

ETHICS OF SCIENCE AS A CIVIC STANCE: REFLECTIONS OF Y.A. BUKETOV AND THE CHALLENGES OF THE DIGITAL AGE

Makatova A., Academician E.A. Buketov Karaganda University, Karaganda, Kazakhstan

Khabyl A., Academician E.A. Buketov Karaganda University, Karaganda, Kazakhstan

Defining and adhering to a strictly ethical stance in scientific research has never been an easy or self-evident task. In addition to being a scientist, a researcher is also a member of society – often one who benefits from significant privileges, such as access to quality education, security, and the freedom to pursue scientific interests. The combination of the roles of a "pure scientist" working in an "ivory tower" and a citizen accountable to society for the public resources allocated to scientific work is inherently complex and difficult to manage. Today, in the digital age, these ethical boundaries are further blurred by the need for ethical science communication, the integration of technologies in research, and the growing emphasis on publicity in scientific careers. Some of these issues were addressed by Academician Yevney Buketov in his works. Though written long before the widespread digitalization we experience today, and during the Soviet era when science was entirely state funded with no private investment, Buketov's ideas remain relevant and significant for modern science in Kazakhstan. This article aims to build upon Buketov's perspectives on the ethics and social responsibility of scientists, contributing to contemporary discussions on the challenges of scientific ethics in the digital age.

The questions of scientific ethics and the role of scientists as members of society lie at the heart of many contemporary research endeavors. Some studies, such as [1], focus on specific practical concerns related to conducting and publishing ethically sound research in the digital age. Others concentrate on the ethical dimensions of particular areas of research, such as gender, race, evolution, and medicine [2]. Meanwhile, some authors explore the systemic mutual influence of science and social ethics on a macroscale [3]. In the works of Academician Yevney Buketov we can find useful guiding principles for each of these levels of scientific ethics debate.

One of the principles of science as we know it is openness - that is, the free public sharing not only of results, but also of data, materials, methods, protocols, and other components of a scientific study. The origins of this principle can be traced back to the Socratic approach, which emphasizes openness as a necessary condition for the free exchange of ideas, leading to new arguments and ultimately to synthesis in scientific debate. It is worth mentioning, however, that even in ancient Greece, the Socratic approach was not without controversy. Some ideas were considered too shocking or dangerous to be shared openly in public debate. The fate of Socrates himself stands as evidence of the difficult path toward openness. Later, the principle of openness - along with the tradition of Socratic questioning - found followers despite political, religious, and other limitations, spreading through the Islamic world and reemerging in Europe during the Renaissance and Enlightenment. In the modern world, science faces new challenges in upholding this principle in the face of digital transformation and information saturation.

Resnik's [1] description of the modern debate around openness is summarized in Table 1.

Table 1 – a summary of the debate around openness in science

Arguments for openness in science	Concerns around openness in science (counterarguments)
Openness is essential for reproducibility and verifiability in science	The need to protect the interests of a researcher. For example, the data and materials should be used by the researcher who collected them.
Other scientists need to build on the previous research	The need to verify and ensure reliability of results before sharing it
Scientific results have to benefit the society, especially if they were achieved using public funding	Protection of the intellectual property interests and promote private investment in research (if the research was done using private investment money, the investor might want to limit openness to benefit from the research).
	To protect the identity and interests of the research subjects.
	To protect national security interests, if research has implications for national security

It may seem from the table that there are more arguments in favor of secrecy in research, however, such an arithmetic approach would be misleading since openness is one of the foundations of science and the basis for internal and external validity and replicability of the research. It is necessary therefore to navigate the somewhat murky waters of "as open as possible as closed as necessary" principle [4].

The digital age makes ethical dilemmas even more difficult for scientists. Thus, a modern scientist cannot afford to wait several years to finalize and crystallize her conclusions as Charles Darwin famously did. An ever-speeding competition among the scientists for journals publications and research grants requires cutting the research results into some small pieces in order to follow the "publish or perish" mantra. Publication of articles in peer-reviewed journals are the "golden standard" of research output and the grant money is the fuel of research [5]. The modern digitalized environment in science seem to further strengthen the arguments against the openness in science (interests of the researcher, interests of the investor, catching

the “right moment” for publications). The traditional foundations of science as we know it – openness, transparency, replicability can be damaged by the intense speed and competitiveness of modern research process. This may be partially (along with the deficiencies in the journals’ procedures) responsible for so called “retraction boom”, when many articles are retracted after being published when their poor quality and/or manipulation with data are revealed [6].

The digital age brought us new research methods in social sciences that also require additional ethical considerations. As a minimum, we need to revise our guiding principles regarding consent for participation in the research taking into account that often the research data consists of public or semi-public information in social media posted by the owners of this information. Not always has a researcher an opportunity to ensure consent of all the people whose data is involved in the research, especially if we are talking about content analysis of thousands of messages or other big data analysis. Privacy of individuals is one of the important concerns not only in the frame of the openness debate but also in terms of scientific ethics in general [7].

