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AUTHOR: I. M. Kogan, Editor

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PROBLEMS OF THE BIOLOGICAL FIELD

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FOREWORD

The problems of that portion of "anomalous" phenomena, which are included in practically all synonymic concepts of parapsychology, psychotronics, extrasensory perception, bioinformation and so forth, in recent years have come to enjoy widespread popularity. They have become the object of attention of the most diverse layers of the population, top level scientists down to a popular audience. There are no elements of the mass media which would not lend their facilities, time and coverage to these problems (and sometimes, "problems"). On the other hand, at the scientific level public and professional groups are working in this field, including some who have been involved in selecting the topics and organization of this scientific conference. These include the sections on extrasensory perception of the All-Union Committee on Energy and Information Exchange in Nature of the Union of Scientific Research Organizations of the USSR, of problems of the biological field of the Moscow City Administration of VNTORES, of general radio engineering of the Central Administration of VNTORES; a scientific seminar is being held at the Moscow State University imeni M. V. Lomonosova; a course of lectures is being given to students of the N. E. Bauman M. V. Lomonosov Moscow State University and so forth.

Evidence of the great activity which the scientific community attaches to problems of extrasensory perception is, in part, the series of all-union (in Moscow) and international gatherings (in Moscow and Sophia), which have been held recently, and also future meetings (conferences, symposia, congresses). The positive significance of these meetings is clear. On the one hand they have attracted a large number of specialists, mediums (extrasensory perceiving individuals) and people who are merely interested and have allowed them to form a loose organization; on the other hand, meaningful fundamental scientific reports have been discussed at these meetings.

However, such a broad, practically unlimited (even by problems of traveling abroad), nature of the undertakings cannot be obtained without some costs. Quite respectable scientific bases of well-attended conferences have sometimes been overwhelmed and inundated by poorly controlled element of "prophets," "clairvoyants," "healers" and "extrasensory perceiving persons."

We have intentionally used quotation marks to describe the indicated categories of persons who have forced their way into the conferences. Genuine prophets, clairvoyants, healers and mediums (without quotation marks) are worthy of all matter of respect, attention and support (which we, unfortunately, do not yet have). But along with persons who really have unique capabilities - genuine mediums, which of course are very, very few (therefore they must be valued!), huge numbers of imagined "mediums" are abundant, who consider themselves to be such whether out of self-deception, due to psychological disorders, or from a profit motive (it should be evident that "medium-ship" or "ability to heal" in the hands of certain dishonest persons during the transition to a market economy will become a very profitable occupation).

This situation not only detracts from scientific development of problems of extrasensory perception but it easily can in general discredit it. In order to overcome these negative aspects of the situation which occurs in the study of extrasensory perception, at the initiative of the A. S. Popov Moscow City Administration of VNTORES, which is actively supported by all participating organizations, it was decided to hold this inter-regional conference with a large number of participants. As one can see from the program and the collection of its materials, only scientific reports, which have been included in the program on a requested and competitive basis, have been allowed to be presented at the conference. This does not mean that the program does not contain problematic and even quite "absurd" (we recall the famous speech by N. Bor) reports. On the contrary, the criterion of "traditionality," "general acceptance" in formation of the conference program was in general rejected.

The conference was devoted to the central fundamental problem of extrasensory perception study (parapsychology) as a science, which studies phenomena which occur at a distance, long-distance phenomena. According to modern physical concepts long-distance interactions are evidence that in the space which separates the interacting objects (subjects), there is a corresponding field. In the given case, when one is speaking of interactions with the participation of biological objects, this field is related to the creation and perception of the field, which is caused by processes in living nature. In other words, we are speaking of a field of biological origin, and in brief of a biological field or, even more briefly, of a biofield. This concept was used in naming the topic of the conference. In view of the fact that all kinds of speculative insinuations surround the concept in term "biofield," it is convenient at this point to specify the contextual meaning of this term.

By biofield we mean a field which is a system of different components, which are due to the vital activity of living beings. If we stay within the framework of physical concepts, then by a biofield we mean a system of different physical components, which are related to the vital functioning of organisms.

By itself the presence of diverse field components of living objects which are well-known by modern physics is obvious at the present time and has been convincingly supported by experiments. In addition, it has not been disproved that such field components can also be connected with living organisms, which are not yet known to modern physics; from this standpoint a biofield can have its own specific features.

