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Krishtal, M. I.; Shchekoturov, A. V.

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# EFFECTIVE RISK COMMUNICATION AS A FACTOR IN MANAGING PROTESTS ATTITUDES IN A LOCAL COMMUNITY

**M. I. Krishtal**

**A. V. Shchekoturov**

Immanuel Kant Baltic Federal University  
14 A. Nevskogo St., Kaliningrad, 236016, Russia

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*Contemporary research into the perception of environmental risks suffers from poor knowledge of risk communication in a local community and of how different ways of risk communication affect protest attitudes. This study aims to clarify communication strategies and practices used by members of local communities as a protest response to environmental threats. The work builds on the cultural theory developed by Douglas, Dake, Bremen, and others. This theory distinguishes between several cultural types (hierarchy, individualism, communitarianism, and egalitarianism), which differ in how environmental risks are perceived and what forms risk communication takes. The study investigates the case of the village of Nivenskoe in the Kaliningrad region in Russia where residents opposed the development of a potash deposit. It is concluded that egalitarians and communitarians are more likely than hierarchical elitists and individualists to participate in protests when a serious environmental threat arises. Respondents of all cultural types tend to trust information coming from their close social network, public figures, and environmentalists whereas people of business are trusted the least.*

## **Keywords:**

risk communication, cultural theory, local community, protest

Risk communication has a decisive role in the perception of risks since it sets criteria for detecting dangerous situations and prompts individuals to unite in preventing and minimising negative consequences [1]. There is evidence that inapposite forms of communication with citizens contribute to risk and uncertainty [2; 3].

The choice of risk communication methods and the overall vision of the problem are affected by the 'localisation and concentration' of the ecological conflict [4, p. 105]. For instance, people living in metropolises pay considerable attention to the ecological situation; this is explained by their greater affluence and de-

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mands [5, p. 57 – 58]. For the majority of the country's nationals, the most urgent problems are low salaries and growing prices.<sup>1</sup> Ignoring environmental problems can only aggravate strained economic conditions.

Environmental risks can cause social tensions and even protests as well as lead to political and economic losses [6]. Spelling out technical and scientific details is not an effective solution because participants in communication do not see each other as neutral communicating agents. Problem perception and construction, as well as the actions taken by participants in communication, depend on their social standing and cultural and political attitudes.

One of the many cases of social tensions occasioned by environmental risk is the conflict between residents of the village of Nivenskoe in the Kaliningrad region and the management of the industrial combine responsible for the d communication networks, and influencing the configuration of the social space of the local community and communicating agents may well lead to a new wave of protest attitudes.

The development of a potash deposit. Although certain measures have been taken (greenspace improvements, buffer zone expansion, etc.), the situation remains volatile because of popular distrust of the combined management [7]. Unfamiliarity with mechanisms for creating images of risks in the local community, disseminating information across local is study aims to clarify the role of risk communication in the emergence of protest attitudes among different social groups in a local community. To this end, we will consider the case of the potash deposit in the village of Nivenskoe.

To attain the aims of the study, we set the following objectives:

- 1) to measure the trust of residents of Nivenskoe in different sources of information on environmental risks;
- 2) to measure the awareness of the ecological conflict among residents;
- 3) to determine whether residents are ready to attend rallies should the ecological situation get worse;
- 4) to understand how residents of Nivenskoe view different measures taken to resolve the conflict.

In this work, we define risk communication as 'a targeted process of exchanging information on various types of risks by shareholders: government agencies, organisations, trade unions, non-profits, mass media, etc.)' [8, p. 235].

Risk communication consists of 'organising interactions among different actors, institutions, and practices, including those representing the civil society within which information about risks is exchanged and analysed' [9, p. 133]. Our analysis pays particular attention to sources of information about environmental risks, trust in these sources, and social protest as an instance of risk communication.