What do the works of Academician Buketov advise us to do to protect the classical foundations of rigorous transparent scientific processes? In his essay “The facets of creativity” devoted to Dmitry Mendeleev, Yevney Buketov describes three levels of scientific research: (1) the first one is producing figurative “bricks” for the metaphorical edifice of science, i.e. collecting some empirical data that can be further used to construct theoretical foundations; (2) the second level is theoretical and consists of building “pillars”, i.e. uniting some of the data blocks into a new structure; and (3) the third level is building a “roof” to unite the whole structure, in other words, creating a paradigm for generations of scientists to come [8]. In the modern competitive environment of academic research in the era of digitalization there is a risk of a bias towards rapid publications of “bricks” rather than long a careful construction of pillars and roof of scientific building. The works of Yevney Buketov remind us that the scientific vision, such as the one that resulted in Mendeleev’s periodical table of chemical elements, is essential for the progress of science and human culture in general, since it unites all the previous research into a new framework. At the same time, any vision is to be based on empirical data and supported by practical results.

Another important principle highlighted by Y. Buketov in his essays about science and scientists is non-stop learning. It is obvious that in his view, this was one of the most important qualities for any researcher. In his essay “A man born on a camel, and his peers” Buketov made the strongest possible emphasis on this, when talking about the pioneers of Kazakstani academia [9]. This quality, sort of healthy humility and openness of mind, along with openness of scientific processes and results, can help modern scientists to further develop the ethics of science and adapt it to the changing and challenging conditions of digital age. New conditions and methods of research, as well as the ethical concerns about research are rapidly emerging due to digitalization, and, recently, due to the development of artificial intelligence. No one is able to learn the correct procedures and principles from the start of their scientific career and follow them to the letter for their whole life. Such elaborate universal procedures, rules, and readily available answers simply do not exist yet. Therefore, only a flexible openness to learning can help modern scientists to find the ethical path in the unknown situations in their research.

Last but not least, it is important to recall that academician Buketov consistently emphasized the social responsibility of researchers and the need to ground scientific knowledge in real-world practice. In his essay “Second in the Republic”, dedicated to the early development of Karaganda University, he highlighted the strong, organic connections between university researchers and local industrial enterprises [10]. This practical orientation was not seen as an obstacle to scientific creativity but rather as its natural continuation and validation.

In the context of the digital age, Buketov’s principle of practice-grounded science takes on new forms. While the “enterprises” of today may no longer be only factories or mines, the link between research and social application remains essential - especially when we consider the ethical implications of digital technologies. As researchers develop tools involving big data, artificial intelligence, and algorithmic decision-making, their responsibility is not only to produce rigorous academic knowledge but also to anticipate its practical consequences. Just as Buketov saw the connection between university laboratories and regional industry as vital, today we must view the connection between digital research and digital society as ethically indispensable.

The intellectual heritage of Yevney Buketov reminds us to consider science and academia not as a business, but as a form of social responsibility. Any development in research methods and research outputs has to be viewed through this prism. The emerging research in the digital age with the use of artificial intelligence calls for careful consideration of its effects and value for the society. Buketov considered himself and his colleagues in the then-newborn Karaganda University as first of all members of the society and citizens responsible for improving the life and work in the region. The same principles we have to apply now in the modern research and development in the digital age.

In conclusion, the ethical reflections of Yevney Buketov continue to provide meaningful guidance for the scientific community navigating the complexities of the digital age. His unwavering belief in the moral responsibility of the scientist - as a thinker, as a citizen, and as a participant in social progress - remains highly relevant today. While technologies, methods, and institutional landscapes have transformed, the core principles of integrity, openness, and societal accountability in science must remain intact. The digital transformation of research does not nullify these principles; rather, it requires their thoughtful reinterpretation and reaffirmation. Following Buketov’s example, we must strive to preserve the humanistic mission of science, ensuring that it remains a force not only for innovation but also for public good.

References

1. Resnik, D. Openness in scientific research: A historical and philosophical perspective / D. Resnik // *Journal of Open Access to Law*. - 2023. - Vol. 11, No. 1. - P. 132. - <https://doi.org/10.63567/t32qgs15>
2. Monroe, K. R. *Science, Ethics, and Politics* / K. R. Monroe. - Routledge, 2015.
3. Morris, S. *Science and the End of Ethics* / S. Morris. - London. - Palgrave Macmillan, 2015.
4. Lindemann, T., Häberlein, L. Contours of a research ethics and integrity perspective on open science / T. Lindemann, L. Häberlein // *Frontiers in Research Metrics and Analytics*. - 2023. - Vol. 8. - Article 1052353.

