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TRANSFORMATION OF ETHICAL NORMS IN SOCIETY IN THE ERA OF IMPLEMENTATION OF THE LATEST TECHNOLOGIES¹

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The development of modern medicine today directly depends on biomedical technology. Human life begins to depend more and more not only on the physician's personality (his knowledge and experience), but also on the level of technology development, availability of access to them. In this regard, the entire picture of the interaction between the doctor and the patient is gradually changing, ethical norms regulating these relationships are being transformed. Mostly clear and impressive these changes can be observed in the field of transplantology and organ donation. Dependence of the development of organ donation on the human factor, namely the presence / lack of donor organs, sets a special ethical tension. Hopes and fears associated with the implementation of the latest technologies, reflected in the cinema and literature, including science fiction.

How will the future medicine deal with ethical issues related to organ donation, will an alternative be found - a question that excites not only physicians, but also philosophers and ethics.

Keywords: biomedical technologies, bioethics, transplantology and organ donation, cyborgization, future medicine, ethical and philosophical problems of perception of corporeality.

TRANSФОРМАЦИЯ ЭТИЧЕСКИХ НОРМ В ОБЩЕСТВЕ В ЭПОХУ ВНЕДРЕНИЯ В ЖИЗНЬ НОВЕЙШИХ ТЕХНОЛОГИЙ²

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Развитие современной медицины напрямую зависит сегодня от биомедицинских технологий. Человеческая жизнь начинает все больше зависеть не только от личности врача (его знаний и опыта), но и от уровня развития технологий, наличия доступа к ним. В связи с этим постепенно меняется вся картина взаимодействия врача и пациента, трансформируются этические нормы, регулирующие эти взаимоотношения. Наиболее ярко и выпукло эти изменения можно наблюдать в области трансплантологии и органного донорства. Зависимость развития органного донорства от человеческого фактора, а именно наличия/нехватки донорских органов задаёт особую этическую напряженность. Надежды и опасения, связанные с внедрением в жизнь новейших технологий, отражаются в кино и литературе, в том числе научной фантастике.

Каким образом медицина будущего будет решать этические проблемы, связанные с будущим донорством, будет ли найдена альтернатива - вопрос, волнующий не только медиков, но и философов и этиков.

Ключевые слова: биомедицинские технологии, биоэтика, трансплантология и органное донорство, киборгизация, медицина будущего, этико-философские проблемы восприятия телесности.

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Introduction. The goal, which was the motive in choosing this topic, is the search for a correct and harmonious correspondence between the practical knowledge existing in modern medicine and fundamental philosophical knowledge about human nature and the system of humanistic values. The problem of a correct understanding by the society of the development and use in the medicine of the newest technologies and the transmission of this knowledge becomes more and more urgent.

The task of this article is to investigate how the notions of the achievements of science and modern medicine, in particular transplantology, are formed in the public consciousness, and also how the ethical norms that regulate the relationship between doctors and patients are transformed.

The ways and ways of obtaining information, the formation of beliefs about biomedical technologies, the influence of the scientific community on the formation of these beliefs and moral values - all these aspects of the problem require, in turn, an additional interdisciplinary study.

Modern biomedical technology through the eyes of an ordinary person.

Impressive successes of modern science, in particular modern biomedical technologies, designed to help people improve their health and quality of life, often face an incorrect, sometimes very bizarre understanding of the essence of these discoveries. An ordinary person (not a scientist, not a physician or philosopher), usually guided in the decision-making process by intuition and scrappy scattered information obtained from the media, often refers to new biomedical technologies with a great deal of mistrust or even apprehension, believing at times that harm from them can be more than good. Especially acute is the branch of medicine, such as transplantology. A number of social prejudices, including religious ones, have a negative impact on the work on organ donation. As a result, in most countries (including Russia) the picture is as follows: a huge number of patients who could have been saved by organ transplant surgery stand in line for donor organs. Many still do not live up to the operation; at the same time it is extremely difficult to obtain permission for both the removal of organs from a dying relative, and the consent of a seriously ill person for their own posthumous donation.
The path of scientific knowledge to the ordinary person is thorny: knowledge is distorted, simplified, undergoes an incredible transformation, accumulating unprecedented details, and therefore, when it comes to modern technology, ordinary people are guided not so much by scientific information as by half-knowledge drawn from the media and films, and myths, rumors and science-like information introduced into the information space for advertising purposes. Thus, there is a huge gap between the scientific and practical knowledge existing in modern medicine, and what ordinary people know and think. How to overcome this gap is a matter worthy of special attention.

