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JUL 29 2015

John Greenewald
[redacted]

Dear Mr. Greenewald,

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Sincerely,

TRISHA M. SEXTON, Colonel, USAF
Vice Commander

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FOREIGN TECHNOLOGY DIVISION

PSYCHOTRONIC
(SELECTED ARTICLES)

EDITED TRANSLATION

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PSYCHOTRONIC
(SELECTED ARTICLES)

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WHO AND WHAT IS MAN?

V.V. Jefimov

Psychotronics means the integration of man. Psychotronics is a synthetic method of investigating the organism and the human personality.

The first university in Italy was established to combine all the sciences, encompassed at that time by human knowledge. The purpose of this first university was the unification of all knowledge, including poetry. The classification of knowledge about nature and man appeared at that time as a task easily performed. Universities were set up in many countries. In Moscow, the great scientist and poet Michail Vasilievic Lomonossov organized the first Russian university. It became apparent however, that the 'universality'of science, taken as a whole, is not functional. The sciences were divided into a series of departments (chairs), divided into Faculties. In the university, almost all the sciences were separated, and constituted independent institutes (mathematics, physics, geology, medicine, physiology). The universities were transformed into Towers of Babel, where individual specialists did not understand each other, and indeed even made no attempt at mutual understanding. The textbooks contained facts and theories, which in most cases were not related into a coherent whole. This split affected particularly the sciences dealing with man.

Recently, subjects are being studied, representing bridges between the scientific fields, for example, biophysics, biomathematics, cybernetics, seeking to combine mathematics and neurology. However we require today a science, which integrates much more deeply the knowledge regarding man--and that is precisely what psychotronics is.

Each Department attempted to obtain a definition of man in accordance with its narrow point of view. By comparing these definitions, we obtain a manifold idea of the complexity of man as a whole. The philosophers of ancient Greece used for the symbolic representation of the primary elements and of man, geometrical figures. The earth was presented as a cube, man as a dodecahedron --a twelve-sided element. Why did the ancient Greeks see man as a dodecahedron and not as another geometric figure?

I believe I was able to discover this symbol of man in the study of the non-Euclidian geometry of Lobacevskii and G. Riemann. In building up his New Geometry, Lobacevskii did not start from the point, the straight line, and the surface, as Euclid had done, but from the geometric bodies and their intersections. Thus he came to the dodecahedron, whose surfaces are pentagons.

1. The Scientific Definition

The professors of the most different university departments define man in accordance with their narrow specialization, to which they have devoted their scientific career.

'Man is a monkey, who lost his tail' says the anthropologist (Man comes from monkeys, but the brain of a gorilla or of an orang-utang is three times smaller than that of a human child).

'Man is the food, which he consumes during his life', says the physiologist.

'Man is a social animal', explains the sociologist.

'Man is what he feels himself' says the sensualistic philosopher.

'Man is a thinking being. Thinking differentiates man from other living creatures' states the philosopher R. Descartes. 'I think, therefore I am' adds this rationalizing philosopher.

'Man is a ball, with which nature plays for her entertainment', Leoparde, the pessimistic philosopher observes grimly.

'Man is the most beloved blossom, tenderly tended by nature' the optimist protests.

Man is a great researcher and investigator of the planet on which he lives, and risking his life he strives personally to reach all corners of the world, even the most inaccessible, the Everest peak of such difficult access, the jungles of the Amazon. He is no longer content with the Earth, he is therefore sending exploratory spacecraft to Venus and Mars. But the space discoveries are no longer sufficient, he is attempting in his laboratories, to penetrate the laws of nature, the secrets of creation of all matter, into their molecular and atomic structure and even the secret of the energy compressed in the nuclei and thus obtain the powerful atomic energy.

Why do men with the same morphology and probably also with the same physiological functions differ so sharply from each other in the area of their intellect and their ethics?

'Man is the most terrifying and treacherous being, much more bloodthirsty and heartless in relation to other men than a tiger or a cobra', states a judge, whose hair had grown grey in the course of many legal proceedings. Man is subject to thousands of diseases which may befall an idiot as well as a genius: two of the greatest composers, Tchaikovsky and Scrabian, died because of tiny bacteria. And how many talents die because of the onslaught of cancer cells! But even a healthy man is doomed to die, when he reaches his age limit. And who determines this limit in life? Man is mortal and his soul is mortal, writes Uriel Acosta. The human soul is formed of atoms, the author Lucretius Carus had already explained in his naturalistic poem 'On Nature', a work of the mechanistic materialism, far from the understanding of the dialectic origins of Nature. But the deepest and most important definitions of man as an integrated and withal, a most complex creature were not given by the scientists, but by the novelists and particularly the poets.

2. The Literary and Artistic Definition

'Man makes a pround sound' writes Gorky in his dramatic work, where in a terrible night refuge the 'has-beens' rot away and attempt to justify their fall into the abysm of alcoholism, lack of willpower, and degeneration by proud and high-faluting words. These persons consider themselves 'protesters against the morals of the fatted rich, who are nevertheless slaves of their base instincts'.

'Man is a deep secret which only he himself can uncover', says the great novelist and inveterate cardplayer Dostoyevsky. The author of 'Notes from a Dead House', 'Crime and Punishment', and of the 'Brothers Karamazov' does not indicate actually what is the secret that man has to discover, and this is because this secret is individual to each person.

A man who is a genius in his musical abilities, may at the same time be a base and envious person and a murderer of his rival who is as great a genius. "Yes this may

be so" says Pushkin in his short tragedy 'Mozart and Salieri'. Genius and envy may co-exist in a man. The highest and the most base live in one conscience.

How masterly the creation of man! How worthy he is in his reason! How infinite his abilities! "He is the crown of all the living", writes Shakespeare in his philosophical tragedy 'Hamlet', without any notice of the treachrous murder of Hamlet's father.

In comparing the scientific definition of man, more exactly of mankind, we may convince ourselves how long the human body took to develop, how much of the'animal' is still reflected in the human personality and the difficulty and the effort needed to replace these animal characteristics by human ones, and how much time this transformation requires. The base nature clings stubbornly to its position. Man is at present still a mixture of the base with the germ of the higher, which can only fight through with difficulty against the lower nature. This fact was expressed wonderfully by the great Russion poet Dierschawin, an intuitive dialectician, in a pregnant line of poetry:

"I am a slave, I am a king, I am a worm, I am God".

