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Evolutionary Constructor of Connectivity in Systems Formation

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Abstract.

The hypothesis about the possibility of different types of being has always served as a fruitful source for constructing various models. The latest scientific results on combining the results of information theory with the achievements of physics provide a reasoned justification for the hypothesis under consideration. In this article, being and other being are considered as the basis for constructing the Universe on the basis of the identity of opposites of such categories as "essence – phenomenon", "form – content" and "continuity – discreteness". Research on the scale of the quantum and nano ranges allows us to come to the construction of rational designs for the possible basis of objective reality. It is the general principle that gives all things and phenomena of such reality an interconnected, including synchronous, character.

Keywords: being; other being; quantum range; nano range; Universe.

Introduction

The main methodology for the study of Being is built on constructing it as the identity of the opposites of being and otherness; entities and phenomena; forms and substances. It makes it possible, in an extremely abstract form, to logically collide and connect these universal categories with each other and allows one to reach the construction of rational structures of a possible basis for Being. It is the common principle that gives all phenomena of the real world an interconnected (synchronous) character. If the real world of things constitutes an ordered completely, synchronized the by beginning of its emergence, then at its base are an unsynchronized set of "quanta" that form matter.

Matter is the substrate that generates the multiplicity of phenomena of the world through the application of the primary simple environment to various specific conditions that determine whether a phenomenon belongs to a certain type of Being. Matter self-organizes into things according to the original "meanings". Any material embodiment has its own design, carrying its own text. Any text is not a formal unification of the constructions of material embodiments, but their connection.

The evolutionary constructor works to increase the coherence of things in its "constructive space". For a material point, such space is constructively binary, and determines the protocol of its behavior with the help of time and space. If movement represents a general way of existence of the material world, then space and time represent a resource that has the character of "activity" and "fixation" of conditions for drawing boundaries, creating places and forms, for realizing the behavior of moving things and performing the work by them.

Space is a measure of being, stability in motion. The space "records" and stores the results of work. Various forms of being coexist in space. In general, space acts as an "aggregate of places." Time is a measure of variability in work. Time has the character of "activity", and represents a consistent change in states of things and events of reality. Time constantly binds and retains its resources and, in general, acts as a "series of events." Space and time are inextricably linked.

Main Part

1. Logic and the Universal Language of Connecting Things

Any material embodiment has a systemic nature. Systemicity is an evolutionary constructor (in terms of the necessary components and the order of their occurrence), creating a text of minimum length for all entities of the Universe. The Universe is a reality in which the unity unfolds - in the process of creation and meaning - in action.

When discrimination of something occurs, it is no longer just identification, i.e. statics, but constructive dynamics. In the process of such identification, during differentiation, universal operators of the Universe construct the image. These operators are common to both the observer and the Universe and are known as logic.

The material reality exists in the operational space of the entire Universe and demonstrates its concrete appearance as a "visible image". A set of such "visible images" acquires an ontologically independent status, forming an ideological and value field as a set of absolute and perfect plan of possible things. The categorical structure interpreting the original semantics of such things includes the following:

- External forms, corresponding to the sensory perception of the image of a thing.
- Internal forms, corresponding to the way of being of the thing itself.

The logical construction of the systemic of the "visible image" of a thing is carried out in its narrow sense of category certainty. This design has an absolute universal character and embraces all imaginable types of being. The logical construction of the categorical structure of a thing as a being based on itself and dependent on itself gives an internally connected system of categories, starting with a self-emerging primary element and ending with a formed image as a name. The image is the first definition of meaning in general, i.e. the first setting for it of precise limits, precise boundaries, because of which the first and initial general structure of meaning appears here. In contrast to the ever-flowing source of semantic design, but not the design itself, the nature of meaning is revealed in the image.

Categorical statuses of systemicity, as something of a whole, are presented in the following form:

{**difference – identity – becoming – already become – manifestation**}

Each highlighted status carries information about its position similar to that of that pentameter. The meaning of the pentameter as a carrier of the goal position will remain invariant. It is already determined by the invisible context of the pentameter's diagram, which carries the image and consistency of this particular description. In its categorical form, systemic has a schema, and without such a schema, the parts of the system would never be able to "understand" each other. In such a fundamental scheme, with its unity and immutability, there are internal parts and statuses of the system, with their certain number and order.

A characteristic expression that is applied to systemicity is the visible essence of a thing or the "visible image" of a thing. This image of a thing is the very individuality of the thing, the separateness of which is already receding into the background. What comes first here is precisely that systemic unity that cannot be reduced not on:

a. the unity of the continuous fluidity of a given thing; not on:
b. unification of its properties and qualities; not on:
c. logical processes of generalization.

The visible essence of a thing has a large systemic range, from individuality to systemic unity. That is, systemic (in itself) has both a special category and a general category.

The concept of the structure of the world as a One determines systemic, with its five statuses, is in a certain way connected with the One. This means that it contains the idea of continuity and optimality of the One. This is the idea of fundamental simplicity by which the One acts ("talks" to the observer). This is precisely the initial scheme by which observers can understand each other and construct the world. This scheme is sometimes very different from how construction occurs in the physical world. However, the physical world contains all the elements corresponding to the context of systemicity. Therefore, the "universal language" in which observers communicate with each other in different areas necessarily contains the idea of systemicity.

In general, logic is the operational space of the entire Universe. Man, as a part of the Universe, is endowed with logical thinking capabilities along with the "thinking" of the Universe. Logic should be understood as a system of pure reason and thought. This system is truth, existing without veils, in itself and for itself. Such content is an image of the basis of everything, as it is in its eternal essence before the creation of nature.

Removing formal logic from the basis of ontology and theory of knowledge leads to the fact that when clarifying its basic concepts, it is necessary to start exclusively from the features of symbolic language. Logic as a study of the universal possibilities of meaningful statements cannot be determined by any ontology, quite the contrary, since it is logic that establishes the criterion of meaningfulness; any ontology is a consequence of the logical clarification of the possible relationships of description structures. As a universal method of clarifying thoughts, logic cannot depend on how the world is comprehended by a person. Logic determines the ontological structure of the world, since it is within its competence to decide what can take place in the world, and what cannot.

The Universe "thinks" logically and logic is inevitably connected with languages in the most general case and with the languages of human communication in particular. The form of logic, an "invisible scheme", holds the entire meaning of any sentence. It is precisely, this unique post status nesting, which is characteristic of languages, of high-level human communication. Language is self-sufficient. That is, he himself forms his own "habitat", providing commutation between different aspects of life and their participants, modeling reality. The coherence of this "habitat" of language is determined by logic: logic fills the world; the boundaries of the world are also her boundaries.

Connectedness (Coordination) is a property of topological space, which consists of the fact that the space cannot be represented as a sum of parts that are separate from each other. Topological space is a collection of objects consisting of elements of arbitrary nature, called points of a given space; and from the topological structure or topology introduced into this set. A set of elements sufficient for all other elements of the topology to be obtained as unions (in the case of an open topology) or intersections (in the case of a closed topology) constitute the basis of this topology.

The essence of the autonomy of logic is that it has nothing to do with the surrounding reality, with the variables of its manipulation. It is self-sufficient in its internal consistency (tautology). Logic simply shows how any language works, including the language of human communication.

There is another side that connects logic and language - purposefulness (teleology). Here logical analysis is understood as a method that reveals the internal teleology of any language. Logic shows the "universal and necessary nature of signs." In this case, thinking is considered a type of language and is denied the role of a mental mediator between language and reality. Therefore, logical analysis does not correct language from the point of view of thinking; in contrast, elucidation of the nature and capabilities of language indicates what is essential and necessary in thinking.

The possibility of a natural reflection of the logic of system formation is shown in the form of a tuple, since the places (topos) in the statuses of the structure strictly correspond to certain operations:

{**negation (difference) – equivalence – implication – disjunction – conjunction**}

The formal operators of this logic assume precisely this arrangement. That is, to work with equivalence one must be able to distinguish. The logical implication function, in "event" language, performs a logical check and, depending on the result of the check, performs one of two possible actions.

For the implication, it is necessary to know the equivalence, since in the implication the phrase: "if (the condition is fulfilled) then (the execution method 1), otherwise (the execution method 2)" requires prior knowledge of the equivalence; the "execution condition" cannot be checked in any other way. In connection with previous events, the implication takes us into a structure defined by disjunction - (construction: "either-or"). Disjunction symbolizes the possibility of choice (from sums). The conjunction operator (construction: "and-and") already defines the previous choice as the final text. The conjunction symbolizes the obligation to take into account all circumstances (works). This arrangement in the form under consideration maximally corresponds to the expression of logical operators, and corresponds to the idea of teleology. All this is associated with the "single language scheme".

