

## BIOLOGICAL AND SOCIAL: TWO PROBLEMS OF HUMAN IDENTITY IN THE CONTEXT OF MEDICAL ETHICS

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At present, the most important problems of medical ethics related to the issues of fair access to medicine and health care as the main human benefits are of particular importance. In this regard, the study of biological and social foundations seems to be especially relevant, allowing us to consider a person not only as a user of medical services, but also as a sense-making center, influenced by the value-driven norms and societal ideas. The aim of the study is to consider the following two aspects of conceptualizing a person in medical ethics: his/her biological and social status. Dialectical method, system analysis, cultural and phenomenological approaches constitute the article's methodological basis. Based on the discussion undertaken in modern scientific literature, these allow us to come to an understanding of a person in the system of medical ethics. It is noted that consideration of a person in the context of issues of medical ethics goes, first of all, in two main directions: first, the role of a person is revitalized in the process of choosing treatment methods and understanding the degree of risk associated with the treatment and prevention of his person as a biological being; the second is the immersion of a person, engaged in decision-making, into the system of values and traditions of society. It is shown that the second aspect is connected with the understanding of a citizen as a social being. Comprehension of a person should be undertaken through the study of his moral, spiritual, emotional, physical and biological foundations of being; at the same time, biological and social approaches should not act separately, but in unity, and lead to a holistic concept of man.

**Key words:** medical ethics, human, healthcare, medicine, health, society, humanitarian knowledge, natural sciences, consciousness

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## БИОЛОГИЧЕСКОЕ И СОЦИАЛЬНОЕ — ДВА РАКУРСА ИДЕНТИЧНОСТИ ЧЕЛОВЕКА В КОНТЕКСТЕ МЕДИЦИНСКОЙ ЭТИКИ

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В настоящее время важнейшие проблемы медицинской этики, связанные с вопросами справедливого доступа к медицине и здравоохранению как основным благам человека, приобретают особое значение. В этом плане особенно актуальным представляется исследование биологических и социальных основ, позволяющих рассматривать человека не только как пользователя медицинских услуг, но и как смыслообразующего центра, испытывающего влияние ценностных норм и представлений, принятых в обществе. Цель исследования — рассмотреть два аспекта осмысления человека в медицинской этике: биологический и социальный статусы. Методологической основой статьи является диалектический метод, системный анализ, культурологический и феноменологический подходы, позволяющие на основе материалов дискуссии, предпринятой в современной научной литературе, прийти к осмыслению человека в системе медицинской этики. Отмечено, что рассмотрение человека в контексте проблем медицинской этики идет, прежде всего, по двум основным направлениям: первое — активизация роли человека в процессе выбора методов лечения и осмыслении степени риска, связанного с лечением и профилактикой его персоны как биологического существа; второе — погружение человека в процессе принятия решений в систему ценностей и традиций общества. Показано, что второй аспект связан с осмыслением гражданина как социального существа. Осмысление человека должно быть предпринято через изучение его нравственных, духовных, эмоциональных, физических и биологических основ бытия; при этом биологический и социальный подходы должны выступать не разрозненно, а в единстве и привести к целостному пониманию человека.

**Ключевые слова:** медицинская этика, человек, здравоохранение, медицина, здоровье, общество, гуманитарное знание, естественные науки, сознание

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Currently, the most important problems of medical ethics related to the issues of fair access to medicine and health care as the main human benefits assume special importance. In this regard, studying biological and social foundations allowing us to consider a person not only as a user of medical services, but also as a sense-making center, influenced by the value-driven norms and societal ideas, seems to be particularly relevant.

In today's environment, the citizen's decision-making within the bounds of medical care requires certain grounds. In this context, the principle of respect for human rights and human dignity is the key principle of medical ethics. Every citizen has the right to protection of health, however, as EV Bryzgalina rightly points out, "personal, professional and life experience,

system of values, nonverification of multiple parameters and the impact of social norms make it possible to describe the healthcare resource allocation at the micro level as the bioethical choice, but not the act of deciding" [1, p. 43].

Considering a person in the context of the issues of medical ethics goes, first of all, in two main directions: first, the role of a person is revitalized in the process of choosing treatment methods and understanding the degree of risk associated with the treatment and prevention of his person as a biological being; the second is the immersion of a person engaged in decision-making into the system of values and traditions of society. It is obvious that the second aspect is connected with understanding the citizen as a social being.

