

I. Serov

Concept of universal development and stabilization of helical hypercluster biosystems

The structural and functional unit of any living organism is considered to be the biological cell, which in itself is an extremely complex object. When combined, cells (cytostructure) form the tissues that make up organs, which, in turn, make up physiological systems (circulatory, respiratory, digestive, etc.). The human body is a multi-level "system of systems", united by the performance of various functions. To indicate an entity as complex as a human, we use the term "**hypercomplex system**"¹. We can consider the environment and any natural objects in the same way.

As you know, the universe consists of elementary particles. This hypothesis was first put forward by Democritus in the 4th century BC. However, it was only at the beginning of the 20th century that a new scientific concept — quantum physics — emerged. It studies the processes of the world of elementary particles. In the microworld, all interactions are fundamentally different from the processes occurring in our familiar macrocosm, which is described by the classical physics that rely on systems and objects that can be directly measured. However, nature is unified. Everything that we see, hear and feel is only a partial manifestation of recordable natural processes. Most of them are imperceptible and can be understood only through modeling, by creating approximating algorithms for objective physical reality.

It is appropriate to note that all kinds of radiation, electromagnetic in nature and surrounding us everywhere, are also an "invisible process" of interaction between elementary particles. However, if we but use the requisite physical device capable of registering these phenomena, and a whole world of unique information reveals itself. The question arises—is it possible to control it by deliberately simulating program-dependent structural combinations, without resorting to algorithms that would inevitably incur huge energy costs and, as a result, bring enormous harm to the environment and the human body. Multiple studies in physics, chemistry, biology and medicine have shown that this problem can be solved both in an area of targeted correction of the interactions, and through direct modeling. Here, so-called "super-weak interactions" appear on the scene, using energy not from external sources, but from the elementary particles themselves. Moreover, there arises a process of self-organization that is characteristic of both living and non-living Nature.

The paradox of the phenomenon of "super-weak interactions" is that an impulse with an seemingly

¹ - not to be confused with a similar term used in algebra

entirely insignificant amplitude causes extensive reactions of various systems, whose scale exceed the potential of the "stimulus" by several orders of magnitude. The effect of such interactions is enormous, but the most characteristic feature is that it is impossible to provoke similar reactions using the standard (according to traditional stereotypes) "input (power) energy to result" ratio. From this perspective, it should be remembered that the energy of an electromagnetic wave is proportional to the value of its frequency squared. Thus, a microwave impulse with a seemingly very small amplitude carries a huge potential.

Thus, it can be argued that the efficiency and, consequently, the consistency of the programmatically-organizing submodules of a "super-weak" signal tends to the maximum value, in contrast to a "strong" or "super-strong" pulse, meaning that level the entropy of such a programmatically-oriented, high-coherence signal should tend toward the minimum. This scenario requires not only adequate semantic programming of the whole process, but also the maximum possible consistency of the "amplitude - wavelength - phase and interaction vector" system of each individual wave pulse involved in the program. It should be noted that only an unambiguous solution meets this condition, and it is determined by the parameter that represents the primary function, whether it is the amplitude, wavelength, phase or polarization vector of the energy-information pulse.

In this case, the values of the structural components of the signal become optimal and maximally harmonized, i.e. coherent. An attempt to deliberately change any of the signal parameters (amplitude, wavelength, phase or interaction vector) will certainly cause a reaction in all the others. As a result, there will be "side-effect" frequency modulations derived from this action that have no relation to the semantic orientation of the modeled process and, in fact, disrespect it, sharply increasing the level intrastructural entropy of the useful signal. Thus, increasing the amplitude (power) of a pulse that has specific parameters provokes a shift in its frequency and phase with the emergence of new polarization vectors and additional frequency submodulations (superpositions), not stipulated by the program, that bring into the process the electromagnetic emissions of the environment, which generally carry a spontaneous set of inherent structural components, and therefore, initiate a surge in the entropy of the simulated signal with a manifold decrease in the consistency of the program-generated process. Naturally, the quality of the final performance of the previously encountered "program-object" interaction will tend to the minimum, and the reaction's unintended, side-effect activity will tend to the maximum. Thus, the stereotypical "the stronger, the better" attitude can lead to a massive disintegration of the object, and not to its programmatically-oriented correction, which is adequate only from the standpoint of a coherently organized process control signal whose power is a strictly dependent unit from a frequency (wavelength), phase, or interaction vector function taken by directive.

The human body is a hypercomplex biological cluster and a unique natural self-organizing system. The complexity of its multi-level helical construction is such that modern classical medicine in most cases

is not able to build an adequate algorithm for stabilizing even its purely peripheral areas. However, the following should be noted. It is impossible to isolate even one thought or feeling generated by human consciousness that would not directly or indirectly affect the physiological state, meaning that it is impossible to separate the perceived information from physiology and psychology or any other sphere of human activity from global environmental processes, which, in turn, is electromagnetic in nature. The memory of stresses, which is only a virtual information model of a person's subjective response to a stimulus, causes the same destructive overloading of the bioform as the negative influence itself. Still, many years of scientific experience shows that the process of structural destabilization of a biosystem is not constant, and its nature can be changed, accelerated, slowed down, stopped for a while and even reversed. This phenomenon is explained by the fact that the very uncertainty that characterizes the wave processes of the opposing interaction of many billions of cellular and subcellular formations generating electromagnetic impulses in the widest frequency range opens up additional possibilities to control any physiological process from a variety of positions and in different directions.

Let us consider some questions about the structure of matter, which is known to consist of atoms. According to modern scientific concepts, an atom is a complex structure consisting of a nucleus and electron shells. In general, the structure is electrically neutral. According to the basic tenets of quantum mechanics, the behavior of any electron is completely described by a wave function ψ and, thus, it is a pure wave structure. A powerful branch of nanotechnology — tunneling probe technology — relies on an electron's wave properties, and there is no reason to question the wave nature of an electron.