Thus, the existence of the subject is predetermined precisely by the logic of the Universe through systemicity, since all the texts generated by it are written according to a single scheme, and the very existence of the subject is laid down by systemicity as a genome. For example, when a part of a certain system is considered, then it has a special semantic activity that distinguishes it from everything else, namely the activity of being a certain part of this system. This is a completely special activity, namely the semantic effectiveness of the system.

Logical systemic, first, has an evolutionary purpose. In addition, the presence of a cause-and-effect relationship is not a simple phenomenon. In the evolutionary process, at some points of phase transformations, bifurcations can occur - a double outcome of phenomena. If we transfer this moment of "bifurcation" to formal logical language, then implication is responsible for this. Both consequences can guarantee the system's life in the evolutionary movement; otherwise, the system can drop out of the game of evolution.

Any object that aspires to evolutionary development must have a minimum adequate device that allows it to be operated with the specified consistency. The "subject" of the implication is equivalence. It is equivalence that stands in the original logical system. It is she who "takes care" of her self-sufficiency and preservation. What the system does depends on how the equality being checked is satisfied. This "or" shows that the result of the choice is placed in the structure of disjunction. Thus, the operational space of the Universe provides for the possibility of controlling the outcome of the bifurcation. Where the fact of "control" (implication) is assigned to equivalence, behind which in the integral evolutionary embodiment stands the subject, as a set of all the second statuses of the scheme that determines systemicity.

The logic considered here presupposes a cause-and-effect relationship in implication and a special order of arrangement of logical operators. Without this implicative "intentionality," evolution could not have taken place. There is another aspect of this implication - it emphasizes the teleological nature of evolution. Simply put to be optimal in terms of time to achieve a goal, the system always needs a paved path. This precisely ensures the nature of the implication, consolidating the substantive part of the equivalence in the form of a hierarchy of disjunctions.

In operational activities, variables, details, and constants are specified as metadata. In the calculations, the result of the implication is determined and placed in a table. A table is the simplest hierarchical device in which a direction (tropos) is specified, the upper level of which determines the "continuation (1)", and the lower level determines the "stop (0)" of actions. Such a table, from which you can select the value "1" or "0" by disjunction, clearly demonstrates that without the phenomenon of hierarchy there would be no phenomenon of structure and energy, they would be impossible.

The table acts as a field of operational activity for the thinking of design actors. In creating a program design,

the tabular part interprets the fact that to operate with qualities, they must be distinguished. To operate with quantities, it is still necessary to know equivalence (identify). To imply qualities and quantities in a table to create a structure (relationship between elements), they must first be ordered (set the direction of movement). This can be done arbitrarily by setting, for example, numbering. Quantity allows us to create direction (in principle). This reveals the principle of self-sufficiency of the table.

2. Being and Otherness

The problem of defining other existence as a possible existence is postulated in the form of ideal centers - target causes for real physical things, formed by system-forming of different order. The world of other existence is ranked and forms a hierarchy depending on the ratio of continuous and discrete in each of the systems at the appropriate level. The activity of systems is synchronized by a "common principle" determined by the existence of the essences of the things being formed.

The concept under consideration, in addition to things and phenomena, takes into account their activities and modalities, and for this purpose an energetic description is used. It represents the unfolding of a system-forming process, in which it is revealed that the target reality is the ideal prototype of individual things and phenomena. Any image of them, due to its necessary symbolism, reveals its semantic content only in ascension from the current image to the prototype. Upon "contact" with the prototype itself: then and only then does the identified image no longer become an image, but comes into life as a thing and manifests this in the trigger effect of creation.

Each schema status carries information about its position in the system. The systemic nature of natural language also reflects that property that is inherent in all images. We are discussing the second status of the pentameter, its special role in systemic nature. The fact is that the second status is conventionally called "subject" because that it already participates (explicitly or implicitly) in the following statuses. The second status sets the entire semantic tone of the system, corresponding to the content of this status. At the same time, in the design, starting from the source of energy of comprehension, there is a further increase in meaning.

For systematicity, implication is a manifestation of the third status (becoming), which defines the hierarchy. Becoming determines the transition from one level to the next level. This is what, when considering the concept of "structure," is called direction, and in logic is called following. The hierarchical vertical rests on "choice in implication." The implication is additive (instead of "fulfillment" you can insert another implication); in the case of human participation in the construction, the mind takes the place of the implication, and consciousness takes the place of the disjunction.

Since the idea of the original essence on the ideal plane exists without any change, this determines that the symbol obtained as a result of the synergy of the energies of two planes is something that exists, first of all, in itself, without any formation and changes. The symbol contains a phenomenon that immediately points to a certain entity. Logical symbolism, or the realization of abstract meaning, is the "subsuming" of meaning under a logical symbol. The symbol in this case represents an amphiphile entity (object) arising on the border of two planes, and simultaneously possessing the properties of both planes.

A symbol represents an amphiphilic indivisible image that manifests the meaning of an object and essentially means what the object is. Such a symbol is not an ideal being, but a vitally sensitive and created material reality. It is a purely material reality, which, however, is at the same time detached from the usual course of phenomena, due to another degree of hierarchy, which increases its level of reality. For example, quantum objects exhibit amphiphilicity in the form of particle-wave duality.

According to the original pentameter, the first united one, possessing semantic activity, emits semantic energy from itself. As the energy of nonlocality, it is discretized (localized) by the designs of the second status and is "imprinted" by the third status. The one is the inexhaustible source of these forms, which tirelessly arise from it as a fundamental principle. The one holds everything and contains everything included in it, as something inseparable. However this precisely means

that everything that is separately formed, systemic strives back to the first unified One. This is how the "breath" (pulsation) of Being is realized.

Systemicity is the semantic activity of the "source". This semantic activity, taken in abstract terms, has no limits. Semantic activity, or the active formulation of meaning, is activity directed toward the One itself. One actively comprehends itself, because, apart from the "source," there is nothing at all to comprehend. Beginning to comprehend and intend to go into infinity in this process, one encounters itself, its own border.

Fig. 1

The meeting of Being and otherness occurs according to the principle of "unmerged and inseparable", through synergy, as a combination of two energies – uncreated and created. Number is a measure of the saturation of otherness with Being. As a result of synergy, the consciousness of the amphiphilic essence is actualized in other beings. In the consciousness of the amphiphilic essence there is a symbol as the primary memory of existence, thanks to which the transformation of matter occurs.

Let us consider the picture of identification degrees of discretization by pure systemic. At the top is pure and absolute systemic self-awareness. In the case of human participation, there is initially absolute self-awareness, by pure mind (**X**), of systemicity modes (figure **1**). The mind contemplates himself (**a**), because there is nothing else besides it and nothing more to contemplate. He is the whole meaning; more precisely, the mind is the self-transparency of meaning, semantic self-relation and self-penetration.

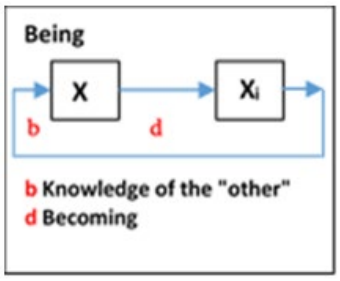

Fig. 2

Furthermore, the first degree of discretization of the mind exists when the entire mind, remaining entirely itself and self-consciousness, turns out to be completely fluid ($\mathbf{X}_i$) and reaching itself (**b**) (figure **2**). The meaning that becomes at the same time contemplates the pure systemic and contemplates its entirety, without fragmenting and without itself being fragmented in this contemplation. This is the same pure and integral meaning, but in the aspect of achieving oneself as whole, and becoming (**d**) oneself as whole same. Such systemicity also "in itself, for itself" knows itself, but this happens in it only due to its contemplation of pure systemicity, or the second status.

Systemicity does not simply give rise to the opposition of oneself and another, as a third status, taken in its entire and absolute phenomenon - all three statuses are absolutely mutually consubstantial and interlincing.

How will the next degree of discretization of the original systemic arise? The mind can only think of itself. He thinks of himself instantly, everything at once and does not experience any delay in this. What happens now if the mind collides and moves to confrontation from the discretized part of the system? He will then stop thinking only about himself. Being partly discretized, partly pure, he will continue to think of himself as himself, but he will only partially succeed in this. Plunging into otherness, he will no longer be able to attribute everything only to himself. Being in otherness, the mind forces itself to contemplate as external to itself, attributing a part of itself to otherness, otherwise it would not be in otherness. He is no longer completely self-transparent and self-revealing. The mind is forced to attribute a discrete part of itself (directly proportional to its degree of immersion in the otherness) to the other itself, but it knows that the plural-becoming cannot be itself.