From our point of view, comprehension of a person should be undertaken through the study of his moral, spiritual, emotional, physical and biological foundations of being. Both biological and social approaches not act in unity, and lead to a holistic concept of man.

In this regard, research is notable, conducted by Ralph Emerson, who was the figure in the transcendentalist movement. The philosopher substantiates the importance of the person's spiritual advancement. However, he writes about the necessity to consider the individual's biological needs as well. To his mind, mankind has done nothing to learn about the mystery of fate, and feeble efforts to conceptualize the human nature have put the human person on the edge of madness. That is why the researcher rejects all dogmatic measures applied to humans, neither biological, nor social. He aims to uplift the soul of every person to make him/her understand the moral beauty, and to hypnotize everyone into understanding the importance of human dignity. Emerson encourages every person to discover oneself and identify the person's better qualities. His book *Moral Philosophy* is the apotheosis of unity of the human spiritual and corporeal being mediated by Supreme Wisdom: "Human spirit should prefigure our philosophical plans exactly how the human body needs are taken into consideration when building the dwelling house" [2, p.7].

Biological substantiation of human evolution made in the 19<sup>th</sup> century evoked protests from many philosophers. In this regard, VS Soloviev has noted the following: in case we hide behind the idea of humanity as an abstract concept, we would begin to replace true values with imaginary ones. According to V. S. Soloviev, we would begin to see "in our nation the zoological side, its brutal instincts, strengthen its brutal character; whom and what do we love here, whom and what do we serve?" [3, v. 5, p. 393]. When criticizing the attitude toward a person from the perspective of the prevailing biological nature, Friedrich Nietzsche wrote the following about the renegades: "Those young hearts have already all become old — and not old even! Only weary, ordinary, comfortable... their first companions must be corpses and buffoons" [4, pp.154–155].

In the 20<sup>th</sup> century, evolutionary ideas were criticized by many researchers. E. Durkheim opposed absolutizing the biological basis of humans in the context of sociology [5]. VF Malinovsky [6] completely excluded evolutionary concept from social anthropology. In this regard, it is important to emphasize that empirical methods of acquiring knowledge continued to have a strong influence on the human nature conceptualization in the early 20<sup>th</sup> century in the context of both natural science and the system of humanitarian knowledge. Conversely, medicine in general and the development of medical ethics in particular were greatly influenced by the functionalist concept, which interpreted human life through the prism of one's status in the family, social group, society. Thus, Leland Yeager wrote that history did not prove that people had invented ethical norms on purpose. Furthermore, he pointed out that "some rules of families and other groups, including statutes enforced by governments, have been deliberately adopted" [7, p. 97].

Clear delineation of the terms "biological" and "social" primarily on ethical grounds was first noted in the mid-20<sup>th</sup> century. According to T Dobzhansky, exaggerated importance of biological component in the conceptualization of man is the red herring for the mystery of man. Dobzhansky emphasized the danger of relapse into the racial theories, being equipped with the biological basis for determining human nature only. He stressed the implications of the one-sided version of human nature: "some biologists make fools of themselves over and

over by enforcing the solution for social and political problems, which is based on the idea that man is just an animal" [8, p. 157].

Conditional division of the functions of natural sciences and humanities was achieved by the mid-20<sup>th</sup> century. Furthermore, studying the biological basis for the existence of nature and man was the main object of natural science, and humanities focused mainly on the spiritual, social, cultural and ethical aspects of the human being. Thus for example, Erwin Schrodinger, Austrian physicist, carries the biological patterns over to the emotional and psychological sphere of human life. He notes the fact that many elements of the individual's conscious activity (where the person feels happy when reaching a goal) are not subject to volitional control, and some physiological processes (for example, breathing in the room full of smoke) on the contrary may slow down. Schrodinger calls these phenomena "misconceptions of mnemonic hereditary nature" [9, p. 13]. That is why he describes the manifested human spirituality, such as the emerging faith and religion, as the "absurd support" fearfully grasped by the "weak, deceived human spirit" [9, p. 205]. In this regard, it is interesting to note that Descartes excluded sensations from the category of mental quite often: "when we see an animal heading towards us..., when this figure is extraordinary and very scary, i. e. when it vividly brings to mind something that hurt the body in the past, it sparkles the passion of fear in the mind, which could be followed by the passion of courage..." [10, p. 575].

