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SOME PROBLEMS OF BIOLOGICAL ELECTRODYNAMICS AND PSYCHOENERGETICS

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(Article by Victor Adamenko, Senior Scientific Associate, USSR: Moscow, Nekotoryye Vop Biol Eleki Psikh, Russian pp 22-29) STAT

Introduction

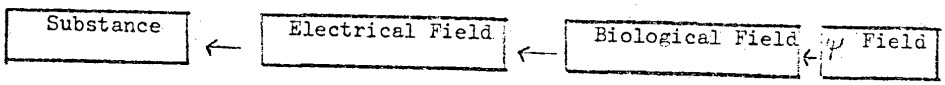
Living matter, in the thermodynamic sense, is not subject to the physical laws that hold for inorganic matter /1/. The anti-entropicity of the psychic processes /2/, which are higher manifestations of life, generally serves as a demonstration of the fact that the thermodynamics of living systems cannot be related to classical thermodynamics but that living matter possesses some new properties not found in inorganic matter.

That which is correct for matter may not also be correct for fields of living organisms. Actually, if living molecules are distinguished qualitatively from inorganic molocules, why cannot such a distinction exist between "living" and "technical" fields? If this is a properly posed question, the electrodynamics of living systems should be distinguished from technical electrodynamics. More precisely, technical electrodynamics may be a particular case of biological electrodynamics. This means that, during the study of living organisms by technical methods, some properties of bio-electrical fields are difficult to establish. The so-called "treatment by laying on the of the hands" may serve as one such example. An electric field is observed between the patient and the "investigator,"

/Kirlian, 1966/. However, using of a "technical" electric field, it is not possible to cause the same subjective sensations (subjective sensations of heat, etc.) which are experienced by the patient during the "laying on of the hands."

If a specific field inherent only to the living organism exists, then a corresponding form of energy should exist. Psychic or biological energy, however, can be changed to other forms of energy, just as electrical energy can be changed to mechanical energy. As numerous experimental data show, psychic energy may be manifested through an electrical and magnetic field, heat and mechanical motion. Therefore, it makes sense to use electrical energy, electromechanical energy and other of its equivalents for evaluation of magnitudes of psychic energy.

An exemplary diagram of the interaction of a psychic field and matter may take the following form:



We may make a certain analogy between the laws of an electromagnetic and a psychic field. Probably, just as an electric field, the ψ field should have sources (man). An analog to induction may be suggestion and to self-induction -- self suggestion. Also, as in Ohm's Law, the psychic voltage should be proportional to the psychic resistance. From this point of view, the brain and the living cells

in general may be conveniently considered as a transformer of ψ field energy into other forms of energy and the reverse.

Bio-electrical Induction

If a living cell is assumed to be a transformer of energy, we can speak about at least 2 phenomena analogous to those which lie at the basis of technical electrodynamics:

1. The effect of an electrical field causes mechanical contraction of the neuro-muscular apparatus of living objects.

2. Neuro-muscular tension (in particular, volitional tension) may create an electrical field around living organisms, due to which electrical charges may be induced in surrounding objects.

The correctness of the first part of the law of bio-electrical induction was demonstrated by Luigi Galvani, who observed that, at a certain distance from the spark of an electric machine, the muscles in a neuro-muscular specimen from a frog contract. Analyses of experimental data (3,4,5,6,7) show that the second part of the law of bio-electrical induction also may be correct. As an example, we shall examine the results of 3 experiments: electrical telekinesis, the electrical properties of acupuncture points and the Kirlian effect.