A more fundamental specific feature of a biofield arises from a definition of it specifically as a system of different components. As a result of the interaction (linear and nonlinear) of the large number of these components with one another the biofield in such a complex system, as a biological system, can bring about new properties, which are not present in each of the components separately. In this case a biofield will give rise to such properties which can no longer be interpreted within the framework of the concepts which relate to incomparably simpler systems at a physical level. As a result, within the framework of even purely physical concepts we can approach biofield phenomena, which go beyond the

limits of the concepts of modern physics.

Finally, it would be naive to think that the great diversity of the surrounding world and, in particular, long-distance interactions in it (particularly if we keep in mind living nature and human beings) reduce exclusively to physical processes (and fields). In this case we will come to the calm perception of the fact that a biofield should have its own specific features, which in principle go beyond the limits of physical (and more broadly, physicalistic) interpretations. Some reports, which are included in the program of this conference, are devoted to such topics, including gnostic problems.

The organization of the conference program in some respects is not traditional. In contrast to the majority of scientific conferences, where the first reports as a rule are determining, and are fundamental and generalizing in nature, the organizing committee as its initial premise decided to begin from the starting point that "facts are the air of science." Therefore, the conference was opened up by a section which was devoted to experimental research. Given the present-day conditions it is even more important that doubts regarding the existence of reliable experimental observations will provide a richer diet for attacks on parapsychology.

The next section of the program includes various natural-scientific (including "exotic") aspects of the phenomena under consideration and, finally, the third section is devoted to philosophical and humanitarian aspects of the study of extrasensory perception.

Chairman of the organizing committee of the conference, Doctor of Technical Sciences, Professor I. M. Kogan.

AUTHORS: Usenbayeva I. A., Karmanov O. Yu.

REMOTE HUMAN ACTION ON THE STATE OF ELECTRICAL STABILITY OF THE HEART DURING EXPERIMENTAL HYPERTROPHY OF THE RIGHT VENTRICLE

The possibilities of a human being to have a long distance influence by using the "biofield" has attracted the interest of many researchers. We studied the influence of a human biofield on the state of electrical stability of the heart during right ventricle hypertrophy.

This study was conducted on a model of gradually developing hypertrophy of the myocardium. It is quite similar to the situation which develops in a human being during development of the disease, because in a human being the disease usually develops gradually.

Modeling of right ventricle hypertrophy (RVH) was conducted on 7 mongrel puppies of both sexes about 4 months of age by applying a ligature to the pulmonary stem freely, without any constriction on a background of thiopental-sodium narcosis (30-35 mg/kg). Breathing was maintained artificially using the DP-8 apparatus. Access to the heart was realized through the fourth intercostal on the left side. Following application and attachment of the ligature the chest cage was sewn up by layers. For one week following the operation the animals were given antibiotics, and treatment of the wounds was carried out. On the seventh days the sutures were removed. During growth of the animal there should have occurred gradual narrowing of the pulmonary artery trunk, an increase of intraventricular pressure and corresponding gradual development of right ventricle hypertrophy. In order to monitor this process we recorded the EKGs in standard readings using a 6-channel electrocardiograph machine, the EK-6T-02 at transport speed of 50 mm/sec. Analysis was conventional. In addition, we determined the systolic pressure in the right ventricle by the method of direct tensometry using the Stathem sensors made by Elema company. For this purpose a siliconized standard catheter was inserted in the right jugular vein of the animals to administer thiopental narcosis. Pressure monitoring was realized by using the S1-68 type oscilloscope.

The condition of electrical stability of the heart (ESH) was evaluated from determination of the tendency of the heart to fibrillate.