Here we are talking about the Freud's idea that many mental acts are unconscious and therefore there could be some unconscious desires and beliefs. According to Freud, desire is covertly constructed as the condition, which produces certain behavior. Thus, Freud has come to believe that conscious access to certain conditions is insignificant in explaining behavior. Consequently, the person's awareness never constructs the being of something as the belief: "...there are present in all men destructive, and therefore anti-social and anti-cultural, trends and that in a great number of people these are strong enough to determine their behaviour in human society" [11, p. 20].

Representatives of the behaviorism movement developed a new psychological explanation of human activity, which left no room for the informed assessment. The belief that the internal states were not related to the explanation of human behaviour was the primary reason for this view. That is why interpretation of human activity is independent of phenomenal concepts. Currently, David Chalmers tries to rationalize the concepts of behaviorism. He points out that defining the role of mental in the production of human behavior requires focusing on psychological properties. When considering the experience of the human consciousness mental states, we should base on phenomenal concepts: "To assimilate the phenomenal to the psychological prior to some deep explanation would be to trivialize the problem of conscious experience; and to assimilate the psychological to the phenomenal would be to vastly limit the role of the mental in explaining behavior" [12, p. 35].

In this regard, fundamental research was performed by Konrad Lorenz, who tried to define the term "instinct" by monitoring animal behavior, and studied the inherited patterns of behavior in animals. Comparative analysis of behavior in wild and domestic animals led Lorenz to believe in the loss of vitality in domestic animals. The thinker also noted the adverse impact of urban infrastructure on the domesticated animal management. By extrapolating his observations into the development of modern civilization, Lorenz came to understanding the ambiguity of the moral and esthetic

foundations of humanity. He considered political activism in the society as the aberrant aggressive instinct. Lorenz came to a conclusion that human cognition emerged in the course of evolution to preserve the species: “this should be studied as a function of some real system that has emerged naturally and interacts with the equally real world” [13, p. 15].

Ideas of Konrad Lorenz did not go unnoticed by the academic world. These were further developed by Edward Wilson, Harvard University, in his book *On Human Nature*. Wilson, who was one of the founders of sociobiology, defined the goal of the new science, sociobiology, as a “systematic study of the biological basis of all forms of social behavior in all kinds of organisms, including man” [14, p. 5]. He tried to shift the humanities towards absolutization of the biological basis of the human being based on evolution theory, providing true interpretation of human behavior. Wilson promoted the social development strategies in the same way as the “human animal survival strategy” insisting that social relationship had the biological basis [14, p. 96]. The thinker believed that even science was not totally free of constraints imposed by the human evolutionary inheritance. Wilson aimed to define and specify certain levers allowing one to both explain and predict human behavior in the framework of the natural selection theory. For example, the researcher attributed the incest taboo to the fact that primitive society had a genetic intention to increase their capability of reproducing. Wilson paid close attention to four major (in his view) categories of behavior, such as altruism, sex, aggression and religion, and treated each category as a human evolutionary strategy.

Edward Wilson concluded that knowledge of genetic strategies was the basis of human sciences. That is why the researcher substantiates the fact that “there is a threshold beyond which biological evolution would start reversing the cultural evolution” [14, p. 80]. His famous saying, “Genes hold culture on a leash” [14, p. 167], demonstrates the desire to justify the priority of the human being biological determinants over the social bases. It is also important to pay attention to the destruction of the basis of medical ethics attempted by this author, since, according to Wilson, there is no way to prove that ethics is more important to define the behavioral determinants compared to genetic basis. That is why the person's fear of sickness or death impedes the individual's activity, whether he/she is a doctor or a patient. Therefore, the Wilson's conclusion is as follows: ethics and culture should only be considered in terms of necessity of these spheres of the human being for evolution.

In the current context, many ideas of Konrad Lorenz are further developed by Paul Nurse, the distinguished British scientist and Nobel laureate. He substantiates the concept of natural selection and declares widespread use of this concept in the areas other than biology. The thinker demonstrates the importance of natural selection for economics and computer science. He emphasizes the fact that the algorithms used to operate technical devices simulate the natural selection. In his writings, he revives the idea of man gradually transforming into machine, proposed by philosopher La Mettrie: “Is it likely to ever meet any other life forms?... I am sure that they, like us, will be self-sustaining chemical and physical machines, built around information-encoding polymers that have been produced through evolution by natural selection” [15, p. 219–220].

