Е. В. Корнилова

«Арктическая константа» в языковом сознании современной студенческой молодежи

Введение. В настоящее время наблюдается беспрецедентный рост интереса к арктической проблематике в самых разных областях. Анализ научной литературы свидетельствует об актуализации изучения феномена региона как фрагмента семиосферы и формировании арктической регионаологии. Данное исследование посвящено проблеме репрезентации целостного образа арктического пространства с междисциплинарных позиций, а также в контексте ценностно-смысловых нарративов в науке и образовании. Цель исследования — представить основные характеристики семиотики циркумполярного региона, выявить его культурно-символические коды, закрепленные в языковом сознании современной студенческой молодежи.

Материалы и методы. Основной метод исследования — свободный ассоциативный эксперимент, проведенный со студентами Санкт-Петербургского горного университета. Исследование проходило в несколько этапов, начиная с 2021 года. В нем участвовали 400 студентов разных факультетов преимущественно в возрасте 18-20 лет. Использовались также следующие методы: опрос-беседа, систематические педагогические наблюдения, теоретический анализ научной литературы.

Результаты исследования. В результате проведенного ассоциативного эксперимента на слово-стимул «Арктика» от его участников было получено 2875 спонтанных индивидуальных реакций. Ассоциаты респондентов были объединены в 5 тематических групп, которые образовали понятийное поле «Арктика». Анализ его ядерной, околоядерной и периферийной зон позволил сделать выводы о преобладании эмоционально-чувственных реакций и оценок сурового арктического пространства, а также о его восприятии как богатейшей ресурсной базы и уникальной площадки для разнообразной научной деятельности. Этнокультурный и геополитический компоненты, а также духовно-идеологические коннотации в структуре понятийного поля «Арктика» представлены слабо. Исследование было верифицировано также путем свободного опроса студентов в форме беседы.

Заключение. Полученные данные подтвердили гипотезу о том, что героический нарратив, сформированный в советский период, сегодня не является доминирующей категорией в понимании концептосферы Арктики и Севера. Однако символическая ценность Арктики и полярного подвига может стать одной из приоритетных национальных идей в современной России. Анализ мировоззренческих ориентиров студенческой молодежи относительно концептуального поля «Арктика» является важнейшей педагогической и воспитательной проблемой. Необходимо возрождать образовательные традиции по формированию «арктического сознания» у молодого поколения и разрабатывать единую социогуманитарную парадигму знаний об этом уникальном регионе Земли.

Ключевые слова: Арктика и Север, студенческая молодежь, Санкт-Петербургский горный университет, языковое сознание, свободный ассоциативный эксперимент, арктический нарратив, культурно-символические константы
**E. V. KORNILOVA**

“The Arctic constant” in the linguistic consciousness of modern student youth

**Introduction.** Currently, there is an unprecedented increase in interest in the Arctic issues in various fields. The analysis of scientific literature testifies to the actualization of the study the phenomenon of a region taken as a fragment of the semi-sphere and the formation of Arctic regionology. The research is devoted to representing the integral image of the Arctic from the interdisciplinary perspective, as well as in the context of value-semantic narratives in science and education. The purposes of this study are to present the key features of semiotics of the circumpolar region, and to reveal its cultural-symbolic codes anchored in the linguistic consciousness of student youth in contemporary Russia.

**Materials and methods.** The main research method used was the free associative experiment involving students of Saint Petersburg Mining University. The study took place in several stages, starting in 2021. It was attended by 400 students of different faculties, mainly aged 18 to 20 years old. The following methods were also used: enquiry-conversation, systematic pedagogical observations, theoretical analysis of scientific literature.

**Results.** The respondents gave 2875 responses to the stimulus “the Arctic” in the course of the associative experiment. The obtained associates were distributed into 5 thematic groups, which formed the “Arctic” conceptual field. The analysis of its the core zone, the near core zone and the periphery obtained shows prevalence of emotional-sensual reactions and estimations of the severe Arctic space, which is also perceived as a place richest in natural resources, with unique conditions for all kinds of research activity. Of all the components in the framework of the “Arctic” conceptual field, the ethno-cultural and geopolitical ones, together with any spiritual-ideological connotations related, are underrepresented. The research was also verified by the free interview of students in the form of a conversation.