The existing mistrust and heightened skepticism towards doctors and scientists combined with sometimes extremely dangerous prescriptions for home treatment, all kinds of "miracle-working" diets, methods of cleansing the body, etc., which unhindered pass the obstacles of critical thinking and continue to have a huge impact even on quite intelligent and educated people, show that modern enlightened society in many aspects, alas, is very far from this title. Various dubious sources of information (in particular, TV, the Internet), from where people derive information and are guided by them in making crucial decisions regarding their health and life, are many, and they are easily accessible.

As a result, we get a society that, living in the age of science and technology, often does not fully understand how these technologies work or what they mean for the future of mankind. However, as stated by experts, often this is not only a lack of knowledge, but also a lack of systematic efforts by society and the state, and insufficient attention to the popularization of science by the scientists themselves. The development of the industry is impossible without adequate information and scientific and educational work. Take for example Spain. This is a recognized world leader in the number of donors and transplants, where the idea of posthumous voluntary donation is very developed and there is a presumption of consent. However, the country took 15 years for information training, the implementation of educational programs, social advertising. An example for other countries can be considered a clear system of transplant coordination, which in Spain is developed at an exceptionally high level. Practical applicability of the Spanish model was demonstrated by Croatia and Belarus, which achieved significant success due to the implementation of the Spanish model and the introduction of appropriate changes in the legislation.

The foregoing suggests that values, beliefs, even prejudices, which are sometimes very persistent, can change if the social environment changes, because a person, being a social being, cannot help reacting to changes that occur in society, especially if he gets a correct explanation of the new laws and phenomena and has the opportunity to see the results. It can be assumed that in the minds of the inhabitants of these countries there are not so many fears and prejudices concerning organ donation that exist among residents of countries where the problem of shortage of donor organs is much more acute.

**The problem of deficiency of donor organs. Ethical and psychological aspects**

The problem of lack of organs for transplantation is one of the most serious and difficult to solve in transplantology. According to the organization Donor's Gift of Life Program, more than 122,000 people in the world are waiting for the organs they need (including the heart). In the US, according to OPTN3 for 2017, an average of 20 people die each day (including children) awaiting transplantation, which is not carried out because of a shortage of donor organs. At the same time, there is an entire army of highly skilled transplant surgeons armed with modern technologies and ready to save lives. They again and again bitterly state that the potential recipient of the donor organs has died, the next opportunity to save the patient has been missed.

The solution should be sought not only in the medical field. In this problem are hidden complex ethical and philosophical questions related to the perception of the human body, its integrity, dignity, including after death. Attitude to the body (even the deceased person) as to a set of organs contradicts our deep, not always realized convictions. From a philosophical and ethical point of view, a person cannot be a simple functional set of organs and systems. Such a reduction of the concept of a person is able to open the practice of using the body as a set of spare parts that threatens humanity. Here we run into the classical Kantian moral law, which prohibits to treat humanity, whether in ourselves or in others, as a means. This law extends to the human body. Let the life activity of the organism is maintained artificially, let the doctors state the

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death of the brain - all the same our moral intuitions rebel against the removal of organs from the body, in which the heart is still beating.

Probably, people with greater understanding would react to the removal of organs after cardiac arrest, but explanting of donor organs is possible only if the natural blood flow is preserved, otherwise they will be unsuitable for transplantation. This applies to the liver, heart, lungs, pancreas. The only exception can be kidneys that can be used, explanting them in time after cardiac arrest, but it is still worse for the recipient and is fraught with additional complications.