5. Stewart, N. *Research Ethics for Scientists* / N. Stewart. — 2nd edn. — Wiley, 2023.
6. Marcus, A., Oransky, I. What's Responsible for the Retraction Boom? / A. Marcus, I. Oransky // *Research Ethics in the Digital Age: Ethics for the Social Sciences and Humanities in Times of Mediatization and Digitization* / ed. by F. M. Dobrick, J. Fischer, L. M. Hagen. — Wiesbaden: Springer Fachmedien, 2018. — P. 23–28.
7. Dobrick, F. M., Fischer, J., Hagen, L. M. *Research Ethics in the Digital Age* / F. M. Dobrick, J. Fischer, L. M. Hagen. — Wiesbaden: Springer Fachmedien, 2018. — Available at: <https://doi.org/10.1007/978-3-658-12909-5>.
8. Buketov, E. A. *Grani tvorchestva [Facets of Creativity]* / E. A. Buketov // *Grani tvorchestva*. - Alma-Ata: Gylym, 1977. - Pp. 91-123.
9. Buketov, E. A. *A Man Born on a Camel, and His Peers* / E. A. Buketov // *Grani tvorchestva [Facets of Creativity]*. — Alma-Ata: Gylym, 1977. — Pp. 3–63.
10. Buketov, E. A. *Second in the Republic* / E. A. Buketov // *Grani tvorchestva [Facets of Creativity]*. — Alma-Ata: Gylym, 1977. — Pp. 63–90.

UDC 340.11

LEGAL FOUNDATIONS OF REGULATING RELIGIOUS BELIEFS AND ACTIVITIES OF RELIGIOUS ASSOCIATIONS IN SOVIET AND INDEPENDENT KAZAKHSTAN

Musin K.S., academician E.A. Buketov Karaganda University, Karaganda, Kazakhstan

Ilyassov K.T., academician E.A. Buketov Karaganda University, Karaganda, Kazakhstan

The relationship between the state and religious associations, as well as the interconnection between religion and law, represents a phenomenon that has undergone complex evolutionary stages throughout the history of human civilization. Religion and law, as important mechanisms of social regulation, shaped human behavior and actions, while the state and religious organizations fulfilled the role of institutions that organized and governed society. Historically, it is well known that religious norms played a significant role in the formation of legal and state institutions [1].

In the present era, despite the ongoing process of secularization in many states, religion has not lost its influence on social relations. This phenomenon is particularly evident in the post-Soviet space: despite the policies of atheistic ideology and efforts to exclude religion from society, religious associations have regained strength and increased their social influence. Such circumstances demonstrate that, regardless of the extent to which the state employed tools of power and ideological resources, it was impossible to completely eliminate religion from public consciousness.

An analysis of the historical evolution of the relationship between the state and religious associations makes it possible to identify their mechanisms of mutual influence. Religion and law, as institutions of social regulation, shaped human behavior and ensured social order, while the state and religious organizations acted as organizers of social structure and systems of authority. In this regard, structural and functional similarities between state and religious institutions can be observed, and it is evident that the foundations of many legal systems are rooted in religious principles.

Analyzing the contemporary situation, on the one hand, we see that in many countries the process of secularization of legal systems has deepened, and state institutions have become increasingly free from religious influence. On the other hand, in former Soviet states, the role of the religious factor in public life has been growing, and its significance as a social institution has become more visible. This, in turn, demonstrates that religion has deep historical roots in the consciousness of society and cannot be completely excluded from social life.

The relationship between the state and religious associations in Kazakhstan can be divided into three stages. The first stage spans from the spread of Islam in the Kazakh steppe up to the establishment of Soviet rule in 1918. The second stage extends from Kazakhstan's incorporation into the Soviet system until the attainment of independence. The third stage covers the period from independence to the present day.

During Soviet rule, the relationship between religion and the state went through four stages. In the first stage (1917–1928), Soviet authorities showed tolerance toward the Muslim community and sought to use them for the purpose of revolution in the Eastern countries. In the second stage (from 1929 onward), the regime openly fought against the Muslim community and other religious groups, destroying many mosques and subjecting the majority of their clergy to repression. The third stage (1944–1989) was marked by the cessation of persecution of Muslim leaders and the establishment of four religious administrations, which were fully subordinate to the Soviet government. During this period, the Muslim Religious Administration, alongside other religious organizations, was forced to pay high taxes and contribute to the Peace Fund. In the postwar years, the construction of new mosques and the opening of religious educational institutions were prohibited.

During Khrushchev's anti-religious campaign, authorities closed many of the mosques that had been opened earlier and banned Muslims from making pilgrimages to sacred sites.

The fourth stage (1989–1991) was characterized by a decrease in state pressure on religious associations and the beginning of large-scale reconstruction and construction of mosques.

From the establishment of Soviet rule until 1929, the Bolsheviks sought to maintain good relations with the Muslim community, since their ultimate goal was to extend their authority to the Eastern countries where Islam was practiced. For this reason, during those years, certain rights and opportunities were permitted, such as granting voting rights to mullahs, allowing sharia courts to handle minor cases, opening schools for religious education, and enabling believers to perform the pilgrimage (Hajj). However, beginning in 1928, these freedoms were gradually restricted, Muslim leaders were subjected to persecution, and mosques began to be closed on a large scale. Starting in 1929, with the introduction of the policy of "militant atheism," mass repression against all religious associations, including representatives of Islam, was launched. By