Consider the size of an atom. The linear size of an atom (the electron cloud) is 10^{-8} cm with a corresponding atom volume of 10^{-24} cm³, while the linear size of the nucleus is approximately 10^{-13} cm with a volume of 10^{-39} cm³. The difference in the volume of the nucleus and the entire atom is 15 orders of magnitude.

Let us now consider the organization of any physical body, whether it be crystalline in nature or amorphous. In order for a rigid structure to exist there must be a balance between the forces of attraction and repulsion between the atoms that make up the structure. At the present stage of scientific progress, 4 types of interaction are known: molecular, ionic, covalent, and metallic. All of them are formed by the opposing interaction (resonance) of the outer, valence electrons of the atom, that is, by the interaction of wave structures. However, the outer valence electrons are also responsible for the action of the repulsion forces. According to one of the fundamental postulates of quantum mechanics, the Pauli principle, two elementary particles with the same set of quantum numbers cannot be in the same space (point). Because atoms and electrons of the same element are statistically identical, when atoms approach one another and the outer electron shells overlap, as a consequence of the Pauli principle the electron levels are separated in proportion to the forces of repulsion.

The occurrence of balance between the forces of attraction and repulsion leads to the atom acting as a harmonic oscillator under the influence of these forces, while any physical structure can be thought of as a spatially-distributed system of harmonic oscillators. That is, a system that has a certain band of wave oscillations (superpositions), despite the separate wave structures that it consists of.

Thus, due to the interaction of the wave structures of valence electrons, processes of self-organization of atoms into ordered spatial structures occur, since as a result of the complex processes of interaction, it is the wave structures that are prone to self-organization and resonant stabilization. If a structure is understood to mean any matter—a complex hierarchical system organized according to the principles of self-similarity—then any biological structure can be considered as a fractal-cluster hypercomplex open system.

As a result, it can be argued that any mismatched interaction or system defect (conflict) is a violation of the regular wave structure formed during synthesis of the corresponding hypercomplex system.

Of course, each material body is a highly consistent multilevel macrocluster wave system, formed as a result of the interaction of the subwave structures of the atoms (oscillators) it consists of, based on the principle of the fractal reversal of the basic prototype of a crystalline lattice.

As is known, a special distinguishing feature of the perfect structural composition is minimal intrasystem entropy. But any real communication system, especially a biological system, grows spontaneously according to the opposite principles: the more extensive and complex the system of interconnections, the higher its entropy. Stabilization of such a system can only be achieved by deliberately reducing the level of entropy as a result of an increase in the conformity factor of the fractal projections of its basic prototype. Thus, the process of structural improvement of any hypercomplex system will be unambiguously associated with an increase in the level of intrastructural harmonization. And conversely, destabilization of a structurally dependent complex will be accompanied by a stepwise increase in entropy (quantum process), and when this reaches a certain critical barrier it will cause a collapse of the object and total destruction of the object right up to the elementary particles. As a result, the coefficient of structural conformity of the materialization prototype and level the resulting entropy will always be a qualitative measure of the structural perfection of any hypercomplex system. In turn, the possibility of a stable state (adaptation) in a non-elementary system as a result of interaction with an arbitrary environment will directly depend on the structural perfection of the fractally-dependent reversal of its basic prototype.

Thus, real evolution, as a factor without alternatives in the objective development of the helical hypercluster human biosystem, is bound, along with broadening perception and deepening analytical capabilities, to initiate the process of the bioform's structural improvement, which is accompanied by a natural increase in the function of multi-level self-regulation and a pronounced decrease in intrasystem entropy, which turn will greatly increase the adaptive capacity of the body.

Consequently, the evolutionary age of a truly developing bioform determines the duration of many successive corrective modifications that stabilize and harmonize the reciprocal exchange processes of life and improve the self-regulation and adaptive capabilities of an object moving toward the absolute fractally-dependent structural perfection of its hypercluster system. Thus, the process of a person's objective development determines the movement from the initial stage of the spontaneous synthesis of the bioform as a result of the reversal of the helical prototype of a genetically programmed chain reaction. As part of the ever-changing nature of the environment's electromagnetic radiation, the three-level helical genetic base is unable to synthesize a structurally impeccable fractally-developed hypercomplex system of reciprocal exchange interactions, turning into a hypercluster complex consisting of a set of structurally independent subforms.

If we analyze the "successes" of modern civilization that proudly declares its technological achievements, it is obvious that every technology created over the course of thousand years belongs to only one semantic concept - the disintegration of energy carriers and the blocking the impact of the environment on the human body. Not the optimization and development of their own adaptive capabilities, but the creation of all kinds of protective devices that actively block the effects of the environment and make the bioform a system that is conditionally "closed" to the environment. As a result, the adaptive capabilities of the body begin to degrade, intrasystem self-regulation starts to fall, and the level of intrastructural entropy begins to increase. In this case, a subjectivized dependence on artificial protective devices is created by direction. Without these devices, the object is doomed to complete disintegration and destruction. As a result, any failures or accidents of technogenic means of life-support cause mass destruction of representatives of this biological species that are no longer capable of elementary adaptive actions. Naturally, any geophysical phenomena that go beyond the average statistical parameters easily overcome primitive means of technical protection, condemning to death people who have lost the ability to adaptively self-regulate due to artificially caused degradation. Thus, this civilization's process of the so-called "development" cannot be called evolutionary at all. There is a typical unsystematic "growth" of the superposition of the helical structural components of a spontaneously formed social and communication cluster complex. Local "super specialization" and "entanglement" of society's repeatedly multiplied segments, which prevent the systemic and social integration of society, are actively provoking a general disintegration of society, despite the pronounced expansion of the perceptive range of a wide variety of information categories. Moreover, the repeated decrease in the regulatory potential of the bioform, the efficiency of the self-regulation system and, finally, the sharp increase in the level of intrasystem conflicts, which makes the "perception - analysis - reaction" complex extremely inadequate, especially in the work of the CNS, are not fundamentally incompatible with the true concept of the evolution of a biological helical hypercluster system.

