Arousing a Dispute over BioCosmology. A Reply to Stephen Modell

Konstantin S. KHROUTSKI

Institute of Medical Education, Novgorod State University after Yaroslav-the-Wise, Novgorod Velikiy, Russia

E-mail address: hrucki@mail.ru

Summary

Author draws a parallel, in the beginning of his response to Stephen Modell, between Aristotelian philosophy (Greek universalism), especially his conception of final causality, and Russian cosmological philosophy and science (Russian cosmism, in its true sense), which likewise emphasizes the significance of vital inherent active teleological forces of a living being (“inner drivers”, \textit{causa finalis}). However, in spite of their evident teleological similarity, Aristotelian universal naturalism and Russian universal cosmism have the polar directivities: Aristotle’s – ‘from God (Absolute) – to Man’\textsuperscript{1} (a kind of ‘theocosmism’), while Russian cosmism realizes the directivity ‘from Man to Absolute’ (at the resulting personalist, active-evolutionary integration into the whole ambient Cosmos – a kind of ‘anthropocosmism’) – by virtue of a man’s inherent deliberate activity, through the realization of a person’s Basic Cosmist Functionality). In this perspective, author revises and develops the conceptual foundations of his BioCosmological concept, advancing the triadic elucidation of the three real macro-cycles (macro-levels) of the world’s cultural evolution (ACosmist, AntiCosmist, RealCosmist, a kind of Thesis–AntiThesis–SynThesis or Day–Night–NewDay triadicity), including likewise the characterization of the three kinds of naturalism: Eastern, Western, and Russian (RealCosmist). A cornerstone on this way is the division of cosmology into the two universal types: \textit{First} and \textit{Second}, following the ancient approach of Aristotle who discerned "first philosophy" (metaphysics) that lays the necessary grounds for the "second philosophy’s" (physical) understanding of reality. In author’s substantiation, a First cosmology is proposed to deal with ontological and gnoseological issues (distinguishing, in the triadic approach, at least three distinct forms), while the Second cosmology uses the derived and elaborated (from the basics of a First c.) paradigmatic and methodological research principles. In the sphere of Second cosmology, author introduces the notion of Russian (Cosmist) functionalism that is characterized chiefly with reference to the general theory of functional systems by P.K. Anokhin. Decidedly, at present, Russian (Cosmist, functionalist) scientific achievements realize the true explanation and use of Aristotelian \textit{causa finalis}, i.e. implementing rational and universal comprehension (insight into) the organization of intrinsic active forces that determine biological, personalist, social and ecological development of a living being (of a person, first of all).

\textsuperscript{1} The type of ‘…’-brackets or writing with a capital letter is used for the designation of author’s own terms, metaphors, expressions, etc., whereas “…”-type – for citing and the use of generally accepted words.
Keywords:
BioCosmology, Aristotle’s causes “the formal, material, efficient, final”, a priori and a posteriori principles, macro-evolutionary triadicity, Eastern, Western, Cosmist naturalism and holism, Russian cosmism and functionalism, anthropocosmism, world futures, bioethics

Contents
1. Introduction: Aristotelian cradle of modern philosophy
2. What is “Cosmos”?
3. Cosmism vs AntiCosmism
4. ACosmism, AntiCosmism, RealCosmism
5. Eastern, Western and Future (Cosmist) biomedicine
6. Three kinds of naturalism: Eastern, Western, Russian (Cosmist)
7. First and Second Cosmologies
8. Russian Cosmist Functionalism
9. Eastern holism, Western holism, Cosmist holism
10. A Cosmist (macro)evolutionary “Day–Night–NewDay”-metaphor
12. Conclusion: A Perspective of anthropocosmism
Stephen Modell’s paper "The Two Arrows of Efficiency: A Commentary on Konstantin S. Khroutski’s BioCosmology – Science of the Universal Future" is really an interesting and valuable (thought provoking) contribution to the discussion on BioCosmology. In this work Modell has considered in depth the information on "BioCosmology" and put from a fresh perspective new issues for the consideration. Author’s first impression, as a noteworthy fact, was the sensation of the validity of Modell’s reasoning and the soundness, as well as coherence and consistency of his critical matter. At the same time, inasmuch as author himself answers entirely for his material, a reader might arrive at the same conclusion – of good logicality of both materials (of author’s and Modell’s) – and, thus, run into a tricky question: What if both scientists are mistaken?

In his conclusions, Stephen Modell emphasizes the classical notions of causality in natural process and advances Aristotle’s notion of efficient cause as the most viable alternative for explaining universal process (Modell 2006, 1). Likewise, from his point of view, teleology can be interpreted as the operation of physical and biological laws “in chaotic (Italic mine. – K.K.), complex, and living systems”. “The analysis concludes that a universe with occupants possessing personal functionality can be explained by causal efficiency connecting the open present with a naturally organizing immediate future and past, thus avoiding conflicts over design.” (Ibid.) However, as Jan Pavlik valuabily notes, “the archaic understanding of the principle of causality admitted not only «our» causality (as corresponding to the notion of efficient cause), but also all forms of teleological determination – as coming from God (defined in Aristotle as the aim of all aims), from people, and from unconscious teleology as working in nature.” (Pavlik 2006, 62).

This is really a valuable relation – Stephen Modell’s reference to Aristotle’s philosophy. Indeed, Aristotle practiced biology and his thinking always returned to living beings, and, especially, Aristotle treated philosophy as “the science of the universal essence of that which is actual”. Really, Aristotle is in the cradle of modern rational cognition. Substantially, Aristotle together with his teacher Plato regards philosophy as concerned with the universal. However, Aristotle shifted Plato’s “forms” into “formal causes” and added the powerful “final cause” (teleology) and “efficient cause” – stating that all three are related to God (“unmoved mover of the universe”, a “supra-physical entity”), without which the physical domain could not remain in existence), but which, intrinsically, are acceptable to perception by a cognizing subject (a man) – thus having realized a high road for the development of rational (universal) experiencing of the world by a human being. Simultaneously, Aristotle formed the cradle of the modern Western ontological AntiCosmism (see the characterization below) and the modern epistemological Subject–Object pattern of cognition.

As a cornerstone for the consideration of our issue, we might highlight the dualism of Aristotelian world outlook: the causal objective order of our perceivable world is entirely determined by the prime movers – the supra-physical entities. In other words, the causal interrelations that are perceivable in the physical world (the
objects of physics – his second philosophy) are dependent on separate forms (first entities, such as the unmoved mover at the pinnacle of the cosmos), which is the prime and distinctive task of his first philosophy (metaphysics). Aristotle defines metaphysics as “the knowledge of immaterial being”, or of “being in the highest degree of abstraction”. Substantially, metaphysical investigation of first entities (including formal cause, final cause, efficient cause), as established by Aristotle, is completely indispensable for the perception of causal interrelations of physical entities.

It is relevant to emphasize Aristotle’s dualism between form and matter – between ‘active causes’ (formal, final, efficient) and substantially passive “material cause” that is acted upon (in the whole causal interaction) by the supra-physical entities, which, from Aristotle’s standpoint, are intrinsically and insubstantially available for perception by the active intellect of a man\(^2\). It is the intellect, as distinguished from sense perception, which Aristotle described as separate, immortal and eternal, and ultimately attributed only to god – the immortal first cause of all subsequent causes in the world. Logically, in Aristotle’s view, universals exist (arouse) only where they are instantiated, i.e. where an object or objects (things or beings, located somehow in space and time) and its/her/his/their properties and relations to other objects become the target of cognition, thus realizing that a universal is identical in each of its instances. Therefore, the world naturally consists of objects that are perceived or otherwise acted upon by subjects (possessors of divine intellect).

In author’s strong opinion, Socrates, Plato, and Aristotle eventually originated what we call nowadays the Subject–Object metaphysics (and physics) that divides reality into the substantial (objects, things, beings) and the insubstantial, but really active and effective in the cognition (subjects). At the same time, due to Aristotle’s conception, active internal forces are inherent and determinative to any being, including a human being, substantially correlating with Aristotelian causa finalis, especially the one that takes the entire lifetime of a subject’s (person’s) ontogenesis – in achieving her/his basic causa finalis (the prototype for the author’s Basic Cosmist Functionality). At any rate, the significant point is that Socrates, Plato, and Aristotle, eventually expressing the epoch of Greek (Ancient rational) Universalism, have completed the elaboration (creation) of the bases for the modern rational – Subject–Object – Western philosophy (and science) that treats Cosmos (Nature, World, Universe) ‘from without’ – by means of human reason and on behalf of Ideal Forces (prime movers – supra-physical entities).

In contradistinction, any Cosmist philosophy (including BioCosmology as a variant) considers Cosmos ‘from within’ (from the comprehending position of a subject or person who is primordially integrated into the whole Cosmos), thus treating every being as equal “microcosm” (in relation to both a cognizing subject and the cognizable living object) within the one whole world (“macrocosm”). From this standpoint, naturally, there is no basic sense (for a cognizing subject) to inquire the issues “From which substance, or What is the origins of the entire world”, or “Where does it develop, or What is the ultimate end of the entire world’s evolution”,

\(^2\) The term ‘man’ is traditionally referred to the human race in general, or “mankind”.

4
inasmuch as every being is the integrated subject-microcosm within the entire macrocosm-Cosmos (equally as every cell or organ is within a human organism). Therefore, inasmuch as any being (in the Cosmist light, a person as well) is the equal subject (microcosm) among the other subjects-microcosms within the one whole Cosmos, the introduction of a Subject–Subject epistemological attitude (of a scientist or a person to the world, just in the Cosmist realm of cognition) might be quite appropriate.

What is “Cosmos”?

We might elucidate, first of all, the meaning of the term “Cosmos”. Really, what is “Cosmos”? Has it chiefly a religious sense? For instance, at the XX-th conference of European Society for Philosophy of Medicine and Health Care in Helsinki (2006) author’s presentation on BioCosmology was put into the session, entitled “Medicine, religion and metaphysics”, and, in the support of this attitude, in the discussion time after the presentation, Professor Ingemar Nordin argued that BioCosmology is exactly a “religious” approach.

Indeed, at present, we might discern at least four main meanings of the term “cosmos”:

(1) In its primary philosophical sense, a cosmos is an orderly or harmonious whole (eventually, as it is perceived by a man). It originates from a Greek term κόσμος meaning "order, orderly arrangement" and is the antithetical concept of chaos. Pythagoras is said to have been the first philosopher to apply the term cosmos to the Universe. Significantly, in the original (mythological-religious, Eastern philosophical) use the words “absolute”, “cosmos”, “nature” and “universe” were (and are) employed synonymously to include all that exists.

(2) Cosmos – systematic harmonious whole (but distinct to Absolute) held to arise by and persist through the direct intervention of a concrete divine or mystical power. This relation to “cosmos” leads to the existing range of religious and esoteric cosmologies.

(3) An astronomic (astrophysical) standpoint that is dominating nowadays: cosmos is the universe as a whole, considered as complex, well-ordered, and unified system. In cosmic space, as distinct from the Earth, scientists study celestial objects (such as galaxies, stars, planets, comets, etc.) and phenomena that originate outside the Earth's atmosphere (such as auroras and cosmic background radiation).³ “Physical cosmos” is an object for modern physical and metaphysical cosmologies.

(4) Cosmos is a harmonious world of human experience – a subjective harmony within the surrounding world. ‘Humanistic cosmos’ is rooted in the philosophical tradition of ancient Greece, but now it is based on new ontological foundations. Humanistic approach, aiming at the harmony in mutual relations of a subject (human

³ As it is evident, herein, in scientific relation Cosmos is contrasted to the planet Earth, and this is an obvious paradox: Earth is ever the integrated part of Cosmos.
being and his society) with the world around (“the nearest cosmos”)⁴, as well as harmonization of the subjective experience of a man (of mankind's historical experience on the whole) – is realized chiefly in the area of philosophical anthropology, modern vitalistic conceptions, including “new age” theories, fundamental ecological approaches, including systems ecology and deep ecology (with Lovelock's Gaia theory), the doctrine of Noosphere by Vernadsky (and its precursors and followers: Bergson, Morgan, Teilhard de Chardin, Wilber), as well as the so-called "postneoclassic" science⁵, in the forms of synergetics, conceptions of co-evolution or universal evolutionism (in relation to cosmist issues), that are developed mainly among modern Russian philosophers and scientists (Timofeev-Resovsky, Moiseev, Styopin, Kurdyumov, Knyazeva, Kazyutinsky, Ermolaeva, Liseev).