In order to determine the tendency of the heart to fibrillate a study of the vulnerable period, the natural interval of the heart cycle, which ensures continuous induction of repeated spontaneous depolarization, is prospective (1). Only during this period is it possible to cause fibrillation experimentally by applying an electrical pulse. The electrical current, which passes through the heart during the vulnerable period, will increase the dispersion of excitability restoration (2). Therefore, the threshold value of the current, which causes fibrillation, has come to be used as the index of "quantity of additional

inhomogeneity," which is required to develop it (3). However, in evaluating the electrical stability of the ventricles, that is their tendency toward fibrillation, this index under some conditions (for example, uniform myocardial hypoxia) can cause one to err (4). Therefore, after studying the electrical stability of a hypertrophicized heart, in addition to measuring the fibrillation threshold, we determined another parameter of the vulnerable period, its duration, which in our opinion most adequately reflects the tendency of the ventricles to fibrillate. As this period increases the probability of the onset of spontaneous and experimental fibrillation also increases, because the probability of internal as well as external stimulus happening during this period will also increase. One should note that studies in which this parameter has been used to study the electrical stability of the heart are very few in number.

The fibrillation threshold and duration of the vulnerable period of the heart ventricles were determined under deep thiopental-sodium narcosis (35 mg/kg) according to the method of Wolff and coauthors (5) in the K. K. Mishchenks and coauthor modification (6). The essence of this method consists in finding the boundaries of the vulnerable period using square pulses of current with force of 6 amperes and duration of 2.5 milliseconds and fibrillation threshold by a series of 5 square pulses with duration of 2.5 milliseconds and the same on-off duty cycle. The pulses were applied in a period of time which corresponds to the wave of the T electrocardiogram. Following each occurrence of fibrillation with subsequent defibrillation the study was continued only after restoring the initial rate of the heart contractions.

It is necessary to note that the aforementioned studies were conducted in 3 stages:

I - in the initial state;

II - one year following the operation;

III - one year following the operation on the background of extrasensory influence.

Extrasensory action on the experimental animal was carried out during electrophysiological studies and had an average duration of about 1 hour; at this time the palms of the operator were placed over the area of heart projection onto the chest cage at a distance of about 20 cm. This set-up resulted in improvement of the condition.

RESULTS

During the experiment there was a considerable growth of the animals from 4.9±0.6 kg up to 7.1±0.7 kg or 45% ($P<0.001$). Monitoring the development of the right ventricle hypertrophy of the heart was conducted according to the EKG and level of systolic pressure in the cavity of the right ventricle, which is reflected in table 1. Thus, whereas in the initial condition the electrical axis of the heart (EAH) was in vertical position and on average was

+84±5 radians, one year following the operation there was a statistically reliable deviation of the EAH to the right of +118±6 radians (P<0.001). Duration of the QRS complex increased from 42±2 msec up to 65±3 msec (P<0.001).

Table 1.

Parameters		I stage	II stage	P
1		2	3	4
Weight, kg		4.9±0.6	7.1±0.7	<0.001
EAH, radians		+84±5	+118±6	<0.001
QRS, msec		42±2	65±3	<0.001
QT, msec		198±7	225±8	<0.05
Ramp, mm		1.6±0.2	3.0±0.2	<0.01
Systolic pressure, mm Hg		27±3	105±12	<0.001
TSS, units/min		180±7	184±6	>0.5
Limits, msec	Internal	147±4	154±4	>0.2
	External	149±4	166±4	<0.02
DVP, msec		3.3±0.6	13.0±1.8	<0.01
TVF, MA		911±92	770±51	=0.05

The same kind of dynamics was observed with respect to the QT interval; there was considerable lengthening of the interval from the 198±7 msec to 225±8 msec (P<0.05), which is explained by an increase of the time for transmission of the pulse through the hypertrophicized myocardium. The amplitude of the spike P reliably increased from 1.6±0.2 mm up to 3.0±0.2 mm. The indicators of systolic pressure in the cavity of the right ventricle reflect its considerable growth from 27±3 mm Hg to 105±12 mm Hg (P<0.001). The internal limit of the vulnerable period one year following the operation was not subjected to considerable dynamics (>0.2). The external limit underwent a considerable shift from 149±4 msec to 166±4 msec (P<0.02), which reflects the growth of the duration of the vulnerable period (DVP) due to the external limit. The duration of the vulnerable period in the initial state was 3.3±0.6 msec, and one year after development of right ventricle hypertrophy it increased to 13.0±0.8 msec or by a factor of almost 4 (P<0.01). The threshold of ventricular fibrillation (TVF) declined by 15%, from 911±92 mA down to 770±51 mA (P=0.05).

