

BIOETHICS IN TRANSDISCIPLINARY AND INTERDISCIPLINARY CONTEXT OF POST-NONCLASSICAL SCIENCE

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Abstract: Bioethics is an offspring of the post-nonclassical science. The subject of this research is its genesis and development in interdisciplinary and transdisciplinary space of the existence of modern philosophical-scientific thought. The direction of analysis is chosen by the author led to some inferences. Foremost, we will point out that anthropological turn in science is one of the main factors, which have created bioethical interdisciplinarity and transdisciplinarity. The aforementioned bioethics characteristics created the possibility of the complex solution for this science's problems. Philosophical and ethical concepts and methods had played very important role in bioethics formation as a new form of scientific cognition. At the same time, bioethics enriches and upgrades classical philosophy with new interpretations of fundamental philosophical problems. Bioethics formed in interdisciplinary and transdisciplinary context of modern science is the life axiology.

In order to find axiological importance of bioethics, we have decided to identify links and relationships within bioethics as a whole system. We constructed the bioethics concept as an interdisciplinary and transdisciplinary study of the moral and social problems caused by development of modern biomedical technologies. We then used this concept to form such philosophical-scientific comprehension paradigm of a problem of axiological justification of human life and health in the modern world, which assumes cooperation between representatives of different disciplines, and expansion of scientific outlook—its exit from a scientific radius.

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Introduction

The interdisciplinarity and transdisciplinarity of bioethics, which are its characteristic features, are determined by anthropological turn in science. Interaction of different sciences differing from each other, by methodological receptions, expands prospects of humanology. There is some combination of the alternative approaches existing in various areas of knowledge about a person.

The bioethics integrates such knowledge of nature and the Socio-Humanitarian sciences, which can be useful in the protection of human life, health, and well-being from all risks that modern civilization's discoveries include.

The interdisciplinarity and transdisciplinarity of bioethics are defined by complexity of bioethical problems and demands of their complex solutions. Ab incunabulis bioethics co-opted information, from many scientific and extra-scientific spheres of knowledge about the world, which prima facie can seem rather remote from each other, e.g. from natural sciences, medicine, jurisprudence, anthropology, sociology, social ecology, literature, and history.

Philosophical (foremost, socio-philosophical and ethical) and religious ideas played the meaningful role in bioethics as a new form of scientific cognition. The central bioethics problem is the formation in public consciousness of a life axiology. It became a connection point of these humanology spheres, which are very far from each other.

It is important to comprehend the extensive problems in the field that is common to bioethical and social studies. On one hand, convergence of natural science knowledge, including medical, with the socio-humanitarian stimulates redefining social and philosophical knowledge in a context of realities of a modern civilization. On the other hand, it influences transformation of a biomedical problematic—its exit to new level of public comprehension taking into account socio-humanitarian knowledges.

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Anthropological turn in science: A factor of formation of interdisciplinarity and transdisciplinarity of bioethics

The interdisciplinarity and transdisciplinarity of bioethics, defining problematic character of its methodological development, are determined by anthropological turn in science. In this sense, it represents the result of post-nonclassical science development.

Post-nonclassical science development stimulates continuous movement of scientific and philosophical thought in search of new methods, which would be suitable for the solution of the widest problems range or even for the entire knowledge system. Markov (2008) stated that now there are maturation of an urgent need for revision of rigid methodological divisions and a search of new sciences interaction forms, which are considered incompatible because there are distinctions in methodological and real world outlook. It opens prospective creation of interdisciplinary and transdisciplinary scientific space. In fact, now there are many “complex,” “system,” “integrative,” and “interdisciplinary” sciences—Bioethics is one example. Interdisciplinary and pluralistic inwardness of bioethical dialogue is indicated by the Universal Declaration on Bioethics and Human Rights, accepted on October 19, 2005 by the 33rd session of General conference of UNESCO: “The aims of this Declaration are: to foster multidisciplinary and pluralistic dialogue about bioethical issues between all stakeholders and within society as a whole.”

Frolov (2009) believes that the person, as object of scientific research, becomes in the center of multi-sciences crossing—social, natural and technical. “As a result of it, there are new sciences, as a rule, these sciences are synthesized.” And, “the reality force scientists of very wide range to concentrate attention on the person” (Frolov, 2009).