The well known philosopher and scientist Giordano Bruno formulated for the first time the law of conservation of matter and energy: "Nothing disappears and nothing is lost, everything is only changed". This means therefore that the lower nature does not disappear, is not lost, but can be transformed into the higher. This transformation of the lower into the higher is precisely the task, the mission of man in the universe. Only the man who has purified himself and is enlightened can perform this great cosmic mission. For this great purpose man must purify himself by the method of self-control. Man alone has a nervous system such that it is able to convert the lower forms of life into the higher ones.

3. Psychotronics

The contradiction of the scientific and particularly of the literary and artistic definition proves, that it is possible to understand the latter only on the basis of the laws of dialectics, the law of unity and the struggle of the contrasts.

Therefore, the new science, psychotronics, should base itself for its researches and conclusions on the laws of dialectics and intuition (hence on the dialectic leaps in the thoughts of the researcher). Psychotronics makes intensive use of experiments, as well as observation. Like physiology, it studies the lower functions of the organism and of the personality, but as far as possible it deals not only with the higher, but also with the'superhigher' future functions, which are discovered in the human psyche under the effect of the complex and new conditions appearing in society. It also studies the psyche of animals and primary reactions of plant organisms influenced by man. But psychotronics also makes use of the latest technique of biophysics, especially psychophysics. Psychophysics should always take into consideration the fact, that each human organ has several functions, which was mentioned for the first time already by the evolutionist zoologist, Academician Severcev. For example, the tongue has a mechanical lower function, of moving the food in the mouth cavity, and finally also a higher function that of taking part in the formation of speech. The larger the share of the central nervous system in the given function, the higher the function itself. This fact was indicated for the first time by I. Pavlov in his 'Conditioned Reflexes'. Psychotronics investigates with new methods only facts, which were not examined hitherto by science, the qualities which were replaced by the intellect in the course of the development, or appeared to be new under the complex conditions of the highly technical civilization, and which obviously exist not only in certain men, but potentially in all.

ROMANIAN CONTRIBUTION TO THE DEVELOPMENT OF BIOLOGICAL ELECTROGRAPHY

I. Dumitrescu

Abstract

The author reports on the present position of biological electrography taking into account particularly his own technique, which he calls electronography. The electronographic technique employs individual pulses with control of the polarity, the amplitude, the pulse increase and the energy. The phenomenon of interaction may be rendered visible using a condenser and a luminescence shield or by means of a photosensitive emulsion.

Electrography is an image transfer through electric current of one or several electric or non-electric qualities to a studied physical body under certain conditions, at a certain moment or in a permanent form. The images obtained by this method are determined by the intensity of the current applied, the peculiarities of the electric medium as well as the electric peculiarity of the body in the conditions in which the recording is carried out.

For a long time electrography was known in the framework of the high voltage technique[1]. The photo of the high voltage discharge sources is applied in technology under the name of klydonography (Lichtenberg 1977). Although the use of electrographic images in the electric scanning of living organisms was mentioned in the scientific literature since the end of the previous century, it drew scientific attention only recently.

Electrography assumed a great scientific interest through the further development of photographic techniques by V,and S.Kirlian. That is why many authors use the term electrography for electroluminescence photography, which is obtained by high-voltage current and is known as Kirlian photography.

In the report given here we will present overall principles, constituting the basis of various electrographic methods and techniques with their variants. As their basic principle they make use of the different effects of the electric current, while they check the various electric aspects carefully by means of the pictures obtained.

The principal effects representing the basis of the electrographic technique, are the following:

1. Heavy Motor Effect
2. Electroluminescence Effect
3. Electrostatic Polarization Effect
4. Blocking Effect of the Secondary Luminous Emission
5. Thermoelectric Effect

The systematic study of these effects, as well as their application in the biological area leads to the application of some original techniques, which are applied in the electric investigation of living organisms.

It is thus easy to understand, why we consider the Kirlian photography technique, in which we are dealing with an application of the electroluminescence phenomenon under high voltage and radio frequency conditions, is considered by us as a certain aspect within the electric methods and techniques, constituting a series of other possibilities of application and adjustments for living organisms.

1. Electrography through Heavy Motor Effect

In the heavy motor effect, electrography makes use of the effect of directional and spatial distribution of some micro-particles, which are obtained by their collision with a directed electron beam or through secondary ions, coming from electronic collisions with the atoms and molecules, which we find in gases.

Fig. 1 Heavy motor electrography of human fingers. Note the lines of force

The electrography through heavy motor effect furnished through pulverization of neutral microparticles and the effect of electric high-voltage current the first Lichtenberg figures.

Later the use of the heavy motor effect of very high voltage discharges was replaced by a further development of the photographic records of the electroluminescence, by which the pictures gave a similar arrangement of the discharge lines.

The electrographic technique by means of the heavy motor effect was used by us to characterize the lines of force of living organisms, when the latter were exposed to different voltages, and for the characterization of their correlation with the effect, starting from the living organisms.

This technique permits us in its new forms adjusted to the scanning conditions of living organism, to reproduce for the first time lines of force, arising from the interaction of living organisms with the high voltage source.

Besides these qualities of the source of voltage and the studied organisms, the heavy motor effect depends also on the factors of the microparticles, subject to the effect of wandering (extent specific weight, electric conductivity, layout of the electric surface discharge, humidity, etc.), as well as on the electric factors of the medium, in which wandering occurs (temperature, humidity, ion concentration with the corresponding gradients in the wandering direction, etc.).

Biological electrography may be achieved in all electric current areas, assuming that the harmful parameters are restricted within the biological tolerance limits. The graphic effect of this method consists in the reproduction of lines of force, whose orientation in the vicinity of the living structure characterizes the interaction between the latter and the external electric medium.

2. Electrography through Electroluminescence

Electrography through electroluminescence is based on the luminescent ionization effect in the separation level of two different electric media.

The use of electroluminescence in biological scanning is attributed to E. Navratil,

(1886), J. Narkiewich (1898), Jan Sdhlemmer, S. Prat (1920) and V./S.D. Kirlian (1939). All these authors use the scanning of living organisms by means of high frequency current at very high voltage.