Electrical telekinesis. Subjects induced a charge in a dielectric cube with 0.5 meter edges and shifted different articles weighing 10-100 grams along its surface. Successful performance of the experiment required not only the presence of a charge on the surface

of the dielectric cube and the maintenance of it for a specific time, but also an appropriate distribution of the electrical field. In a plane condenser the field is concentrated between the plates and therefore ponderomotor forces do not appear on the outside of the plate. The electrical field of the charged plane has approximately a uniform intensity on both sides. If one places any small object on the charged dielectric surface it is possible to make it shift with the help of electrostatic forces. As a rule, the charge of the object is negative but this charge cannot neutralize the charge of the entire dielectric since the electrons and the ions, as is well known, cannot be shifted along its surface. Consequently, coloumb forces of attraction will operate between the objects and the region of the dielectric where the positive electrical charges are concentrated. If these forces are greater than the forces of friction which hold the object, the object will be shifted. The force of friction, however, usually is greater and the object is found in a state of unstable equilibrium. If a person moves his hand up to the object from the side opposite of the electrostatic forces of attraction between the object and the positive charges on the surface of the dielectric, then electrostatic forces of repulsion (the person is negatively charged) arise between the person's hand and the object. These additional forces of repulsion may cause a shift of the object if the charge of the electrified surface is sufficiently large. If the charge is not very large, then the object

begins to be shifted only during volitional tension of the muscles of the hand (or other parts of the body) of a trained subject. The appearance of a supplemental electrical field during emotional-volitional tension evidently confirms the correctness of the second part of the law of bio-electrical conduction. One may note that the operation of this simple device for shifting objects by humans resembles the operation of the Geiger counter, which registers the small bits of energy carried by individual particles. Actually, an electrical field of high intensity is created in the working volume of the Geiger counter. The incident particle produces a supplementary ionization, due to which there occurs an electrical discharge. In the device described above the supplementary energy generated by a person and causing shifts of the objects plays the role of the particles.

During the shifting of objects by subjects, the force of friction sometimes decreases so much that the objects seem to fly in the air. The cause is probably as follows: in the absence of an electric field the air molecules have 6 degrees of freedom, but in a strong electrical field they are polarized and the number of degrees of freedom is reduced to 2; if the field is homogeneous, then the aerostatic pressure of the directed flow of molecules is compensated for by the pressure of the oppositely directed flow; if the field is in-homogeneous, the pressure of the air molecules will be greater in one direction than in another, that is, an "electrical" wind arises and the objects

lose weight. This effect may formally be interpreted as an increase of air density and a pseudodensity of the air environment which increases with the increase of the homogeneity of the field.

The proper conduct of experiments in electrical telekinesis requires uniform physical conditions. After such arrangement of the experiments, it was observed that the psychophysiological state of the subject had considerably greater effect on the success of the experiment than, for example, atmospheric conditions. Under hypnosis, the capacities of the hypnotized examinees increased.

Investigation of the psychic component of telekinesis showed that the phenomenon is reinforced by training. In the beginning of training the examinees usually are charged additionally by friction of the hands on the surface of the dielectric cube. Gradually, subjects learn to work without such additional charge. The development of the capacity of telekinesis is helped by psychic stimulation. During very good psychophysiological states it is completely unnecessary to create additional charges on the surface of the cube by friction, since the dielectric surface accumulates energy generated by the subject. After psychic training over the course of several weeks, some subjects induced in the cube a charge of such great magnitude that any person who worked with the cube afterward could shift objects on it without touching them. The impression was created that the subjects transferred their capacity for telekinesis to other persons

for a short time. Actually, during work with an object, there is an accumulation of energy in the electrical cube due only to the trained subject. Other persons, as a rule, in shifting the objects, discharge the dielectric, which was charged beforehand by the subject and thus use his energy stored in the cube.

Approximate calculation of energy expenditures during telekinesis indicates that energy of the electrostatic field /E^2 / 8 π/ is inadequate for shifting objects of the weight determined. After stimulation by success (biological feedback) the magnitude of the charge induced by the examinee grows but the difference between the overall energy generated by the examinee and the energy of the electrostatic field also grows.

Electrical Properties of Acupuncture Points.

There is a correlation between the psychic state of a person and the electrical characteristics of acupuncture points /8/. Emotional-volitional efforts may change the conductivity of active points. This change of conductivity, in particular, is associated with muscular stresses. Considering the second part of the law of bio-electrical induction, we may assume that the change of conductivity of points during emotional-volitional efforts is associated with the induction of a charge. However, reliable registration of the change of the psychic state of a person by measuring the conductivity of active points is possible only with an electronic amplifier with large dynamic characteristic. This fact probably

indicates the small changes of the electrical properties of active points during transformation of psychic energy into electrical energy.