Such kind of information is very emotionally charged, especially if it’s not about abstract medical cases, but about a close person. In critical situations, face to face with death, a person begins to believe in God (if not previously believed), and in extrasensory, and in shamans with clairvoyants, and simply in elementary luck. Fears also include: what if suddenly doctors make mistakes or, worse, deceive, because they want to quickly remove organs?

Against the backdrop of such fears, the darkest myths about “black” transplantologists and the black market of donor organs are born, which is replenished at the expense of people killed on demand, about special places where they keep "consumables", etc. There are books and movies in which this theme develops, such as, for example, the film "Island" (USA, 2005, directed by Michael Bay), and similar in plot, but perhaps deeper and more multilayered, though not so the famous film "Never Let Me Go" (UK, USA, 2010, directed by Mark Romanek) based on the novel of the same title Kazuo Ishiguro. In these films, we see a society in which people are specially cloned and grown for organs that are used later to save lives of "genuine" people, since clones are not considered full-fledged people, they are just living "factories of organs". However, clones also think and feel, know about their doom and at the same time cannot do anything with the system: they do not have the rights of an ordinary person, and under the law they are not citizens, by and large not even people, and the meaning of their existence is to give back "normal" people their bodies (and life), when the hour comes. If the heroes struggle in the first film (they arrange an escape, fight and eventually change their destiny), then the second film is much more sad and hopeless: the characters unsuccessfully try to find and pass a secret test, after which (according to vague rumors) one can get a special permission not to go immediately on "excavation" of organs, and live a little longer. Among the clones there is a legend that it is possible if you prove that you are able to feel and create like a normal, full-fledged person. The film's characters do not even pretend to be bigger. However, even such a modest dream - to get several years of quiet life - turns out to be unrealistic for clones, and as a result, a ruthless system gradually takes away the lives of young donors. And the worst thing is not even that they live so briefly and know that their bodies and lives are designed to take away organs for transmission to other people, but that they guess that after the first two or three "excavations" they will not be able to die, that is, "complete." And then the most terrible thing will come: they will no longer be taken care of, because officially they will cease to be considered alive, but, remaining conscious, they will have to observe how from the still living body others continue to take the organs ("donation-by-donation"), and this personal hell is infinite...

Such works of art reflect the fears in the public mind, and people are more likely to believe such a gloomy dystopia than medical facts and sociological studies. Analysis of artistic texts, science fiction is an extremely fertile topic of research, because they can reflect existing in society views, beliefs, including moral standards, desired (or, conversely, criticized by the authors) relationships between people, an image of the possible in the future moral collisions.

Against the backdrop of all these contradictions, the existing request in the medical community and in the patient community to preserve and increase the donor resource leads to a very ambiguous pressure on public authorities. A number of measures are called for to change the state of affairs, but we must take into account that public mores, values, opinions and perceptions of ordinary

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people about transplantology are touched upon, which, as mentioned above, are often extremely bizarre.

**Cyborgization: a dream or an alternative to organ donation?**

According to experts, the world transplantation makes great strides. Successfully transplanted not only the various internal organs, but also limbs (arms and legs), the face. An important event in transplantology was the fact of a uterus transplantation with successful gestation and the subsequent birth of a child.

In the United States, 65,000 amputations are performed every year. In 80% of cases, patients are over 50 years old. The most common amputation is below the knee. The main cause of amputation is vascular disease and trauma. Only 4% live with congenital absence of limbs. All these people are saved by prosthetics.

According to the Federal State Statistics Service for the year 2016, there are 12.8 million disabled people in Russia. Among them are disabled people of the 1st group - 1.3 million people, II group - 6.3 million people, III group - 4.6 million people, disabled children - 617,000. According to the estimates of the Ministry of Labor (data for 2015), 86.6% of disabled people are provided with rehabilitation appliances. In the same year, the state allocated 676,743 prostheses, 2408 devices for dressing, undressing and seizing objects.