The biological photography in electroluminescence is known in three versions of different techniques.

a. Kirlian Photography

Kirlian photography is the method, introduced into the scientific world by biological electric scanning. The researches of the Soviet authors in this area are impressive. Kirlian photography uses the scanning of living organisms in the electromagnetic field, by which electrical currents are produced with radio-frequency and very high voltage range.

Fig. 2 Kirlian finger photography

The picture is produced by the the illumination of some ionization micro-canals in dielectric compartment, by which the light shines on the boundaries of separation between the biological electrical medium and the external electric medium.

Around the exposed organisms appears a comparatively homogeneous discharge of the applied skin effect type (border aura). The presence of the ionization channels transmits the presence of areas of normal electrical resistance of the medium, which exist both in the vicinity of the organism (proximal electric medium) and inside the same.

Kirlian photography proved to be very important for the scanning of living organisms and their limit of separation from the environment[2].

b. Electronography

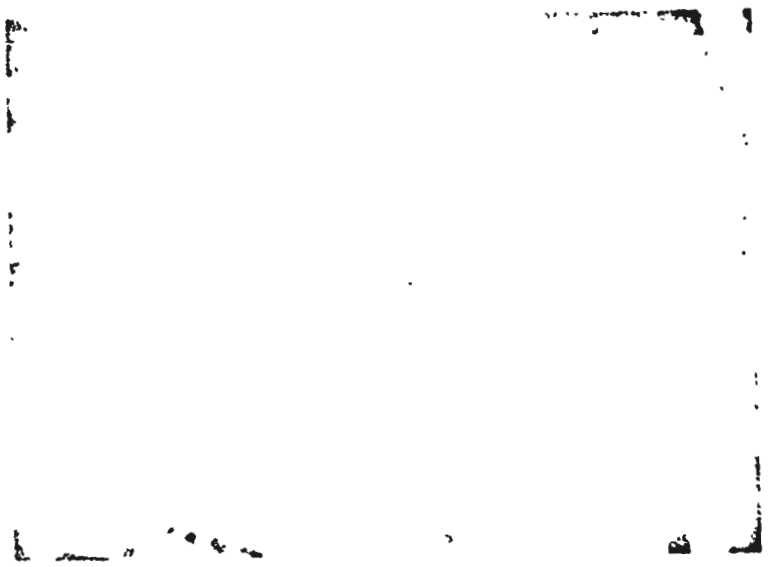

Fig. 3 Electrography of the human abdomen. The picture was obtained by TV current technique

Electronography is a version of electrography which was carried out by means of electroluminescence, in which the required transition media of the electron flux are inhomogeneous, but compact (without air layer). The propagation of the electron flux is undirected in these methods and only very short (single pulse).

Electronography is a new method (Dumitrescu and his team 1975), characterized by three basic elements:

--quantization of the electron emission

--differentiation of the free electrons in the magnetic field produced

--differentiated scintillation with determination of the energies of the accelerated particles through their conversion into a proportional luminous flux.

The electronographic technique uses single oscillations with polarity, amplitude, increase of pulse and controlled energy. The order of magnitude of the voltages is the one producing the 'explosive potential' under impedance conditions of the electric circuit current used.

The electronographic picture is characterized by three aspects, each of which may be predominant according to the chosen technique.

--The skin aspect or the basic edge discharge aspect, which may produce the characteristic aura in summation a successive trait as happens in the Kirlian technique.

--The electromorphic aspect is produced by the electromagnetic field distribution of the very high voltage pulses within the conductor volume, given by the living organism.

--The aspect of the surrounding electric medium (corresponding ion layer, free air ions, and other luminous emissions).

The electronographic technique satisfies the basic conditions imposed and is therefore very different from the Kirlian technology. Like Kirlian photography, electronography belongs to the large group of electrographic possibilities by means of the electroluminescence effects.

c. Microelectronography

Pictures with electroluminescence on cellular plane were obtained for the first time in 1975 (Dumitrescu, Portocola, Herivan).

Fig. 4 Microelectronography of fibroplastic cells

The microelectronographic technique which is even more precise than the technique of electronography consists in placing of biological cells in monomolecular layers in an electromagnetic field, produced at a critical amplitude of single pulse trains. The electroluminescence on cellular plane is recorded with a photosensitive emulsion. which is then magnified, tested, and stored by means of an optical or electron optical device.

The microelectronographic picture is obtained by the black-and-white-technique and the natural color technique or converted into conventional colors to increase the contrast.

This method is applied abundantly in the study of cells, the tissue, and genetics.

). Electrography through Electrostatic Polarization Effect

Fig. 5a: Electrography through electrostatic polarization of a leaf with positive polarity

Electrography through electrostatic polarization effect employs the electrostatic discharge effect of electrical and semi-conductor materials, to which is added further a small-grained pigment which is discharged on a paper with optical contrast. This method was developed and published in 1975 (Dumitrescu and Celan). The very high

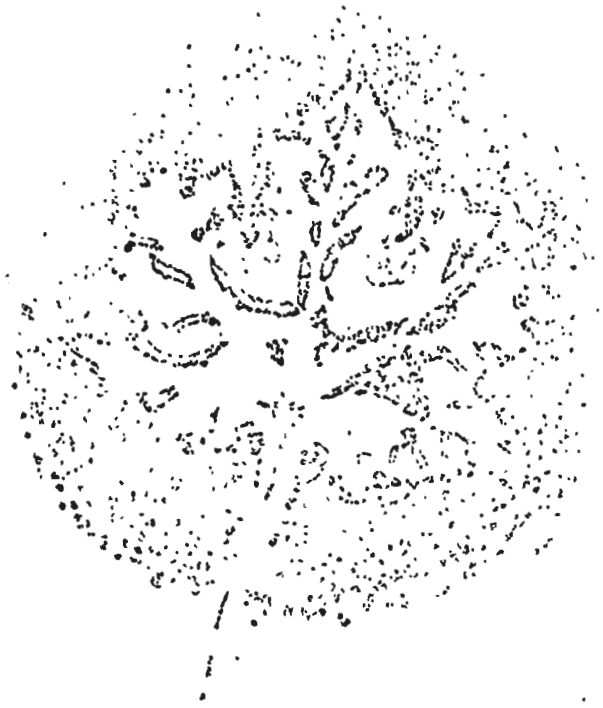

Fig 5b: Electrography through electrostatic polarization of a leaf with negative polarity

voltage induces individual monopolar oscillations, corresponding to the electronographic technique. The electrographic principle was applied in the reproduction of electronographic pictures with electrostatic discharges.

