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INNOVATIVE PROCESSES IN THE REALITY OF VIRTUUM: ONTOLOGICAL ASPECT

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INTRODUCTION

Human beings are fundamentally incapable of existing in literal reality and in the usual model of space-time due to the complexity of inherent mechanisms of world perception. Therefore, his intellect and imagination, figuratively speaking, "draw" ideas and then embody them in their various variations. The constructed artificial society is filled with spiritual, material and virtual things, which is the quintessence of creative interaction of philosophy, science, art and religion. We are talking, first of all, about the best embodied ideas in the history of mankind.

In any case, any idea is partly virtual one because it is in its primary form a figment of the imagination. The reality of the virtuum as an imaginary world, therefore, depends on the inexplicable capacity of the imagination to create ontologically distinctive, mostly unreal and rich worlds.

In our opinion, the modern philosophy of the virtual world cannot be associated exclusively with the integration of Man and Machine, with the emergence of a fundamentally different type of information space and communication, the Internet, as well as with attempts to model computer realities. It now encompasses such communication models as: "Man-Man, Man-Machine, Machine-Machine".

The virtuum can also be understood as a broader phenomenon that goes beyond virtual reality. Rather, it appears to us as an infinite virtual world, as the totality of ideas in the triad "*past-present-future*".

In the plane of modern philosophical ontology, such new directions as philosophy of the virtual world, technosophy, experimental metaphysics, and virtualistics have emerged. This indicates that man's attitude to reality has changed qualitatively. He now looks at the world through technology, because "living" eyes are not adapted to fully perceive the Universe in all its literal manifestations. For this purpose, mankind has formed an innovative environment that allows us to live better and more efficiently.

As far back as the Bible and more ancient writings, "wisdom" and "technology" have been creatively interacting since the beginning of the creation of Genesis. It is God who creates the primordial universe. Technology is presented as a means of knowing and reconnecting with the wisdom that created Man himself. This is displayed in another triad: "*God* –

Creator of Nature" – "*Man – sacral creation of God*" – "*Techniques – artificial creation of Man*".

Today, there is a certain set of theories and practices, approaches, concepts that allow reproducing various images of the virtual world. At the same time, it can be stated with certainty that such a world already exists in reality.

The ontological approach allows this study to clarify "whether virtuum exists as a reality". This approach also helps to introduce a clearer interpretation of the following concepts: virtuum being, virtuum structure, virtuum properties, forms of virtuum being (material, ideal, virtual, spiritual, mental, creative), virtuum space, virtuum time, virtuum movement.

The ontological approach, thus, is an attempt of the most general description of virtuum, existing as a special reality of society.

"Virtual world" can be understood as a special separate sphere of being, a set of multi-versus, surreal-possible worlds combining fictitious and real, fantasy and embodied, simulacrum and authentic qualities. The virtual world is at the same time a product of innovation. The virtual world is one of the possible levels of psychical realities, as well as potentially existing realities.

The virtual world is not entirely a "technical body", which is usually identified with the possibilities of modern gaming computers, the Internet or cinema. Its final image is also only partly a picture of the world, in which copies of various things, processes and characters are portrayed more or less plausibly, and the environment is presented as a spectacular imitation of "real life". The virtual world becomes something more, going beyond its technical limits. Technology will be only a tool of the future, increasingly filigreed, capable of realizing any aberration of our imagination.

Based on the mentioned above, ***the aim of this study*** is to ontologically conceptualize the phenomenon of virtuum in the context of techno-gnoseology in the triadic variation of "*metaphysics-psychophysics-techno gnosis*".

1. The phenomenon of virtuum as a metaphysical reality

A uniform understanding of the phenomenon of virtuum being has not been achieved so far. In general, being a virtuum covers questions about the nature of virtual reality, its interaction with objective and subjective reality, as well as the process of its formation, its influence on people's practical activities.

There is no clear outline about the being of virtuum, but the concept of "being of virtuum" is comparable to other concepts: "virtuum existence", "virtuum reality", "virtuum space", "virtuum time".

The being of virtuum can be considered by analogy as the broadest and most generalised abstraction, uniting on the basis of existence the most diverse

virtual phenomena, objects and processes: their properties, connections and relations; virtual human communities and individuals; their virtual avatars; virtual social institutions; virtual states of human consciousness; people-creators; (philosophers, scientists, musicians, artists, poets); virtual phenomena of the spirit; subjective virtual reality; virtual being of spiritual or ideal order; concrete, material virtual being; computer reality.

Virtual existence encompasses everything that existed, exists and will exist, i.e. objective and subjective virtual realities. Computer environment, computer person, his thoughts, ideas, computer community also co-exist. Different in content and properties of their existence, these digital realities form a holistic, unified virtual existence, primarily due to their existence.

However, virtuum as an aspect of virtual existence also includes non-digital forms: thoughts, ideas, images, fantasies, dreams, imagination. In combination with digital virtual being, virtuum is defined as an infinite, existing in space and time, as well as outside of space and time reality, combining its ideal, spiritual, virtual metaphysical facets. Limitations in terms of seeing the world exist only in human consciousness. However, if imagination is used, the possibilities of such "virtual vision" become limitless.

There is a kind of metaphysical symmetry in virtuum, which ensures the correspondence of the creative centre of personality to universal spiritual structures, invariance manifested in the process of innovative transformations (accumulation of creative energy, information, technical experience). In virtuum metaphysics, the symmetry of a physical system is some of its permanent property that preserves its archetype as a sphere of civilization and culture of a new level.