During the training of subjects for the development of capacities for telekinesis, we used an electronic amplifier with a steep dynamic characteristic and a measuring device at the output. The subject, on the active point of the skin of whom was fastened electrodes connected to the electronic amplifier, shifted the pointer of the gauge by volitional effort. Thus, the control of the field during telekinesis may be realized not only by a shift of the hands of the examinee in space but also by the controlled change of conductivity of the skin at the active points. In a special series of experiments, the hands of the examinees were fixed near the object which was lying on the charged dielectric surface. With the help of volitional effort, the examinee shifted the object.

Kirlian Effect.

Production of images in the field of a high-frequency discharge is based upon the phenomenon of field emission /8/. The difference in parts of the human integument, photographed in a field of high frequency currents, record the obvious dependence of the structure and the density of the images on the psychic state of the person. The most detailed results are obtained when the living objects are located in a high-frequency electric field of very high intensity.

However, as is well known, the current of cold emission of electrons grows exponentially and this provides a reason to assume that, in this case, the change of structure and density of the images is associated with the second part of the law of bio-electrical induction. The following experiment was conducted to confirm this proposition: a uni-polar pulsed generator, designed by engineer V. Contorerich, was used to produce a high-frequency image of inorganic objects and leaves of plants both without additional electrical bias on the object to be photographed and with additional bias; the change of structure of images when additional direct current is supplied indicates that the dependence of the structure and density of the image on the psychic state of the person is associated with the generation of an additional field by the person. Actually, it is just the distribution of the intensity of the electrical field on the surface of objects that is recorded in the high-frequency photographs.

This same genratcr was used to produce images of the fingers of the hands of subjects in an ordinary state and at that moment when they concentrated attention on telekinesis, not moving the objects, but mentally picturing its motion. The change of structure and brightness of the images photographs, in this case, the phenomenon of supplemental positive biases at the electrode, which leads to a decrease in the energy of the emitted electrons.

Direct experiments demonstrated the induction of a charge in a dielectric by volitional effort when the subjects, in a special psychic state, moved their hand toward the dielectric surface.

Characteristics of Objective Registration of Psychophysiological Energy

As stated previously, we can assume that psychic energy can be transformed into other forms of energy. However, the essential component of such transformation, which was noted earlier by other investigators (Doctor Kotik, 1912), is that initial energy is necessary. For example, subjects could not cause luminescence of a luminescent screen by a change in their psyckic state. Only when the luminophor was excited beforehand, could the subject amplify the luminescence of the screen. It is likely that in producing Ψ -- photographs the film also must be preliminarily treated by light. In case of a loop rotating in the hands of a douser conversion of psychic energy into mechanical energy), a state of unstable equilibrium of the loop is also necessary, evidently, as an inition situation.

Three methods of objective registration of psychic energy examined above are based upon one genral principle: the use of a state of unstable equilibrium of a system for coverting psychophysiological energy into electrical energy. Actually, the principle of operation of devices for non-contact shifting of objects by a person is analogous to the principle of operation of a Geiger counter: A direct

current amplifier for registration of psychophysical state by a change of conductivity of active points of the skin should have a steep characteristic. The production of high-frequency images, which record the psychic state of a person, is based on cold emission of electrons but the dependence of the field current on the intensity of the electrical field is exponential. Thus, systems in a state of unstable equilibrium are necessary for conversion of psychic energy into electrical energy.

Probably, the conversion of psychic energy may be realized not only at the level of mechanical, electrical and light phenomena but also at the level of radioactivity, magnetic and electromagnetic fields, sound and gravitation. Thus, it is possible to construct psychotropic apparatus, the principles of operation of which are based on the use of the state of unstable equilibrium (lasers with preliminary pumping, gyroscopes, taperecorders with tape magnetized up to a definite level, etc.). It is possible that there will finally be observed forms of energy unknown today into which psychic energy may be transformed.