4. Electrography through the Blocking Effect of the Secondary Luminous Emission

The blocking of the stimulated luminous emission through an electron flux is a recently discovered phenomenon (Dumitrescu, 1976). It is opposed to the luminous emission of the electroluminescent discharge form. The method employs extinction of a phosphorescent screen, which was previously excited by light or other methods in the area of the cells in which an electron flux produced by living organisms, bombards the excited screen. The picture in the 'dark' reproduces, like the electroluminescent picture, the electrical characteristics of the living organism and is therefore able to uncover anomalies in the passage of areas of different luminous intensity.

Fig. 6 Electrography through blocking of the secondary luminous emission of the human hand

5. Electrography through Thermal Effects

Fig. 7: Thermoelectrography of the human hand

Electrography through thermal effects makes use of the thermal effect in high voltage discharges through the living organism, so that they represent another possibility of electrical investigation of the organism.

These high voltage discharges are recorded with special thermographic devices, with liquid crystal layers with standardized color rotation or they are fixed by means of thermovision circuits. We tested this recently by means of electrographic scanning and it is another method, different in concept and effect from the wellknown photographic Kirlian technique.

6. Summary

We attempted in this initial introduction into electrographic technique, to determine the place of electronography within the biological electrographic techniques. Electrography is a completely new scientific area with great possibilities for the scanning of living organism, especially the human organism.

This classification, which takes into consideration the principles of the electric current and not the qualities of the electrical sources and the recording of the picture is considered by us totally justified. It will cause a real advance in the practical application of the methods presented.

We should not disregard the fact, that any method, however perfect it may appear on the basis of the results, must not be equated to scientific truth, which is to be found on its fundamental principles and which has many forms of development.

We are convinced, that the electrographic principles when they are established, will lead in future to different versions, just as electrography is directly related to high frequency photography. We believe that of all the methods tested, electrography has furnished us with the most surprising results with immediate possibilities of adjustment.

If the chronological aspects in the development of electrography are considered as science, we consider it necessary to indicate, that most of the techniques presented represent original works, covered by patents and publications[3].

Type of Electrography	Version	Authors Years of Publication	General characteristics
1. Electrography through heavy motor effect	Klydonographic Techniques	Lichtenberg 1777	Microparticle wandering and orientation in electro-magnetic field.
	Biological Scanning Technique	Dumitrescu 1976	Microparticle wandering and Orientation under the effect of the electromagnetic field by high-voltage currents on the border of life possibility of organisms.
	Kirlian Photography	Kirlian 1939	Biological electroluminescence phenomenon on the boundary separating electric media.
2. Electrography through electroluminescence	Electronography	Dumitrescu and Mitarbeiter, 1975	Quantization of electron emission Electron field differentiation Differentiated scintillation
	Microelectronography	Dumitrescu and Mitarbeiter, 1975	Electroluminescence in the cellular and tissue area.
		Dumitrescu and Celan, 1975	Electrostatic charge of a semiconductor plate.
3. Electrography through electrostatic polarization		Dumitrescu and Celan, 1975	Electrostatic charge of semiconductor plate.
4. Electrography through blocking of secondary luminous emission		Dumitrescu, 1976	Blocking of phosphorescence emission by eigen electron emission

Type of Electro-graphy	Version	Publication	General characteristics
5. Elect-tography through thermal effect	Dumitrescu 1976		Conversion of thermal effect of discharges into very high voltages

Characteristics of Voltage	Characteristics of Recording Techniques	Graphics Effects	Areas of Application
High and very high voltage, alternating and direct voltage pulses	Wandering of free powder under discharge electrons	Differentiation of lines of force between electrodes Black- and white or color particle technique	High Voltage Electronics
Very high Voltage Direct voltage pulses	Wandering of microparticles of known qualities in a condenser	Differentiation of lines of force around the biological medium Black and White or microparticle technique	Biological field scanning
Very high Voltage Radio Frequency	Ionization channels forming a condenser	Edge luminous discharges on the border of separation of the medium presented Black and White or color technique	Biological Research Scanning of Bioelectric Surface Phenomena
Very high Voltage Monopolar single pulses (+ or -)	Condenser Screen with a certain Dielectric and Scintillator	Basic edge discharge (skin effect) Volume distribution effect of electromagnetic field (electromorphic effect) Ionization effect of surrounding electric medium Black-White and color technique	Scanning of bioelectric surface phenomena Electrofunctional diagnosis Bioelectrical and industrial research
Very high Voltages Pulse trains (+ or -)	Monmolecular Indicator layers of a tissue covered by a photosensitive emulsion	Photo sensitive Emulsion Impression in Microscopic size Black-white and conventional color technique	Cell Research

Characteristics of Voltage	Characteristics of Recording Techniques	Graphics Effects	Areas of Application
High and very high voltages Monopolar single pulses (+ or -)	Dielectric screen with polarizing semiconductor layer	Contrast picture with electronographic qualities Black- and white technique	Experimental Stage
High and very high voltages Sinusoidal or pulsating currents	Phosphore condenser screen with secondary emission	Black picture with absorp- depending on the electrical properties of the organism Black-and-white technique	Experimental Stage
Very high voltage Low and high frequency Sinusoidal or pulsating currents	Condenser screen with thermal sensors (liquid crystal) or by thermal radiation	Picture with tone graduation Black-and-White or conventional color technique	Experimental Stage

Footnotes

1. H.S. Dankin High-Voltage Photography Dankin, May, 1975; R. Feynmann-Modern Physics Bucarest: Tehnica 1969; R. Titeica/I. Popescu, General Physics Bucharest: Tehnica 1975-76 Vol II and III.

2. S.D./V. Kirlian Photography and Visual Obeervations by means of High Frequency Currents J. of Sc. a. Appl. Photography 6, 1961; St. Krippner/R. Dubin Galaxies of Life New York: Interfaces 1973; The same authors : The Energies of Consciousness, New York : Interfaces, 1975

3. L. F. Dumitrescu Omul si Mediul Electric. Bucharest Sciintifica si Enciclopedica 1976 The same author, Romanian Patent Nr 83 440; the same, Romanian Patent Nr. 82 222, 1975 the same, Romanian Patent Nr 88 263, 1976 ; the same Romanian Patent Nr. 87.384; I.F. Dumitrescu/E. Bujor/M. Bibis, Romanian Patent No. 87.610, 1976.