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<sup>1</sup> FOMnibus: the situation in the region and pressing problems. URL: <https://fom.ru/Obraz-zhizni/14288> (accessed: 26.11.2019)

This study explores risk communication in the perception of ecological risks; its focus is the forms of risk communication among different social groups in a local community in the context of an outcry over the threat of an environmental disaster.

Methodologically, this work draws on Mary Douglas's grid/group concept, which has grown into the cultural theory of risk [10]. The concept holds that people embrace values and norms as well as enter into the system of social relations under the influence of two universal forces: group cohesion and social control. Accordingly, risk perception and behaviour under threat depend on the attitude to group norms and the possibility to control the situation [11].

### **The cultural theory of risk and environmental threat perception**

As mentioned above, the theory of cultural theory originates from a work of Mary Douglas [10], who was the first to use grid/group analysis in studying different types of cultures. This theory can be summarised in three statements [12, pp. 396–397]: 1) the beliefs of individuals, their judgements and attitudes are determined by culture; 2) there are several types of cultures which are identified based using two dimensions: group cohesion (group) and social control within the group (grid) [10, p. 8]; 3) cultural types are universal because they manifest the social nature of the human being.

Based on these two dimensions, Douglas identifies four ideal types of culture, which correspond to four approaches to risk perception: individualists (quadrant A), fatalists (quadrant B), hierarchical elitists (quadrant C), and egalitarians (quadrant D)<sup>2</sup> (Fig. 1).

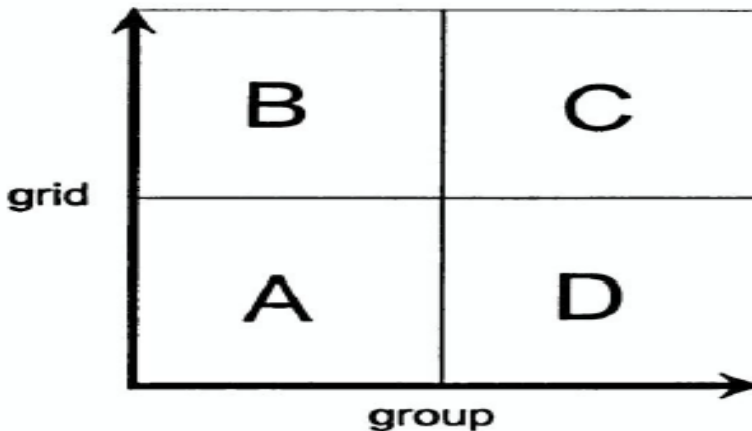


Fig. 1. Douglas's grid/group model [10, p. 8]

<sup>2</sup> Douglas herself called type C 'isolates' and type D 'enclavists'. The research community, however, has adopted the terms 'fatalists' and 'egalitarians'. The development of grid/group analysis and cultural theory and changes in connotations have been considered by Virginie Mamadouh [12].

Each cultural type is defined as a combination of social and cultural patterns characteristic of an individual's social environment and manifested in his or her behaviour, the system of values, and attitudes to social reality [12, p. 400].

Since the publication of the book, Douglas has recurrently revised and modified her grid/group approach. An appropriate adjustment was made by Michael Thompson (Fig. 1), who introduced a third universal dimension of social life — manipulation. That way, he obtained the fifth cultural type — autonomous individuals [13]. This type is distinguished by weak group cohesion, weak influence on other people, and minimum sociocultural barriers and limits. Other authors have classified it as an asocial cultural type [14].

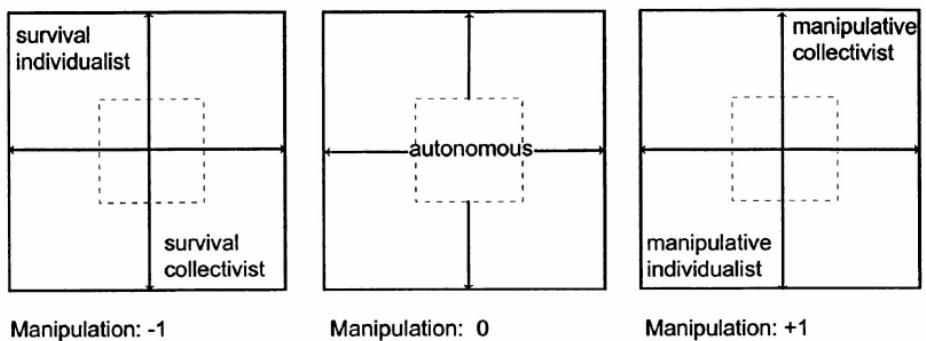


Fig. 2. Thompson's analysis model [13]

Thompson's modification, however, did not solve the problem of multiple belongingness of individuals, which made it more difficult to evaluate the influence of a certain cultural pattern. As a response to the problem, cultural types began to be considered as two continuums: the hierarchism — egalitarianism and individualism — communitarianism [15; 16].

A statistical reliability test has shown the efficiency of this approach in studying cultural types [17].

The first, hierarchism — egalitarianism, scale shows whether social control is strong or weak. If the individual is closer to hierarchism, his or her behaviour is governed by what society deems acceptable. This concerns gender, social status, etc. Representatives of the hierarchical cultural type rely on traditional structures and values. They see inequality of opportunities and resources as inherent in social organisation. If an individual is closer to egalitarianism, he or she believes that his or her behaviour is ruled by individual preferences and volition and, to a much lesser extent, by social norms and institutions. Unlike hierarchical elitists, they stand for equal opportunities across all aspects of life.

The second, individualism — communitarianism, scale shows how much social relations and expectations are affected by the 'us and them' categories. Those who are closer to individualism do not draw the boundary between 'us' and

‘them’. Individualists are advocates of a free market, fair competition, and are ready to take on responsibility. When making decisions, they tend to rely on their own powers rather than external structures and circumstances. For individuals who are closer to communitarianism the ‘us’ and ‘them’ category has an important role in the matters of identity. They support tighter government control and public monopoly in the market. Communitarians believe that the state is the most influential institution and it must have as much power as possible.

## **Methods**

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In conducting the study, we surveyed 300 respondents - residents of the village of Nivenskoe (a 95% confidence probability, a  $\pm 5\%$  confidence interval). The quota sampling method was used to represent the age and sex structure of Bagrationovsk district’s population; the village of Nivenskoe is a part of the district. The door-to-door survey was chosen as the method of the study. The data array was analysed using the SPSS (V23) software.

The cultural type of the respondent was determined using the methodology proposed by Dan Kahan [16]: the respondent rated his or her attitude to certain phenomena on a scale from -2 (strongly disagree) to +2 (strongly agree). Each answer placed the respondent within a certain cultural type (hierarchism, individualism, communitarianism, and egalitarianism). The ratings were summed to obtain a score that defined the cultural type of the respondent. On the one hand, this method made it possible to measure cultural types on a quantitative scale and carry out a correlation and regression analysis. On the other, the range of answers ordered on the ‘hierarchism — egalitarianism’ and ‘individualism — communitarianism’ scale made it possible to identify what type was dominant for each dichotomy. The cultural type was treated as a nominal variable to facilitate the analysis of two-way tables.

## **Trust in sources of information on environmental risks**

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Using correlation analysis, we established connections between belongingness to a cultural type and trust in sources of information on environmental risks amid environmental concerns.<sup>3</sup> The pairwise correlation coefficient matrix (Table 1) demonstrates significant dependencies at 0.01 (\*\*) and 0.05 (\*) levels. The values that did not meet these conditions were not shown (‘-’).

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<sup>3</sup> The Kolmogorov-Smirnov test demonstrated that the distribution differed from the normal ( $p < 0.05$ ), the Spearman’s rank correlation coefficient  $r$  was used.

Table 1

**Connections between belongingness to a cultural type and trust  
in sources of information on environmental risks amid environmental concerns**

Sources of information	Hierarchical elitists	Egalitarians	Individualists	Communitarians
Environmental organisations	—	—	—	—
Businesses	—	- 0.19**	—	- 0.21**
Friends and acquaintances	—	—	—	—
Authorities	- 0.16*	—	—	—
Human rights defenders	—	—	—	—
State media	- 0.15*	—	—	—
Private media	- 0.15**	- 0.18**	—	- 0.21**

*Source:* calculated by the authors based on data from the KMG survey provider.

All significant correlations were negative. Belongingness to egalitarians and communitarians has a negative effect on trust in businesses and private mass media. This is very much in line with the attitudes of the two cultural types: communitarians support government control and monopoly in the market, whereas egalitarians stand for equality. There was a negative correlation between belongingness to hierarchical elitists and trust in the media (both public and private) and the authorities. Individualism, on the contrary, had little correlation with trust in sources of information.

The values of these dependencies are rather low, ranging from -0.15 to -0.21. Thus, belongingness to hierarchical elitists, egalitarians, and communitarians is a factor affecting trust in some sources of information; yet it is not decisive.

The index of trust in sources of information on environmental risks was calculated for the studied cultural types. To that end, respondents' ratings on a five-point scale from -2 (not at all) to 2 (a great deal) were analysed. Each rating was multiplied by the percentage of respondents who gave the corresponding answer; then, the values were summed:  $(-2) \cdot n_1 + (-1) \cdot n_2 + 0 \cdot n_3 + 1 \cdot n_4 + 2 \cdot n_5$ . Communitarians stand out for their distrust of any sources of information (Table 2).

Table 2

**Trust of different cultural types in sources of information  
on environmental risks amid environmental concerns**

Sources of information	Hierarchical elitists	Egalitarians	Individualists	Communitarians
Human rights defenders	20.2	19.5	19.9++	19
Environmental organisations	19.3	19	18.9	17.4
Friends and acquaintances	20.2	15.8	19.4	12.5
State media	5.8	5.5	5.2	2.7
Authorities	4.8	6	5.9	2.4
Private media	3.4	5.1	4.7	1.2
Businesses	- 13.2	- 15.2	- 13.4	- 18.2

*Source:* calculated by the authors based on data from the KMG survey provider.

Respondents were asked to name their preferred sources of information on environmental risks. Regardless of the cultural type, respondents preferred information from people considered experts in the field, ranging from the staff of the Ministry of Emergency Situations (MES) to ecologists (Table 3). Only a few representatives of each type named the Internet a priority source of information.

Table 3

**Responses to ‘What is your preferred source of information  
on environmental risks?’, %**

Sources of information	Hierarchical elitists	Egalitarians	Individualists	Communitarians
MES	32.7	28.6	30.8	28.7
Ecologists	30.8	26.7	24.3	27.3
Authorities	9.6	14.3	15.9	12
Internet, social media	9.6	6.5	7.5	8
Repots in the media	5.8	9.2	12.1	8
Colleagues/friends/relations	5.8	6.5	4.7	6.7
No answer	5.8	8.3	4.7	9.3

*Source:* calculated by the authors based on data from the KMG survey provider.



## **Awareness of the environmental conflict and emergency sources of information**

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The websites, which were searched through to get information about the conflict in the region, can be classified as search engines (*Google, Mail, Yandex*), news portals (*New Kaliningrad, Klops, Rugrad*), video-sharing platforms (*Youtube*), and the website dedicated to the criticism of the project in Nivenskoe (*Rezonans39*). The latter was accessed most often by individualists (13.9 %) and hierarchical elitists (19.2 %). Less than half of representatives of these types browsed websites: 44.2 and 40.2% respectively. Among communitarians and egalitarians, the proportion of those who were looking for information on the Internet was even lower: 33.2 and 32.7 % respectively. The most frequently mentioned social media page was *Rezonans39.ru* on VKontakte. The page reposts news from the *Rezonans39* website. Almost each fourth hierarchical elitist (26.8 %) and each fifth individualist (21.4 %) identified that page as a source of information on the potential development of the potash deposit. Among egalitarians and communitarians, the proportion of people who gave that answer was somewhat lower: 15.2 and 14.7 % respectively.

The printed media were less popular among respondents as a source of information than the Internet. The data obtained suggest that about 70% in each cultural type did not read the printed media.

Relatively more often, respondents named television as a source of information about the environmental conflict. Almost two-thirds of hierarchical elitists (61.6 %), half of individualists (47.7 %), and one-third of egalitarians (37.8 %) and communitarians (38 %) noted that they watched different TV channels to learn about the situation.

The survey demonstrated that hierarchical elitists and individualists more often than the other cultural types looked for information on the environmental problem in different media and on the Internet. Probably, that is why they consider themselves more informed about different opinions on the safety of the potash deposit development in the village of Nivenskoe (Table 4).

Table 4

**Responses to ‘Are you familiar with different opinions about the safety of the potash deposit development in the village of Nivenskoe?’, %**

Level of awareness	Hierarchical elitists	Egalitarians	Individualists	Communitarians
Yes, I am	50	41.9	52.3	35.3
Somewhat familiar	44.2	53.5	41.1	61.3
Not at all	1.9	2.8	3.7	2.7
No answer	3.8	1.8	2.8	0.7

*Source:* calculated by the authors based on data from the KMG survey provider.

### **Protest activity amid environmental concerns**

Egalitarians and especially communitarians have considerable experience of protest activity in response to serious environmental problems. Moreover, they are more inclined to attend rallies than hierarchical elitists and individualists are (Tables 5, 6). This might be explained by that the set of beliefs of the two former types (equal rights, equality, the absence of competition, etc.) is weakly implemented in today’s Russia.

The most popular forms of potential and actual protests among cultural types are collecting signatures to petition local, regional, and federal authorities as well as attending rallies (Tables 5, 6).

Table 5

**The types of protest actions in which respondents took part, %**

Type	None	Ranked first	Ranked second	Ranked third
Hierarchical elitists	55.8	Rally (25)	Call for signatures to petition regional authorities (25)	Call for signatures to petition federal authorities (25)
Egalitarians	47.9	Call for signatures to petition federal authorities (32.3)	Call for signatures to petition local authorities (26.3)	Call for signatures to petition regional authorities (26.3)

The end of Table 5

Type	None	Ranked first	Ranked second	Ranked third
Individualists	57.9	Rally (24.3)	Call for signatures to petition federal authorities (23.4)	Call for signatures to petition regional authorities (20.6)
Communitarians	37.3	Call for signatures to petition federal authorities (40)	Call for signatures to petition local authorities (34)	Call for signatures to petition regional authorities (33.3)

Source: calculated by the authors based on data from the KMG survey provider.

Table 6

### The types of protest actions in which respondents are ready to take part, %

Type	None	Ranked first	Ranked second	Ranked third
Hierarchical elitists	76.9	Call for signatures to petition local authorities (15.4)	Call for signatures to petition regional authorities (15.4)	Call for signatures to petition federal authorities; rally (13.5)
Egalitarians	67.7	Call for signatures to petition federal authorities (18.4)	Call for signatures to petition local authorities (13.4)	Rally (12.4)
Individualists	72.9	Call for signatures to petition federal authorities (15.9)	Call for signatures to petition local authorities (14)	Rally (14)
Communitarians	65.3	Call for signatures to petition federal authorities (19.3)	Call for signatures to petition local authorities (14)	Rally (12.7)

Source: calculated by the authors based on data from the KMG survey provider.

### Measures to stop rumours of environmental risks

Respondents named the best measures that large companies could take to stop rumours of environmental risks (Table 7); multiple answers were possible. In descending frequency order, the measures mentioned by respondents of all types were as follows: creating conditions for maximum government control over production; close collaborations with expert ecologists; public visits to the production facilities.

Table 7

**Attitudes of different cultural types to the measures that large companies  
can take to stop rumours of environmental risks, %**

Measure	Hierarchical elitists	Egalitarians	Individualists	Communitarians
Creating conditions for maximum government control over production	76.9	77	75.7	80
Public visits to production facilities	69.2	57.1	56.1	62
Close collaborations with expert ecologists	65.4	64.1	64.5	68
Raising awareness of production processes	48.1	48.4	42.1	57.3
Roundtables with broad public participation	42.3	53	43	58.7
None	7.7	9.7	8.4	6.7
No answer	7.7	5.5	5.6	8

*Source:* data obtained by the KMG survey provider at the request of the Immanuel Kant Baltic Federal University.

Tighter government control was most often named as the best measure by communitarians — the type associated with support for government intervention in production and manufacturing. Similarly to egalitarians, they commonly called roundtables with broad public participation an effective measure. This can be explained by high levels of distrust among communitarians and their ensuing desire to receive first-hand information. It does not come as a surprise that many representatives of this cultural type mentioned public visits to production facilities. It is difficult to explain, however, why many communitarians (57.3%), whose level of trust is rather low, selected the ‘raising awareness’ option.

Hierarchical elitists also mentioned public visits to production facilities as an effective measure more often than other respondents.

Egalitarians supported the idea of round tables with broad public participation. This answer is very much in line with the equal rights values shared by representatives of this type.

The answers given by individualists did not show a specific pattern.

The study of protest activities in the village of Nivenskoe revealed that representatives of different cultural types perceived environmental risks differently and preferred different risk communication forms. This conclusion leads one to make the following interpretations.

1. Egalitarians and especially communitarians are more ready to participate in environmental protests than hierarchical elitists and individualists. The two former groups commonly are experienced in such activities. This fact and the low trust of egalitarians and communitarians in sources of information on environmental risks make these two groups the most non-conformist protest activity segment in the village of Nivenskoe as long as environmental problems are concerned.

2. Representatives of the two other types have a more positive outlook and consider themselves familiar with different opinions on the safety of the potash deposit development in the village of Nivenskoe. It can be concluded that these two factors are complementary.

3. To prevent an increase in protest attitudes, egalitarians and communitarians should be considered as participants in roundtables and public hearings. Firstly, this will aid in channelling their energy into constructive pursuits. Secondly, they will receive the information they need. This is all the more important as egalitarians и communitarians are more inclined to see raising awareness as an effective tool to relieve social tensions than hierarchical elitists and individualist are.

4. The study identified features common to all cultural types. Respondents agree that creating conditions for tighter governmental control over production is the most effective measure to stop rumours of environmental risks. Moreover, respondents tend to trust information received from friends and relations, social activists, and ecologists. The authorities, private and public media, and especially business are not considered effective sources of information about environmental risks. Residents of the village of Nivenskoe prefer direct forms of communication. Moreover, they stress that, should an environmental problem arise, they will give priority to information form the MES and ecologists.

Further research on the problem may draw on the findings of this study to explore the perception of environmental risks by each cultural type.

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## References

1. Sato, A. 2015, Understanding effective risk communication in the context of a radiological accident, *Fukushima Global Communication Programme Working Paper Series*, no. 7, available at: <https://i.unu.edu/media/fgc.unu.edu-en/page/922/FGC-WP-7.pdf> (accessed: 13.12.2019).
2. Barg, A.O., Lebedeva-Nesevrya, N.A. 2015, Risk communication in the occupational risk analysis system for the health of industrial employees, *Medicina truda i promyshlennaya ekologiya* [Labor Medicine and Industrial Ecology], no. 8, p. 28—33 (in Russ.).

3. Acton, J.M., Hibbs, M. 2012, *Why the Fukushima was Preventable*, Carnegie Endowment for International Peace, Washington DC.

4. Platonov, K.A. 2016, Vospriyatie ekologicheskikh riskov: ekspertnye ocenki i obshchestvennoe mnenie, *Vestnik Sankt-Peterburgskogo universiteta. Seriya 12. Psihologiya. Sociologiya. Pedagogika* [Bulletin of the St. Petersburg university. Series 12. Psychology. Sociology. Pedagogics], no. 1. p. 102—110 (in Russ.).

5. Tihomirov, D.A., Kistkina, I.A. 2017, Problema osoznaniya ekologicheskoy ugrozy v Rossii, *Gorizonty gumanitarnogo znaniya* [Horizons of humanitarian knowledge], no. 2, p. 55—61 (in Russ.).

6. Chmel', K.Sh., Klimova, A.M., Mitrohina, E.M., 2020, Politizacija ekologicheskogo diskursa v Arhangel'skoi oblasti na primere stroitel'stva musornogo poligona okolo stancii Shies. *Zhurnal issledovaniy social'noi politiki* [The Journal of Social Policy Studies], no. 18, 83—98. <https://doi.org/10.17323/727-0634-2020-18-1-83-98> (in Russ.)

7. Ilyashevich, A.V. 2018, Risk Communication in the Sphere of Environmental Risk: Power Structures and Citizens, *Regional Risks and Risks to the Regions. Conference Proceedings*, p. 68—71.

8. Vishnyakov, Ya.D. 2008. In: *Vishnyakov, Ya.D., Radaev, N.N. (eds.) Obshchaya teoriya riskov* [General risk theory], Moscow, 368 p. (in Russ.).

9. Burganova, L.A., Iskhakova, E.I. 2019, Risk communication as a mechanism for effective risk management, *Vestnik ekonomiki, prava i sociologii* [Journal of Economics, Law and Sociology], no. 1, p. 132—135 (in Russ.).

10. Douglas, M., 1982, Cultural Bias, *In the Active Voice. Routledge and Kegan Paul*, London.

11. Johnson, B.B., Swedlow, B., 2019, Cultural Theory's Contributions to Risk Analysis: A Thematic Review with Directions and Resources for Further Research, *Risk Analysis*, Doi: <http://dx.doi.org/10.1111/risa.13299>

12. Mamadouh, V., 1999, Grid-Group Cultural Theory: an Introduction, *GeoJournal*, Vol. 47, No. 3. P. 395—409.

13. Thompson, M., 1982, A three-dimensional model. In: Douglas M. (ed.), *Essays in the Sociology of Perception*. P. 31—63. Doi: <https://doi.org/10.1080/1351161042000291941>

14. Dake, K., 1992, Myths of Nature: Culture and the Social Construction of Risk, *Journal of Social Issues*. Vol. 48. No. 4. P. 21—37.

15. Jenkins-Smith, H.C., 2001, Modeling Stigma: an empirical analysis of nuclear images of Nevada. In J. Flynn, P. Slovic & H. Kunreuther (Eds.), *Risk, Media and Stigma: Understanding Public Challenges to Modern Science and Technology*. Earthscan. London.

16. Kahan, D.M., 2012, Cultural cognition as a conception of the cultural Theory of Risk, *Handbook of Risk Theory*. P. 725—759.

17. Kahan D.M., Peters E., Wittlin M., Slovic P., Ouellette L.L., Braman D., Mandel G.N., 2012, The polarizing impact of science literacy and numeracy on perceived climate change risks, *Nature Climate Change*. No. 2, P. 732—735.

## The authors

**Dr Mihail I. Krishtal**, Researcher, Sociological Lab of Analysis, Modelling and Forecasting of Risks, Immanuel Kant Baltic Federal University, Russia.

E-mail: MKrishtal@kantiana.ru

<https://orcid.org/000-0001-6167-1025>

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**Dr Aleksandr V. Shchekoturov**, Head of Sociological Lab of Analysis, Modeling and Forecasting of Risks, Immanuel Kant Baltic Federal University, Russia.

E-mail: [ASHCHekoturov@kantiana.ru](mailto:ASHCHekoturov@kantiana.ru)

<https://orcid.org/0000-0001-6703-4860>

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