

ECOLOGICAL CULTURE AND THE QUEST FOR THE FORMATION OF MODERN MAN

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Abstract

Environmental conflicts arising from the pollution of river systems in Kazakhstan and Central Asia demonstrate that water bodies are perceived not only as a resource, but also as a significant factor influencing human well-being, identity, and cultural identity. Drawing on the theoretical approaches of Bruno Latour, Ulrich Beck, Edgar Morin, and Ursula Heise, the study reveals the formation of a new environmental ethics for the era of postnormality. It is based on the principles of complexity, hybridity, and global interdependence, in which a person ceases to be considered the central subject of socio-natural interactions. The new ethic recognises uncertainty, responsibility, and solidarity as key moral compasses that can counteract the phenomena of greenwashing, greenlash, and environmental ambivalence. The results of the study suggest that there is a need to develop ecological awareness focused on practical sustainability rather than symbolic declarativeness, which is critical for preventing and mitigating conflicts over the region's water resources.

Keywords: Postnormal Time, Ecological Culture, Ecological Consciousness, Philosophical Understanding of the Ecology of Culture.

Introduction

The modern era, often described as “post-normal” or “the era of post-normal science”, represents an entirely new background for socio-philosophical understanding of value shifts. S. Funtovich and J. Ravets proposed this term. He describes a situation in which the uncertainty of facts, conflicts of values, high stakes, and the need to make urgent decisions are combined.

The environmental crisis is a perfect example of how the signs of a post-normal state can manifest. The conflict between economic growth and sustainable development is becoming not only political, but also existential. The consequences of environmental degradation, biodiversity loss, and pollution of the atmosphere and water systems directly affect the safety of future generations, human health, and the survival of ecosystems and humans. From regulating greenhouse gas emissions to transforming energy, agricultural, and urban practices, the necessary solutions require immediate attention.

This situation requires not only solving technical and organisational problems but also developing “green” technologies, implementing economic incentives,

and establishing political institutions. It also causes profound changes in society's value orientations—in the system of ideals, norms, and symbols that form ecological culture.

Research Methodology

The study's methodological basis is an interdisciplinary approach that combines conceptual analysis in environmental philosophy with empirical research on environmental conflicts in Central Asia's water systems.

Theoretical-analytical stage

Study and systematisation of modern theories of postnormal science, actor-network theory, and the concept of ecological complexity. A critical analysis of the works of Latour, Morin, Beck, and Heise to form the methodological framework of a new ecological ethics.

Qualitative Analysis of Environmental Conflict Cases

Selection of representative cases of river pollution in Kazakhstan and Central Asia. A comparative study of the perception of rivers as natural actors in various socio-cultural contexts.

Analysis of media, legal, and expert sources to identify the structural causes of conflicts.

Normative and Ethical Interpretation

Identification of the key principles of the new environmental ethics that can ensure practical environmental sustainability.

Identification of the relationship between new ethical attitudes and the transformation of environmental culture in the region.

The use of these methods enables the provision of theoretically substantiated and practically applicable recommendations for managing environmental conflicts related to water resources, as well as for the formation of sustainable socio-natural relations in conditions of global uncertainty.

Main Results of the Study

Ecological culture is understood as a set of views, moral principles, norms, and patterns of behaviour that form the "right attitude to nature." It also includes how society perceives and responds to the risks associated with environmental changes.

Ulrich Beck's concept of a "risk society"¹ is a fundamental theoretical tool for understanding the processes described. Beck argues that a paradigm shift is taking place in modern society: instead of distributing material wealth, the main task is to distribute the risks generated by modernisation.

¹ Beck, U. *Obshchestvo riska: na puti k drugoj modernu* [Risk Society: On the Way to Another Modernity]. Moscow, Progress-Tradition Publ., 2000. – 384 p.

Risks that were previously considered external, such as natural disasters, are now often internal products of technological, industrial, and institutional development: transport exhaust, CO₂ emissions, plastic pollution, and human-induced changes to ecosystems.

Global risks not only return to their sources but also change social relations, institutional practices, and worldview horizons. This leads to the so-called “reflexive modernisation.” In the process of such modernisation, society is forced to rethink the foundations of its development logic: what is considered sustainable, what is development, and how man and nature interact.

In his famous work *We Have Never Been Modern*, Bruno Latour introduces the concept of “quasi-objects” or hybrids,² which denote entities that cannot be attributed exclusively to either pure nature or pure society. They integrate natural, social, technological, and discursive components simultaneously.