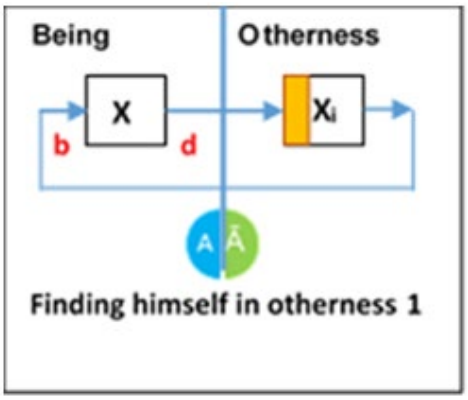

Fig. 3

The more discretized the mind itself is, the more it passes into the otherness of itself, and in the sense of systemic it alienates itself from its self-consciousness - the more it thinks of itself as external to itself. In addition, the more multiple the system is, the less conscious it is of itself, and the more vague the knowledge it has about itself. The more the Mind plunges into otherness and is discretized, the less clarity the externally attributed image receives and the more vague the Mind's knowledge about itself becomes (figure **3**). The more multiple and incoherent the systemic becomes, the less stable its knowledge about other beings and about itself becomes, as a result of a decrease in the fixation of knowledge and an increase in its fluidity.

In this way, a modification of purely semantic self-consciousness into the self-consciousness of Becoming occurs. The result of this modification is the beginning of evolutionary self-achievement of systemicity. Theoretically, one can think of two degrees of modification in the process of formation, and, accordingly, two degrees of discretization of pure meaning. Firstly, mind, may partly turn out to be multiple and partly turn out to be unaffected by discretization in otherness. Second, it is theoretically quite conceivable that the self-conscious Mind will be completely discretized, that is, it will be completely immersed in otherness to itself. In the first case, the mind, being partially discretized, transfers the discreteness outside and creates something external for itself. In other words, a subject-object opposition appears here, since the mind itself sees that there is something besides it that is before it, although it may not understand that this "objective" is its own creation, i.e. itself. In addition, since the mind is discretized not entirely, but partly, it continues to see itself even after embedding itself into the external - something else, also unchangeable, although immediately, since we are talking about the beginning of formation, this unchangeable is seen by it as becoming and fluid.

Therefore, in the first case, a new picture is obtained, the mind takes on the form of subject-object being with partial contemplation of both oneself and another as a partially localized, becoming image. The mind is forced to project part of itself outward, seeing both itself and the external as a continuously changing figurative immobility. "Subject" and "object" are some semantic forms.

In all cases, continuity prevails in the construction under consideration - the subsequent status of this construction requires the previous ones. The subject is opposed to the object, as a kind of active activity to study and transform the object. However the subject arose evolutionarily later than the object. In the logic of systemicity, the "subject" is, first of all, an operator of equivalence (identity with oneself). Why did this identity become a certain most important point in evolutionary development? Because this is a fact of some kind of copying. Moreover, at the lower levels of the hierarchy, this is a fact of simple growth; higher up, these are the possibilities of obtaining new structural properties. Furthermore, this is copying at a higher level - dynamic copying for the purpose of adaptation. Moreover, copying is observed at all levels. In the functioning of the equivalence operator, any innovation in this system leads to further copying. The uniformity of things formed in this way allows diversity to exist precisely fractally and evolutionarily. Receiving any unique "assembly" and combination of elements stops the design and evolution due to its uniqueness.

The last degree of discretization of systemicity is the one when systemicity, although it continues to be itself, i.e., to know itself, loses the meaningfulness and formality of this knowledge and disperses it into a continuous and continuously flowing irrationally sensed and sensing fog. This is a sensitivity (figure 4).

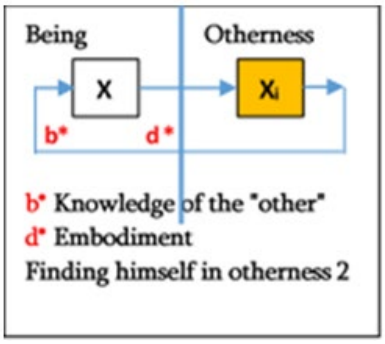

Fig. 4

Here, multiplicity, capturing the mind entirely, completely deprives it of the ability to see itself and others as unchanged. The mind sees only the fluid, discrete, becoming and does not grasp any design, any comprehension in this. Of course, systemicity still remains. Her remains, first, in full force as pure semantic self-consciousness, without which there could be no degree of this self-consciousness, in particular the degree that is being considered. Second, self-awareness of oneself and another in its absolute fluidity is still a kind of systemicity, for this is undoubtedly a kind of self-relationship, albeit a blind one. Pure self-awareness of absolute fluidity is systemicity, or its degree. In the pure fluidity of meaning, there are no stable and formalized semantic givens. This means that in the self-awareness of pure fluidity or, in the awareness of fluidity of itself, there cannot be a "subject-objective" opposition. That which only flows, feels itself, but does not know that it is it; feels different, but does not know that it exactly different. Such systemicity has transferred its entire self into another existence, although it does not realize this. However, having transferred herself to the other and forgetting herself how can she cognize the other if there is nothing to compare it with, if what is forgotten is precisely the very thing with which the other could be correlated? It is clear that separate knowledge of oneself or another cannot exist in such a system. This knowledge is endlessly stretched, its boundaries are blurred, it itself blurs, and all this continuity of becoming is indistinguishable and indivisible, meaningless and viscously formless. This systemicity to the degree of knowledge of oneself and others without comprehension of this knowledge, without knowledge of the fact of this knowledge, i.e. knowledge of oneself and others without semantic design, but exclusively in the form of a formless-fluid set, or, simply, this mind, discretized to the degree self-forgetfulness, but not yet losing the ability to know oneself and others, is a sensation. This means that the second possibility of discretization of the mind is the transformation of mind, systemicity, into sensation. Accordingly, the first possibility of discretization is thinking associated with sensation, or thinking about what is sensed. This is something between the absolute self-consciousness of the pure mind and the self-forgetfulness of the mind that has passed into the stage of sensation.

The "subject-object" opposition is contained in the concept of discretization. The greater the transition to other existence, the stronger the discretization, the more irrationalized the mind is, the more intense the confrontation between "subject" and "object" and the more and more the "internal" and "external" diverge, and the less and less it is possible to judge by one of them about something else and less and less clearly self-awareness.

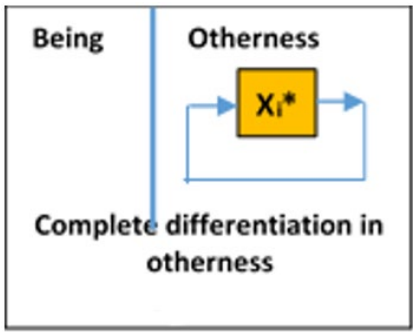

Fig. 5

The less discretization is manifested, the fewer moments of the mind it captures, the more and more the mind connects "external" and "internal", "object" and "subject", and the more and more it becomes possible to judge from one of them about the other.

As below (figure **5**), complete differentiation (localization) of "external" and "internal" up to the complete indistinguishability and lack of understanding of where "internal" and where "external" are, so that everything turns out to be immersed in an indistinguishable flow sensations, so at the top - complete

integration of "external" and "internal" to the point that it is no longer possible to see one and not see the other, so that everything turns out to be immersed in an absolutely revealed and transparent separate and luminous mind.

3. Symbols and Signs

Man lives not only in the material and social world, but is also largely at the mercy of the particular language that has become the means of expression and communication in a given society. Structural modifications of empirical language are associated with the symbolic structure or genetic code of creation - the Primary Name. In comparison with the conventionalist interpretation of such language, the word-symbol is not a sign, the primary name is an ontological transcendental that sets the condition for the possibility of the empirical deployment of ontological scenarios.

A sign, on the contrary, is a kind of symbol, its virtualization, which allows us to talk about different ontological statuses of a symbol and a sign. As a consequence, the difference in their structures, and, consequently, in the genetic codes of creation, becomes obvious.

The normal structure of being is being-symbol. This is an ontological norm of existence, which has as its basis a symbol, considered as the originally combined meaning and appearance of the essence. The language of existence of a symbol – language-symbol – has a dichotomous word structure. Topological shifting is an ontological process, the consequence of which is the splitting of being as a symbol and the emergence of a virtual structure of being. In such a process of splitting being into otherness, a decrease in the initial existential level occurs. At the same time, phenomenon and meaning virtualize themselves as independent entities, claiming their self-sufficiency. In such a "dissolution" of being by otherness, a two-natural being (**A-Ā**) arises (figure **3**). In a virtually structured two-natural being with a violated ontological norm, discrete entities appear, which form the basis of the sign reality of otherness. As a result, the language shifts from the symbol toward the sign, and the language begins to appear as a language-sign.

The language of a two-natural being – a language-sign - has a trichotomous word structure. The trichotomous structure of a word consists of a phoneme, which forms the psychophysical backbone of the word; a morpheme that serves as a connecting link between the phoneme and the internal form of the word, expressing the law or norm of two-natural existence; and a sememe, showing the expressed meaning. Virtualization in language arises due to the formation in the structure of a sign, along with the signified and designated, of a third element - a phoneme, the appearance of which is directly related to matter (discretization of being). Invading the structure of a symbol, causes a displacement of the elements of the symbol relative to each other.