Thus, one year following the beginning of the experiment there was considerable growth of the animals, which was accompanied by narrowing of the pulmonary artery trunk, by considerable increase of the systolic pressure in the cavity of the right ventricle and by development of myocardial hypertrophy, which was confirmed by the EKG data and by considerable shifts on the part of such basic parameters of electrical stability of the heart as the duration of the vulnerable period and the threshold of ventricular fibrillation. Table

2 presents the III stage of the experiment when the remote influence of a human being on the condition of electrical stability of the heart in an experimental animal was investigated.

Table 2.

Parameters		II stage	III stage	P
1		2	3	4
TSS, beats/min		184±6	199±6	>0.1
Limits, msec	Internal	154±4	152±6	>0.5
	External	166±4	159±5	>0.2
DVP, msec		13.0±1.8	7.0±1.6	<0.02
TVF, mA		770±51	926±101	=0.05

The rate of heart contractions did not undergo any special dynamics ($P>0.1$). The internal and external limits of the vulnerable period also did not undergo verifiable shifts ($P>0.5$; $P>0.2$). However, there was a considerable shortening in the duration of the vulnerable period from 13.0±1.8 msec down to 7.0±1.6 msec ($P<0.02$), or of 46%. The threshold of ventricular fibrillation during the process of extrasensory action increased from 770±51 mA to 926±101 mA, by 20% ($P=0.05$). Thus, during the process of extrasensory influence there was a considerable correction of the DVP and TVF in favor of normalization of these parameters.

DISCUSSION

As is known the normal functioning of ionic currents of the cardiomyocyte membrane is the basis of electrical stability of the heart (7). But the ionic currents of the membrane do not constitute a passive process, for it is conditioned by precise operation of the ionic channels, which are protein molecules which have penetrated the membrane. The functioning of the ionic channels is due to two basic properties of these protein molecules: selectivity, that is the selective permeability for a specific ion, and dependency on the condition of membrane polarization. At the molecular level the dependency of the functional state of the ionic channel on the level of membrane polarization is connected to existence of the potential sensor, which causes conformational restructurings of the channel, which ensure that it will be in nonconducting "closed" or conducting "open" state (8, 9). It would seem possible to assume the following: the remote influence of the human biofield has its application point specifically at the level of the potential sensor, the protein molecule of the ionic channel, which is particularly sensitive to electrical shifts of the medium. It is quite probable that the action of the biofield in our experiment had sufficient intensity for the reaction of the potential sensor, which was manifested in a verifiable change of the basic parameters of the electrical stability of the heart.

As one can see from results of the experiment, myocardial hypertrophy has a negative effect on the state of the electrical stability of the heart, which is manifested in a reduction of the basic parameters such as the fibrillation threshold and duration of the vulnerable period. Even more interesting was study of the extrasensory influence on the disturbed state of the electrical stability of the heart, which probably is evidence of the fact that the given influence has a specific informational background, which causes activity and optimal operating mode of the potential sensors of precisely those ionic channels, the functioning of which stabilizes the electrophysiological processes under the given conditions.

CONCLUSIONS

1. The phenomenon of remote human influence on the state of electrical stability of the heart does occur.

2. The remote influence of a human being on the heart of an animal is capable of having the character of correcting disturbances of its electrical stability.

Thus, the derived facts confirm the hypothesis of energy and information exchange in nature.

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AUTHORS: Morozova E. V., Polikarpov V. S., Suponitskiy V. Ye., Il'ina A. P.