An ecological crisis, according to Latour, is a typical example of a quasi-object. All its manifestations—from climate change to water pollution, from species extinction to landscape transformation—are hybrid phenomena that cannot be adequately analysed if strict modern dichotomies are adhered to.

Edgar Morin proposes a theory of complexity that emphasises interconnectedness, nonlinearity, recursivity, pluralism, and contradictions.³ His approach allows us to consider ecological culture not as a simple sum of elements, but as a self-organising system. Individual parts of the system symbolise the whole, and contradictions are not only not automatically eliminated, but also become productive, creating new meanings, new experiences, and new ethics. Morin notes that stable knowledge and practices cannot arise in conditions of one-dimensional thinking or simplification.

The interplay among these three approaches—Beck’s theory of risk, Latour’s understanding of hybrids, and Morin’s theory of complexity—creates a powerful analytical tool.

Beck’s theory of risk helps us understand how global environmental risks affect institutional and social structures, shift priorities, create new categories of risk, and require transparency, accountability, and prevention.

Latour’s understanding of hybrids demonstrates that many conflicts and misunderstandings arise from the fact that society continues to perceive nature

² Bird Studies Canada. New Paper Underlines Importance of BC’s Fraser Delta to Birds. Available at: <https://www.birdscanada.org/new-paper-underlines-importance-of-bcs-fraser-delta-to-birds> (accessed: 02.09.2025).

³ Carnegie Endowment for International Peace. Confronting Backlash Against Europe’s Green Transition. – 2025. Available at: <https://carnegieendowment.org/research/2025/09/climate-backlash-europe-green-transition-farmers-protests?lang=en> (accessed: 02.09.2025).

and society as two separate realities. However, environmental problems are destroying this boundary.

Morin's theory of complexity helps us deal with chaos, confusion, and unpredictability from a methodological perspective. It allows us to see how values transform in a nonlinear way, through critical turns, dialogues, and resistance.

To achieve this goal, a synthetic theoretical approach will be used, based on the ideas of Beck, Latour, and Morin, as mentioned earlier. The work will be structured as follows. First, the external manifestations of value changes, as seen in consumer practices, corporate responsibility, and environmental activism, will be analysed.

In conclusion, an attempt will be made to formulate the main features of a new ethical paradigm that can adapt to the challenges of the postnormal era and combine uncertainty, complexity, pluralism, and responsibility.

Environmental responsibility as a value imperative and a market force. Changes in environmental culture, expressed in the desire for environmental responsibility, represent not only an ethical principle important for personal and public choices but also a powerful market trend that affects production chains, marketing strategies, and government regulations. To better understand the essence of transformation, it is important to consider its specific manifestations, mechanisms, and contradictions.

Firstly, the statistics show a significant growth in the market for sustainable products. Business Research Insights predicts that this market will reach approximately \$382.6 billion in 2025 and exceed \$692 billion by 2033, with a steady annual growth rate.⁴ Statistics show that sustainability has already become an important economic factor that companies consider when developing product offerings, supply chains, packaging, and marketing strategies.

Second, data show that many consumers are willing to pay more for eco-friendly products. According to an extensive international survey by PwC, in the context of rising living costs and inflation risks, the average premium consumers are willing to pay for goods produced or supplied sustainably is about 9.7%.⁵ This phenomenon is not only an expression of abstract values but

⁴ eBird / Cornell Lab of Ornithology. 9 Ways People Have Used eBird Data to Make Conservation Happen. Available at: <https://www.allaboutbirds.org/news/9-ways-people-have-used-ebird-data-to-make-conservation-happen/> (accessed: 02.09.2025).

⁵ Fortune Business Insights. Sustainable Personal Care Products Market Size, Share, Forecast 2025–2032. – Fortune Business Insights, 2025. Available at: <https://www.fortunebusinessinsights.com/sustainable-personal-care-products-market-110903> (accessed: 30.08.2025).

also an actual transformation of economic behaviour, indicating a redistribution of priorities. In the competition among price, quality, and sustainability, consumers are increasingly choosing the latter, even if it increases the product's price.

According to a 2025 GlobeScan study conducted in the United States, approximately 49% of Americans reported purchasing an “environmentally friendly product” in the last month, exceeding the 2024 figure (43%) by six percentage points.⁶ This circumstance indicates that almost half of society takes environmental factors into account when making purchases, turning responsible consumption into not only a current trend but also a widespread practice.