The language-sign, trying to reproduce the structure of the language-symbol, creates virtuality, the illusion of full existence, using the signs available to it. Encoding the meeting of being and otherness, the sign gives rise to number as a regulating code of creation. The number arises as a measure of the "dissolution" of the energy of the meaning of existence in otherness. At the same time, otherness is forced to imitate being, like a sign to a symbol, like a language-sign to a language-symbol. Signs are forced to appear as symbols. The impossibility of the transition of otherness into stability is a prerequisite for the semantic mobility of a word, through a change in the form of the similarity of a sign to a symbol and, as a consequence of this metamorphosis, the reason for the ongoing discourse between the signifier and the signified.

Language-symbol and language-sign set the ontological measure of what predetermines the entire human civilization and the reality of its world as a whole, or tradition. At the same time, the ontologies of language-symbols and language-signs are diametrically opposed, one might even say "inverted" in relation to each other. If a symbol is the ontological normativity of being and a name, as the principle of symbolic ontology, sets the conditions for the possibility of a language-symbol, then the principle of ontology and, accordingly, the condition for the possibility of a language-sign is a number. Moreover, here we are talking about a discrete ontology of otherness, as a violated normativity of being and therefore "flawed" - the virtual structuring of being.

The name, as an ontological principle of the structure of being, is the source and foundation of otherness. Complementary <appearance-meaning> relate according to the law of reverse perspective and constitute eternity. The name, as a form of affirmation and self-affirmation of being, affirms it in Personal being as the mutual reversibility of appearance and meaning. The name requires understanding.

A tradition characterized by symbolic language as the last and highest authority, representing the fullness of conceptual possibilities, is the tradition of the name. The principle of this tradition is the name, and the form of existence of being is eternity, i.e., a completely different picture from the modern idea of time. Eternal existence (nonlocality) is self-sufficient, does not flow anywhere in the form of emanations, is not discrete and always remains integral, participating in various processes. Eternal being as a form of time of being-symbol is "being that is greater than itself." In the language of the tradition of name, there is no temporality, and there is no time in its discrete sense. There is absolute time - as the source of a single genetic code of <space-time> without a specific direction. The language-symbol has no direction for its development due to its self-sufficiency.

A tradition characterized by a language-sign, which virtualizes the reality of a language-symbol and claims the status of a universal language, is a tradition of number, the principle of which is number, and the form of existence is "being in becoming". This attitude considers time as an ontological process with its teleology as an existential decrease. The tradition of number is that it is less than itself due to its discretization (materialization) and the constant one-directionality of time, as the basic coordinate axes of the language-sign. The struggle between the traditions of name and number passes through all civilizations, in an obvious or hidden form. Since this conflict is inherent in their basic ontological concepts, they are absolutely irreducible to each other, because the tradition of the name excludes the tradition of number, and vice versa.

There is no transition between discrete and continuous: discrete is a sign of the real world, and continuous is a sign of the ideal world. Numbers are ideal, but things are formed and expressed in reality. Number and thing are mutually complementary, but also mutually exclusive. Quantity is characterized by numbers, and quality is characterized by the amount of systemicity of a thing. This is the difference between the sphere of fundamentally discrete numbers and the sphere of quantities - parameters of systems, which, although they bear intelligible signs, are also homogeneous to physical quantities in their visual representability. We can talk about the symbolic representation of numbers in magnitudes, but only as an image of the former in the latter, and in no way their identification: number and magnitude will never come together.

The system is involved in becoming and otherness, but at the same time it represents something integral, comprehensive and unique. The limiting value of the systemicity of a system is an "integral parameter" of itself; it is a kind of its own continuous integral system "unit", which can only be reduced, i.e. divisible, but not increased (otherwise it will be a parameter of a completely different system). A number cannot be arbitrarily divisible, because its basis and smallest element have no parts and are indivisible. Such a quantum is a discrete whole, the "lower limit" of a number.

Thus, the ideal number has a limit in the direction of the smallest, and in the direction of the largest it always exceeds any set. The number can be infinitely increased, but not decreased. For a specific quantity, it's the other way around - there is no such thing as an infinite quantity. A quality on the contrary, can be infinitely divisible, but cannot be increased.

The limit that limits the infinite, in one case in relation to addition-increase, in another - in relation to decrease-division, is the whole, in one case - a separate unit-quantum, in the other - the whole value itself, the integral parameter of a specific system.

The tradition of number is a special "background" program, an operating system, the sign-language of which is a computer language in which the basic programming alphabet is the numbers **1** and **0**. Binary oppositions: **0** and **1** are "prototypes of creation" of the number tradition. For the original two variables {**x**; **y**} taking values **0** and **1**, there are **16** possible logical

functions that represent the genetic code, in which all possible logical operations in otherness are collapsed (figure **6**). These are autonomous entities that serve on the basis of coding that determines system formation, regulated by the code of binary oppositions. This primary matrix of the gene of otherness, reflects the metastable binary rhythm, and constitutes the core of virtualization, capable of organizing into a game of unstable variations, from polyvalence to tautology, putting an end to what the sign meant before self-reproduction.

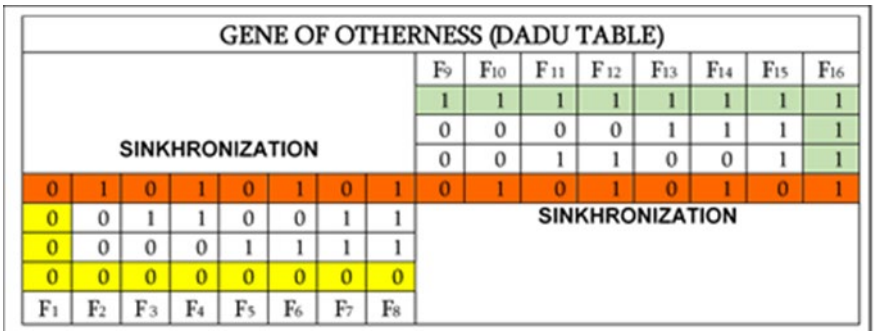

Fig. 6. Logical functions $F_{(1\text{-}16)}$ of two argumnets (x; y)

Operation $\mathbf{F_1=0}$ performs the function of the *generator zero*. Identical zero.
Operation $\mathbf{F_2=x\&y}$ performs the function of *conjunction* (dissemination).
Operation $F_3 = x\&\bar{y}$ performs the *prohibition* function on the logical variable **x**.
Operation $\mathbf{F_4=x}$ performs the *reiteration* (reproduction) function on the logical variable **x**.
Operation $F_5 = \bar{x}\&y$ performs the *prohibition* function on the logical variable **y**.
Operation $\mathbf{F_6=y}$ performs the *reiteration* (reproduction) function on the logical variable **y**.
Operation $F_7 = (\bar{x}\&y) \cup (x\&\bar{y})$ performs the variable *differences* function.
Operation $\mathbf{F_8=x \cup y}$ performs the function of *disjunction* (comparison and selection).
Operation $F_9 = (\overline{x \cup y})$ performs the function of *negating selection*.
Operation $F_{10} = (x\&y) \cap (\overline{x\ \&\bar{y}})$ performs the function of *equivalence* (identity).
Operation $F_{11} = \bar{y}$ performs the function of *negation* (inversion) of the logical variable **y**.
Operation $\mathbf{F_{12}=y \to x}$ performs the function of *implication* (indication; connection) **y→x**.
Operation $F_{13} = \bar{\bar{x}}$ performs the function of *negation* (inversion) of the logical variable **x**.
Operation $\mathbf{F_{14}=x \to y}$ performs the function of *implication* (indication; connection) **x→y**.
Operation $F_{15} = (\overline{x\&y})$ performs the function of *negating dissemination*.
Operation $\mathbf{F_{16}=1}$ performs the function of the *unit generator*. Identical unit, tautology.

Number as an ontological principle of the objective-material Universe is the principle of a discrete ontology that sets the conditions for the possibility of a language-sign and discursive thinking based on it. Analysis of number as a pure concept shows that in one there is 1) what is supposed, 2) what is believing, and 3) what is due, and between these three moments there is a very definite relationship. For the emergence of the number "two" or the concept of "second" to occur, obviously, in addition to "this," another "other" is needed, a transition from "this" to "other" is necessary. If there is nothing "other" than "this," then there can never be anything "second," that is, there can never be "two." The transition from "this" to "other" is possible only by comparing the "next" from the "previous" in time, i.e., the "generic identity" of the read values is necessary.

Thus, for a number there must be a relativity of one from the other in time, otherwise the unit will always remain a unit that does not provide a transition from "this" to "other".