In turn, the environment can be considered as a more global hypercomplex system relative to its own entity: the biological organism. As a result, the background radiation of the environment will be either a stabilizing or destabilizing factor for any object. The range of the degree of coherence and the structural composition of this radiation will determine the direction and nature of the process.

Thus, the quality of the state of geophysical background activity will have a stabilizing or destabilizing effect on each open hypercluster biosystem, either contributing to its structural improvement, or initiating the disintegration process.

Accordingly, every object that actually exists in nature is deeply connected with its environment by multiple electromagnetic structural relationships and their derivative modifications (superpositions), even if it lacks the slightest notion that this is the case. But if this dependence is not realized and the need for intersystem "object-environment" correlation is also deliberately ignored, then the gross inadequacy thus initiated will periodically give rise to stress dissonance of the object's internal structural interactions with respect to the environment, thereby determining its evolutionary failure.

At present, this situation has become even more strained, as the targeted use of electromagnetic energy in all kinds of areas of human life has resulting in the addition of an artificial electromagnetic field to the existing electric and magnetic fields of the Earth, atmospheric electricity, and radio emissions from the Sun and the Galaxy. A huge impact on the biological organism is exerted by man-made components of background radiation, the activity of which already significantly exceeds the level of the natural electromagnetic background. It should be noted here that natural radiation is in its nature very harmoniously correlated, because millions of years of self-regulation has produced a rather high degree of harmonization and thus an acceptable coherence level, but technogenic radiation is characterized by phase chaos, a large variety of amplitudes, frequency bands, polarization vectors, and, consequently, high entropy. All this cannot help but have a destabilizing effect on the intrastructural processes of biological systems, which are extremely sensitive to electromagnetic radiation in a wide frequency range.

Also relevant today are the processes directly related to the violation of the intrasystem correlation of the geophysical state of a planet, which are caused by a large-scale environmental crisis at almost every level of its structural hierarchy. Certainly, this process is provoked by society's aggressive life activities whose founding philosophy is the greedy disintegration of the environment.

Naturally, this situation requires the creation of a radically new strategy for deliberately stabilizing the environment, both at the scale of an individual person and the planet's entire society. Active technical "progress", which is essentially only a primitive interpretation of fundamental natural processes, has led to a large-scale degradation of internal adaptive functions and loss of the genetic potential that provided deep self-regulation during the initial synthesis of the bioform. Multiple structural discrepancies, which are manifested in the reversal of the individual helical genetic DNA matrix, form categories of reciprocal

exchange interaction that are unnatural and chaotically "entangled" after the third helical level. All this provokes a loss of objectivity in the body's perception, analysis, and response to the environment's wave impulses, initiating inadequate adaptive activity, thereby determining the individual's fundamental inability to achieve high-quality creative realization in these conditions.

Unfortunately, the inability of medicine, which at the current stage of civilization's development is one of the most important technological elements for ensuring a stable society, to be integrated into the new social and geophysical conditions is obvious. The vast majority of superficial methodologies proposed by traditional therapy, the overwhelming majority of them, do not produce satisfactory results in solving the simplest problems, and the widespread emergence of severe pathologies is the clearest confirmation of the failure of the conceptual principles being applied.

As it is known, a biological organism functions as an information exchange system consisting of a set of active components that are electromagnetic in nature, each of which reacts to a particular signal with its own resonance. Obviously, achieving multi-level harmonization that tends to an infinite number (*more than* 10^{20}) of reciprocal exchange reactions, again—electromagnetic in nature, requires a deep corrective modification of the helical structural foundation of the hypercluster bioform, which differentiates the its peripheral relationships' numerous inconsistencies in the synthesis process.

This begs the question: how do we adjust the structure of matter to minimize defects and non-uniformity? It would seem that such a result can be achieved by a powerful energetic influence on the atoms of an object—using a concentrated mechanical load, chemical reactions, an ion flow, a powerful electric field, and X-ray, laser, or microwave radiation. But, unfortunately, all these methods lead to a spontaneous change in the structure, composition and properties of matter, with subsequent arbitrarily occurring non-linear restructuring processes not subject to targeted program-dependent regulation.

Since all matter has an electromagnetic nature represented by a wave structure, it makes the most sense for targeted program-dependent corrective action on that matter to take advantage of the phenomenon of controlled resonance with the more ordered wave structure of a highly coherent control field of a similar type covering the corresponding frequency range. The resonant frequency of the interaction can be easily determined from the corresponding absorption peaks and the polarization diagram of the resulting response.

However, exposure to an EM field of the necessary resonant frequency, unfortunately, will not lead to the harmonization and self-regulation of the physical structure. The informational structure of the corrective field must be suited to the object being corrected. Resonant interaction will only lead to an unordered discharge or absorption of energy and spontaneously chaotic structuring, which is unacceptable for any type of hypercluster bioform. Frequency or phase structuring of the EM field also does not make it possible to achieve the desired result. In the end, the only adequate solution is use of the inherent spatially

restructured EM field that fractally covers the object's entire range of electromagnetic radiation.

A material's crystal lattice can be thought of as a certain ordered, periodic field structure. Erwin Schrödinger, Austrian physicist and one of the founders of quantum physics, was the first to express this idea: "I tend to view the entire structure of the crystal lattice as something very related to a de Broglie standing wave. Apparently, the lattice can also be treated in a similar manner; However, such a task is unusually difficult due to the very strong interaction between these waves". From Schrödinger's point of view, any ordered material structure *creates a periodic electromagnetic field and is supported by this same field*. Consequently, any deliberate change of this field's structurally dependent parameters will cause a similar correction in the characteristics generating its material structure. As a result, the most adequate agent for targeted restructuring of any type of substance is also a spatially structured electromagnetic field with a special configuration. Thus, to effectively correct an arbitrary material structure, it is necessary to transform its own electromagnetic radiation (superposition) into a highly coherent control field that has a more perfect informational-topological similarity, similar to the structure of the crystal matrix being corrected. Then the whole process of corrective interaction can be imagined as the *reciprocal interaction of field structures or wave function systems*. The result of adequate corrective harmonization of the fields of reciprocal interaction, which determine the fractally arranged hypercomplex field structures of an arbitrary type, will be their large-scale *coherent transformation*.

