

**INFORMATION EQUATION $E=I\text{MC}^2$ OF COSMIC BEINGS –
20 QUESTIONS TO PROFESSOR RUDOLF KLIMEK:
THE PRESIDENT, WORLD INFORMATION UNIVERSITY;
*IN THE STYLE OF SOCRATIC DIALOGUE***

**ИНФОРМАЦИОННОЕ УРАВНЕНИЕ $E=I\text{MC}^2$ КОСМИЧЕСКИХ СУЩЕСТВ:
20 ВОПРОСОВ ПРОФЕССОРУ РУДОЛЬФУ КЛИМЕКУ;
ПРЕЗИДЕНТУ ВСЕМИРНОГО ИНФОРМАЦИОННОГО УНИВЕРСИТЕТА;
*В СТИЛЕ СОКРАТОВСКОГО ДИАЛОГА***

Opening remarks

The role of ‘collective Socrates’ (who, through a series of debatable, embarrassing and controversial questions, is inquiring the essence of the Information concept through a constructive dialogue with its author, Prof. Rudolf Klimek) is performed by R. Klimek’s close associates within the World Information University (WIU)¹ and the Biocosmological Association (BCA)²; and the given paper is prepared by me, Konstantin Khroutski (BCA's secretary). I, personally, had a lucky chance to meet and work with Rudi Klimek during the summer days of 2017 (the year of the ceremonial launching of WIU, at the World Congress “Biocosmology and Cancer”, in Krakow, July 14-15, 2017); and (upon the invitation) in the summer time of 2018 and 2019 (in Krakow and Zakopane, Harenda). Since the beginning, I have realized the magnitude of these genuine (precisely in a spirit of Socrates) discussions on the tenets and characteristics of his Information theory, for which Prof. Klimek always is open-minded; and started to record them. Eventually, the time has come to summarize and organize the recordings; and, after the direct verifying and updating by Prof. Klimek – to provide input on them to the attention of BCA- and WIU-communities and all the interested colleagues.

¹ The book “*Information Medicine*”, its second revised version, is published in the current BCnA-Issue, with the permission of the WIU-directorate (this joint monograph sufficiently contributes and develops R. Klimek’s Information concept).

² The articles of Rudolf Klimek, published in the *BCnA*-journal, are available at:
<http://en.biocosmology.org/contributors/rudolf-klimek>

Questions (question №1 – Q1) : In the 2014 we have published in the Biocosmology – neo-Aristotelism”-journal your equation of the quantum equivalence of matter, energy, information : $E=imc^2$. Please explain to me: What it is “information”?

Rudolf Klimek (RK) : First of all I wish to express my sincerely gratitude for your pioneer inclusion of the Information medicine views into the current Biocosmological discourse. Your journal is one of the first editions who have published this equation. Once again, I express my pleasure with your fruitful activities and our cooperation on preparing the version of WIU-book for publishing in the BCnA_Vol.9 (3&4)_issue together with the *Dialogue*. I am at direct contact with world scientists interested in all kinds of matter and energy, especially of new ephemeric atom positronium, which disappears into two or three quanta of energy. Therefore, I receive many questions about the meaning of the notion *information*, which as the basic pattern of Nature is characterized by three S : Self-organization, Symmetry and Sacred perfection (*omne trinum perfectum!*). So, to answer your question – I would like to inquire you: What do you want to receive : the answer about the name of information or the essence of information?

Q2: Of course, I expect to know about the essence of information.

RK : Information is one of Three basic components of Cosmos, next to the well-known matter and energy. It is not only the linguistic concept like “being”, “life”, “myth”, “knowledge”, “consciousness”, “good and evil”, which are commonly used by people; but it is more than they – a basic concept defined as the equivalent both to cosmic matter and energy! The philosophy of information concerns three areas – *first*, Information is something that exists as an objective, and which means the independent feature of the natural world, and can be quantified as such. *Second*, this is the information mostly often used as the information-exchange conceived to be an important part of human communication, in which word and gesture are regarded as tools for disseminating information with distinguishing right or wrong, and good from bad. *Third*, information is inextricably linked with matter and energy : it determines both the organization of the Universe, and is a source (on the basis of *information resonance*) of sensory and intellectual cognition – as a particular way in which something is done, organized and may happen as beginning of emergence (as in the example – an ephemeral atom of positronium emerges from its information resonance).