The identity and difference between "this" and "other" is a condition for the production of a number series, and, consequently, meanings in a sign-language. In their meaning, in their basic meaning, "this" and "other" are completely identical (both are "something"), but in their actual existence, in fact (purely numerically), they are completely different. It is no coincidence that thought is an implication of the tradition of the name, since "to think means, first of all, to distinguish, and where there is no discrimination, there is no thought."

Let us consider as an example the roles and functions of the opposition "time-eternity" as constructive structures of a sociocultural whole. Time is an ontological process with its own teleology, i.e. it is oriented toward a specific qualitative limit. The temporality of time in otherness is discrete time. The concepts of "time" and "eternity" act "as tools for synchronizing joint human life in order to achieve the "fullness of time." The basis of any model of eternity is a model of time, projected into the area of measurement of eternal structures, which is the totality of all times. This totality performs the function of unifying time.

"Absolute knowledge", which is a characteristic feature of the synchronistic phenomenon, is knowledge that cannot be acquired through the senses. This confirms the correctness of the hypothesis about the presence of self-existent meaning and even expresses its existence. As knowledge of future or spatially distant events shows, this form of existence is located in the immediate space-time continuum. In the perception of time by human consciousness, when trying to replace the "ideal structures of the eternal," the phenomenon of time itself takes on the basic systemic properties and functions of the "structures of the eternal," which leads to substitution of its contents , by the systemic functions of eternity. Such "cultural" construction cannot but influence the picture of modern social and individual reality.

Space and time are conventional concepts generated by the activity of the conscious mind in drawing clear boundaries, and they represent indispensable criteria for describing the behavior of moving bodies. Synchronicity consists of "random" equivalences. Their necessary third term of comparison, the criterion of comparison, rests on "pure forms," which are called protostructures. They are uncertain, that is, they can only be known and determined approximately. Although they are connected with or "transported" by causal processes, they are constantly torn out of this frame of reference. In the categories of causality, protostructural equivalences are random, that is, there is no regular connection between them and causal processes. Therefore, it seems that they represent a special example of chaos or chance, or that "chaotic state" that "moves through time in a completely natural way."

The manifestation of the implications of name and number in culture is shown as the current activity of human society, revealing the hidden proto-structural traditions of the name in the tradition of number.

Synchronicity sets the possibility of transforming the amphiphilic structuring of otherness, and is a condition for the possibility of access to the truth, a way of self-regulation and self-restoration of language. The synchronicity existing as temporality, as a trace of absolute time in the discrete, represents a "protostructure" of the tradition of name in the tradition of number, i.e. synchronicity is the proto-structure of absolute time in discrete time.

The emergence of the phenomenon of number and time as a result of a "topological shifting" in a symbol indicates that the time of a two-natural being is a measure of energy load that stores the memory of being-symbol as a "trace" of symbolic ontology. The actualization of virtual memory of ontological normativity appears in the form of an invasion of proto-structures, the influence of which leads to a "fallout" from the natural coordinate system. As a result, time and space become relative and lose their meaning, since causality, which presupposes the existence of time and space, becomes completely unthinkable, i.e. cannot be considered existing.

The reason for the search for human thought in the problematic field of language and its relationship with the phenomenon of time was the intuition about

language as the "house of the truth of being," a hermeneutic mediator and understanding of language as the energy of meaning. This understanding of the relationship between language and time is associated with the heuristic potential of the idea of the fundamental irreducibility of language-signs and language-symbols to each other with the fundamental representation of the world as a name, as well as the manifestation of the implications of names and numbers in culture and economics.

4. Character of Otherness

In a two-natural being, there are two states of time - absolute and relative time, tending toward each other. The presence of these two states becomes possible only due to the "topological shifting" of the phenomenon relative to the meaning in the symbol, that is, in the process of discretization, since discrete time is a form of violated normativity of being.

In real life, there is a certain temporary damage, expressed in a cyclical or spiral form of time, capable of compaction or stretching, as a stable memory of eternity - absolute time. In the amphiphilic essence, the beginning and end of time are lock-in and thereby balanced it. It has a double structure - simultaneously temporal (diachronic, temporary) and extratemporal (synchronic, timeless). Through the symbol - "a hole punched in its subjectivity" - the essence comes into contact with ontological normativity, with the fact of the "otherworldly", when temporality in the usual physical understanding overturns into the "nonlocality of Eternity".

In the process of lowering the existential level of the symbol, the language-sign, discrete and abstract in its essence, turns out to be unable to express the continuity and integrity of ongoing processes, unlike language-symbol. When the language-symbol gradually begins to fade into the background due to the active virtualization of the symbol by the language-sign, the displacement in the symbol sets the conditions for the emergence of discrete time, which is characterized by unidirectionality and irreversibility and arises linear time.

With the advent of linear time - a directed vector from the past through the present to the future - the concept of eternity was considered in different interpretations in parallel with linear time. The world begins to be perceived in connection with temporality, in which all phenomena do not exist at once, and everything in this world has its place, the beginning of existence and the end. This determines the character and structure of otherness.

There is a possibility of overcoming space-time boundaries due to the "expansion" and "constriction" of consciousness. In the concept of consciousness as an operating system of the number tradition, it is shown how a decrease in the existential level of a symbol as a result of recoding carries with it the displacement and final replacement of the symbol by a code - a number. Interpretation of the relationship between number and consciousness, carrie out in a programming language - a language-sign. Consciousness is the result of launching a metaprogramming circuit in which the number resides in a single reality - a discrete otherness. Through consciousness, number as an ontological principle of two-natural being itself creates discrete being and structures it.

The reaction of tradition of name, occurs in response to the virtualization processes of the number tradition. The process of discretization being leads to an appeal to the lower level of the phenomena of language and time and, accordingly, culture. Due to the presence of its "otherness" in the word, along with the comprehension of a discrete element, otherness is not able to constantly "idealize", as happens in the symbol and "ideal forms". The impossibility of the transition of otherness into stability and meaning is a prerequisite for the semantic mobility of the word and, as a consequence of this metamorphosis, the reason for the ongoing discourse between the signifier and the signified. The language-sign tries to reproduce the structure of the symbol language and thereby creates the illusion of full existence, using the signs available to it.

The structure of the language-sign is characterized by the presence of three components: label-signifier, content-signified, and morphological similarity of the sign itself to the phenomenon it denotes. Metamorphosis goes through three stages of the sign formation process, the onset of each of which is characterized by another change in the form of the sign's similarity to the symbol.

At the first stage of the process of sign formation, the language-sign virtualizes the energy of the form (the energy of the name) due to the morphological similarity of the full existence of the forms of the sphere of symbols to what they denote. It is no coincidence that at this stage the forms are still "protected by the ban on replication, wich provids them with complete clarity", that is, the transition from the uniqueness of each form to their "unlimited" creation is prohibited.

Morphological similarity is violated by the fact that in a two-natural being there is a virtualization of the phenomenon (form) of the symbol, comes the quasi-corporeality of linguistic reality, and the meaning is already opposed to quasi-corporeality. This is because that the counter energy of the symbol's appearance is absent due to the shift of the same symbol. Thus, two traditions are established: the tradition of the name and the tradition of the number.

In the second stage of the sign formation process, the form is described as a type of sign. When the "external" similarity of signs and symbols is replaced by an "internal" similarity, the sign imitates not the symbol itself, but the processes of thinking, knowledge of truth, i.e. the form of similarity changes. The second stage of the process of sign formation is characterized by an obvious difference in the status of language as a language of both being and thinking. Being and thinking act as independent subjects of consideration, to achieve which they actually resort to language. In other words, deontologization occurs ("not addressing" existence).

It is important to note that the flow of speech, taken by itself, is a line, a continuous tape. That is, on the one hand there is continuity of the text, on the other hand, there is discreteness, in the form of at least words. Considering that a simple sentence is a system, and a word is also a system, traveling through a text is at least a two-dimensional movement. Such a movement is undoubtedly evolutionary. At any given moment, speech activity presupposes both an established system and evolution. At any moment, language is both a living activity and a product of the past. However, if language includes evolutionary aspects, then it can be considered both an instrument of evolution (in the communication sense) and its reflect for the observer.

Thus, the emergence of any language plays the evolutionary role of an accumulator of information about the world. In the process of human activity, not only the accumulation of information in linguistic form but also the active study of all forms of its organization began to occur. Language-as-sign now becomes a function of representing the subject; it no longer denotes external things. A sign does not turn into a thing, but becomes an image of consciousness, a system of representation, since knowledge based on signs is consciousness, rationality. Therefore, the language-sign shapes our consciousness.

Language is directly subordinate to the rationalistic logic that characterizes language-sign, with its sign forms and laws of thinking. With the invention of language-sign, the recognition of time begins, namely the past associated with memory, which encourages to recreate events using imagination.

For such an element as a phoneme, at the second stage of the sign formation process it turns out to be terminologically encrypted: - the structure of the sign begins to virtualize the structure of the symbol, and the emergence of new terms is an inevitable consequence of a "topological shifting" in the symbol.