Widely known in the physics of open systems, *phenomena of resonant interaction of two or more wave functions are always the result of a multi-level harmonization of the electromagnetic pulses involved in this process*. This means that consistent harmonization of the wideband radiation of hypercomplex systems of an arbitrary type, which represents the process of spatio-temporal coherent transformation of amplitudes of the wave range, phases and polarization vectors of the interaction subjects, should lead to a structurally-dependent resonance that dramatically increases the energy potential of the system and radically optimizes the quality of the object's **structural characteristics** in a natural way. Consequently, effective self-regulation of any hypercomplex open system depends entirely on the scale of the resonant interaction of the system's subjects, based on the wideband harmonization of the wave functions involved in this process.

Every variety of crystal structure defining the characteristic features of matter fits into 14 types of structures—the so-called 14 Bravais lattices—which, in turn, are divided into 32 symmetry classes and 230 spatial symmetry groups, each of which is an individual, topologically expressed raster complex interacting with the medium precisely in its own range of electromagnetic radiation. A summary diffraction "packet" of wave functions is formed. It is the "load-bearing frame" for exchange interaction of various types of hypercomplex systems, which in turn forms a set of subsequent derivative superpositions, which together form a highly integrated multilevel hypercomplex structure of the corresponding

electromagnetic field. System-wide integration of intrastructural modulations totally and completely depends on the basic prototype of a scheme that initiates the fractally-distributed nature of the interactions and determines the consistency, interstructural correlation, and properties of the complex. As a result, evolution of the self-regulation of such a system is the process of coherent transformation of the entire wave packet of a hypercomplex system, which reduces the intrastructural entropy of the complex to a minimum. And vice versa, disintegration is a mismatch of the wave interaction, which leads to the emergence of many conflicts and a surge of entropy.

For its part, the human bioform consists of about 250 cell types that differ from each other in shape, size, response range, and many other characteristic features. But the main difference is more than 230 structural types that form cell membranes with a similar topology, which can be represented as specially designed diffraction gratings that determine the individual specialization of each individual unit and their groups (clusters) as a derivative wave superposition.

Since the overwhelming majority of a bioform's mobile organic compounds are liquid crystal formations, their polarization must also not exceed the genetically determined potential. Otherwise, the presence of excess charge will lead to a change in the direction of the interaction vectors and unauthorized structural modifications. The harmonization of these major processes can be achieved only through the coherent transformation of the inherent electromagnetic radiation of the involved biochemical compounds.

Any material crystal lattice, as a fractal-matrix composition, defines the internal arrangement of radiated wave pulses in the form of a characteristic diffraction pattern. And if it is used as a prototype of a program-dependent model for the synthesis of a hypercomplex system, then it is this matrix that dominates, serving as the basis of the foundation of the structure of the object's exchange reactions, thereby creating a similar resonant-architectural system in the corresponding frequency range.

Thus, a three-level, single-vector, helical prototype for the synthesis of a biological organism is a double polynucleotide DNA matrix, which as a result of loss of the inter-turn matching coefficient in the process of its own helical spiralization, is capable of forming only three levels of spiralization—"spiral – spiral in a spiral – spiralized spiral in a spiral". Instead of a fourth level of spiralization, it begins to randomly "wind up" on itself. Thus, having lost the principle of a helical fractally-dependent implementation, this core of the three-level helical prototype of a bioform's synthesis is a primary cluster link, later projecting a similar programmatically-distributed principle of interaction to all subsequent derivatives of the formation, forming the hypercluster objects corresponding to this principle due to pronounced polarization. Any increase in the charge density of such a helical single-vector prototype only leads to the formation of a new unsystematic coil on the already "entangled" "tangle" of self-blocking linear-chain tracks. As a result, because a person's evolutionary development implies consistent expansion

of the range of perception and deepening of the analytical capabilities required for adequate formation of the result of creative self-realization in the environment, which certainly causes a multifold increase in its energy-information potential, this one-vector helical genetically fixed prototype is fundamentally unable to support such a process. Accordingly, a hypercluster bioform, synthesized in the standard way, at a certain stage requires a spatially dependent, highly harmonized restructuring, which is the objective, programmatically-oriented evolution of an individual "human" biosystem.

However, since the peripheral categories of any hypercomplex system are totally and completely determined by the structural features of its prototype, an arbitrary number of any constructive modifications of a bioform's "periphery" will be differentiated by its "basic foundation". Thus, without a highly coherent transformation of the native radiation of the bioform's DNA matrix, no evolutionary correlating processes on the surface level of the hypercluster biosystem can be stably initiated and recorded. Given this situation, it is primarily necessary to perform a deep correction of the bioform's genetic prototype, and only then can the modification of the peripheral structure of interactions be fully realized. But since the three-level DNA helix is inherently asymmetric, there is also a sharp drop in the inter-turn matching coefficient across the helical levels, forming irrational frequency-wave characteristics of the simulated torsion helical (twisted) field, and, additionally, there is a pronounced discrepancy and conflict caused by the appearance of an EMF and electrical and magnetic components on the primary spiral. All this blocks the process of highly coherent transformation of the DNA matrix's inherent program-dependent radiation, and therefore, the qualitative harmonization of the structural lattice of the double polypeptide chain, and then the entire dependent biological periphery.

Accordingly, spatial restructuring of the DNA double helix is initially required. As a result, a three-level helical prototype of the synthesis of a bioform from the activator of the process of the materialization of genetic programs is transformed into a multi-level stabilizer of the previously formed structural complex.