**Conclusions.** The data obtained confirmed the hypothesis that the heroic narrative formed in the Soviet era is no longer the dominant category in interpreting the conceptosphere of the Arctic and the North. However, the symbolic value of the Arctic and the polar feat may become one of priority national ideas in modern Russia. The analysis of the ideological orientations of students regarding the “Arctic” conceptual field is the most important pedagogical and educational problem. It is necessary to revive educational traditions on the formation of “the Arctic consciousness” among the younger generation and develop a unified socio-humanitarian paradigm of knowledge about this unique region of the Earth.

**Keywords:** the Arctic and the North, student youth, Saint Petersburg Mining University, linguistic consciousness, free associative experiment, the Arctic narrative, cultural and symbolic constants

For Reference:
Introduction

Currently, the Arctic issues are becoming a zone of special attention from the global community in connection with the strengthening of geopolitical, environmental and socio-cultural significance of the circumpolar region. The Arctic is the place of interaction and collision of different civilizations (first of all, the Western and local civilizations of the northern ethnic groups), a transport crossroad of sea routes, a unique nature reserve and climate regulator of the whole planet, and it is also an extensive storehouse of minerals, the object of international economic cooperation, the unprecedented diverse of scientific research and technological innovation. Since the creation of the Arctic Council in 1996, the center of economic activity not only of the eight Arctic states, but also other countries is shifting more and more to this region. At the same time, for the purpose of sustainable development of the Arctic in the context of global problems of the XXI century, such areas as environmental protection and the science have to be separated from conflicting geopolitical interests and contention of great powers [1, p. 5].

The Arctic generates interest of scientists from all over the world primarily in the fields of raw material extraction, high technology, economics, energetics, geology, ecology, climatology, transport logistics, etc [2; 3]. In the article on the history of well drilling in glaciers and subglacial rock with the aim to investigate paleoclimate tendencies Professor V.S. Litvinenko, Rector of Saint Petersburg Mining University, writes: “The discovery of unique subglacial Lake Vostok in the center of Antarctica and development of natural resources in Arctic permafrost regions occupying up to 65% of the Russian territory have been the key priority for Russian researchers at the beginning of the 21st century in the Antarctic and Arctic areas” [4, p. 1].

Figure 1 Exploring subglacial lakes
Russia has a 60-year history of exploring subglacial lakes and developing the technology of deep drilling in extreme conditions (see Fig. 1). Experimental scientific research work and projects in deep ice drilling started in Saint Petersburg Mining University (at that time Leningrad Mining Institute) in 1967, commissioned by Arctic and Antarctic Research Institute, the oldest scientific research institution that carries out comprehensive investigation of polar regions. Saint Petersburg Mining University entered the top three universities in the world in the QS World University Ranking by Subject 2023 for Mineral and Mining Engineering. Since 2019, the International Competence Centre for engineering and technology of developing deposits in the Arctic conditions has been successfully operating there. Publications of the Director of the Center M.V. Dvoynikov and his colleagues are devoted to the world and Russian experience of drilling ultra-deep wells [5] and, in particular, introduce the university’s developments in the field of drilling fluids [6; 7].

“The Arctic thesaurus of knowledge” also includes the cumulated notions, ideas and basic concepts about the current status and evolution of the Arctic on the basis of a variety of different scientific disciplines and branches of science [8; 9]. Of ultimate importance in understanding of the integral image of the Arctic area and of the conceptosphere of the Arctic and the North is the interdisciplinary approach that integrates the characteristics of this complex and multifaceted object of investigation that pertain both to natural sciences and the humanities [10].

The article aims to present the key features of semiotics of the Arctic area, to reveal its cultural and symbolic constants, and to represent the image of the Arctic as anchored in the linguistic consciousness of young people of today’s Russia (based on the free associative experiment involving students of Saint Petersburg Mining University).