From the position of original (BioCosmological) exploration, which main distinction is its foundation on the a posteriori universal truths (characterized below), author considers it relevant to add one more (fifth – Cosmist, realistic) definition⁶: Cosmos is everything that really exists and is the target of our experience – feeling, perceiving, consideration, reasoning, etc.), including this paper. As a matter of fact, the planet Earth itself and the entire evolutionary process of the life on Earth (briefly, Evolutionary Process or EvoProcess), naturally including every self-dependent life process (biological, personalist⁷, sociological, ecological), – are unconditionally the product and the integrated part of Cosmos, subordinated to the common (universal) Cosmic laws; hence, every life process or event really is the direct subject of BioCosmology (wherein ‘Bio’ is Greek. “Bios” – Life), including equally the development of the journal E-LOGOS or the entire ontogenesis of a human being (person).

---

⁴ But now, primarily, on behalf of a man, that is, in Rudolf Steiner’s words “from the spirit in the human being to the spirit in the universe” (these words are taken from the website of “The Anthroposophical Society in America”).

⁵ The notion of “postneoclassic science” is introduced into the philosophy of science by Russian philosopher Vyacheslav Styopin (2003) to designate the corpus of modern sciences which study phenomena of autopoiesis (system self-organization), including the historical development of Universe (Cosmos) and the position of Man in Cosmos.

⁶ Essentially returning, herein, to the primary (‘pre-philosophic’) meaning of the term “cosmos”, but now rationally realizing it on the higher evolutionary level of its significance.

⁷ Author would like to use “personologist” or “personological”, but am afraid of their misunderstanding (for instance, contemporary studies of correlation between facial features and personality might be considered herein). Author’s ‘personalist’ means precisely the natural link between “biological” and “sociological and ecological”. Herein, ‘personalist’ certainly correlates with the personalism that stresses attention on individual personality, relating chiefly to the scientific research programs in personality psychology, especially to those that study the entire wholesome lifespan of an individual person (like the theories by Jung, Maslow, Erikson, Simonov). However, the BioCosmological ‘personalist’, although commonly regarding the personality as the key to the interpretation of reality, substantially introduce a new (‘functionalist’) sense to this notion – of the ultimate significance of a person’s creative functional (substantively inherent, intentional and responsible) contribution to successful and safe evolution of the whole world (or Cosmos).
The natural sciences reality of cosmic origin of the Earth and its (cosmic) Evolutionary Process (and, hence, of every current life process) is simultaneously the universal law of the life on Earth. This law (of Cosmic origination of every life process on Earth) does not depend upon any of the existing idealistic\(^8\) assumptions of origin and (macro)evolution of the life on Earth, like creationism, panspermia, biogenesis and abiogenesis, chemosynthesis, etc.), – at any rate the life on Earth has emerged and been developed always from cosmic matter and energy. Consequently, the life on Earth (EvoProcess, every human ontogenesis, every social history) always is a Cosmic phenomenon (process) and the direct subject for BioCosmological attitude and exploration – this is a naturalistic fact,\( a \ posteriori \) truth.

This approach (basing upon \( a \ posteriori \) truths) is the cornerstone point of BioCosmological reasoning. Fundamentally, all BioCosmological basic principles are evident \( a \ posteriori \) truths corroborated (and not disproved) by natural sciences data. At least, in ontological aspect, we might advance five fundamental \( a \ posteriori \) (naturalistic) – BioCosmological – principles (truths, laws):

1. **Fundamental cosmism (naturalism)** – undoubtedly planet Earth is the product of Cosmic evolution and a part of real Cosmos, hence all life processes (including the ontogenesis of a person) have the Cosmic origin (are originated from Cosmic energy and stuff);

2. **Fundamental universalism**, first of all the structural(morphological)-functional universalism – a natural sciences truth at least since the discovery of the structure of DNA by Watson and Crick, inasmuch as this discovery has proved, first of all, the unity (identity) of basic physical-chemical elements (of proteins, first of all) that constitute any biological organism on Earth, as well as, secondly, has revealed the psychosomatic unity of any conscious organism (the genetic transmission of physiological character by DNA molecules);

3. **Fundamental self-(macro)evolutionism** – every subject of life is the self-(macro)evolutionary process (including the entire biological evolution and social history) and every subject’s ontogenesis is a self-dependent emergent evolution;

4. **Fundamental macro-evolutionary cyclic recurrence of life processes** (a kind of triadicity), which essence is that diametrically opposed (in relation to the entire life activity of a subject), but successive cycles-stages (like Day–Night–NewDay, or Systole–Diastole–NewSystole, in essence – Thesis–AntiThesis–SynThesis) effectively realize the ontogenesis of every living subject (biological, personalist, sociological, ecological), overruling in evolution each other by turns.

5. **Fundamental anthropologism** – precisely BioCosmological ‘universal personalist law of evolution’: Since the evolutionary biological emergence of Homo Sapiens, human freedom is a fundamental assumption of all societies and a central experience of all people during the entire social\(^9\) history and every personalist evolution – emergence of independent (from physical and societal conditions)

---

\(^8\) I.e., on the subjective hypotheses of modern philosophers and scientists, which are not validated by the experiment.

\(^9\) Since the emergence of independent civilized (self-organizing and self-producing its structures for independent life) societies.
HumanKinds\textsuperscript{10} – through realization of its/her/his inalienable rights (needs), but aiming ultimately at the self-realization of one’s Basic inherent (Cosmist) need (and right) – of personalist contribution to the one common whole Cosmic evolution (which is a kind of Aristotelian \textit{causa finalis} but which acts throughout the man’s ontogenesis). Cosmist expression of this law: \textit{The essence of Cosmic evolutionary process of the life on Earth consists in the increase of a degree of freedom of intentional (functionalist) activity of a person, that is realized during her/his entire ontogenesis.}

For the additional information on these issues, please see author’s basic article (E-LOGOS, 2006a). In this paper a special accent is laid upon the fundamental principle of macro-evolutionary cyclic recurrence in our life (like Day–Night–NewDay, in metaphor), including as much the world civilizational evolution, as the evolution (ontogenesis) of any subject of life.

\textbf{Cosmism vs AntiCosmism}

In essence, there are only two polar (opposite) types of world-viewing or metaphysical positions (in relation to the one whole sphere of the life on Earth) – Cosmist and AntiCosmist. The Cosmist approach states that (1) Man (Person) is a constituent of Nature (in the meaning of all-embracing Universe or Cosmos) that is infinite and determinative to Man; hence, (2) Person (any Subject\textsuperscript{11}) and Cosmos must not be opposed to each other, but are to be considered in wholeness – Person is a microcosm and his Cosmos (universe, nature, environment) is the macrocosm, i.e. the organism or its organ that embraces any microcosm (the person); (3) Person and her/his environment are essentially the organic elements of one whole Cosmos; therefore Person (including her/his mind, thought, consciousness) has the essence of inherent functional attitude or belongingness (i.e. acting effectively as the means, but not as the ultimate aim) of the Cosmic evolving whole, together with all other subjects of life; (4) Subject of life (Person, first of all) is functionally integrated (due to its/her/his basic \textit{causa finalis}) into the whole organic ambient real Cosmos (irrespective of its origin, due to God or Universe, etc.). Hence, all the subjects of life on Earth (from a molecule to mankind) are the functioning (evolutionary-active) parts of the one living whole (Vernadsky called it Biosphere (1924); Lovelock (1979) and

\textsuperscript{10} The term HumanKind serves as universal equivalent: Having the meaning of a Cosmist man (of a human active-evolutionary functioning), the term ‘HumanKind’ accentuates that a person, in the current epoch, is the leading element of the entire Evolutionary Process of the life on Earth, determining the evolutionary fitness of any conscious ‘human kind’ subject (as a society, civilisation, mankind is) and the wellness of EvoProcess itself. Consequently, the term HumanKind refers as much to a man (basically), as to any conscious subject of life (society, ethnos, civilization, and mankind).

\textsuperscript{11} In the author’s BioCosmology, ‘subject’ means the \textit{integrated functionalist subject}, which forever integrates autonomously and hierarchically other subjects (to be the functional whole) and, simultaneously, always being functionally integrated by the higher organised subjects (organisms). In other words, from the Cosmist point of view, \textit{subject} means every living organism on Earth: molecule, cell, biological organism, biosphere, human being, family, community, social body, society, mankind, and, ultimately, Evolutionary Process itself (EvoProcess).
his followers treat it as “Gaia”-organism; in this course I see the metaphor of Evolutionary Process (EvoProcess or CEPLE) – cosmic evolutionary process of the life on Earth – to be more accurate and adequate).

In actual fact, any organism (of a person, for example) begins with molecules (a genetic material of gametes), further it develops to the cell (zygote), next successively occurs the emergences of the multicellular embryo, organogenesis of the fetus, birth of the child and her/his subsequent life development that goes through the consecutive stages to the extent of adult mature levels of the highest (in complexity) social and creative activity, directed (for example, as in the case with James Lovelock's recognized activity) for the preservation of Earth's integrated ecosystems.

In other words, any organism (subject) is the ontogenesis (individual development of an organism) – the whole of the transformations undergone by the organism from the origin up to the end of the life (i.e., in essence, – the evolutionary process). Hence, in this light, if every cell, as the ‘microcosm’ of the (for instance) human body (‘macrocosm’), has the inherent inalienable functionality (and that is a biological fact), then we have the right to admit\(^{12}\) that every human being (a person) has her/his inherent (inborn) ‘the Basic and Ultimate Functionality’ (i.e. the Basic Cosmist Functionality – a cornerstone position of the author’s conception) in ‘the organism of Evolutionary Process’. In this course, we should not be confused by the variety in duration of an individual ontogenesis – 70 hours, or 70 years, or 70 million years – this quantity depends on certain immanent integral factors, but never depends on our (human) cognitive and constructive abilities.

In this Cosmist way of viewing the evolution of life on Earth, Nature (in the meaning of Biosphere), Man and Society are the equal elements of Cosmos (represented on Earth in Evolutionary Process: firstly, Cosmic origination of Earth; next, origination of EvoProcess (CEPLE); further, the biological evolution, emergence of Biosphere and its highest level – Homo sapiens; finally, the emergence of social history and its acme – modern global (Western) civilization, which, as any other, is just a transient macro-stage of the one whole EvoProcess.

On the contrary, the other pole (of AntiCosmism or absolute anthropocentrism) generates the fundamental separation of Man from Cosmos or Nature (her/his physical, biological and ecological, i.e. material World) – establishing \textit{res cogitans} and \textit{res extensa} (or a form of empiricist, or transcendentalist, or pragmatist, or materialist world-viewing), thus constructing an opposition (initially or ultimately) between Human Mind (or Ideal Intellect) and Material World. Herein, Man is basically independent from Cosmos, s/he withstands the forces from the outer world and adapt her/himself to the conditions of a given environment – ultimately to resist, survive, cognize, conquer and subordinate the resources of the World (Nature, Cosmos) for a person’s safe and satisfactory growth and development (well-being existence on the whole). In this light, for instance, there is no essential difference between Humean empiricism, Cartesian rationalism, Kantian idealism, and Deweyian pragmatism, as well as Marxian (or Hobbesian, etc.) materialism, – inasmuch as they

\(^{12}\) Due to the foregoing \textit{a posteriori} ontological principle of fundamental universalism.
all equally have the AntiCosmist essence, stating the (primary or ultimate) autonomy and independence of a human being’s mind (intellect) in relation to the evolution of Cosmos (nature, world, environment).

The scheme helps to look into the author’s suggestion about the polar position of Cosmism and AntiCosmism:

<table>
<thead>
<tr>
<th>“Cosmist” and “AntiCosmist” poles of the whole sphere of knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Designations:</strong></td>
</tr>
<tr>
<td>I/M – the pole of Idealism (or Materialism) that</td>
</tr>
<tr>
<td>dominates at present time and which essence</td>
</tr>
<tr>
<td>consists in generating the independent existence of the</td>
</tr>
<tr>
<td>consciousness of a person from a material world</td>
</tr>
<tr>
<td>and <em>the subject–object</em> pattern of the cognitive</td>
</tr>
<tr>
<td>activity of a person.</td>
</tr>
<tr>
<td>AC/RC – the opposite pole of the Cosmist relation to the</td>
</tr>
<tr>
<td>world (of ACosmism or RealCosmism), which essence</td>
</tr>
<tr>
<td>consists in generating a holistic significance of the world</td>
</tr>
<tr>
<td>of life (Cosmos) and an organic inherent inclusiveness of</td>
</tr>
<tr>
<td>every subject of life in the evolution of one whole Cosmos.</td>
</tr>
<tr>
<td>Eq – the &quot;equator&quot; of modern scientific (relating to all</td>
</tr>
<tr>
<td>forms of life) objects and subjects of research: the</td>
</tr>
<tr>
<td>person and her/his body, animals, plants, microorganisms</td>
</tr>
<tr>
<td>and their system organizations, including human societies,</td>
</tr>
<tr>
<td>as well as relating to cells, tissues, organs (and their</td>
</tr>
<tr>
<td>system organizations), that constitute the organisms.</td>
</tr>
</tbody>
</table>

Essentially, Aristotle is a universalist, but the founder of AntiCosmism – his natural universal order totally depends on “the unmoved mover of the universe”. However, substantially, Aristotle is neither idealist, nor materialist, but a naturalist who believes in only one whole – natural – world (although this world has a “supernatural” essence), but not in any separate supernatural realm (unlike his teacher Plato). In this way, Aristotle strives to explain rationally (on the basis of his elaborated conceptual apparatus) the wholeness of the one natural world. Also unlike Plato, Aristotle is an empiricist, believing that philosophy should start with what we sense or experience (although of course he substantiated the indispensable role of reason and logic). Another crucial property of Aristotle’s conception is that his view is teleological, i.e. it included the idea of a purpose or goal (*telos* in Greek) for all kinds of natural thing (due to his philosophy each thing has an entelechy or inner driver to achieve the purpose).