In otherness, the arbitrariness of a sign begins to appear when, instead of connecting systems with bonds of inextricable reciprocity, it begins, as a signifier, to refer to the revealed world of the signified, to the common denominator of the real world, to which no one owes anything.

Considering the development of civilization, the imperceptible disappearance from the structure of a sign of such an element as morphological similarity is noted. There is a movement away from the Prototype as a result of the virtualistic development of language. These processes lead to the symbol becoming a type of sign indicating a certain reality. Language begins to be viewed "in itself and for itself" as a system of relations and distinctive units (a symbol is interpreted as a sign).

At the third stage of the process of sign formation, the self-referentiality of signs is described and the process of virtualization is analyzed, which comes into force at the present time, coming from the tradition of number, and carrying within itself the desire to preserve

the meaning of the word by artificially completing its meanings, i.e. overcoming the crisis in the language by hyperbolization of language. Again the form of the sign's similarity changes as the sign produces another sign.

Representing no longer external things and ideas of the subject, signs build a virtual similarity by self-reference. "Topological shifting" at this stage is observed in the sign itself - between the signified and the signifier. A text, devoid of any structural organization, due to the illusory nature of the structure, which is a field of play for decentralized signs and scattered meanings, is only a clutter in the space of language. The uncontrolled multiplication of signs and meanings leads to the emergence of "floating" signifiers and signifieds, fraught with hyperreality, where there is no longer a boundary between the imaginary and the real. This is the unreality of a hallucinatory self-similarity of reality.

Today, a person deals with virtual information hyperreality, which is the basis for increasing the order of manipulation. The very form of similarity undergoes a radical change in priorities. Now, at the third stage, signs virtualize not the external similarity of signs and objects, not the internal similarity of the cognitive abilities of the subject and the objects constituted in cognition. After all, it is a question of self-reference. If a sign points not to objects, not to the subject of knowledge, but to itself, then the only form of its self-identity and its self-similarity remains nothing more than the principle of difference in the sign itself. Difference creates distinctiveness, and it also creates significance and unity. As a consequence, one can observe a game of discursive meanings, substitutions or random mutual substitutions in writing, carried out with only numbers, signs and words, i.e., a person is faced with the omnipotence of operational virtualization, not burdened by any meanings and messagings.

It is precisely the code, which is structural logic, that distinguishes modern thinking from the thinking structures of the distant past. Instead of the object of representation, we end up with the fact of its negation and even destruction, i.e., reality, evaporating, turns into reality for reality - hyperreality or "the unreality of the hallucinatory self-similarity of reality," because language duplicates what is said and with the effect of reality.

Language-sign, due to the endless multiplication of objects, begin to claim the status of a metalanguage, however, the hyperbolization of language is precisely characterized by a reality that is not reflected in the language, but involutively collapses until its complete exhaustion. The disappearance of the symbolic record (symbol) gives way to only one structural record - the code. The analytical identity of the original record is replaced by its equivalence in a code system that virtualizes its meaning as a linguistic value. In parallel with the multiplication of semantic content, the sign field of language is expanding. The response of the tradition of the name of the established reality is presented as the closure of the illusion of some virtuality. This is how the tradition of a new reality arises - this is a kind of "protostructure" of the tradition of the name, manifested in the constant presence of the image of the past and coming from the original time.

In the course of the violation of ontological normativity, a collision begins with the virtualization of the symbol and its replacement with a sign, which indicates the beginning of metamorphosis. However, there is a response from the symbol, such as the construction of the matrix of the genetic code of creation - the Primary Names. The tradition based on the Primary Names tries to convey the truth of existence through amphiphilic practices. This is confirmed by amphiphilic practice, the basis of which is the principle asserting that with the entry of the word into the world, everything in the world became language, for the world bears within itself the stamp of the "solidification of the word." Currently, the subject-actor is a form of ignorance of the world, with a "distorted" consciousness about it.

5. Inner Essence of Number

If we consider the phenomenon of number as a principle of discreteness, that is, as the basis of a discrete ontology of amphiphilic being - a principle oriented toward language-sign, then the following picture is observed. The basis of amphiphilic existence, and, accordingly, in sign reality, is a violation of the ontological Norm, as a result of the invasion of the Other

into the voids of the symbol, formed during its split after the "topological shifting".

At the same time, the law of reverse perspective as a principle of the symbolic structuring of existence is also violated. Amphiphilic being turn out to be dissolved by otherness in being. It is the number that shows the degree of dilution of being with nonexistence, the degree of absence of a name in being. At the same time, number kills the personal principle of being and replaces it with materiality, becoming a function of material Otherness, requiring knowledge.

"Number as the antipode of a name" is analyzed as a principle of discrete ontology. At the same time, it becomes obvious that being in time, or two-natural being, is characterized by the relative form of its existence and has its own spatial and temporal limits. Moreover, time can be imagined as an ontological process with its teleology of decrease from completeness to absence. This representation of time is the exact opposite of symbolic, absolute time, since in the ontological normativity of being (being-symbol) time does not exist in the traditional sense, and the emergence of temporality is directly related to the "topological shifting".

The most interesting case seems to be when, in otherness in time, a mathematically described amphiphilic structure is considered, containing the memory of a symbol. The amphiphilic essence plays the role of a kind of mediator between discrete reality and consciousness containing the memory of the ontological norm.

In the case when the event lies in the "absolutely remote", a transformation of amphiphilic being is observed due to the activation of the "existential" memory of the symbol, returning the defective being to its ontological norm. The influence of the symbol through synergy introduces a change in the understanding of the phenomenon of time: time - in the "absolutely distant" embraces both the past and the future - a kind of "neighborhood of the point "now". This phenomenon can be interpreted as nothing more than the absence of time in its categorical understanding. An event that simultaneously embraces the past and the future is an event that occurs in the sphere of being-symbol. Time in this sphere is synchronous, at the same time it is eternity. Moreover, time and space in being-symbol are grasped "at once" together. "Absolutely remote," the ideal region, is the center of the model of eternity.

The complex number present in the formula of an imaginary, space-like interval makes it possible to study in detail the phenomenon of a complex number as a process of unification of discrete being to the ontological norm of being. It is the process of unification of discrete time to absolute - eternity. That is, there is a modification of the measurement of traditional time using an imaginary unit.

The definition of synchronicity as a process of coordinating meaning and phenomena in a language-sign in discrete time describes the decoding of language-sign objects through a change in space and time through "compression" and "convergence" to the point "now". Temporal "compression" to the "neighborhood of the point "now"" is defined as "crowding." Space and time here should be understood as categories of discrete existence or two-natural existence. Thus, thanks to the existence of an internal connection between complex numbers and synchronicity, the comprehension of being-symbols is realized through "imaginary irrationality."

Based on two types of the phenomenon of time: discrete and eternity, the study of complex numbers allowed us to assume that absolute time, being a form of existence of symbolic being (the tradition of a name), also covers the discrete time of the tradition of number, being present in it in an implicit form as an ideal remainder in the number, which represents as imaginary part of a complex number, functioning as the Absolutely Other, as fundamentally unattainable.

The presence of an ideal remainder of the tradition of name, during the actualization of the imaginary part of a complex number is a condition for a change in space and time, leading to the so-called "expansion" toward the absolute time of the tradition of name, while simultaneously "compressing" the discrete number tradition. This refers to a discrete understanding of "expansion" as a process of delocalization of what strives toward absolute time, since the form of absolute time is eternity. This is how the "breath" (pulsation) of Being is described.

A complex number as a complete number is a transcendental function of a language-symbol in discrete

time, since it represents the process of coordinating meaning and phenomena in a language-sign in discrete time, through the actualization of the virtual memory of the symbol as an ontological norm. A complex number carries energy of energetic act, as a complete number, i.e., the internal content of the meaning of normative being, which, pouring outward, represents the inner depths of symbolic existence.

The noted phenomenon is clearly visible in the theory of complex numbers. For complex numbers, there is no concept of quantity with typical more-less properties and no concept of order. It is impossible to determinel which complex number precedes or follows any given data. With the help of complex numbers, it is easier to find many connections between real quantities. In a sense, complex numbers model a discrete ontology. This is an of pairs of numbers, postulating the existence of two sets of elements between which pairwise relations are specified, characterized by complex numbers containing the square root of minus one.

Let us examine the inner nature of such pairs of numbers, with a view to revealing their hidden meaning, and to show by this example that expressions that, according to ordinary views, appear to have only symbolic necessity, but have been completely uninterpreted, can enter the world of thought and acquire reality and meaning.

The mathematical description of number, as the principle of discreteness of amphiphilic existence, finds its refraction in the study of a complex number of the form:

$$z = x \pm yi,$$

where: **z, x** and **y** are real numbers, **x** is called the real part of a complex number, **yi** is the imaginary part; and $i = \sqrt{-1}$ is an imaginary unit or an imaginary number.

