Introduction to the Systems Logic

Conceptual Foundation

In the 1930s, Ludwig von Bertalanffy (1901–1972, Austria–Canada–USA), Austrian–born researcher, began development of the general science of wholeness also known as the *systems theory* [von Bertalanffy (1968) 37].

Gradually, the focus of research changed, and the *systems laws* became the main subject of consideration. The systems laws are the derivatives of the *universal law**Σ1***; they govern creation, existence, development, destruction, and transformation of the systems, dimensions, and realities of the human time–space–complexity–bounded world.

Consequently, the systems theory received the rank of universal science – the *metalanguage, metascience,* and *metaparadigm*, appropriate to the meta–level of studies previously defined as metaphysics [e.g., Löfgren, ref. in: Klir 15; van Gigch 429].

Among the primary purposes of the systems theory, researchers mention extended understanding of the Universe, improvement of the world [Reckmeyer 183, 184], and comprehension of the laws, which control the Universe and its subsystems at the different levels of complexity.

Some researchers began to consider systems theory as an ultimate version of the universal or "final" theory sought by every generation of philosophers and scientists, for instance, by the Milesians (late seventh – early fifth centuries B.C.), as well as by the contemporary researchers [e.g., Weinberg 7; Reckmeyer 183].

Initially, Ludwig von Bertalanffy asserted existence of similarity between the systems theory and the theory of analogies. He assumed that a system might be seen as a "conceptual analog" of the universal phenomenon considered from the interdisciplinary point of view, or as "a *model* of general nature" [von Bertalanffy (1972) 27, 31; italic in the original].

In fact, fundamental differences exist between a model and a system:

1/ a system is the source of a model, thus, the system's level of complexity exceeds the model's level of complexity

2/ by the very nature, any model is an imaginary construction, and as such, is endowed with a restricted level of complexity inadequate to the actuality, which, nevertheless, the model is expected to explain or to predict. Such expectation is illogical; furthermore, the initial illogical assumption initiates failure of the research, which it apparently, was intended to sustain.

For a description of a model and subsequent forecasting of behavior, features, and possible Future of the observed phenomenon or event, researchers employ artificial languages with restricted levels of complexity – such, for instance, as mathematics and symbols. In addition, if the level of complexity of a particular parameter exceeds (or does not correspond to) a limited purpose of observation, researchers intentionally discard the parameter, thus, intensify the inadequacy of observation. Finally, all the restrictions, discarding, reductions, and simplifications come to the simplified – therefore, irrelevant – inferences and results, which might adequately reflect the needs and the complexity (e.g., level of intellectual development) of a creator of a model, yet, which do not disclose the actual nature and purposes of the observed object.

As any new or re–discovered and held to be new domain of knowledge, the systems theory went through the typical stages of development: it attracted many researchers, experienced the pick of publications, influenced many interconnected and previously non–connected fields of thinking. Some of the assumptions developed within its framework have been embodied into conceptual and material systems, for instance, such as philosophical concepts, information networks, systems of defense, and the others.

The systems theory opened an opportunity to regain the complexity and comprehensiveness of consideration lost during the long time of adherence to the Aristotelian logic of simplification, or logic of death***Σ2***, through which the heathenism became the alternative framework of knowledge for the minds that

a/ have rejected the knowledge of only One True God
↓
b/ became incapable of evolution*Σ3*
↓
c/ make themselves busy with accomplishment of anti–evolution

The most advanced possibilities of the systems theory however, somehow slid out of the focus, probably, because of the common problem: lack of philosophical foundation.

In general, two things provide the starting point for any research activity and secure valuable results: the philosophical foundation and the method.

In lieu of development of the philosophical foundation, technological applications based on formalized languages ***[[***e.g., in information technology, defense***]]*** became the main direction of the systems research. The attempts to find the proper philosophical foundation failed, firstly, because the contemporary philosophy is based on philosophical doctrines of Plato and Aristotle, while the common foundation of the philosophical doctrines developed by Plato, Aristotle, and their followers is the Orphism. It means that the contemporary philosophy is utopia – myth similar to its source: imaginary constructions of the ancient heathens; as such, it is not sufficient for creation of knowledge adequate to the actuality.

For instance, in the 1930s, English philosopher Alfred N. Whitehead (1861–1947) referred to the European philosophy as to "a series of 'footnotes to Plato'" [Alfred N. Whitehead ref. and qtd. in: van Winden 124]. Ludwig Wittgenstein (1889–1951) linked philosophy with "a mythology of symbolism" [Wittgenstein (1974) §18 56]. Another researcher concluded that the modern philosophy is the sum of "clashing contentions without consolidated results"; it does not offer the guide, which is systematized and ready to be applied to life [Resher 135, 137].

General philosophy of logic also did not advance in comparison with the Antiquity.

Initially, at the dawn of human history, the pre–Plato philosophers operated with essences and concepts, which reflect the complexity of the world they had to dominate and to lead to evolution***Σ3***.

Then, with advancement of the Minoan civilization, the heathenism***Σ4***, and its most elaborated version – the Orphism***Σ5*** began to spread over the populated world.

Then, Plato, who accepted the secret doctrine of the Orphics, and Aristotle, the Plato's apprentice, transformed myths of their predecessors into imaginary worlds of slavery–based social and political utopias.

Although the philosophical concepts of Plato and Aristotle destroy foundation of family, morals, ethics, and human freedom and assert slavery and perversion as the universal order***Σ6***, they, similarly to the shared artificial worlds of contemporary science fiction ***[[***e.g., such as the shared imaginary world

created by the fans of science fiction movies, computer games, and other fantasies***]]***, became the favorite entertainment of the educated elite in ancient Greece, and, through the Greek conquests ***[[***e.g., wars of Alexander of Macedonia***]]***, were implanted into life of other nations of the ancient world. They still sustain the general framework of the current civilizations***Σ7***, and particularly, the contemporary sciences, with which the current civilizations attempt to survive, to exterminate their counterparts, and even to evolve into the viable global order.

However, the uninterrupted chain of problems and failures at all levels of states and societies, incessant crises – economical, political social, religious, esp., wars, conflicts, unrest, revolutions, and proven inabilities of even the most powerful states–subsystems of the current civilizations to sustain decent human life of the own and dependent states and nations by providing at least minimal resources for physical survival prompt the only inference:

the framework of knowledge as the foundation,
upon which the current civilizations are built,
is not sufficient and consequently,
has no potency to sustain existence of the entire civilizations
as well as of their main life–sustaining subsystems

The logic of the scientific inquiry, which was developed on Aristotle's logic of simplification***Σ2*** and which also absorbed the Pythagoras' obsession with numbers, eventually has been precipitated to the level of primitive language of created algorithms. One of results is that the contemporary philosophers are not able to find explanations for phenomena comprehended and explained by philosophers who lived thousands years ago.

Besides, the main contradiction looks irreconcilable.

This contradiction is between

1/ the internal unlimited logic of the mind whose life according to its nature is the continuous incessant cognition, and whose natural manner of existence is evolution as the constant increase of complexity until achievement of the optimum–perfection ***[[***for the mind, optimum–perfection is the state, in which the full potency of the mind is developed and might be actualized through thoughts and their embodiments into written and spoken words and creations that might became a part of the world that accommodates the mind's existence – concepts, theories, books, systems, states, social, political and other establishments, research institutions, and other systems established for accomplishment of purposes of survival and evolution***]]***

and

2/ the fixed mandatory definitions of the limited imaginary world of Aristotelian "philosophy" with such "universal" constructions as the geometrical–mathematical–astronomical theology, slavery as the universal order, and concept of man as social animal and part–property–slave of men's establishments.

The contemporary sciences are the fruits of the Aristotle's arithmetical–physical "philosophy": even today, they use Aristotelian logic of simplification, which due to inadequate complexity, has to be supplemented with imaginary constructions. At the same time, the common point of view is that the sciences produce adequate knowledge because they are sustained with direct observation of the tangible perceivable matter, or for them, in compliance with the Aristotle's logic, the plain objects of senses illustrate the obscure objects of the intellect***Σ8***.

Henning Genz observes that the Aristotelian speculations at least two millennia provided "the standard model of philosophy and natural science," until Newton began to consider "space and time as attributes of God" [Genz 79, 159]. Yet, Philip Sherrard evaluates the significance of Newton's framework as perfection of the "mechanistic vision" on which the contemporary sciences and societies exist [Sherrard 68].

Indeed, there is no sense in the new – Newtonian – paradigm, which is based on the primary false assumptions, because

a/ God is eternal, and nobody is enabled to know the attributes of eternal God
b/ space and time are the temporal settings, which, by the very definition, cannot be the attributes of the eternity
c/ the mind accommodated within the time–space–complexity settings is not empowered to comprehend the eternity

Thus, the Newtonian initial assumptions are false, and Newton's followers have substituted the updated science fiction for the previous irrational and outdated imaginary constructions.

The irreplaceable attributes of any mind that searches for knowledge of the actuality include adherence to truth, unbiased judgment, and human dignity. However, ethics–free or value–neutral atheistic sciences eliminated such attributes from the daily life of research institutions; for instance, as all the recent and previous scandals convincingly prove, wide–spread theft of the intellectual property, plagiarism, intentional deceit for the sake of commercial profit, politicizing, climate–gate, swine flu false pandemic alarm, poisonous drugs, which induce addiction, suicides, or simply kill, man–made disasters such as Fukushima nuclear power plant***Σ9***, new "religion" of climate change, gender ideology, and other consequences of freedom from conscience, logical reasoning, are the daily reality.

Richard John Neuhaus attests the overall status of the ethics and values in sciences with two statements:

1/ anything can be said and done at the point reached by the current ethical theories

2/ the "rationalized ethics" lost "any tradition of virtue and truth," and the society has the only choice between Aristotle and Nietzsche [Neuhaus 153–154].

If so, the society has the only choice between two imaginary worlds – the basic and the advanced versions of the heathenism:

1/ the basic version that sustains the Aristotle–Aquinas' political theology, to which Roger Eatwell refers to as to "Christianity" and asserts that it "accommodated itself to all the main Western ideologies" [Eatwell 175]***Σ10***

2/ the advanced version, which discarded the remnants of the cover–up provided by the Aristotle–Aquinas' terminology; this version sustains the contemporary ethics–free sciences:

a/ it was initiated by Francis Bacon who separated sciences from their natural foundation – philosophy and theology

b/ it advanced through Weber's notion of the ethics free sciences based on Aristotle's rejection of the Absolute Good as impracticable for businesses of men***Σ11***

c/ ultimately, it embraced

— the Dionysian cult of death, with which Nietzsche fashioned the Nazi mentality***Σ12***, and which became one of the pillar of the "new religion," on which the Nazi state, politics, and sciences were built, and which the Nazi scientists carried with them into the countries, which accepted them after defeat of Nazi Germany and in which they continued their research

— Freudism***Σ13*** as the basis of the psychological and other sciences focused on life of the mind and operations of the human reasoning.

As the history of the Western civilization founded upon Plato–Aristotle social political and religious utopias convincingly confirms, both versions have no limits of dehumanization.

For instance, the history of the European nations controlled by the papal empire***Σ14*** provides illustrations of the fruits of the basic version; this history

began with the Great Schism initiated with the papal quest for the world–wide domination of the papacy
↓
proceeded through the Crusades waged in the Middle East, Constantinople, and ultimately, in Europe
↓
led through the Dark Ages "illuminated" by the pyres on which the Inquisition burned books and the "heretics," filled with persecutions and extermination of the Jews, different–minded, researches, and Orthodox Christians
↓
culminated in world wars I and II
↓
currently is in the state of crusade against the Christianity, which is waged through the ecumenism*Σ15*

Philip Sherrard argues that the contemporary sciences lack complexity; they are ignorant of consequences of their own constructions, and they are unable to distinguish the "order of wisdom" from imaginary constructions built on the data resulted from experiments [Sherrard 115].

So, development of the systems theory as the universal science became complicated: the Aristotelian "philosophy" and issuing logic of simplification are not adequate to the actuality, yet, the contemporary sciences have no other philosophical and logical foundation. Consequently, the mainstream research into the systems theory, which initially was seen as the *metascience*, degenerated into

– formalized languages with the level of complexity insufficient for general observation

– technological applications based on mechanistic view, reductionist approach, and static models, that is on the same logic of simplification, which was expected to vanish with coming of the systems theory.

Although some researchers continue search for the meta–methodologies, which would at least prevent the systems failure [e.g., Nakamura, Takafumi; Kijima, Kyoich], still, there is no commonly accepted theoretical foundation which would support, for instance, creation of the evolving systems, adequate defense of the created systems ***[[***e.g., such as protection from cyber espionage and prevention of economical, political, and social crises, wars, conflicts, crimes, plagues, and other man–made and man–triggered catastrophes***]]***, creation of the invincible systems, development of successful strategies of survival, etc.

Among practical applications developed within the systems theory framework, one of the most valuable contributions could be the input into development of the analytic techniques***Σ16***.

However, ultimately, the general systems theory, which sustains development of the strategies of survival and optimization as well as design of evolving systems, became irrelevant for the contemporary sciences because

their existing philosophical foundation created on Plato–Aristotle's *[[*Orphic***]]* utopia is based on the logic of simplification**
↓ ↑
their working tool – logic of simplification – is not compatible with logic of complexity

Evidently ***[[***as the current state of world affairs and incessant wars and conflicts that fuel unprecedented crisis of humanity illustrate***]]*** the mind that operates within the framework based upon the Plato–Aristotle's philosophy sustained by the heathenism ***[[***that is by the multi–deity religions and cults of idols***]]*** is not capable of operations at the level of complexity adequate to the reality of the world, within which the mind has to survive and to evolve for the next phase of existence – the eternity with God.

Logic of complexity — the logic that operates with the complex systems, which compose the universe: the ***systems logic***, or the logic of complex systems — is a component of another framework of knowledge.

Complexity

The logic of complexity evaluates and describes behavior of the chaotic realities.

The contemporary sciences still are unable to describe, explain, and predict precisely the time–space–complexity point when and where discernible or cognizable systems would emerge from the chaos or would be created within the chaotic reality. The relatively new chaos–complexity science ***[[***new, if to forget that the priests of ancient Egypt specified the rules for managing the chaos***]]*** has been invented for attempts to search for the order within this something that has been identified as ***the chaosΣ17*** of the Universe. Finding the order is comprehension of the laws–patterns of creation of new systems. Cognition of the laws and processes, which stipulate creation of purposeful systems within the chaos, unfolds the ability to understand, reproduce, or foresee results of the common (typical or universal) process of creation. If a researcher has an ability to learn such laws and processes, he would be able to initiate creation of specific systems within the chaotic realities of the Present, therefore to control the Future.

However, the science of complexity still is at the initial stage of its development and some researchers

– consider it as the scientific frontier [e.g., Axelrod and Cohen]

– attempt to apply the terms and definitions borrowed from the range of sciences – from the general systems theory through cybernetics [e.g., Pascale 85]

– seek the philosophical foundation for explanation and description of the science of complexity with such insights, for instance, as that the language of complexity is the *metalanguage* and that the ancient religious wisdom determines or contains the roots of complexity [e.g., Murthy 76–101].