THE POSSIBILITY OF TRANSFERRING INFORMATION FROM A HUMAN BEING TO A PLANT

Members of the biological section of the Commission on Scientific and Technical Problems of Bioenergetics attached to the Committee on Information and Energy Exchange in Nature of the Union of Scientific Research Organizations conducted research on studying the possibility of contact-free transmission of information from a human being to plants. It was found that when there was purposeful influencing of a human being on seeds of different plants, the germinating capacity of the seeds increases, and depending on the assignment the length of the seedling increases or decreases. Various kinds of screens do not prevent the transmission of information. It is still not clear what growth systems are participating in the reception and use of the received information. There are observations which give evidence of the important role of water in this process. Work with seeds has shown that the greatest response with respect to stimulation or delay of growth can be obtained by influencing not dry seeds but seeds which have been soaked for 12 to 20 hours, that is during a period of high water content of the tissues. It is possible that the operator in some way alters the properties of the intra-cellular water, which result in a change of the growth rate. Tests with the transfer of information to water and sprinkling it over plants, which results in subsequent stimulation or suppression of growth depending on the tasks of the experiment, indicate this possibility. During a one-time action over a period of time the reaction of plants is erased and the plants become equal in length. However, in a number of cases irreversible morphological changes are observed which are not equal to the transmitted assignment. For example, in attempting to cause complete stopping of the growth of a wheat seedling, shoots were obtained in a number of cases with two shoots instead of one. A morphological analysis revealed that growth of the coleoptile bud is stimulated, which produces the second shoot. This phenomenon is also encountered spontaneously, but quite rarely. As experience shows, out of 967 growing control seeds, one occurs with two shoots. Due to action of the operators on 10 to 15 seeds in 1 or 2 seeds twin shoots form. In a second series of experiments the task was to cause growth of dormant buds, which are located in bean leaf axils, with undisturbed central bud. It was not possible to stimulate growth of the axil bud, but plants unexpectedly were produced in which there were additional leaflets of the first leaf. This phenomenon is also observed in the control plants, but out of 38 control plants the leaf was altered in only 1, but due to action of an operator out of 10 plants 4 had altered leaves. In a different experiment out of 31 control plants 4 had altered leaves, and out of 32 experimental plants 14 had changes. All subsequent leaves grew without changes, that is by giving information to the seed, in which many new formations were included, which are located at different stages of development, we obtain a response only from a specific tissue. Consequently, one can assume that there is a specific ability of the tissue with respect to the influence. The transition to a different stage of growth or existence at an earlier stage makes cells which are insensitive to the inserted information.

Plant reaction testing of a large number of operators revealed that not all persons can transmit information to plants and the results basically depend on the degree of operator conditioning, and his physical and psychological condition. This was very clearly tracked during execution of an identical assignment on a single batch of seeds. For example, the assignment given to operators was to increase the germinating capacity of wheat seeds. Five persons participated at one time in the experiment. The germinating capacity of seeds in the control was taken to be 100%, but after irradiation by the operators the germinating capacity was 142, 123, 132, 135, and 178%, that is individuality of the operators was manifested even in this relatively simple assignment. The analysis of the experimental data shows that a large number of operators are able to increase the germinating capacity of seeds and to increase their growth, but as the assignment becomes more complicated the anticipated results can be obtained only by individual operators. The results from experiment to experiment are quite stable, but there are cases of failures, the causes of which are not clear. However, it is notable that a positive emotional mood level increase in the operators will increase the results of the experiments.

Thus, it was found that there is an information and energy channel between human beings and plants, the nature and laws of which are still not clear.

AUTHORS: Golubeva N. V., Verzilin N. N., Stepanova A. M.

USE OF PLANT OBJECTS TO RECORD BIOLOGICALLY ACTIVE HUMAN FIELDS

Selection of the object of influence is of great significance in setting up experiments to study extrasensory phenomena and interactions. Many researchers with reason believe that only a system with similar level of complexity, that is a living object, can be used to undertake a study of human beings or another living object in the entire complex and interactions of its components, including, possibly, ones which are unknown to modern science. However, in conducting experiments when using as the object of influence human beings or animals great complexities will occur due to the difficulty of taking into consideration the contribution of the psychoethological and physiological condition of the object of influence itself, which, unfortunately, are not always subject to control and recording. These difficulties disappear when one uses plant organisms as the objects of influence. Until recently the majority of these kinds of experiments yielded only factual material, recording the effect of the influence but not explaining it.

At the present time the state of the art of those fields of biological science such as physiology, biochemistry and biophysics of plants allow one to readily approach an understanding of the mechanisms for plant organism perception of all kinds of influences (including influences which are not identifiable by modern physical science) and the reaction of a living organism to this influence. The physiology and biochemistry of plants has at its disposition a broad arsenal of equipment and methods which allow one to record and monitor the physiological condition of a plant object, changes of its physiological functions and the biochemical processes which occur in it.