But the appearance of a stabilizing effect is possible only in the event of an a soliton wave directed against the main flow of radiation, which, due to the harmonization of its inherent frequency-phase characteristics with the parameters of the initiating wave, forms a stationary resonant boundary. The primary helix of a polynucleotide chain should structurally form a superhigh-frequency waveguide. In this case, it is necessary to leave the irrational wave relationship and move to a multilevel purely fractal prototype of a spatially distributed structural composition of a helical hypercluster bioform and its electromagnetic field. As a result of this transmutation, there cannot be any deviation from the already purely resonant exchange reactions, initiated by the prototype and striving for an absolutely harmonized state, since the modified polypeptide chain carries a structurally fixed program for universal coherent transformation. Subsequently, the genetically fixed polypeptide matrix is able to be passed from generation

to generation via the mechanism that is standard for the biological organism.

The scale of modifications to biological cells is determined by the maximum possible number of types of membrane topologies and a similar internal structure, which form an appropriate diffraction grating and, as a result, the range of perception and reactions within a particular wave pulse. The radiation pattern of this wave pulse also has special meaning.

As is known, not being a full-fledged fractal object, a helical hypercluster biological system easily projects the structural features of its own regions into each other, taking into account the complex hierarchy. Thus, as a result of the three-level helical design of the organism's genetic prototype for synthesis, the central, fractally-distributed zones of the system deliberately generate the programmed modulation corresponding to their structure for all dependent levels and the overall shape as a whole, forming a purely helical structures that unsystematically wind in on themselves after the third level of spiralization of the lines conveying exchange interactions. In turn, any type of influence through the peripheral network of perception can trigger constructive influence on an object if the communication system being used is well developed and corresponds to the fractal modification of the prototype. Thus, the natural defects in the pattern of helical development of the organism's genetic base, arising after the third level of spiralization, lead to multiple distortions of the system parameters of the fractal correspondence of the scale of biochemical differentiation in the form of a large-scale violation of the accuracy of the topology of the cytostructural membranes. As a result of the "entanglement" that automatically occurs in this situation, the subforms that constitute the organism collectively cluster together, not responding to the strict helical principle of systemic compliance assumed by the genetic base, and in the process of synthesizing the bioform, isomers are recorded — information-wave parameters that are different from those that are genetically programmed. As a result, the corresponding cytostructural formations are unable to construct adequate exchange tracks with their functional basis in a fractally harmonized manner and, according to the polarization principle, are grouped into separate cluster formations. All this causes a loss of the required quality of harmonization of the cytostructure and full-scale system-wide integration, thereby provoking the formation of a hypercluster system in the process of a biological organism's spontaneous growth tending toward a permanent increase in the switching "entanglement" and loss of even elementary integration by already highly polarized subcluster modules.

The objective of this concept is to create an effective method of conducting a universal spatially-distributed restructuring of the human body's helical information-exchange relationships by restoring or forming anew the missing spatially-distributed structural components lost during the synthesis of the organism or distorted during life activities.

Here it is appropriate to give several definitions, namely:

1) Any physical formation that has an electromagnetic nature and is a cluster object is characterized by chaotic polarization, representing an extremely irregular space with a high level of entropy. The variety of the differences in the characteristics of the local areas of this irregular space will have a rather high index;

2) field interference of spontaneous interaction of a set of non-harmonized wave functions covering a wide range of waves will correspond to unsystematic interaction

3) in turn, the coherently transformed electromagnetic space will have a stable, fractally arranged form of a spatially-distributed hologram with a corresponding internal structure.

Thus, a spatial structure arises. It determines the most dense program-dependent packaging, which is ordered with respect to amplitudes, frequencies, phases, and polarization vectors of wave modulations, whose total potential is greater than the potential of any low-coherence formations by many orders of magnitude and tends to infinity, while the linear dimensions of the system tend to zero.

Such a highly integrated, spatially-distributed field system of interconnections in a self-affine arrangement in the form of oppositely directed electromagnetic modulations saturated with information and leading to a highly harmonized state is a wide-range coherent transformer—a graphically schematized, program-dependent matrix controlling the restructuring.

The indicated effect of universal correction is achieved by the formation of stable, spatially-distributed intrasystem resonance between the biological organism's corresponding structural formations that form cluster complexes and systems as a result of coherent transformation of the electromagnetic wave pulses they generate.

The high-quality result of the spatially-distributed restructuring of functional reciprocal-exchange processes that ensure the organism's vitality is adequate for the concept of absolute health, structural perfection, physiological harmony, beauty, etc. The process of objective programmatically corrected evolutionary development of the helical hypercluster biological system known as a "human" goes through several fixed stages, the entry to which is conditioned on the presence of the necessary initial potential.

The successful implementation of the primary systemic correlation of the one-vector helical synthesis of the hypercluster bioform makes it possible to begin the process of harmonizing the activity of subforms by deliberately dampening the identify of its own unsystematic activity.

The fulfillment of this objective makes it possible to balance the amplitude harmonization of the overwhelming majority of a bioform's intrinsic wave radiation and approach the second stage—the coordination of the range of perception and reactions of various levels of the systemic gradation of the bioform and personality manifestations in general.

In turn, harmonization of the wave range, adequately formed in the accessible manifestation zone, opens the way to the third stage, which assumes spatially-distributed, deep fractal integration of all the

structural categories previously formed by the helical DNA prototype into a single, more indivisible structure, taking into account the physical principle of large-scale coherent transformation of the inherent radiation of the organism's subforms, and thus stabilization of the biochemical balance. This task can be solved only with the use of a high-coherence control field—a universal fractal-matrix pattern of spatial distribution, arrangement, and harmonization of program-dependent wideband electromagnetic radiation of the bioform. The qualitative final fixation of this process corresponds to the multilevel spatially-temporally coherent transformation of absolutely all of the cytostructure's inherent radiation and the restructuring of systemically-expressed defects of helical "confusion" and a sharp decrease in entropy in a spatially restructured "perception-analysis-realization" arrangement. Consequently, there are real prospects for a radical reconstruction of the planetary genome.