APPLICATION OF MYOTRANSFER AND TRANSFACILITATION IN MEDICINE

J. Bradna

Abstract: The author discusses the possibility of making use of energy processes, accompanying muscular activity of the therapist, inducing an acceleration of the rehabilitation process of the patient. Between the therapist and the patient an energy distance interaction occurs, which the author calls myotransfer and transfacilitation. On the basis of numerous cases, the author demonstrates that the new rehabilitation aid method is justified.

The development of bioelectronics /1/ makes it possible, together with the development of psychotronics /2/, to follow the remote contacts between organisms, to render objective some older observations, and thus implement their practical application, for example in medicine. In the greater phenomenon field, the healing magnetization applied recently particularly by F. Messner is concerned, and not for the least. In this connection not only the effect of suggestion, but also possible effects of the magnetic field, the effect of the bioelectric potentials or the bioelectric plasma /3/ on the diseased organs should be analyzed.

We drew attention to the effects of magnetism and of the artificial electromagnetic field in the objective following of the variations in the muscle tone under the effect of the Japanese magnetic armbands and in the remote action of the kilo-and megacycle alternating current frequencies on the muscles of man and animals /4/. We established occasionally a healing reduction of muscular tension after carrying the magnetic armbands, but we also called attention to the possibly harmful effect. Considered from the therapeutic point of view, the high frequency field (apart from the thermal effects) affects the human organism particularly by increasing the muscle irritability and the nerve excitation conduction /5/. But it also affects the muscle tone /6/ and the central nervous system./7/

These effects are just as important for the explanation of the interaction further observed between the muscles of two individuals in myotransfer and healing transfacilitation.

Facilitation methods and techniques are part of modern rehabilitation, especially in the treatment of nervous disorders and muscular diseases. They utilize simple and

complex tendon and periostal reflexes up to neck reflexes /8/. They also take into consideration the ontogenetic development of standing and walking in man. Up to now, however, the remote influencing of the concerned muscles and body segments through the effect of the muscular bioactivity of the physiotherapist was not taken into consideration. In studying the remote action of water and metals on the water diviners, we established that the muscles turning the divining rod were also affected by the muscular activity of a person located in the vicinity of the water diviner /10/. By measuring the muscular tension and by electrography, we established a remote effect of the activated muscles of the agent on the muscular tone of the recipient, and called this phenomenon energy myotransfer. We already demonstrated in 1942 this remote action in Prof. Vondratschek's Department /11/. We proved experimentally myotransfer on a neuromuscular frog muscle preparation.

1. Experimental Setup

Fig. 1a--neuro-muscle preparation (of a frog) A--agent, R--recipient; agent stimulated by electric pulse

A neuromuscular frog preparation (A = agent) was stimulated electrically (10.0 pulse.sec; 10.0 ms 0.5 V). It was placed on an isolated plate. Another neuromuscular preparation (R = recipient) was isolated at a distance of 2-5 cm. Both muscle preparations were connected by electromyograph canals. After the stimulation of the nerve of preparation A and the muscular twitching after a short latency time a twitching was also observed in the preparation R (Fig. 1). In the tetanic stimulation of the agent A, a tetanic long-lasting contraction occurred in the recipient R. When the recipient was shielded from the agent by a metal screen, myotransfer stopped. The experiment was carried out

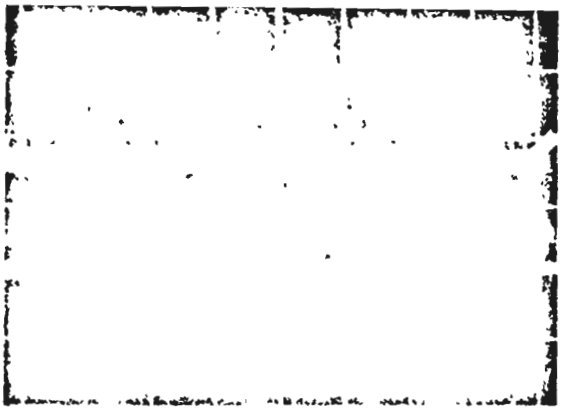

Fig. 1b The electromyographic recording reveals synchronization between agent and recipient

on a series of preparations. Myotransfer was also visible in a direct muscle stimulation of the agent.

Similar experiments were alsc carried out on man. We observed /12/ (Emr, Bradna, Pat. Nr. 11 8558) the muscle tone occurring through myotransfer on the flexors and extensors of the forearm in the muscular activity of the agent. As control method we applied electromyography. In the muscular activity of the agent we find a synchronous increase in tension of the recipient's corresponding muscle (Table 1). Contrary to this are the antagonistic muscles in the recipient are attenuated in the recipient's corresponding muscle group. Sometimes there was also a movement in the corresponding muscle group in transfacilitation, as we called the healing use of myotransfer.

Table 1 Effect of myotransfer on normal muscles (140 patients) (muscle tension in N = Newtons)

Flexors	Forearm	Before	After myotransfer
	Rest	19	29 N
	Action	31	53 N

2. Results

To activate the muscle, injused after an accident, of the (female) patient V.J. (21 years old), we first used the synchronous activation of the leg muscles of twins, on which we followed myotransfer. There was in their case a surprising consistency in the forms of movement in a rapid suquence of movements carried out on order, during which neither could see the other. For muscular contraction also, the twins showed a consistent variation of the curve of duration of the tonic muscular activity. In the

patient as a result of long immobilization in plaster, the Quadriceps femoris was injured and rehabilitation by means of current rehabilitation techniques were unsuccessful. Already after the first transfacilitation (leg extension at the twins' knee) in the patient sitting nearby, there was a spontaneous movement of the knee, which extended completely the tonized muscle and held for 2 minutes. This result was a lasting one. The walking improved and the muscle was further strengthened.