It is our opinion that the problem of interaction is a key question within the broader inquiry into being. It also defines the essence of the modern concept of the Universe. The phenomenon of interaction is multifaceted. Firstly, it reveals reality as the quintessence of its infinite incarnations. Furthermore, it describes the configuration of the social matrix in its dynamics; captures the continuous variability of reality. Finally, it actualizes the necessity of maintaining balance in nature, as well as preserving the harmonious dualism of human bodily and spiritual constructs. Interaction is an abstraction because it is difficult to provide its precise and complete interpretation. In our opinion, interaction can be understood as an antinomian opposition, manifesting harmony and contradiction, balance and conflict; illustrating compatible and incompatible relations. Interaction can be considered in terms of symmetry and asymmetry. On the one hand, symmetry reflects the existing order in nature, proportionality and commensurability between the elements of any system or object of nature, orderliness, balance of the system, stability. That is, it brings some element of harmony. Asymmetry, on the contrary, reflects disorder of the system,

disturbs the equilibrium, which is associated with change, development of the system. Asymmetry contains the characteristics of the distribution of random variables. Thus, the developing dynamic system should be non-equilibrium and asymmetric. That is, interaction is supposed to be a constructive, active creative mechanism of the Universe[1].

The non-existent part of being is non-existence. Non-existence also preserves the metaphysical symmetry of virtuum, ensuring the equilibrium of the *dyad* "*being*" – "*non-being*" as fully existing realities. Virtual reality can depict non-existence, define it. Virtual being embraces non-existent phenomena, or being in potential reality, in relation to the future, or they are really possible sometime, or they are fundamentally impossible in principle (these are magical, mystical, fantastic phenomena).

Consequently, the being of virtuum exists first of all as a spiritual reality, as a sphere of fantasies, fairy tales, myths, legends, utopias, fantasy, as a set of images defined in books, visualized in paintings and computer digital images, in scientific ideas, theories, concepts, pictures of the universe.

An innovative idea is a special form of reflection of reality, which consists in the creation of new images by recycling, on the one hand, already existing ideas and concepts in the process of accumulating experience. The birth of ideas becomes mediated and deliberate if scientific cognitive work is carried out. On the other hand, an innovative idea is a product born out of experience. It can be argued that it is a metaphysical creation.

In this regard, J. Habermas in his article "Postmetaphysical Thinking. Between Metaphysics and Critique of Reason" mentions that the most important endeavour is the endeavour to understand the unity of the individual as a special process. To this, in his opinion, positivism and historicism respond with a renewed scientific-theoretical turn, which can be observed today in contextualism of one variety or another[2]. The author, however, realizes that true innovation depends on the metaphysical nature of the individual as a person.

The development of an innovative idea is accompanied by the perfection of operations of substitution of real objects by imaginary pictures. In this case, in the process of creative search or "immersion" in the opaque atmosphere of the mental unconscious, imagination creates images of objects and phenomena that have never been perceived by a person before or do not

[1] Kharchenko J., Kvasha A. Principles of interaction in the topology of antinomies (ontological deconstruction of the social matrix). *Вісник Національного авіаційного університету. Серія: Філософія. Культурологія*. Вип. 1 (39). 2024. С. 16.

[2] Габермас Юрген. Постметафізичне мислення. 111. Між метафізикою і критикою розуму. *Філософія освіти*. 2012, № 1-2 (11). С. 29.

exist in nature. The content and configuration of these images are enriched and transformed intuitively, spontaneously, in moments of inspiration.

With the help of these abstractions we can analyze phenomena, processes, events. By extrapolating the images of these abstractions, it becomes possible to experience the metaphysical world (the world of mathematics, astrophysics, transcendental philosophy is highly abstract). In this regard, J. Habermas rightly argues that metaphysics is a philosophical doctrine of the ultimate super-experiential essential principles and foundations of being, cognition, culture, society and history. Metaphysical thinking is always a thought about the whole, capable of covering with its concepts the fundamental questions of human existence, culture, place in the world, society and history[3].

The virtuum as an infinite imaginarium connects incompatible facets of existence: the real and the unreal; the imaginable and the unimaginable; the logical and the illogical; the corporeal and the incorporeal. Innovative ideas are formed in the process of mental construction of abstractions, the primary images of which do not exist in reality. These abstractions, based on the modern understanding of quantum reality, practically do not reflect the usual essential sides, connections and relations of the objective world.

These abstractions are interwoven rather like a kaleidoscope of "pure ideas". Such ideas are sublimated: 1) in the highly 'subtle' spheres of literature, architecture, music, painting; 2) in the plane of extremely abstract phenomena of philosophy and religion; 3) in the numerical texts of mathematics, astronomy, engineering, cosmonautics, cybernetics, quantum physics.

The virtuum is the intersection of different levels of being: material, spiritual, virtual. It also represents a new milestone in the development of culture. The virtuum becomes a culture of a new level, which is not only a product of people's imagination and creativity, but also of great importance for the development and perfection of man as a species. In such a model of culture, if it takes real shape, spirituality, morality, science, technology, cybernetics, cosmonautics, religion, and art will interact harmoniously. Then man will go far beyond the limits of everyday life and overcome the barriers of space-time.

The innovation process in virtuum architectonics is a reflection of reality in perspective, which will allow us to perceive the future as a set of all possible changes. Such a set of alternatives is a process of transformation of new variations and combinations from already established constructions into new constructions.

[3] Габермас Юрген. Постметафізичне мислення. *Філософія освіти.* 2010, № 1-2 (9). С. 77.

2. The phenomenon of virtuum as a psychophysical reality

The psyche is the controlling system of the human organism, and the central nervous system is presented as the key system of regulation and self-regulation. It is these mechanisms that perform unconscious functions of controlling physiological processes and reflexes. However, there are irrational facets of the psyche that cannot be concretized.

Imagination, dream, fantasy are highly necessary aspects of the psyche of a person who has risen to the level of virtuum. Imagination plays a significant role in the construction of images and social structures. It is only through imagination the virtuum can exist as a special spiritual platform for creativity. It is an infinite world in which a person searches for itself, reasonably plans and manages its intellectual activity.