Q3 : My second question is about the mathematical equation aroused to the power of Information (Ξ^i), which I could not find in mathematical annals?

RK : Ever a discrete part of the universe is considered as the element that constitutes a **system as the being**, who's mass is informationally belonged to its actual and potential energy, and who is synchronously coupling with its surroundings (environment). In truth, the thermodynamic law of quantum equivalency of the mass, information and energy of the universe expresses the rising of the sign of equation over the equivalence (Ξ^i). Therefore, matter and energy are understood as two aspects of information. The equation settles the centuries-long dispute over the **essential** and the **existential essence of each being**.

Q4 : The being has being invested in its constantly varying names, limited to some merely information conceptions that are simple in the material world deprived of energy?

RK : Yes. It is necessary to understand what the word 'being' (existence, life) really refers to. Any word denotes the entirety of everything that in any way exists in the **essential sense** (most important, just that constitutes the essence of the substantial telic existence) or the **existential being** (the very fact of its existence), integrated into the universe, and in the form of any part of it, called the **system**. There is a fundamental difference between any sort of real being and merely abstractly conceived existence (in human thought), where the latter is increasingly (often misleadingly) is referred to as a 'virtual' one, while this term is derived from the Latin expression used to denote virtues or power.

Q5 : But, in ancient time the four classical elements of universe are the earth, water, air, and fire; and the fifth element is the Cosmic *aether* (due to the Aristotelian *Organon* Kosmology), and which is the basis for organizing all other elements.

RK : Matter and energy are just the two aspects of the threefold informational essence of the reality, what only man can describe using his senses and knowledge. In turn, man himself is composed of the same elementary cosmic particles (as any other cosmic thing), and which are organized in the locally resonating information pattern field, and which we can see and even photography!

Q6 : How is it possible?

RK : Information rays are the bidirectional information rays; and they fill all spacetime, because they can pass through it without obstacles and interact with matter and energy. Every day you can watch mirror – to perceive own forms as material things or by changing their shape as appearance of their related energy. But the mirror image (*informgraph*) is only the locally resonating information spacetime (pattern field) with the any bidirectional information rays (caused by a human person), which we can see and even photograph!

Q7 : What is the physical substance of these images (*informgraphs*)?

RK : The “physical” substance of *informgraphs* (“mirror pictures”) is information itself, what means that it is the field resonance effect of the information pattern field which is generated by the human person sights, i.e. the human organism as a whole. The carries of *informgraphs* (images), as is generally accepted by scholars – are only accompanied them electromagnetic waves; and due to them they can be fixed technically (photographed). However, these *informgraphs* have the physical ability to generate (themselves) the resonance bidirectional information (sight rays) response – already to the human sense organs or technical systems (photo, video, etc. devices).

Q8 : We know that already in the thirteenth century the Polish canon and physician Vitelon conducted such observations. He investigated the rectilinear propagation, reflection and diffusion of sight and light, as well as meteorological phenomena, being interested in the mechanisms of the action of the eyes. He recognized sight, hearing, smell, taste and touch as external senses of soul; and imagination, fantasy, judgment and memory as internal senses. What is the present state of this line of scholarly attitude?

RK : The present-day progress of these issues’ studies is associated with developing the concept of Information. The latter proposes that Information is the transparent foundational constituent of Nature that acts on matter and energy by means of setting the range of their possible actualizations in evolving into a functionally perfected being. It is a medium that functions to influence, accommodate and organize all the elements and forces of Nature; and which precedes the actualization of energy and material things emergence.