The ***metascience of complexity***, or the systems–chaos–complexity theory, might be defined as the knowledge framework, which evolved at the basis of the general systems theory: it is the contemporary version of the general systems theory employed at the levels of consideration that involve chaotic realities. The chaos is the energy, energy–information, and energy–information–matter reality with the purposes, therefore with the levels of complexity, hierarchical and other arrangements, which are not cognized, discerned, reflected, or predicted at the present level of development or at the present place within the supersystem. The source for origin, existence, development of the specific level of the Universe usually is referred to as the chaos. Each level of the Universe has its own chaos***Σ17***, which the higher hierarchical levels identify as the structured system.

The systems–chaos–complexity theory might be the convenient tool for design of the Future for the observers who identify the correlations among the human thought and its consequences in the realities composed of the arrangements of the structured matter.

In general, the phenomenon of ***complexity*** has not received a comprehensive definition. The existing assumptions reflect mainly the researchers' needs, purposes, or outlook. The researchers employ the universal coordinates or dimensions, which describe the object of consideration as well as their own position within the Universe: time, space, complexity level, etc. The accuracy of their knowledge depends on the purposes, choice of the languages of

description, terms, initial assumptions, and other means of finding the order within the observed chaotic realities. Some researchers correlate complexity with a level of development of a particular observer, and assume that information, which is needed to describe a system, describes a measure of the system's complexity [e.g., Ashby, ref. in: Klir and Folger 194]. Such approach results more in cognition of the level of researcher's development than in cognition of the system's complexity.

Other researchers envision complexity as the state of mind that is not connected with surrounding systems [Warfield and Perino, Jr. 225].

In sociological studies, complexity is linked to the number and functions of the subsystems, to the quantity of the social roles, which the members of the society have to perform, and to the pattern of the processes sustaining the wholeness of the society. Consequently, the simpler society is the fewer units it contains. The complex society is referred to as the society, which includes the "stable and independent" units capable of maintaining the wholeness and particular levels of political differentiation and achievements. Complexity in such a meaning is referred as "the base of civilization" [Tainter 23–25, 37–38, 41].

Other researchers assume that complexity includes elements of unknown, and offer two general definitions of complexity based upon quantity of information needed to describe the system and to resolve any uncertainty concerning the described system; in their interpretation, the ways to deal with complexity are

– simplification of systems, breaking them into their subsystems – so–called reconstructability analysis

– imprecision of the systems description [Klir and Folger 2, 197–198, 199–203].

However, according to the concept of wholeness, it is not possible to comprehend a system by investigating its isolated parts: the system's behavior cannot be "summed up" or inferred from the behavior of its subsystems [von Bertalanffy (1968) 37, 68].

Besides, the reconstructability analysis substitutes a simplified model for a system. The failure/defeat is the highly probable end, if a business or another system employs such a substitute (a simplified model) to comprehend the competitor's potential and purposes and, consequently, to elaborate the strategy of war or strategy of the market domination.

Another example: historians apply method of periodization, when the time is used as the main criterion for structuring the chaotic reality of the Past. Such consideration includes the reconstructability analysis [Klir and Folgers] employed for re–construction of the assumed reality within the range of time. This method of historical description implies simplification of reality because the event is

– vivisected from the wholeness – purposeful reality, where this event happened – on a principle of arbitrary division of the time

– considered within "manageable lengths" of the time presented as "natural rather than contrived" [Novick 16]

– not correlated with the set of the purposes, which justify existence of the considered reality.

Such periodization and reconstructability as well as other methods of analysis and cognition based upon an intentional decrease of complexity, provide a description, which has an insufficient level of complexity and which does not reflect reality of the considered object. When researchers use the logic of simplification, they ascribe the lowest levels of complexity to the objects of consideration; it means that their interpretations do not coincide with the real complexity of described phenomenon and misrepresent the described reality. There is no assurance that the researcher armed with such methods as periodization and reconstructability would be able to discern and to analyze the time ranges and events within them, which have the actual significance for development of mankind.

Perhaps, insufficient level of complexity of consideration and, consequently, inadequate description of the history that children and adults had (and still have) to learn at schools, colleges, and universities might be an explanation, why so many generations were (and still are) not able to infer the right lessons from the Past.

If to analyze the settings, which accommodate existence of mankind, the method of structuring the Past by the time is also inappropriate. The time is the reality controlled by the law of irreversibility of cognition, while the essence of the history is the evolution actualized/achieved through creation and utilization of knowledge. Therefore, the history should be arranged by the knowledge created for particular civilizations (that is by the levels of complexity), or by the logical realities, which accommodate origin, development, and disintegration of particular systems of knowledge. The main criteria of distinction and discernment of such logical realities should be correlated with the purposes of evolution.

The following postulates of the ***theory of complexity*** underlie the analytic techniques employed within the systems logic framework:

a/ complexity is correlated with the universal energy that is the source and essence of any particle, system, reality of the Universe. The meaning of system's evolution is achievement of the system's maximal potency (also defined as perfection) and actualization of the maximal creative power, or the ability to accommodate unrestricted and infinite multitude of transformations of the universal energy.

Consequently, complexity of a system is the system's degree of closeness to perfection/optimum, or the actual ability to accommodate transformation of the universal energy into the energy–information and energy–information–matter formations that serve the development–optimization–evolution

b/ complexity defines the attributes of the energy field, which accommodates purposeful transformations of the universal energy into the energy–information structures, systems, and realities. That what the human mind perceives as a purpose is the readiness of the energy field to perform particular transformations of the universal energy; the discernible results of the field activities could be detected, for instance, in a form of new knowledge.

In general, complexity is the description of the human mind's feature: it specifies the level of development as the ability to create–assimilate–transfer knowledge within different systems and realities.

Complexity correlates with the system's capacity to create and accommodate new knowledge for achievement of particular purposes; as such, complexity of a system might be described with the following system's properties:

– an ability of development–optimization through cognition and creation of new structures, systems, realities

– an ability to accommodate processes of the higher hierarchical level(s), therefore, lack of simplicity and similarity; any system is simple – open for cognition or understanding by another system – if another system has the same degree of development, the same pattern of creation, similar life–sustaining processes, and is situated within the same realm/supersystem. Conditionally, similarity, or likeness of properties existing at a particular level of complexity, might be considered as an auxiliary method of comprehension of systems with the complexity lower than the observer's complexity

– an ability and capacity to achieve the multidimensional sets of purposes

– an ability of transformation/change of purposes and the capacity to accept and to accomplish new purposes

– an ability of participation in the multitude of sets, realities, fields, and dimensions, which provide components for creation of the supersystems, realities, processes, and conditions situated at or composing the different levels of complexity, hierarchies, and dimensions

– the compliance with the ***systems law of adequacy***; to survive, the system has to provide adequate responses, services, or processes, which satisfy the changing demands of environment; to achieve the state of optimum, the system must be able to achieve multiple purposes at the different levels of complexity, therefore, to apply means and methods adequate to properties and conditions of the counterparts, enemies, and other systems

– an ability of development and maintenance of self–sufficiency and independence from the systems at the same hierarchical levels

– an ability of realization the maximal potency

– an ability of achievement of the state of optimum.

In general, a system might be described as a complex system, if it evolves – pursues optimization, and if it is able to achieve and to actualize the maximal potency.

The degree/level of complexity is the estimation of the developed by a system ability to realize patterns of energy transformations in definite forms, under certain conditions, and at particular time–space points. The perceptive structures of the system's cognizing core determine and stipulate the maximal level of complexity, which a system is able or is allowed to obtain.

The processes, which determine system's survival and achievement of the state of optimum, are based on search of information, perception/assimilation and creation of knowledge. The new received–assimilated–created knowledge makes the system able to continue creation of new intra–system knowledge, to increase own complexity as the capacity to accommodate more advanced search for and creation of new knowledge, thus, to accomplish new purposes within time range of existence.

At the practical levels ***[[***e.g., the level of systems designer or analyst***]]***, ***complexity*** is the universality of knowledge, which sustains the entirety of processes defining life of the world→reality→system, when life is perceived as the totality of cycles of transformations of the divine→universal energy of creation. For instance, one of such cycles includes development of the mighty tree from the smallest seed *{Matthew 13:31–32}.*

The ancient philosophers came to the conclusion that the world of living beings should be described in the terms of time–space–complexity–bound singularity: positions within dimensions of time and space and possession of the knowledge of life stipulate the Past, Present, and Future of any purposeful–evolving system.

The evolving systems (those capable of development–optimization) carry the patterns of knowledge search–creation–consuming, which resemble the patterns of the mind–creator.

In a context of evolving systems, complexity might be envisioned as the unity of three co–related and mutually enhancing phenomena, which (the unity) sustains the abilities to will and to accomplish a particular purpose:

a/ the possession of knowledge

b/ the abilities to perceive–absorb/learn–create new knowledge

c/ the power to apply knowledge – to embody it into the structures of the matter needed for achievement of some purposes within the world composed of the structures of the matter.

From the practical point of view, the one might infer that existence of the contemporary ethics–free sciences, which operate with logic of simplification***Σ2***, and Aristotle–Aquinas' political theology constructed upon the heathen philosophy based on the Orphic doctrine or serpentine "theology," is possible only because of disregard of the central axiom of the complexity theory:

incompatibility of the essences of existence or the meanings of complexity makes pointless any attempt to utilize the methods of one level of complexity for operation/analysis at another level of complexity

It means, for instance, that when theologians or poets construct monotheist theology by imagination and philosophy based on multi–deity doctrines, they create the false assumptions, and when a businessman attempts to run the prosperous business enterprise according to the theological concepts instead of the market knowledge, he comes to a construction disconnected with the market–driven world.

The ***law of irreversibility of cognition*** regulates the processes resulting in increase of complexity. The law of irreversibility of cognition controls the dimension of time: without irreversibility of cognition, the optimization and development as the increase of mind's complexity ***[[***the increase of complexity is the evolution***]]*** are not possible. The time might be portrayed as the setting/framework/reality controlled with the law of irreversibility, which directs all transformations of the universal energy toward an increase of complexity.

The human mind, knowledge, complexity, and time–space are linked into the inseparable wholeness oriented toward an increase of complexity by the law of irreversibility of cognition:

— the mind as the energy field, which transforms the universal energy into the energy ready to produce or re–structure the matter

— the knowledge as the manifestation/derivative of complexity at the levels of the matter

— complexity as the parameters of a purposeful reality of fields that accommodates sets of transformations of the universal energy into the derivatives: energy, energy–information, and energy–information–matter forms

— the time–space as the structured setting or the net of fields, within which the mind embodies its thoughts – energy–information forms – into energy–information–matter or the discernible and material systems and realities.

This inseparable wholeness of the mind–knowledge–complexity–time–space comprises the purposeful reality, which might be considered as

a/ the embodiment/derivative of the universal code at the particular level of the complexity

b/ the specific reality, which transforms the universal energy into energy–information formations–thoughts

c/ the set of fields, which accommodates the complex of energy transformations and sustains the energy and energy–information flow within the humankind universe.

The universal energy creates, sustains, and accommodates this wholeness–reality, where the mind thinks its thoughts, pursues its objectives, and develops–moves toward the maximal potency by incessant irreversible creation of knowledge. This incessant process creation of knowledge is the process of the evolution of the Universe because the Universe moves toward optimization through an increase of complexity of the specific realities – human minds.

Irreversibility***Σ18*** in the context of my research implies impossibility to stop, decelerate, reverse, or interrupt the interminable purposeful transformations of the energy and processes of cognition governed by the universal law. Irreversibility is also impossibility for a system to decrease the level of complexity, while such a system is in a process of realization of purposes.

To decrease the level of complexity means to unlearn what had been learnt as a result of accomplishment of a specific purpose: it is impossible until the specific purpose remains the unchanged reason for the system's existence.

When the purpose is changed, the system has to restructure all knowledge it possessed before modification of the purpose. Any system with modified purposes becomes a new system, because new knowledge inevitably transforms the system's essence.

A system sustains own existence by irreversible processes of assimilation–cognition–creation of information and knowledge. The essence of cognition is irreversible assimilation of the active information or the *"small energy" form****Σ19***, which activates inter–system irreversible transformation of energy and its derivatives – energy–information forms with different levels of complexity: data, information, knowledge.

The active information might be conveyed in a form of code, pattern, information, data, concept, thought, system of knowledge; its material carriers–transmitters might be a report, book, library, establishment, etc.

The law of irreversibility postulates that when a system cognizes – accepts or perceives – the active information, the accepted energy form triggers off the irreversible inner (intra–system) changes of the complexity, which result in changes of the system's interconnections with its environments (supersystem, counterparts, enemies, etc.) and subsequent changes within all correlated systems and realities.

There is no possibility for a purposeful system to reverse its conditions after reading, perception–assimilation, or embodiment of the active information.

The law of irreversibility describes achievement of purposes through the irreversible continuity of the processes of cognition, increase of complexity, and optimization. The law of irreversibility implies that until the system is able to accomplish the purposes it has been created to accomplish, it is not possible to stop or reverse the process of cognition and to unlearn knowledge created or accepted during accomplishment of the system's purposes.

Irreversibility and purposefulness are the main system–driving forces of the time–space–complexity–bounded world of men.

From another point of view, irreversibility and purposefulness might be seen as two sides of the evolution.

The systems–complexity theory deepens comprehension of time: time***Σ20*** might be defined as the realm or even as system/reality ***[[***because it has a purpose – to accommodate specific form of transformation of the universal energy of creation – for accomplishment of which it was created***]],*** whose essence is described with the correlation among the purpose, information, complexity, and irreversibility. This correlation not only constitutes the meaning of time; it determines the range of existence and the duration of time for any system/reality within the time–bounded realm. Each level of complexity has own duration of time, as a period of movement

from the point of creation for achievement of specific purposes
↓
through the accomplishment of purposes
↓
to the consequent transformation or destruction

As soon as the purpose exists, exists the time: the systems and realities advance throughout their dimensions of the time by the irreversibility of cognition and toward their interim and finite states, which had been designed as the results – purposes – of their existence. The purpose, knowledge, complexity, and irreversibility of cognition determine the essence of the dimension of time and constitute the nature or essential properties–features of any reality and system perceivable by the human mind within the dimension of time. Within the world of the matter, the evolution, as an increase of complexity, can be realized only within such a setting as the dimension of time, and only under the law of irreversibility of cognition. Irreversibility unifies a purpose, knowledge, and complexity into the logical chain:

the **Purpose** is adequate to the **Complexity** of the **Knowledge** created by the system
|
the process of creation of **Knowledge** is irreversible
|
the **Knowledge** is created with and transmitted through the intra–system **Information flow**
|
the intra–system **Information flow** sustains the **Cohesive Power**, which maintains the **Wholeness–System**
|
the **Wholeness–System** exists as a result of the **Irreversible system's life–sustaining Processes**
for instance, the **Irreversibility of Cognition**
|
the **Irreversible system's life–sustaining Processes** are the processes of achievement of the **Purpose**

In summary,

1/ the meaning of complexity is correlated with the universal energy, that is with the source of the origin, existence, and development of the world of the matter that accommodates existence of men

2/ the meaning of complexity includes a capacity to accommodate creation of new knowledge and issuing potency to accomplish the purposes that belong to the higher hierarchical level(s). The complexity corresponds to the knowledge of the supersystem/reality: the closer to comprehensive the system's knowledge of the essence–nature of the system's supersystem is the higher the level of the system's complexity is. The system's state of optimum might be described with the maximum complexity, which a system with maximum efficiency of intra– and inter–system processes reaches at the maximum level of intensity of the processes of transformation of the universal energy

3/ knowledge (as the function of human mind–creator of knowledge) provides the practical means for identification of the level of complexity; the descriptions or conditional measurements of this knowledge might differ

4/ descriptions accepted at one level of complexity should not be applied toward other levels of complexity because such an application produces inadequate/false knowledge, which results in destruction of the system that accepts it as the truth.

