Retraction

Retraction: Fundamental problems of geopolitical and socio-cultural development of the Arctic: Islamization, digitalization and transformation of the Arctic space (Russian example) (IOP Conf. Ser.: Mater. Sci. Eng. 940 012112)

Published 25 June 2021

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IOPP expresses its thanks to the readers and independent advisors who have shared their thoughts regarding this paper during the course of the investigation.

Retraction published: 25 June 2021
Fundamental problems of geopolitical and socio-cultural development of the Arctic: Islamization, digitalization and transformation of the Arctic space (Russian example)

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Abstract. The principal problems of geopolitical and socio-cultural development of the Arctic are analyzed and illustrated with the example of Russia in this study. The authors identified and singled out three of the most acute among them: islamization, digitalization and transformation of the Arctic space in the era of the Fourth industrial revolution and the technological structures’ change. The present study is based on the method of comparative analysis, as well as on axiomatic and empirical definitions, built on the basis of civilization theory, reflecting the problems of technological change, and the theory of innovations diffusion suggested by a Swedish geographer T. Hagerstrand. The current trend is that all issues of Islamic regionalism today are resolved exclusively from the position of force and direct military influence. At the same time, the growth of the Muslim population in the region and the spread of Islamic regionalism ideas make the Arctic and Subarctic region of the Russian Federation a zone of potential development, while the risks of confessional tension are about the same as everywhere else, with the development potential being higher.

1. Introduction
The authors identified and singled out three of the most acute among them: islamization, digitalization and transformation of the Arctic space in the era of the Fourth industrial revolution and the technological structures’ change. The purpose of the research is to determine, analyze and systematize fundamental problems of geopolitical and cultural exploration of the Russian part of the Arctic. The article is aimed at determining how these factors influence the development of the Russian Arctic zone. One of the global trends of the late XX – early XXI centuries is the growth of the Muslim population in the world outside the so-called “Islamic world”, in non-Muslim countries, as well as in the regions in which, until recently, the Muslim proportion was either extremely small and was noted at the level of statistical error, or was not recorded as such. Until the late 70’s of the twentieth century, the Arctic was just such a territory. A significant theoretical and practical interest is the study of the space in the Russian North from the standpoint of the dynamics of changes in ethnic and religious composition, as well as the use of these changes as a positive factor, the driver of economic growth, where the problems are somehow correlated with the same problems of other Arctic States – Norway, Denmark and Iceland, but this is even more true in the case of the US and Canada.
Currently, the problem with the spontaneous growth of the Muslim population, communities and organizations is felt as the most acute, problematic and symptomatic in the Northern Europe and the Arctic region – more than in all world regions. The Swedish example illustrates the paradox of the whole situation: in 1975, the Muslim population of the Kingdom was 0.25%; in 2017, according to official data - it is every 10th citizen, according to unofficial data, the Muslim population of Sweden is balanced between 14.5 and 17.5%. 75% of all Muslims in Sweden live in two agglomerations, of which: 53-55% - in the metropolis of Stockholm and Uppsala, 20-25% in the one that is formed by the capital of Denmark, Copenhagen, and the Swedish city of Malmo. This circumstance creates a single region, which is home to an estimated 280 to 350 thousand Muslims. The process of European urban space becoming a ghetto is going on with the acquiescence, connivance or inaction of local authorities and has a voluntary-compulsory character [1].

In the Russian Federation, in the Arctic zone of the Russian Federation (AZ RF) the situation is fundamentally different. First of all, there is a completely different settlement system; the level of urbanization is almost 100% [2]. That is 10-20% more than in any Arctic part of Europe, except Iceland and Greenland. The infrastructural disunity, objectively inherent in the Northern territories in Russia, aggravates the situation. In Russia, compared with the USSR, there is increased migration activity. The category of "traditional places of settlement" is losing some of its importance. Yet moving populations have different social characteristics. Moreover, the Russian Far North was initially characterized by increased migration activity [3] [4]. In the present, we conclude that the Arctic zone of the Russian Federation hosts a process of new regional and religious identities’ formation. Also for the reasons described above, this process has its own confusion, logical incompleteness, as well as local antagonism, for example, the Muslim community of Vorkuta, which has from 17 to 20 thousand Muslims, has no place of worship and can not build the Great mosque of Vorkuta for 25 years.