The manufacture of prostheses began long ago, and at first, several centuries ago, they were fastened to the human body with the help of belts, they were quite inconvenient and, of course, there was no talk of any connection with the nervous system. However, in the 1960s, the industrial production of myoelectric prosthetic forearms began in the USSR, and this was a serious breakthrough. In 2014, the US created a bionic prosthetic hand DEKA Arm, which bent, turned and carried grips with sensors attached to the patient's stump. In 2015, prostheses began to print on a 3D printer, and American biotechnologists first used reprogrammed stem cells to grow bones suitable for replacing their damaged analogues in the human body. From year to year, prostheses are becoming more convenient and comfortable. Some prosthetics make it possible to feel touching an object, there are also cosmetic prostheses of the face, the eye. It is already widely used prostheses that are implanted inside the human body, - with the help of prosthetics, bioengineers can replace bone tissue, joints. In June 2008, the world's first operation for the transplantation of a trachea, grown from stem cells, was carried out. Professor Martin Birchall, who participated in its cultivation, says that for twenty years with this technology people will learn to create almost all transplanted organs. Perhaps the transhumanists' dreams about the human body, in which it will be possible to replace the diseased, lost or worn out organs with new ones, like spare parts of the mechanism, are approaching implementation.

**Biohacking, or New cyborgs**

The idea of changing the human body and expanding its capabilities through technology is very inspiring and attractive for many people. With the development of technology, some people are trying to become a kind of cyborg, "crack" their body and expand opportunities. This movement has received the name "biohacking". Biohacker Amal Graafstra implanted between his fingers RFID chips, which allow him to unlock the doors and log in to his computer. On one of the chips in his hand is also stored the encrypted key to the electronic wallet. Although in general, the implantation of chips is still a very rare phenomenon, extravagant personalities tend to change their bodies not so much by medical indicators as from curiosity, risk appetite and the desire to shock. Perhaps in the near future biohacking will become as common among fashionable men and women as tattoos or plastic surgery. Such a radical attitude to his own body reflects, in our opinion, the desire of human to change and improve himself, which is dictated, perhaps, by deep dissatisfaction with his personality, destiny and rejection of his present body. Unlike moral improvement and painstaking psychological work on one's own personality, radical changes in the body can give a quick result and play

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11Innovation. Improving the way we live. URL: http://www.dekaresearch.com/innovations/ (reference date: 08.10.2017)

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13Custom gadgety for the discerning hacker. URL: http://amal.net/ (reference date: 08.10.2017).
a kind of therapeutic role, which is currently performed by cosmetology and plastic surgery. However, if the cause of discontent with your body and the desire to change it are not real physical defects, but self-disapproval, the lack of inner harmony, even a complete replacement of all parts of the body will give only a temporary effect.

At the same time, you can only rejoice at such original and positive people as the Canadian director and producer Rob Spence, who at the age of nine lost his eye and in his place wore an implant, and now replaced the cosmetic implant with a miniature video camera\(^\text{14}\) and with its help makes unacknowledged movies. The ability to transform a body flaw or mutilation into an advantage and the possibility of creativity is admirable and allows us to believe that a future, even such an unusual for us, will not be deprived of humanity and a sense of humor. People with physical disabilities due to the development of technology can live a full life.

In October 2016, Zurich hosted the first Olympics "Cybathlon" for people with disabilities, on which, unlike the Paralympic Games, people compete in technical terms, they use high-tech devices. It is planned that such an Olympics will be held every four years, and with each new Cybathlon we will be able to see more and more perfect devices designed to help people.