Q9 : Information has no qualities (e.g., is not either hot or cold, wet or dry) and incapable of change with exception of changing the place by its natural moving in

circle; and has no contrary or unnatural motion. It is weightless, transparent, frictionless, and undetectable chemically or physically, and literally permeating all matter and space; and where only the resonance effects with the cosmic information pattern field can be visible.

RK : Informational essence of the reality links cosmic matter and energy, which are just its two aspects, and therefore – Information as the realization of the perfect idea is regarded as more important than either of them. The equation $E=mc^2$ mathematically expresses the triad of the matter-information-energy universe combining, i.e. the formation, existence and interaction of cosmic structures and processes. For example, the prolongation of the human lifespan increases the number of illnesses as the organism becomes older, e.g. cancers, obesity, neuroses, depression etc. Ageing is characterized by a gradual loss of equilibrium of internal personal state and therefore lessening the ability for self-defense and self-regulation of the person in response to the environment influences. It results in an increased state of weariness (fatigue), as a measure of own personal entropy. Humans view their own consciousness as the non-material motivation for their lives and action according to their own values of social and livelihood. A lot of information is passed on as true and correct, but not always is know who has created it and for what reason, or in what surroundings it manifests itself.

Q10 : The essence and existence of information rays and pattern everybody can prove also by your informational experiment for documentation of sight's nature. It is sufficient to look at portrait of man as real two-dimensional object from three different positions: *en face* and using the same distance from the left and the right side of portrait, doing simultaneously three photographs from perspective of observer's localization. On each photo of man *en face* and from both sides the head is seen turned towards to the position of eyes of an observer or the image sensor of the digital camera, giving three different informgraphs, which do not have even one atom of portrayed man. The same result can be seen using the mirror at which everybody is looking every day.

RK : The visible (mirror) pictures appear only thanks to resonating informational field ("pattern information") in place of observer (or his apparatus) localization, wherein the information rays coming from real object and from eyes meet together and have the identical value of their unique characters. One sight speaks more about reality than thousands words do, which are the information basis of human verbal

world. The eye sees the forms of things. In contrast to widely held belief that colors and sounds are considered to be illusions, with no reality in the world out there, Peter Heusser presented his interpretation of colors, sounds and other sensory experiences to be the ultimate effect of the cascades of physical and physiological processes which propagate from the respective objects to the sensory organs and from there via the sensory nerves into the brain³. Despite their qualitative nature they are just as real as the cascade of physical waves and physiological processes, which do not cause, but only mediate the sensory experiences that are not physical, but mental in nature. Information works always bi-directionally and moves with unimaginable speed.

Q11 : This methodological approach confirms the ontological theory of being, which treats the cosmos as an inseparable-information whole, described by the equation: $E=imc^2$. The prolongation of invisible rays of information on the principle of resonance creates an informational image of the original object (portrait) without the participation of its atoms, that is, material and energetic components. This phenomenon of resonance is commonly used in imaging the internal state of the body by means of nuclear magnetic resonance, where the electromagnetic field leads to technically resonating with only the atoms of selected elements, and their behaviour can detect cancer or the place of organ's predisposition to the self-supporting onset of cancer.

RK : Similarly, the whole person resonates to an even single word, if he understands it and wants to know how much he can use the information he carries.

Q12 : If the Information rays are bidirectional, and they fill the spacetime (passing through all obstacles and interacting with all matter and energy) – then we can propose that “*Informgraph*” is a stable (but depending on the condition of a reflected subject) cosmic configuration (construction, form, “resonance”, “resonating information space pattern field” – that has been accepted (through the interrelation with the subject), organized and reflected back to the subject); and which is primarily (so far) invisible for human senses, but capable universally subordinate all other (entire) spectrum of existing cosmic events, including the visible range of electromagnetic wavelength for humans. Such an order, at least, can explain your

³ See: Heusser, Peter (2018). “The extended mind and the objectivity of colors and sounds «out there». A new and non-reductionist understanding of sensory physiology,” *Biocosmology – neo-Aristotelism* Vol. 8, No 2 (Spring 2018): pp. 294–300.

observations over the facts, including that we see in the mirror the accurate image of a subject and the whole context, and exactly inside the mirror, not on the mirror surface (“through the looking-glass”, in the expression of Lewis Carroll); and that the eyes of portrait figures at paintings meet the eyes of those who view the portraits, and when the portrait's “gaze” follows the view of an observer.