Changes are observed in a variety of areas. For example, the market for sustainable materials that can be recycled or have a smaller ecological footprint is growing rapidly. According to forecasts, its volume may exceed \$1 trillion by 2034, corresponding to an average annual growth rate (CAGR) of about 12.4%.⁷ There is also a growth in the market for sustainable personal care and cosmetics. It is expected to increase from \$56.44 billion to about \$90.40 billion by 2032.⁸ Consequently, the trend of sustainable consumption affects not only basic needs such as food and transport, but also a wider range of goods, including personal care, cosmetics, and durable goods.

Finally, marketing strategies and consumer expectations are becoming increasingly environmentally friendly. For example, according to a report by Shorr (2025), almost 43% of consumers said they were willing to pay more for products with sustainable packaging.⁹ In addition, 90% of the same respondents noted that they are more inclined to buy from brands that focus on sustainable packaging. More than half of them have already consciously chosen such products in the past six months.¹⁰

Modern environmental problems, characterised by complexity, versatility, and uncertainty, require us not only to adopt new approaches to solving them, but also to rethink our knowledge of them. Traditional scientific systems, in which only specialists can obtain, process, and interpret data, are proving ineffective

⁶ GlobeScan. Americans Say They Are Buying Sustainable Products in 2025. – GlobeScan, 2025. Available at: <https://globescan.com/2025/05/14/insight-of-the-week-more-americans-say-they-are-buying-sustainable-products-in-2025/> (accessed: 29.08.2025).

⁷ GlobeScan. Americans Say They Are Buying Sustainable Products in 2025. – GlobeScan, 2025. Available at: <https://globescan.com/2025/05/14/insight-of-the-week-more-americans-say-they-are-buying-sustainable-products-in-2025/> (accessed: 29.08.2025).

⁸ Heise. U. Sense and Sense of planet: the environmental imagination of the Global. – New York, Oxford: Oxford University Press, 2008. – 250 p.

⁹ International Energy Agency (IEA). Kazakhstan 2023: Energy Profile. Available at: <https://www.iea.org/countries/kazakhstan> (accessed: 03.09.2025).

¹⁰ International Energy Agency (IEA). Kazakhstan 2023: Energy Profile. Available at: <https://www.iea.org/countries/kazakhstan> (accessed: 03.09.2025).

both in breadth and validity. The concept of an extended community of experts, developed within the framework of post-normal science, proposes involving not only academics but also ordinary citizens, communities of volunteers, and people with practical experience in the process of assessing and creating scientific knowledge.

One striking and proven example is the eBird project, founded by the Cornell Lab of Ornithology. The project brings together millions of volunteers worldwide who provide valuable data on birds: their habitats, migrations, numbers, and behavioural changes. These data not only contribute to scientific publications but also significantly impact environmental policy. For example, thanks to eBird, the rufa Red Knot subspecies was listed as threatened in the United States. In addition, the project has helped expand internationally recognised wetlands in the Fraser River Delta in Canada. In addition, this data was used to plan the location of wind farms to minimise risks to eagles. Moreover, they even influenced legislation, such as restrictions on drone flights in Florida's national parks, which minimised the disturbance of birds.¹¹

Projects like eBird illustrate different levels of citizen engagement in the scientific process according to the Huklai Muki classification. These levels range from elementary data collection (crowdsourcing) to participation in their verification, analysis, and interpretation [10]. This circumstance means that citizens become not only observers but also active subjects in the generation of scientific knowledge. Such a method contributes to the growth of trust in science, stimulates participation, and strengthens the interaction between the scientific community and society.

The inclusion of citizens in the process of scientific knowledge brings tangible results in the field of nature conservation: more accurate identification of migration routes, protection of natural habitats, improved monitoring of climate change through phenological observations, as well as a faster response to environmental crises at the local level, where official science may lag. Accordingly, citizen science becomes one of the practices characteristic of a postnormal society. It successfully manages a high degree of uncertainty, is open to new ideas and knowledge, is based on the principle of participation, and symbolically combines knowledge, experience, and ethical principles.

Conflicts of Values: Dialectics of Globalisation, Politics and Media. The process of transforming ecological culture cannot be considered smooth or straightforward. It takes place in the context of intense conflicts, in which the entrenched values of the industrial age are. These conflicts are becoming increasingly noticeable in the context of globalisation, increased mediatisation,

¹¹ Iovino, S., Serella, A., Heise, U. K. *Sense of Place and Sense of Planet: the environmental Imagination of the Global*. – Oxford: Oxford University Press, 2008. – 256 p.

and political polarisation, exposing internal contradictions in the very structure of modern society.

Economic Interests are opposed to Environmental Principles: The Phenomenon of the “Green Counterreaction” (Greenlash).