Likewise, essentially, the world of Aristotle already is ‘anthropocentric’, but the general vector is directed by him ‘from God to human being and other beings’ (a kind of ‘theocosmism’, whereas metaphysical vector in Russian philosophical cosmology has the opposite ‘cosmos-centric’ direction – ‘from beings and human being to
Absolute’ (a kind of ‘anthropocosmism’). In other words, in Aristotelian philosophy, the whole organization has the centrifugal direction, truly realizing a transitional stage – egress from initial Cosmism to rational AntiCosmism, though, herein, all the final causes of all beings in the cosmos refer to the eternal cause of all movement – to the prime mover God. In contradistinction, in the Russian Cosmist approach, this is the primarily self-dependent task (aim, goal) of a (human) being to realize one’s inherent, but centripetal basic (and ultimate) causa finalis that takes an entire lifetime (ontogenesis) – to contribute to Absolute by virtue of a man’s inherent deliberate activity, through the realization of a person’s (in the BioCosmological term) Basic Cosmist Functionality. This is really a philosophy of anthropocosmism that truly carries out the inverse (from rational AntiCosmism) ingress into rational (but opposite in cosmological relation) RealCosmism.

Significantly, however, a human being (of Aristotle) is put into the heterogeneous, purposefully arranged comprehensive whole (physis) of the world as a necessary teleological element. It is likewise important that precisely the natural real world (than the world of ideals) is put on the first place in Aristotelian philosophy. On the basis of this naturalistic and realistic metaphysics, Aristotle has elaborated the theory of the psuchê (the form that turns a body into a living human) and established that this psuchê (form) has to do almost entirely with function – biological and psychological function. Substantially, the Aristotle's theory of the psuchê (and its teleological essence) seems to have a decisive influence on the modern development of science and brought about the appearance of contemporary functionalism. The latter was grasped by Russian scientists (primarily, by I.M. Sechenov and A.A. Ukhtomsky), but was realized on the fundamentally distinct (Cosmist, in contradistinction to Aristotelian AntiCosmist) metaphysical (cosmological) basis.

ACosmism, AntiCosmism, RealCosmism

Modell points out the fact, “science rejects the notion that phenomena have a final cause compelling them to proceed in a certain to achieve an inevitable end” (p. 4). Actually, in our modern (AntiCosmist) times we might compare Aristotelian causa finalis with the Kantian thing-in-itself. This is a natural state of things, inasmuch as, to author’s firm belief, a researcher can grasp the causa finalis of a being (subject) exclusively in the nearest approach to RealCosmism, i.e. in rationally viewing world as the one whole Cosmos, wherein every being is the microcosm that is metaphysically (cosmologically) equal to a researcher her/himself.

As it was stated above, Aristotle is one of the founders of AntiCosmism – he contributed substantially (within the Ancient tradition) to the Egress-Transition of a philosophical culture from previous mythological-religious Cosmism (with its hylozoism as a kind of irrational Subject–Subject relation to the world) to the next and, nowadays, global (post)modern Subject–Object AntiCosmism. On the contrary, Russian rational cosmological tradition (in the metaphysical aspect), which was originated in the XIX-th century but was banned under the Soviets, as well as marginalized and misinterpreted in the Western academy of-today, represented from the early Slavophiles (Khomyakov, Kireevsky) to the so-called “Russian religious”
philosophy (Solovyov, Fyodorov, Florensky, Bulgakov, Berdyaev, and many other) and further developed to the XX-th century “natural sciences cosmism” (Tsyolkovsky, Vernadsky, Chizhevsky) – the entire Russian cosmological tradition (in the variety of forms: “Sobornost”, “Pan-Unity”, “Sophiology”, “Godmanhood”, utopian conceptions by Fyodorov or Tsyolkovsky, “Noosphere” by Vernadsky, cosmological esoteric teachings and scientific concepts, and other) are reduced to the to the fundamental principles of *organicism* and *anthropocosmism*: fundamental viewing of Cosmos as universal organic whole (not merely space) – “the living unity of Cosmos”, wherein a subject’s active-evolutionary (inherent, free) contribution and integration into the organic Cosmos is the only proper position for the realization of everyone’s life activity.

Developing the previous material (E-LOGOS, 2006a), but now with respect to epistemological issues and relying on the aforesaid *a posteriori* (realistic) fundamental principles, we might disclose three macro-evolutionary levels (cycles, stages) of the world civilizational development. They are, with respect to the currently dominating Western civilization and in relation to the rational comprehension of the world: First – Eastern (Cosmist or *Day*, ACosmist in essence); Second – Western (AntiCosmist or *Night*, AntiCosmist in essence); and Third (projected into the macro-evolutionary future) – of RealCosmism (of *NewDay* Cosmist character). Their brief (essential gnoseological) characteristics are:

I) The Eastern – ACosmist\(^\text{13}\) – mythological, religious, and holistic philosophical search for universal truths in the course of conscious integrated relation of a HumanKind (person or society) to the natural (cosmic) world. This gnoseological world outlook might be characterized basically by the *Subject–Absolute* pattern of cognitive attitude to the world. Herein a man (explorer or social actor), although s/he deliberately integrates and interrelates with the one and common (for everybody) whole world (cosmos), however lacks rational scientific knowledge (hence, lacks universal, understandable to everyone knowledge) and meets the imperfection of technological means, thus arriving at the actual inability to realize the cosmic universal laws in everyday (personalist) life. All this makes impossible the intentional realization by a HumanKind (virtually and practically) of its/her/his inherent functionalist\(^\text{14}\) life potential during the individual ontogenesis. In the result we have herein, objectively, man’s inability to realize a harmonious Cosmist world on Earth, but only the possibility of direct spiritual appeal to Absolute (the Ultimate) and the comprehension of Ultimate Reality (and its universal truths), which is a kind, to author’s mind, of ACosmism.

II) The Western – rational philosophical and scientific (AntiCosmist) organization of the modern civilized world, with its technological progress, highly advanced democratic institutes and the ‘sacred’ status of a person within the infinite

\(^{13}\) Author’s term ‘ACosmism’ has the definite meaning and differs from the accepted ones, like “acosmism” in Hegelian philosophy or “acosmism” in Hinduism, etc.

\(^{14}\) It might be reminded that the term ‘functionalist’, in contradistinction to “functional”, stresses, in author’s BioCosmology, the intentional (or internally foreordained – for unconsciousness subjects) character of effective and satisfactory life activity, ultimately aimed at the effective realization of a subject’s Basic Functionality (subject’s basic *causa finalis*).
development of the democratic world (treated as “the end of history”), whose self-cognition (the comprehension by a person of her/himself directly) is treated as the supreme knowledge. Substantially, this Western AntiCosmist realm is based precisely on *a priori* (speculative, artificial) fundamentals (Western episteme\(^{15}\) on the whole; including Greek universalism, British empiricism, Continental rationalism, German idealism, American pragmatism, Marxian materialism, and their developments). The gist is that modern Western episteme basically disconnect Man from Cosmos (man’s surrounding World) and states that the ultimate reality belongs to a person her/himself. The basic gnoseological pattern, herein, is the Subject–Object relation to the world (cosmos) – of a human active cognition and the further transformation of the inert surrounding world for the satisfaction of human needs. In other words, the Subject–Object approach means that only a subject (a cognizing human being, from any exploratory position: naturalist, idealist, materialist, empiricist, phenomenologist, pragmatist, etc.) is able to realize an active interference (including the cognition of Aristotelian *divine active* causes – “formal, final, efficient” – with respect to the object under consideration) and exert influence upon the natural course of events on Earth, transforming and subjecting passive “material cause” or other (‘less active’) conscious subjects.

III) The future Russian RealCosmism – based on the Cosmist philosophy and science, that return to the global culture its primary integral vision of the world as unity of man and cosmos, referring to the cosmos as a united organism (Cosmos), but now realizing it in the rational way, by the means of colossal modern massive of objective data and the mighty possibilities of modern technologies. A turning point, in this way, is the integration of philosophy (of RealCosmism) with science, inasmuch as they refer similarly to the one real universal world and treat every being (every subject of life) as a *microcosm* that is located *within* one whole Cosmos (*macrocosm*) and, thus, is naturally subordinated to the universal Cosmic laws. Hence, a Cosmist philosophy has its own metaphysics (cosmology) that determines the unity of Man (microcosm) with Cosmos (macrocosm). In gnoseological sphere, Cosmist philosophy advances the rational Subject–Subject approach that is based (with respect to a man) on the self-determination of a person, but which is expressed in the universal ‘language’ of objective data in natural and human sciences\(^{16}\). The significant moment, herein, is that Subject–Subject approach leads to the revelation of the *causa finalis* of a subject under exploration. The cornerstone point of the RealCosmist (and the proposed BioCosmological) approach is its foundation on *a posteriori* universal truths: of fundamental *cosmism, universalism, self-(macro)evolutionism, anthropologism* and *self-(macro)triadism* (of consecutive ascending shifts on the cyclic macro-evolutionary levels that are polar in the directivity of general life activity – in the metaphor of Thesis–AntiThesis–SynThesis, or PrimaryCosmism–AntiCosmism–NewCosmism, or Day–Night–NewDay) and

---

\(^{15}\) The Cosmist notion ‘episteme’ is characterized in detail in the previous work (E-LOGOS, 2006).

\(^{16}\) With regard to the issue of the interrelation of subjective (determinative) self-knowledge of a person and objective (approving) knowledge on her/his wellness, please see author’s publications in the E-LOGOS (2002a), Anthropology & Philosophy (2004b), Ultimate Reality and Meaning (2006b).
other real Cosmist (universal *a posteriori*) truths – in the ontogenesis (and the entire life activity) of every subject of life, from a molecule to man and humanity.

**Eastern, Western and Future (Cosmist) biomedicine**

BioCosmology, as a variant of RealCosmism, has the cornerstone notion of Basic Cosmist Functionality – BCF (an analogy to Aristotle’s *causa finalis*, but which has the primary significance among the all three active forces and material cause accordingly). Let me remind that the universal meaning of the BCF springs from the cornerstone significance of Evolutionary Process (which has the sense of *macrocosm* that embraces the entire Earth’s living organization). EvoProcess, as we understand it, allows the *universal functionalist reduction of all living subjects*: Every living subject on Earth is ultimately a self-dependent function of EvoProcess – of the all-embracing self-evolving organism of Earth’s life (like every cell has the inherent specific function in a human organism, which is realized on its own during the entire ontogenesis). Hence, every subject of the life on Earth (from a molecule to a person and society) has its/her/his basic (ultimate, cosmist) functionality. On this ontological (or, rather, cosmological) basis, Cosmist reductionism comes to light – universal reduction of any subject of life to its/her/his Basic Functionality (Cosmist *causa finalis*).

The ‘functionalist’ essence of this Universal Cosmist Reductionism signifies the one meaning (of the inherent ultimate functional activity of a subject in the integrating organism\(^{17}\)) and the main value of the self-realization by (and, accordingly, responsibility of) a subject of its/her/his BCF – Basic Cosmist Functionality. Further, inasmuch as every living subject is a natural *Cosmist function* of the higher-level congenorous subject (organism) and ultimately of Evolutionary Process itself, another crucial principle emerges – of CosmoBiotypology\(^{18}\), according to which every subject of life naturally bears the biotypological traits of its/her/his *intrinsic basic functionality* (BCF) and naturally relates to the appropriate ecological-social environment. This principle establishes the functional identity and thus the universal meaning of the three macro-orders of man’s entire wellness: (i) satisfying subjective feelings and perceptions; (ii) adequate position in the social-ecological environment; and (iii) biological constitution or biotype (including genotype). The latter serves to fulfil a person’s *cosmist functional* assignment (BCF, Cosmist *causa finalis*) in the world.