RK : Not only views, but all human body features.

Q13: In this approach, your another core concept of the informational pattern field (that is a basis for the informgraph, your another key notion) is important; and which not only can be seen, but also photographed or captured on video. Then, you state herein that “the mirror picture” (the “informgraph” that does not contain a single human atom) is the “resonating informational field”. Then, a question is: Isn't this Information virtual coherent picture (“mirror-world” informgraph) is basically generated by the Information waves (Aristotle names them as Aether?) In this, you rightly argue that the information rays coming from any object (it is then better to use the term ‘subject’ instead of “object”)... and moving in any direction not being restricted?

RK : Yes, each Cosmic subject generates the Information rays and contributes specifically to the coherent virtual (but onward actual, i.e. tangible-Functionalist) resonating Information field constructions that further are transformed into the actual subjects-images. In this respect, the results of Peter Heusser’s scientific pursuits are significant (including those realized in the article “The extended mind and the objectivity of colours and sounds «out there». A new and non-reductionist understanding of sensory physiology” [Heusser, 2018]), wherein he states that “the mental process of perceiving extends out into the world, beyond our organism, to the objective contents of perception «out there» (*extended mind*)” [Ibid., p. 294]. In general, all this is certainly relevant to the Aristotelian concept of aether and the whole *Organon* Kosmology of the Stagirite.

Q14 : In studying the issues of Integral Biocosmology, BCA leading scholar Paul Beaulieu draws attention on the following moment of world culture: “each of the previous major periods of civilization has generated its particular definition of the «reality» that was coupled with moving forward its own (historical era) cosmology”

[Beaulieu, 2018, p. 57]⁴. At the same time, Beaulieu appreciably focuses attention on the significance of “the axial age” (the notion of Karl Jaspers) – the universal (“quasi-synchronized”) historical time, wherein the world “saw the emergence and the development of the individual self-consciousness” [Ibid., p. 58]. Further, exactly in this trajectory our contemporary (modern and postmodern) historical periods have realized “an expansion in the interest for material side of the perceived world and its related human conditions” [Ibidem].

RK : Yes, I agree; and, what is more – we can argue (in our 21st century) the world is once again at the crossroads, facing either the anthropocentric prospect of (continuing) to move (to) and achieve the aims of transhumanism (and, thereby inevitably moving to a deadlock of the death of mankind); or to generate the needed rational shift to a new naturalist (Bio)cosmological level (evolutionary stratum) of the wholesome human existence on Earth. In view of this, we have the real challenge of highlighting the significance of a ‘New Axial Age’ that would generate the new types (firstly, of the Organicist and Integralist essence) of rationality and new scientific approaches in realizing the common safe and wholesome future of Earth’s mankind.

Q15 : Referring to the Chapter 3 “Phenomenological aspect of informative Visual Radiation”⁵ (published in the book “*Information Medicine*” [2018]) and its key notion of the “information pattern field” (IPF) – we could discuss that the basis for the IPF could be the *topological resonance* (natural coincidence) of information fields of the two (many) subjects that form the environment *in situ* : How you are thinking about this?