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**Literature review**

Today we see a steady increase in the popularity of such interdisciplinary research trend in science as investigating the phenomenon of a region taken as a fragment of semiosphere, a spatiotemporal and sense-bearing unit pertaining to organization of community life with a sophisticated structure. The notion of geospatial code is introduced, in accordance to which “the essence of geographical space is reduced to the integration of nature, people, things and meanings”. This has become the basis for investigation of goals and strategies in developing Russian Arctic as living space, the Oecumene [11, p. 1-2].

Exploring the process of regionalization of the area, that is “region-specific designation of the area”, D.S. Dokuchaev interprets it, first of all, as identification of signs and symbols that shape its uniqueness and distinctiveness among other parts of the space [12]. The semiotics of space in the Arctic and the North, its message charge is to a great extent underpinned by sacralization of the region which is closely linked to the myth of Hyperbore and the Hyperborean, the legendary Northern country and its people, the powerful polar archetype characters strong in body and spirit. The idea of Hyperbore and mission-oriented perception of the Extreme North is key to the concept of philosopher A.G. Dugin which says that Russia has an important geopolitical mission of unification [13].

While remembering his voyage over the Barents and White seas, on Northern Dvina at the age of 13, when he also met the Pomors, with their simple way of life, unusual songs and stories, D.S. Likhachev, a distinguished scientist and advocate of Russian culture, concludes that was the best and the most “magical” place he had ever visited. Likhachev believed that it was the North that was the true guardian of Russian history and culture, so we should
take care of its identity as carefully as possible. In his essay “Reflections on Russia” (Chapter “Russian North”) he declares his incessant love to this region, so important for the country in terms of its history and culture: “Russian North presents a most admirable combination of the past and the present, of modernity and history (and history it is indeed – Russian history! – the most significant and tragic in the past, and the most philosophic), of man and nature, of the watercolour poetry of water, land, and sea together with the fierce power of stone, storms, cold, snow and air ...” [14, p. 571].

It is interesting that Likhachev’s ideas are quite consistent with the generalized characteristic of the area of the professor Yu.F. Lukin: “the Arctic is a perfect example of the domination of Thalassocracy, i.e., the domination of water, ice, sea and cold clean air” [15, p. 96]. The Arctic is a very significant part of the noosphere. The Lukin’s model “Arctic-XXI” representing the Arctic as a large multi-stratum space of natural greatness along with the world history glories connected with the Arctic exploration deserves special attention. This model has been modified by the author many times in different years, but nevertheless it represents seven main subject strata: 1) the circumpolar space with certain physical and geographical coordinates, borders, and natural objects; 2) the administrative and legal structure of the Arctic states and regional societies; 3) the geopolitical macroregion (Arctic strategies, international relations, Arctic Council); 4) the ethno-cultural landscape and spiritual habitat for civilizations, religions, indigenous peoples cultures (with the features of the whole Arctic civilization); 5) the global economic space (resources, industry, infrastructure, logistics, technology); 6) the unique natural environment (Arctic biota – flora and fauna), that requires the ecological approach to its development; 7) the Arctic community, population, human resource (ideally, a comfortable social environment based on the principle of the Arctic solidarity).

Yu.F. Lukin without exaggeration can be called the founder of Arctic regionology, which aims to integrate a wide variety of specific studies and problems in the development of the Arctic and to create of the integrated paradigm of knowledge about this unique area of the Earth in social science and humanities. His monograph “The multi-faceted Arctic in the flow of time and meaning” deserves special attention [16].

Scientists from Saint Petersburg who study socio-political discourse related to the Arctic argue that Russian interests in the Extreme North are not only of exclusively pragmatic character, being of economic and geopolitical nature, they also lie in the spiritual dimension, because “the shaping of prospective Russian identity is linked with the Arctic”, which is much “more important than material considerations” [17, p. 294]. T.M. Krasovskaya, speaking about the integrity of geographical, rational and artistic awareness of the region, also writes that the idea of Russian North “has been increasingly often referred to by political analysts in search of civilizational identity of Russia, by geographers who develop new images of the cultural landscape on its base, and by sociologists in the attempt to use it in reconstruction of the nation’s historical memory” [18, p. 42].