Substantially, the principle of CosmoBiotypology runs counter to the common morphological (structural-functional, based on the investigation of *formal* and *efficient* causes) approach of reducing living phenomena from biosphere – to populations, organisms, cells, organelles, genes, etc.; or from mankind – to societies, social bodies and human being ultimately – a member of the society. On the contrary,

---

\(^{17}\) The term organism has, herein, the synonymic meaning to the Cosmist notion of subject, i.e. the universal significance.

Cosmist reductionism, of subjective functionalist evolutionary essence, means that every living subject (organism) has the ultimate health-design – its/her/his BCF: Basic inherent and definite (Cosmist) Functionality, evolutionary realized in its/her/his CosmoBiotypology. The latter serves precisely to fulfil the person's cosmist functional assignment. Virtually, the CosmoBiotypological principle is able to universalise biomedical, social, and human knowledge – to unite rationally man's subjective knowledge with objective knowledge of man and, thus, to reconcile so far incompatible scientific and humanitarian paradigms.

In its turn, modern scientific Western science is unable to grasp the essence of causa finalis with respect to a subject (i.e. – object) under consideration, due to its Subject–Object (dualistic or pluralistic) relation to the world. Causa finalis for modern science is really thing-in-itself (therefore, Western science refused categorically causa finalis since the XVII-th century). Indeed, to grasp the essence of the causa finalis of a subject under exploration, one needs to realize her/himself within the world and to become aware of her/his (as a microcosm) integration into the whole Cosmos (alike any other subject-microcosm). Otherwise, it is impossible in principle to comprehend one’s causa finalis from the position of an observer or experimenter (i.e. in the Subject–Object pattern of exploration). In its turn, the other two (Aristotle’s active) causes are quite available for the exploration ‘from without’: the formal cause – through the study of morphological structures, and efficient cause – for example, of the normal or impaired functional characteristics of a biomedical object (for instance, of a diseased organ of a patient with the somatic disease).

To underline this important point, once again, Basic Cosmist Functionality (BCF) universalizes (comprises the activity) of all the four Aristotelian causes. Really, due to the BioCosmological conception, BCF (of a HumanKind) hierarchically organizes, since the beginnings of zygote and to the stages of mature functionalist activity, HumanKind’s entire repertory of biological and social needs in one integral order. Hence, biological and social needs may be considered tools for BCF to implement its self-unfolding and ultimate self-actualization. In other words, all biological and social needs of a HumanKind conform to the ultimate end of its/her/his specific functionalist contribution to the wellness of common all-embracing EvoProcess. Therefore, during every individual’s ontogenesis, at every stage and in relation to the satisfaction of a concrete need (be it a physiological need or of safety, or a cognitive need, etc.). BCF always selects and organizes the needful morphological structures (from atom to organ and systems of organs) and their inherent functional activities (i.e. integrates, although subordinating, the material, formal, and efficient causes of the organism) – thus organizing the integrated functional system (organ) which aim is the realization of the indispensable effects (results) for the satisfaction of the actual need (but, ultimately, aimed at the self-realization of the BCF).

Substantially, BCF exists as much in the present and in the past (historical account), as in the emergent future (macro-evolutionary evaluation). The former embraces man’s actual genetic experience and her/his personal life experience,

---

19 This order, in principle, repeats the hierarchy of the main stages of biological and social evolution on Earth.
including nurturing, education and maturation. The latter incorporates the so far non-realized (virtual, but real) adaptational and creative intentions of its/her/his functional integration into the successively higher macro-levels of a HumanKind’s entire ontogenesis – reaching ultimately the personalist creative level for the direct functionalist contribution to the wellness of EvoProcess.

We might exemplify the aforesaid triadic (ACosmist–AntiCosmist–RealCosmist) macro-evolution of the world cosmolgies in the corresponding and currently existing types of biomedicine: Eastern (holistic), Western (scientific), Cosmist (personalist, projected into the future). The First (Eastern, of ACosmist basic world-viewing or *episteme*)

20 gave rise to holistic (irrational organismic) medicine which is fundamentally health-centric, inasmuch as it considers firstly the health of a man as the rehabilitation and maintenance of her/his integrated (organic) position and the harmony of interrelations in the whole world. This medicine treats a patient as the whole organism – *microcosm* (which is naturally integrated into the given environment or world – *macrocosm*) and whose disease is generally considered as the disturbed organic interrelations with the world and the resulting imbalance of the man’s internal harmony.

The contemporary forms of the Eastern (holistic) medicine are represented in the Traditional Chinese medicine and the so-called Alternative (Complementary, Natural) medicine (which practice does not include invasive or pharmaceutical techniques) such as Medical Herbalism, Acupuncture, Homeopathy, Osteopathy, Reiki and many others. The humoral theory of Hippocrates and Hippocratic medicine has apparent correlation with Eastern ACosmism, treating a patient as an individual (who has the inner inherent substance or harmony that makes her/his life a healthy one). On the whole, holistic medicine applies, generally, the so-called Subject–Absolute pattern of cognition that refers the sought-for truth (of healing) to the reestablishment of harmony between a patient (individual or organism – *microcosm*) and the whole world (*macrocosm* – Absolute). Essentially, Eastern medicine relies on the holistic (organismic, naturalistic) and health-centric philosophy.

The Second (Western, of AntiCosmism) modern dominating medicine has the character of objective – ‘organic and pathocentric’ – examination of a patient, realizing basically the Subject–Object relation of a doctor to the patient (and to the biological objects), and of a patient to the world. Western biomedicine is therefore bio- and morphi-centric, as well as socio- and environment-centric, and obligatory *pathocentric* in resolving the issues of health and disease. These features come from the basic Western AntiCosmism and the consequent presentism and adaptationism. In

---

20 The Cosmist term ‘episteme’ was introduced in the previous work (E-LOGOS, 2006). It has not only the accepted meaning of a primary structure that underlies all cultural manifestations of the epoch, as well as of the meaning of ruptures in social history (due to the change of epistemes) but which likewise reflects the natural (universal) order of things: (1) the *macro-evolutionary* and (2) *macro-cyclic* character of Evolutionary Process (and of all constituting processes, including the ontogenesis of a man), thus referring not only to the past and present (historicist and presentist outlook), but to the emergent future as well. BioCosmology, as it is claimed, has primarily the *epistematic* distinction from current philosophies and sciences.
contradistinction to the Eastern medicine and even to Hippocratism, an individuality is viewed here as the relation to the ‘average patient’ – a statistical biological or adopted social norm, paying no attention to internal specific organismic distinctions (including active inherent ontogenetic forces or causes). Main attention is placed on the external factors which cause disease (i.e. efficient causes) – infectious and traumatic environmental causes, as well as environmental risk factors, in relation to chronic non-infectious and non-traumatic diseases. Naturally, practical approaches have been radically changed within the area of modern medicine – shaped in its current morphocentric (morpho-functional, structural-systemic) and pathocentric forms. A vivid example is the definition of blood types in humans, unnecessary to a healthy person, but absolutely necessary in certain pathological situations.

Herein, for the additional demonstration of ‘Epistematic versus Epistemic’ (Khroutski, 2006a), the comparison of Eastern (Chinese, complementary, alternative, etc.) medicine with mainstream Western (rational scientific modern medicine) may be inserted. Indeed, both are based on their own original fundamental (epistemic) systems (or cosmologies) that rest on their basic principles (references, values) – epistemes – and are not reducible to each other, to one the same underlying fundamental ‘code’ of their whole organization (for, they are really opposite – Cosmist and AntiCosmist). Therefore, ultimately, the core of their differences is the distinct basic systems of their Weltanschauung (world outlook). Naturally, a pair of doctors (a representative of Eastern and of Western medicine) always are unable to understand each other, inasmuch as their conceptual framing cannot be reduced, in principle, to one the same (or even compatible) foundations of reference.

Finally, the Third (Cosmist, of RealCosmism) macro-level that is projected into the future and is aimed at the realization of personalist biomedicine – relying on a RealCosmist foundation and developing the means of initial exploration of the inner and inherent substances of a subject of life and its/her/his basic causa finalis (in the BioCosmological conception – Basic Cosmist Functionality), which has the primary and determinative significance for the wellness of a subject (person) during the entire ontogenesis. Significantly, Cosmist (personalist) medicine has already (long ago) realized important achievements in physiology and psychology, that are the mighty scientific instruments and the guarantors of the Cosmist medicine’s effectiveness in the future (herein, firstly, I mean the elaborated conceptions and theories by I.M. Sechenov, A.A. Ukhtomsky, P.K. Anokhin, A.M. Ugolev, P.V. Simonov; their achievements are characterized below).

**Three kinds of naturalism: Eastern, Western, Russian (Cosmist)**

Applying further the triadic (in the Cosmist, macro-evolutionary pattern) approach to the consideration of civilizational processes in the areas of philosophy and science, it is relevant to elucidate the epistematic distinctions in relation to the notion of naturalism. As it is well known, the notion of naturalism has several stances in modern philosophy, however, in general, this is a view that (1) the world can be understood in the clear (scientific) terms denying that an event or process has a supernatural (spiritual) significance, or (2) that an action, inclination, or thought is
based only on the natural desires and instincts. For instance, Professor Hyakudai Sakamoto, in his presentation at the Fifth Asian Bioethics Conference on “Globalization of Bioethics” claimed that the challenge is to introduce a new type of bioethical thinking and a new type of naturalism (based on “Asian ethos”) – “to establish a new humanism without human-centrism, a new methodology to complement this new humanism…, adopting the Asian ethos and wisdom to avoid the European excessive inclination to the manifold natural-artificial dualism”\(^{21}\) (Sakamoto 2004, 489). Really, in the light of aforementioned, we might distinguish “Asian” naturalism which is realistic (inasmuch as it treats man and nature as one whole, since this is a real truth – natural sciences fact), but irrational (rationally unfounded – not reducible to any fundamental rational reason and, thus, existing in Cosmos but missing in Earth's rational life – ACosmist in essence).

On the contrary, (post)modern Western naturalism is rational, but unrealistic, inasmuch as it repudiates the unity and sameness of the world and relies exclusively on objective data, i.e., disclosing exclusively objective causes – material, formal and efficient (in Aristotelian meaning), i.e. investigating morphological structures and the functions of objects, while the causa finalis (in the AntiCosmist milieu, with its “dualistic” and “natural-artificial” essence) is naturally a thing-in-itself for the Western philosophy and science, including the rational comprehension of subjectivity and personhood. In other words, the common (for modern Western philosophy and science) rational fundamental world-viewing principles – of basic AntiCosmism (dualism of Man and Nature) – have resulted in the absolute anthropocentrism: human being has been crowned as the ultimate creation of the world and, thus, the supreme ultimate epistemic certainty has been transformed (from Absolute) to a person’s subjective knowledge about her/himself. Aristotelian philosophy, herein, has really a ‘transitional’ or ‘preparatory’ character in building the further mature “human-centric humanism”.

It is important to note that we might draw, nowadays, a clear-cut distinction between physics (that relies mainly on the Aristotelian metaphysical bases) and modern biological, social and human sciences (that rest on the foundations of Cartesian rationalism, Humean empiricism and Kantian transcendentalism, and their developments). In other words, in physics all theories are based ultimately on natural laws, but in biology (as well as in social and human sciences) there are no natural laws (corresponding to the natural laws of the physical sciences) – herein knowledge is based on numerous concepts, frequently incompatible. Therefore, we have, at present, various metaphysics and ontologies, but we still do not have metabiology in the sense of metaBiology (or BioCosmology), i.e. which comprises Life in all its forms: biological, ecological, personalist, sociological. Indeed, current ‘metabiology’ is basically dualistic (or pluralistic), lying in the two realms of conscious comprehension – “res cogitans” and “res extensa”, thus realizing the main Subject–Object pattern in apprehending phenomena of the life on Earth. This is an evident

\(^{21}\) Prof. Sakamoto has presented his original bioethical “bargain consensus” conception and the “Social Tuning Technology”, aimed at the resolution of conflicts of any type and realisation of the harmony in (future) global bioethics.
Artificial AntiCosmism, inasmuch as the planet Earth and all the life processes on Earth (including a man’s personalist ontogenesis) are the result of Cosmic evolution and the product of Cosmic energy and stuff (i.e. – the direct natural subject matter of BioCosmology, wherein ‘Bio-’ is Greek. “Bios” – Life).