We observed a similar result in the patient S. (22 years old) who after jumping into water had sustained injury in all 4 limbs through an injury to the spine and bone marrow. He was given a rehabilitation treatment for half a year with the current facilitation techniques without visible success. He was unable to stretch the upper limbs sideways, and could not move his fingers. After the first facilitation using the Jendrassik trick of the agent (the entwined fingers were pressed together with intensive contraction of all the muscles of the upper limbs), the patient suddenly extended both arms sideways. The electromyographic activity as well as muscle tone increased and further movements of fingers and hands occurred. The result was also a lasting one.

Similar results were also obtained in 143 patients (Table 2)

Table 2: Effect of transfacilitation on the tone of the paretic leg musculature (m. tib. ant.--143 patients)

	before	after transf. with Al filter	after transf.
Rest	20	19	29 N
Action	30	26	40 N

In brain injuries we also observed favorable results of transfacilitation. In the (female) patient Z (22 years old), injuries occurred in the knee after an aneurismatically induced encephalorrhagia. After the first transfacilitation, movements were possible, the tone as well as the duration of the muscle tone improved. After 10 myotransfers, the mobility was good, finger and leg movements could be performed, the walking improved (Table 3).

When we summarize the results of treatment of this first group of patients in the Kladruby Rehabilitation Center, we find a considerable improvement both of muscular

activity as well as the objectively followed parameters, i.e., the muscle tone in electrography. We are dealing with patients with disorders of the peripheral neuron and nerves as well as the ones with central brain injury.

Table 3: Effect of transfacilitation on the duration of the tone in a paresis (m. tibialis in central hemiplegia, condition after the operation aneurysmata cerebri, Pat. Z., 22 years old)

Rest	Action				120 sec		
0	0	30	60	90			
25	30	27	-	-	-	N	before
28	31	30	28	27	-	N	after 1 transf.
23	40	37	36	35	30	N	after 10 transfaciliitations

In restoring the muscular activity, not only the resting and the active muscle tone and the electromyographic activity are increased, but inherent myotransfer of the muscles concerned is also increased. We already indicated earlier, that in the muscular **activity** of the agent, it is possible to register an increase in muscular tension and in the electromyographic activity of the small arm muscles.

Another criterion of myotransfer results was the angular extent of the active, goniomerically followed movements /13/

In the second group we studied 100 patients of the Ambulant and Bed Department of the People's District Hygiene Center in Kutna Hora and Tchaslaw.

With respect to the location of the disease and the difference related therewith of the transfacilitation technique, we divided the patients into diseases of paresis to plegia of the upper and lower limbs, into disorders of cheek nerve and mimic musculature, in speech disorders and disorders of the speech muscles.

The upper limbs were affected by peripheral and central paresis to plegias with immobility, limited mobility, or moderate spasticity. In total injuries it was possible even a long time after the occurrence and unsuccessful conventional rehabilitation, to restore gradually muscular activity by transfacilitation. An example is that of the patient T (30 years old) with totally paralyzed arm and minimal mobility of the elbow after a trauma of the left shoulder and disease of the Plexus brachialis. After the

rehabilitation in the Clinic, the joints and contractions relaxed, paresis remained, however, After the first transfacilitation, there was a movement in the finger flexors, the action tone in the extensors increased; the flexion in the elbows improved. After a series of myotransfers, with further conventional treatment, he bent his finger, extended it partly sideways, and was able to bend the elbow well. The electromyographic activity and muscular tone had coordinated well.

In central spastic paralysis the extent of the movements as well as the muscle strength was improved. In the patient P.J. (74 years) we shielded before transfacilitation the nerve trunks, the spine and the head with an aluminum foil, and yet there was some success.

To restore flexion activity, the muscle flexors of the upper limbs of the agent (physiotherapist) were freely activated, specifically by bending of the fingers into a fist , sometimes also the wrist and the whole arm. To activate extension, stretching was performed of the fingers with the extensors. In the first extension of total paralysis we employed the clenching of the fist; to improve the paralyzed small arm musculature we activated the fingers up to stretching and spreading apart. For the tonic muscles, we used an activation of longer duration and proceeded in a similar manner with phasic and rhythmic contractions /14/.

In the case of brain damages with mental diseases after transfacilitation, movements occurred sometimes, but a further use of movements was restricted by apraxia. (Patient Z., 50 years old, with the diagnosis Tumor cerebri).

On the whole, the results obtained by transfacilitation gave progress in the mobility of the limbs and fingers, improvement in the hand's grasping power, as well as the restoration of the mobility of the wrist, elbow, and shoulder (Table 4).

Table 4: Effect of transfacilitation on muscle tone in limb paresis

	upper limbs		flexors		extensors		lower limbs		
	rest	action	rest	action	rest	action	rest	action	
before	21	24	20	25	24	32	26	33	N
after transf.	26	35	24	33	24	40	27	42	N
angle gain of extent of active movement	24		32		25		-Gr.		

Fig. 2 Type of myotransfer. The rehabilitator activates the finger flexors and thus affects the paralyzed toe flexors

In the lower limbs, the diseased muscles responded to transfacilitation, insofar as they were not completely transformed into connective tissue. First of all, the muscle tone improved, then small and gradually greater movements became possible. Sometimes the muscular activity was obtained in a full extent already after 3-4 myotransfers, for example in the case of the patient (female) CH.H (18 years old), who had fallen into a well 14 m deep. As the result of a thigh-bone fracture after neurolysis, she suffered from peroneal and femoral paralysis. Already after the first transfacilitation, she bent the paralysed toes, and moved the leg at the knee.

Next came a 14-year old patient with hemiparesis after an automobile accident. After the first myotransfer, she bent the paralyzed leg at the knee and smiled with the paralyzed cheek. Likewise the 8-year old L. who after an automobile accident suffered from paresis of the left arm and leg, showed after an 11 month rehabilitation treatment, immediately an improvement in the finger mobility and after transfacilitations, significant improvement in the limbs. We had used here the muscles of the parents in the treatment for the effective activation of the muscles. After instructions, they carried out myotransfer themselves very successfully.

Muscular activation and mobility occurred even with a very old paresis. Thus in the case of the patient H., who suffered from a leg paresis as the result of a bullet, the activity and the tone of the paralyzed tibialis muscle increased.