In virtuum as imaginarium, having a rich imagination, a person can "exist" simultaneously in different realities at different times. The present is filled with emotional search, creative experience, the past is fixed not only in memory images, arbitrarily resurrected by willpower, but also in digital computer storages. The future is represented not only in dreams and fantasies, but also in fantastic, computer-modeled pictures of the universe.

Imagination as a special form of human psyche is different from other mental processes and plays a key role in the construction of virtuum. The special value of this psychic process lies in the fact that imagination is the quintessence of human creative stimuli and it is not quite clear how imagination is able to play in any particular case at the moment of creative insight. "Imagination play" is not a regular feature of the life activity of a biological organism. In nothing else but imagination does the ideal and mysterious character of the psyche manifest itself. Imagination is switched on only in the process of creative flight of an idea generated by imagination and intellect.

Mankind still knows almost nothing about the mechanism of imagination, in particular about its physiological basis. There is no answer to the question whether imagination is connected with the work of various structures of the nervous system. However, as a spiritual structure in the context of its philosophical understanding, imagination is a generator of new ideas.

Imagination was practically displayed in its pure form in archetypal scenarios of ancient myths, legends, religious rituals, so the researcher's desire to understand and explain it has not lost its relevance even nowadays. Imagination is developed in the process of innovative human activity, especially in the sphere of artistic and scientific creativity. Without imagination it would be impossible to progress in science, art and technology.

The activity of imagination does not always correlate with the real reality. The practice of existence of the virtual world is the criterion of demonstration of virtual objects. Digital or artistic materialization of images

as derivatives of imagination allows to concretize all kinds of ideas of the author. And even the most inconceivable forms of ideas in the digital frame become clear, definite, and real.

The value of imagination is that it allows us to make an innovative decision and find a way out of a problem situation even in the absence of full knowledge.

The human mind is not capable of inactivity in principle, so constructive ideas of innovative properties arise in moments of rest or in sleep. Thehuman brain continues to function even when it is abstracted from unnecessary information. It is exactly at such moments that imagination is switched on. That is, it is impossible to stop the flow of thoughts, to stop imagination, to stop heuristic work at will.

The innovation process, therefore, is accompanied by the setting of constructive creative tasks involving non-standard solutions. This approach implies the development of critical thinking and the ability to deeply analyse phenomena and events.

The ability to produce innovative ideas involves certain emotional states and is related to psychoanalysis. With the help of the imagination a person realises cognitive intents connected with the intense work of intellect. Creation of innovation elements is connected with participation of imagination in arbitrary regulation of cognitive processes and human states.

With the help of imagination a person can control many psychophysiological states of the organism, adjust it for the forthcoming innovative activity. In its inventions a personal original identity can be seen.

R. Brubaker, analyzing the phenomenon of identity, emphasizes that identity understood in the strict sense as implying exclusive, unchanging, fundamental identity, usually means too much; and identity understood in the weak sense as multiple, fluid, fragmented, contractual, usually means too little[4]. The researcher argues for the contextual replacement of the notion of identity by the processual notion of self-understanding, the meaning of which is actualized in innovation activities.

The virtuum functions harmoniously under the condition of building a special innovative environment in which qualitatively new ideas and projects collide, and the prerequisites for the free formation of science, technology, culture, art and spirituality are formed. Creative imagination manifests itself in such a case in the form of new images arising as a result of a special human intention to imagine something definite, concrete and surprising in terms of effective future.

[4] Brubaker R. Ethnicity without Groups. Harvard University Press, 2006. 18–19 p.

The innovation process involves: 1) formation of an internal action plan; 2) intellectual engineering; 3) programming of life processes; 4) stimulation of cognitive activity.

In digital computer reality, *agglutination* literally takes place, which works when different parts that are not connected in everyday life are "glued" together and an unusual whole is created (for example, in sculpture the sphinx, in mythology the centaur, in cinema the spider-man). There is also *substitution,* namely masking of real objects by virtual objects (virtual houses, virtual inhabitants, virtual trees).

Revitalization is the process of replacing a person who died in real life with his virtual double. Event *modeling* involves playing out separate scenes in the future in order to check perspectives, consequences (virtual galaxies, virtual black holes).

Computer-based virtual reality is capable of simulating the opposite of the light and comprehensible world, the dark beyond, in which dreams become vivid.

In virtual reality, dreams are not passive and involuntary forms of imagination. Dreams begin to live a very real life of their own. Technically, they can be embodied in living images and even studied, given that their true role in human life has not yet been established.

In dreams, a person can live a dreamer's life alternative to the ordinary reality, which the virtual world partially copies, imitates. If dreaming is seen as a natural "escape" from reality, the virtual world is capable of satisfying the most unexpected needs of the dreamer's psyche.

There are other types of imagination that literally "come to life" in virtual computer reality as good or evil digital creatures. These are hallucinations, reveries and dreams. Hallucinations occur as fantastical visions that appear to have no connection to the reality surrounding the person. Usually hallucinations are the result of disturbances of the psyche or the workings of the body and accompany many painful conditions. However, their nature also remains unsolved.

The main question remains open, it is formulated as follows: what allows prophets, artists and writers to see hallucinations and create such images? Realistic enough are the entities in the Gothic novel "The Strange Case of Dr Jekyll and Mr. Hyde" by Robert Stevenson, published in London, in which a sinister doppelganger is given free range of action thanks to a split personality caused by an invented substance.

Reveries, unlike hallucinations, are a psychic state more natural for creative people, an emotional manifestation of fantasies associated with the desire to aestheticize, idealize events, people and the future. Reveries often precede poetry.