Donna Haraway, American historian, takes the opposite view. After studying reports on the life of primates, the researcher concluded that males dominated in the groups. She disputed the finding that gender differences were natural. This provision provided the basis for criticizing the priority of biological foundation in understanding the human being. She

demonstrated the difference between the terms “gender” and “sex”. Haraway showed that the human life biological basis itself was produced by means of social relationships, could be only remotely related to the natural basis, and moreover, could not be explained by evolution theory [16, p. 23]. The researcher criticized the feminist call for determining the foundation of women's emancipation. She denied the possible biological and social rationale for the free choice of “sexual identity”.

Victor Ten has adopted a conciliatory position between the advocates of biological approach and the supporters of sociological justification of human behavior. In his writings, he tries to provide a way out of the cul-de-sac, the science, unable to shift from the reflex theory, has been stuck in. He is offering to start a new science, psychophysiology, which would be capable of answering the following questions:

1. How did humans manage to free themselves of reflexes?
2. What tragedies did they experience in the transitional stage?

After studying the writings of physiologists, Victor Ten concludes that animal reactions are always preset by their biological nature and constantly unambiguous by the way of realization. The animal behavior variation may be only tolerable within the narrow confines of species by means of the well-formed conditioned reflexes. And humans are capable of responding to certain situations in the completely unpredictable manner: “he can shout (curse) like a dog, run away as a hare; he can climb the tree as a squirrel; he can get into a fight as a bear standing on two legs; he can act like Socrates and stay calm” [17, p. 259]. Thus, the researcher finds that the human nature is universal. His anthropological theory is based on accepting polymotivation of the human being. In this regard, we are unable to find exact motives of human behavior. The motives would always be mediated not only by instincts and volitional beginning, but would also show the lack of basis, the intuitive freedom of choice. V Ten notes that “in philosophical speech, human behavior is considered activity, i. e. represents the inverted subject-object relationship” [17, pp. 259–260]. However, according to the author, when engaged in activity, man objectifies his personality and “subjectifies” the object of his activity. Animal behavior does not constitute activity, it is just a reflex behavior. Animals have no resource for the situation conceptualization, that is why animal reactions are immediate and result from unconditioned and conditioned reflexes.

David Reich, American geneticist, studied the modern human populations and set the goal to discover the population diversity. The researcher compared DNA of modern humans with DNA of our earliest ancestors and concluded that the wide diversity of human traits cannot be fully explained by genetic factors. In this regard, the individual's behavioral characteristics, athletic performance, artistic talents, and intelligence are not affected by the parameters of the population. Therefore, David Reich concludes that social bases of the human being are a priority. However, he cautions against exaggerating the importance of biological origin in the human life, which is inherent in certain scientists, since the biological concept absolutization always gives birth to racist theories, which are based on group stereotypes. David Reich opposes any “stereotype labels” applied to people: “Phrases such as “you are black, then you are surely musically gifted” or “you are a Jew, so you have to be smart” are definitely harmful” [18, p. 351]. With that in mind, the researcher concludes that in case of well-chosen social conditions everyone can develop their potential and achieve great success in any sphere of activity, even with low genetic predisposition to this sphere. David Reich encourages us to treat every person as an extraordinary



person, and the society should give everyone the chance to realize their potential. It is respect of the rights and capacities of every person that is the main leitmotif of his writings.

IL Andreyev, expert in cultural and historical anthropology, aims to consider the neurophysiological basis of consciousness and functional state of the brain with regard to explaining human social behavior. He identifies the main difference between humans and animals, and sees not only the premise of language and abstract thought, but also the basis for reflection in the left cerebral hemisphere. According to the researcher, the man's ability to adhere to the norms of morality, law, and cultural beliefs accepted in society results from the hemispheric asymmetry. The author consistently supports the priority of evolution theory in the context of the human formation conceptualization. He rationalizes the idea that "evolutionary and age-related metamorphosis of the brain in the course of the disease or during ageing has its basis in the trend of the brain's situational or permanent return to the status of endocrine organ in the spirit of the Hegelian principle of negation of the negation..." [19, p. 26]. In this regard, we cannot agree with IL Andreyev, who concludes that mass panic, conformist behavior, fashion and other kinds of "psychic contagion" are induced by hormonal impulse. Thus, in accordance with his concept, intellectual potential of mankind would become a powerful evolutionary impulse.