A complex number, from the point of view of the concept under consideration, manifests the "pure idea of number". It represents a special continuum of numerical unity and indistinguishability of the three main spheres of number, as the revealed idea of "pure number" or its first principle: intensive, extensive and operational numbers, where:

1. The intensive number or mathematical essence of a complex number is **z**.

2. An extensive number or its phenomenon is the real numbers **x** and **y**.

3. The operation number, that coordinates essence and phenomenon and reveals the reality of the tradition of name for the tradition of number is **i** or an imaginary number.

In the theory of complex numbers, the "real" and "imaginary" parts of the One Whole Number are not mutually negating concepts, in contrast, they are two complementary independent parts that carry their own specific meaning of the one whole number for a certain system.

If the "real" part of the number is the degree of differentiation of the system, then the "imaginary" part of the same number is the degree of its integration. One part cannot be the negation of the second part, otherwise there would be no corresponding single whole number. The system plays the role of a kind of mediator between discrete reality and continuous reality, containing the memory of the ontological norm. The imaginary number i is precisely the memory of the symbol as an ontological norm. In this case, **x** and **y** represent a phenomenon (quasi-body) or numbers as an invariant of objectivity, and **yi** – meaning (quasi-system) or pseudoname as an invariant of subjectivity. Neglecting of the imaginary part of a number leads to the elimination of the normalizing component, and, as a consequence, to the reduction of the single whole number to a giant discrete archisystem in which meaning plays a minimal role in system formation.

When **y** is equal to zero, a situation occurs when an intensive number is represented by an extensive number: the essence is represented only by a phenomenon. A complex number is considered as a real number **x**, i.e. when:

$$y = 0 \rightarrow z = x$$

Those. there is a complete loss of the symbol as a norm of existence. When **x** is equal to zero, a completely different picture arises: a collision occurs with the essential discovery of the reality of the tradition of the name.

$$x = 0 \rightarrow z = yi$$

In other words, a complex number becomes a purely imaginary number. In this case, a transformation of two-

natural existence occurs due to the actualization of the memory of the symbol, i.e., a return to the ontological norm. Although this return is short-lived because regardless of whether the number is imaginary or real, the number remains a number. Number kills the personal principle of being and replaces it with materiality.

Another conclusion: when considering the number **z**, it can be argued that **z** as a real number is not self-sufficient, because it requires in its full form the arithmetic sum of a real number and - some special ontological remainder that adds up to a whole, creating the illusion of a full-fledged "being that is greater than itself."

In fact, despite containing an imaginary number or memory of a symbol, the imaginary part (**yi**) also consists of a real number **y**, which performs the function of a material otherness, thereby leaving the possibility of metamorphosis of the thing under study and the discovery of something that was not initially grasped, was not seen, could not be recorded. Hence, as a result of the sum of two parts, the result always remains the same - "a being that is less than itself" (reactivity).

A complex number is a formula for the potential for transformation of discrete being, the subordination of discrete time - eternity, which occurs in the tradition of the name. In a complex number, the **yi** or imaginary part is the transcendental remainder, functioning as the Absolutely Other, as the fundamentally unattainable. By neglecting yi at **y=0**, we thereby contribute to the formation of the phenomenon of a virtual environment, displacing the model of eternity and replacing its structure. The unification of the model of eternity or the "absolutely remote" occurs in the process of synchronicity of time, as a fact of achieving the "fullness of time." Thus, **yi** is part of the referent area of our consciousness, reserving the meaning of ontological normativity.

Therefore, when **y=0** there is a collision with the virtualization of the ontological norm of existence, where time is represented by the concept of "real time". Such virtuality, articulated in the idea of a new reality, does not need depth of meaning, since the the production and interconversion of discourse become sufficient for it. Moreover, the linguistic element becomes that very universal "medium" for various manipulations with meaning ("The past is erased, what was erased is forgotten, and the lie has become the truth").

Because of this, language is no longer rooted in the ideal region of meaning or, in the "house of being." Language becomes a border, on one side of which the language-sign is constantly recoding the language-symbol located on the other side of the border. Thus, the imaginary number i in a complex number represents the very boundary of the language that recodes the tradition of a name into the tradition of a number. Consequently, it is the imaginary number i that carries the ideal function in a complex number, expressed in the qualitative combination of opposites, including temporal opposites through synchronicity.

In the development of the concept, there is an approach to the unitary idea of being, characterized, on the one hand, by space and time, and, on the other hand, by causality and synchronicity, which makes it possible to see whole picture unity of being. This leads to an understanding of the complex number as an ideal function of tradition of name in the tradition of number. "Crossing the border" should be understood as the actualization of the imaginary part of a complex number through the actualization of the virtual memory of ontological normativity.

The "pure idea of number" is understood as a complex number, the imaginary part of which is different from an ordinary real number and represents a new reality. Number is not only a category of being and consciousness, number is an ontological principle of the tradition of number. The implications of the tradition of number are the numerical code, which manifests itself in consciousness as a function of the number program. Number is an act of semantic positing, and not the content of this positing, since number is an outside content, nonqualitative semantic structure. However, this definition cannot be attributed to a complex number containing in its imaginary part a region of semantic symbols - i, which represents the way the number remains in its otherness.

Applying the idea of the trichotomous structure of a word to a complex number, an analogy is discovered between the structure of a word and the analysis of

number: real numbers, **x** and **y** are an analogy of a morpheme in a word; **z** is an analog of a phoneme and **i** is a sememe of a word or virtual systematicity, the meaning of being-symbol. Consequently, when **y=0**, a complex number turns into a real number and expresses a purely discrete principle of two-natural existence. When **y≠O**, the complex number is an ideal function of the language-symbol, in discrete time. When **x = 0** and **y≠O**, a complex number represents the process of coordinating meaning and phenomena in a language-sign in discrete time through the actualization of virtual memory of the symbol as an ontological norm - **i** (consciousness) through synchronicity.

Thus, a complex number can be represented as the semantic energy of the act of positing in discrete time, which appears simultaneously with the number in the operational space and limits any process of formation, thereby synthesizing a two-natural being-symbol. Consequently, we can propose another definition of a complex number, and, consequently, of the number itself, since a number is a tamed form of a complex number, i.e. a number is, in fact, a complex number without its imaginary part: a complex number is a mental act positing through a word containing a "topological shifting" between phenomenon and meaning in a symbol in time. As soon as a "topological shifting" appears, number arises as a principle of separation and differentiation of meaning and appearance in a language-symbol, as a principle of logical (calculus), as a principle of ontological distinction and design of discrete being - two-natural being.

In the pure fluidity of meaning, there are no stable and formalized semantic givens, which is typical for a conductor. The process of formalizing semantic data in other beings is realized in the process of system formation. Systematicity collides with a discrete flowing set - a variable energy flow of meaning. Meaningful energy makes it possible to design amphiphilically structured matter. It creates the potential for transformation of discrete otherness. Interaction occurs in upward and downward directions.

Pure self-awareness of absolute fluidity determines the degree of its systemicity. It is a condition for the occurrence of an ascending process of the formation of semantic data in otherness existence. The process itself is characterized by the efficiency of transformation. Efficiency in a circuit of variable flow of sense is expressed by a complex number, in which active efficiency is its real part, reactive efficiency is its imaginary part, and total efficiency is its module.

$$S=P+iQ$$

where: **S** - Total efficiency;

P - Active efficiency;

Q - Reactive efficiency.

In the case of a single-pole conductor, this is an emitter. By passing the flow through itself, it releases semantic energy due to the existing internal resistance (**R**). No delays between flow and voltage and no frequency dependence. The amount of tension is determined by the difference between the potential of the ideal prototype and the potential of the current formation of the semantic given.

Active efficiency characterizes the rate of irreversible transformation of semantic energy into other types of energy. The loss efficiency **P** (average over the oscillation period) is expressed by the relation:

$$P=R|I|^2/2.$$

Elements of the circuit that do not emit meaningful energy, passing the flow through themselves, but at the same time take energy from the flow passing through them, are called "reactive" elements, and the corresponding reaction to the passing flow is designated by the letter (**G**).

Hidden in the phrase "reaction to a passing flow" is an elegant picture of phase shifts. Reactive efficiency (**G**) is a quantity characterizing the loads created in transforming devices by fluctuations in the energy of the semantic field in a network of variable flows. It is equal to the product of the rms values of voltage and current multiplied by the sine of the phase angle **φ** between them:

If the flow lags behind the voltage, the phase shift is considered positive, if it leads, it is considered negative. The reactive efficiency is related to total efficiency and active efficiency by the ratio:

$$|Q|=(S2-P2)^{1/2}$$

The functional meaning of reactive efficiency is the energy pumped from the source to the reactive elements

of the receiver, and then returned by these elements back to the source during one period of oscillation, referred to this period. Reactive efficiency can be either positive or negative. This circumstance emphasizes the fact that reactive efficiency is not involved in the operation of the flow. When a receiver has a positive reactive efficiency, it consumes it, and when it has a negative reactive efficiency, it produces it, and this is due to the nature of the transforming devices. The reactive elements of the network have the characteristics of inductance and capacitance, in the fields of ideas and values, which storied part of the energy of the passing flow. By themselves, these elements are lineariy passive. Reactive elements are only functional in variable circuits. Their functionality is to create delays. The measure of the energy load of the network is determined by the memory stored in it.