RK : In other words, this is basically (and initially) the Informational interrelation of all the Cosmic subjects involved (*in situ*) that brings about topologically the stable (but which is essentially dynamic) resonance of the interacting Cosmic subjects’ Informational fields. In the result, this cohesive interaction generates the primary

⁴ See: Beaulieu, Paul (2018). “Looking for an Integral Biocosmology – Critical comments on the «Challenging Integralism»,” In: Bremer, Josef; Khroutski, Konstantin S.; Klimek, Rudolf and Tadeusiewicz, Ryszard (2017). “Challenging integralism, Aristotelian *entelecheia*, *hyle* and *morphe* (form), and contemporary concepts of information, touching upon the aetiological issues of carcinogenesis (with reflecting feedbacks of Paul Beaulieu, Ana Bazac, Anna Makolkin, Leonardo Chiatti, Milan Tasić and Dariusz Szkutnik),” *Biocosmology – Neo-Aristotelism* Vol. 7, No. 1 (Winter 2017):8–111; pp. 57–64.

⁵ See: Klimek, Rudolf & Szkutnik, Dariusz (2018). “Phenomenological aspect of informative Visual Radiation,” in: R. Klimek (ed.), *Information Medicine* (World Information University by Hermes), pp. 33–38.

“information pattern field” (IPF), the static (at the moment, but basically dynamic) occurrence that emerged by virtue of the topological interoperating of all (*in situ*) resonating Cosmic subjects with their life. The IPF is realized both ‘*from within*’ and ‘*from without*’ ($E=mc^2$), so it is a reason to preserve the name “informgraph”.

Q16 : Yet another question concerns the work of another leading BCA-scholar – Georges Chapouthier. But, firstly I remind your important utterances (notions, statements) that are worthy of reference: “a programmed potential morphologic-informational-energetic human life”; and “the informational program of the whole material-energetic development of the individual” – that trigger for me the associations with Chapouthier’s work entitled “Aristotelian entelechy and modern biology”⁶; and wherein he makes a general reference to the treatise of W. E. Ritter “Why Aristotle invented the word Entelecheia” [1932]⁷. In his work, in relation to the theory of evolution, G. Chapouthier states: “Here the shift is from individual, ontogenetic potential (already noted as corresponding closely to Aristotelian theses) to collective, phylogenetic potential” [p.427]. In turn, famous American biologist William Ritter stresses, in the above-mentioned paper : A) “the intrinsic «principle of motion» (growth and differentiation) appertaining to the whole process; and finally he takes the entirety, the «complete reality» – germ, material, motion, form and whatever, if anything more, there may be that is «not separable from the things themselves» and invents as a name for it the word *entelecheia*”; and B) justifies “the inclusion (as my summary does include) of the germ and all the *ontogenetic* stages, structural and functional, in the «complete reality» of a man”[Ritter, 1932, p. 390]. What are your comments?

RK: These are the verbal interpretations of information from biological points of view; but this is a true Organicist approach that certainly has a right to exist and refers to a serious scientific field.

⁶ See: Chapouthier, Georges (2018). “Aristotelian entelechy and modern biology,” *Biocosmology – Neo-Aristotelism* Vol. 8, Nos 3&4 (Summer/Autumn 2018): pp. 421-430.

⁷ Ritter, W. E. (1932). “Why Aristotle invented the word Entelecheia,” *The Quarterly Review of Biology*, 7(4): pp. 377–404.

Q17 : What is your perception of the “Functionalist-Organic Information Economy”⁸ – the concept of Prof. Alexander I. Orlov?

RK: Enthusiastic. Professor A. I. Orlov developed the new basic theory of information economy, which main aim is not only profit, but primary the needs of people! What more, he abandoned the use of the term 'future' because 'the future is now', making the recommendations to the heads of economic structures, state and municipal authorities.

Q18 : How do you evaluate the two definitions of Information: the one, given in the joint article that “Information cause is essentially the Naturalist cause, which, by nature (the “κατα φυσιν”-causality), by testing and receiving (resonating with) all the needed essential contacts and messages – thus naturally is realizing (disclosing, discovering) the inherent (substantive) solution for uniting the congeneric polarities (opposite substances) – for the given subject of life effective Homeostatic existence and the entire Functionalist (Entelechist, Ontogenetic) Self-evolvment”⁹; and the classical one, of Claude Shannon that “information is the quantity of information produced by a source – for example, the quantity in a message – by a formula similar to the equation that defines thermodynamic entropy in physics”; and wherein, “in its most basic terms, Shannon’s informational entropy is the number of binary digits required to encode a message.”¹⁰

RK : We both as physicians have introduced to medicine the very useful thermodynamic concepts by informative recognition of morphological and energetic changes concerning human life, but separating applied medicine (practice) from its theoretical basis of understanding etiopathogenesis of diseases and monitoring of personal health span. By analogy to living subcellular forms of life to theoreticians we have to do the same with different applied and theoretical informations.

