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NANOTECHINDUSTRY AND BIOTERRORISM IN MODERN SOCIETY

In article the author focuses attention on the actual problem of concerning the sphere of safety: on nanotechnologies, nano industry, nano reality and biosafety.

Social transformations and development of high technologies must have to be realized by scientists mainly on the basis of a moral imperative, positively and clear changing the existing reality under the influence of quickly developing modern nanotech industry.

Keywords: *sphere of safety, bioterrorism, biosafety, transhumanistic reality, nanotechnologies, cyborg, nanotech industry, nanoreality.*

The authors emphasize the focus on the actual problem related to security, namely, biological terrorism, biosafety, nanotechnology, nanotechnology industry and the emerging nanorealities. Social transformation and development of high technologies is carried out today by scientists on the basis of the moral imperative, which affects social relations, which objectively are modified in the process of creating a modern nanotechnology industry.

Ontological foundations of security interest today because of scientific discoveries in the field of nanobiotechnology, mass media area, computerization and specific perception of a person, society and the state of the existing reality, which is multi-vector-valued and multi-dimensional. «The most important part of the national security is the spiritual security. It represents a state of social and cultural environment in which the combined public consciousness, spiritual values, culture, and provide the conditions for spiritual development and progress of the individual, society and the state on the basis of national identity and the

preservation of spiritual unity of the people» [1, c. 12].

In this connection, knowledge of the processes in the area of security may be due to the expansion and deepening of theoretical knowledge on the one hand, and on the other hand, with the obligatory account of perceptions and ideas about identity security accumulated in behavioral and normative reflection and empirical practices of society. Human security is a certain rate of reaction of the subject (actor) on a real danger in modern society. Civilized man keeps society if it focuses on its secure existence and development, and vice versa, the person does not preserve the social space, i.e., It is focused on the destruction, if society creates preconditions for its dangerous existence.

Philosophical understanding of the specifics of the security sector as one of the leading system properties of existence of man and society based on the following epistemological principles: Historicism (evolutionism), synergies, integrity and value perception of reality (axiology).

Actualizing in the present work categories such as biosecurity, bioterrorism, nanotechnology and nano industry explain that the synthesis of diverse definitions is poorly investigated and is of particular interest to the author.

Firstly, for a theoretical generalization is enough to remember that social being is characterized by changes in geopolitical and biotic factors, so that constantly arise danger, threat, provoking diverse destructive events in social space, which is an objectified form of the existence of man and society. For this reason, research and scientific generalization of the security sector involves as accentuation on biosafety, as well as on the specifics of this form of terrorism, or bioterrorism.

Secondly, when it comes to technological civilization and the rapid scientific progress, it becomes clear desire of the modern society most effectively optimize the field of security, especially when it comes to biological threats, the nanotechnology industry and international terrorism. «At the turn of the XXI century, this new dilemma of modernity begins to materialize in the need to mobilize resources for international cooperation, further improve the global strategy to combat international terrorism, the development and use of new forms and means of protecting the rights and freedoms of man and citizen, to strengthen the democratic foundations of society» [2, p. 104].

Third, under the rule of the market economy, where the overriding factor is profit, competition, create an atmosphere for initiation of growing consumer trends, there are contradictions unproductive and destructive phenomenon, provoking events cardinal nature.

The result of complicated tectonic movement, it can probably be the depletion of energy resources of the planet, environmental, biological catastrophe, rebirth of the human being, both in form and in content. Due to the rapid development of the nanotechnology industry, the emergence nanorealities, and further, that happens gradually offset worldview, values of modern man, his «reification», leads to a change in accepted norms of morality, dominance deviations, including security.

Modern nanotechnology as a special area of fundamental and applied scientific knowledge, is interesting due to the fact that theoretically justifies the empirical data acquisition, defining process of knowledge and practical use of the «world of things» that specifically controlled and programmed by a person at the molecular

level in the existing nanorealities. Whoever initiates and participates directly in the development of high technologies, sells its scientific ideas based on the moral imperative to create favorable conditions and environment correlate social relations in the process of creating a modern nanotechnology industry.

Nanoindustry creating nanoreality includes purposeful intellectual activities of man to create a competitive product, which has a direct relation to the respective levels of nanoscale systems. Interdisciplinary studies, stepping up the use of intellectual resources, taking into account scientific and technological progress and today allow scientists to create a variety of system-level education nanoscale (nanoparticles, which have nanoscale properties).

In this case, it is appropriate to note that, according to the authors, there is a need to explore the basic existential questions, which are quite complex for the following reasons: firstly, nanotechnology and nano industry, developing under the influence of the intellectual resource nanoreality significantly affect the movement and adjusts modern society and affects the effectiveness of the security sector.