All levels of being, from molecular to conceptual and axiological, are connected in a person. It is not a mechanical unity, but it is an organic whole. Nevertheless, each of these levels is studied by its own specific methods. The reasonable question might be, “how to upbuild a dialogue about a person?” We can connect different sciences in the methodological receptions, thus a combination of alternative approaches, which can even be in one science is a *sine qua non*. Each science looks at the world only from its own perspective. A result of it is an emergence of everything new and new sciences with the narrow specialized subject. Nevertheless, our subject matter is not the quantity of sciences (it is not necessary for a modern civilization), but their integration and mutual openness. This statement is demonstrably true; those levels of human being, which are divided between sciences, are actually interconnected. For example, the illness and healing depend not only on the physiological reasons, but also on those of social, spiritual, moral, even the intellectual nature.

In different aspects and facets of humanity, human existence are isolated for studying between different research spheres, which in classical science, are interconnected among themselves either minutely or in the slightest way. For instance, a person can be viewed through historical science, human anatomy, religious beliefs, spirituality, genetic screening, psychology, quality of life statistics in sociology, etc. Any scientific subject is no more than an abstraction without real subsistence. It seems proven, yet, for adequate understanding of the person, it is necessary to view one through unified science.

It is our strong conviction that this thought is a very close approximation to the truth. But, it is still uncertain to say whether the accumulated modern scientific knowledge is sufficient for the complete concept of a person. If the answer is “yes,” then the subject require following provisions that integrate knowledge is necessary for creation of this concept, i.e. the knowledge, which are collected from all those fields science, necessary to study the person. To elaborate, this effort is not a creation of the all-around-a-person theory, but it is a search of new cooperative forms between different approaches to humanological study.

In the formation of this new approach, connecting simple parts and sketchy knowledge from different fields of knowledge about a person is impossible. It is inane to divide a whole into parts and then try to integrate the simple parts. That is the point, the interdisciplinarity and integrality are not creation of a uniform science substratum. It is a formation of flexible communications between their interactions, which results in specialized development with complex, systematic ideation and sophisticated intellection.

Academician Frolov was one of the first in Russia who began to write about necessity of all-inclusive humanology. He was also the first who tried to explore the integrated interdisciplinary approach in study of the person in his book “Perspective Possibility of the Person. Experience of Complex Statement of a Problem, Discussion, Generalization,” which was republished in 2008 (Frolov, 2008).

Frolov emphasizes the problem of a complex and all-inclusive study of a person is triggered by modern reality, videlicet by the credibility gap between technical-scientific progress and the human weal. In his opinion, studying of the person from different sciences, separated among themselves, is unpromising and inefficient. Thus, the scientist accents axiological and regulatory functions of philosophy. He developed its socio-ethical and humanistic principles in relation to problems of human life and death, health and welfare, “and now (in what already time!) comes, apparently, “hour of triumph” for philosophy (Frolov, 2009). It is not only because, at all times, the person is being the main object of the philosophy searches or is being investigated, but also because the unbounded person is universal in a world so unfirmamented of its relations and states, including natural, social and moral. Thus, philosophy, with its love for wisdom, had one more opportunity to connect science and humanistic ideals, thanks to Protagoras’ paraphrased principle of homo-mensura (man-measure), “of all sciences the measure is man.” In Frolov’s works, not only could we sense aspiration to sciences integration (interdisciplinarity), but also see a way of expansion of scientific outlook (transdisciplinarity).

Interaction of different disciplines, differing from each other by methodological receptions, expands humanology prospects and creates possible combinations of the alternative approaches existing in various areas of knowledge about a person, e.g. evolutionism and generationism—the anthropic principle in Physics and cosmological representations by old Russian authors.

In bioethics, it is possible to find space, which will be the general ground for problems as information theories, and Christology as biology and history. It is possible to present a problem of a human genome from the Christian point of view, e.g. from the doctrine about predetermination, etc. Bioethics has the general problematics with ethnology—ethnogenetics problems, with business ethics—so far as concerns with commercialization of scientific researches, etc. Thus, we can speak about heterogeneity of bioethical knowledge.