The Ψ field hypothesis leads to the necessity during the investigation of psychic phenomena for examining not only the informational but also the energy aspect of the psyche.

If psychic energy is quantized then it is possible to state the hypothesis concerning the existence of a whole class of elementary particles which arise due to the psychic field.

Conclusion

In biology, an abrupt change of biological properties causes mutations. Analogously, an abrupt change of the psychic properties of individual persons may cause "psychic" mutation. These probably, include persons who are capable of manifesting different parapsychic phenomena. We may assume that, if the fourth state of matter, plasma, is incorporated in living organisms, then a change of the process may be responsible for mutations, including psychic mutations. In this case, through the effect of natural electrical fields and magnetic fields on plasma the connection of living organisms with cosmic phenomena may be traced. However, the psyche has the capacity for automotion, for the development and overcoming of facts of the external environment. Therefore, the production of special states of consciousness and psychic training at the level of psycho-energetics, using modern devices, has just as great significance as the investigation of the [illegible] field of psychically talented persons.

BIBLIOGRAPHY

1. Ervine-Schroedeinger. What is Life?/from the Point of View of Physics/ Moscow. Avoyndat. 1972.

2. Kobozov N. I. "Investigation in the Area of the Thermodynamics of Processes of Information and Thought." Moscow State University. Moscow. 1971

3. Benson Herbert. Psychokinesis in Bratislava. Journal Parfizika (Paraphysics) Vol. 6, No. 6, 1972.

4. Kirlian S. D.; Kirlian V. Kh. Photographing and Visual Observation by Means of High Frequency Currents. Journal of Scientific and Applied Photography and Kinematography, Vol. 6, Issue 6. 1961.

5. Teller, William. "Observation of Energy Fields of Humans and Objects of Inorganic Nature." Stanford University. 1972

6. Adamenko V. G.; Kirlian S. D.; Kirlian V. Kh. "Investigations of Biological Objects in High Frequency Energy Fields." Problems of Bio-energetics. Alma-Ata. 1969.

7. Adamenko V. G. "The Shift of Objects at a Distance by Means of Controlled Bio-electrical Field." Materials of the 20th International Psychological Congress. Tokyo. 1972.

8. Raykov V. L.; Adamenko V. G. "Objective Registration of a Deep Hypnotic State." Therapy of Mental Issnesses. Moscow. 1968.

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AN ELECTROSTATIC MODEL OF REMOTE EFFECTS

/Article by E. K. Naumov, S. D. Kirlian and V. G. Adamenko;
Moscow, pp 38-40/

The ability of some subjects to remote shift objects of small weight was reported recently in the literature but the problem of modelling this phenomenon was posed several years ago. A theoretical model, based upon the conception of biological plasma, was proposed by G. A. Sergeyev in 1969. However, this model was not realized experimentally. Here is why: A force effect of plasma upon on object requires a high concentration of charged particles and also a sufficient degree of order of their motion. Both of these conditions are unconfirmed experimentally with respect to bioplasm and therefore remain hypotheses.

From our point of view, the presence of cold plasma around objects and subjects by no means signifies that it itself is responsible for the remote action. Most likely, ionization of the air arises due to the high intensities of the electrical field.

Therefore the hypothesis concerning the essential role of the electrostatic field, rather than plasma, may lie at the basis of physical modelling of non-contact shifts of objects by a person.

We prepared a simple device with the help of which it is possible to remotely influence moveable pointer located inside

the device, by means of electrostatic forces. The device consists of a closed dielectric box 140 x 140 x 100 millimeters in size. The top of the box is closed by a glass-like transparent plastic under which a 1 gram metal pointer is fastened on a pivot. Low friction provides high mobility for the pointer.

Putting a dielectric glove on the hand and electrifying it on a glass-like transparent plastic, it is possible to shift the pointer of the device and also to control this shift by selecting the position of the hand in space at a distance from the device. If one fastens 2 pointers on the same axis then, as a result of electrification of the dielectric and the hand, these pointers may be moved in opposite directions. By substituting an electrified dielectric for the hand in the dielectric glove, the pointer of the device may be moved without the participation of a person.