Dreams are more realistic than daydreams and are more connected to reality, so in principle they can be realized in the future. Dreams are intertwined with imagination, which is able to draw any images in the mind, regardless of events. Cognitive as well as innovative activity is practically impossible without dreams.

That is, dreams are not only a natural state of imagination, they are a prerequisite for artistic and scientific creativity. A dream presupposes complete freedom of thought; hence technically it can be fitted into reality in any form and in any future direction. If the imagination is directed towards the future, it can be perceived as a dream.

The question of the origin of the dream phenomenon also remains open. However, in literature, mythology, history of science the place of dreams has always been essential and central. Dream is a precursor of scientific discoveries and inventions, a necessary condition for the realization of human creative forces aimed at innovative transformation of reality.

The dream is presented as a compelling motive for cognitive activity, the final completion of which may be delayed in time, but at the same time, is realized as an innovative idea that has led to a significant advance in science.

The things that surround a person contain the innovative potential accumulated historically, and even in the most ordinary object the dreams of many generations of people are concentrated. The virtuum combines dreams imprinted in things and innovative ideas that cannot be realized in the current moment because they can only be realized in the future. The more antique things are, the more essentially they are transformed, and therefore they belong more to the distant fantastic future.

In the present time, objects of the past or future can be defined if their digital or textual similarity, their double in the computer virtual reality or in painting, literature, and architecture is fixed.

Each new scientific advance, modernized enterprise, improved production activity satisfies human needs only at first, but over time they require transformation. Only Plato's "world of ideas" as a realm of pure substances is absolutely perfect, but the "world of things" shows significant flaws that need to be corrected throughout the present and all subsequent history.

A person can only dream of an ideal maximally comfortable life in a maximally technological world. Technology is being introduced into practice more and more intensively, but the more opportunities and benefits are produced, the more chaotic life becomes due to dissatisfaction.

Another question arises: can dreams disappear in people who are endowed with considerable wealth? When dreaming, a person always creates an image of what he or she wants. If material needs are fully realized, dreams take on a different meaning. In the midst of material gains,

disturbing visions can take root, giving rise to feelings of anxiety, dissatisfaction, and depression.

The virtuum as a centre of innovative processes, as a giant imaginarium, natural to creative people, is aimed at constructive interaction between creative people, seeking to build a holistic architectonics of a new level of the future.

According to W. Hosle, it is the ignorance of the future that is the necessary condition for human freedom and thus for responsible action. The idea of rights and moral presumptions, and even other ideal values, are transcendent in relation to empirical reality[5]. The author emphasises ideal values rather than social values.

The new level of the future as a result of the introduction of innovative technologies is presented rather as a "new vision of life". This model of virtuum existence envisages radical changes in working and leisure conditions, seeks to intensify creative and scientific activity and achieve rapid and productive practical results.

New ideas are always directed towards the future, so their contemporaries do not always witness their realization, even if these ideas were born by the minds of intellectuals of the past. Often a scientific discovery is not perceived by the ordinary mind as a lightning-fast value that changes reality.

Innovative ideas, which a person creates in dreams, if they are recorded and understood, are accompanied by an emotional upsurge; they make the innovator stay in continuous tension and experience. Very often the search for such an idea is conducted blindly. However, as a result of fixing a heuristic idea, a person feels inspired, which helps to see the future.

The role of fantasy in the virtuum of innovation is the most significant and mysterious. The phenomenon of fantasy appears as an exclusively spiritual plane of the psyche. Fantasy contributes to the construction of a picture of the world to which practically nothing corresponds to reality. However, scientific pictures of the world, which existed in the history of scientific thought, were built with the help of fantasy and were impossible without it. This is the paradox of fantasy as a phenomenon and as a product of imagination.

A necessary condition for the existence of virtuum as an imaginarium is the presence of fantasies, as they radically change the appearance of the entire social reality reflected in consciousness. Even if we take computerized virtual reality out of brackets, fantasy contributes to transposition because it juggles elements of reality, reshapes reality.

[5] Hősle Vittorio G. Moral and Politics. Notre Dame, Indiana: University of Notre Dame Press, 2004. 541 p.

Without transposition it is impossible to construct the realities of politics, culture, economy, and the whole society. In technical terms, virtuum is constructed as pure transposition.

Characteristic features of transposition are especially manifested in literature: The combination of two parallel worlds – the world of humans and the world of creatures in the wardrobe in Clive Staples Lewis' The Chronicles of Narnia, the coexistence of the ordinary world and the looking glass in Lewis Carroll's Alice in Wonderland, the coexistence of two Englands – ordinary and magical in Joanne Rowling's Harry Potter, the presence of two countries – a large human and a small magical one in Ernst Theodor Amadeus Hoffmann's The Nutcracker. In the computerized virtual reality, transposition becomes the norm of life.

As a key condition for the perception of social-historical and cognitive experience and as a key factor in the formation of an intellectual creative personality, the fantasy is a value that is important not only to develop, but also not to lose in the future.

There are threats that can suppress fantasy as such: 1) loss of creative and cognitive stimuli; 2) lack of interest in reading and science; 3) shutting down the ability to imagine and dream.

In such a case, a person can only exist as a function, which poses significant threats to the very meaning of its existence as a creator.

If modern people continue to be guided by a consumerist attitude to life, the future will become "one-dimensional" and flat. The principle of virtuality provides for the development of science and art. The absence of multiple realities in human consciousness and the disabling of the constructive mechanism in the unconscious, which is responsible for the ability to fantasize, impoverish the personality, leveling fantasy as a therapeutic function of psychic structures.

Fantasia, which contributes to the construction of fantastic worlds, serves as a psychological "shield" behind which a person can hide from the harsh reality. Having common sense, a person is unable to live fully outside the virtuum as an imaginary world.