The bioethics aspires to avoid reductionism or oversimplification—reduction to simpler, foreseeable, understandable, more available for the analysis and the decision. It tries to use multilevel understanding of human life and health, and leads to a system of complex cognition and knowledge about the person.

Interdisciplinarity and transdisciplinarity as a ways of complex solution of the bioethical problems

The interdisciplinarity and transdisciplinarity of bioethics are defined by complexity of bioethical problems and demand the same level of complex decision. Each difficult case from the ethical point of view in medicine is unique; therefore, for an effective solution, it is necessary to take into consideration both medical and psychological, both legal and moral, both financial and social aspects of current situation. It is possible to consider everything all-encompassing only at a joint discussion. For this reason, it is important for bioethics to have extensive discussions between natural scientist, lawyers, theologians, doctors, and philosophers is important; each participant in the discussion

represents an essential aspect of a discussed matter. The decision is formed on the basis of consensus and each of the parties bears equal responsibility for consequences, which would be predicted professionally. The purpose of this joint discussion is neither for each of the parties to comment on the concrete issue, nor is it for solving up-to-the-minute problems for the here-and-now situation. In fact, the purpose is for creating a new type of social “ego” in which the changes of the public and personal self-identification is ethically reflected through the relation of the person to life.

Ab incunabulis bioethics co-opted information from many scientific and extra-scientific spheres of knowledge about the world, which *prima facie* can seem rather remote from each other, e.g. from natural sciences, medicine, jurisprudence, anthropology, sociology, social ecology, literature, and history. The significance of co-opted information from each of these spheres of science, the formation of bioethics, is explored as follows:

- Attainment of natural sciences is relevant for bioethics as it is ineffective to approach any scientific sphere with moral preachments and ignore any professional specifics and the store of accumulated knowledge. Moral values of science comprise of the all-ethical contents, but at the same time carry out instrumental functions; therefore, their applications have to be situationally correlated. Protection of human life and health against dangers, which are concealed in natural science discoveries, does not presuppose groundless and indiscriminate negation of scientific progress. In fact, adequate and correct social and moral assessment of its positive and negative results is impossible without support on natural science knowledge.
- Medicine which, certainly cannot be carried unambiguously to the natural science, was always the sphere in which convalescence of the person was defined as a search result of golden mean between possible harm and expectable avail from used methods and remedies (the word “medicine” has also an Indo-European root of “med” – meaning the “middle”). The search of this measure of healing is common both for medicine and for bioethics; evidence of medical ethics is especially significant for bioethics. Medical ethics, in considerably degree, differ from other forms of professional ethics. This difference consists of knowledge and abilities of the specialists directed at the solution for privy problems concerning intimate aspects of life and connected with a matter of life and death. Medical ethics rectifies understanding of many moral values, virtues and shortcomings. These corrections are conditioned by that priority of values, which is defined by professional need of medical practice, e.g. truth-telling and “*noli nocere*” (truth-telling and confidentiality). The knowing and understanding of these axiological nuances are extremely important for bioethics formation.
- Nomology provides juridical warranty of a human right for life, health, human dignity, and liberty. This domain comprises of information on borders of that social life space, in which the moral positions can be strengthened by authority of the law. If ethics appeal to individual conscience, public opinion and cultural tradition, the law has the actionability (claim force), as provided by Wilson (2009), “while moral obligation focuses on an individual’s conscience or on society’s opinion about behavior, legal obligations are enforceable by the state’s power without regard to an individual’s conscience.” Characteristic of the former Soviet Union legal illiteracy of the population, including problems concerning life and health, accentuates legal aspects of bioethics today.
- Anthropology, with its all-complex anthropological knowledge (biological, social, cultural, and philosophical anthropology), is important for bioethics because it is the science which centers around the life, health and welfare of the person. It seems that the sociocultural anthropology, in which part is the medical anthropology, is especially significant in this case. Medical anthropology was first introduced between the 1960s and 1970s. Its genesis is connected with a keen interest to social and cultural factors of an illness and treatment. The

medical anthropology is capable of strongly influencing conceptualization of social, scientific and philosophical analysis of an illness and treatment. Within this direction, we can make an attempt to understand how social, political, and economic aspects have influences upon the health, organization and structurization of socialized medicine.