When environmental policy moves from general declarations to targeted regulatory measures, from plans and agreements to legislation, taxation, and technical standards, it inevitably begins to affect economic interests, employment patterns, and lifestyles, as environmental measures are perceived as a threat to economic well-being or social stability.¹² For example, in Germany in 2023, there were mass protests over a law requiring new heating systems to use at least 65% renewable energy. Although the government offered subsidies to facilitate the transition, many citizens perceived the initiative as an imposed “heating ideology” proposed by the Green Party. As a result, thousands of people took to the streets, which forced the government to soften the bill.¹³ In Polish Silesia, the confrontation is even more pronounced. Miners and steelmakers have repeatedly expressed dissatisfaction with plans to phase out coal-fired power plants as part of the EU’s Green Deal. For these groups, such a measure represents not only a desire for a clean environment, but also a real threat to their own communities, jobs, and social identity.¹⁴

No less indicative were the farmers’ protests that swept Europe in 2024-2025. In countries such as Poland, the Netherlands, France, and Germany, tens of thousands of farmers have expressed their dissatisfaction with the EU’s new environmental regulations on fertilisers, methane emissions, and land use.

They believed that these rules unreasonably raise production costs and undermine their competitiveness in the global market. In Poland, for example, in May 2024, farmers held a march through Warsaw under the slogans of the fight against “green poison,” referring to EU climate norms.¹⁵ Similar protests occurred in Germany, where farmers blocked roads and demanded the abolition of environmental regulations they perceived as a threat to traditional agriculture.¹⁶

For Central Asian countries, including Kazakhstan, the green transition is particularly challenging, as the region remains heavily dependent on coal and hydrocarbons. In Kazakhstan’s energy balance, coal accounts for about 70%

¹² Latur, B. *Pered litsa Gaia: eight lectures on the new climatic regime*. St. Petersburg: European University Publishing House in St. Petersburg, 2023. – 350 p.

¹³ Morin, E. *Method. The Nature of Nature* / transl. from French. E. N. Knyazevoy. – 2nd ed., add. – Moscow: Progress-Tradition; Canon+, ROOI “Rehabilitation”, 2013. – 488 p.

¹⁴ Morin, E. *Method. The Nature of Nature* / transl. from French. E. N. Knyazevoy. – 2nd ed., add. – Moscow: Progress-Tradition; Canon+, ROOI “Rehabilitation”, 2013. – 488 p.

¹⁵ IQAir. *World Air Quality Report 2023: Region & City PM2.5 Ranking*. Available at: <https://www.iqair.com/world-air-quality-report> (accessed: 03.09.2025).

¹⁶ Morin, E. *Method. The Nature of Nature* / transl. from French. E. N. Knyazevoy. – 2nd ed., add. – Moscow: Progress-Tradition; Canon+, ROOI “Rehabilitation”, 2013. – 488 p.

of electricity production.¹⁷ This means that any attempt to accelerate the transition to renewable energy sources inevitably creates tensions, especially in the coal-mining regions of Karaganda and Pavlodar, where entire communities depend on mines and thermal power plants.

The results of sociological surveys show that the population has an ambivalent attitude to issues related to air pollution in cities. On the one hand, many people are concerned about the high levels of pollution, especially in Almaty, which is regularly included on IQAir's list of the world's most polluted cities.¹⁸ On the other hand, many are sceptical of climate reforms, fearing they could raise the cost of living and affect employment. In 2022-2023, local protests against utility and electricity tariff increases were repeatedly held in Kazakhstan. This demonstrates the characteristic logic of "green resistance": any reforms, even if justified on environmental grounds, are perceived through the prism of economic problems.

The situation in Central Asia is becoming increasingly complex due to the region's serious climate risks. One of the most striking examples of "slow violence" is the drying up of the Aral Sea. The environmental catastrophe has led to many socio-economic problems, including migration, deteriorating health, and unemployment.¹⁹ Surprisingly, in the context of such crises, discussions of decarbonization and the abandonment of coal are often perceived as initiatives imposed by the West rather than as national priorities. This circumstance only strengthens the policy of "sovereign energy" as the government seeks to balance international obligations under the Paris Agreement with the need to maintain social stability.²⁰

The principles of anthropocentrism, the dualistic separation of nature and society, and the perception of nature as a passive resource prove insufficient and even harmful in the conditions of the postnormal era. However, the axiological crisis not only causes destabilisation but also serves as the basis for the formation of a new, non-anthropocentric ethical paradigm.²¹

¹⁷ Notes from Poland. Polish Steelworkers Protest against EU Climate Policies. – 21.05.2025. Available at: <https://notesfrompoland.com/2025/05/21/polish-steelworkers-protest-against-eu-climate-policies/> (accessed: 02.09.2025).