In studying the influence of biologically active human fields on plant objects one should use such processes of vital functioning of the plant organism, which:

1. have been thoroughly studied at the given stage of the growth of science,

2. with great accuracy can be recorded by using modern methods of investigation,

3. are some of the critical ingredients which are related to the most important aspects of vital functioning,

4. quickly react to external influences.

We conducted experiments to study the possibility of noncontact influence of human operators on the following processes of vital functions of plants:

- electrophysiological processes, measurement of the longitudinal difference of potentials in plants by the electrode method;

- growth by stretching, measurement of the growth rate of isolated plant organs in short intervals of time using a movable-electrode tube sensor;

- movement of cytoplasm (cyclosis) in cells of Characeae algae, a method which allows one to evaluate the energy state of the cell (in particular, the content of ATP in it);

- oxidation-reduction processes (oxidation and reduction of the pyridine nucleotides), measurement of the intensity of fluorescence of the reduced pyridine nucleotides.

Date were obtained which provide evidence of the possibility of noncontact influence of human operators on the aforementioned processes of plant vital functioning, which allows one to readily approach an understanding of the mechanisms of perception and primary reaction of the living organism to biologically active components of physical human fields.

The excellent sensitivity of the method of recording biologically active influence of human operators based on a change in intensity of the fluorescence of the pyridine nucleotides in plant tissues and the possibility of not only a quantitative but also a qualitative evaluation allows one to use this method for a test sampling of operators who have the capacity of creating biologically active physical fields.

AUTHORS: Tkachuk Ye. S., Morgun V. V., Dolin Yu. S., Zhivlyuk Yu. N.

CHANGE OF IONIC HOMEOSTASIS INDUCED BY HUMAN ENERGY IN PLANT ORGANS

The research task was to study the influence of human energy on the concentration of Ca, K, Mg, Fe, Zn, Cu, and Mn cations in a medium-plant system during the cultivation of varieties of winter wheat which differ in productivity and resistance to unfavorable conditions.

With this goal in mind we conducted a chemical analysis of the content of cations in seeds before and after the influence of operator energy, and also in plant organs following germination of the seeds.

A comparison of data on the increase of some and reduction of the content of other nutritional elements in the seeds and organs of plants allow us to establish the following regular patterns:

1. The increase of Ca, Fe, Cu and Zn concentration in seeds as a result of human energy action along with the reduced concentration of other cations. The Ca content increased by 35%, but Zn, Fe and Cu declined by 12.5-66.7%.

2. The influence of the genetic factor on the ionic homeostasis of cations in plant organs.

3. A change in the concentration of chemical elements in seeds depending on the operator energy and influencing conditions.

The report also examines data on the influence of pre-seedling action of operator energy on the intensity of certain metabolic processes: photochemical activity of the chloroplasts of wheat leaves, cytoplasmatic Mg-ATP activity of leaves and others.

The existence of correlational relationships between the increase of concentration of individual elements and parameters which characterize the energy state of plants was shown.

AUTHORS: Tyagotin Yu. V., Bondarenko Ye. G.

STUDY OF GROWTH FEATURES OF HYBRID CELLS AFTER BEING INFLUENCED BY A HUMAN BIOFIELD

A study was conducted on the action of a human biofield (BPCH), (the "biofield" generator, Ye. G. Bondarenko) on hybrid cells, which contain a double set of chromosomes from two precursors: normal mouse splenocyte and tumorous line of cells, also derived from mice.

The cells were irradiated by a human biofield for 10 minutes at room temperature by 2 hands simultaneously at a distance of 2-5 centimeters. The objects of irradiation were 96 and 24 alveolar culture tables with hybrid cells sown in the cells. As the control we used the same tables with cells, which are kept under identical conditions, but which are not irradiated by a human biofield.

The results of the experiment were evaluated according to the number of growing cell clones per 100 cells (in percent) or by counting the number of cells in a unit space of the culture medium.

The human biofield altered the growth dynamics of the hybrid cells. We noted two different types of reactions in different cell lines. The first type was characterized by an increase of a number of growing cell clones following treatment by the human biofield by a factor of more than 3, from 2% in the control cultures to 7% in the irradiated cultures. In the second type of reaction we noted deceleration of the growth rate of cell clones in the initial period of cultivation (8 days) and a shift over time of the maximum number of growing clones in the later stages (14 days). In this experiment the absolute number of growing clones and cultures, irradiated by the human biofield, did not differ from their number in the control samples, if all clones were counted for the total period of cultivation (18 days).