The hip muscles responded well to transfacilitation and the activation of the hip abductors normalized the stability of the pelvis fast (Fig 4) /15/. This was also the case for other patients. We achieved activation of these muscles in the patient by

Fig. 3 Even after rehabilitation, the cheek of the 14-year old child remains paralyzed, but after the first transfacilitation, it is permanently normalized (Figure on the right)

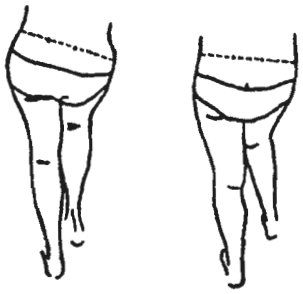

Fig. 4

facilitation as he lay on the side with lasting tone, and his bending the non affected limb when standing up. We activated with clenched fist while approaching the forearm to the abductors and adductors of the hips.

In the patient B (36 years old) with alcohol-induced polyneuritis and tabic paraparesis with total instability of the lower limbs, we activated in stages the principal groups of muscles, so that he was able to stand without a stick. In the course of further treatments, walking was possible with slight support from a cane. The result was lasting.

A 62-year old patient with hemiparesis could not stand on the affected leg, due to the impossibility of fixing the knee. After transfacilitation, the arthrokinetic

fixation reflex (AFR) /16/ of the knee was completely restored, so that the patient was able to go about the room himself.

To treat paresis fibularis we used the forearm extensors, or directly the leg extensors of the physiotherapist. To activate the quadriceps we used the extension of the leg at the knee or the fist and the tensed forearm musculature or also the Jendrassik Trick (see above) by the agent.

Table 5: Effect of transfacilitation on the muscle tone in pareses (Nervus VII, nervus facialis)

	Paretic tone			Non-paretic tone		
	Rest	Action		Rest	Action	
before transf.	16	20	N	18	36	N
after transf.	19	33	N	19	33	N

In the case of peripheral paresis of the cheek nerve (Table 5) after myotransfer, movement was quickly found, or the existing one improved, the rest and action muscle tone as well as the electromyographic activity increased. The undesirable spasms of the cheek nerve no longer occurred and the synkineses in the area of the mimic musculature disappeared. We give as example a 43-year old patient with paresis lasting 10 months. He was treated with injections and exercises, but he was unable to close the eyes by 10 mm, could not smile, nor frown. After the first transfacilitation, he closed his eyes completely, smiled as instructed and frowned. After further transfer, his condition was completely normalized.

A 53 year old patient had been treated unsuccessfully. Even after acupuncture, he could not shut his eyes, which also watered. He squinted slightly. Two transfacilitations allowed him to shut his eyes completely and smile. Already after the first treatment, mobility and tone improved clearly. For the activation we used the myotransfer of the clenched fist and the forearm, to activate the eyelids in ptosis (hanging of the upper lid) the stretched finger. The patient practiced himself at home the myotransfer of the fist, the so-called auto-transfacilitation.

Transfacilitation was unsuccessful in the patient K. (78 years old) whose paresis had lasted one year and who had total paralysis of cheek and eyelid; after a tarsorrhaphy

(suture of the margin of the lid for blepharophmosis). The muscle could be only slightly tonized. Only once, right after myotransfer, she smiled with her mouth, but the effect was never repeated, in spite of intensive myotransfer. However, after one year she could swallow better, and had no difficulty in drinking.

Pareses after the attenuation of the accompanying otogenic inflammatory processes were particularly suitable for transfacilitation. However results were also found in the first week in very fresh pareses. The tone and electromyographic activity, as well as muscle transfer increased.

3. SUmmary

The phenomenon of remote myotransfer, demonstrated on neuromuscular preparations and test animals, is manifested in man by objective change in the muscle tone, and increase in the electric mucular activity, in pareses by restoration or improvement of the extent of movement and of muscular strength. This holds for transfacilitation, i.e., healing myotransfer, where the activated muscles of the physiotherapists act as agents on the paretic muscles of the limbs, the mimic muscles and speech muscles. In this way it is also possible to accelerate the rehabilitation of speech after injuries to the central nervous system. Here the idiomotor myotransfer , i.e., soundless word formation was also applied on the part of the agent.

The improvement of the muscle functions after transfacilitation is also achieved through increase of muscle transfer. Myotransfer is therefore also used in therapy in transfacilitation, in the measurement of the muscle tone, as well as by means of electromyography on the recipient's muscles.

The basic principles of myotransfer are bioenergetic processes of muscular activity with secondary phenomena in the field of electromagnetic waves /17/. Proof of this is the exclusion of myotransfer and transfacilitation through metal filters, through screening, the possibility of conducting the stimulus through oscillation carriers and the recording of myotransfer energy through technical monitors in the area of Megahertz frequencies, possibly to the Giga-hertz /18/. Indirect proof may also be provided by the muscular sensitivity and changes in the muscle tone under the effect of corresponding

frequency of generators. The effect of the constant magnetic field on the muscle tone is also striking. Our study is connected in the experimental respect also with that of Rothlin, who observed the movement of isolated insect intestines in the movement of the beting organs of a spider, which was nearby. His experiments were also confirmed in V. Vasiliev's laboratory /19/. The presence of electromagnetic waves in the organism was already assumed earlier, the high frequencies were established in certain parts of the brain.

Footnotes:

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Scientific Review

Insects and Birds Produce Electric Fields

Until recently it was assumed, that the capacity to induce electric fields and charges was only to be found in certain fish species. The charges occur on the animal body in various ways, particularly through substance exchange, friction, muscular work, among others. This may also explain a sudden reversal of a flock of birds or a swarm of insects in the occurrence of a synchronized electric alternating field.

U. Warnke, Umschau in Wissenschaft und Technik, 75, 479, 1975.

The Electric Field Affects Certain Physical Properties of Matter

Water in the 15 kV direct current field reaches the boiling point twice as fast. An iron rod in this water attained a temperature of 76° in 10 minutes, whereas in the same time in the absence of the electric field it only reached 63°C. The objects also cooled down more slowly in an electric field. If an electrode is placed inside a cylinder, heating occurs faster, and cooling slower. The inflammation of gasoline in a 2 kV electric field is much easier than otherwise. The effect of the electric field decreases the absorption band of water in the infrared area to 4 μ.

Yukichi Asakawa, Nature, 261, 220, 1976.