¹⁸ Precedence Research. Sustainable Materials Market Size to Surpass USD 1,073.73 Billion by 2034. – Precedence Research, 2025. Available at: <https://www.precedenceresearch.com/sustainable-materials-market> (accessed: 29.08.2025).

¹⁹ PwC. Voice of the Consumer Survey 2024. – PwC, 2024. Available at: <https://www.pwc.com/gx/en/news-room/press-releases/2024/voice-of-consumer-survey.html> (accessed: 29.08.2025).

²⁰ Reuters. Polish Farmers March against "Green Poison" EU Climate Change Rules. – 10.05.2024. Available at: <https://www.reuters.com/world/europe/polish-farmers-march-against-green-poison-eu-climate-change-rules-2024-05-10/> (accessed: 03.09.2025).

²¹ Rowe, T. Holding Space for Climate Justice? Urgency and 'Regenerative Cultures' [Electronic resource] // *Geoforum*. – 2023. – Vol. 141. – P. 94–103. Available at: <https://www.sciencedirect.com/science/article/pii/S001671852300194X> (accessed: 02.09.2025).

One of the principal directions of this process is the transition from local to global responsibility. Heise argues that environmental problems can no longer be seen as purely local, as cross-border pollution flows, climate change, and biological crises make every corner part of the global whole. Eco-cosmopolitanism offers an ethical position in which the sense of place and the sense of the planet become inseparable. Global environmental citizenship requires respect for cultural diversity, as well as recognition of common boundaries and responsibilities to ecosystems and future generations.²²

Another important change that occurs at the ontological and axiological levels is the recognition of the world's activity that does not belong to man. Serenella Yowino and other representatives of environmental humanism develop the ideas of material ecocriticism, proposing to consider matter not as a static object, but as something filled with history, connections, and influence. In works on material ecocriticism, material realism plays an active role. Plants, rivers, soils, rocks, and the atmosphere—all of these elements can be “telling,” that is, they bear traces of cultural, environmental, and social changes. They can influence human decisions and practices.²³ For example, viewing a river or lake not as an object to be used but as an active participant that influences the region's health, culture, and politics is a fundamental revision of the status quo in environmental disputes.

Conclusion

Environmental conflicts related to the pollution of river systems in Kazakhstan and Central Asia often reveal how individuals perceive water bodies as significant subjective factors that affect costs, health, and cultural identity. It is assumed that “natural actants,” according to Latour's terminology, have a certain degree of autonomy. The emerging new ethical paradigm is not limited to expanding the scope of moral responsibility to include animals and all of nature. However, it is transforming the very core of our worldview:

1) The ecological sphere, the world of nature, and the material environment become an integral part of social reality, and do not remain only the external environment.

2) There is a shift in the system of values: from the predominance of exploitation and domination to the priority of care, responsibility, and interdependence.

3) A single integrity is formed by scientific knowledge, local experience, and an understanding of suffering (both anthropogenic and non-anthropogenic).

²² Shorr. 2025 Sustainable Packaging Consumer Report. – Shorr, 2025. Available at: <https://www.shorr.com/resources/blog/sustainable-packaging-consumer-report/> (accessed: 30.08.2025).

²³ The Guardian. ‘People see it as invasive’: did anti-green feeling fuel the right's rise in Germany? [Electronic resource]. – 04.03.2025. Available at: <https://www.theguardian.com/world/2025/mar/04/did-anti-green-feeling-fuel-right-rise-germany-climate-afd> (accessed: 03.09.2025).

At the regional level, this situation may lead to the following challenges and opportunities:

1) Revision of environmental legislation not as “sectoral norms”, but as part of socio-natural networks.

2) Participation of local communities in decision-making regarding water resources, forests, and pollution, and not only through institutions that act from above.

3) Recognition of the environmental rights of future generations and local natural objects as a legal and moral act.

In the era of postnormality, the new ethical system serves as the foundation for the formation of ecological consciousness. It not only responds to crisis phenomena but also seeks to transform the very way of human life within the socio-natural network, where the individual is one of many elements and does not act as a central subject. This ethic, according to scientific descriptions, is based on the principles of complexity (according to Morin), hybridity (according to Latour), and global interdependence (according to Beck and Heise). It recognises uncertainty, responsibility, and solidarity as its primary values. It is these principles of ethics that can resolve the contradictions and conflicts generated by greenlash, greenwashing, and ambivalence, and guide ecological culture toward true sustainability—not declarative or symbolic, but deeply practical.

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