Multiple repeated treatments by a human biofield (up to 4 times) preserved the nature of the reaction of the cell culture, which occurred following the first treatment.

Of particular interest were experiments in which the human biofield was used to treat hybrids with dominant activity of tumorous origin genes. Deceleration of the growth of such cells was noted following treatment and reduction of a number of growing clones from 3 and 6% in the 2 control cultures to 0 and 2% respectively following action of the human biofield on similar cells.

The derived results indicate that the hybrid cells, which have features of normal and tumorous precursors, are quite sufficiently sensitive for their use as a human biofield "detector." The advantage of this model is the possibility of studying particular features of the human biofield based on diverse results of its interaction with the cell system, which has

a complex and unstable gene. Deficiencies of this model are two, complexity of the culture process technology and long period to wait for the results.

After evaluating the results which were obtained by using this model one should note their preliminary nature and the possibility of using these data to conduct further research in this area.

AUTHORS: Kornilov G. B., Rayevskiy V. Yu.

EXPERIMENTAL STUDY OF PSYCHOKINESIS IN SEMICONDUCTOR STRUCTURES

This is the PEAR approach

One of the main problems of natural science is the problem of the possibility of the human consciousness to impose order on surrounding processes in nature. The importance of this problem is constantly increasing. In many laboratories throughout the world experimental studies are being conducted of the possibility of a human being to remotely influence processes occurring in living and nonliving nature (1, 2). Among them a considerable portion is comprised by studies of the interactions in the human-physical sensor system. The advantage of this choice is obvious, particularly for physical studies. However, the low rate of reproducibility of effects in such systems requires an especially careful set up of the physical experiment and repeated independent verifications of the derived results. In addition, this scrupulous care in setting up experiments and caution in the interpretation of the results are also required because the investigated nontraditional interactions for the most part have been rejected by official science. Any investigations in the field of parapsychology are not taken seriously by official science. Only the availability of reliable experimental results will be able to change this situation. Careful independent check of one of these experiments was conducted by the authors. We are speaking of investigation of the influence of operators on generators of infralow (infrasonics) frequency noise, which was described in [3].

The design of the experiment was the following. Semiconductor flicker noise generators (bipolar effect transistors, MOS-transistors, photoresistors) were placed in a brass cylindrical container, the container in turn was lowered into a Dewar flask, which on the outside was shielded by brass strips. In this manner reliable shielding and good thermal stabilization of the sensors was achieved. Information was picked up from the three sensors simultaneously, from each one over two channels, in the frequency band from 0 to 0.1 Hz - one channel; and from 0.01 Hz to 0.01 Hz - the other channel. The channel amplifiers had independent galvanic power sources with precision micropower voltage stabilizers. The amplifiers together with the power sources and stabilizers were placed in brass boxes, which were installed in a duraluminum box, wrapped with paralon on the inside. This was able to achieve reliable shielding and thermal stabilization of the amplifiers. The operators during the experiment were placed either at a distance of 0.5-3 meters from the Dewar flask with sensors, or in another room.

In more than 50 experiments with different operators anomalous changes of the flicker-noise amplitude were observed in only two. The diagram of recording the moment of influence in one of them is given in fig. 1. The first diagram of this figure was obtained from the channel in the range from 0.01 Hz to 0.1 Hz and reflects the flicker-noise of the sensor-transistor. The second was picked up in the range from 0 Hz to 0.1 Hz and represents the behavior of the transistor collector potential in time. In section 2 of diagram 2 there is an abrupt change of the collector potential; this change of the working point is so considerable that it results in power limitation of the measurement amplifier - section 3

of diagram 2 (also see diagram 1, section 3).

Following the change of the working point of the sensor one will observe a sharp increase of amplitude 1 (f-noise). (Diagram 1, section 2). Restoration of the position of the working point of the sensor within one hour did not occur. After removing the limitation from the amplifier by using external balancing, the amplitude of the flicker-noise had the usual value.

The probability that fluctuations of noise amplitude in section 2 (diagram 1) are random in nature and are caused by this noise is close to 10^{-6}.