A system-wide transformation of the interaction diagram of the cytostructure's coherently transformed inherent radiation and its superpositions into the form of a self-affine hypersphere takes place. In this case, as a result of system-wide resonance, all wave interactions are instantly transformed into a more indivisible quantum object. This completes the bioform's specific dependence on the naturally occurring spiral-wave discrepancies and environmental features. Due to the fact that a high-quality quantum system of universal harmonization and redistribution of the energy information load of a wide range of frequencies is formed through an evolutionary structural transformation, the effect of chain autoregulation of the bioform's entire structural complex, as a result of the multi-level coherent transformation of environmental radiation, regardless of its wave range, polarization vector, amplitude, frequency and phase. Up to this point, the effective self-regulation of a one-vector helical hypercluster that occurs automatically corrects arising loads is fundamentally impossible, because all of a bioform's regulation programs are linked precisely to the structural model of a genetically fixed prototype of the materialization of program-dependent nucleotide formations, which is at this stage its projectively distributed field matrix.

Thus, the stable evolutionary development of a hypercomplex biosystem is possible only when its constituent units are coherently transformed and are able to generate program-dependent impulses, which are spatially distributed, fractally arranged diffraction matrices whose polarization diagram forms a multilevel self-affine hypersphere.

Undoubtedly, the universal self-regulation of a bioform is just a derivative superposition of the functional basis of a highly harmonized, spatially-distributed state — a genetically fixed prototype of the bioform having an electromagnetic nature and manifested as a corresponding highly coherent Control Field. As a result, numerous actively occurring wave processes, which are the natural background radiation of an arbitrary model of the geophysical environment, are unable to destabilize the exchange processes of such an object.

If the algorithm of spatial stabilization of a helical hypercluster system consists of strict sequential actions determined by a graphically expressed formula of a specific wide-range program for coherent transformation, then this fractal matrix becomes the stem basis that will permeate all the components of any chain of cytostructural interactions and their derivatives superpositions that are naturally transmitted from generation to generation. Otherwise, the adequacy of the multilevel harmonization of the helical complex is impossible, and the structural composition unfolding in the process of linearly-chained system development will be integrated as an imperfect polystructural hypercluster macroform. In turn, a fully formed spatial program of universal coherent transformation, as a Control Field (a quantum object) that corrects the structural development process, can be implanted in hypercomplex systems of arbitrary type in a variety of different ways, the nature of which will certainly affect the quality of the final result of the program-dependent structurally-schematized correction.

It should be noted that the coherent transformation of the inherent radiation of a bioform's local zones, though it causes numerous positive reactions, is nevertheless unable to initiate large-scale, spatially-distributed harmonization of the overwhelming majority of helical reciprocal exchange processes. For a full-fledged universal correction of the organism, full-scale coverage of the entire bioform is required—from the genetic prototype to the periphery—through a universally structured self-affinity electromagnetic Control Field of the widest range, and at the same time a coherently transformed diffraction response of the entire packet of inherent radiation of a helical hypercluster object in the form of a similar electromagnetic field should occur.

The biological organism radiates and absorbs waves of a wide electromagnetic spectrum in the course of its life and activity. This process is characteristic of all of the organism's subforms, from individual cells to internal organs.

The physical channel of control and implementation of programs for the development and functioning of the human body is heterogeneous and represented by electric, electromagnetic, and acoustic fields and polarization domains. At the level of the material foundation, from the atom to a multicellular organism, electromagnetic interaction is most important when it comes to the functioning of a biological object. The intensity of the interaction is determined by the magnitude of the electric charge.

All processes in a biological object from the atomic-molecular level begin with a change in the amount of electrical charges due to the fact that macromolecules are semiconductors or dielectrics, which are dipoles capable of forming domains, and also due to the fact that the structures of macromolecules have the properties of liquid crystals or electrets. When the electrical status of macromolecules changes, these physical properties determine whether they can generate electromagnetic fields and waves. In terms of quantum electrodynamics, this is explained as follows. The primary accumulation of an electrostatic field's energy as a result of metabolism leads to the appearance of a static non-equilibrium state, what initiates the

electric current. Ions move and as a result mechanical vibrations build up in the macromolecule. As a result, energy accumulates in the form of mechanical vibrational energy, and it dissipates through the emission of electromagnetic waves.

The human body's radiation is very extensive and diverse with respect to the spectrum of wave characteristics and their physical nature. These radiations, above all, differ in frequency-wave characteristics.

Living systems are non-equilibrium open systems, one of the fundamental properties of which is their vibrational nature. It has been mathematically proven that all processes in nature are oscillatory in nature. The body simultaneously has oscillations of different frequencies at different organizational levels: atomic, cellular, organ, and during various processes different kinds of oscillations and wave radiation arise. The richness of the rhythms of the environment corresponds exactly to their abundance in biological systems. Biological rhythms are a manifestation of the self-oscillatory processes in biological systems.

The existence of a biological organism becomes possible due to the harmonization and synchronization of all vibrations. Synchronization contributes to the stability of the system, and optimizes the transfer of matter, energy, and information, and is one of the most important factors in the self-organization and harmonization of complex systems.

According to scientific views:

- receptor proteins on cell membranes are the primary molecular model and object during exposure to millimeter waves (EHF);
- the receptor proteins are influenced through water molecules, which largely absorb EHF radiation;
- the direct receivers of EHF-radiation are free water molecules, which transfer some of their energy to bound hydration water molecules;
- critical hydration of proteins is crucial to realize the biological effect of EHF-exposure. In this process, proteins from one functionally passive state move to another functionally active state;
- Receptor proteins that have undergone a phase transition have a decisive influence on all processes occurring in cells.

The spectrum of electromagnetic oscillations emitted by the cells themselves, including the EHF band, carries information about the nature of changes or violations of their state. And the external action of this particular spectrum, which is even more important, actively influences the restoration and maintenance of cellular homeostasis.