In contradiction, Cosmist naturalism (including the author’s BioCosmology) is precisely the Third macro-evolutionary way in contemporary philosophy and science (and, in the metaphor, mentioned above, – a NewDay, in relation to the Eastern Day and Western Night, which all are the necessary cycles and always existing processes, of revolving experience, of the one whole EvoProcess). First of all, the Cosmist naturalism comprises the clarified metaphysics of Russian cosmism (“metaphysics of pan-unity”\(^{22}\) in its broadest understanding. BioCosmology is precisely the development of (so understood) Russian Cosmism, however, BioCosmological conception is based on its own epistematic or cosmological (ontological and gnoseological) foundations that are founded on the a posteriori universal naturalistic truths (but not on a priori speculative concepts). Therefore, the cornerstone point is that modern Cosmism (BioCosmology) forms a specific – rational and realistic – macro-trend of theoretical and practical activity, inasmuch as it is based substantially on a posteriori fundamentals, i.e. its fundamental a priori notions reflect the real (natural) matter of fact, as it is demonstrated by natural sciences.

In contradistinction, the contemporary Western world-viewing is based on a priori (speculative, abstract) fundamental principles, like British empiricism, French (Continental) rationalism, German idealism that embraces Kantian (and his followers’\(^{22}\)) transcendentalism, Marxian materialism, and American pragmatism. This is, so to say, naturally (realizing a natural Night-cycle of world development) a not natural relation (in the form of artificial man-world dualism) to the all-including evolutionary process (EvoProcess) of the life on Earth, really a “manifold natural-artificial dualism” (Sakamoto, 2004). The other important point (as it was seen in the example with modern various forms of medicine) is that the existing forms of naturalism and their succession (Eastern, Western, Russian), although they reflect the inner macro-evolutionary logic of the world’s development, but, at the same time, they are rather the macro-evolutionary levels that exist all-together and are ready for use at the due time.

‘First’ and ‘Second’ Cosmologies

It is considered that the word cosmology was used for the first time in Christian Wolff’s *Cosmologia Generalis* (1730). However, the study of the universe (i.e. cosmology) has a long history involving philosophical, religious, esoteric, and scientific explorations. To orient ourselves generally, the reference point might be asserted that the primary cosmology – during the early stages of HumanKind evolution (in the folklore and mythological creativity, Eastern philosophies, Ancient

\(^{22}\) The characteristics of Russian cosmism is given in author’s article “Russian Philosophical Cosmology: One Step Backward and Two Steps Forward – Approaching the Universal Evolutionary Future” in the *Journal of Futures Studies* 10(2) (November 2005).
natural philosophy, pantheism) – fundamentally states the indivisible unity of a man and cosmos\textsuperscript{23}, treating the divine forms as cosmic inherent active forces (Divine as immanent in Nature or Cosmos). The turning point is the development of Ancient rational philosophy, which has paved the way to the division of the one whole Cosmos into objective (sensible) cosmos and the transcendent (to cosmos) being, including ideal reason (intellect) or consciousness of Man. Since that we have got the world cultural process that has reached nowadays its climax in the predominantly objective exploration (by ideal active reason of Man) of material cosmos and the unshakable conviction that the history of the Universe has been governed entirely by physical laws.

In this way, the original and all-embracing significance of cosmology has been historically narrowed in the actual meaning. However, as it was mentioned above, all is fallen under (macro)evolutionary cyclic recurrence. Therefore, the challenge might be, nowadays, to rehabilitate the true significance of cosmology as the philosophy and science of real and all-embracing synthesis, first of all in relation to a person. At present, however, the dominating form is physical cosmology which aim is the study of the whole material (inorganic) Universe (as opposed to the planer Earth), while metaphysical cosmology, in modern use, addresses questions about the Universe, that are beyond the scope of science\textsuperscript{24}. In this condition, Man’s unique position in the Cosmos has been passed into the possession of special philosophical and scientific study, i.e. psychology and anthropology, and, in consequence, that essential portion of the corporeal world with which these sciences deal has been cut off from the domain of the true universalizing cosmology properly so called.

In accordance with the above stated \textit{a posteriori} principles of fundamental cosmism, universalism, self-(macro)evolutionism, anthropologism (‘the universal personalist law of evolution’), and the macro-cyclic triadicity, the reason is to develop the current division of cosmology (from the accepted physical, metaphysical, religious, and esoteric cosmologies) into the two universal types (following the ancient approach of Aristotle who discerned “first philosophy” that lays the necessary grounds for the “second philosophy’s” understanding of reality) – First cosmology and Second cosmology. First cosmology studies the basic philosophical (including theological and esoteric) relation of a cognizing person to the world (cosmos), i.e. explores the fundamental ontological and gnoseological principles of the given world outlook. In the light of aforesaid, all forms of world-viewing might be reduced to the two poles – of Cosmism (wherein a person is the microcosm integrated into the one whole macrocosm – organic Cosmos – and entirely subordinated to its laws) and AntiCosmism (wherein a person, i.e. her/his mind is independent from the surrounding material cosmos). Cosmism is realized primarily in an ACosmist and Subject–Absolute relation to the world (Cosmos), i.e. deliberate integration of a man with the World-Absolute by seeking for and discovery Absolute Truth or Reality, or

\textsuperscript{23} The notions of Cosmos, Absolute, God, herein, are equivalents to the notions of Universe or Nature.

\textsuperscript{24} Including the “biocosmologies” of mathematicians Chris King (1978) and Vladimir Lefebvre (2005), which are busy with the exploration of the origin of life in cosmos and discovery of extraterrestrial civilizations.
the revelations of a omnipotent God. In contradistinction, modern dominating AntiCosmism and its fundamental gnoseological Subject–Object position states that Man is the crown of the entire cosmic evolution and the Subject for the Objective exploration and rational transformation of physical cosmos.

At any rate, the First cosmology deals with the ontological (or accurately metanaturalistic\(^{25}\), in essence\(^{26}\)) and gnoseological issues of the being of man and cosmos. Substantially, modern Cosmist approaches (of RealCosmism, including BioCosmology) relate to cosmos as to the one all-embracing Cosmos – the one whole organism (home) – macrocosm for every microcosm (a constituent of Cosmos), including any subject of life (a person, first of all).

In the 2001 I have introduced the notion of “philosophical cosmology” (Khroutski, 2001a), including its definition, subject-matter, object, purpose, method, as well as the characterization of its fundamental principles\(^{27}\). In the successive works (Khroutski, 2001–2004) “the Ontological System of Absolute Cosmist Wholism” was developed, which is precisely a BioCosmological variant of the First cosmology). At the same time, inasmuch as the term “philosophical cosmology” already has acquired the certain meaning that is interrelated chiefly with the issues of physical cosmology, I have arrived at the conclusion to use the term ‘Cosmist philosophy’ as the more appropriate one. However, it is relevant to remind, herein, that a prominent (cosmist) philosopher N.O. Lossky (in the chapter “Characteristic Features of Russian Philosophy” of his recognized “History of Russian Philosophy”, 1951) claimed the necessity of the discipline “cosmology”: "Moreover, the world-whole, studied by the branch of metaphysics called cosmology, contains concrete individual elements of such significance as for instance, the biological evolution, the history of humanity – and philosophy must answer the question as to their meaning and their place in the world-whole." (Lossky 1951, 402).

The main distinction of a modern Cosmist philosophy (philosophical cosmology) is that this is a philosophy from within – it is not focused on the origin, purpose, and destiny of the Universe (as the above-mentioned metaphysical cosmology does). On the contrary, Cosmist philosophy primarily refers to the wellness (of effective inherent functioning) of every subject of life (above all of a person) – microcosm inside the one whole Cosmos (macrocosm). In metaphor, this is analogously to the effective vital activity (functioning) of any cell within the biological organism, also taking into consideration that this effective functionalist activity is entirely subordinated to the (universal) laws of the organism (cosmos) and, simultaneously, (the effective functioning of microcosm) is the necessary condition for the entire wellness of the whole all-embracing organism (macrocosm). With respect to a human personalist activity, it is important always to remember that the evolutionary process of the life on Earth (EvoProcess) is not a human handwork, but precisely a human

\(^{25}\) I tried to substantiate the notion of metanaturalistic exploration in the article for the E-LOGOS (2003b).

\(^{26}\) That is beyond ‘the objective evidence of nature’.

\(^{27}\) Of course, these issues are necessarily touched upon in author’s following papers (Khroutski, 2001–2007).
being is the product of EvoProcess, therefore man is entirely subordinated to its (Cosmic) universal laws.

In its turn, the *Second* cosmology is based on the fundamental principles of a First cosmology and explores mainly paradigmatic and methodological research issues of cosmos exploration (a given reality under investigation). Generally recognized cosmology of-today, however, is the physical and metaphysical quantitative (usually by the means of mathematics) study of the Universe in its totality, and by extension, humanity’s place in it. As it was mentioned above, modern cosmology is narrowed to the study of extraterrestrial corporeal objects. However, even if this research area will be extended to the entire range of explorable objects – the study of the whole material universe – and the entire set of inorganic (or relating to the living bodies) substances will be disclosed, i.e. their morphological structures, as well as their functions (i.e. – the formal and efficient causes of all cosmic things) will become available for the research, – the main epistemological essence (of the current Western AntiCosmism, i.e. the pattern of Subject–Object exploration) will stay the same, therefore Aristotelian *final* causes will remain (as they are) unavailable for modern philosophy and science.

Actually, philosophers of-today employ “cosmology” and “philosophy of nature” chiefly to designate the philosophic study of the corporeal world. The basic point of the modern (physical and metaphysical) cosmology is the separation of Cosmos from Man (her/his reason) and, thus, the Subject–Object exploration of the cosmic phenomena and processes. Naturally, from the position from *without*, modern metaphysical cosmology finds and appropriates its main targets in the (1) inquiring the causes of the origin of the Universe (in the course of monism, or pantheism, or creationism, etc.); (2) the ultimate material components of the Universe (physical causes, or monads, or Aristotelian hylomorphism, or atoms, etc.); (3) the ultimate reason and purpose for the existence of the Universe.

All this is inessential for a Cosmist philosophy, primarily for its First cosmology that has a polar view from *within* on the reality of our world. Accordingly, the main issues of a (Cosmist) First cosmology have the polar significance – of the primary and foremost exploration of the universal laws of one common Cosmos and the inherent functionalist activity of a subject (as the microcosm within the whole Cosmos). In the paper for the World Futures (2004a, 590) author has drawn the conclusion, that a subject is always the organism, process and integrated functionalist whole, which/whose (process of) self-realization of the inherent functionalist destination is the first condition for the subject’s (person’s) entire healthy ontogenesis.

In turn, as distinct from physical cosmology, the forms of religious or esoteric cosmology strive to apply the profound Subject–Absolute approach at the comprehension and explanation of the real unity of the world (Cosmos). However, applying the various religious or esoteric world-viewing approaches, they arrive at the irrational (and, hence, non-universalizing) level of cognition. At any rate, the great variety and the great spread of religious cosmologies (by adherents of Christianity, Judaism, Islam, Buddhism, Hinduism, etc.) and esoteric cosmologies (Theosophy, Gnosticism, Tantra, Kabbalah, Sufism, Yoga, Anthroposophy, etc.)
means the real prodigious basis for the effective perception of the proposed real and rational (Cosmist) cosmology.

Eventually, in contradistinction to the existing forms of cosmology, Cosmist philosophy (BioCosmology) presents real and rational approach to the perception of universal Cosmos. A cornerstone of BioCosmological gnoseology is the Subject–Subject approach to the exploration of real world (Cosmos), but which uses exclusively the objective scientific data (inasmuch as they are the only reliable means for the universal study of the reality under exploration). BioCosmological methodology, basing on its First cosmological principles, precisely attempts to reveal the integrated organisation of all passive and active forces in the universe (in Aristotelian light, of material, formal, efficient, and final causes) and, thus, to reach the level of integrated consideration of the subjects of life (microcosms) within (in the organism of) one whole Cosmos (macrocosm). The Cosmist philosophy and its Subject–Subject gnoseology is discussed below, at the target of cosmist achievements in Russian physiology and psychology.

**Russian Cosmist Functionalism**

Author’s main claim is that precisely First cosmology is the basic foundation that determines the entire cultural edifice of the society, as well as every personalist ontogenesis, and which is articulated by philosophers and is assimilated (due to cultural workers) at the every level and sphere of historical development (nurturing, educational, enlightening, socializing, humanizing, etc.) – the First cosmology determines and generates the essence of the entire amount of cultural manifestations. It is not surprising, therefore, that Russian cosmism (the product of Russian First cosmology) is rather common in treating (in the current (post)modern world) as a kind of occultism, that combines mysticism with the elements of natural philosophy, religion, and ethics: “the term "Russian cosmism" as a characterization of a national tradition of thought appeared in the early 1970s, whereas the expressions "cosmic thinking," "cosmic consciousness," "cosmic history," and "cosmic philosophy" (philosophie cosmique) go back to nineteenth-century mysticism and occultism” (Hagemeister 1997, 185). However, the basic point that is disregarded, Russian Cosmism (as an expression of Russian cosmist philosophy) has its own specific metaphysical foundation – the substantiation of the pan-unity of all life beings and the main significance of subjective (personal) functionalist responsibility – for the active self-determination and self-realization of one’s inherent contribution to the evolution of the one whole world (as, in example, a biological cell contributes to the development of the comprising organism).