3. The phenomenon of virtuum as a reality of techno gnosis

Modern techno-gnoseology includes philosophical, scientific and practical branches. In the near future, this sphere of philosophy as a complex scientific discipline, studying problems including virtual reality, will start an interdisciplinary dialogue of technology with art, philosophy, religion, culturology, mythology, psychoanalysis, psychiatry, neurodynamics, cybernetics, cosmonautics, modeling, futurology, theoretical physics and other fundamental and humanitarian disciplines.

Partly this dialogue already exists in reality; partly its results are described in science fiction, for example in the cycle of stories "I Robot" by Isaac Asimov.

L. Shashkova rightly notes that the development of science of the XXI century actualizes the study of situations in which the boundaries of disciplines become flexible and the issues of combining truthfulness and practical utility arise. This state of affairs is explained by the changing nature of science, which goes beyond laboratories and crosses disciplinary boundaries, carrying out a transcending movement into the borderlands with the life world, responding to the demands and requirements of the practical and applied sphere. Such requirements are met by the methodological strategy of transdisciplinarity, which not only crosses disciplinary boundaries, but also ensures the unity of knowledge beyond scientific disciplines, without going into the distinction between the concepts of "interdisciplinarity" and "transdisciplinarity"[6].

It should be noted that there is a discrepancy in the understanding of the phenomenon of technology by philosophy and science. Philosophy of technology has become one of the most important branches of philosophy, covering various approaches to understanding the being of technology in the context of comprehension of the phenomena "technology", "innovation", "new".

At the same time, such sphere as "techno-gnoseology" ("techno" – art, skill, craft + "gnosis" – wisdom, knowledge + "logos" – word, meaning, doctrine), which studies the spiritual, material and virtual facets of technology as a subject of research, is distinguished from it. Also techno-gnoseology in the form of one of its branches "technosophy" reveals the connection of technology with metaphysical, theological, mystical dimensions of being.

The question of this area of philosophy also actualizes the problem of compatibility of technology and metaphysics, and focuses attention on the role of the spiritual man trying to survive in a technotronic robotized digital society.

Philosopher V. Tabachkovsky once noted that spirituality is not reducible to mental, cognitive abilities, because the totality of the essential forces of man appears as a harmony of feelings, reason and will, and when we have disharmony it is evidence of one-dimensionality[7].

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[6] Шашкова Л. О. Трансдисциплінарні перспективи експериментальних практик наукового мистецтва. *Вісник Національного авіаційного університету. Серія: Філософія. Культурологія*: Збірник наукових праць. Вип. 2 (26). 2022. С. 39.

[7] Табачковський В. Г. У пошуках невтраченого часу. К.: Вид во ПАРАПАН, 2002. С 29.

Science, although it appeals through philosophy to the creation of a "pure machine" with perpetual motion, it dissects and modernizes the already existing instruments on the basis of their purely mechanistic properties. E. Berman emphasizes that in the second half of the twentieth century there was a significant deformation of traditional forms of organization and conduct of scientific research, as intellectual property rights were significantly expanded and academic science was reorganized in the direction of reorientation towards commercial activities. In general, these changes are referred to as the economization of science and science policy[8]. This has led to a crisis in education. The economization of science has created a total loss of incentive to discover the world.

It should be noted that technology is directly related to intellectual and creative activity of man. Replacing biological components of the organism, man goes beyond himself, and also dreams of penetrating beyond the boundaries of the universe. For this purpose he creates, apparatus, transport, complex devices. Techniques is presented as a set of embodied ideas transformed into a machine organism. Technology is more like a living thought, spreading as a system of knowledge of teachings, skills.

Technique is continuously modernized through scientific knowledge, use of the power of intellect and creative stimuli to: 1) carrying out the processes of production and servicing the non-productive needs of society; 2) facilitating and increasing the efficiency of human labor by partially replacing humans with computers, artificial intelligence; 3) expansion of human biological and physiological capabilities through innovative technologies – space, genetic, cybernetic, nano; 4) liberation (partial or complete) of man from heavy physical work in production or in space, complete replacement of man by a machine (robot, bot).

A robot as an artificial creature is an alternative to a man. In the science fiction world, a robot can be a friend, a helper, a professional. All sorts of robotic machines are already used in manufacturing, but humanoid robots are new in the service sector. Ultimately, the robot is a familiar phenomenon, thanks to literature and science.

Although robots have not yet become fully anthropomorphic, separate parts of such robots are being created – various technical devices providing interaction between people and virtual reality (3D glasses, 3D helmets, simulation rooms, electronic gadgets, electronic vehicles, self-service machines in supermarkets and other services). There is a rapid development of information technologies and the Internet.

[8] Berman E. Not Just Neoliberalism: Economization in US Science and Technology Policy. Science, Technology and Human Values 2014. № 39 (3). P. 402.

Simulators, like robots, as software and hardware, simulate reality by displaying part of real phenomena and properties in a virtual environment, and are also used in the control of a process, apparatus or vehicle. Simulation is also used in scientific modeling of natural or human systems to gain insight into their functioning.

Just as the robot body imitates the functions of the human body, the "virtual body" is superimposed on the "social body" and becomes a new full-fledged dimension of it. Therefore, we propose to understand technology as a set of additional artificially created material means and tools arming the human body (cars, ships, airplanes), its brain (computers, computers), and sensory organs (glasses, telescopes, microscopes).

Technology is a historical process of accumulating experience, going beyond the limits of human capabilities through the "objectification" of labor functions, artificial language, skills and knowledge.

Technology, responding to the spiritual needs of man, creates artificial intelligence as a virtual collective mind, a kind of digital organism capable of existing in virtual space and virtual society. Man can control such space with the help of brain processes, and in the future, as is assumed, with the power of thought.