Thus, the concept of identity is increasingly more often used in research papers that aim to explain the so-called metaphysics of the Arctic and the North, to reveal the cultural and symbolic constants of the circumpolar region. In the opinion of historians and philosophers, the greatness of Russia, since the time of Veliky Novgorod, is largely due to the development of the northern territories. Northern Russia is one of the major spiritual centers of Russian nationhood which possesses the redemptive healing power. The region has never seen serfdom, Tatar yoke or long wars, and its people are accustomed to enjoying the work they do and communication built upon equality. Here were shaped Russian labour traditions that
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base on mutual respect and love of your own land, of its severe nature. Here, in Russian North with its island monasteries (Solovetsky, Valaam, etc.), local saints and pilgrims, has formed a particular type of worldview, of sanctity and righteousness. The North has always been looked upon as a sacral land providing ideal conditions for spiritual recollection, a unique environment where one can find answers and go through inner change. This explains to a large extent the incessant interest in the North on the part of writers and publicists and of academics and artists.

Materials and methods

The characteristics of critical importance required for efficient interpretation of the semiotics of “the image of a place”, or “the spirit of a place”, including the Arctic area, appear to be as follows: 1) specific spatial coordinates, names of geographical locations and administrative-territorial units; 2) the event line, which is historic periods in exploration and development of the area, and benchmark events; 3) personalities: travelers, navigators, pilots, polar explorers, heroes both of the past and the present; 4) symbols of art: books, films, paintings, pieces of music, photographs, decorative art works, etc.; 5) linguistic-communicative component – symbol words, set expressions, metaphors, precedent texts, and verbal associations that allow to represent the signal segments of reality in the collective linguistic consciousness.

In order to identify the stereotypes pertaining to the Arctic and determine the key components in the perception of this notional concept as present in the linguistic consciousness of today’s young people the free associative experiment involving students of Saint Petersburg Mining University was carried out. It should be noted that the Mining University is the first higher technical educational institution in Russia (Empress Catherine the Great signed the decree on its establishment in 1773). Mining University played an important role in the formation of the system of higher technical education in Russia as a whole, as well as in the emerging of Russian pedagogy and traditions of teaching Humanities to students of mining engineering profile [19]. Students who have come from different regions of Russia, including the Russian Arctic, the regions of the Far North and the territories equated to them (Khanty-Mansi Autonomous Area, Yakutia, Murmansk, Arkhangelsk, and Irkutsk regions, Krasnoyarsk Territory, Ust-Ilimsk district, etc.) study here. It is quite possible that after graduating from the Mining University, they will work and do research in the Arctic region. Therefore, the assessment of certain socio-economic and psychological aspects of working and living in the Arctic by students is also of particular interest [20].

The research was conducted in several stages, starting in 2021, with students from different faculties. The largest number of the selected test subjects studied in the specialty “Mining engineering”. The free association test involved 400 students of different faculties aged 18 to 20 years old, who within 5 minutes produced 2875 responses (the number of responses to be given by one test subject was not limited). The outcome of the experiment was the model of the associative verbal field “the Arctic” as a totality of spontaneous individual responses (isolated lexemes, collocations and set expressions, including precedent ones) to the stimulus word. In general, the mass and individual reactions which made up the core zone, the near core zone and the periphery of the conceptual field in question were analyzed.

The technique of explication of cultural-symbolic codes in perception of certain lexemes based on psycholinguistic and linguocognitive analysis dates back to 1879 [21] and is now
rapidly developing with regard to a variety of language semantics elements of linguocultural value [22]. These studies have traditionally been of strong interest in the context “analyses of semantic aspects of language in one particular field, namely, the semantic field of natural objects”, taking into account their “national perception” [23, p. 175]. The following methods were also used in this study: enquiry-conversation, systematic pedagogical observations, theoretical analysis of scientific literature.

Research results

In this article we consider as appropriate to represent semantic (thematic) groups of the associate responses obtained that have linguocultural relevance together with their percentage and examples of the most frequently occurring naming units, without presenting the full list (see Tab. 1).