Resonant correction of biological hypercluster systems, implemented by spatially arranged annular

diffraction gratings that form three-dimensional field structures is based on the theory of waves and resonant amplification of coherently transformed returning traveling waves emitted by the body. As a result, the diffraction grating and its fractally organized spatial field signals perceive all types of a biological form's electromagnetic radiation. The scheme of matrices deployed in the form of a self-affine field structure (hypersphere) consists of mutually intersecting spheres of various sizes and forms a body of mutually harmonized oscillatory circuits that induce resonant oscillations with natural frequencies. These vibrations are induced by electromagnetic radiation emanating from organs, tissues and the body's own microflora.

Ring diffraction gratings are:

- spatial frequency phase analyzers emitting a discrete frequency grid in transmitted or reflected radiation;
- generators of an ordered raster structure, on which the field structure of auto-interference of spatial frequencies associated with the centers of fractal topology is placed;
- graphically synthesized holograms that form a stable spatial structure of regular maxima and minima of a coherently transformed field with harmonic ratios of frequencies and amplitudes, phases and polarization vectors.

Research conducted jointly by the AIRES Foundation, Vavilova State Optical Institute, and SPbSU Information Technologies, Mechanics and Optics showed that the ring-shaped fractal-matrix diffraction gratings developed by the Foundation have the properties of synthesized holograms and make it possible to structure electromagnetic fields of a wide frequency range, transforming them into a coherent state, so that the resulting field structures correspond to the required type of planar and three-dimensional crystal lattices. These coherently transformed fields, naturally, will also resonantly interact with the structure of the biological organism that generates them.

Research by the Foundation AIRES together with Saint Petersburg Electrotechnical University LETI (Prof. V.I. Margolin, Prof. V.A. Moshnikov, Department of Micro-Radioelectronics and Radio Hardware Technology); with SPbSU (Prof. O.V. Frank-Kamenetskaya, Department of Crystallography); Vavilova State Optical Institute (Prof. M.G. Tomilin); All-Russian Research Center Vavilova State Optical Institute (G.S. Melnikov); SPbSU Information Technologies, Mechanics and Optics (Prof. G.N. Lukyanov, Prof. A.V. Kopyltsov, Tarlykov), Mechnikova Saint Petersburg State Medical Academy (Prof. V.I. Slesarev), Bekhterev Scientific Research Psychoneurological Institute and the Pavlov Institute of Physiology of the Russian Academy of Sciences (Doctor of Biological Sciences L.A. Rybina), have shown that the field fractal-matrix diffraction structure (control field) resulting from the coherent conversion of

the object's own radiation is a universal catalyst of **orderly** synthesis of matter of various types regardless of its physical characteristics.

Thus, any field diffraction grating, as a universal spatial-wave coherent transformer, restructures the oscillations of electromagnetic fields of any type (background, man-made, biological) into harmonic components and integrates them into a matrix of harmonized characteristics. An electromagnetic pulse interacting with a field annual diffraction grating induces a coherently transformed fractal field due to the interference of the flows passing through the diffraction grating or reflected from it. As a result, a harmonized and strictly ordered background is formed in the action zone. Thus, due to the passive interaction of a bioform's electromagnetic radiation with the spatial structure of a self-affine control field, the peak field anomalies are effectively corrected, and the structural characteristics of the human body are stabilized in a wide spectral range.

The interference of traveling waves and waves returning after their resonant transformation into a form harmonized by a field diffraction grating leads to the appearance of coherent standing waves.

From the structural framework of the highly coherent control field, a wave is reflected in antiphase. Accounting for a certain elasticity in the biomaterial, the energy of oscillations passes from the medium of the bioform to the structure of the control field. As a result, the amplitude of the reflected wave is smaller than the amplitude of the incident wave. But in the first medium, there arises is a combination standing and traveling waves in antiphase to the coherently transformed wave.

In a medium having limited size λ (a cell), a standing wave can be formed only if the value of λ is a multiple of an integer number of half-waves $\lambda/2$. In the presence of a huge spectrum of waves coherently transformed by the control field, this is always possible.

When interacting with complex structures of a body's spatially self-affine highly coherent radiation field and the environment as a result of diffraction, interference, and polarization, they are "packed" into coherently transformed, fractally-arranged, spatial wave packets of electromagnetic energy and produce a systematized effect on the biomatter's structure, corresponding to the most optimal conditions. This coherently transformed radiation produces a concentrated effect, being a catalyst for positive processes of self-organization and increased orderliness in the body's exchange processes.

Thus, to activate constructive genetically fixed programs and maximize dampening or completely eliminate pathological tendencies, it is necessary to coherently transform the cytostructure's own radiation, which provokes spatial restructuring of biological matter based on existing program-dependent principles. The self-affine matrix of the control field used in this process arises in accordance with objective physical criteria for harmonizing the radiation of a wide frequency range and represents the interference of the object's own coherently converted

electromagnetic pulses. It induces the restoration of integrity and system-wide integration of all of a biological organism's entities generating wave impulses, optimizing the algorithms of the bioform's genetically fixed program, and clearly defining all zones and levels of the macrosystem, which strives for maximum structural equilibrium.

Each level of the hypercluster biosystem is a phased shift of its own structural categories, where the helical genetic base is a set of principles for their systematic reversal. As a result of the coherent conversion of electromagnetic radiation of cytostructural and biochemical components of the deepest level, the percentage of spontaneously incident errors in the synthesis of biological derivatives and the work of the central nervous system also decreases to the maximum objective level.

Thus, given the requisite accuracy in building a highly coherent self-affine control field in the form of a complex of passive spherical diffraction matrices as a highly integrated spatial system of resonating surfaces, there appears the prospect of deliberately initiating high-quality program-dependent synthesis of biochemical units of various types.

As a result, there is a real opportunity to optimize the structure of a biological organism's aqueous clusters, which are known to comprise up to 62% of its volume. Because there is not a single biochemical fraction without accounting for this molecular substance, stable molecular components that do not enter into random unauthorized reactions form, thereby creating a biochemical stabilization effect in the body.