The control process can be considered as a program giving a direct command to an object, the object performing an action, sending data about the action back to the program, and the program's reaction to the received data. In fact, any control is a two-way flow of information. In this way, the machine learns to "think", but at its own, incomparable level.

In the presence of artificial intelligence, the question of identifying not only a machine, but also a person arises, since it is unknown whether there will be differences between them. The issue of analyzing the concept of "identity" is raised in his works E. Erikson, who, in particular, talks about its loss[9]. The researcher characterizes identity as a subjective feeling of integrity, which is formed through the processes of observation and reflection. An individual evaluates himself from the point of view of how (in his opinion) others evaluate him. At the same time, he perceives such evaluations from the point of view of his own judgments about himself [10].

The idea of a biological organism as a prototype of a machine is not new, but it is becoming key to modern science. The living organism and the brain are considered by cyberneticists as examples of the technical work of nature and prototypes of future biotechnologies. The product of innovative technologies would be new organisms created on a quantum basis or neural

[9] Erikson E. H. Identity, Youth, and Crisis. London: W. W. Norton & Company, 1994. 120 p.

[10] Erikson E. H. Identity and the life cycle. London: W. W. Norton & Company, 2009. 100 p.

networks of the brain that can be connected with electronic communication networks using chips (then "intelligence" will be formed as a property of intelligent systems that perform creative functions).

Technology is no longer perceived psychologically as a soulless mechanism. For example, the films "Transformers", "Real Steel", "Chappie" are perceived as a future in which people and machines coexist. Moreover, modern man has long been psychologically ready for "reviving Frankenstein".

The machine is not only biologized, mentalized, but also becomes an attribute of culture and aesthetics. Ultimately, man becomes part of the virtuum as a plexus of

spirit-matter-technology. The virtuum is a condition for the existence of the intellect under the condition of the dominance of consciousness and the moral principle over material existence.

At the moment of his appearance on the planet, man went beyond the limits of his biological species, since he was endowed with intelligence, fantasy, imagination, creative potential, and the ability to perceive the world through the prism of ethics and aesthetics. Remaining within the limits of biology only physically, in the current conditions of technical life he perceives the world even more at various systemic levels – physical, chemical, genetic, including virtual, and transforming it with the help of new generation devices within the framework of the triad of "micro-, macro-, mega systems".

Innovative technologies nano-technologies; biotechnologies; information technologies; linguo-technologies, cogno-technologies, cyber technologies are still difficult to classify due to their exceptional novelty, however, they raise technology to the level of art of arranging unearthly things.

No less relevant is the problem of simulation in the reality of virtuum as a futuristic construction. Simulation as a key concept of postmodern philosophy, records the process of total semiotization of being, in this study it is shown that virtuum also becomes a symbolic sphere, gravitating towards symbolic self-sufficiency, however, the spiritual principle is the essence of the symbolism of virtuum.

Virtual reality in the social virtuum also plays a narrowly applied role, since it is a copy of constant reality. Sometimes it is a play of the imagination, a constructive, creative illusion (animated images of inconceivable characters created in cinema and literature), and sometimes it is a fake, a simulation, an imaginary plausibility (conscious distortion of the truth). As much as art and creativity are eternal, so computer virtual reality is finite. Thus, the virtuum, as one of the dimensions of society, is a fixer of various moments of materialization and embodiment of ideas (in science and technology, literature, music, architecture, cinema, and computer space), in comparison with which, computer virtual reality is almost completely devoid

of spirituality. The spiritual virtuum is connected with the inner world of a person, its intellectual activity, feelings, and thoughts[11].

If the virtuum develops constructively, with maximum consideration of the creative, intellectual, spiritual needs of the individual, then simulation does not seem to be a negative phenomenon. When creating futuristic compositions in painting, literature, cinema, the gaming world, simulation is used to imitate various physical processes and phenomena with the help of artificial systems.

It is also about computer "simulation modeling" using the latest innovative technologies. Simulation is also used when the real system cannot be used because it is unavailable, or unacceptable for participation in real life, or it is designed but not yet built, or it cannot exist in nature in principle.

We have already said that imagination in its originality and fullness is filled with simulacra, namely images that significantly renew the entire structure of society. A simulacrum as a likeness or copy of an idea first captures an approximate outline of something that does not actually exist. Then, in the process of objectification, an image of the thing is created. This can be a photocopy, a portrait, a drawing-description of a character from a book, a photo fit. The simulacrum also becomes a digital creation, concerning any things and meanings. The simulacrum has always been the core of the myth, its archetypal-symbolic basis.

In most ancient philosophical concepts, there is a line about the primacy of abstract ideas in relation to secondary things. In Eastern philosophical systems, there is eternal life (death is only an illusion). Heraclitus (everything that exists is unclear), Democritus (only atoms and emptiness exist, the rest is an illusion), Zeno (motion does not exist), Pythagoras (only numbers in the infinity of their combinations are real), Plato (the objects we see are only shadows) spoke about the illusion of everything that exists.

In medieval philosophy, only the Kingdom of God is real, and the rest is an illusion. In modern philosophy, thinking is primary in relation to existence. In modern philosophy, there is no single reality, everything is multiple in the quantum space-time continuum.

Simulation can also have a negative connotation. In everyday life, it is generally accepted that simulation is the creation of an appearance or pretense, which involves the use of a targeted action to deceive, trick, or cheat in order to gain an unfair advantage.

In the digital community, social networks use "bots" to fraudulently extract personal data and money from users. To make the simulation look realistic, the program adapts to the perception, interests, and preferences of

[11] Kharchenko J., Kharchenko S. Spiritual virtuum: the interaction of the finite and the infinite // *Вісник Національного авіаційного університету. Серія: Філософія. Культурологія*: Збірник наукових праць. Вип. 2 (36). 2022. С. 30.

network users, creating virtual objects that increasingly influence their minds and consciousness, since in the world of illusions they receive almost everything.