One must note that in the processes of operator influence on more than one occasion we noted ordering of the noise fluctuations, which are described in (3). However, these features in the behavior of the transistor during the work of the operators, were not considered a positive result of the influence, because the mechanism for calculating the probability of the randomness of these events is quite subjective in nature.

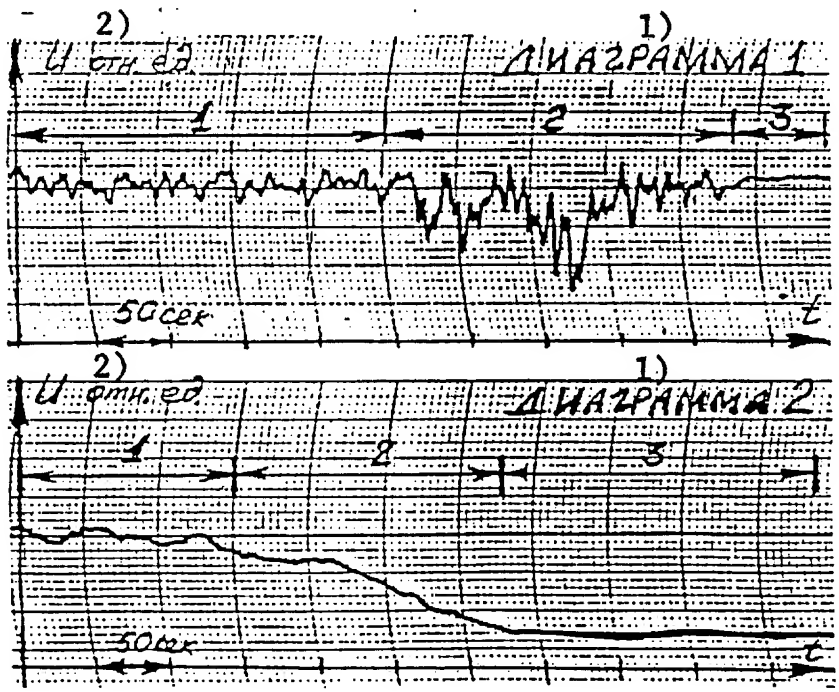

Fig. 1. Change in the behavior of sensor signals during the action of operator M. Perepelitsin. Distance from the operator to the object is 3 meters.

Key: 1) diagram; 2) relative units.

Thus, the possibility of remote nontrivial influence of an operator on behavior of semiconductor transistors, which are included in infralow frequency noise lasing mode, is confirmed. An analysis of the experiments revealed the action of the operator does take place, evidently not on the noise properties of the transistor, but on its input or output characteristic, causing a displacement of its working point, and the increased intensity of the flicker noise is only a consequence of this displacement. The poor reproducibility of positive results from experiment to experiment is explained not only by the particular feature of the parapsychological interaction of the human-physical object, but also by the fact that transistors in infralow frequency noise generating mode evidently are quite coarse sensors of the studied interactions. In addition, in such sensors, particularly given the low results of the influences of operators, one must consider the probability of their anomalous behavior, which is related to the reliability of the instrument as a serial manufactured model. Nevertheless, the derived positive results of remote influence of a human on the described physical objects, taking into consideration the results obtained in (3), provide a basis for continuing the search for sensitive electronic sensors.

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AUTHOR: O. A. Goroshko (Kiev)

ANALYSIS OF FIELDS AT UFO APPEARANCE LOCATIONS AND THEIR INFLUENCES ON MAN

This report presents results of a biolocation analysis of fields at UFO (unidentified flying object) landing locations and their influence on the human organism. It has been established that all observed cases are separated into two kinds based on the shape of the fields: in the first case a field anomaly has the form of a circle with diameter 5-9 m. Inside the circle there is a square with dimensions 1 x 1 m^2; in the second case the same configuration is surrounded by another external "protective" field barrier of 30-35 m diameter. The fields inside the square and in the external "protective" barrier have a highly negative influence on the human organism. By studying persons who have spent time at UFO landing locations in a number of cases we have established a deterioration of health and development of diseases which are related to weakening of the immunity function. The reason for weakening of the potential is outflow of energy and reduction of the biofield potential. Recommendations are given for protection from the influence of these fields.

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