⁸ Alexander I. Orlov, Alexander I. (2013). “Functionalist-Organic Information Economy – the Organizational-Economic Theory of Innovation Development,” *Biocosmology – neo-Aristotelism* Vol. 3, No 1 (Winter 2013): pp. 52–59.

⁹ Khroutski, Konstantin S. & Klimek Rudolf (2018). “Biocosmological definition of Information and its Naturalist causative significance, approaching to evolve the World Information University (WIU),” *Biocosmology – neo-Aristotelism* Vol. 8, No 2 (Spring 2018): pp. 203–261.

¹⁰ Cited at: Collins, Graham P. Claude E. Shannon: Founder of Information Theory. *Scientific American* (October 14, 2002) URL: <https://www.scientificamerican.com/article/claude-e-shannon-founder/>

Q19 : What is the role of the biological and medical knowledge in the emergence of your *Information medicine* concept and its formula $E=I\mathbf{MC}^2$?

RK : Medicine is one undivided human knowledge with its own foundational bases (but, yet, which have not been identified; therefore medicine, so far, although realizing a purely scientific activity, but it also has a pronounced applied character) – therefore we do need to develop further the biomedical theoretical principles how to protect or restore health and simultaneously putting them into practice; and Information medicine is among the contemporary challenging and advanced conceptual and practical endeavors. In this way, one hundred years after the postulation of the famous equation $E=mc^2$, medicine has finally been forced to acknowledge the information besides the matter and the energy in new equation $E=I\mathbf{MC}^2$

Q20 : The neoplastic disease (cancer) remains very topical : What is the significance of your and colleagues' Information medicine approaches to resolving this urgent problem?

RK : Neoplasms self-organize from the cells of the patient, who did not provide the necessary conditions for cellular metabolism as defined in the moment of appearance of its zygote. Essentially, the neoplastic disease is caused by a neoplasm which is a different, thermodynamically more efficient, biological system than the host organism tissue which it originates from. The task of medicine, therefore, apart from destroying the existing neoplasm, is to remove dissipathogenic areas in the body, as the causes of neogenesis. In turn, dissipathogenic states are diagnosed by clinical symptoms and disorders as well as nucleomagnetic imaging, taking into account the hereditary and socio-economic factors. Quantum thermodynamics combines matter, energy and information while technical quantization in a novel way differentiates precancerous states as the dissipathogenic ones from the neoplasms as the newly formed dissipative structures.

Other directions of effective treatment, through using the naturalist approaches (within the general route of *Information medicine*) are immunotherapy (as the use of *Lactobim-vaccine*); and neuroendocrinal normalization of the patient's homeostatic physiological status¹¹.

¹¹ In detail, see: Klimek, Rudolf (ed.) (2015). *Psychoneurocybernetic conquest of carcinogenesis and cancers*. New York: Nova Science Publishers; as well as the book "*Information Medicine*"

And, *instead of a conclusion* : What are the perspectives of your Information concept and its $E=MC^2$ -formula evolvement in the 21st century?

RK : Now, the existence of information rays coming from the body may be used to explain the mysterious image found on Turin Shroud, because the even presently known techniques itself are unable to produce an image having its most critical characteristics. Similarly, the theory of cosmic beings has to explain many medical problems.

Prepared by Konstantin S. Khroutski
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[R. Klimek (ed), 2018], which revised version is published in the *BCnA_Vol.9_Nos.3&4* – are the relevant resources on the afore mentioned issues.