A First cosmology’s inherent foundation is essential for the scientific work as well, generating the derivative (the Second cosmology’s) epistemologies and methodologies, thus determining the following results of scientific research. For instance, the scientific work and achievements of the prominent Russian physiologist and philosopher I.M. Sechenov were basically generated by the whole cultural

---

28 “Pan-unity” is synonymic to organicism or cosmism, and, hence, universalism.
climate in Russia at the end of XIX-th century – ultimately, by Russian First cosmology’s principles that are, to author’s mind: ontological organicism, anthropocosmism and ‘triadic futurology’, as well as gnoseological “zhivoznanie”\(^{29}\) – Russian epistemological realism in the various forms of *intuitivism* that integrates “the subrational aspect of the world (sense qualities), its rational (or ideal) aspect, and the superrational principles”, thus combining “sensuous, intellectual and mystical intuition” (Lossky, 1951, 404).

“The whole truth is only revealed to the whole man, said Kireyevsky and Khomiakov. It is only through combining all his spiritual powers – sense experience, rational thought, aesthetic perception, moral experience and religious contemplation – that man begins to apprehend the world’s true being and grasp the superrational truths about God” (Lossky, 1951, 404). Significantly, there is no fundamental distinction between the “God” of Aristotle and the “God” of Lossky or Solovyov, or any other Russian cosmist, inasmuch as they both (Aristotle and Solovyov, for instance) essentially meant the ultimate substance (Absolute, Cosmos) that integrates (organizes) all the (living) things of the world. From this rational point of view, in both spheres of Greek universalism and Russian cosmism, we might directly arrive at the integrated view of the world (of the inherent heterogeneity and specificity in the organic whole), wherein every being (subject) universally (naturally) serves the harmony of the one evolving whole (Cosmos). Naturally, herein, the First (Russian) cosmological principles have led to the XX-th century’s scientific phenomenon of Russian (Cosmist) functionalism.

The wisdom says: “Seek and you shall find”. Really, we have two polar examples of philosophical and scientific activity with respect to the reflex theory – of René Descartes and Ivan Sechenov. While the great philosophical distinction between mind and body in Western thought can be traced to the Greeks, René Descartes, French mathematician, philosopher, and physiologist, is considered to be the first who realized the systematic account of the mind/body relationship (dualism). In Descartes’ conception of reflex action (which is the foundation of reflex theory), the rational soul, an entity distinct from the body and making contact with the body at the pineal gland, might or might not become aware of the differential outflow of animal spirits brought about through the rearrangement of the interfibrillar spaces. Therefore, naturally (due to his First cosmology), Descartes main idea was that the reflex mechanisms are limited to the spinal cord and that the psychic processes occur voluntary in the higher structures, thus opposing reflexes to man’s ‘spontaneous’ and ‘voluntary’ actions, and realizing the explanation of human and animal behaviour mechanistically.

In contradistinction to this position, I.M. Sechenov, basing on the Russian First cosmology, followed his well-known principle that the study of a man is real exclusively in the “wholeness of body, soul and nature, of which he is a constituent”.

\(^{29}\)“Zhivoznanie” –‘LifeCognition’, the term of Slavophils, who urged that our knowledge of reality is immediate. “Zhivo-znanie” (‘LifeCognition’) is represented in Russian gnoseology in the different forms of intuitivism that “discards the Western belief that sense data are subjective mental states of the observer, and admitted their transsubjective character” (Lossky 1951, 404).
Really, Sechenov was friends with Mechnikov, Chernyshhevsky, Umov, Timiryazev, Mendeleev and other (whose thoughts conformed to the Russian First cosmology), as well as met with Dostoevsky and positively reviewed the works of Tsiololkovsky. Naturally, therefore, Sechenov’s scientific work (and the following Russian physiology) has brought to international science vital new findings in the study of reflexes (i.e., of the integrated activity of a human organism and the behavior of the person).

Russian psychologist and historian of sciences M.G. Yaroshevsky substantiated the “Russian way” in the world science, which brought about the emergence of behavioral science that is radically different “from psychology of consciousness, on the one hand, and from neurophysiology, on the other hand” (Yaroshevsky 1995, 5). Really, Sechenov had revealed the phenomenon of “central inhibition” that showed clearly the integration of central nervous activity (including the qualities of “soul”) into the whole behavioral activity of a person. Further, I.P. Pavlov elaborated the theory of conditioned reflexes (“conditioned”, i.e. centrally organized). However, the cornerstone moment is the origination of the notion of “functional organ” by A.A. Ukhtomsky, the forerunner of his famous theory of dominanta. The Russian scientist gave a strict definition to his concept of a mobile, whole functional organ: «we used to bind the notion “organ” with the representation of a morphologically developed, static and constant formation. It is absolutely not obligatory. Organ can represent any temporary combination of the forces, capable to carry out the certain achievement» (Ukhtomsky 1978, 95).

The revelation of the physiological mechanisms of “central inhibition” (by I.M. Sechenov) and the following conception of “functional organ” (by A.A. Ukhtomsky) unraveled the integrated nature of the organism behavior in the environment (world) and worked the way to the other functionalist achievements in the Russian physiology and psychology (the theory of functional systems by P.K. Anokhin, the conception of modern functionalism by A.M. Ugolev, the need-informational theory of higher nervous activity by P.V. Simonov and the other). For the purpose of more detailed characteristic, we are to decide in favor of Petr Anokhin’s scientific work, inasmuch as his theory, probably, is the most elaborated conception in the area of modern (Cosmist) functionalism. Characterizing a distinguished contribution of P.K. Anokhin to the world science, Professor K.V. Sudakov, a leading specialist in the area of systems approach in contemporary Russia, emphasizes “universality, constructivity, and practical usefulness of the principal scheme of the functional system… According to this theory, a functional system is an elementary integrative unit of any activity ending with a useful result. It makes the functional system an isomorphic (i.e. – universal. – K.K.) principle for systems of different classes which end with a useful result.” (Sudakov 1998, p.171).  

30 A brief characterization of the functionalist systemic achievements in modern Russia is given in the article for the E-LOGOS (2003b).
The definition of a functional system is the following: “Functional systems are dynamic, self-organizing and autoregulatory central-peripheral organizations the activity of which is aimed at achieving adaptive results useful for the system and the organism as a whole.” A cornerstone point is that Anokhin’s notion of a functional system differs radically from the notion of a classical system. In his time, P.K. Anokhin emphasized that “overwhelming majority of researchers do not attempt to penetrate into the internal architectonics of a system – to make a comparative estimation of the specific properties of its internal mechanisms” (Anokhin 1973, 31). K.V. Sudakov sets out the essence of this issue: «Precisely the being of a system-formative factor – result of activity – radically distinguishes functional systems from the system organizations of the classical type formulated by L. Bertalanffy» (Sudakov 1997, 48).

In other words, (1) we have in the standard methodology a subject–object pattern of research, wherein a researcher-subject (the observer, by virtue of her/his reason) selects for her/himself the object of a material world for its structural-morphological studying (furthermore, s/he can consider this object, including the treatment of the object as a system – the aggregate of interconnected components) and the investigation of its functional characteristics – as of the whole object (system), as of its constituting structures in particular; in contradistinction, (2) in the methodology of the theory of functional systems we have the distinct – subject–subject (but, of course, on the rational objective data) – approach to the exploratory process: herein, a researcher (doctor) primarily considers a living thing as a subject and tries to understand, above all, its subjective (internal, virtual or informational, i.e. non-material) essence, first of all the useful adaptive result that has the determining significance for the selective integration (by the functional system) of all necessary elements (molecules, cells, organs – in a human organism) for the completed and effective (“resulting”) central-peripheral organization. In turn, the architectonics (internal organization of a functional system) is isomorphic (universal), consisting of the “centre and periphery (peripheral executive mechanisms)”, while “the centre” always comprises the result of activity, receptors of the result, reverse afferentation that signals into the central nervous system from the result of its activity, and the other elements and mechanisms of functional system apparatus.

In conclusion, we might claim that the theory of functional systems (as well as the other functionalist achievements: “Dominanta” of A.A. Ukhtomsky, “Tectology” of A.A. Bogdanov, the conceptions of A.M. Ugolev and P.V. Simonov and the other) realize in our (post)modern times, after the spiral ascent of philosophical and scientific development (that takes two and a half thousands years of the world cultural evolution), the true explanation of Aristotelian causa finalis – rational understanding of subjective internal active forces that determine biological and

---

31 This definition is taken from the site of the International Academy of Sciences (Russian Section): [http://www.rsias.ru/eng/scientificdivision](http://www.rsias.ru/eng/scientificdivision)

32 For the detailed elucidation of a functional system organization a reader might be referred to the site of the International Academy of Sciences (prepared by the specialist in the theory of functional systems) – [http://www.rsias.ru/eng/scientificdivision](http://www.rsias.ru/eng/scientificdivision), that contains direct references to the works of P.K. Anokhin and his successors (first of all, of K.V. Sudakov).
personalist development of a living being (of a person, first of all). The forerunner of this modern functionalist breakthrough is clearly the scientific and philosophical achievements by I.M. Sechenov, and we might argue that his creative effectiveness was evidently conditioned by the Cosmist (of the Russian *First* cosmology) relation to the world.

**Eastern holism, Western holism, Cosmist holism**

Professor Walter Kofler, substantially analyzing the creativity of Sechenov from various aspects, discloses a fact that “more than one third of the papers by Sechenov deals just with philosophy… especially «The reflexes of the brain» include relevant philosophical positions and new ideas” (p. 16). Kofler’s analysis shows that “Sechenov used not only epistemological techniques as tools, but paradigms too… A paradigmatic but not often discussed contribution is his argumentation about «cause» and «causal connections», including unobservable causes… He linked this with inner causes of men… with the clarification that «the connections are not the same as on the phenomena of the outside world, but they have a common point…»” (Ibid). Likewise, Kofler argues, “Sechenov developed techniques for empirical based science to deal with materialistic and idealistic aspects of the comprehensive person”, as well as “he demonstrated that ontologies («paradigms») can be used as tools according to the given problem which should be solved” (Kofler 2007, 30). Therefore, Prof. Kofler concludes, “Sechenov can be seen as a precursor of the so efficient philosophical positions of Einstein and Th. Kuhn” and, maybe, the scientific contribution of Sechenov “is indispensable for the needed linkage between materialistic and idealistic aspects of a person”, however, unfortunately, “the proposals of Sechenov are helpful up to now but nearly unknown” (Ibid).

Prof. W. Kofler is a noted scientist in the area of social medicine, health and ecology, President of International Council for Scientific Development (of the International Academy of Science). At the same time, he is a bright representative of the galaxy of Austrian philosophers and scientists (von Ehrenfels, Lorenz, von Bertalanfy, Frankl, Capra and other) who applied the holistic (mainly systems) relation to the world. In general, system theories presume there is one whole reality which the inquirer must struggle to see more of its full complexity. In this area, I am to note two bright figures: Dr Cornelia Guja, a Romanian physiologist, the author of truly holistic “Biointerface” theory (Guja, 1997), in the area of “individual anthropology”; and a Canadian geographer Cristian Suteanu, a specialist in the complexity theory, who strives to realize the concepts of new geography and new types of environment, in this realizing “the real nature of complex problems such as global environmental change” (Suteanu 2005, 135).

---

Definitely, all the above discussed approaches (Subject–Absolute or Eastern, Subject–Object or Western, and Subject–Subject or Russian-Cosmist) are necessary for the cognition of the one whole real world of our being and are relevant in their proper time. Likewise, the synthesis of various approaches is important in the condition of being relevant. The highlighted Cosmist philosophy and science (Russian cosmism) uses, substantially, the rational Subject–Subject gnoseological approach (characterized above) which is directed at the disclosure of “inner active causes” (*causa finalis*) that determine the appropriate (healthy) life activity of a living being (firstly, of a person) in the world. Russian cosmism (being broadly understood) has already realized itself in the world culture: nearly all Russian philosophers until the 1917 are the real cosmists (in their relation to the world), as for physiologists and psychologists – they are Sechenov, Pavlov, Bekhterev, Ukhtomsky, Anokhin, Ugolev, Simonov and other; in social sciences – Danilevsky, Mendeleev, Bogdanov, Kondratyev, Sorokin and other; in ecology – Vernadsky, Kholodny, Chizhevsky, Moiseev, Kaznatcheev and other). The core features of the existing (but still receiving less attention than its due) Cosmist philosophy and science are its (1) futuristic essence, (2) practicality (actual purposeful activity), (3) person-centrism (considering a free person as the main Cosmist agent (active force) in realizing the common Evolution). 