Each stage of development of society was historically accompanied, on the one hand, by political, economic, socio-cultural transformations. On the other hand, society changed as a result of the activation of innovative processes in the sphere of science and technology. That is, any model of society in which man exists at a certain point in time is, in principle, not perfect, but at the same time it changes its appearance significantly. The Internet as a technical means that ensures the functioning of computer virtual reality, one of the sides of the virtuum, is also not a perfect device.

However, even taking into account the embryonic state of the Internet idea, we can talk about significant changes in man, contributing to the emergence of a civilization of a different quality. It can be called a virtuum if it is based not only on new technologies, new generation computing technology, nanotechnologies, artificial intelligence technologies, but also on the "Moral Law" and "Starry Sky" mentioned by I. Kant.

The development of digital technologies proves that reality can become a product of a computer program. Moreover, such a reality-simulation is becoming increasingly indistinguishable from the so-called "real reality". Simulation as a product of technologies in the field of computer engineering is designed to create familiar models of perception of the world, products of consciousness and reason, as well as material objects that surround people every day.

Reality-simulation erases any time boundaries, since it allows for: 1) *reconstruction* of the past; 2) *deconstruction* of the present and future; 3) *reception* of foreign historical, social and cultural forms.

Substituting the basic reality in which a person lives with a simulated reality that a person experiences creates a simulation of a special order. It is easy to enter, but difficult to exit. The following questions arise again: how real and permanent is work on the Internet? How reliable is such work? How valuable is a digital product, in comparison with real material and spiritual goods created in production? How real and valuable is a person as an individual, as a professional in such a digital world? And is a post-human digital civilization capable of replacing humanity if artificial intelligence considers that this will be effective and optimal for life?

The existence of virtuality in its narrow technical embodiment is a sphere of interaction between many programs and computers of the new generation, the result of which is the communication Quadra model: "*space – nature – society – man – machine*".

The sets of virtual realities in the existence of virtuum have the following characteristics: 1) *generation* is a condition under which a virtual reality is

created by the activity of another reality; 2) *actuality* is a state under which a virtual reality exists only actually, in its own time, space and with its own laws, different from real ones; 3) *interactivity* is the process of interaction of virtual reality with all other realities; 4) *autonomy* is the singularity of virtual reality among a multitude of similarities of reality.

S. Krymsky warned that in modern times, with the formation of electronic civilization, the density of social connections and mass communications increases so much that people have the opportunity to personally represent an entire culture, era, nation[12].

It can be stated that we partly live in a digital civilization, since being in a computer reality is a necessary condition of work and a factor of everyday life in terms of rest and entertainment. Digital technologies, artificial intelligence, nanotechnologies, cyber technologies pose new complex current tasks in the field of intellectual engineering, which almost every person needs to solve in high-speed mode.

Digital hyper reality is more like a hypothetical metauniverse as a set that unites not only all real universes, but also simulation universes. Such a universe, in turn, generates hypertext as a new model of digital language.

T. Dirk, in this regard, states that the tradition of studying narratives as topics (macrostructures) is indeed actively used in media discourse. The thematic structure of a media text is a set of formally or subjectively selected topics around which the signification of the text is organized, and the relevance of each topic is marked primarily by the title and lead, and then by the linear composition of components depending on the genre[13].

A person as a living system, possessing language, receives any information through direct sensory perception and through thinking. Language and thinking are inextricably linked. For sensory perception, there are several channels of information: perceived objects affect the sense organs in different ways.

The multiplicity of these objects and sources of information forms a sensory field. Multiple signal and linguistic systems enhance the process of information transfer. Information sources have a number of characteristics that allow information to be identified and viewed in a certain way. The complete replacement of language with “network language” disables some functions of thinking.

L. Drotyanko also claims that the individual himself should do much to preserve his personal inner world, his personal Self in the process of

[12] Кримський С. Б. Заклики духовності XXI століття. Шляхи та перехрестя сучасної цивілізації (Людина – Культура – Постісторія). Зб. наук. праць. Філософські діалоги. К., 2009. С. 40.

[13] Dijk van T. A. Discourse and Knowledge. A sociocognitive approach. Cambridge: Cambridge University Press, 2014. 58 p.

learning, professional activity, and leisure time, because he chooses the ways to realize his unique natural inclinations and satisfy the needs for relevant knowledge. For this purpose, he himself should be able to choose the appropriate networks in the system of social communications, the appropriate circles of interlocutors, colleagues, and friends. And the public education system should, of course, prepare for a meaningful choice of his communication, since it is in educational institutions that critical thinking skills are formed, the possession of which does not allow unscrupulous owners of media platforms, chats, and blogs to manipulate the consciousness of participants in social communications. Self-preservation of the uniqueness of human existence is also ensured by the presence of spirituality in a person, which is also laid down, starting from childhood, in the process of acquiring knowledge, assimilating social values, and forming personal moral qualities. The problem of building and self-preserving the internal I-being arises in modern society in the system of social communications as a cornerstone for society[14].

Innovations also play a special role in the development of society, civilization, culture, everyday life and the state, so most modern states are competitors in terms of improving national innovation systems.

The innovation process is aimed at managing existing knowledge systems, developing high-quality innovative products of practical significance, which will subsequently bring significant economic benefits. The innovation process requires the presence of: 1) scientific, engineering, design, and project developments in fundamental sciences; 2) research programs and tools in the humanities; 3) the latest achievements in experimental medicine, cybernetics, and astronautics, related to the implementation of science-intensive operations; 4) means of technological control and communication.