- Sociology, especially such direction of nonclassical sociology as the vitalistic sociology (sociological vitalism), has many general problems and questions (generalialia) related with bioethics. An intersection of interests between these two scientific spheres happens in the concepts “quality of life,” “social safety,” “social risks,” “vital forces,” etc. Thus, both bioethics and sociology affect valuable aspects of the aforementioned phenomena. Use of acquirements of sociology in bioethics enriches its categorial system and expands a social context of research. Thus, this leads us to a cross-fertilization.
- Social ecology, as well as bioethics, arose as a joint of natural sciences (biology, geography, physics, astronomy, and chemistry) and humanitarianism (philosophy, sociology, cultural science, psychology, and history). This sphere investigates communications between society and the nature. Preservation of our habitat is directly linked to values and value system, which honor and cultivate in our society, e.g. consumer in relation to the nature— robber-economy, harmonious exploitation, etc. A sound ecological situation is essentially important for the preservation of human life, health and well-being.
- Literature contains an enormous humanistic potential. It is especially necessary to give accent to the Russian literature, seeing it as a humanism treasury-house of universal culture; it is possible to make confirmation of axiological absolutization of human life. The thesis that human life is an absolute value is fundamental in bioethics. Moral feat of the doctor and responsibility of scientists for researches results, along with other subjects, are inspired repeatedly by the Russian writers, e.g. A.I. Kuprin, M.A. Bulgakov, A.N. and B.N. Strugatsky, B.L. Pasternak, etc.
- The history discloses options of the value in relation to life and health of the person existing in different periods and how axiological guideposts can change the society, depending on a party line, cultural transformations, economic situation, etc. The history forms a clear picture about a person’s life relative to humankind. For bioethics, that part of historical science, which transmits to us information about science and medicine development, is especially significant.

Role of philosophical and ethical ideas in bioethics formation as a new form of scientific knowledge

Philosophical (foremost, socio-philosophical and ethical) ideas played the meaningful role in formation of bioethics as a new form of scientific knowledge.

Modern natural sciences achievements force us to address the analysis of an anthropological problematics to ideas, concepts and theories of very high philosophical level. It is necessary to apply philosophical methods and intentions in a wide range for an explanation of new discoveries and new discourses generated by these opening in controversies about human nature. The old classical science with its methods cannot cope with this task. The philosophical and methodological reflection of this perspective is indispensable. Furthermore, the philosophy urges us to look at realia of a modern civilization, not from pragmatic positions or from the man-technocrat stances, but from height of the panhuman principles and ideals.

The bioethics not only takes from philosophy, but also enriches it. There is an enormous potential for disclosure of new variations of classical philosophical topics in bioethics—it is perceptive and open. The classical philosophy was trying to comprehend fundamental problems of ens: space and time,

logic of historical development, etc. Its valuable preferences were fixed in the spiritual, moral, and esthetic domain, i.e. it is not materialistic, but speculative. Accordingly, aside from philosophical attention, there were many important aspects of human life: physiological health, corporality, fleshliness, sexuality, facts and events of daily occurrence among many others. The bioethics addresses, first of all, these realities, but not on a high philosophical level. All problems of bioethics bear the specifics; they have a philosophical content, but their decision demands exceedingly concrete and situational methods. Bioethics, without being fond of speculative theorizing, makes philosophical problematics more visual and real-life.

It is possible to tell that bioethics is an understanding of the most difficult philosophical problems of human life through daily occurrence. "Daily occurrence" is a term, which is not incidentally defined by post-nonclassical science to the forefront. Philosophy is, first of all, knowledge of life and how we best comprehend what directly are touching and are personally for us. The Russian word "понимать," which means "to understand or to comprehend," is formed from an Old Russian word "пояти" literally meaning "to take in hand." As for we are as strong as our life and health.