For instance, evaluation of philosophy, ethics, or logic of human mind with the quantitative measures (e.g., the logical ethics of the Stoics and market ethics of Aristotle) illustrates an application of the categories of the matter toward the functions of the intelligence–reasoning. Decay and collapse are typical consequences of inadequate levels of complexity: a system collapses if there is inadequacy of the complexity of environment and the complexity of description of the environment, in which the systems builds and applies its strategies of survival and expansion.

Although complexity describes the meaning of existence at the levels of the material world, such a description does not assume application of the measurements (e.g., numbers of units), which are employed at the lowest levels of complexity, to the entire hierarchy. The complexity of knowledge does not depend, for instance, on the quantity of units, which participate in its creation.

For example, people might create an empire and assume it to be invincible because of the abundant material resources, victorious military machine, sophisticated secret police, etc.

However, the history contains many examples when a person opposed the mighty establishment and prevailed: the material structures and resources do not determine complexity, therefore, the potency of knowledge.

Systems Logic: A Definition

Systems logic is the logic of complexity, logic of complex systems.

The systems logic was conceived as an application of the universal law of perfection at those levels of the Universe, which accommodate creation, existence, and disintegration of systems created by the human mind; its foundation is the logical realm sustained by theology, philosophy and epistemology:

Theology → Philosophy → Epistemology
↓ ↓ ↓
==========
↓
Systems Logic

Theology originates all knowledge, which the mind has as its foundation: all knowledge created by the mind has roots in theology. The greatest problem of mankind is in that, which theology is held to be true:

either
the knowledge of the only One True God
or
false assumptions produced by imagination devoted to idol–making

Theology***Σ10*** determines all life–maintaining and life–destructive activities, including processes identified as thinking and self–cognition: as the main source of life (if knowledge is true) and death (if knowledge is false) of the reasoning–mind, the theological knowledge sustains every activity of a human being.

In brief, theology might be seen as the comprehensive realm of knowledge, which is framework for a particular reality/world that accommodates life of a particular mind and its creations — realities and systems ***[[***civilizations, empires, societies, establishments, institutions***]]***. This realm provides the mind with knowledge, which sustains daily existence and which might activate the evolution. Theology opens the possibilities to understand the conditions and terms of survival and development and to interpret the knowledge assumed to be the true knowledge of God into the knowledge of survival and evolution; it originates all knowledge, which the mind has as its foundation: all knowledge created by the mind has roots in theology. The knowledge of God determines purposes, means and methods of all life–maintaining activities, including thinking, self–cognition, and self–actualization – creation of thoughts and systems, with which the mind materializes own nature and achieves own purposes.

The following chart depicts the place of systems logic, which is a knowledge–creating tool, within the realm that defines life of the mind:

Theology
↓
The Mind
↓
Philosophy ←↓→ Systems Logic
↓
Sciences

There are two mutually exclusive frameworks of knowledge; in many theological and philosophical works, both of them are referred to as to ***theology***:

1/ monotheism***Σ21***; this knowledge is revealed by God

2/ multi–deity arrangements known as the heathenism***Σ4***; this knowledge is created by human imagination.

The mind is endowed with the unlimited abilities of comprehension of the perceivable world, into which it is born to live, to evolve for the next phase of life, and to leave through the threshold of the physical death. However, beyond the world given into the dominion of man, anything is closed for comprehension until transformation or transfer into another mode of existence (physical death) {*Deuteronomy 29:29; 1 Corinthians 13:9–13; 15:42–43, 50–51, 53*}.

It means that, as the norm, the mind comprehends the work of the universal Law only at the levels allotted for the mind's existence: it has neither own power nor capacity to ascend to the higher levels of complexity until the power is given to him from above – until he is enlightened by God the Creator {*John 1:1–18; 3:3, 5–13, 31–33*; *6:44–69; 10:30; 12:44–50; 14; 15; 16; 17; 1 Corinthians 2:15–16*}.

Hence, theology as the knowledge of God the Creator provides the overall framework for existence of the normal human reasoning–intelligence ***[[***'normal' means that it operates according to its nature and pursues the purposes for the sake of which it has been created, for instance, such as own evolution–development of the highest potency to create the good, and facilitating of advancement–development–evolution***Σ22*** of the others {*Genesis 1; 2*}***]]***. The mind employs philosophy to transform the theological knowledge into the philosophical doctrines, which explain the world and define the methods of inquiry, research, and all other activities; for instance, such as the systems theory and the systems logic.

Thus, the following correlation–link describes the optimal work of normal human intelligence–reasoning–mind:

1.Theology
↓
2. Philosophy
↓ ↑
3. Logic

Knowledge of God results in knowledge of own nature; this knowledge originates philosophical outlook–positioning within the world; then, the mind applies logic to determine own methods of cognition and actions.

The problems appear when the main correlation–link ***1.Theology*** ⇒ ***2. Philosophy*** ⇐⇒ ***3. Logic*** is broken, and the mind, instead of interpreting theology into philosophy, begins to apply philosophy for creation of theological knowledge that is to fantasize about God.

Within the fantasizing ***[[***or using divination***]]*** mind, the main correlation is perverted in the following manner:

1.philosophy usurps the place of theology

2. imagination takes the place of philosophy and becomes the source of mind's creations–thoughts

3. imagination sustained by logic of simplification creates theology – fantasies concerning the deity/deities, and augments/elaborates philosophy with newly developed "theological" concepts

4. the mind begins to broadcast figments of imagination as theology, knowledge of God.

Thus, the referred above correlation–link describing the optimal work of human intelligence–reasoning–mind ***[[1.Theology*** ⇒ ***2. Philosophy*** ⇐⇒ ***3. Logic]]*** is altered, human imagination becomes the source of theological knowledge:

Philosophy
↑ ↓
Imagination ↔ Logic
↓
Theology

Fantasizing about God (use of imagination for creation of knowledge of God) is the most dangerous kind of perversion, which sustains the idol–worshiping worlds of heathenism: the false religions, the false theological knowledge, the sources of which are divination, mysticism, and imagination. The entire history of mankind confirms that the false knowledge is the deadliest weapon of destruction.

To the contrary, the systems logic is based upon theology; it works with the derivatives of the universal Law at the levels of complexity correlated with the mind.

The complex of factors ***[[***energy → energy derivatives, e.g., such as knowledge***]]*** defining the difference among all creations (e.g., Earth, man, fish, bacteria, state, empire, etc.) is referred to as *complexity*.

The levels of complexity stipulate the differences among all the systems: complexity defines the purposes, results, time–range of existence, time of judgment–decision, and ultimate destruction–consuming–transformation.

The fundamental truth is that the ultimate destiny of the mind and its creations is determined by the adequacy of a particular theology to the knowledge of the only One True God {*John 17:3*}. Hence, two theological realms accommodate the life of the mind: monotheism and heathenism (including atheism). These two realms of theological knowledge have originated all religions professed by men, and each human mind has to make the inevitable choice:

either
theology of the only One True God
that sustains life of the human mind and evolution for the next phase of existence – eternity in the presence of God
or
theology of the ancient heathens – the heathenism*Σ4*
that sustains perversion, degeneration, and collapse of human reasoning followed with self–annihilation
[[e.g., through wars, especially, fratricidal wars among groups serving different cults and different false religions – the groups that come into existence within the divided nations and lead them to collapse and ultimate disintegration***]]***
and collapse of human establishments/systems, which the mind creates to sustain life, survival and evolution of mankind
and of the world that accommodates its existence

Christian theology is the framework for philosophy of the absolute good, doctrine of the omnipotence and ultimate freedom of the human mind, epistemology of the evolving systems, and the systems logic as the knowledge–creating tool for design, evaluation, optimization, initiation of collapse, and destruction of complex systems.

Systems logic is a derivative of theology of the only One True God – τον μονον***Σ21*** αληθινον Θεον {*John 17:3*} – the Christian teachings.

Philosophy: the basis of philosophy is the knowledge provided by theology. Philosophy interprets the knowledge about God, His laws and His attributes such as the Absolute Truth and Absolute Good, into the knowledge of survival and evolution within a particular reality/system accommodated by the world composed of the temporal arrangements of temporarily structured matter.

In general, philosophy is intended to create generalized knowledge of the world, especially knowledge of the basic principles and the laws that define its existence–survival–evolution–collapse–destruction. This knowledge stipulates existence and development of human establishments/systems/realities, with which the mind sustains survival, achieve the purposes, initiates, controls, and completes either development–evolution or degeneration–collapse of own creations – systems and realities — civilizations, empires, states, societies, families, political, social, religious, educational and research institutions, systems of defense, and all other establishments.

In practice, philosophy might be seen as a system of tools, methods, and principles, through which theology is implemented into the actions of men.

A person could deny involvement of philosophical concepts into own private or professional life or reject existence of philosophy at all, yet, any act still has a basis and purpose:

– a basis is a personal system of criteria (e.g., definitions of good and evil, allowed and not–allowed methods)

– the everybody's main purpose is survival — survival of the mind, survival of the body, or survival of the social or any other establishment.

No human act exists without the purpose and evaluation: the term *philosophy* defines the means of evaluation, justification of actions, and rules of survival–oriented behavior for a person and for any establishment/system/reality – creation of the mind: civilization, state, society, business enterprise, and so on. The denial of philosophy is also philosophy: even a seemingly irrational behavior, senseless acts, and crimes have the roots, explanations, and purposes determined by personal philosophy or by philosophy of the social group, which accommodates real or imaginable existence.

Philosophy of the absolute good, as the derivative of Christian theology, elaborates theology – knowledge of the only One True God – into the practical knowledge: generalized inferences, concepts, doctrines, and finally, guidance and instructions, which define life within the evolving societies and other establishments/systems arranged to sustain development and actualization of the highest potency of the human mind and its creations.

Epistemology studies the nature of knowledge, processes of creation, accumulation, dissemination, and consuming of knowledge at the levels of

human thought and its creations – societies and other establishments. Epistemology reflects the laws, which govern the cognitive activities, communication, transmission, accumulation, creation, and acceptance or learning of knowledge; it aims to determine the parameters of life and evolution through the study of knowledge.

Epistemology is expected to explain the processes of cognition that is the life of mind: assimilation, transformation, transmission, and consuming of knowledge. Epistemology studies the nature of knowledge, processes of creation, accumulation, dissemination, and consuming of knowledge at the levels of the thought and its embodiments – societies and other establishments. Epistemology reflects the laws, which govern the cognitive activities, communication, transmission, accumulation, creation, and acceptance or learning of knowledge; it aims to determine the parameters of life and evolution through the study of knowledge as the means to maintain life of the intellect–reasoning and to embody ***[[***materialize***]]*** the thoughts into the structures, systems and realities that compose the world.

Systems epistemology identifies knowledge as manifestation of system's existence and the means of maintaining of system's existence and development; for instance, life of the intellect and embodiment of the results of thinking – thoughts, concepts, doctrines – into arrangements of the structured matter.

Systems epistemology studies

a/ the intra– and inter–system processes of creation, accumulation, re–construction, and transmission of knowledge, which result in achievement of the state of either the optimum or the degeneration → collapse → destruction

b/ the processes of creation, perception, acceptance, restructuring, and transmission of information, from which the mind arranges information structures – assumptions, systems – concepts, and realms – knowledge, and which therefore, determine the system's level of development (or degeneration/collapse), processes of optimization (or destruction), and the system's chances to survive under the extreme conditions or the external destructive impact. This field of studies is closely knitted with studies of the human mind as the knowledge–creating reality with the managing subsystem–core, which sustains the ability to evolve and includes the pattern of processes of cognition–creation of knowledge

information structures – assumptions
↓ ↓
systems – concepts
↓ ↓
realms – knowledge

c/ creation, parameters, contents, initiation, control, and termination of the flow of knowledge that evokes systems within chaotic realities of the world: any of systems/realities ***[[***e.g., society, state, civilization***]]*** might be seen as the particular flow of particular knowledge that organizes the components of chaos into the wholeness focused on achievement of a particular purpose:

THE MIND
↓ ↑
≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈
Knowledge ←←↓ →→ Knowledge
that has to be embodied into the material ↓ of the Chaos as of the pool of reserves
structures needed for achievement of a purpose ↓ needed for achievement of a purpose
↓
≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈
↓
Chaos, within which the flow of knowledge is initiated
↓
points of absorption–utilization of knowledge
and accumulation of the elements of chaos – reserves, elements, structures, systems, minds
↓
design → creation → establishing of a core of a new system/reality
↓
creation of the *cohesive powerΣ23* as the arrangement of the flow of knowledge,
through which the core will define–create–assemble–arrange–control–manage the system for achievement of the purposes
↓
process of selection and arrangement of the elements of the chaos,
which the core actualizes with the chaos' reserves and through the cohesive power
for creation of a system as the means to accomplish the purpose
↓
a new system–reality is arranged within the chaos
for the sake of achievement of a purpose
≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈

The mind, or the set of co–related minds ***[[***e.g., in a case of ruling elite, the government, political party, or other establishment–center that controls the system's existence and defines its destiny – **either** survival → development **or** degeneration → collapse***]]*** is the point of initiation of a particular flow of knowledge, which evokes a system from the chaos.

Consequently, the features – degree of development, accessibility to adequate knowledge, power of discernment, abilities of adequate judgment, abilities to apply knowledge for achievement of the purposes, and other characteristics of the mind/set of the minds, define the system's efficiency, effectiveness, and achievement of ***[[***or failure to achieve***]]*** the purposes, which it was intended to achieve.

From another angle of consideration, it might be said that theology, philosophy, and epistemology consider–describe existence of a human being

within three intertwined dimensions or at three levels of complexity, or as three manifestations of being–life:

– theology accommodates life of the soul–heart–mind, therefore, sustains completeness/wholeness of existence

– philosophy and epistemology provide the descriptions of the lower levels or subsystems of this reality: life of a human being within the societies and establishments.