Second, the scientific activity of modern man technologizes, rationalizes, moves to a different value dimension, nanoreality public relations deterministic nanotechnology and trans humanism. This, in turn, can lead to long-term future of global variables and even catastrophe irreversible qualitative social transformation, where nano industry rightly takes the leading place that certainly will affect the security of modern society. In an aggressive scientific and technological progress and the depreciation of the moral principles of life, changes in biological portrait will be a gradual transformation of the existential nature of man to a cross between a robot and a biological organism, or a cyborg that can be welcomed by civilization, able to produce and consume. «Cyborg - not a robot, as he found his identity as a man, and the question is where and when he can lose it. In robotics another problem - how to find the artificial creation of the independence and quality similar to those of men. Is it possible to breathe soul into this thing differently than it does in humans, by programming, not through education, training, substantive communication?» [3, p. 174].

Third, there is a possibility that the deliberate use of harmful biological substances, negative impact on man and nature through the nanotechnology industry and the untimely and

inadequate security measures in the future will provoke the loss of fundamental human manifestations, changing evolutionary projection of civilizational development. It is possible that at this very moment to happen the transformation of social relations and, therefore, to change attitude, outlook and outlook of the person. Turned into «embodied» the biological mechanism for the implementation of various options for existing cyber-technical capabilities to move people in trans humanist reality that will, not only quantitatively but also qualitatively different from existing nanorealities.

Note that a qualitative leap in the development of science, including genetics and modern biotechnology, not only due to the use of innovative methods, but mainly object selection biogenetic research (development of molecular biology at the nanoscale, the active use of nanostructures in the creation and use of genetically modified foods).

It is logical to assume that bioterrorism and nano industry could soon become the root cause not only positive but also negative transformations in society, including in the security sphere. That is why, bioterrorism, unfortunately, is not just an ephemeral imagination of scientists, and a real threat to human civilization. And in this case, cannot but agree with the fact that it is «... the problem worldview non-state actors that pose a threat to international peace and security» [4, p. 23] generate the conditions that allow to implement even the most dangerous citizens aggressive tendencies associated with bioterrorism and nanotechnologies. Bioterrorism is a complex phenomenon is a deliberate action aimed at the dissemination of biological agents in order to create conditions for their spread, causing harm human health, as well as all biological life forms on our planet.

Recall that biological terrorism in today's society is qualified: 1) as a real threat to commit such acts for the same purpose; 2) as complicity in the commission of these acts as an organizer, co-executor, instigator or accomplice; 3) as a preparation, or an attempt to commit these acts [5, 14-65]. Under certain conditions, may be bioterrorism systematic destructive phenomenon, knowledge-intensive counterweight that can cause global changes and, ultimately, lead to a change in the geopolitical situation [6, p. 14-20].

In such an embodiment can be carried out similar threats of harm, committed with the

purpose of influence on individual citizens, representatives of the political elite, eliminate competitors, violation of stability in modern society, providing an effective influence on the power of the state to participate in international affairs and strategic foreign policy solutions.

Modern society is constantly transformed and in this regard there is change in the nature and impact of the individual and society on the environment, socio-economic, political, legal and spiritual existence. All this is due to scientific progress, and such circumstances as lack of satisfaction of human interests in biosafety nanosafety, there is objective relationship between the political system of social relations and the imperatives of security, taking into account existing nanorealities. And, unfortunately, today more relevant than ever reads the statement that «humanity has managed to grow a repressive consciousness, a kind of gene violence affects the behavior and way of thinking» [7, p.104].

Accentuation on the issue proposed by the authors, allows for this information to identify the field range of complex issues that require a response in order to develop mechanisms to ensure stability and a sufficient level of biosafety and nanosafety. All these questions need to be social and philosophical reflection, as in today's society especially in demand humanitarian aspects of bioethics, genetics research in the field of molecular biology at the nanoscale, which affects, in particular, to the sphere of security.

Today there is an active study of the magnetism of nanostructures, nanocrystals, allowing to develop nan sensors based on nanoparticles, nanomaterial's, nan electronics, nano systems, molecular nanostructures, nanobiotechnology, nano toxicology, toxicological studies the biological effects of nano materials on humans and the environment. «Develop techniques for measuring, testing, calibration and testing used in the nanotechnology industry of measuring instruments, their harmonization with international standards in the field of nanotechnology and security development and application of nano-industry facilities» [8, p. 974].

Nano science and technical progress, the information society in a situation where demand is particularly renewed moral model, taking into account the existing existential variations must now ensure the effectiveness of the security sector, taking into account changes in the range

of development and introduction of modern biotechnology. At the same time, we must not forget that the current scientific research is always «... caused a rapid progress in a number of areas related to genetics of biological knowledge. Application of cybernetic modeling, information theory of genetics has created a new reality and a new understanding of the problems and the nature of scientific investigation of heredity and variation at different levels of organization of living systems» [9, p. 60].

Variability of modern society proves that hardly all the processes are monosubjectivity in society that does not exclude the possibility of attracting structures, and in a democratic society objectively requires extensive system of broad social and state influence to more effectively deal with the various destructive phenomena such as bioterrorism.

The focus of scientific research and the development of molecular biology at the nanoscale, as well as modern technologies imply a moral position of dominance researcher and moral and ethical imperative that can project specific value options in the nanotechnology industry.

Semantic aspect of contemporary philosophical discussion is a generalization that allows to specify the ontological, epistemological, axiological component of modern society and to offer adequate and advanced nanotechnology, which conceptualized and understood by the public. «The direction of science is the search direction of scientific truth, and not the scientific truth. Final evaluation of the selection can be made only on the final result of the search, in an objective scientific truth, accepted by all» [10].

Systems and Innovation bioethical systems based on intellectual resources, is gradually becoming an objective necessity for the development of society and, of course, its security sphere. Not being isolated from other spheres of public life, the sphere of security, especially biosafety and nano-industry is sufficiently effective mechanism to resolve social conflicts and crises.

Most likely, now it is necessary to develop comprehensive measures to counter bioterrorism and, most importantly, not to break the nanotechnology production is gradually evolving social space and not to destroy the natural environment, as «... the current system of interaction between man and nature can not be regarded as a relationship between components,

which influence each other can be ignored» [11, p. 19].

In scientific discourse biosafety is considered as the most broad and applies to all modern societies. Biologically aggressive (military) forms of influence are among the most terrible means of destruction of man and society, developed by modern scientists. Unlike conventional weapons biological weapons can not be fully controlled, especially if the infection occurs territory whose borders are difficult to control and record the spread of infectious diseases. Unmanaged and destructively aggressive potential of biological weapons is particularly attractive to terrorists, do not differ in the desire to peacefully resolve the issues of the global plan and understanding of the responsibility for the future of the state and civilization. Clear and present danger of biological weapons in the community, is an important moment in the process of manipulating the authorities and intimidation of citizens of any country that has a direct relationship to modern nanotechnology and nano industry.

An interesting fact is that it is now documented cases where terrorist organizations want to be able to use biological weapons. So, in 2007, the report of the National Intelligence Council of the USA, and the report on the prospects of development of international terrorist activities, focusing on changes in the activity of members of terrorist groups in order to find access to weapons of mass destruction, where bioterrorism is «the most acceptable form of shares to minority groups militants»[12].

Bioterroristic acts were committed not only against man, but also against animals. Since the Berlin molecular biologist E. Geisler found that in 1916, specially bred bacterial cultures were infected animals, which have been exported to Spain, Romania, Argentina and the United States, and later found out that this used anthrax [13, with. 57].

There are also non-obvious facts of biological terrorism, when it is difficult to trace the cause-and-effect relationship, define terrorist target and localize the disease emerged after the use of biological agents. Not always manage to quickly identify the different species of bioterrorism, such as «the use of chemical or biological weapons against the enterprises of agriculture and food industry» [14, p. 11].

In today's society, where there are very promising nanotechnologies and nano industry, issues related to global biological threat is very

relevant. This is evidenced by, for example, the efficient operation of specialized State Scientific Center «Vector», which counteracts viral infection and biological terrorism. «Vector» is specialized in the study of infectious agents maximum biological hazards. «In general, our center is working on a very important area in the field of biomedicine and biotechnology, including nanobiotechnology» [15, p. 30].

In summary, adding that, firstly, the research interest in the issue of biosafety and nanosafety involves the implementation of three high technology areas: development of long-term program to meet the needs and interests of the individual and society in an effective biosafety; the implementation of the most appropriate measures to counter bioterrorism, taking into account the processes in the nanotechnology industry; development of integrated security, necessarily involve nanotechnology and nanosafety. In these areas, the need for action in the implementation of biosafety and the effective fight against bioterrorism that would allow for a qualitatively new level of dialogue in the international arena.

Secondly, in the era of global economic turmoil contemporary society in the bifurcation point, is a sophisticated «version of the Golf», which is not always adequate for the majority of citizens, since in this situation requires bold diplomatic decisions of a strategic nature, allow to settle peacefully with through dialogue arising problematic situations.