In our opinion, innovation can be partly considered a synonym for the concept of “idea”, however, if we make it more specific, it can be understood as a set of collective efforts in the practical plane for the introduction of a whole complex of ideas, as a result of which the production of the latest invention is established through the synthesis of engineering, technology, work organization and effective management.

In the process of active indirect implementation of mechanisms of innovation activity, based on the latest achievements of science, objects of implementation or so-called innovations can be recorded in everyday life. The effect of the “new” can be described as a process leading to constant changes.

[14] Дротянко Л. Г. Унікальність людського буття у сучасних соціальних комунікаціях. *Вісник Національного авіаційного університету. Серія: Філософія. Культурологія*. Вип. 1 (39). 2024. С. 9.

A. Goldman noted that social epistemology studies the process of cognition from an interdisciplinary position and pays special attention to the social dimensions of knowledge; therefore, it studies individual epistemic conviction in current social contexts[15]. Therefore, mediated systemic innovation activity is aimed at implementing scientific and technical goals and objectives of a new level, which contributes to quantitative and qualitative changes in the way of thinking and the way of acting of people. In turn, this is reflected at the level of the social dimension of knowledge.

The innovation process involves expanding economic and financial resources to support research in the field of engineering and technology. Such practices as invention, rationalization, engineering, modeling can be restored, introduced as mandatory practices in the education system and effectively developed, implementing the latest equipment and technology, as a result of which new large-scale discoveries are possible. History shows that with all this, not one but a cluster of bright discoveries appears.

The innovation process, on the one hand, involves a thorough renewal of the existing "old" or "current" tools. Such "obsolete" technologies can be competitive and effective for a long time. They can be called reliable and time-tested resources.

On the other hand, innovation serves as a qualitatively new scientific discovery, scientific theory, technical invention, new product, scientific and technical solution of a production, administrative, commercial nature, significantly improving the structure of production or the social sphere.

Virtuum as a new level of social reality is directly related to cybernetics, which determines the quality of innovative processes. The objects of modern cybernetic research are machines, complex mechanisms, computer programs, and computer systems, large and small social systems. However, the basis of cybernetics is the study of living organisms, the brain, man, psyche, thinking, consciousness, soul. Cybernetics represents the general principles of management, which provides for information exchange, which can be applied to living organisms. Such information exchange is present in the triad: "*man-man*", "*man-machine*", "*machine-machine*".

A living organism, in turn, functions as a self-organizing, self-regulating, self-governing system, the unique feature of which is the ability to self-program. Consequently, a machine, since it is a "copy" of an imitation of a living organism, copying genetic algorithms, is capable of adaptation and learning. This means that dynamic cybernetic systems, smart neural networks and new generation programs are capable of continuous evolution.

[15] Goldman A. A Guide to Social Epistemology. Social Epistemology: Essential Readings, 1st Edition, by A. Goldman (ed.), D. Whitcomb (ed.). 2011. P. 11.

On the one hand, man and machine are connected with each other, however, it is not man but machine that "copies" man's abilities. It is self-identical and self-sufficient as a complex multi-existent construct. In this regard, E. Elliott defines self-identity as a key characteristic of an individual and society, their thoughts, assumptions, beliefs and affects in the question of who they are and what their attitude is to others, as well as to the world[16]. The author focuses on the ideas of "self" and "self-presentation", explaining the essence of the "I-concept".

On the other hand, the activity of human consciousness does not fit into the framework of the laws of nature, as well as general control procedures.

Consciousness does not obey the rules of programming. Multiple mental phenomena do not fall under the action of general cybernetic laws either. J.-P. Sartre reveals the essence of man as a person, and not just as an individual, through the category of freedom, believing that freedom is the basis for intentional activity. Also in reality, "freedom is human existence"[17].

CONCLUSION

Innovative activity, as a rule, is aimed not only at studying and creating equipment and technologies, but in the current reality also at modeling quite "viable" virtual worlds. Modeling can be used to demonstrate the possible effects of alternative living conditions in extreme conditions (in space, in the ocean), as well as methods of action.

Computer virtual reality is already capable of representing and depicting as a digital object a non-existent object or imitating an existing object, replacing it with a digital copy. In this case, the artist keeps it in his consciousness and mentally manipulates it, inventing variations of the embodiment of the object.

Virtuum gives a creative person the opportunity to freely create in the mind an image of a yet non-existent object or phenomenon, and then embody it in an innovative environment. In the conditions of an innovative environment, taking into account new opportunities and technologies, it is no longer necessary to be able to only mentally imagine an object. In order to transform it in practice, we can first imagine the object mentally, and then create its virtual model. As a result, before objectifying an idea, we can improve it in an intermediate state, moving between the concept and materialization. This approach significantly accelerates the process of developing innovative ideas.

[16] Elliot A. Introduction. Routledge handbook of identity studies. N. Y., 2011. P. XXI.

[17] Сартр Ж.-П. Буття і ніщо. Сучасна зарубіжна філософія. Течії і напрямки. Хрестоматія. К.: Вид-во ВАКЛЕР, 1996. С. 160.

The creation of virtual models allows us to program not only the future behavior of society as a virtual reality, but also to work with archetypal images of the past.

SUMMARY

The ontological conceptualization of the phenomenon of virtuum is carried out in the context of techno-gnoseology in the triadic variation of "metaphysics" – "psychophysics" – "techno gnosis". An ontological approach is used, which allows for the explication of concepts: the existence of virtuum, the structure of virtuum, the properties of virtuum, and the forms of existence of virtuum. A triadic model is presented for describing virtuum as a specific reality of society. The result of the study is presented in the interpretation of virtuum as a special sphere of being, a set of multi-versus, surreal-possible worlds, combining fictitious and real, fantasy and embodied, simulacrum and authentic qualities. The role of innovative processes in the existence of virtuum as one of the possible levels of psychic reality, as well as potentially existing realities, is shown.

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