Christian theology, philosophy of the absolute good, and systems epistemology have

a/ the same source of origin: our God is the Lord of Knowledge; He gives wisdom, and from His presence, knowledge and understanding come; the knowledge of only One True God and Lord Jesus Christ Whom He sent is the everlasting life {in: *1 Kings 2:3; Proverbs 2:6; John 17:3*}

b/ the same subject – knowledge***Σ24***, yet, at the different complexity levels:

the supersystem – the realm of the laws of God–Creator Who controls existence of the Universe –
is the subject of theology
↓
the reality – the laws and embodiments/manifestations of the laws that control the material world,
which accommodates existence of a human being –
is the subject of philosophy and epistemology

c/ the same main purpose of optimization–evolution and survival of each human being, yet, at three different levels or within three dimensions, which correspond: to the human nature ***[[***a human being is the wholeness of soul—mind—body, or intelligence—reason—flesh, or energy—energy–information—energy–information–matter formation—reality—system***Σ25]]***:

the human spirit
[[the intelligence/heart or the soul/spirit for the Hebrew Prophets and the Greek Orthodox theologians;
the subconscious/unconscious for the contemporary atheistic psychology, which operates by the Freudian terminology***Σ13]]***
that is created in the image of God and likeness, and whose life therefore,
can be described with derivatives of the Absolute Good and Absolute Truth
↓
the levels of the mind,
which accommodate the discernible life of human reason
[[the knowledge–identifying–learning–absorbing–conveying faculty – or consciousness***]]***
↓
a human being perceived as a physical being and accommodated within the material world
[[the wholeness of soul—mind—body, or spirit–intelligence–flesh, or energy—energy–information—matter***]]***

In summary, Christian theology, philosophy of the absolute good, and systems epistemology arm the mind with the perfect foundation and with the powers, abilities, and tools of cognition, discernment, judgment, creation of knowledge, with which the mind might achieve the zenith of own development as the optimal potency of creation of the good at the earth and to evolve for the next phase of existence, in the eternity with God. One of such tools is the systems logic.

The term ***systems logic*** defines the technique of transformation of knowledge provided by the Christian theology into philosophy of the Absolute Good, systems epistemology, and other realms of knowledge. This technique is based on the universal law of perfection; it connects theology, philosophy and epistemology into one foundation – the logical chain, which sustains the human intellect–intelligence–reasoning–mind.

Thus, the systems logic might be defined as an instrument for creation of the evolving systems in a process of actualization of the will of God–Creator within the world of the matter.

The following **axioms *[[*1** through **8*]]*** describe the realm of Christian theology, philosophy of the absolute good, and the systems epistemology as the framework of knowledge, within which systems logic was designed and within which it operates.

1. The knowledge of God is the life–creating energy that determines existence of the mind; the mind is not able to cognize and to describe God with the categories and images of the visible material world: the mind receives life–sustaining knowledge of God only as the direct knowledge from God Himself, through faith in Lord Jesus Christ and by the Holy Spirit {*John 14; 15; 16; 17*}. When this knowledge becomes the focus of the reasoning–mind, two things happen:

the mind obtains the knowledge, which it names "theology"
↓
the mind actualizes its nature (or exists/lives) by transferring/embodying the knowledge of God
into the life of the material world,
for instance, into design–arrangement of the material structures,
with which the mind accomplishes its purposes

2. Life of the human intellect–intelligence–reasoning – the mind – is the process of cognition of the attributes of God–Creator: the Absolute Good***Σ26***, Truth, and Being. Life is created by the perfect Love of God – Λογος/Αγια Σοφια, the Word–God; life of the mind is consummated by learning the knowledge of the Absolute Good, which leads to the knowledge of the Truth, embodiment of the love and knowledge of God in own thoughts, and embodiment of the thoughts in the systems and realities, which sustain the evolution. If the love and knowledge of Lord God Jesus Christ becomes a foundation of the reasoning or, in the words of St, Paul the Apostle, the mind just follows the reasoning of Christ {δε νουν Χριστου εχομεν – *1 Corinthians 2:15–16*}***Σ27***, a human being might achieve perfection — be empowered to develop and to actualize the maximal potency to create good according to the will of God. Such mind creates thoughts adequate to the main code–law–pattern – Λογος, with which the universe has been created and by which it exists. The mind that achieved the state of perfection ***[[***the mind that operates according to the Law of God***]]*** is able to actualize the evolution of the Universe in accordance with the will of God, therefore, to perform the job for which it has been created.

The attributes of God – the Absolute Good***Σ26*** originate truth, good ***[[***e.g., love, mercy, wisdom***]]***, and life of men. The Truth, Good, and Being are the different definitions of the Divine Love – the manifestation of the Omnipotent Almighty Unity of the Will/Law–Energy–Power that creates the Universe and sustains its existence. They compose the inseparable triad that constitutes the essence of life and perfection at the levels of the universe accessible by the human mind.

The derivatives of the Absolute Good are the subjects for the interconnected realms of knowledge: philosophy, epistemology, and the systems logic. The mind creates these realms of knowledge to sustain own operations–existence–life; for instance,

to reflect the essence of own nature at the levels of the material world
↓
to comprehend and to apply the laws, which govern the life of the intellect
↓
to determine the conditions of survival and development–optimization–evolution

3. Through the prophets and apostles, God had revealed all knowledge, which His creation should have about Him and His law, and which is sufficient for accomplishment of His will within the world of men. This knowledge received the name of theology. Theology provides the explanation, justification, and the means to sustain, comprehend, and accomplish

existence, perfection, and the evolution
↓
creation of Christian philosophy, epistemology, and other knowledge, which sustains survival–oriented activities
↓
survival of a human being and the human establishments:
civilizations, states, social and business systems

4. Philosophy of the absolute good elaborates Christian theology into the practical knowledge of survival, the morals, and ethics. The created by philosophy knowledge includes

the set of principles for cognition of the material world, for the choice of purposes,
which would result in optimization, and for the choice of the means and ways to achieve the purposes
↓
the set of principles and the means of creation and maintenance of the societies and other establishments (systems)
↓
the practical applications such as the morals, and ethics and their derivatives, for instance
a/ the intra– and inter–system policies and laws
b/ the ethics of scientific and other inquiries
c/ the standards of personal, social, and professional behavior

5. Systems epistemology applies the knowledge provided by theology and philosophy for cognition of the laws, which determine creation–communication–accumulation of knowledge.

6. All components of the framework of the logical reality of evolution (theology, philosophy, epistemology, and systems logic) have the same focus:

survival → optimization → evolution

The difference among them is complexity of the created and applied knowledge.

The theological knowledge with the highest level of complexity a human being receives from God Himself through the dimension of faith, as

the divine energy of creation
⇓
the universal energy that sustains existence of the Universe
⇓
wisdom ⇒ power of cognition ⇒ knowledge

This knowledge

a/ reveals the laws of God–Creator, which determine the meaning of existence

b/ empowers a human being to cognize the revelations of God given through the Prophets and Apostles

c/ provides the foundation for embodiment of the knowledge of God into realities, systems – establishments, institutions, which sustain survival and development of men and their creations.

The theological knowledge enables the mind to create knowledge with the complexity sufficient for maintenance of other levels, e.g., the physical life within the world of the matter, maintenance of cohesive power, which sustains existence of the mind's creations ***[[***civilizations, empires, states, societies***]]*** and maintains within them the cycle of life–maintaining operations:

information → identification–gathering–classification–aggregation → transfer → consuming/utilization for achievement of purposes
↓
knowledge → acceptance–learning–absorbing/consuming–transformation–creation → exchange → transfer

The mind creates philosophy, when it works at the energy–information levels – the levels of creation of thought: philosophy is an application of the

knowledge provided by theology for the practical organization of life and for maintenance of the societies and other establishments.

Epistemology studies the laws of creation, circulation, and utilization of knowledge

a/ by the mind at the level of the energy–information – the thought, and at the levels of energy–information–matter – the thought's embodiments: sciences, philosophical concepts, books, establishments/systems – societies, states, civilization, political, social, religious, financial, and other institutions, etc.

b/ by the realities and systems at the levels of energy–information–matter (the systems epistemology, social epistemology, etc.).

Hence, from a practical point of view, the systems logic is the working technique, which sustains the entire cycle of cognitive activities starting with the acceptance of a theological concept and finishing with the application of the laws of reasoning toward routine and strategic decisions.

7. The knowledge with the lower levels of complexity – philosophy and epistemology – cannot be applied for creation of the theological doctrines because of the incompatible levels of complexity: the knowledge, which the mind creates (e.g., philosophy), does not originate the true knowledge of God because the levels of complexity are incompatible. God is the Spirit {*John 4:24; Genesis 1:2*} Who does not have any analogue within the material world from where the mind receives the sensory information with which the mind creates knowledge about the laws controlling the material world and about own life as the part of the system that has to dominate this material world. In accordance with the law of inadequate complexity, a simplified analogy cannot convey the reality of observed phenomenon even within the world of the matter. It means that the mind itself, with the reasoning, logic, and imagination fuelled with the images of the material world, is not empowered to create true knowledge concerning the nature of God or His attributes. The axiom of complexity is the foundation of the world of the matter; it also allows understanding of meaningless of any attempt to impose the laws of the matter on the Spirit – God the Creator.

8. The false knowledge might be detected through an observation and comparison of the levels of complexity of the original subject of consideration, the levels of consideration, the purposes and the means of utilization of the created knowledge. When the mind utilizes false knowledge for survival–oriented activities, it creates the inadequate strategy, therefore, endangers own life and existence of own creations, for instance, such as a society, state, business or other systems.

Summary

The foundation for life, well–being, survival, and development of the human mind — the framework of knowledge, which sustains the evolution ***Σ3*** — consists from

theology – the knowledge of God and His laws
↓
==========
philosophy – an application of the knowledge of God and His laws
toward organization and maintenance of the life–sustaining processes
within the human establishments (societies, states, etc.)
↓
epistemology – the theory of knowledge, which describes the optimal processes of
cognition, transmission, communication–exchange, and accumulation of knowledge
the material systems created by human mind
==========
↓ ↑
the systems logic – an application of the universal law of perfection at those levels of the Universe,
which accommodate creation, existence, and disintegration of the material systems created by human mind

The **conceptual foundation** of the systems logic includes the following doctrines ***[[1*** through ***4]]***.

1. **Theological – monotheism*Σ21***: Christian Orthodox theology conveyed by the Septuagint and The New Testament

2. **Philosophical** –

a/ the concept of the Absolute Good***Σ26*** as

the source of moral, morality, ethics, laws, criteria of evaluation,
and purposes and values, which compose the meaning of the good
↓
the foundation of life of the mind
↓
the foundation of any purposeful activity
focused on survival, development, creation of the good, evolution

b/ the systems ***concept of human mind***; some of the main assumptions:

mind is the purposeful system
responsible for development–optimization–evolution of the world observable by men –
the mankind universe
↓
the nature of mind is unrestricted unlimited cognition–absorption–creation of knowledge
↓
the purpose of mind within the world of the temporarily structured matter might be defined as
the unity of three processes –
cognition ⇆ creation of knowledge ⇆ materialization of knowledge
[[the mind accomplishes materialization of knowledge
through creation of the devices–plans–systems for embodiment
of the created knowledge into the material structures–systems–realities***]]***
↓
the law of irreversibility of cognition underlies unification of
the human mind, knowledge, complexity, and time–space
into the inseparable wholeness oriented toward an increase of complexity — evolution

The ***law of irreversibility of cognition*** controls the dimension of time; without irreversibility of cognition, the optimization and development as the increase of mind's complexity are not possible ***[[***the increase of complexity is the development also referred to as optimization and evolution***]]***.

Irreversibility***Σ18*** is impossibility to reverse a process. Irreversibility in its exact meaning (impossibility to reverse process) manifests itself after sets or arrangements of energy derivatives attained the specific threshold of complexity and became able to carry and to consume the purposeful information.

The law of irreversibility controls acceptance, accumulation, and transformation of energy and any of its derivatives, including knowledge, by any system.

In accordance with the purposes of observation, the ***timeΣ20*** might be seen as the setting, framework, or conceptual reality controlled with the law of irreversibility, which directs all transformations of the universal energy toward an increase of complexity. The continuity of the processes of cognition, increase of complexity, and optimization is irreversible because, even if cognition can be stopped, when a particular system/wholeness undergoes annihilation, it cannot be reversed for the entire dimension/realm/world, within which its creation, existence, and annihilation are consummated.

From a particular point of view, annihilation is interruption of acceptance–cognition–creation–exchange–transfer of knowledge: a system loses wholeness, which is sustained by the ***cohesive powerΣ23***, and disintegrates. The moment of irreversible collapse is the moment when impairment of the cohesive power results in interruption of cognition; at this moment, the system's disintegration becomes manifest.

Within the wholeness of the human mind, knowledge, complexity, and time–space dimension are unified by the law of irreversibility of cognition

– ***the mind*** is the energy field, which transforms the universal energy into the active energy***Σ19*** forms/human thoughts/knowledge ready to modify, re–structure, re–arrange, or disintegrate the matter

– ***knowledge*** is the manifestation/derivative of complexity at the levels of the matter; it is a product of human thought – the aggregate of the active energy forms, which carries the potency necessary for transformation, re–structuring, and disintegration of the systems, subsystems and material arrangements/structures

– ***complexity*** is a property of a purposeful reality of fields that accommodates sets of transformations of the universal energy into the derivatives: energy, energy–information, and energy–information–matter forms, which might be arranged for achievement of purposes

– ***time–space*** is the structured setting or the net of the energy fields, within which the mind embodies its thoughts into the discernible/material systems and realities, or, in the other terms, within which the active energy forms initiate transformation of the energy into the material structures and create/evoke systems within the chaos of the reserves accessible for the mind's creative activities ***[[***such reserves are the arrangements of the matter structured at the levels of complexity accessible for the mind–creator of a system***]]***.

The following inseparable wholeness of the **knowledge** ⇔ **mind** ⇐ **complexity** ⇔ **time** ⇔ **space** comprises the purposeful logical reality, which describes the world of men or the mankind's universe:

Time ↔ Space
↕ ↕
Complexity
↓
Mind
↓ ↑
Knowledge

This reality also might be considered as

– the reading/embodiment/derivative of the universal code at the particular level of the complexity

– the specific reality, which transforms the universal energy into energy–information formations – human thoughts; the human thoughts are the cores of new systems and realities, through which the world of the matter and its components (*for instance, systems created by men – societies, businesses, empires, civilizations, etc.*) might be developed–optimized or destroyed

– the set of fields, which accommodates energy transformations and sustains the energy and energy–information–knowledge flow within the mankind's world.

3. **Ethical** – the concept of truth: the ultimate purpose of any research is finding truth. Truth is the adequate description of the observed phenomenon. The adequate description, or the knowledge of truth, might be created only by the mind that

does not have any bias, preconception, and partiality
↓
does not set any pre–conditions
↓
does not restrict the terms of interpretation and inferences
↓
does not utilize the logic of simplification*Σ2*, modeling*Σ28*, or other techniques resulting in non–compliance of complexity of description with the complexity of the observed phenomena

4. **Epistemological** –

a/ concept of evolution, which defines the evolution as an increase of complexity of created knowledge and as an achievement of the optimum – the state of perfection, when the system reaches its maximal potency; for instance, when the mind actualizes own maximal potency to create knowledge

b/ the doctrine of human mind as an evolving system capable of unlimited increase of complexity manifested as the limitless cognition and creation of knowledge; this doctrine might be seen as the opposite of epistemological concepts developed within framework of scholasticism and other presumptions of human limitation and limits based on the heathenism, for instance, on Aristotle's concept of social animal–men and its development by the political theology and ideologies of all kinds

c/ irreversibility of cognition.