The book *Operation Mensch* by Ariel Noltze is important for conceptualization of biological and spiritual bases of the human being. The main goal of the book is to show the reader the path towards harmony in all spheres of life. The author demonstrates gravity of disregard for the spiritual aspects of understanding a person when providing medical care. His book is focused on the search for true foundations of medical ethics. According to Noltze, declarative medicine is unable to provide the bases, which are required to understand human life in its entirety: "Removal of something large may be excessive, and removal of something small may later appear to be insufficient — this is a balancing act that may be committed only with humility and respect for life" [20, p. 50].

Ariel Noltze poses a very important issue of medical ethics, the issue of the doctor's responsibility for the patient's life and health on the one hand, and the issue of the patient's trust in the doctor as a person raised to the level of God. The researcher reflects on the situations when a person being subjected to medical intervention completely loses control over his/her life, he/she transfers control over his/her physiological parameters to the doctor. There is a difficult issue of medical

ethics, the issue of the medical staff responsibility for the individual's life and health. Noltze cautions against slipping into understanding of any treatment methods as the "silent barter". The author tends to absolutize paternalistic approach to the doctor-patient relationship, since the sacrificial nature of transferring the responsibility for life from patient to physician is a true foundation of medical ethics. The patient's hope to find advantages and accept certain benefits always have a metaphysical foundation. However, the issue of the treatment-related risks widely debated in modern medical ethics may destroy all metaphysical foundations, underlying the patient's trust in the doctor. Noltze points out that it is trust in potential benefits that makes it possible to implement the doctor-patient cooperation. It is trust, strong and boundless, that has to somehow surpass the risks, emerging during treatment. In this regard, the words said by Ariel Noltze may be considered the true apotheosis of medical ethics: "God wants and is able to put your life in order. Are you willing to trust Jesus as your Savior? He can become your personal advisor. Would you entrust Him the essential restorative surgery of your health and mind? Surely, you would still ignore this costly chance or would respond to this invitation to new life with an open heart" [20, p. 59].

Thus, in concluding the review of studies focused on the issue of the relationship between the "biological" and "social" categories, it is important to note that the majority of researchers tend to absolutize the biological basis of the human being. Arguments in favour of understanding man as a "crown jewel" of the evolution of life, such as reliance on the numerous genetic studies or appeal to studying animal behavior, cannot be regarded as conclusive evidence in the current context. However, provisions, resulting in complete leveling of man's biological nature and transfer of social factors in order to explain the physiological basis of the individual's life do not stand up to criticism as well. Therefore, the researchers' keen interest in this issue cannot fail to affect the crucial principles of medical ethics. When treating the biological nature of man as a constant, it is important not to lose sight of man's uniqueness, singularity of every person and, of course, the spiritual component of the term "Man". After all, man is not a "two-legged animal" (this idea was ridiculed by Socrates), and not a Nietzsche's "superman", but an extremely delicate creature in need for care and patronage. Here the following basic principles of medical ethics are established: "nonmaleficence" and "patients treated as ends, not as means". Consequently, the ultimate humanistic goal of medicine, preserving human health and life, becomes the basis of the reverence for life ethics.

## Reference

1. Bryzgalina EV. Biojetika pandemii: abris problemnogo polja. *Chelovek*. 2020; 31(4): 41–56. Russian.
2. Jemerson Ral'f U. *Nravstvennaja filosofija. Opyty. Predstaviteli chelovechestva. Obraz zhizni*. M.: Amrita-Rus', 2021; 400 s. Russian.
3. Solov'ev VS. *Sobr. soch.* SPb.: Prosveshchenie, 1911–1914; 5. Russian.
4. Nietzsche F. *Also sprach Zarathustra: Ein Buch für Alle und Keinen*. Moskva: Eksmo, 2019; 288 s. Russian.
5. Dyurkgeym E. *O razdelenii obshchestvennogo truda. Metod sotsiologii*. M., 1991; 208 s. Russian.
6. Malinovskiy VF. *Izbrannyye obshchestvenno-politicheskie sochineniya*. M, 1958; 305 s. Russian.
7. Leand B. Yeager. *Ethics as Social Science. The Moral Philosophy of Social Cooperation*. Moskva: Mysl'; Sotsium, 2019; 479 s. Russian.
8. Dobzhansky T. *The Myths of Genetic Predestination and of Tabula Rasa. Perspectives in Biology and Medicine*. 1976; 19(2): 156–170.
9. Shredinger Ervin. *Anatomiya razuma: ob intellekte, religii i budushchem*. Moskva: Rodina, 2020; 208 s. Russian.
10. Descartes R. *Strasti dushi. Descartes R. Sochineniya*. Izd. 2-e. Sankt-Peterburg: Nauka, 2015; 562–635. Russian.
11. Freud S. *Budushchee odnoy illyuzii. Freud S. Psichoanaliz. Religiya. Kul'tura*. M.: Renessans, 1991; 17–64 c. Russian.
12. Chalmers J David. *The Conscious Mind in Search of a Fundamental Theory*. M.: URSS, 2019; 512 s. Russian.
13. Lorenz K. *Die Rückseite des Spiegels — Versuch einer Naturgeschichte menschlichen Erkennen*, Moscow: ASTPubl, 2019; 416 s. Russian.
14. Wilson EO. *On Human Nature*. Camb., MA: Harvard Univ Press, 1978; 260 p.
15. Nurse P. *What is Life? Understand Biology in Five Steps*. M.: KoLibri: Azbuka-Atikus. 2021; 224 s. Russian.
16. Haraway DJ. *Simians, Cyborgs, and Women*. New York: Routledge, 1990; 312 s.