Reviews

Dubrov, A.P. Geomagnetic Field and Life, Gidrometoizdat, Leningrad, 1974, 175 pp

This little book is one of the few publications in this new field. In spite of the range, the newness and manifold nature of the problems discussed, it is indeed small, but totally accurate, and remaining always on the ground of reality. The author is active in this area, and gives a number of his own results, and detailed information about those of other authors. The exact and extensive bibliography is also very valuable.

It would be very desirable to translate this thin, but very detailed book, so that our readers could also become acquained with these new data, even though modern science does not show any great interest in these facts and even assumes a negative position in this connection. This is based probably on the fact, that there is no explanation for the relations and the principle of such phenomena. However this objection cannot be sustained, since such a lack exist for most of our knowledge (even older) (for example, gravity). On the contrary, it is known, that such extraordinary phenomena contributed to the constitution of new scientific areas.

The book is divided into 4 parts: the first concerns general data on the geomagnetic field (GMF).

The second discusses the effect of GMF on life on the earth.

The third discusses geomagnetobiology of man, animals, and plants.

The fourth explains the relation between the geomagnetic field and the biological effects.

The more detailed contents of the individual parts is the following: The first part describes the basic data on the constant and variable components of the GMF and its dependence on solar activity.

The second part first furnishes a series of relationships between biological events and the variations of the GMF. This is followed by the results of the tests in the attenuated GMF (shielding or compensation from GMF). The tests with artificially induced slow GMF pulsations showed man's high sensitivity towards even slight GMF variations. The rapid variations of the magnetic fields of the technical devices on the other hand have only a slight effect. The GMF variations affect not only the mortality of diseased persons, but even the functions of the organs in healthy people (for instance heart-rate, blood coagulability, number of leucocytes, among others). There is also a parallel effect of solar activity and its periodicity. The data indicated reveal a great significance of GMF for bioclimatology. The effect of GMF variations on some physical and chemical reactions, which may be applied for indication and objectivization, is also interesting.

The third part, dealing with the effects of the GMF, describes the statistically established effects on healthy and ill persons. In healthy subjects, the change in the heart rate and blood pressure during magnetic storms appears as the effect of the GMF on the central nervous system. The GMF also affects the potential of the epidermis. In magnetic storms the number of leucocytes decreases and blood coagulability increases. In ill persons a striking relation is found between their condition and the GMF variations. The statistical evaluation of the effects of the individual bioclimatic factors on the heart-artery injuries shows a significant predominance of the effects of GMF disturbances againstthat of atmospheric pressure and temperature variations, even though these changes are also strikingly parallel. The effects of the GMF on the rest of life in nature is discussed in separate chapters, and specifically for microorganisms and

viruses, insects, birds, fish, and plants.

The fourth part puts forward possible explanations of the mechanisms of the GMF effects on biological objects. We refer here to the possibility of the GMF effect on the molecular plane through the high sensitivity of water (as a predominant component of cells, especially cells of more intensive metabolism) on the magnetic and electromagnetic fields, since the structural changes in water do not require high energies.

We discuss here the role of the biological membrane and the changes in permeability of the latter under the effect of the electromagnetic waves. The effect of the GMF on the ferment activity is also important. Biological objects themselves induce magnetic and electromagnetic fields. Brief information is also furnished here about magnetocardiography and magnetoencephalography. Very weak magnetic fields were also established in plant seeds.

At the end of the book, there are tables concerning the solar rotation, days with low or high GMF variations, days of magnetic storms, international characteristic data on GMF disturbances.

The bibliography contains 647 references, including 360 from the Soviet Union.

Frantisek Boleslav.

TAYLOR, J. Superminds: An Enquiry into Paranormal--London: Macmillan, Ltd, 1975 183 pp 140 fgs, partly in color.

The need of investigating the socalled paranormal phenomena and explaining them has become urgent, when at the beginning of the 70's of our century Uri Geller appeared on the television in some countries. He bent forks, spoons, keys, and other metal objects without touching them and also performed other phenomena already known before, such as telepathy and clairvoyance. John Taylor, Lecturer of Physics and Mathematics who attended the Geller appearances and made with him and a few other persons, especially children, a series of tests, collected much valuable information and wrote the above book about his experience and opinions. In the first 4 chapters, he describes the experience with Uri Geller and others and gives a survey of the development of ASW research. In the next 4 chapters he deals with the known natural energies and attempts to determine through a

thorough analysis what energy is being put to work here. In the 8th Chapter he comes to the conclusion, that this may be the energy of the electromagnetic field. Another explanation might be the socalled Psi-field which is not located in physical time and space, but in other areas. However, the non-physical nature of such a field is hard to understand, when this energy reacts so obviously, and causes the bending of metals. It is also hard to prove, that for this purpose the Psi-field penetrates without disturbance matter and is transformed under favorable conditions, bending spoons and forks. The Psi-field may be the expected fifth interaction of matter but we have up to now no proof of it. The most promising theory remains therefore the electromagnetic one, but here too we have to overcome a few difficulties, for example, in determining the wavelength. Some experiments showed, namely, that the effective frequency may be low, n.e., 5-50 Hz, the required antenna should on the other hand be several times the height of the human body. However this energy may obviously be directed, which is for the rest confirmed also by other tests with growth stimulation of plants and with the electric randomizer. In conclusion, after analyzing these different possibilities, Taylor states, that the electromagnetic theory is the most probable.

In Taylor's book, we learn many interesting facts, which may supplement our knowledge. For example, the Uri-Geller effect was repeated successfully by many children, and in adults almost exclusively by women. In following the TV program, this effect occurred involuntarily in many households, and not only with table utensils, but also with watches, which after many years of being out of action, were automatically started. Taylor's book shows the method to be followed: no imagining bare theories, but comparing of the paranormal phenomena with the contemporary physics, analyzing the possible relationships, and attempting to find an explanation on the basis of the tests performed. The direction of research is indicated today by other researchers also, and many other facts show, that the socalled Psi-energy is nothing other than a certain form of electromagnetic radiation, probably from the microwave category. If we assume therefore, that the human body is an energy generator, accumulator, or transformer--and we have every reason to do so--we can explain a series of other phenomena, especially if we consider the possibility of existence of the socalled paramagnetic nuclear resonance.

Taylor's book is therefore an example, of how such books of this type should be written. Its only defect is perhaps that it contains some superfluous sensational photos.

The way is therefore indicated, and psychotronic research expects zealous work with the help of many other areas of science.

Venceslav Patrovsky