Truth, knowledge, and the human reasoning/intelligence as the means of cognition–creation of knowledge compose the inseparable unity similar to the unity of life, the meaning of life, and the means of existence: this unity is the main driving force of evolution.

Consequently, the systems logic facilitates accomplishment of three purposes:

1/ to provide the framework for

a/ creation of knowledge of the truth – the knowledge adequate to the particular levels of complexity

b/ accommodation of the logical realities created by the mind, which has reached particular understanding of truth and which is in a pursuit of the purposes of evolution within the world where the universal law of perfection is the main law of existence

2/ to evaluate, describe, and anticipate

a/ the compliance of the logical realities, which are created by the human mind, to the purposes of evolution

b/ the conditions of the Future for the mind that creates some logical realities and the probable Future of those systems, which would embody the logical realities created by the mind

3/ to design and to maintain evolving – complex – systems.

A system might be referred to as a ***developing or evolving or complex system*** if it has abilities to create–assimilate–utilize knowledge, therefore, if it is capable of optimization–evolution. Only systems, which include the human mind ***[[***e.g., society, political or religious establishment, empire, civilization***]]*** are capable of creation of knowledge, therefore, of development and evolution. In such context, the human mind – creator of human thoughts – might be seen as the source of ***active information [[***small energy form***Σ19]]***.

The human thought – active information – is the core of any system that might be created–evoked–initiated within the chaotic realities ***Σ17*** of the Universe.

The systems logic is a tool for cognition, design, and control of the developing–evolving systems.

The systems logic does not work within the boundaries and limits established by the atheistic, materialistic, or other false sciences, ideologies, and misconceptions; it belongs to the mind existing at its original unassailable position: the center of the world, which man received from God to love, cultivate, dominate, and cherish.

The systems logic works for the mind, which does not accept the restrictions imposed by the imaginary worlds of anti–evolution: ideologies, hierarchies, deified superiors, and matrices of thinking intended to subdue human beings, to deprive them of freedom of thinking, to pervert their nature, and to make them slaves and worshipers of the phantom of "absolute power" ascribed to men who have access to the power of physical coercion. For such a mind, the Plato–Aristotelian utopia and similar imaginary worlds (along with their embodiments into religious, social, and political establishments) are the means of death and destruction.

In summary, the systems logic has

1/ the starting point – the ***universal law of perfection***; the universal law of perfection***Σ1*** postulates that any complex/evolving system exists to actualize purposes, which result in optimization–evolution, and any complex/evolving system is created for development into the state of optimum–perfection achievable at the particular level of complexity

2/ the main criterion – the conformity of the system's nature (purpose, origin, essence, processes, end) to the derivatives of the absolute truth that specify the levels of complexity where the system exists

3/ the purpose – comprehension of the optimum and evaluation of the actual, probable, and optimal potency of a considered system in its Future, Present, and Past

4/ the working method – evaluation of the conformity of the considered system (or doctrine, theory, concept, etc.) to the universal law of perfection and to the purposes of evolution

5/ the results – design of the optimal system's strategy: survival, assimilation, transformation, optimization, or destruction.

Optimization is the process of achievement of the ***state of optimumΣ29*** that is fulfillment of the universal law of perfection.

The systems logic investigates the problems of optimization at those levels of the Universe, which accommodate creation, existence, and disintegration of the material systems arranged by human mind.

The systems logic opens possibilities of advanced cognition, and consequently, more efficient creation, modification, assimilation, and destruction of systems.

The value of generalized consideration achieved through application of the systems logic might be found in possibilities provided by the created advanced knowledge.

For instance, the systems logic facilitates identification and comprehension of

– laws and patterns within the chaotic realities of events, facts, news, assumptions, opinions, scientific research, achievements, failures, victories, and all other phenomena, which

compose the contemporary reality – the Present
↓
describe/disclose the Past
↓
define/reveal the Future

– the particular patterns of behavior, development, degeneration, and collapse of a particular system, for instance, such as a civilization, state, empire, nation, religion, society
– the system's destructive potential including risks and threats, which a particular system is able to inflict on its environment and its counterparts; therefore, design of the preventive measures might be more efficient
– and so on.

In conclusion, the systems logic deals with general systems as with complete purposeful wholenesses, which exist and achieve purposes within the chaotic reality of identifiable systems and unknown systems and realities with the complete spectrum of parameters: from the known to the unknown, from simple to super–complex, from recognizable or predictable to unidentifiable or non–predictable. As a tool of cognition and analysis, the systems logic

1/ facilitates creation of knowledge necessary for evaluation and desirable modifications of the environment and its components – realities–systems

2/ allows design of the flow of knowledge, which – if initiated – provides a possibility of maintenance of the invincible (or indestructible until the purposes are accomplished) systems

2/ sustains comprehension, design, re–creation, and initiation of collapse–destruction of the actuality by ***the observer***.

Concept of the Observer

The concept of observer is a meta–level construction intended to assist comprehension of the chaos and chaotic realities.

Some researchers consider an observer as an inseparable participating component of the object of observation. Consequently, they place the observer within the object of observation [e.g., Hayles 15, 24]. Such a placement not only makes the observer limited (as a part/subsystem of a system) by the logic of the object of observation, which the observer is expected to analyze; it makes the observer's perception and inferences biased and restricted. For instance, only in the period of paradigm change, the scientists perceive the contradictory phenomena and admit existence of the knowledge that does not correlate with the existed paradigm [Thomas Kuhn ref. in: Hayles 39].

The practice of placing of an observer within the observed reality and making the observer a part or subsystem of the observed reality results in creation of knowledge biased toward a particular matrix or a particular logical reality. The assumptions made by biased observers confined within logically restricted frameworks cannot correspond with the actuality, yet during many centuries, people accepted them as the scientific truths.

Other researchers have adopted the Heisenberg's uncertainty principle (borrowed from physics), with the inference that the mere fact of observation influences the considered object [Makridakis 16].

The unquestionable application of the uncertainty principle resulted in inadequate assumptions. The value of observation is perception of the actuality at the particular level of complexity, neither change nor influence of the observed phenomenon. The necessity of influence might be inferred later, but until the observation is complete, the very essence of the observation, as well as the purpose of the observer, is creation of generalized knowledge – unbiased toward the subject of observation.

Furthermore, until an observer participates directly in the existence of the observed object or with its actions influences the life or behavior of the observed object or phenomenon, the uncertainty principle also is not valid. To become "the observer" in the strict sense, with the purpose to create knowledge of unknown before reality/system (that is why any observer is needed), the observer must be independent and separated from the object of consideration. In particular, only when the observer–human mind accepts the possibility of freedom from the restrictions at the levels of the matter, the mind becomes able to comprehend the underlying energy–information nets of the energy fields/patterns that constitute the essence of the Universe, its systems, and subsystems.

The simplest example: a child (who first time visits grandparents) is staying in the room and through the window, and having being unnoticeable behind the curtains, observes a cat, a dog, a sheep, a cow, and chickens at the grandparents' backyard. These members of household do not discern the child behind the window, and their behavior is not altered by the observer's presence: it remains consistent with the conditions and terms of their existence, which presently are not influenced by the child's observation. At the same time, the child–observer creates new knowledge concerning behavior of the unseen before animals without any interaction with the objects of observation. Later, the child might or might not become veterinarian, butcher, or someone totally unconnected with the animals; he might choose or choose not vegetarian diet, and so on. The impact of the child's observation on the world of men is the matter of the Future. Now, at the time–space point of observation, he creates knowledge, which does not influence those he observes.

Another example: a scientist–observer was sitting at the table, in library, and looking at a magazine. As soon as the scientist did not touch or read the magazine, nothing happened within the material world as well as in the realm of the energy–source of the matter. The scientist–observer had read the magazine and new information prompted the vision of an unknown before interconnection; then, he created new knowledge concerning some processes of energy–matter transformation. Nothing happened with the magazine, which was returned at its place at the table and which is ready to be read by the others. The observer's thought (*a human thought is an energy field, "small information," or active information, which has potency of structuring the chaos/creation of new systems*) instantly changed the energy level of the mankind universe, therefore, its Future, and might change the material world if the observer decides to embody new knowledge into energy–information–matter, or into tangible form, for instance, a new concept, a book, invention, new or improved service, new or re–designed corporation. However, such an activity would transform the observer into a creator of new reality, which includes the knowledge of the observed object.

Therefore, the term ***observer*** defines a specific knowledge–creating system, which
a/ is not connected with the object of observation
b/ has the level of complexity, which exceeds the complexity of the object of observation.
The concept of the observer includes the following assumptions (from ***A*** through ***E***).
A. Any creation has the complexity incomparably lower than the complexity of its creator and lower than the creator's likeness.

Consequently, the world–creation of God has the level of complexity lower than the level of complexity of the human mind that is God's creation made in His image and after His likeness.

Consequently, the mind's level of complexity surpasses the level of complexity of the world and the level of complexity of any phenomenon, system, reality, etc., which exists within the world: only the human mind is capable of independent and unbiased observation of the world in its entirety/wholeness, as well as any of its systems and subsystems at different levels of complexity.

The human mind, which is created in the image and after likeness of God–Creator of the world, has the highest level of complexity within the world of men – the realm, which the mind is able to perceive, observe, or infer.

The human mind as the outer point of reference at the level of complexity, which is higher than the levels of complexity of the world of men, is the observer: the knowledge–creating system at the highest level of complexity, which exceeds any of the derivatives – bodies of knowledge on which human establishments (civilizations, societies, sciences, etc.) are founded.

B. The world is the totality of the energy fields. Within these fields, the universal energy creates and maintains embodiments or readings of the universal law/code actualized at different levels of complexity – the systems and realities.

The observer–human mind in its state of optimum is able to cognize the universal code/law, as well as the infinite complexity of the world, in all its entirety, complexity, and splendor. The level of comprehension and consequently, the adequacy of reflection of the universal law by the observer depend on two conditions: the purposes of the observer and complexity of observation.

C. The observer is an outer or non–correlated point for the supersystem, into which an observed object–system was placed at the moment of origin, creation, or establishment. The observer describes the observed system within its supersystem or identifies the starting points for the cognition, description, development, or transformation of the observed system:

— by comprehension of the essence and potential of the supersystem

— by cognition of the purposes of the supersystem

— by cognition of the typical (*common, or natural*) laws–patterns of creation and life–sustaining processes of the supersystem and its subsystem – the object of observation

— by cognition of the purposes of the system, the body of knowledge, the resources, and the methods of operations, which the systems employs for achievement of its purposes.

D. The main purpose of observer is cognition. Cognition (*as the complete cycle of creation–transformation–transmitting–acceptance of knowledge*) is life of the human mind. Whatever the mind does (*e.g., controls the state, creates the civilization, arranges goods manufacturing or providing services, etc.*), it cognizes the supersystem–environment in which the mind's creation would exist, and then, creates knowledge, which would evoke these systems from the chaos (*in this case, the chaos might be seen as the pool of reserves, for instance, investors, lending institutions, organization, contractors and subcontractors, workers, tools, building blocks, computers, machinery, researchers, media companies, etc. From the pool of reserves/chaos, the creator–establisher–founder selects those who can be assembled/unified into the system for achievement of his purposes*), define results of their existence, and ultimately, trigger their collapse.

Each of the mind's actions has the particular knowledge as its basis, and each of its connections with the environment and the created system(s) exists for the sake of a particular knowledge: it assimilates, conveys, and discloses this particular knowledge, or activates creation of new knowledge within any other system, which receives the conveyed knowledge. There is nothing more purposeful than cognition and knowledge transfer: any system perceives only knowledge, which it needs to achieve its purposes, and any system is able to accept only the knowledge needed to achieve its purposes. The level of complexity of percipient defines the knowledge it would accept.

The instant inference: if the observer knows the information and knowledge that circulates within a system or the knowledge, which is accepted or rejected by the system, if the observer knows the system's purposes and the system's meanings of the good and the evil, the observer can re–construct the system's knowledge of survival, main policies, the desirable and actual Future, strategy of survival, possible actions toward the environment–supersystem and other systems, and so on.

Therefore, as soon as any system created by men is an embodiment of a particular knowledge, the control over the use of information and knowledge provides the possibilities to develop, transform, use, and destroy the system through (or with) the particular information and knowledge.

E. Cognition in the context of the science of complexity might be defined as the two–folded process of transformation: the perceived universal energy into the energy–information, then, the energy–information into the tangible form (e.g., word, concept, book) carrying the knowledge that might be transferred to the others and might sustain life, optimization, or destruction. The outcome of cognition is knowledge of the laws, which define creation, existence, potency, collapse, and disintegration of the observed phenomenon or event. The level of observer's complexity – not actual complexity of the observed object – determines process and results of cognition and the consequences of the created knowledge for the processes of evolution, degeneration, and destruction of the world of men.

In consistency with the purposes of observer, the sub–observers, or systems with the lower levels of complexity might perform some functions of observer at the different levels of complexity, which are lower than the human mind. Such sub–observer might be a science, society, or any other system, which is endowed with methods and tools of inquiry needed to collect information, then, to systematize and classify information, and to prepare the subject of observation for cognition by the observer.

Within any system, the process of cognition has two directions: cognition as the means of development, and cognition as the means of collapse, disintegration, and destruction.

Cognition as the means of development consists from three inter–connected processes:

1/ information preparation – selection, evaluation, restructuring, generalization, abstracting, or creation of analogies, finding the patterns

2/ knowledge creation – arrangement of the prepared information, inferences concerning the laws, which underlie existence, development, and collapse of the system, restructuring of the information, accommodating of the newly restructured and newly ordered information within the existed before body of knowledge, or creation of new knowledge, which might completely replace the previous knowledge

3/ knowledge application – an increase of complexity resulting of transformation of life–sustaining processes in accordance with new knowledge.

Cognition as the means of destruction begins when a system accepts false or distorted information as the true reflection of actuality. The false information is a distorted reflection of the actuality; use of the false information interrupts development of the system and converts the processes of optimization into the processes of decay. The initial processes, which prepare the system for degeneration, decay, and, then, collapse, include

1/ deterioration and distortion of the information–selective structures of the managing/controlling subsystem

2/ loss of an ability to discern truth and false resulting in the routine selection or acceptance of the false or incomplete information

3/ substitution of new knowledge created with the false information for the old knowledge, which sustained the system's original purposes, values, and criteria.

In some cases, the problem of inability to discern the true and the false information might be prevented through optimization of the system's design.

The essence of information at the level of the material structures and systems conditionally might be defined as a description of patterns and codes. Consequently, the information flow might be seen as "a sequence of patterns" [Miller 1027].

With the knowledge of the intra–system flow of patterns, the observer might infer the purposes, nature, and laws that stipulate life and disintegration of the system, limits of potency, which the systems is expected (and is able) to reach, and an actual degree of the system's development, optimization, or decay.

Two factors determine the real value of information and particular knowledge for a particular system:

1/ the level of development of those who work with information and knowledge

2/ the resulting increase (optimization) or decrease of the level of complexity (collapse), which a system achieves after applying information and knowledge toward its purposes.

The process of creation of a system is stipulated with two levels of complexity: the level of the creator and the level of the supersystem or the environment, where the creation will exist.

Whatever people create, they create it for a particular purpose. Whatever a system carries out – the system acts for a purpose. The principle of purposefulness***Σ30*** underlies the entire order/wholeness and each level of complexity of the world.

Systems Definitions

The following ***systems definitions*** introduce the basics of the systems terminology.

Each system (for instance, a society, state, empire, civilization) is the means to achieve some purpose(s): identification of a purpose allows identification of a system. Within the realms observable by the human mind, the universal law***Σ1*** – Λογος, the universal pattern or main code of the energy transformation – stipulates and controls the processes, which realize the nature, or the mode of operations–existence–life: creation, life–sustaining activities, transformation, dissolution, and annihilation of systems and realities. The infinite multitudes of executions of this code, which are accomplished at the multitude of different levels of complexity, result in achievement of infinite multitude of purposes with different levels of complexity. The totality of these purposes might be defined

– in theological terms – as the universal purpose of creation also known as the will of God

– in philosophical terms – as the body of knowledge sustaining existence and evolution of the human mind

– in the terms of the systems logic – as the logical scheme of the observed totality.

The ***nature*** of a system is the energy–information cycle specific for a specific system; a specific system is a unique energy field that accommodates particular cycle of transformations of the universal energy. The system's energy–information cycle is functioning of the energy field or arrangement–order–pattern of correlations of the intra–system and inter–system energy and information transmissions and transformations, which creates all functions–operations of a system (for instance, maintains life of a living being and existence of the state). Any distortion of the nature is the distortion of the energy–information cycle, which modifies or disrupts the original life–maintaining intra–system correlations and alters or disrupts the system's life–maintaining connections with its environment. The system with the distorted energy–information cycle becomes unable to achieve its purposes: it is unable to function according to its nature. Such a system discontinues normal participation in the operations of its supersystem. Consequently, the system with the distorted energy–information cycle or perverted nature has to be either corrected or destroyed to prevent the further distortion of the energy–information cycle of its supersystem. Consequently, the violation of the universal law, or the distortion–perversion of the system's nature, becomes the direct threat to the system's own existence. Such a system inevitably either will be destroyed by its supersystem or itself will trigger the program of self–annihilation.

The word ***universal*** defines such a phenomenon (code, property, condition, or other feature), which has the maximal level of complexity within a particular environment–system–reality–universe, and which, therefore, might be identified as the comprehensive basis–condition–description of existence of the considered entirety, as well as any of its components.

At the level of mankind, the universal purposes include realization of the maximal creative power of the human mind and the optimization–evolution of the world of men. At this level, optimization–evolution is development as unfolding and actualization of the maximal potency of creation of good, for instance, advancements in overall quality of life, health, and prosperity of a person, a family, society, and nation.

The systems logic facilitates creation of knowledge necessary for achievement of the following purposes:

– identification and description of the derivatives of the universal law at the different levels of complexity

– application of the knowledge of the universal law for creation, control, maintenance, and optimization of systems and realities

– realization of creative potency of the human mind and achievement of the optimal conditions of human existence

– facilitation of survival and optimization of existence of the creators and users of the systems: the human mind and its creations–establishments, such for instance, as a business enterprise, a society, any system that sustains existence of the mind and its creations

– identification of the patterns of the system processes at the different levels of complexity

– identification of the optimum at the different levels of complexity ***[[***optimum is a condition achieved through actualization of a particular derivative(s) of the universal law, which stipulate(s) the meaning of maximal complexity, vital parameters of a particular system/reality, and its influence onto other systems and realities***]]***

– a design of the optimal systems for realization of the purposes of development, optimization, and evolution at different levels of complexity; for instance, a political or social establishment, the state, the empire

– design, creation, and maintenance of a special class of systems – invincible systems.

Invincibility*Σ31* within the world of purpose–oriented, therefore, temporal systems, might be defined as the system's complete control over its own time–range and conditions of existence. Such comprehensive control includes, for instance, advanced abilities of defense, destruction of hostile systems,

influence on and transformation of the hostile environment.

A system might be defined as the ***invincible system***, **if**

it controls conditions of own existence
↓
it controls achievement of own purposes
↓
it is impenetrable for hostile influence
↓
it has complete protection against other systems' influence
↓
it possesses the means of protection or assault unavailable to other systems within the same environment/supersystem

The infinite multitude of systems has originated many definitions of systems, their critical subsystems, and life–sustaining processes. Usually, the purpose of research determines description of a system and makes the system identifiable within its environment, settings, or the supersystem.

Any system is the energy perceived as (or embodied into) information and matter. The life–cycle of any system might be adequately identified in the terms of energy.

The most generalized system's description might be given in the terms of

1/ interactions of the energy fields

2/ energy transformation.

For instance, Laville in 1950, and McNeil in 1993 [Laville and McNeil ref. in: François 217], envisioned a system as the dynamic formation of energy or as an energy field: a system is energy whorl or vortex [Laville] or a product of dynamic interactions between energy fields [McNeil].

Preparedness to accommodate a particular cycle(s) of transformation(s) of the universal energy discloses the meaning of a ***purpose*** and determines the character of the wholeness.

The ***wholeness*** might be defined as the unity–set of energy fields capable of accommodating a complete cycle of energy transformations, which results in some change(s) of complexity of the reality, which accommodates existence of a system. The desirable parameters, settings, potency, etc., which are expected to be achieved as a result of the change(s), are a ***purpose***.

Any system is wholeness within the totality of other wholenesses. The totality of the wholenesses is referred to as a universe.

Consequently, an assemblage of components (e.g., bodies of knowledge, organizational structures, material resources) becomes a ***system*** only **if**

it has a purpose
↓
it is endowed with an ability of cognition
[[at the level of systems, cognition is the ability to perceive–accumulate–transmit–actualize–embody specific system–creating and system–maintaining energy,
which at the level of human mind is defined as **knowledge*]]***
↓ ↑
it is capable of development–optimization
[[development–optimization might be seen also as achievement of an ability to realize own maximal potency***]]***

The intra–system information flow, which connects the system's components into the purposeful wholeness and which is controlled by the cohesive power, carries the knowledge how to achieve a purpose; it also discloses potency and other properties of the systems, therefore allows cognition of the system's future.

General Systems

Five sets of assumptions concerning definitions, nature, and possibilities of control describe the **general systems**.

1. A ***general system*** is a set of the energy fields, which accommodates the complete cycle of energy transformations allowable and controllable by the universal law. As such, a system is a unique field–formation of energy producing energy derivatives. This energy field is unique, because each system (e.g., a pine tree, the human mind) has a specific purpose, therefore, the specific outcome of energy transformation processes. The law is universal because it controls any level of complexity and any system within the Universe.

The ***universal lawΣ1*** has its derivatives at every level of complexity; it might be also said that every level of complexity is governed by the same universal law according to the complexity of transformations of the energy, which take place at this level of complexity. The derivatives of the universal law at the level of general systems accommodating existence of the human mind received a name of the ***systems laws***.

The systems laws stipulate the systems properties, features, life–sustaining and destructive processes and determine their results at any level of complexity within the realm of systems.

Some systems laws work independently from the spatial–temporal parameters of existence.

For example, the same laws of survival and the same laws of destruction–disintegration control existence and trigger collapse of civilizations, empires, states, as well as a small corporation; they determine duration and parameters of the destructive processes within the multinational empire, as well as, for instance, within a particular state, social, political, or religious establishment.

Each of the systems and realities of the Universe (e.g., a human being, the business universe, the state, the empire) have the same design described with the following common features:

1/ the pattern of the energy transformation–transmission–accumulation–utilization is the essence–nature–main code of the system

2/ existence of the system depends on the cohesive power that controls the information flow, which arranges, organizes, and sustains the system as the purposeful wholeness in a process of achievement its purpose(s)

3/ the purpose of creation determines parameters of the cohesive power, complexity of intra–system knowledge, meaning and duration of time–range of existence, and pattern of disintegration

4/ after accomplishment of the purposes (or due to impossibility to achieve the purposes), which a system has been created to accomplish, the system collapses ***[[***usually, through collapse of the cohesive power, which makes impossible circulation of the life–maintaining knowledge within the system***]]*** and releases its subsystems and components; the released subsystems and components either are instantly assimilated or continue to disintegrate until they become ready for assimilation by other systems.

The law, nature, or essence of a system might be defined also as the pattern/main code that stipulates two system's activities:

1/ intra–system transformation–transfer of information and knowledge

2/ inter–system transfer–exchange–transformation of information and knowledge.

By actualization of these patterns, the system achieves some predetermined results: it accomplishes purposes of existence. If the intra– and inter–system processes continuously carry out such transformation–transfer of information and knowledge, which have been determined by the purposes of the system, the system realizes its own essence–nature.

2. General systems have the following sets of typical features: they might be **hierarchical**, **chaotic**, and **unknown**.

A **hierarchical system** has a structure: the discernible or cognizable arrangement of the intra–system information, knowledge, and material structures, which might be identified, for instance, by the knowledge, which they accept, accumulate, and transmit, or by the flow of material resources. The system's structure reflects, therefore, discloses the system's purposes: hierarchical systems are the systems with the lowest levels of complexity; the hierarchical systems are predictable: they can be easily assimilated and destroyed. The traditional descriptions of structure include such definitions as

– an arrangement of the system's subsystems in "three–dimensional space" [Miller 22, 24]

– an expression of an underlying processes [Capra and Steindl–Rast with Matus 116]

– "the pattern of organization" [Kuhn and Beam 270].

However, traditional definitions of a fixed structure lack the complexity necessary for an adequate description of a system; they might have sense only at the levels of the matter where the quantitative measures (e.g., mathematics) might constitute the applicable language of description.

The system's purposes determine the following properties of the system:

– the essence or the patterns of intra– and inter–system processes of transformation, accumulation, and transmission of energy, information, knowledge, and the material reserves

– complexity at different time–space points; the identifiers of complexity might include, for instance, the essence and potency of knowledge created, accumulated, assumed or transmitted by a system

– the potency as the maximal complexity that a system has to achieve at particular time–space point, under the specified conditions, within a particular range and duration of existence

– the patterns of interactions with other systems; for instance, exchange of energy, knowledge, information, resources

– the knowledge created during normal existence and the knowledge created by the system's transformation, optimization, collapse, or disintegration; this knowledge might be recognized through material results of the system's existence; for instance, manufactured goods, the knowledge offered and transferred through professional services

– the range of the dimensional properties includes characteristics of destructive processes sufficient to impair and to terminate the system's existence, the conditions, which trigger self–annihilation, and other features composing the meaning of wholeness and its disintegration.

Some researchers characterize an essence of a system as its potency [e.g., Maritain 454]. If to accept such a definition as adequate to the actuality, existence, again, might be seen as the process of development and then, actualization of the maximal potency of the system.

In particular, if thinking is the process of creation of new systems–bodies of knowledge, a human thought might be seen as an energy code–core (seed) of a new system or already completed system; for example, a vision of a new universe, a new corporation, or identification of the underlying information net. Consequently, the potency of mind–creator can be determined through its creations.

However, a human thought may or may not be embodied in the material structures; for instance, the new universe and the new corporation might not be created because a thinker does not have access to the applicable sources of energy: universal energy for creation of the universe, and capital for an arrangement of a new corporation. Consequently, some researchers evaluate the potency of a system within the range of resources, which are available for actualization of the system's potency. The meaning of potency in this case is restricted with the quantitative parameters; consequently, the evaluation is unreliable: it would remain valid only if the system's environment or access to resources is not changed.

3. At the levels of the material systems created for physical survival, all purposeful systems are organized as the structured hierarchical systems; for example, the state as a whole and its subsystems–components of the state, such as political, financial, social, and other institutions. The hierarchy–making factors include limitations of complexity of knowledge.

The knowledge, which any hierarchical system produces by own existence and communicates to the environment ***[[***environment is a supersystem, which accommodates origin, existence, and dissolution or destruction of its components – systems***]]***, discloses at least five crucial features:

1/ the level of complexity at which the system exists, therefore, its potency and possibility to influence, assimilate, and destroy other systems

2/ the system's essence, foundation, results of existence

3/ the time–range of existence, decay, and disintegration

4/ the system's possibilities of optimization

5/ the possibilities of assimilation and destruction by the other systems.

4. General systems might have the following main subsystems: managing subsystem, manageable subsystem(s), and boundaries.

The ***managing subsystem*** has a cognizing core, controlling subsystem, and executing subsystem. The cognizing core includes the permanent energy formations – the patterns of knowledge creation that stipulate the intra–system processes of cognition, development, and optimization. The permanent formations of the cognizing core define perception, accumulation, transformation (re–structuring of energy–information), and creation of knowledge.

The ***controlling subsystem*** (e.g., censor in technical arrangements) contains the standard or ideal patterns of energy transformation; these standard or ideal patterns are also known as the codes/laws, which govern the system's existence, that is all system's processes. These codes, patterns, and laws determine the results and conditions to be achieved, criteria for evaluation of the achieved results, hierarchies of values at the different stages of the purpose–fulfillment processes, etc. For instance, usually, the collapse and targeted destruction of a system might begin with development of inability of the controlling subsystem to preserve the conformity of the system's processes with the system's nature ***[[***the system's nature might be defined as the main code or the general/universal pattern of energy assimilation–transformation–transmission***]]***.

The ***executing subsystem*** activates the cohesive power and controls the stream of processes maintaining existence of the system and its subsystems.

The manageable subsystem contains resources, which a system uses to achieve the purposes: permanently and temporary available energy, information, subsystems, intra– and inter–system channels of communication, and the others.

The ***boundaries*** of a system are the specific flow of information–knowledge intended

– to actualize the patterns of defensive processes and sustain the special subsystems and structures, which protect the system

– to carry the perceptive formations–structures that select information, knowledge, material forms–structures within the environment or at the other levels of complexity, which the system is able to absorb–cognize–assimilate

– to transmit–convey the specific information, knowledge, and other resources needed to execute the inter–system communications, as well as expansion, development, and other transformations of the system during its interchange and interaction with the environment.

5. All intra–and inter–system processes are the phases of one undivided process that is called life/existence: operations, transformation, development, achievement of the state of optimum through realization of the maximal potency, and disintegration.

Existence is realization of the system's purposes. From another angle of consideration, existence is the stream of energy transformation–transfer–accumulation processes.

Existence of any purposeful system might be also defined as a purposeful cycle of simultaneous interconnected and intertwined intra–system processes – development, transformation, decay, destruction:

– the system's existence is development; if it is not development, it is degeneration and decay

– development is, at the same time, a transformation, and sometimes, it is destruction

– the transformation is, at the same time, development, and sometimes, it is destruction

– the system's existence is, at the same time, decay – exhausting of the potential, and so on.