2. Methods
Recognizing the importance of taking into account the confessional factor for almost any multi- confessional society, moreover in the aspect of spatial transformation under the influence of technological diffusion, we believe that this kind of study, made on the example of Russia, will be of interest to a wide range of specialists. The authors have tried to reflect the pluralism of opinions, as well as to pay attention to the economic, political and socio-cultural components. While working on the article, the authors resorted to latest scientific discoveries to support their claims, taking into account fundamental works of Russian and foreign specialists in Geography, History, Sociology, Economy in such scientific fields as civilisational theory, which studies the problems of the flows of migration, the influence of sectorial and territorial (including migrational) factors on regional labour market, and the theory of diffusion process of innovation.

3. Results and Discussion
Initially, as it became clear from history, the so-called "traditional Islam" in the Arctic zone of the Russian Federation was represented by Siberian, Kazan and Volga Tatars living together with the Russians for more than five hundred years. The discovery of Volga oil turned all professions related to oil production and refining into promising ones, and therefore profitable, and then specialized for the peoples of Tatarstan, Bashkiria, and other Muslim regions, dominating even at that Soviet period: Azerbaijan, Chechen-Ingush Autonomous Soviet Socialist Republic, Dagestan Autonomous Soviet Socialist Republic, Kabardino-Balkar Autonomous Soviet Socialist Republic. In 1973, the USSR had only 5 complex universities preparing specialists with a high level of training, 3 of which were in the Muslim regions of the USSR (Baku, Grozny and Ufa). Naturally, no one thought about the religious composition of the population then. The large West Siberian oil, supplemented with gas [5], led to the migration of the population from the Volga economic region to the West Siberian region. A new Muslim settlement zone was formed and is now characterized as historical and traditional. In the next 40-45 years since the construction of single-industry towns in the AZ of the Russian Federation and
the launch of the oil and gas industry [6], the share of the population professing Islam gradually increased in the region.

Currently, in the Arctic zone of the Russian Federation, depending on the region-subject, the Muslim population ranges from 2.1% to 41% of the total population (see Table 1). The data are based on a statistical study conducted by the authors. on the basis of comparison of the all-Russian census materials in 2002 and 2010, Federal state statistics service for 2019, also on methods of an objective assessment taking into account the actual statistical error as in one of the above censuses there was no column "religion". To date, the inclusion of this item into the form is only under discussion, for this reason, all assessments are purely subjective. Materials provided to one of the authors by the Russian Council of Muftis representatives, as well as regional media reports of the relevant subjects of the Federation were used.

Despite a rather serious fragmentation and a relatively small number of the Muslim population in the total number of region inhabitants, its compact concentration in the regional centers of North-West Russia, the Urals and Western and Eastern Siberia, as well as cities in the Far East is of serious concern not only for local authorities, but also for the Federal center.

The Western European problem of ghettoization or concentration of the Muslim population is clearly seen in the current political and economic conditions. This is the first fundamental problem of geopolitical and socio-cultural development of the Arctic: the problem of forecasting the dynamics of development and transformation of the Arctic region.

This problem has already led a number of European States (primarily the Benelux and Northern European States) to the most severe social disasters and crises, solutions to which have not been found at the moment and a safe way out of which is currently not visible even in the long term. As of January 1, 2017, every 10th inhabitant of Northern Europe is a Muslim. Only Sweden alone has a Muslim population comparable to the population of 5 Icelands. If the same trend continues (without repetition of the events of 2015), then by 2025-2027 it will be every 3rd, and by 2035-2050 every 4th citizen. Between 20% and 40% of young people under the age of 25 have neither education nor a permanent job. However, even it can be considered at present a relatively prosperous district in comparison with Stockholm Rinkeby nicknamed "little Mogadishu" [1].

At these rates, it is difficult to imagine what these and neighboring areas will become by 2025-2035 in percentage and proportional ratios. By 2025-2030 years a primary map is a projection of the Muslim settlement in Northern Europe has to be finally formed. This map should fix the Muslims’ settlement in Northern Europe for the next 50-70 years, in fact – until the end of the XXI century. By the same period, plans of the most ambitious project related to the construction of Islamic infrastructure in the states of the region should be completed and implemented in practice [7]. The Arctic region has both huge potential (humanitarian, resource, infrastructure, etc.) [8] and strategic importance for all global players, and the Islamic world is no exception. The absence of a single, real and working legislative framework is the second fundamental problem of the Arctic, development dynamics and transformation of the Muslim population of the North of Russia and the Arctic zone of the Russian Federation.

Table 1. Muslim population of the Russian Arctic (Regions of the Arctic zone of the Russian Federation) as of January 1, 2019. In the column "total" * means excluding migrants from the former Soviet republic of Central Asia, and ** - including migrants from the former Soviet republics of Central Asia.

| Russian Arctic Regions                | Total population | Muslim population | Percentage of Muslim population in % |
|--------------------------------------|------------------|-------------------|--------------------------------------|
| Krasnoyarsk region                   | 2 865 908        | 300 000           | 10.5                                 |
| Murmansk region                      | 762 371          | 55 000            | 7.2                                  |
| Arkhangelsk region                   | 1 173 763        | 25 000            | 2.1                                  |
| Nenets Autonomous district           | 43 855           | 1 500             | 3.4                                  |
| Republic of Komi                     | 856 631          | 93 000            | 10.9                                 |
For comparison, in this paper, we present the official statistics of the Muslim population in Canada and the United States, the dynamics of its growth before the "Arab spring" and in this process (in 2019) (see Table 2).

| Canadian and US provinces | Number of Muslims in 2001 | % 2001 | Number of Muslims in 2011 | % 2011 | % 2019 |
|---------------------------|--------------------------|--------|--------------------------|--------|--------|
| Alaska                    | 1 570                    | 0.3    | 3 100                    | 0.5    | 0.7    |
| USA                       | 1 951 386                | 0.6    | 2 595 000                | 0.8    | 1.3    |
| Ontario                   | 352 525                  | 3.1    | 581 950                  | 4.6    | 6.7    |
| Quebec                    | 10 620                   | 0.5    | 243 430                  | 3.1    | 3.8    |
| Alberta                   | 49 045                   | 1.7    | 113 445                  | 3.2    | 3.5    |
| British Columbia          | 56 220                   | 1.4    | 79 310                   | 1.8    | 2.1    |
| Manitoba                  | 5 095                    | 0.5    | 12 405                   | 1.0    | 1.3    |
| Saskatchewan              | 2 230                    | 0.2    | 10 040                   | 1.0    | 1.2    |
| Nova Scotia               | 3 545                    | 0.4    | 8 505                    | 0.9    | 1.1    |
| New Brunswick             | 1 270                    | 0.2    | 2 640                    | 0.3    | 0.5    |
| Newfoundland and Labrador| 625                      | 0.1    | 100                      | 0.2    | 0.3    |
| prince Edward island      | 195                      | 0.1    | 660                      | 0.5    | 0.7    |
| Northwest territories     | 175                      | 0.5    | 275                      | 0.7    | 0.9    |
| Nunavut                   | 25                       | 0.1    | 50                       | 0.2    | 0.2    |
| Yukon                     | 55                       | 0.1    | 40                       | 0.1    | 0.2    |
| Canada                    | 579 640                  | 2.0    | 1 053 945                | 3.2    | 3.7    |

Several conclusions can be drawn on the basis of this Table 1: 1) zoning of the territory of the Muslim population settlement in the Russian Arctic sector – the Arctic zone of the Russian Federation into the following zones (parts): North-Western, Ural, West Siberian, East Siberian and Far Eastern; 2) the above data demonstrate that the Muslim population is located on the Arctic zone of the Russian Federation very unevenly, mainly in the North-Western, Ural and Western Siberian parts; 3) it should be noted that it is mainly concentrated in the capitals and central cities of the regions; 4) in almost all cities where there is some organized Muslim community, mosques, madrassas are built, new cultural centers, cafes, shops with Halal and Muslim product lines are opened; 5) another important conclusion following from Table 1 is that de facto every 5th resident of Russian AZ today is a Muslim. Muslims are distributed unevenly in the AZ of the Russian Federation; most of them live in the Yamal and KHMAO, and least of all – in Arkhangelsk region, respectively.
However, who can guarantee that tomorrow the Arctic zone of the Russian Federation, which is today not the most prosperous compared with other regions, but relatively quiet, won't turn into a problem area or a "hot spot" under the pressure factors inspired from outside or inside. The security of a large and passionate Muslim community is the third fundamental problem of the Arctic development, the dynamics and transformation of the Muslim population in the North of Russia and the Arctic zone of the Russian Federation. Economic and political realities as well as the factor of open borders contribute to the "spontaneous" and "unorganized" interpenetration of cultures together with their carriers. By the way, this applies not only to Muslim communities, but also to Orthodox communities in Finland [9]. However, Muslim communities are certainly more active in the present time throughout the Arctic Circle.

Research shows that cultural expansion as a specific form of intercultural communication is the most effective factor in the implementation of the inclusive system of other civilizational and cultural code values formation [10].

This fully applies to the values and practices of economic behavior. This is the fourth fundamental problem of the Arctic development, the dynamics and transformation of the Muslim population in the North of Russia and the Arctic zone of the Russian Federation. This is especially true for the VI technological order, in the era in which we now live.

In the transition to the next VII technological order it is extremely difficult, if not impossible to imagine and predict the role of cognitive technologies in human life and society. This is the fifth fundamental problem of Arctic exploration of the dynamics of development and transformation of the Muslim population in the Russian North and the Arctic zone of the Russian Federation, for several reasons: a) despite the progress in transport and IT, these areas are still distant from the central cities, as well as from air and land routes, b) their geographical distance, overlaid on the relative (in comparison with other regions of the Russian Federation) viability of the population contributes to a more rapid and at the same time more mass transition to the new lifestyle, that already forms the territory of experimental advanced development.

Successful adaptation and integration of migrants from the Middle East, North and East Africa, South Asia, both in Russia and in Northern Europe is perceived with a healthy degree of skepticism due to their quantity and quality. This is, albeit partly indirect, but the sixth principal problem of the Arctic development, dynamics and transformation of the Muslim population in the North of Russia and the Arctic zone of the Russian Federation.

The seventh fundamental problem of Arctic development, as well as the dynamics of development and transformation of the Muslim population in the North of Russia and the Arctic zone of the Russian Federation is the immutable fact that today the entire Arctic region occupies a special place in the system of economic priorities of Russia, China and our allies. In this regard, the ethnic and religious composition of the regional population becomes important not only for Russia itself, but also for the foreign economic policy in other countries.

The "peculiarity" of the Arctic zone in the Russian Federation lies in the exclusivity of the geographical position of the Arctic, as well as in those enormous resources (energy, raw materials and food) [11], which in itself is the cause for conflict on a global scale, not inferior to the previous global wars, which aimed at the definition or establishment of a new world order belonging to the winners. All global players are interested in the resources and opportunities that the Arctic region as a whole, and the Arctic zone of the Russian Federation in particular, can provide.

The eighth fundamental problem of the development of the North of Russia and the Arctic zone of the Russian Federation is the immutable fact that today the entire Arctic region occupies a special place in the system of economic priorities of Russia, the United States, Canada, European States, China, as well as of our other allies and partners. [12] In this regard, the ethnic and religious composition of the regional population becomes important not only for Russia itself, but also for the foreign economic policy of other countries. [13] [14]

And finally, the ninth fundamental problem of development of the North of Russia and the Arctic zone of the Russian Federation is its growth, indicated above in Table. No. 1. One out of every 10
Muslims lives in AZ Russia and North Russia. This challenge is not unique for Russia, however, it is partly unique for the AZ of the Russian Federation.

4. Conclusions

The research, devoted to the conceptual theories and ideology of sustainable development of the Arctic in the era of the 4th industrial revolution and the change of technological structures, which is based on the method of comparative analysis [16], as well as on axiomatic and empirical definitions, built on the basis of the theory of civilization, reflecting the problems of changing technological structures, and the theory of diffusion of innovations by the Swedish geographer T. Hagerstrand, we’ve come to the following conclusions:

Prerequisites for changing or reorienting the concept of value development with the example of the Arctic region are:

- Geography is determined by nature;
- Technology shapes space;
- Man (or humanity) goes beyond the limits of their ecumene.

Those explain the so-called "Main directions of the new Arctic region development" ("Updated Arctic") [15]:

- "Northern ideology" / "Scandinavism";
- "Methamodernism";
- "Reinterpretation" or "Theory of moral foundations";
- "Human development";
- "Enlightened free will";
- "Bifurcation technocracy";
- "Ultra Scandinavism".

In addition to these conceptual theories of development, the Arctic region, or rather the countries, states and societies that make up its diversity, in addition to this problem of determining the vector of movement, have a number of other challenges – the threat of wars, uncontrolled migration, examples of the destruction of history and their cultural heritage – and these are only some of the examples. All this is complicated by the fact that this is happening at one of the most crucial moments for humanity, on a rapid change in the foundations, ways and conditions of life. 40-50 years ago it was impossible to imagine something which is a commonplace for us today, for example, the Internet. As we described above, the Arctic region is now for a whole range of reasons both the most interested consumer of high technologies, including theoretical orientation, and at the same time a testing ground for their development and processing. Throughout history, as new technologies were changing the means of production and communication, they transformed societies and cultures, sometimes beyond the latter’s will.

The current trend is that all issues of Islamic regionalism today are resolved exclusively from the position of force and direct military influence. At the same time, the growth of the Muslim population in the region and the spread of Islamic regionalism ideas make the Arctic and Subarctic region of the Russian Federation a zone of potential development, while the risks of confessional tension are about the same as everywhere else with the development potential being higher.

First of all, it concerns such problems as:

- participation of public and private initiatives in the implementation of various projects and areas of economic, social, infrastructure and political activities in the Arctic;
- activity and transformation of new and previously introduced objects and projects in conformity with the conditions and standards of the VI technological mode and IV industrial revolution (a fundamental modernization processes, recovery and reconstruction of the main project facilities, taking into account the highest environmental requirements, reclamation of polluted areas, etc., etc.) [17] [19] [20];
• institutionalization of high-tech technologies, high-tech projects in conjunction with dialogue with organizations and communities representing the population of the Northern territories, regardless of their origin and status.

If at least a little of the above will be implemented, all this in synergy with the totality of the common interest, will rediscover the Arctic for all mankind. Time has already shown that no country, even such economically and industrially-technologically developed ones as the United States or Canada, or what the USSR used to be, is able to do it alone. That is, even in matters of restoration of territories, it is necessary to collaborate – we need international cooperation, involvement and interaction of the whole international potential. Only together in cooperation and mutual respect for each other, for nature, its flora and fauna [18], and for the world that we can achieve truly amazing results

References

[1] Eidemiller K Yu, Krasnozhenova E E, Samylovskaya E A, Kudryavtseva R.-E A 2019 Spatial analysis of Muslim communities' convergence in the Nordic European region, in Scandinavian countries IOP Conference Series: Earth and Environmental Science 302(1) 012073
[2] Balabeykina O A, Faibusovich E L 2018 The urban extension level of the Russian Federation’s territory: regional aspect Geographical bulletin 1(44) 72-82
[3] Larchenko L V, Gladkiy Yu N, Kolesnikov R A 2019 Tourism as a factor of restructuring the economy of resource-producing regions of the Arctic (on the example of the Yamalo-Nenets Autonomous District) IOP Conference Series: Earth and Environmental Science 302(1) 012039
[4] Popkova A, Kostko N, Skripnuk D 2017 The quality of social space mapping: The case of tyumen, Russia International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management SGEM 17(23) 753-760
[5] Larchenko L V, Kolesnikov R A, Tumanova G P, Kibenko V A 2016 Economic problems of exploring hydrocarbons in Russian northern provinces in the context of international interests International Journal of Energy Economics and Policy 6(3) 529-536
[6] Efremova I, Rudenko D, Didenko N, Skripnuk D 2017 Disparities in rural development of the Russian arctic zone regions Research for Rural Development 23189-194
[7] Eidemiller K Yu, Samylovskaya E A, Kudryavtseva R.-E A, Alakhin A E 2019 Social and Islamic diffusion in the Nordic countries with the example of Sweden by year 2050 IOP Conference Series: Earth and Environmental Science 302(1) 012071
[8] Popkova A, Kostko N, Skripnuk D 2017 The quality of social space mapping: the case of Tyumen, Russia International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM 17, 753-760
[9] Balabeikina O A 2014 Traditional Christian confessions in Finland: the territorial aspect Izvestiya of the Russian Geographical Society 146(5) 56-62
[10] Sidorov E Yu 1998 Culture of the world and culture of Russia Polis 5 106-113
[11] Russian Arctic World in numbers. Arctic oil and gas reserves RUTV.RU Available from: http://rutv.ru/brand/show/episode/827119/viewtype/picture/ [Accessed 1th September 2019]
[12] Skripnuk D F, Kikas K N, Safonova A S, Volodarskaya E B 2019 Comparison of international transport corridors in the Arctic based on the autoregressive distributed lag model IOP Conference Series: Earth and Environmental Science 302(1) 012096
[13] Didenko N I, Cherenkov V I 2018 Economic and geopolitical aspects of developing the Northern Sea Route IOP Conference Series: Earth and Environmental Science 180(1),012012
[14] Didenko N, Kunze K, Skripnuk D 2015 Russian export strategy and social sector: Consequences of resource-oriented exports on population of Russia Mediterranean Journal of Social Sciences 6(5S2) 473-481
[15] Larchenko L V, Gladkiy Yu N, Sukhorukov V D 2019 Resources for sustainable development of Russian Arctic territories of raw orientation IOP Conference Series: Earth and Environmental
Science 302(1) 012121

[16] Kruk M N, Cherepovitsyn A E, Nikulina A Y, Guryleva N S 2018 Opportunities for improving the corporate social responsibility programs for metallurgical companies in the Arctic Non-Ferrous Metals 44(1) 3-6

[17] Didenko N, Skripnuk D 2016 The environmental Kuznets curve in the case of Russia International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM 16 209-216

[18] Kruk M N, Nikulina A Y 2016 Economic estimation of project risks when exploring sea gas and oil deposits in the Russian arctic International Journal of Economics and Financial Issues 6(2) 138-150

[19] Skripnuk D, Kikkas K, Romashkina E 2019 Sustainable development and environmental security in the countries of the circumpolar north E3S Web of Conferences 110 02037

[20] Didenko N I, Romashkina E S 2018 Assessment of the Influence of the Extraction of Energy Resources on the Environment IOP Conference Series: Earth and Environmental Science 180(1) 012014

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