It is known that aqueous clusters, i.e. water-formed structural modifications that are an objective part of the planetary hypercomplex system, determine the stability of all organic molecular compounds without exception.

For living and non-living systems that contain water, the phenomenon of aqua-communication has been established. This means that water senses, saves, and sends information thanks to its ability to structure as clusters which encode incoming information. The mobility of its molecular dipoles leads to the emergence of electromagnetic radiation modulated by information encoded in the structure of the highly coherent control field containing the original program-dependent information, due to the induction of the indicated electromagnetic radiation. In this aspect, the coherent conversion of the intrinsic radiation of H₂O is extremely constructive.

So, for high-quality development of a biological organism's structural integrity, it is necessary to optimally restructure the matrix composition of existing water molecules. This process becomes real if field diffraction systems are used. Optimization of the structure of H₂O will make it possible to successfully use hormone self-regulation resources, creating cellular formations that are highly stable and already deployed as biological systems. And this means that the widely manifested primary defect in the synthesis of the helical cytostructure will be minimized, which will make it possible to automatically, i.e. spontaneously, without special additional technologies and individual correction, promote uniform

development of the body, avoiding periodic failures in the disintegration zone.

Thus, long-term interference between a bioform's radiation-generating cells and the complexes and systems they form, and their own electromagnetic radiation coherently transformed and spatially integrated into a self-affine structure, can produce a universally harmonized restoration and spatial restructuring of the genetic matrix of the bioform's prototype and the vast majority of the functional processes that comprise the hypercomplex human system. The resonant relationships arising during this process make the resulting corrective effect stable. The highly coherent structure of the electromagnetic field formed as a result of the universal correction must have a self-affine hypersphere architecture, and therefore the pattern and nature of the external radiation will not be able to change the pattern of the quantum transformation of resonantly fixed structural relationships that are spatially integrated into the quantum construct, which has a single phase center shared by the entire hypercomplex. Thus, the redistribution of the active potential, and hence the object's self-regulation, becomes not only extremely high, but also capable of endless evolutionary development.

The technology of stabilizing the functional life support of biological organisms relies on a number of principal positions that can be briefly formulated as the following theses:

1. Any physical body is an intricately changing field structure, since the nuclei of atoms, which contain virtually all of a substance's mass, occupy a insignificant part of its volume, but the structure itself is formed and maintained due to the interaction of the external electron clouds formed by its atoms.

2. Any complex physical structure, especially crystal and human DNA molecules, are fractal objects. Moreover, an ideal crystal is a strictly periodic fractal object. Crystal defects of any kind (impurities, empty lattice nodes, etc.) are frequency violations and causes of intrastructural conflict.

3. A biological organism is a helical hyperclustered entity that is an open self-regulating system, especially as it forms. In accordance with the principles of self-organization and the physics of open systems, that is, systems exposed to an external influx of matter or energy through their boundaries, in order for the system to enter the conditions for formation of spatially organized structures due to external influence, the value (potential) of that influence must reach a certain critical value. Moreover, to ensure the system's transition to a higher quality state, the influence must be coherent and targeted.

4. Because any physical structure creates a periodic electromagnetic field of chemical bonds and the field is supported thereby, an electromagnetic field should be considered the most capable agent of external influence, the coherence of which determines the perfection of the structure.

5. The thesis stated above is the central point, since the system's resonant interaction with the influencing agent - its own coherently transformed electromagnetic field, in this case - is most promising

managing the process of self-regulation. Coherent resonant interaction, which includes both spatial resonance and the resonance of the frequencies of the oscillations of the field and the matter grating (cytostructures), will facilitate the process of program-dependent rebuilding a more perfect periodicity (elimination of defects) with the smallest possible (optimal) energy requirements. Due to fractality, this resonant interaction is possible not only when the dimensional parameters of the structures of the control field and organism match, but also when they have similarities at multiple scales. It must be noted that during resonant interaction what matters most is that the resonant conditions are precisely achieved rather than the intensity of the field acting on the substance, which is guaranteed due to the restructuring and coherent transformation of the object's own radiation by a self-affine electromagnetic field.

Undoubtedly, adequate development, first of all, requires differentiation of structural defects that arise spontaneously in the process of sequential synthesis of the organism and in-depth harmonization of all opposing exchange interactions that support the life of the bioform. However, this process of fractal-dependent harmonization is impossible without optimization of the functions of perception and analysis, which makes it possible to consciously approach the structural correction, which is a spatio-temporal fractally-dependent coherent transformation of the intrinsic electromagnetic radiation of the cytostructure. Naturally, the higher the quality and the larger the scale of the corrective influence, the more stable the structure of the bioform and the lower the level entropy in the exchange reaction control system. As a result, the rise to the required level of quality of harmonization of internal system regulation and adaptive capacity minimizes the prospect of spontaneous disintegration of the bioform. Thus, an adequate development of consciousness determines the process of a person's own multi-level structural improvement, resulting in the superstabilization of its fractally-transformed hypercomplex biosystem by spatio-temporal accumulation of a highly coherent structurally arranged energy-information potential and the conversion of all wave processes into a quantum form.

It can be argued that multilevel, spatially-distributed harmonization of all wave interactions and their derivative superpositions, which essentially represent a large-scale structurally dependent space-time coherent transformation of the entire electromagnetic range of an object, makes it possible to initiate the most objective level of high-quality self-regulation of any hypercomplex system of an arbitrary type and maintain it for an arbitrarily long period.

Because, according to the physics of open systems, each physical object is capable of generating in the environment and implanting in any physical object in this environment a spatio-temporal copy of its own structurally-systematized program-dependent interactions, the system, which is a stationary form of stable, coherent interactions, becomes a highly effective corrector of the functional state of biological objects. In this case, the corrective process is a reciprocal interaction of two energy-information systems.