Bioethics enforces us to realize the vital relevance of philosophical wisdom through of daily occurrences, which are generally bodily, corporeal, physical, and earthen. The huge social importance of bioethics consists of an increase in a share of philosophical knowledge and its actualization in public consciousness. Bioethics is especially close to moral philosophy. Even so, some people consider bioethics as a form of applied ethics. We do not agree, forasmuch as interests of bioethics exceed the ethical limits. Nonetheless, the importance of the ethical aspect for bioethics cannot be exaggerated. Without foothold on earlier developed ethical methodology and without knowing about history of development of moral-philosophical noesis, it is impossible to construct the bioethical theory that is significant in the moral plan.

The modern science puts forward the thesis about necessity to rethink of scientific knowledge from the moral values point of view. If the classical science was neutral concerning axiological assessment, the post-nonclassical science recognizes valuable aspects as significant as gnoseological. Academician Stepin (1992) stated, "today scientists comprehend not only historical variability of ontological postulates, but also ideals and norms of knowledge. Therefore, the requirement to explain of values not only does not contradict traditional guidepost to receiving objective-veritable knowledge about the world, but also does the prerequisite to realization of this guidepost."

Regarding axiology, the regulatives of scientific cognition and overall cognition, Russian researchers Frolov & Yudin (2009) wrote, "but if cognitive activity is activity purposeful and aim-conscious, it inevitably gets also the moral-ethical contents. Irrespectively from that how consciousness of aim comes about—by the appeal to logic of science development, or to needs of society, or to interest of the employer, or somehow otherwise—the main thing, the cognition act immerses thereby in value-laden ambience, but not in value-indifferent." It cannot be emphasized enough that ethical indifference of science and its arguments is impossible. New technologies and modern inventions (artificial insemination, organ transplantation, etc.) are within the scientific sphere, only if we consider the technical aspects. Yet, their application is already present in the moral sphere, and here, not as science to make decisions, but as the society. Development of humanity is not a movement on a straight line of scientific achievements; it is a trajectory of moral rises and falls.

Ethics, as a classical science, remains within deontology; it formulates moral ideals, norms and the principles somewhere in the metaphysical sphere. Thus, the person as though has to spiritually "grow" or "reach out" to understand them and desire to embody them in their behavior. Bioethics transfers all moral problems to the area of "momentary significance," such as daily. Its objective is to teach and compel to the use of ethical standards and the principles in the situations connected with our health and well-being. It projects the most sublime moral values on reality through a prism of such situations,

having appeared in which person loses desire to theorize. Moral values, thus, stop being a self-value—ethics for the person, instead of the person for ethics.

American scientists Beauchamp & Childress (1989) wrote, “ethical theory does not create the morality that guides professionals’ decisions and actions. It can only cast light on and supplement that morality, in part by analyzing and appraising moral justification, their presuppositions, and their implications.” They believe that the inside view is necessary for understanding of biomedical specifics. They offered such look in the book, “the obligations, virtues, and ideals analyzed in this book are basic and indispensable threads in the moral life, but the moral life is a still richer fabric with other threads in its weave” (Beauchamp & Childress, 1989).

Theses stating that ethics and health are interrelated, and that the moral is an important factor of preservation of health and life extension, ascend to antiquity. Already patriarchs of classical ethics, Socrates and Aristotle, connected concepts of pain and suffering, pleasure and happiness with good and evil concepts, human virtue and vice—hedonistic and eudemonistic philosophical context. This became one of the methodological bases of human nature cognition, its essence, and existential foundation of its life. After Socrates and Aristotle, in different interpretations, it passed through all philosophy, since antiquity up to our days, and most visibly was actualized in bioethics.

Since that first moment as a child, the moral consciousness appears; its health begins with his virtue, but does not end because virtues are also necessary in life—as much as health.

Conclusion

Bioethics is a transdisciplinary and interdisciplinary sphere of modern scientific knowledge. Natural sciences, medicine, philosophy, theology, law, anthropology, sociology, social ecology, literature, history are all central around the problem and formation of bioethics. In public consciousness, life axiology became a connection point of these cognition spheres, which seem very far from each other.

The life axiology represents hierarchically organized system of values; the human life is primal in this system. Subordinates are the values filling life with sense, doing it perfectly and fully by giving strength and incentive to live. These are such values, as health and well-being, freedom and dignity, equity and mercifulness, etc. Hence, it appears that construction of a life axiology is the general humanistic vector directing the knowledge to the well-being of the person—the only proper purpose of science.

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