively restrict its function; and

Class 6-extreme and irreversible state of organic damage and overall tissue disbalance.

Although the invention herein has been described with respect to a particular embodiment, it is understood that this embodiment is merely illustrative of the principles and applications of the present invention. It is therefore to be understood that numerous modifications may be made to the illustrative embodiment and that other arrangements may be devised without departing from the spirit and scope of the present invention as defined by the appended claims.

**We claim:**

1. A biofeedback diagnostic system comprising a central processing and telemetry unit and a non-invasive triggering sensor equipped with a noise generator, said central processing unit including a situation-generating block for producing a predetermined series of stimuli, said central processing unit also including a dual peripheral means for transmitting said stimuli in parallel to both an operator and a patient and therefore forming two biofeedback loops, consisting of both:

a) a first biofeedback loop including said central processing and telemetry unit sending said stimuli to said patient, said triggering sensor for remotely detecting said patient's brainwaves representing said patient's

response to said stimuli, said triggering sensor further generating a signal in response to said brainwaves and sending it back to said central processing unit, and

b) a second biofeedback loop including said central processing unit sending said stimuli to said operator, said operator affecting said patient to alter said patient's brainwaves, said triggering sensor reflecting said alteration in said signal back to said central processing and telemetry unit.

2. The biofeedback diagnostic system as in claim 1, wherein said stimuli is selected from a group consisting of magnetic, electromagnetic, audio, and visual stimuli.

3. The biofeedback diagnostic system as in claim 1, wherein said triggering sensor further including a detector channel equipped with a logoperiodic antenna to enhance detection of said patient's brainwaves.

4. The biofeedback diagnostic system as in claim 3, wherein said logoperiodic antenna is a multi-turn tapered spiral antenna for short wave reception at about 1.45 GHz.

5. The biofeedback diagnostic system as in claim 1 further comprising an intuition enhancement means for assisting the patient in generating a response to said stimuli.

6. The biofeedback diagnostic system as in claim 5, wherein said intuition enhancement means including an optoelectronic radioelement and a light source directed thereon, said radioelement adapted for placement on a forehead of said patient.

7. The biofeedback diagnostic system as in claim 6, wherein said radioelement is a silicon-based field-effect transistor with a control area being a thin flat channel, said light source being a laser having the power of less than 5 MW, said laser controlled to illuminate Said control area of said radioelement with pulses of light with the wavelength of between about 630 and 680 nanometers.

8. The biofeedback diagnostic system as in claim 7, wherein said pulses of light having a frequency coinciding with the patient's brainwaves theta-rhythm.

9. The biofeedback diagnostic system as in claim 8, wherein said intuition enhancement means further including a cavity resonator to block the electromagnetic component of said pulses of light while permitting the torsion components thereof to reach the patient.

10. The biofeedback diagnostic system as in claim 9, wherein said cavity resonator having a volumetric chamber with the size being a multiple of the wavelength of about 1.45 GHz.

11. The biofeedback system as in claim 1, wherein said central processing and telemetry unit further comprising a designation block for assigning specific relative weights to said signals from said triggering sensor.

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## Annotation

### **QUANTUM STATISTICS OF NONLINEAR TERMINAL EVENTS G. ERDGEL**

The book covers wide range of matters related to quantum theory of terminal radiation by statistics expressing entropic heterogeneity of the medium of material system in different dimensions. Scientific novelty of the monograph lies in that statistical properties of quantum terminal fields are examined from the uniform positions of the theory of entropy logic and special attention is paid to considering of nonlinear terminal events in the work. Totally there are 10 chapters in the book.

Chapter 1 is an introduction.

Chapters 2-4 (they are based on fundamental researches by S. Nesterov and Y. Zeldovich of measuring energy of zero-point oscillations of the vacuum upon transfer from the flat four-dimensional space-time to the curved one) familiarize us with the apparatus of secondary quantification and contain information required for quantum-statistical interpretation of the correlation theory of entropic radiation.

In Chapter 5 general method of metastable states is applied to particular field cases as Gaussian fields, secondary induced Abrahamson fields and their superpositions practically important for the theory of nonlinear location and communication.

Other chapters are devoted to nonlinear events which review is contained in Chapter 6. In Chapter 7 van Hoven — Krick approximation and approximation of Nesterov — Zeldovich generalized equation are considered conformably to statistical properties of entropic radiation.

Chapter 8 contains development of the quantum theory of statistical properties of entropic radiation in continuums including consideration of own field of the medium's radiation.

In Chapter 9 the most important nonlinear terminal events are examined from the positions of Nesterov — Zeldovich generalized equation and van Hoven — Krick equation. A special attention is paid to anticorrelation and diverging effects as well as to subPoisson behavior of terminal fields having no classical analogues. In conclusive Chapter 10 the author formulates problems required to be solved

in the frameworks of the theory of quantum-statistical properties of nonlinear terminal events. The book is oriented to specialists in the area of quantum electronics, nonlinear location and communication, adjacent thereto areas of modern physics, as well as to students and post-graduates.

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