Table 1

<table>
<thead>
<tr>
<th>No</th>
<th>Name of the group</th>
<th>Meaning</th>
<th>Total percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Stereotypical generalized psycho-emotional reactions</td>
<td>Emotional and sensual responses and assessments of the Arctic area with its extreme climatic conditions</td>
<td>38 %</td>
</tr>
<tr>
<td>2.</td>
<td>The research component</td>
<td>Associates with the semantics of the development of the Arctic by human, its comprehensive research and mining</td>
<td>30 %</td>
</tr>
<tr>
<td>3.</td>
<td>The Arctic toponyms and other proper names</td>
<td>Names of geographical objects, administrative units, and proper names, which are associated with the Arctic and the North</td>
<td>17 %</td>
</tr>
<tr>
<td>4.</td>
<td>The Arctic biota and the Arctic community</td>
<td>The nature, flora and fauna of the Arctic, as well as representations about the life of people in the Arctic, indigenous peoples and ethnocultural realia</td>
<td>14 %</td>
</tr>
<tr>
<td>5.</td>
<td>The geopolitical component</td>
<td>Representations about the Arctic region as a zone of international cooperation and national interests of different countries</td>
<td>1 %</td>
</tr>
</tbody>
</table>

The frequency of occurrence of the obtained mass and individual responses to the stimulus word “the Arctic” was used as the criterion to distinguish the core of the corresponding associative verbal field, namely, thematic groups 1 and 2. Thematic groups 3 and 4 make up the near core zone, while the periphery (group 5) is presented by a negligible number of individual associates.

The most frequent responses found in almost all answers the respondents produced are nominations that characterize the Arctic area as vast and cold snow-covered desert unsuitable for human activity: cold, winter, frost, cold land, snow field, icy silence, lifeless calm, Arctic desert, permafrost, snow, snow storm, blizzard, ice, blocks of ice, glaciers, drifting ice, low temperature, hypothermia, frostbite, extreme conditions, polar night, etc. For this reason, warm clothing was also mentioned very frequently: overalls, down jacket, fur coat, hat, woolen sweater, Eskimo fur boots, valenki, mittens, etc.

Along with cold, the key semantic and cognitive features of the Arctic area anchored in the linguistic consciousness of today’s young people include the facts that the place is remote, inaccessible and dangerous, which is shown by the following summarized characteristics: a zone of the Earth, the end of the world, uninhabited islands territory, faraway, hard to reach, a few people, isolation, danger, difficulties. In this respect, there is prevalence of negative
axiological estimations of the region and the presence of people there: life at the limit, survival, death, despair, emptiness, voidness, loneliness, alienation, etc. The area is seen as an inconceivable place resembling far space, where the common spatial and temporal borders are nonexistent. Still, there was also a small number of “ecstatically positive” associates: beauty, beautiful winter, bewitchingly beautiful, snow tale, transparent / pure ice, clear sky, bright sun. Among the elements related to colour perception, the characteristic “white” prevails (white snow, white captivity, snow-white desert, white beard), with such attributes as “blue / dark blue” (blue sky, dark blue ice) and “red” being less frequent (red nose, red ski overalls).

For the majority of respondents the image of the Arctic is associated with the North Pole, the Arctic Ocean, aurora, polar bears, reindeers, dog sleds. Meanwhile, 10 % of respondents said there were penguins in the Arctic, which shows the associative link between the Arctic and the Antarctic. Among the responses representing the Arctic biota in its broad sense we can identify general biogeographical notions (ocean, sea, tundra, taiga), names of animals (polar wolf, Arctic fox, sea elephant, seals, walruses are also mentioned), and summarized characteristics (wildlife, poor vegetation, sea inhabitants, plenty of fish, no flowers). The aggregate picture of stereotypes related to the Arctic as a physico-geographical region of the Earth is supplemented by specific toponyms: Spitsbergen, Greenland, Novaya Zemlya, Khibiny, Yakutia, Chukotka, Yamal, Siberia, Taimyr, the Barents Sea, the Bering strait, Kola Peninsula, Murmansk, Surgut, etc.