The magnitude of the electrical field intensity in the experiments described was approximately 1000 $\frac{\text{volt}}{\text{cm}}$.

As a result of these simple experiments, we concluded that d dielectric screen, due to the concentration on it of electrical charges, amplifies the ponderomotor action of electrostatic field. Consequently, the use of a dielectric cover as a screen against external effects (as was done earlier should not impede but rather assist the subject in shifting objects without contact. In order to confirm this conclusion, light objects (matches) were placed

under a 500 x 100 x 100 glass-like plastic cover whose sides were then electrified by rubbing with dielectric gloves, a fairly high field intensity was thus reduced. Shifts of the matches could be observed at a field intensity of approximately 5000 $\frac{volt}{cm}$ under the cover.

The experiments described are readily duplicated; this indicates the possiblity of using the forces of an electrostatic field for physical modelling of remote effects. Electrostatic forces affect both magnetic and non-magnetic objects and therefore they may play an important role in the mechanism of transfer of remote force effects.

FORMATION OF HIGH FREQUENCY IMAGES USING LARGE DISCHARGE GAPS. /Article by V. G. Adamenko, S. D. Kirlian and V. Kh. Kirlian; Moscow. pp 40-42/

The use in biology of high frequency discharge tubes with image magnification is of definite interest both in the context of observing the dynamics of bio-electrical processes and for studying the spectral composition of the discharge luminescence of living organisms. At present, the method of high frequency photography is used mainly for producing images at atmospheric pressure. In this case, the size of the discharge gap of tens of microns and the production of images is based upon the phenomenon of field emission. If one reduces the pressure of the gas but increases the discharge

gap, it is possible to obtain an amplified image of the object under certain conditions.

There exists a planfor a device with a larger discharge gap. In this device the role of free charges in the air at the beginning of the high frequency discharge becomes more important, since the mean free path of the electrons and ions is increased and, consequently, the energy gained by them in the field is increased. In this case, however, the autoelectrons emitted by the lesser electrode participate in the growth of a discharge and create an image of this electrode on the luminescent screen of the electron tube. It is easy to show at the lesser electrode, a field intensity may be created that is great enough for field emission. Using the Ostrogradskiy-Gauss theorom and the law of conservation of charge, we may obtain the relation

$$\frac{E_1}{E_2} = \frac{S_2}{S_1}$$

where E_1 is the electric field intensity at the lesser electrode,

E_2 is the electric field intensity at the screen

S_1 is the area of the lesser electrode

S_2 is the area of the screen.

If the radius of the lesser electrode equals 1 centimeter, the radius of the screen is 15 centimeters, the distance between the electrode and the screen is 20 centimeters and the amplitude of

high frequency voltage is 40,000 volts, then intensity of the electrical field at the lesser electrode equals $0.45 \times 10^6 \frac{volt}{cm}$, which is sufficient for field emission.

The screen of the image tube is covered with a current-conducting coat upon which luminophor is coated for increased brightness. When the high-frequency is turned on a magnified image of the test object (the lesser electrode) is seen on the screen; the magnification is equal to the ratio of the areas of the screen and test-object. The device described differs from a field emission microscope in that the image is created not in a vacuum but in a gas at low pressure. The power supply of the device comes not from direct current but from high frequency current and the emitting electrode need not be spike-shaped but can be any shape. A similarly designed device may be used for observing the electrical state of living organisms under magnification without placing them in a vacuum.

Investigation of the effect of the pressure of the gas on the formation of the high frequency images showed that if the discharge gap is increased gradually from 0.05 to 220 millimeters, while decreasing the pressure from 760 millimeters to 2×10^5 /sic/ millimeters Hg, then the image exists for definite ratios of pressure and discharge gap.

Table 1 Presents Results of the Experiment

Table 1. Sizes of discharge gaps b and values of pressure P for which fairly clear images are seen.