In general, the reactive efficiency is a function of the inductance, capacitance, and frequency, and is not simply expressed as a single numbers such as the active efficiency.

The resistance of the network of variable flow conductors of sense includes the resistance of the active (**R**) and reactive (**G**) receivers in the network. If this complex impedance G is added to the normal R, then the complex impedance **Z** of the network is obtained. Impedance characteristics are introduced for transmission channels of wave disturbances of any nature for an integral assessment of obstacles to the passing flow. One complex value of impedance **Z** describes all the external properties of receivers in a network consisting of passive linear elements with two poles connected to an external device, in the case of quasi-stationary harmonic processes with time dependence. The impedance value is:

$$Z(\omega)=U/I=R(\omega)+iG(\omega)$$

Here, the **U**-complex voltage amplitude between the poles, the **I**-complex flux amplitude in the direction from the first pole to the second pole, the **R**-real part of the impedance (active resistance is responsible for the energy losses entering the two-terminal network), and the **G**-imaginary part of the impedance. It characterizes the amount of energy pulsating with a frequency of **2ω** (and therefore on average over a period equal to zero), accumulated in a two-terminal network and given back to the source. Its sign is determined by its dependence on time. The impedance module is called the impedance of a two-terminal network.

$$|Z|=(R2+G2)^{1/2}$$

In the case of a pure semantic two-terminal network, the formula for semantic resistance for the variable flow of sense is **G=GL=ωL** (where **L** is induction). This device also has a neat effect. If the flow enters the receiver with such resistance, then a semantic field arises, which suddenly begins to interfere with the flow in the receiver. Moreover, the higher the frequency, the greater the resistance (for a constant flow it is zero).

In the case of a pure morphological two-terminal network, the formula for morphological resistance for an alternating flux is $G=GC=-(\omega C)^{-1}$ (where **C** is the capacitance). The elegance of the picture lies in the fact that the capacitor does not have real resistance, but an imaginary one. And it depends on the frequency, the higher it is, the smaller it is (for a constant flow it is infinity). If the flow enters the receiver with such resistance, then a morphological field arises, which causes either the accumulation or consumption of field energy. This resistance to flow (which appears only in the presence of oscillations) is called reactive. The difference in signs is generated by dual asymmetry and reflects the relationship between the phases of voltages and fluxes: the flux in an ideal receiver with self-induction lags in phase by **π/2** from the applied voltage, and the flux through an ideal receiver with a capacitance leads by the same angle the voltage created at its poles . That is, inductance and capacitance work in “opposite directions” from each other.

Omega (**ω**) is the circular frequency **=2πf**; and **f** is the voltage frequency. If suddenly at some frequency ω they turn out to be equal to each other, this causes “resonance at this frequency.” Then their total resistance is equal to **0** or infinity, depending on how they are connected: in series or in parallel. This corresponds to either complete discretization or the achievement of transformation of the prototype. Total efficiency is a value equal to the product of the effective values of the periodic flux in the circuit and the voltage at the poles of a two-terminal network and is related to the active and reactive

efficiency by the ratio:

$$S=UI=(P2+Q2)^{1/2}$$

where: with an inductive load , and with a capacitive load , i.e. the sign depends on the nature of the load.

Total efficiency has a practical meaning as a value that describes the loads actually imposed by the receiver on the elements of the supply network, since these loads depend on the flow consumed, and not on the energy actually used by the receiver.

Conclusion

Full-fledged Being is characterized by a language symbol, as a Primary Name. When being and otherness meet, language is a boundary, on one side of which there are symbols, and on the other side there are signs. A sign is a similar to a symbol, its code portrait, which allows us to talk about the different ontological statuses of a symbol and a sign. The consequence of this is their functional difference - symbols determine codes, as carriers of meanings, and signs determine the genetic codes of creation in otherness.

Language-sign is engaged in constant recoding of the symbol language. Coding, the sign generates number as a regulating code of creation in otherness. The number arises as a measure of the "dissolution" of the energy of the meaning of existence in otherness. At the same time, the absolute time of being serves as a source of <space-time> otherness, without a specific direction. The definition of synchronicity, as a process of coordination of meaning and phenomenon in being, for language-sign in discrete time, describes the decoding of objects of otherness existence through a change in space and time by "compression" and "convergence" with point "now".

Number is not only a category of being and consciousness; number is an ontological principle of the tradition of number. The number tradition is a special "background" program, an operating system. The implications of the number tradition are the numerical code, which manifests itself in consciousness as a function of the number program. This code represents structural logic. In the concept of consciousness as an operating system of the number tradition, it is shown how the lowering of the existential level of a symbol as a result of recoding carries with it the displacement and final replacement of the symbol with a code-number. Interpretation of the relationship between number and consciousness, carried out in programming by language-sign. By clarifying the influence of language-sign, as an implication of the tradition of number, on public consciousness, today it is possible to identify the immersion of humanity in a virtually structured two-natural existence. The situation of replacing meaning with matter implies the absence of meaning among the multitude of received "meanings," thereby forcing a person to question lost meanings and search for the unsaid in the said.

Economism, which has developed in society, is increasingly beginning to be reduced to the economic needs of the masses against the general background of the industrial growth of technology. At the same time, the "sense of value and strength of personality" is reduced to the last degree. Today's world, immersed in the tradition of numbers, carries within itself, as a result of the influence of ontological inversion in relation to the symbol, a transformation of civilization, at first glance leading to the integration of human society. At its core, so-called "integration" means the loss of its semantic basis and the disunity of society.

From the point of view of the proposed approach, the solution to this problem is seen in levelling semantic disunity and restoring the integrity of a person's inner world. The acquisition of meaning by man inevitably determines the establishment of the natural order of things and leads to unity, in other words, to the restoration of ontological normativity, since the very idea of unity is the complete opposite of chaos and is inseparable from concepts such harmony and order. The problem considered causes the actualization of the virtual norm within a person - as an attempt to return the structure of the Symbol to existence: the combination of Meaning and Phenomenon in the Symbol and the transformation of two-natural being.

The proposed approach also allows us to consider from a new angle a new problem of psychopathology - speech disease, speech disease in an age when a sign, and not a Symbol, has established itself with the growth of virtual processes as the norm. In a situation when a sign becomes the norm, a whole complex of problems of

"personal language" arises for expressing one's feelings and experiences, which has retained only a grammatical character, and this requires a new approach to the unity of human experience (intersubjectivity).

The interpretation of the heuristic idea of the Symbol as a normal structure of being indicates that the phenomena of consciousness and the unconscious are products of a violation of the norm of being-Symbol and have their own ontological basis - the two-natural structure of being. This confirms the need to clarify and return the ontological status of the unconscious and reveals in a new way the genesis of the phenomena of consciousness and the unconscious in the process of their conceptualization.

Research based on the proposed approach shows that if in the sphere of consciousness the potential of unity is conceptualized as an ideal plan, then in the sphere of the unconscious it is expressed by the concept of systematicity, i.e. in the sphere of the unconscious. Potential of unity is preserved as a memory of the norm of the ontological process until the "topological shifting", the consequence of which was the splitting of Being-Symbol and the transition of memory from the actual mode to the virtual mode. Consciousness virtualizes the meaning of the resulting flawed being as its otherness, and in it its shadow side appears, representing the unconscious. The transformation of consciousness is carried out through the actualization of the virtual potential of otherness existence in the sphere of the unconscious.

Thus, the concept under consideration is a consistent justification and expression of a purely ontological approach to the problem of consciousness and the unconscious. Consideration of traditional topics and issues of ontology: how name, number, time, consciousness, from the standpoint of the heuristic potential of the idea of the fundamental irreducibility of language-sign and language-symbol to each other, made it possible to illuminate the concept of a complex number as an ideal function of a language-symbol in a discrete time.

References

1. Dadunashvili, S. (2018). *Medical Expert System with the Properties of Artificial Intelligence*. Springer, IFMBE Proceedings 68/1.
2. Vopson, M. (2023). *The second law of infodynamics and its implications for the simulated universe hypothesis.* AIP Advances 13, 105308
3. Dadunashvili, S. (2012). *System Pattern of Consciousness Functioning.* Springer, IFMBE Proceedings 38.
4. Dadunashvili, S. (2022). Economic field as a tool of social structuration. *Works of GTU, 1*(523).

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