An army of modern scientists is engaged to the holistic exploration of the world and this is a great task to make even a brief outlook of this vast field of activity. I might only mention some bright scientists with whom I have the happiness to collaborate (in actual or virtual interrelations). To start with, I am glad to name the scientists (and point out the significance of their work) whose activity relates to the editions of World Futures and the Journal of Futures Studies. First of all, I appreciate the creative work of Professor Ervin Laszlo – a pioneer in complex systems philosophy and one of the world’s foremost experts on general evolution theory. In the book “Macroshift” Prof. Laszlo arrives at the comprehension of several macro-cycles (substantive in their organization) of world social evolution that will naturally lead us to a new emergent future. They are: Mythos, Theos, Logos; and “the next advance of humankind must be governed by a new rationality… mechanistic rationality of Logos must be replaced by a new holistic rationality of yet-to-be-born civilization (that merits the name *Holos*)” (Laszlo 2001, 107). At the same time, as John Broadbent notes (in his substantial analysis of evolutionary theories), Laszlo’s General Evolutionary Theory “is grounded in the theories of chaos, complexity, and catastrophe” (Broadbent 2006, 617), which is a relation, in the aforementioned metaphor, to the ‘Night’-world.

Significantly, modern futurologists, in their search for a new rationality and (on its base) the new civilizational order, apply the metaphor of “awakening”. For instance, Dr. Ashok K. Gangadean, organizer of the “AwakeningMind” portal and the author of “The Awakening of Global Reason” (Gangadean 2006, 64) suggests that we are in the midst of a profound dimensional shift in our rational capacity to process reality,

---

34 Afterwards the ‘Cosmist vector’ was definitely ruined by the Soviet (Marxist) ideology, which further was transformed into the current ‘liberalist’ (AntiCosmist) course.
and that this advance is so radical and comprehensive that the very concept of a person, of what it means to be human, likewise is taken to a higher global dimension. Concurrently, in the article “Waking Up to a New Future”, Professor Sohail Innayatullah, developing Sarkar’s Neo-Humanism, substantiates the charge to “envision and create an alternative world”, and that “the way out is not the imagined past but a move to a spiral future, remembering history but creating alternative futures. What is needed is an evolutionary jump.” (Innayatullah 2005, 56). Likewise, Ivana Milojevic, exploring the pedagogical strategies in the current and future world, summarizes the vision of Religious Fundamentalism (Past Vision), Secular Progressivism (Modern and Postmodern Vision), and advances Alternative Spirituality (Future Vision). In her conclusion, Milojevic claims that “even though first two alternatives do satisfy certain basic human needs, for humanity to move forward we desperately need the third story, and beyond” (Milojevic 2005, 16). In this way, we do need “a new language for defining the real” (Bussey 2006, 43).

Essentially, the systems approach (that is mostly used in holistic science) offers a perspective on and an approach to complexity and unity or wholism as descriptive knowledge, knowledge of what is or what was, but it does not provide practical knowledge, knowledge of what ought to be. Therefore, the areas of bioethics and ecological ethics become significant fields for the realization of various holistic approaches. Author appreciate his participation in the work of the European Society for the Philosophy of Medicine and Health Care (ESPMH) and Asian Bioethics Association (ABA), and am happy to collaborate with many noted specialists in the area of holistic philosophy and science. Many ideas deeply influenced author’s own ‘holistic’ development. First of all, Stephen Modell himself, together with R.C. Warren (2006), has created the conception of “Optimal Health” that has a deep insight into the substance of a human’s health. Certainly, Lennart Nordenfelt's theory of health (that is, essentially, “the welfare-theory of health”) is a considerable event in the world bioethics, especially I appreciate his teleological notion that “the vital goals of man are those whose fulfillment is necessary and jointly sufficient for a minimal degree of a welfare, i.e. happiness” (Nordenfelt 1987, 78). Emphatically, his holistic theory defines health “in terms of a person’s ability to realize his or her vital goals” (Nordenfelt 1993, 281), in this realizing the connection with the philosophy of Aristotle and emphasizing that “a person’s vital goals are states of affairs which are objectively related to his or her future happiness” (Nordenfelt 1997, 244).

Among the other valuable conceptions that cannot be omitted and which were represented at the recent bioethical conferences are the scientific foundation of holism in medical anthropology by Professor Peter Heusser, disclosure of the personalist issues of modern medicine (especially during the urgent treatment) by Marc Andronikoff, presentation of the "Pathos"-conception (by synthesizing the existing biomedical and humanistic models in modern medicine) by James Marcum, substantiation of the Eastern philosophy as a resource of medicine by Meera Chakravorty, deep insight into major conceptions of autonomy in contemporary bioethics by Michio Miyasaka, a subjectivist concept of health and diseases by Jozsef Kovacs. A special direction, represented by Russell J. Sawa (2005), is aimed at the creation of “Whole-Person Medicine” by means of a cooperative and
interdisciplinary relationship among all those involved, leading towards optimal attainment of the physical, mental emotional, social and spiritual aspects of health. Sawa builds his “foundations of interdisciplinarity” on a Lonergan perspective (especially referring to Bernard Lonergan’s “Insight”, 1957) that “guides the appropriate attitude in interdisciplinary work” (Sawa 2005, 53).

In Asian region the activity of Professor Darryl Macer and his fellow-champions in the Asian Bioethics Association is indispensable. On the whole, Asian philosophy and science are intrinsically opened to the holistic consideration of bioethical issues. At the same time, Asian scientists, as it may come into view, are not inclined to work out expanded theoretical constructions, as the aforementioned, based on the Asian “fundamental naturalism” conception of Prof. Sakamoto, or Susantha Goonatilake’s “Toward a Global Science” (1999). At any rate, it is a pleasure for me to note the interesting contributions into the holistic thinking by Shui Chuen Lee (on a new dimension of bioethics in the light of Confucianism), Chutatip Umavijani (on the interrelations between science and Buddhism), Li-Chuan Kuo (on historical analysis of the Hippocratic Oath), and Soraj Hongladarom (on the ethics of increasing human lifespan). A special accent is laid upon environment ethics, herein the views of Abhik Gupta (2006) are notable, who explores the ways of ecological development that are distinct from Western anthropocentric humanism and man-nature dualism.

**A Cosmist (macro)evolutionary “Day–Night–NewDay”-metaphor**

I would like to emphasize, once again, that Stephen Modell had represented really a sound and coherent critical matter. However, a crucial point is that his critique serves to the justification of exclusively the current dominant AntiCosmist (Anthropocentric, Subject–Object, ‘Night’) sphere and level of scientific comprehension. Precisely in this light his arguments and estimates are irreproachable, including the unpredictability of occurrences, argued by Russell, or randomness of evolutionary events, stated by Darwin, as well as purposeless of individual variation, advocated by Bowler (Modell 2006, 3). As well as Nietzschean “will to power” (p. 4-5) is quite reasonable in the adaptational (of survival-consumption-domination, but of all for the restoration, accumulation, growth, development and the release of one’s inherent potentials, ultimately of a person’s vital rights) realm of current Western (AntiCosmist, ‘Night’) world. However, in the BioCosmological light, Cosmist ‘will to the functionalist self-realization’ (the self-realization of one’s BCF) is the equal (successive) cycle (of NewDay) and level of the evolutionary ontogenesis of a subject.

Substantially, Darwinian “the inclination to survive and prosper evolved through an efficiency of forces competing with each other,” (Modell 2006, 5) may exist concurrently with the ‘self-determined efficiency to perform eventually the subject’s inherent constitutive function’. Otherwise, without the successive self-realization of one’s Basic Functionality (self-actualization of one’s functionalist efficiency, i.e. –

---

35 Darryl Macer is director of the Eubios Ethics Institute. His basic book is “Bioethics is Love of Life”, 1998.
one’s basic *causa finalis*), an (inefficient) subject will be certainly atrophied and eliminated from the space of a healthy organism. Indeed, in rational aspect, we might consider an issue from, at least, the two stands: from the Western view, wherein “the body displays a myriad of restoring forces" from molecular to cellular, organic and organismic levels, including the example of a “T-lymphocyte at the cellular immune level” (p. 5); but, on the other hand, we might look at the lymphocyte from the BioCosmological point of view, taking into account its entire wholesome ontogenesis. We will see then that a healthy lymphocyte’s ontogenesis is purposeful, nonrandom and predictable, i.e. functionalist, self-dependent and active-(macro)evolutionary (organized at the ultimate execution of the inherent result-effect of a lymphocyte’s vital activity).

I mean that the ontogenesis of a T-lymphocyte is a passing over sequential but emergently distinct stages (levels) of differentiation, since the level of a human prothymocyte (T-cell precursors) that is formed in bone marrow and further migrates to the thymus to undergo there thymic maturation and transformation into “naive” T-cells, and then migrates to the peripheral (thymus-dependent) organs of immune system, where the acquisition of their specific activity is taking place, including the ability to react with specific factor, while the final stage is the generation of newly differentiated memory lymphocytes and maintenance of their clones throughout life, as an "acquired" immune system. As we clearly see, the ‘healthy’ route of T-lymphocyte through its entire ontogenesis includes, essentially, (1) adaptational “inclination to survive” (certainly, a necessary basis); but, likewise, (2) the necessary surroundings (firstly, embryonic milieu, then the surroundings of bone marrow, next – thymus, further – thymus-dependent peripheral zones, etc.); as well as, (3) the self-dependent realization of its specific basic intrinsic functionality. Otherwise, a lymphocyte might display wonders of adaptability at every stage of its development (since the embryo, further in marrow, thymus, peripheral organs), but ultimately arrive at its own functionalist inefficiency, and, in this case, – lymphocyte will be inevitably subjected to atrophy (as not wanted) and, thus, will be soon eliminated from the space of the organism (cosmos) once and for all.

Hence, emphasizing this once again, a metaphorical example is quite relevant – of Day–Night–NewDay-cycles of organismic life activity (the analogous expression is Thesis–AntiThesis–SynThesis, or ACosmist–AntiCosmist–RealCosmist), which are the polar, but successive stages of the healthy life of a one whole organism (ultimately, of Cosmos). The cornerstone is that every macro-cycle (Day–Night–NewDay) has its own First and Second cosmoologies (or an ‘episteme’ and the methodologies of the extrinsic cultural and scientific life) – underlying systems of basic principles that determine the whole organization of a subject. First of all, during a Day the functional activity of every physiological system is expedient and subordinated to the supreme wellness of the whole organism in its/her/his integrated interrelations with the surrounding world, while at Night every system (organ, cell) are equal (the condition of total ‘pluralism’) with the respect to their objectives of assimilation and accumulation of energy-plastic materials, regeneration and growth, and steady raising of one’s inherent vital potentials, etc. The crucial point, herein, is that all the processes during a Night take place while a whole organism is switched.
off (natural sensory rupture) from expedient (rational, reasonable) interrelations with the world.

Essentially, the quality of ‘Day’- or ‘Night’-life activity depends on the relation of a subject (person) to the world, but not of its/her/his surroundings. Really, for instance, a myocardiocyte has one the same milieu during the cycles of Systole or Diastole (i.e., of Day or Night), however the directivity of its life activity changes dramatically. In reality, therefore, we do need a Cosmist view ‘from within the organism’. In other words, it is truly important for a researcher to be able to represent her/himself as a ‘cell’ inside the organism – amidst the other ‘cells’ (equal microcosms) subordinated to the one organismic whole. In this way, we might resolutely cast away our poetic vision that a ‘Night’ means “dark and suspicious” and a ‘Day’ means “light and good”. Both cycles are equally necessary and successive cycles of the one organismic wholesome life; hence Day is the natural (emergent) future for the Night and vice versa. The other substantial point is that these two macro-cycles mean the polar (opposite) characters of life activity – expedient or cosmos-centric (Day) and chaotic or subject-centric (anthropocentric) – Night. Really, in a physiological stance, Night-sleep is a natural and healthy, but temporary and periodical, suspension of the functions of the organs of sense, as well as of the voluntary and rational soul, i.e. a lessened acuteness of sensory perception, a confusion of ideas, and a loss of mental control, followed by a more or less unconscious state (of all – in relation to the outer world-cosmos). Therefore, in actual fact, is not this an analogy with the current global world, based on the huge amount of various pluralist world outlooks (frequently incompatible and antagonistic) – a true chaos (Night), although organized?