Meanwhile, cyborgization is gradually becoming a part of our everyday life. If ten years ago bionic hands, called by developers "the hand of Luke Skywalker," were inaccessibly expensive, massive and created in a single copy, today some models will cost several thousand dollars, which means that at least in developed countries they are already accessible to ordinary people. Judging by the analogy with first introduction of mobile phones, which cost three decades ago 4000 dollars and weighed a kilogram, and today every schoolkid has it, we can hope that in the future, in 20-30 years, such services as transplantation, implantation of chips, artificial organs, will become basic and can be accessed in almost any clinic. Bioengineering, bionics are today the fastest growing movement even in comparison with industrial robotics.

It can be assumed, that the splicing of the human body with high-tech mechanisms will lead to the emergence of a new human. Will its nature change as a result? What will be the psyche of this person, social skills, morality? The answers to these questions not only excite philosophers, anthropologists, psychologists, they have universal significance.

**Conclusion**

As a conclusion, I want to return once again to the problem mentioned at the beginning of the article: the existence of a huge gap between the scientific and practical knowledge existing in modern medicine and the level of understanding that society and ordinary people have. Meanwhile, the fate of these technologies depends on formed in the society ideas about science, modern scientific discoveries, medical technologies, and ways of their implementation. What is the role of experts in all this difficult situation: philosophers, psychologists, ethics, physicians, biologists - those who are directly connected with the problems of development and implementation of the latest technologies? Tracking changes in public morality amid changing living conditions, exploring the relationship between beliefs and existing mores and customs, monitoring opinions, and researching the factors of influence on them - all these tools of humanities are designed to improve and clarify the transfer of knowledge in the system of science-society.

The popularization of science, the dissemination of correct knowledge about modern scientific discoveries, including in the field of medicine, are important not only for the purpose of raising the level of education of the population, but also for the development of medicine itself and technology, and consequently, the future progress of society. Definitely, the creation of new connections between modern science and society is what modern philosophy can (and should) do.

**Reference:**

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Improving the way we live. URL: http://www.dekaresearch.com/innovations/ (reference date: 08.10.2017).

About Contradictory Connection of Bioethics and Event (Medicization of Society and Socialization of Medicine)

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The article demonstrates that there is a contradictory connection of bioethics and event. This principle is conditioned by the event of the medicalization of society on the one hand and socialization of medicine on the other hand. The conceptual elaboration of the problem of the connection of event and bioethics, of the definition of hermeneutics of this connection from the point of view of existentially-ontological phenomnomenology is supposed. The connection of bioethics and event is revealed with the aid of intuition, which is discovered phenomenologically. Their connection appears as contradictory unity of two sides. Their contradiction is existential-and-dialectical. It means, that essentially-ontological pattern of their connection is existential. Event and bioethics appear as existentials. But their existential qualities must not be generalized, for quite often the essentially-existing disintegration of the connection takes place. The event is the cause of disintegration and divergence, what supposes human participation. Bioethics and event are anthropological existential. They are connected between each other by essential connection. And here the traditional question about essence of anthropological essence arises. The latter is guaranteed by the experience of its existential basis. This leads to the original essence of the event and bioethics. The existence manifests itself here. It is the basis for the possibility of the essential connection of bioethics and event. The essence of their connection is defined by essential essence of anthropological essence. It is interpreted as dependent on existence of anthropological essence, on its existential behavior. Anthropological essence is the ontological totality of the existential acts-behavior of each human and all humankind. At the same time bioethics is the existentially-ontological phenomena intrinsic in living world of anthropological essence. The conclusion is that contradictory and united continuum of event-bioethics exists existentially. Bioethics and event take place in each other. And their relations are asymmetrical and accompanied by tension, which initiates their interaction.

Key words: event, bioethics, existentially-ontological phenomenology, intercommunication, contradiction, principle.

About Contradictory Connection of Bioethics and Event (Medicization of Society and Socialization of Medicine)

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О ПРОТИВОРЕЧИВОЙ СВЯЗИ БИОЭТИКИ И СОБЫТИЯ (МЕДИКАЛИЗАЦИИ СОЦИУМА И СОЦИАЛИЗАЦИИ МЕДИЦИНЫ)

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