At the different stages of life, these processes have different balances of the power.

Energy transformations are the essence of any phenomenon perceived by the human mind, which identifies them, for instance, as

– information

– patterns of processes, interactions, transformation, destruction, collapse, disintegration

– hierarchical structures (or the structures of order), systems, realities.

Any transformation of energy within any system activates the chain of transformations of energy within all interconnected with the system structures, systems, realities, and within all dimensions, supersystems, and hierarchies accommodating the system; for instance, one human thought might influence the entire society as well as the entire planet.

Development is an increase of complexity of intra– and inter–system energy accumulation–transformation–transfer within the system, which undergoes a process of optimization; the degree of development correlates with the level of complexity.

Transformation is the change of the system's structure and patterns of energy accumulation–transmission–transformation processes in response to the actualization, changes, or termination of system's purposes and conditions of existence. Any energy transformation influences the system's level of complexity.

Deterioration of the cohesive power results in decrease of complexity, decline of the energy potential, distortion and disordering of the system's processes.

Distortion and disordering of the system's processes might be described as

– the degenerative changes and dissolution of the system's structure(s) that is the deterioration or partial destruction of the intra–system channels of the information flow

– deceleration or interruption of cognition and creation of knowledge

– the gradual weakening (inadequacy of the complexity of the cohesive power and the information flow to the intra–system levels of complexity) and collapse of the cohesive power resulting in distortion and then, interruption of the intra–system information flow and the processes of information exchange with the system's environment.

Decrease of the complexity is manifested through changes in an information load. Insufficiency of the information within a system, indicates the latent (hidden until the time) destructive processes. A system ceases to exist when the cohesive power disintegrates; for instance, when the intra–system flow of information does not sustain the processes of transformation, utilization, creation of knowledge and other resources.

The current ***balance of power*** can be identified by the system's conditions: prevailing processes of development result in increase of the system's level of complexity; prevailing processes of decay result in decrease of the complexity level and herald the system's readiness for collapse and disintegration.

Some researchers define a process as a change in energy, energy–information, or energy–information–matter measurements, quantities, or qualities, which takes place within a system over time [e.g., Miller 24, 51].

However, the change is a result, while a process is an arrangement–movement of the interactive structures, systems, and realities within the chaotic totalities. The interactions of energy, energy–information, and energy–information–matter forms, structures, systems, realities during their movement throughout different dimensions and hierarchies of the Universe produce the changes of energy levels (complexity) within the interacting structures, systems, and realities.

Since Heraclites, it is held that any reality or a system has an image (or can be imagined as) of the process or of the non–interrupting stream–flow, which constantly changes its substance. Within such a stream, any described phenomenon is extracted from the "unknown and indefinable totality of flowing movement" [Heraclites ref. in: Bohm 48–49] that is from the chaos.

There is only one problem with such a definition: it does not leave any space for an expectation to cognize a particular reality/system. If the totality of "flowing movement" is indefinable and unknown, it means that the laws of this totality are beyond the levels of complexity accessible by the observer;

therefore, the extracted from this uncognizable totality phenomenon would never be understood adequately. The next logical step should be an inference that all knowledge acquired as the result of observation of the "unknown and indefinable totality of flowing movement" is figment of imagination inadequate to the actuality.

At the levels of the matter, the systems theory connects inseparably the process and structure [e.g., von Bertalanffy ref. in: Miller 24]: the systems theory considers a structure of a system as a momentary image or trace of the processes that sustain the system's existence. This image might be received, imagined, or designed/arranged if all processes are correlated at a particular time–space–complexity point.

Frontier and Floating Systems

Two classes of systems have the specific role in the process of development–optimization–evolution; conditionally, they are defined as frontier systems and floating systems.

Some researchers correlate the concept of ***frontier systems*** with the assumption of pre–Plato philosophers: a human soul is an intermediate between two worlds – the unchanging indivisible eternal infinite reality and the constantly changing discernible finite material world. As an intermediate, the soul/mind is the mixture of the elements from both worlds, yet, this mixture is the whole [Plato *Timaeus* 34–35].

Other Greek authors comprehend the soul/mind as an intermediate between generic and specific intelligence, intelligence and perception, the divine and the irrational [Theodore of Asine, Plotinus, Plutarch and Atticus; also ref. in: Dodds 298; Proclus Prop. 190].

Practically, the frontier systems are the means to accomplish purposes of the higher hierarchical levels. Usually they exist at the boundaries (or themselves might be the boundaries) between

the higher level (a controlling/managing system) –
the supersystem, which establishes purposes for the systems with the lower levels of complexity
↓ ↑
the lower levels (controlled systems or subsystems) –
the systems, which serve the purposes of the supersystem

Sometimes, a frontier system is the boundary between two supercomplex systems with the same or similar levels of complexity.

Frontier systems are the crossing and exchanging points of the streams of energy and energy–information directed from the higher levels of complexity to the lower levels, and from the systems/realities with lower levels of complexity to the higher level(s). As such, frontier systems have the particular purpose, which might be conditionally described as the role of intermediate managerial subsystem or the interpreter: they accept information flow from the supersystem and interpret it into purposes, which must be executed by the subordinate systems. They communicate with the systems/realities with the higher and lower levels of complexity and the different potentials, and incorporate them into the wholeness unified by similar activities directed toward the purposes established by the highest hierarchical level.

The frontier systems

1/ accept the universal energy and transform it into the energy forms and energy–information that might be accessible or became perceivable for the systems with the lower levels of complexity

2/ accept–cognize and actualize or make perceivable the information codes and patterns of energy transformation that are carried by the information flow descending from systems/realities with the higher level(s) of complexity or accommodated at another dimension(s)

3/ interpret and transform patterns and information codes of the systems with the higher level(s) of complexity into purposes and patterns for executing system with the lower level(s) of complexity

4/ maintain the cohesive power, which unifies systems and realities with the different levels of complexity into the wholeness.

Ultimately, the frontier systems sustain the wholeness of the mankind's world.

As the opposite to structured systems created to accomplish particular purposes at the levels of the matter, the frontier systems do not have the stability of constant sub–purposes, structures, processes, patterns, for instance, the basic permanent systems of knowledge, which determine consistency–predictability of behavior. The consistency of a frontier system might be described with the assumption that the frontier system exists for achievement of constantly changing purposes and its essence is the constantly changing flow of energy, information, and purposes of optimization.

A frontier system constantly cognizes, tests, and supplies with additional information/knowledge the realities and dimension(s) at which boundaries it exists (or whose boundaries it is), and changes own configuration, arrangement, and processes when the information flow changes its directions, or when the volume of active information increases.

The main function of the frontier system is creation of specific knowledge for the systems at the lower level(s) of complexity: within the non–interrupted movement of the universal energy and energy–information flow, the frontier system's core modifies (re–creates, re–orders, or re–structures) the created before managing information according to the newly accepted for execution patterns and information codes. The new knowledge becomes the basis for the processes, structures, systems, and realities designed to assure survival and to answer particular requests or problems of development and optimization for the systems, which the frontier system serves by own existence.

Energy ←← Super–Reality ←← The Higher Level
↓ ↓ (Controlling Supersystem)
↓ ↓ ↓
Cognition *Frontier System* ←← Boundaries
↓ ↓ ↓
Actions System/Reality ←← The Lower Level
(Executing System)

In summary, a ***frontier system*** is

a/ the chaotic reality–source for creation of specific purposes (or sub–purposes) for the systems at the lower level(s) of complexity, which are the means to accomplish the purposes of the supersystem

b/ the non–structured reality that has been designed to produce different temporary formations/structures needed to achieve different purposes

c/ the constantly changing floating reality that works at different levels of the complexity.

The constantly changing floating reality means that energy and energy–information contents of the frontier system, or the sets of components composing frontier system, are in constant transformation. At the different time–space–complexity points, dimensions, and levels of complexity, the frontier systems include different energy forms and patterns or codes from both levels – managing and executing realities/systems.

The meaning of movement is that the frontier system ***[[***that is the vortex, field, form, or clot of energy – the energy entity – originated by the universal energy flow***]]*** is immersed into and exists within the flow of universal energy and achieves own purposes by assembling and dissolving the sets of own components around particular pattern(s) of energy transformation. Such activities result in creation of the core (information code or pattern) of new system/reality or process/structure, which have to be created/realized at the lower level(s) of complexity.

The human mind and the Present (a subsystem of the time) are the frontier systems.

The concept of active information and the concept of frontier system originate the concept of ***floating systems***. The role of floating systems resembles the role of active information – a small energy formation that activates system–creative processes within the chaos. Floating systems fulfill the system–creative purposes: they activate the structuring processes within the chaos and trigger off the transformation of existing realities and systems; they also have the ability to accept new purposes, re–construct/re–arrange themselves, and to control changes of the environment or supersystem(s) according to new purposes.

Floating systems have three distinct features.

1. Their main purpose is creation of knowledge for other systems. They cognize/scan the essence/main code of a system, create new knowledge about the system's present states, terms and conditions of existence, and by this newly created knowledge influence the future states and conditions of the system they have learned.

From a particular point of view, interaction of the floating system with a general system might be described as the process of temporary assimilation of the general system by the floating system. Then, the floating system provides the temporarily assimilated system with the additional energy–information in a form of knowledge (the knowledge that is already under their control, or they re–direct another external energy–information flow), or in a form of knowledge supplemented with the material structures/systems, which embody this knowledge. Then, the floating system releases the assimilated system, which had absorbed the new knowledge received through the floating system and became ready to continue existence at the higher level of complexity.

2. Their "working capital" is their knowledge created during temporary assimilation of systems. Such temporary assimilation does not mean that – for instance – a corporation **A** (a general system) becomes the subsidiary of a consulting firm **B** (a floating system); it means that the consulting firm **B** becomes the temporary center of creation of knowledge intended to secure survival of the corporation **A**.

3. The inter–system energy–information flow, which organizes the environment and supersystem of floating systems, is the only means to sustain their own existence and transform their environment and supersystem(s).

The boundaries of a floating system ***[[***these boundaries are the information streams generated within the floating system and directed into the environment and supersystem***]]*** are in a constant uninterrupted movement: the floating system "floats" by including/assimilating or excluding/releasing new systems ***[[***components of the environment***]]***.

Potency of the floating system does not decrease, when the system releases a previously assimilated system, yet, it increases with including (assimilation) of a new system.

When a floating system assimilates a new system, it cognizes the essence of new system and increases own power (and the level of complexity) by accumulating additional energy–information (knowledge); when it releases a temporarily assimilated system, its potency does not decrease because the knowledge created by the floating system for the assimilated system becomes also the floating system's knowledge and sustains its consequent activities.

The phenomenon of an Old Testament prophet illustrates the purposes and methods of interaction of floating systems with the objects of their influence. The prophet receives new knowledge–revelation from God; this new knowledge, for instance, might be the knowledge of new law or the future. Then, the prophet interprets this knowledge with the language comprehensible by the people and transforms this knowledge into the guidance for the people's thoughts and deeds.

In theory, a floating system might have unlimited range of existence within a particular space–complexity setting because

a/ its essence is constant creation of new knowledge (therefore increase of own complexity), its method of work is an expansion of the influence over other systems; the results of its work is an increase of the level of complexity—development—evolution of the system, which it temporarily assimilated

b/ it accepts new purposes in conformity with the needs of its environment and supersystem(s)

c/ it influences and transforms the environment according to those objectives of expansion, development, and optimization, which are established by the supersystem.

Any system, which has been temporarily assimilated by the floating system, undergoes the specific transformation (including acceptance of the additional energy–information provided by the floating system and re–structuring or re–design with the purpose to accommodate the increased potency) that would result in increase of complexity.

The internal transformation becomes possible through re–orientation of the intra–system information and energy–information streams; such re–orientation is the primary focus of the floating system. Whatever the floating system needs to accomplish – to organize any of intra– or inter–system processes or to arrange achievement of the assimilated system's objectives with the optimal results (e.g., development of the maximal potency with the minimal resources spent) – it arranges two streams of the vital strategic information:

1/ the inter–system information flow, which circulates within the system; its movement is actualization of the cohesive power that sustains the system's wholeness and achievement of its purposes. This stream carries directing and controlling information, which be utilized for creation of knowledge that sustains survival and optimization

2/ the intra–system information flow, which is directed into the system's environment; this stream carries information intended to influence, transform, or assimilate (according to the system's needs) other systems.

Levels of Consideration

The systems logic operates with three types of arrangements: ***reality***, ***system***, and ***structure of order***. The main distinctions among them include

1/ complexity of the purposes, which they have been created to accomplish
2/ complexity of knowledge, which they produce by their existence.

The term ***reality*** applies to the systems, conceptual sets, or definitions with the higher levels of complexity. In general, the reality is a multidimensional supercomplex system, which might be a source of creation of purposeful systems with the lower levels of complexity; it has the potential, flexibility, and openness that compose the necessary basis for the abilities to execute multitude of purposes and to accommodate (*or to serve as the source of origin of*) different hierarchies of values, systems, and resources. The reality might include structured and unstructured systems, orderly organized structures, and the unstructured or non–recognizable/indiscernible formations (the chaos). Identification of the supersystem, which accommodates a reality, allows comprehension and description of the present or actual potency and the probable Future of the reality.

Two properties determine the difference between a ***reality*** and a ***system***.

A ***system*** has a structure or appearance discernible and cognizable by the observer: any system is the means for achievement of determined or identifiable purposes, and, as soon as the system has been structured, the system has no destiny apart from its purposes.

A ***reality*** is the entity with the higher level of complexity; it might have the purposes, which are non–discernible (non–cognizable) at the lower levels of complexity. Such a reality might be defined as the ***chaos***, if it is no possibility to discern its boundaries, or even simplest purposes and structures, or at least, to detect or predict its existence. Within the material world, any formless or disorderly looking non–organized substance with the unknown potential, with non–discernible purposes, and with non–identifiable reserves, is referred to as the chaos.

Therefore, the key–point is a possibility to discern a purpose. If the purposes are discernible, a subject of consideration is a system. If some or all purposes are non–discernible, a subject of consideration is a reality. If no purpose can be discerned, it is the chaos.

The term ***structure of order*** has the lower level of complexity in comparison with
– the purposefully acting and developing realities and systems with the levels of complexity from non–discernible purposes through the observable purposes
– the vast range of systems with the discernible, reflected, or created purposes.

For instance, for a corporation, such a range includes the complex formations (e.g., the world financial market) and relatively simple or typical structures (e.g., the intra–company network or local information network) intended to support routine processes.

Another example: one researcher considers the Earth, an empire, and a civilization as mysterious realities or even as the chaos, and the state, society, government, and corporation – as the realities or supercomplex systems. For another researcher (or the observer), the world and the civilizations are the identifiable structured systems, which have definite purposes (e.g., to accommodate the evolution or anti–evolution of mankind). Consequently, the state or another establishment might be seen as the structure of order, which is intended to realize a sub–purpose.