**Thesis–AntiThesis–SynThesis macro-evolutionary triadicity**

A metaphor Day–Night–NewDay or Thesis–AntiThesis–SynThesis macro-evolutionary triadicity (in essential expression) might be realized at any level of life organization: molecular, cellular, organismic, personalist, social, ecological. For example, we might refer to the universal pattern of protein synthesis in a cell. In fact, we have here three self-dependent stages of protein synthesis: 1. (Thesis, or Day) – the emergence of the new whole (macro)organization of a genome, due to the interrelations with the whole organism, that is characterized by the activation of the given (appropriate to the ontogenetic tasks) genes and realization of transcription – the emergence of mRNA molecules (substances); 2. (AntiThesis, or Night) – the new whole (macro)organizational stage of cytoplasmic (endocellular, global) activity – translation – that takes place already without the interrelations with the organism-cosmos, for it is now determined by (internal) mRNA substances and accomplished in the organization of complex processes of protein synthesis on the ribosomes, that results in the production and accumulation of the proteins – biologically active substances; 3. (SynThesis, or NewDay) – the cell (and all cells of this type)\(^{36}\), on a request of the incorporating organism, starts to release and produce expediently into

\(^{36}\) And, accordingly, the appropriate morphological tissue, organ, organism.
the organismic space or environment (due to the already – at Night – realized technology) its bioactive (inherent functionalist) substances (hormones, for example), thus influencing and harmonizing the activity of the whole organism.

In turn, exemplifying the self-(macro)evolutionary universal essence and the macro-cyclic character (process) of a subject’s (person’s) development at the personalist level (during her/his ontogenesis – the entire life span), we might refer to the psychology of Karl Gustav Jung. As it is well-known, K.G. Jung discerned four macro-periods in the life of every person: 1) Childhood; 2) Youth and Young Adulthood; 3) Middle Age; 4) Old Age. If we add Pre-natal stage (cycle), then we might discern five successive macro-cycles: 1) Pre-natal (Night); 2) Childhood (Day; of relating to the whole or Cosmist world); 3) Youth and Young Adulthood (Night – of chiefly adaptationist anthropocentric activity and self-affirmation); 4) Middle Age (“after the age of 35”), here Jung speaks about the priority of “spiritual values”, but this is consistently a “Day”-cycle of anew integrated relation to the world as a whole substance that integrates a person; 5) Old Age (again Night-cycle). Therefore, we have two macro-periods (Second and Fourth) that are evidently of Day (expedient, cosmos-centric) substance. The point is that both are dealing mainly with the comprehension by a person of her or his inherent functionalist role and the expedient (wholesome) activity in the world (which is, herein, naturally the activity of a Day-Cosmist agent in the one common whole world – Cosmic EvoProcess).

A cornerstone moment, stressing this point once again, in the entire BioCosmological approach, including a metaphor of Day–Night–NewDay or Thesis–AntiThesis–SynThesis triadic reappearance of polar macro-cycles, – that all this is based precisely on a posteriori principles, but not of "a posteriori observations" as are opposed by Stephen Modell to "a priori principles" (Modell 2006, 2). I use the terms "a priori" and "a posteriori" in the common sense to distinguish between two different types of propositional knowledge. However, since the definitions and usage of the terms (a priori and a posteriori) are disputed, the reason is to note that I use their rough meanings as follows: a priori knowledge is independent of experience (hence, cannot be derived from empirical evidence and, thus, is not verified completely by scientific exploration), while a posteriori knowledge is dependent on experience (is achieved via information gained from sense perception, including the corroboration by objective data, and in combination with principles of reason and logic).

Conclusion: A perspective of anthropocosmism

A cornerstone distinction of the author’s BioCosmological conception is its foundation on the basic (Cosmist) a posteriori principles – fundamental universalism, cosmist, self-(macro)evolutionism, anthropologism (the Universal Personalist Law of Evolution), and cyclic reappearance (triadicity) of evolutionary processes – which are substantiated by the author, being actually of the same

37 In this aspect the reference might be Calvin Hall’s “A Primer of Jungian Psychology” 1973, pp. 90–95.
evolutionary vigor as the dominating at present a priori fundamental principles of modern Western philosophy, in the forms of Cartesian dualism, or Continental rationalism, or British empiricism, or German idealism with Kantian transcendentalism, or Marxian materialism, or American pragmatism, etc. In turn, BioCosmoslogical a posteriori fundamentals provide a truly universal basis for the author’s all-embracing, rationally deduced principles (foundations), first of all the cornerstone notion of EvoProcess (Cosmic Evolutionary Process of the Life on Earth) and other basic notions: Universal Functional Reductionism, Basic Cosmist Functionality (BCF), CosmoBiotypology. All this makes the way for an original (BioCosmological) – subjective functionalist evolutionary universal – approach to the life, including the integrated scientific consideration of the entire set of rational causes that were formulated by the genius of Aristotle: material, formal, efficient and final.

Stephen Modell introduces the issue of “a particular fate”, exemplifying it with the example of becoming “the governor of Rhode Island or a prize-winning journalist” (Modell 2006, 8). Again, however, in the light of aforesaid, we are to consider this issue from the stands of polar cosmologies – ACosmist, AntiCosmist, RealCosmist. In the ACosmist era, wherein a person believes in the unity and harmony of the whole Cosmos but realizes her/his rational incapability to influence (to contribute to) the Cosmic order in relation to the Earth’s surroundings, “the fate” naturally takes on a chaotic significance and the unpredictable influence ‘from without’. Further, in the AntiCosmist era we are witnessing the steady growth of a man’s rational (technological) might and progressive independence from prejudices. The more, in the (possible) Future – RealCosmist era, a man will be responsible for her/his self-realization of the inherent functionalist vector (route) in the whole personalist life. However, inasmuch as this ‘functionalist trajectory’ naturally has a great variety of concrete expressions (dependent on a huge amount of factors), there will be, nevertheless, a small probability to become exactly “the governor of Rhode Island”. But, very likely, a person will have every prospect of success in achieving the fame of “a prize-winner” in the selected area of functionalist (creative) activity.

The cornerstone point, herein, is the primary freedom of a personalist choice (as well as personalist responsibility) for the discovering and realization of the personal route (vector, perspective, trajectory) during the whole life (ontogenesis) for the eventually effective fulfillment of her/his constitutive BCF inside the space of an appropriate organism (societal milieu). In this course, we might consider a personalist freedom (from the Cosmist point of view) as the degree of obtaining the sufficiently necessary (adequate) conditions (surroundings) for a person to self-realize (to fulfill self-development and realization) of her/his BCF, along with the organization of equitable competitiveness that is absolutely necessary herein (on equal terms) for the discovering of best and optimal functionalist effects-results in a given area of human activity.

At any rate, we always have the polar (Cosmist and AntiCosmist) but universal successive processes of subjective adaptation (with the growth and preparation of one’s vital potential) and the further inherent integrated functioning (in the whole space of an organism) by a subject: (1) ‘Night’-Chaotic “struggle for survival” and
“will to power”, i.e. “the selection of the fittest” from without, through activity of the factors from the Past and Present; (2) ‘Day’-Cosmist ‘will and struggle for the self-realization’ and the functionalist execution of one’s inherent basic vital potential, herein “the selection of the fittest” comes primarily from within (through the realization of one’s intrinsic potentials38) and from the Future (the selection of the efficient functionalist subjective activity in a given functional area for the (future) participation in the whole organismic life processes). Therefore, this is truly a ‘will to the awakening and the functionalist self-realization’.

On any count, awakening, in fact (even in the physiological significance, for instance), naturally means the ‘revolution’ in the conscious condition of a man – radical transformation of sleeping person (from the condition of sensory rupture with the real world-cosmos, thus – from the subordination to Night dreams-‘concepts’) – to awaken a conscious condition of functionally expedient life activity (for the truly judicious – sane, sensible, reasonable – interrelation with the world-cosmos). Then the issue (for the global level) is: Has this task emerged?

In the upshot: the genius of Aristotle had introduced to the world culture a supposition (and this aspect thoughtfully was aroused by Stephen Modell), that the world is moved by active forces which have the intrinsic and inherent essence (realized by Aristotle in the notions of formal, final and efficient causes). However, the world cultural evolution has taken already two and a half thousands of years to realize a spiral ascent and arrive at present at the rational and scientific comprehension of this truth, which was (and is) realized on the bases of the Russian First and Second cosmologies (Russian cosmism), for instance, in the theory of functional systems by P.K. Anokhin. The gist is that current Russian cosmism (which is still beyond the serious consideration) has the same value for (the future) evolution of the cultural world as Greek universalism or British empiricism, or French (Continental) rationalism, or German idealism, or American pragmatism, or, on the higher level of consideration, Eastern holism (naturalism) or Western anthropocentrism (individualism, humanism) have in the past and present development of the world culture.

Distinctly, there is an evident similarity between Aristotelian universal naturalism and the contemporary Russian universal cosmism, firstly in relation to their teleological essence. Substantially, however, they have the polar directivities: Aristotle’s – ‘from God (Absolute) to Man’ (a kind of ‘theocosmism’), while Russian cosmism realizes the directivity ‘from Man to Absolute’ (to the resulting functionalist integration in the whole ambient Cosmos by virtue of a man’s inherent deliberate

38 Ultimately, this is the self-dependent realization of the personalist entire ontogenetic life trajectory, transcending all the stages or pre-natal development, childhood, school education, studentship, career choice and the start of labor, marriage and childbearing, management of a career, redirection (renewal) of social activity in the maturity years and acceptance of new social roles, ultimately a person become a ‘womb’ her/himself for the generation (or participation in) the carrying out of evolutionary novel (emergent) effects (results, products, activities, etc.). (The detailed characteristic of a person as a “womb-himself” is given in author’s article for the Appraisal (2003a).
activity – a kind of ‘anthropocosmism’). The below scheme expresses the metaphor of the cosmic spiral macro-evolutionary and macro-cyclic ascent of the life (biological, personalist, social, ecological) on Earth, and points out the positions (analogous in their relation to Cosmos) of Greek universalism and Russian cosmism. The compression of the turns in the current and future times reflects the apparent acceleration of civilizational processes. As Ervin Laszlo states, “in the past, a more adapted civilization evolved over several generations; the rhythm of change was relatively slow. This is no longer the case. The critical period for change today is compressed within a lifetime of a single generation” (Laszlo 2001, 46).

The place of Greek universalism and Russian cosmism in the world spiral evolution

<table>
<thead>
<tr>
<th>Designations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC – ACosmism</td>
</tr>
<tr>
<td>GU – Greek Universalism</td>
</tr>
<tr>
<td>AntiC – AntiCosmism</td>
</tr>
<tr>
<td>RusC – Russian cosmism</td>
</tr>
<tr>
<td>RC – RealCosmism</td>
</tr>
</tbody>
</table>

The scheme expresses the analogous positions of Greek universalism and Russian cosmism in relation to the ‘general ascending axis (vector)’ of the Evolution (CEPLE), although both eras (and cycles of the world cultural development) have the opposite directions – of ‘theocosmism’ (aimed at AntiCosmism) and of ‘anthropocosmism’ (aimed at RealCosmism).

The main feature of the proposed rational BioCosmological approach is its Subject–Subject essence of cognition, but which, in relation to a person, is based as (primarily) on the subjective experience of a person (of her/his inherent functionalist interrelations with the world), as on the objective (scientific) data on the person and her/his world of life activity. Substantially, the Subject–Subject rational approach is basically possible on the First Russian cosmology (from Eastern cosmology as well) of viewing and relating to the world as microcosm to macrocosm – from within – from the position of a subject that is entirely (functionally) integrated into the organismic whole. Naturally, this integral knowledge can only be attained through the complete combination of cognitive powers: sense experience, rational thought, and more subtle intellectual intuition, which discloses the inner teleological and axiological causes of a being (person) – its/her/his expedient functioning and evolution in the world whole (Cosmos).
Acknowledgements

I would like to express my sincere thanks to the colleagues who contributed appreciably to the entire process of the design and implementation of this work (I think, at least since the 1997), to: Dr Valdar Parve, Tartu University; Prof. Giuseppe Benagiano, University “La Sapienza”, Rome; Prof. Zbigniew Szawarski, University of Warsaw; Dr Jozef Glasa, Slovak Postgraduate Academy of Medicine; Dr Vladimir Mouraviev, Duke University; Dr Eimantas Peicius, Kaunas University of Medicine; Dr Richard T. Allen, University of Nottingham; Prof. Anna Makolkin, University of Toronto; Dr Risto Koskinen, University of Helsinki; Dr Magda Van Hoyweghen, Antwerpen, Belgium; Professors Jurij M. Khrustalyev, Moscow Medical Academy after I.M. Sechenov; Viktor R. Veber and Georgi S. Arkhipov, Novgorod State University after Yaroslav-the-Wise.

References:


