

Transhumanism Horizons of Convergent Technologies*

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Abstract—The article focuses on transformation of human values under the impact of convergent technologies that create possibilities to transform human consciousness on an organic, neurobiological level. They give an impetus for developing ways to overcome fundamental limits of human abilities and methods for targeted modification of biological nature of a human.

Keywords—transhumanism; NBIC-convergent technologies; posthuman; personality manipulation; cultural and moral values

I. INTRODUCTION

The formation of the convergent NBIC-technologies, the width of their issues and the influence of their subject areas – from the atomic level of substance to rational systems – are evidence of a radically new stage of scientific and technological progress that has no historical analogues in terms of an impact on human civilization. At the current stage of development of knowledge and characterized by an active process of interpenetration, a close alliance between science and technologies based on its results is created. The problem of the future of mankind goes into an area of social planning and strategic planning, becoming an issue of spiritual, moral and cultural choice of a person and the human society.

II. THE NEW POSSIBILITIES OF HUMAN NATURE MODIFICATION

Over the past decades, the philosophical view on human nature and the notion of "calling for a new man" have significantly changed and doesn't look as fantastic today as it did before. Improvement of NBIC-innovations takes these issues into a specific applied sphere: above all, it is about expanding of the physical, psychological and intellectual possibilities of a human. Moreover, many experts believe that the creation of a "superhuman" by "extensions" of a current human is the main goal of all technological activity, while everything else is just a "cover operation". Neural implants, bio-electronic devices and psychoactive substances

can change both physical and cognitive parameters of a person and contribute to his intellectual, morphological and functional transformation. In our opinion, the current expansion of the scientific, technocratic consciousness is ready to drive and to destroy the "common man" along with his moral and aesthetic ideals to replace them with something "more advanced and perfect". To put it mildly, it can't cause much sympathy. Also, "the payment for the benefit – extreme life extension, giving new senses and superpowers – may be too big for one person and for humanity in a whole" [5, p. 414].

The development of NBIC-convergence of technologies under a natural scenario can lead to serious and irreversible consequences and may turn the tide of history into an unpredictable direction. It is because their issues are mainly focused on possibilities of mastering the laws for development of artificial reality, created by human but beyond the natural capacity of his perception, thinking and way of being. In this regard, the problem of human nature modification becomes more urgent. We cannot absolutely exclude that the irrepressible activity of a human mind, embodied in the almost-transformative activities, will not lead to an era of "posthuman" at a certain stage of its development. It may be that inventions will surprise researchers on this way and will extremely expand the possibilities of science and the limits of human creativity, allowing scientists to implement the most ambitious plans. However, nano- and cognitive technologies open new prospects of "denaturalization" of a human body. For example, design of anthropomorphic robots can lead to the disappearance of the differences between a thinking being with intelligence with free will and a hard-coded artificial system. In light of recent research, the usual distinction between a living and an inanimate object is being neutralized after shakes produced by biotechnologies. The development of convergent technologies threatens to erase that line. This blurring of boundaries between life and nonlife leads to deformation of understanding of life and attitude towards it. If there is nothing "definitely alive", then major traditional values related to the attitude towards life disappear. The conception of an absolute intrinsic value of life, a reverent attitude to it (its "sanctity", "reverence", attitude "as a goal and not as means", the prohibition and condemnation of murder, etc.) are modified.

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Nano- and bio- technical environment of artifacts threatens to change the usual way of being of a human drastically. As A. I. Fursov noted, "the art of resistance not only for the past, but for the future is something that has to be grinded and fulfilled" [1, p. 69]. It is necessary to realize that "self-transformation of a man is equal to self-transformation of a society, for all the known main social structures and functions were due to this human nature, which is manifested in such social institution as state, with its functions of ordering and coercion" [4, p. 254-255]. Thus, the technological capabilities that appear in the course of NBIC-convergence can trigger a serious ideological, cultural and social upheaval. In general, we can assume that human civilization is at the doorstep, and, if it is crossed, we will face the inevitability of rethinking the fundamental values, revision of such basic concepts as life, consciousness, human, nature, and existence.

III. DANGERS AND FEATURES OF USING NEW TECHNOLOGIES IN THE MILITARY

Implications of developing of so-called "dual-use technologies" are of a particular concern. It is a well-known fact that creating and "trial runs" of lots of new technologies are in the military sphere. A human (that is his nature) was a fighter in ancient times; he continues to fight today and apparently will fight until human communities exist. It is estimated that there were more than 15,000 wars and only 300 years of peace over the past 5,000 years of human history [7, p. 439]. Over the time, ideas about the types and nature of wars and armies have changed. Defense systems, means and methods of force have modified, but "human community in all its various forms and guises at all times did not consider peace to be the Supreme good" [2, p. 3.]. And our time, alas, is no exception. Today, as a hundred and two hundred years ago, the orientation on own (national, etc.) interests and power as a tool for advocacy dominates in international relations. At present, the risk of crises, wars, violence have not decrease. The international arena has not become a more comfortable and secure place than earlier. A great desire to solve major international problems in the world by force is still great, and weapons become more sophisticated and precision.

However, as many years ago, the weakest link in armed conflicts is a human himself. In this regard, special institutions and laboratories propose options for further improvements for the art of war. One of them is to minimize (ideally – to except) the direct presence of a human in war zones by creating remote-controlled "machines of death". Some countries have already equipped a number of remote-controlled planes, drones, etc. The second option is to provide maximum protection of personnel by using the latest technologies. Currently we are speaking, in particular, on increasing the functionality of military uniforms, of control methods, of increasing the strength of components and improving the level of biomedical services for personnel. The third option is upgrading the human, granting him superhuman powers. It is known, for example, about a foundation of a special Institute (Institute of Soldier Nanotechnologies) in the Massachusetts Institute of

Technology (MIT) [11, pp. 110-111], where experiments are conducted to implement the program to create a "perfect soldier". It is planned to improve bodies of warriors of the 21st century by nano-equipment. In particular, to extend significantly abilities of all human senses and to install new ones, such as infrared vision; to create more perfect outfit on the basis new nanomaterials – for example, not so heavy and able to adapt to the color of the surrounding area. In addition, developers and ideologists believe that the program of creating a "perfect soldier" would be incomplete without experiments on implantation of biological, electromagnetic and chemical nanosensors into a human body. Thus, the document containing the National Nanotechnology Initiative of the United States prioritizes the task to modify sensor abilities of soldiers through a neuro-electrical interface to receive benefits in combat operations [12]. In addition to increasing physical strength, adaptation, endurance and invulnerability abilities of soldiers, there is an aim to develop high-tech methods to influence on their psyche "in the right direction". It is not a secret that not all nervous systems are able to cope with the hardships and horrors of war. Mental disorders are not necessarily connected, for example, with receiving severe wounds. A common shock such as shock at the sight of dead comrades may be sufficient causes. In addition, despite special training, not every soldier can kill other people "with easy heart". Of course, at present it is psychologically much easier to do than centuries ago. As K. S. Gadzhiev notes, "an increase of the distance at which a weapon of murder works, largely removes the problem of moral responsibility, of remorse, of pity and other nasty moments for a murderer. Moreover, it is believed, that the invention of gunpowder and firearms has not only undermined the social order of the era of knights, but also its ethics. This distance results largely makes it possible that even a most harmless at a first sight person is able to pull the trigger of a rifle or push a launch-button of a mass-destruction missile" [2, p. 6].

It is known that the problem of a devastating impact of wartime circumstances on an identity of a soldier or an officer was first brought up for discussion only a century ago, after World War I. War neuroses were characterized by E. Lead as "logical and necessary consequence of reality of modern warfare". The researcher noted, "at this first industrialized war the technology has surpassed all human motor abilities. Long-range artillery, machine guns and barbed wire have made fights immobile and war itself became a trench warfare. Such immobility demanded a soldier to be passive "in the face of the forces of mechanized slaughter", the forces that created the necessity of new techniques of disciplining and internal control. The reaction for such a situation was an increasing number of warriors with mental disorders" [10, p 163].

At present, a fundamental possibility may emerge – to use as soldiers those people who have modified, genetically engineered and nanotech-transformed both physical and psycho qualities because the command always needed subordinates capable to implement combat tasks absolutely coolly, let's say, "with no poetry."

It is not excluded, that it will be a less challenging task will be to create a bio-robot than to change an already existing soldier. In any case, it is known about the submission of the Defense Advanced Research Projects Agency Pentagon (DARPA) program "BioDesign" to create for military purposes artificial biological beings with certain biological qualities who are able to live indefinitely long [13]. Thus, the ideas that previously could only be gleaned from fiction begin to master minds of military engineers. However, according to F. Fukuyama, the question is: What would happen "if we really can get two types of people: one with saddles on their backs, and the other – with spurs on their boots?" [6, p. 22]. It is obvious that existence of such warriors can dramatically change tactics and strategy of armed struggle. It is assumed that artificial bodies will be programmed at the genetic level and will be able to implement any command of their creators.

It is planned that technically unlimited lifespan will be achieved with molecules that provide resistance to the mechanisms of aging. To prevent these creatures from a sudden fight against their masters, scientists intend to develop an effective "chain of command" at the DNA level. That is, the formation of undesirable emotions and thoughts is planned to suppress, and, for that, the DNA of the organism will contain the information about its creator. In addition, a permanent control will be established after these creatures, since the DNA in synthetic bodies would contain a record of their action sequence that can be decrypted. In case of emergency, scientists plan to use a so-called molecular switch, which will cause an immediate destruction of a body. It all sounds somewhat unrealistic, but the seriousness of customers and developers is confirmed by significant financial investments to this program (\$6 million), as well as \$20 million to the development of synthetic biology and \$7.5 million to the research of genome analysis and experiments on its changing. Thus, what has recently been a set of scattered and fragmented efforts of individual researchers has turned into a well-coordinated and Federal-funded work of a cohesive team.

The above allows to conclude that using bio-, cogno- and nanotechnologies for military purposes entails unpredictable consequences and may represent serious danger to humanity as a whole. Thus, analysis of a potential usage of new technologies in the military sphere has expanded considerably in recent years. This particularly means that the development of modern military technology not only serves as a vast testing ground for technologies of manipulating a person but also contributes to declining of moral criteria and the increasing of inhumanity of military conflict participants. It is quite obvious that warriors are "servile people" obliged to obey. From this point of view, they are the best "substance for experiments". Considering possibilities of installing different kinds of implants into a human brain, there is a danger of consciousness manipulation – particularly on a distance via remote devices. An effect may be psychological or physiological, for example, evocation of a pain shock or motor abilities blockade. "Experiments have already been carried out when a low-voltage discharge affected a specifically designed device behind the ear to push a person

out of his balance (a so-called vestibular galvanic stimulation): the probationers first began to totter and then fell down. This kind of electrical stimulation may be used for fighting depression, as for a drug to improve mood or to get ecstatic conditions" [8, p. 135-136]. We cannot exclude that this may lead to creation of, as bioethicist L. Cashier says, "happy slaves with a slavish happiness" [9, p. 35]. However, as strongly noted by V. G. Gorokhov, "even if a person agrees to such an interference into his or her body, he is unable to assess the extent of those unforeseeable negative consequences, which can lead to destruction of not only his body, but also his individuality (with intervention into neurophysiological processes of a human brain). This, in essence, cannot be predicted by scientists themselves" [3, p.42].

IV. CONCLUSION

Work with non-linear systems shows that, in many cases, such objects behave in a paradoxical, anti-instinctive way. Pulling one thread, we can unexpectedly cause an avalanche of changes. As an example, it is worth recalling side effects of different medicines. Biotechnology experts often mention the "Lucifer curse", the essence of which is that a change of one element in a human body to give him a "superpower", leading to the risk of receiving totally unexpected consequences and side-results which may be vastly superior to all positive effects from this artificial intervention. Creating a new reality spontaneously, one cannot take into account all the possible consequences, and a new reality begins to "live a life of its own". This world is little studied; it contains many mysteries and dangers. The ways to go are poorly lit and almost invisible. Scientists can open Pandora's Box. In these circumstances, the scientific community should systematically, thoroughly and professionally examine the problems, prospects and potential dangers of using science and technology as ways to overcome fundamental human limits. This is necessary in order to make science, one of the greatest hopes of humankind, not to be aimed both at the indirect and direct development of the most inhuman means of research, evidence-based violence against body and the spirit of a man.

Humanity has no time for "swinging". Technological science is developing extremely. Dynamic transformation of societies and creation of a joint information space entail serious socio-cultural changes, blurring and distortion of social norms and values, the aggravation of contradictions between traditional and modern behavior, gender and intergenerational conflicts urging, customization of models and styles of life. The necessity of reforming the entire system of social relations on a global scale has become obvious. There is no other way – at the beginning of the third Millennium a new approach to universal values and ideas about the development prospects of the world community must be formulated.

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