In summary, the key for distinction among realities, systems, and structures of order is the observer's ability to determine their level of complexity and to discern and to describe their purposes: the same system might be seen by one observer as a chaotic reality and by another observer as a structure of order.

The observer who employs the systems logic creates the knowledge at two levels of complexity: logical realities and logical systems.

A logical reality is a summary of inferences regarding

a/ specifics of manifestation of the universal law and its derivatives at the particular time–space–complexity point(s); in this case, the observer seeks to identify possibilities of creation or destruction, activation or termination of a process/system/reality

b/ the consequences of such a manifestation, therefore, possible changes of complexity.

Creation (and deciphering) of the logical reality includes

1/ identification of the set of laws – derivatives of the universal law of perfection, which (the set of laws) controls the observed level of complexity. This set of laws determines the purposes, potency, essence, and correlation of the systems, realities, processes. The analysis of application of these laws by the mind provides the key to the knowledge of the destiny of the mind's creations as well as the establishments, which embody these creations

2/ analysis of the assertions, concepts, speculations, etc., accepted as the truth

3/ evaluation of compatibility of the logical reality with the purposes of evolution (or anti–evolution), which might be achieved at the observed level of complexity

3/ deciphering of the probable futures of the systems, which might be created at the observed level of complexity.

A mind creates a logical reality when it seeks understanding of the objects of observation, which correspond with complexity of the mind.

The image of tree bringing the fruits according to its nature {*Luke 6:43–44*} introduces **the theological root of the concept of logical reality**.

A **logical reality** might be seen as a self–reproducing supercomplex system existing within the special settings/framework – the human mind, a human establishment (for instance, society, state, business enterprise, any system that sustains life of society), the earth. Logical reality stipulates creation, maintenance, behavior, use, disposal, destruction of material things and other living beings, which are the components/subsystems/structures of the totality of structured matter, and which sustain their existence by arranging, consuming, assimilating, destroying, and decomposing the structures of the matter. The general settings – the earth – sustains existence by providing energy and resources needed for life (soil, air, water, sun, structures of energy fields, energy forms, energy streams, etc.).

A tree has a root; through the root, the tree assimilates the components of the soil (its life–sustaining resources), which it has abilities to assimilate/re–arrange/re–structure/digest, and then, consumes/re–arranges components of the transformed structures of the matter (e.g., minerals, chemical substances) into own components, from which it creates/develops branches, leaves, flowers, fruits, seeds according to its own nature.

In general, the process of tree's growth and creation of fruits is based on a particular pattern of modification of the levels of complexity of assimilated matter and then, creation of the structures of the matter at another level of complexity, which identifies the tree's nature. The tree brings forth the fruits of its own kind; it cannot bring fruits that are not of its own nature.

Similarly, a component of any logical reality is a derivative of the main/universal code that has been read at a particular level of complexity.

According to the law of complexity (the universal law according to which the universe was created and which controls existence of the universe)

nothing incompatible with the main code, which has been read/embodied at the particular level of complexity
can be created/arranged/exist at this particular level of complexity

Consequently,

a/ the things that compose the logical reality of the good are not available for those living by the evil

b/ those who live by the good do not choose the evil, until they live according to their own nature (that is until they succumb to corruption and become perverts).

For instance, a good man will not massacre his co–workers, innocent by–standers, show/movie spectators; the good movie will not give a child lesson in corruption, bullying, perversion; a good teacher will not assault his pupil; a good priest will not corrupt his flock, and so on.

It means that the overall virtue and humaneness of the society are revealed by the fruits it produces and consumes to define/maintain own existence. Those who commit crimes against the society, neighbors, the state, and the others are the very own fruits of the society; it was said: that what was sown that would be harvested {*cf.: Galatians 6:7–8*}.

In other words, if the observer identifies the logical reality, which is the essence of a particular system, he might infer the fruits of this reality: the system's past, present, and future.

When the mind operates with the lower level of complexity (e.g., the social and political establishments, business universe and its subsystems), it creates a logical system.

A ***logical system*** is a summary of inferences describing

a/ mind's creation – a system, which exists within the web of social, political, business and other hierarchies, correlations, links, channels of information composing the world, which accommodates existence of the mind

b/ the consequences of particular processes, links, and correlations, which might influence survival, optimization, the range of existence, and disintegration of the considered system and the environment–supersystem that accommodates its existence.

Each level of complexity has own range of logical realities; compatibility of the logical realities determines an ability of a system at one level of complexity to comprehend and apply the logic of a system at another level of complexity.

In general, any created logical reality–thought should assist the mind in achievement of the following purposes:

a/ comprehension of the world and own place, purposes, and path toward evolution as actualization of the maximal abilities and potential, which would result in achievement of the optimum

b/ advancement toward the state of optimum by understanding own nature, mission, possibilities, and restrictions, which the observer might encounter because of the nature of the matter, existing arrangements, availability of resources, and so on

c/ fulfillment of the universal law of perfection (including actualization of own maximal potency).

Such way of thinking had been found by the ancient sages, prophets, philosophers who described the foundation of survival and evolution – theology, which provides the mind with the knowledge of God.

In particular,

if life is the state of being for the sake of cognition the truth
↓ ↑
if knowledge of the truth–life–being is the essence of mind's existence
at any time–space–complexity point
of the time–space–complexity–matter–bounded Universe
↓ ↑
if logic is the reasoning based upon the knowledge of the truth, –
↓
then,
↓
with the knowledge of an assumption accepted as a particular truth,
it is possible to infer the level of development,
potency, and the range of probable futures of the mind,
which has accepted this assumption as the truth

In summary, the worth of systems logic for the observer is in a possibility to create the conceptual realities that sustain cognition and optimization of evolving systems – the systems, which, for instance,

a/ are in a process of accomplishment of their purposes and achievement of the state of optimum

b/ have to surpass the power of logic and knowledge of all hierarchical levels, which are able to influence or change conditions and terms of their existence

c/ which have to acquire abilities to detect own insufficiency and to activate own latent abilities and inner processes resulting in development and optimization.

The analysis of the visions and expectations, with which a system describes own Future, could disclose the system's hidden insufficiency, and could determine its latent abilities. Therefore, re–creation of the original inner truth and its modifications within the entire range of system's existence leads to the knowledge of the general patterns of system's behavior, which might facilitate analysis of other systems with the similar purposes.

For example, the inner truth of the system is re–creation or reflection of the reality, mostly, the purposes of its existence and finding of own place within this reality. This re–creation embodies the set of assumptions, which the system holds to be its own absolute truth. Consequently, the system's absolute truth might be evaluated with its correlation or opposition to the absolute truth of the actuality accommodating the system. The resulting knowledge opens a possibility to re–create the Past and to re–design or modify the Future of the interconnected realities and systems.

For instance,

a/ the system's Past – as development of the core (or the main code – initial assumption accepted as the system's absolute truth in the beginning of the system's existence) into the present nature or essence of the system

b/ the system's Present – the properties, which might indicate the degree of correspondence between the system's inner truth and the nature of the supersystem accommodating the system's existence (e.g., perfection or insufficiency, latency, potency, and the creative/destructive potential)

c/ the system's Future – mainly, as the processes resulting in

– development of the system's abilities to create knowledge and employ its manifest and dormant abilities during such states as the struggle for survival, development, optimization, and collapse

– optimization and achievement of the maximal potency and the state of optimum within the unlimited range of existence (unlimited according to the perception of the time developed within the particular knowledge framework)

– perversion or degeneration of the system's nature and consequent execution of the program of self–annihilation.

Consequently, with the systems logic, the observer might achieve four purposes:

1/ to identify the derivatives of the absolute truth at the observed level of complexity

2/ to comprehend the system's degree of closeness to the absolute truth achievable at the observed level of the complexity

3/ to evaluate the system's degree of development and optimization or decay and degeneration

4/ to determine the strategy of development–perfection or termination, which is optimal for a considered system and its supersystem.

When the observer's mind has to identify the main code, nature, pattern of the system, therefore, to comprehend the truth, purpose, and destiny–Future of the system, it operates at three levels of complexity: the intuitive cognition, the analytic techniques, and the language of description.

In general, ***intuitive cognition*** does not have the adequate language of description, because it operates at the highest levels of complexity, where the simplified means of communication–description (e.g., spoken languages, mathematics, or symbolical languages) do not exist. From all existing analytic techniques, only the systems logic has the theological–philosophical–epistemological foundation that sustains the capacity of transformation of the intuitive understanding into knowledge, which is possible to describe and to convey to the others: it explicates a system as the correlation among the universal – absolute for the material world – law and truth and the embodiments of this universal law and truth at the different levels of complexity.

For example, an assertion accepted as the absolute truth is the essence of the logical system, where all connections, associations, patterns, meanings, and processes have a uniform pattern of relations, which sustains existence and allows achievement of the particular purpose.

Consequently,

– any system is a logical wholeness with the arrangement that reiterates the main pattern – the system's absolute truth – in all elements, sets, and their interconnections at all levels of complexity defining the system's existence

– the false is the pattern that does not support existence of the system; this pattern (false) specifies the knowledge, which distorts, re–direct, or discontinues the flow of the vital intra–system relations and processes.

As soon as the intra–system relations and processes must constantly re–create the wholeness of the system in order to maintain its existence, the distortions result in the system's decay, collapse, and disintegration.

Conclusion: Logic of the Future

In general, the systems–complexity theory is focused on the determination of the Future. Design/prediction of the Future becomes possible for the mind, which comprehends

1/ the laws governing the chaos

2/ the main purposes achievable at the observed and higher levels of complexity.

Such prediction/design includes descriptions of behavior, results of development, final stages of existence and disintegration of the created systems and the systems, which in the Future might

a/ accommodate optimal existence (development–optimization) of the mind–designer

b/ facilitate or threaten existence of the mind–designer

c/ actualize the destruction of new systems created by the mind–designer.

The key to cognition of the Future might be seen as the knowledge of the laws, which determine existence of the world, and especially, the laws, which control creation of knowledge of optimization and evolution.

From such a point of view, ***logic of a system*** is the law, which creates, maintains, and destroys the system: understanding of the logic of a system is cognition of the law with ensuing abilities to re–create, to influence, and to destroy the system.

Two conditions of conformity determine the destiny of a system:

– the system's purposes must conform to the purposes of evolution

– the system itself (purposes, design, functions, processes, effectiveness, efficiency, potential of development, criteria of optimization, etc.) must conform to the derivatives of the universal law of perfection, which define the conditions and processes of evolution at the time–space–complexity points at which the system exists.

The observer who needs to make the initial evaluation of the referred above conditions of conformity has to know the following system's properties:

1/ the nature (*essence*) and purposes

2/ the intra–system logic, which stipulates the system's behavior, and in particular, determines the compliance or non–compliance with the universal law of perfection

3/ the maximal potency and the accumulated potential

4/ the consequences of the violations of the universal law

5/ the past, present, and future processes, parameters, states of the system, which would convey the degree of system's advancement toward state

of optimum and the state of collapse.

There are only two realities and only two choices available to the mind and to all systems and establishments, which, although are created by men, control human existence: the reality development–evolution and the reality of collapse–disintegration or degeneration–anti–evolution.

Consequently, two types of the logics exist: the logic of optimization–evolution (life), and the logic of degeneration–collapse–destruction (death). These two logics develop independently; they serve the minds that pursue the different purposes and achieve the opposite results (life vs. death, evolution vs. degeneration, optimization vs. decay):

– the logical realities of the mind that serves the evolution are based on the purposes and values, which comply with the universal law and reflect the actuality of existence; these realities are the creations and subjects of the systems logic

– the logical realities of the mind that serves anti–evolution are imaginary constructions–models, which – as any false assumptions and constructions – are governed by the laws of disintegration; these realities are the products of Aristotelian dialectics.

Aristotelian dialectics***Σ32***, through its most popular application – logic of simplification***Σ2***, still is the prevailing method of natural and social sciences.

Some researchers attempted to describe thinking as process of creation of the fictional realities, which people imagine, invent, and then, accept as the actuality. The same distinguishing mark, or the same fatal error, is detected in all such studies: the analyses, created knowledge, and issuing plans and strategies have complexity, which is inadequate to complexity of the subject of consideration.

The insufficient complexity of consideration results in the irrelevant or false knowledge, which leads to destruction, while the initial expectations include prosperity, absolute power, world domination, etc.

For instance, the modeling and other methods of symbolical description cannot exist without a peculiar technique of **simplification** – discarding of the so–called “nuisance parameters”***Σ28***. When a researcher creates a model, he intentionally establishes limits or threshold: he discards properties, features, interconnections, processes, and other properties and features, which do not fit the requirements or purposes of his consideration. Usually, discarded parameters are those, which the researcher is not able to analyze, decipher, measure, and comprehend: they are ignored to simplify the process of analysis and inferences. As a result, the researcher operates with incomplete or distorted information and, consequently, creates misconceptions and misrepresentation – false knowledge – of the actuality. Symbolically speaking, the researcher works with fragments of a skeleton of decayed formless unknown being, which he attempts to introduce as a living creature and to comprehend its nature, behavior, and other properties of life.

To the contrary, the systems logic is intended to comprehend the observed system in its wholeness – the purposes, potentials, interconnections, processes, resources, and abilities of influence and interactions.

The systems logic is not compatible with the simplified snapshots of the world described with the arithmetical–mathematical speculations invented by Aristotle; it has another approach and another level of investigation, especially in operations with the ***unknown systems***.

When the mind enters the state of knowing, it constructs a comprehensive logical reality – the wholeness of logical inferences founded upon the particular axiom(s), which mind has accepted as its own absolute truth.

Consequently, the systems logic assists in studies of the patterns of thinking, suitability of the mind’s creation to the levels of complexity, where the mind places its creations, the purposes and the creative potential–destiny (that is the Future) of the mind’s creations through their conformity to the purposes of evolution.

For instance, any mind’s creation exposes the unique pattern of creation of knowledge, which differentiates its creator from all the others. If the mind’s pattern of creation of knowledge is known, it is possible to re–create the mind’s inner logic and its foundation – truth and logic – of this mind. The knowledge of the mind’s inner logic and truth (the assumptions, which mind considers as the truth) provides a possibility to evaluate the potential of survival and destiny of systems created or controlled by the mind.

Complete comprehension of a system begins with knowledge of evolution, which the system created or acquired.

In conclusion, the systems logic might be seen as a technique that enables the ***observer*** – the ***mindΣ33*** – to accomplish the purpose for which the human mind has been created: to discern–cognize the laws, which control the mankind world, as well as and its tiniest particle, and to apply these laws for analysis and development of optimal strategies of survival, evolution, or destruction at any level of complexity, which the world is capable of accommodating.

The set of concepts developed with the systems logic includes
the ***concept of unknown systems*** –– for comprehension of the Past and Present and design of the Future
the ***concept of invincibility*** –– for design of the evolving systems
the ***concept of civilization*** –– for design of the evolving systems
the ***concept of collapse*** –– for initiation of destruction of systems, which are of incapable of
1/ achievement of the purposes, for the sake of which they have been created
2/ development, optimization, evolution.

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