17. Ten VV. Chelovek bezumnyy. Na grani soznaniya. Moskva: Eksmo, 2019; 384 s. Russian.
18. Reich D. Who We Are and How We Got Here: Ancient DNA and the New Science of the Human Past. Moskva: AST: CORPUS, 2020; 448 s. Russian.
19. Andreev I L. Evolyutsionno-biologicheskie predposylki struktury mozga sovremennogo cheloveka. Chelovek. 2014; 5: 15–27. Russian.
20. Noltze A. Operation Mensch. Zaokskiy: Istochnik zhizni, 2020; 128 s. Russian.

## Литература

1. Брызгалина Е. В. Биоэтика пандемии: абрис проблемного поля. Человек 2020; 31(4): 41–56.
2. Эмерсон Р. У. Нравственная философия. Опыты. Представители человечества. Образ жизни. М.: Амрита-Русь, 2021; 400 с.
3. Соловьев В. С. Собр. соч. 2-е изд. СПб.: Просвещение, 1911–1914; 5.
4. Ницше Ф. Так говорил Заратустра. Москва: Эксмо, 2019; 288 с.
5. Дюркгейм Э. О разделении общественного труда. Метод социологии. 1991; 208 с.
6. Малиновский В. Ф. Избранные общественно-политические сочинения. М., 1958; 305 с.
7. Игер Лиленд. Этика как общественная наука: моральная философия общественного сотрудничества. М.: Мысль; Социум, 2019; 479 с.
8. Dobzhansky T. The Myths of Genetic Predestination and of Tabula Rasa. Perspectives in Biology and Medicine. 1976;19(2): 156–170.
9. Шредингер Э. Анатомия разума: об интеллекте, религии и будущем. М.: Родина, 2020; 208 с.
10. Декарт Р. Страсти души. Декарт Р. Сочинения. Изд. 2-е. СПб.: Наука, 2015; 562–635 с.
11. Фрейд З. Будущее одной иллюзии. Фрейд З. Психоанализ. Религия. Культура. М.: Ренессанс, 1991; 17–64 с.
12. Чарлмерс Д. Сознательный ум: в поисках фундаментальной теории. М.: УРСС: Книжный дом «ЛИБРОКОМ». 2019; 512 с.
13. Лоренц К. Обратная сторона зеркала. М.: АСТ, 2019; 416 с.
14. Wilson EO. On Human Nature. Camb., MA: Harvard Univ Press, 1978; 5 с.
15. Нёрс П. Что такое жизнь? Понять биологию за пять простых шагов. М.: Колибри: Азбука-Атикус, 2021; 224 с.
16. Haraway DJ. Simians, Cyborgs, and Women. New York: Routledge, 1990; 312 с.
17. Тен В. В. Человек безумный. На грани сознания. М.: Эксмо, 2019; 384 с.
18. Райх Д. Кто мы и как сюда попали. Древняя ДНК и новая наука о человеческом прошлом. М.: АСТ: CORPUS, 2020; 448 с.
19. Андреев И. Л. Эволюционно-биологические предпосылки структуры мозга современного человека. Человек. 2014; 5: 15–27.
20. Нольте А. Операция «Человек». Скальпель и крест — два острия для нового начала. Заокский: источник жизни. 2020; 128 с.