At the same time, for fixed distances between the electrodes, equal, for example, to 160 millimeters, an image of poor quality forms even at a pressure of 10^{-2} millimeters Hg. After decreasing the pressure to 6×10^{-4} Hg the image increases in size and becomes more and more blurred and, at a pressure of 1×10^{-6} Hg, it disappears entirely. However, if one uses an electric lens for focusing the image, it may be observed even at a pressure of 10^{-6} or 10^{-7} millimeters Hg.

It is known that the image is formed with the help of discharge microchannels and therefore the blurriness of the image is associated with the focusing of the discharge channels by positive ions which neutralize the repelling charge of the electrons. Therefore, additional focusing is required for a good vacuum. At atmospheric pressure, the ionic pressure is sufficient for ionic focusing but the length of the mean free path of the electrons is small. Therefore, at atmospheric pressure, small discharge gaps are necessary for obtaining images.

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BIBLIOGRAPHY

1. Adamenko V. G.; Kirlian S. D.; Kirlian V. Kh. "The Study of Biological Objects in High Frequency Electrical Fields. Problems of Bioenergetics. Alma-Ata. 1969.

THE ACCUMULATION OF BIO-ELECTRICAL ENERGY

/Article by V. G. Adamenko and E. K. Naumov; Moscow. pp 42-43/

The electrical energy developed by a person is, as a rule, insignificant. However, methods for increasing it exist and also for accumulating it in different technical devices.

The first method is the use of acupuncture points for obtaining an electric current of the order of hundreds of microamperes. For this purpose, electrodes made from various metals (nickel - silver, for example) (1) are fastened to the active points. Ten-Twelve points provide a voltage of hundreds of millivolts with a current of nearly 100 microvolts (amps?). Such a current is adequate for charging accumulators or batteries of condensers. In our experiments, we used a battery of low-voltage condensers with a total capacitance of 10,000 mor /sic/. The condensers were charged by the subject in several minutes up to a voltage of 0.5 volts. Since the conductivity of the active points varies, depending on the psychophysiological state (2), the magnitude of the charging current varies. During emotional volitional effort, for example, the magnitude of the current is 2-3 times larger than during a quiet state in the subject. This phenomenon permitted us to construct a simple device for objective evaluation of volitional effort. The device resembles a device for determining the volume of the lungs, except that electrical energy is used instead of air. Nickel-silver electrodes

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are connected by wires to the active points of the subject and to a battery of condensers. Within a definite time (1-2 minutes), the subject, with the participation of volitional effort uses bio-electrical current to charge the condensers. Then, with the help of a switch, the condensers are connected to the measuring apparatus (microammeter) and are disconnected from the subject. The magnitude of the charging current registered by the device, with other conditions being equal, is proportional to the volitional effort.

Since the conductivity of the active points in the subjects is different, the initial charging current is also different. Therefore, for evaluation of the volitional effort, we used the dimensionless K:

$$K = \frac{i_v}{i_n}$$

where K is the coefficient of volitional intensity

i_v is the charging current curing volitional intensity

i_n is the charging current in the normal state.

The coefficient K in persons incapable of volitional effort equals one. In Subjects with good control of their volitional intensity, this coefficient may reach 3-4 and higher. We must note that the capacity for volitional intensity depends upon the initial psychic state. In one state, for example, the coefficient K in a subject may equal 2 and in a state of fatigue - 1. At the same

time, in subjects capable of controlling themselves well and in the state of fatigue, K may equal approximately 1.5. After resting, their K usually ranges from 3-4.

The device described may be used in psychology for research purposes and for methods of professional selection.

The second method of collection of bio-electrical energy is associated with non-contact shifts of objects at a distance. Some subjects, while shifting objects, communicate an electric charge to them. Any person, approaching such an object, may now cause it to move as long as the object is not discharged. The practical use of the second method is an affair for the future. At present, the reports simply register facts which indicate the possibility of such a method of accumulating bio-electrical energy.

BIBLIOGRAPHY

1. Adamenko V. G. Electrical Energy Potential in the State of Hypnosis. "Problems of Bioenergetics" Alma-Ata. 1969.

2. Raykov V. L.; Adamenko V. G. Objective Registration of a Deep Hypnotic State, Therapy of Mental Diseases. Moscow. 1968.