Third, the shift of public attitudes to the plane of destructive individualism, conflict digital series, when the political elite is not only at the level of rhetoric, but their aggressive actions purposefully strengthens geopolitical tensions shaking the polycentric world order, objectively there is a risk of bioterrorism and the use of active and destructive orientation nano industry biotechnology. «As a science not yet known, bioterrorism may become a social detonator major changes on a global scale, which can occur both in individual countries and regions, and throughout the world geopolitical structure» [16, p. 15].

In summary, accentuation on security of society is not accidental, as objectified, and it is a separate sphere of social life in modern society.

Firstly, at the genetic level, personality, society and state are always keen to ensure their safety, as it is an urgent need for security and the most important interest.

Secondly, the scope of security is largely differentiated and professionalized, as there are, for example, experts in economic, political, demographic, and political security. Third, in today's society it formed a complex of sciences and disciplines about the processes occurring in society, subject to effective work towards achieving the personal, public and state security. Fourth, for the authorities specific activities as a permanent security is institutionalized because since the beginning of any state law enforcement agencies at the same time creates, militias and other military and police organizations as well as security is a common interest. In this case, the effective state influence on the formation of security institutions, the creation of conditions and implementation of the factors determining the essential characteristics of modern public relations, will allow most fully and adequately meet the personal needs and interests of society in safe existence.

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Резюме. В статье автор исследует вопросы, связанные с нанотехнологией и биобезопасностью в современном обществе. Взаимосвязь данных научных дефиниций определяется объективной необходимостью осмысления процессов информационной макроэволюции, а также интенсивной технологизации современного общества.

Современное общественное бытие характеризуется изменениями геополитических и биотических факторов, вследствие чего постоянно возникают опасности, угрозы, провоцирующие разноплановые события деструктивного характера. Исследование сферы безопасности и тенденций развития нанотехнологий предполагает акцентуацию на биобезопасности и специфике такой разновидности терроризма, как биотерроризм.

Развитие техногенной цивилизации и быстрый научно-технический прогресс обуславливает стремление современного общества максимально эффективно оптимизировать сферу безопасности, особенно, если это касается биологической угрозы и нанотехнологии.

Нанотехнология, как область фундаментального и прикладного научного знания, интересна, так как детерминирует процесс познания, что особым образом контролируется и программируется человеком на молекулярном уровне в существующей наноре-

альности и социальном пространстве. Нанотехнология, создающая нанореальность, включает в себя целенаправленную интеллектуальную деятельность человека по созданию конкурентоспособной продукции, которая имеет прямое отношение к наноразмерным уровням соответствующих систем и биобезопасности общества. Актуализируя вопросы, связанные с биобезопасностью, а значит, и с биотерроризмом, нанотехнологией и нанотехнологией необходимо отметить, что синтез таких разноплановых дефиниций пока недостаточно исследован.

Abstract. The author explores the issues related to biosafety and nano industry in modern society. The relationship of definitions of scientific data must be determined by an objective necessity of understanding the processes of information macroevolution, and the intensive technologization of modern society.

Modern social being is characterized by changes in geopolitical and biotic factors, so that constantly arise danger, threat, provoking diverse events of a destructive nature. Research in security and nanotechnology development trends suggests accentuation on biosafety and the specifics of such form of terrorism as bioterrorism.

The development of industrial civilization and rapid scientific and technical progress leads to the desire of modern society most effectively optimize the field of safety, especially when it comes to biological threats and nanotechnology industry.

Nanotechnology, as a field of fundamental and applied scientific knowledge, is interesting, because it is determines the learning process that specifically controlled and programmed by a person at the molecular level in the existing nano reality and social space. Nano industry create the nano reality and includes purposeful human intellectual activities to create competitive products which is directly related to the nanoscale level appropriate biosafety systems and society. To actualize issues related to biosafety, and therefore, bioterrorism, nanotechnology and Nano industry it should be noted that the synthesis of these diverse definitions are insufficient investigated.

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НАНОТЕХНОЛОГИЯ И БИОТЕРРОРИЗМ В СОВРЕМЕННОМ ОБЩЕСТВЕ

В статье автор акцентирует внимание на актуальной проблеме, имеющей отношение к сфере безопасности: нанотехнологиям, наноиндустрии, нанореальности и биобезопасности.

Социальные трансформации и развитие наукоёмких технологий должно осуществляться учеными преимущественно на основе нравственного императива, позитивно и транспарентно изменяя существующую реальность под воздействием быстро развивающейся современной наноиндустрии.

Ключевые слова: биотерроризм, биобезопасность, нанотехнология, наноиндустрия, нанореальность, киборг, социальное пространство.

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