The students have also developed certain perceptions about life of people in the Arctic, including the indigenous people of the North: 7 % of all the responses obtained as part of thematic group 4. The respondents mentioned some ethnic groups living in the Russian North, in Siberia and Far East (Khanty, Mansi, Yakuts, Eskimos, Chukchi, Nenais), their generalized nominations (northern peoples, northerners, a Siberian man, narrow-eyed people), as well as culture-specific terms (yurt, chum, igloo, hunting, reindeer husbandry, reindeer skins, laika, husky, sleigh, sledges, skis, boats, snowshoes, snowmobiles, raw / dried fish, venison, stroganina – sliced frozen fish or venison). The most common markers that characterize the interaction in the Arctic community are unity, friendship and mutual support. The geopolitical component, which is thematic group 5, makes up the periphery of “the Arctic” conceptual field (1 %) and is represented by isolated and semantically dissimilar characteristics: politics, international territory, a sector of the territory, cold war, military confrontation, Russian domination, international life, cooperation.

Special attention must be paid to thematic group coming second by frequency of occurrence (30 %), which represents the Arctic as a place richest in natural resources, with unique conditions for all kinds of research activity. The core associates (along with emotional-sensual estimations) are presented by lexemes with the common semantics related to exploration and development of the Arctic: science, scientific / challenging research, geographical / scientific discoveries, North Pole discovery, study, tests, expeditions, travel, excursions, long business trips. Rather frequent are nominations correlated with the image of the Arctic as a land that holds a lot of secrets: mystery, mysterious, unknown, little-known, dream, history in icepacks. The scientific research component of associative verbal field “the Arctic” is also presented by the names of research venues (scientific center, polar stations, weather stations, settlements) and details of everyday life of polar scientists (globe, map, compass, tents, equipment, thermal underwear, hat with earflaps, fur clothing, lantern, gas lamp, thermos, hot tea, etc).

On the whole, the fairly high frequency of occurrence and variety of semantics in the associates of this thematic group leads to the conclusion that in the linguistic consciousness
of today’s students the image of the Arctic is inseparable from the notions pertaining to scientific research domain. The distinguishing feature of the respondents involved in the associative experiment, namely students of Saint Petersburg Mining University, and the content of their curricula resulted in the names of sciences related to the Arctic (geology, geography, climatology, meteorology, ecology, glaciology) and some terminology that cannot be regarded as common knowledge when we speak about general public (geostructure, endemic plants, anabiosis, etc.) present among the responses obtained. Approximately 12% of the responses contained indications of specific areas and subjects of research, of natural resources of the Arctic area (shelf, shelf zone, subsoil, natural resources, minerals, mineral deposits, oil, gas, hydrocarbons, gold, nickel, water, fresh water supply, bacteria, microorganisms, World Ocean, glaciers melting, ice / icebergs movement, climate, climate change, global warming, new trade routes), exploration activities (wells, well drilling, production, extraction, mineral exploitation, geological prospecting), means of transport and technical equipment (icebreakers, nuclear-powered ships, ships, cruisers, submarines, airplanes, helicopters, excavators, offshore platforms, drilling stations). Single responses produced by individual students (nuclear tests, Siberian plague investigation) show their awareness of the facts not related directly to their learning.

Therefore, the analysis of the integrated framework of associative verbal responses leads to the conclusion that the Arctic, being a major conceptual field in Russian national worldview, is one of important sections of conceptosphere for student youth of today’s Russia.

**Discussion**

Identification of the most frequently occurring naming units, of semantic and cognitive features and key units of meaning, as well as of emotional-sensual and axiological responses and estimations in perceptions about the Arctic as an “image of the place” allows for certain conclusions regarding the trends in conceptualization of the region.

In the recent past the image of the Arctic closely associated with the iconic history of its exploration and development by the USSR prevailed in the public mind, and such notions as “the Arctic”, “Motherland” and “heroism” were inseparable. Today, although, there is little recollection that the title of Hero of the Soviet Union was instituted in 1934 as a consequence of a remarkable event in the history of the Arctic, the rescue of the crew members and passengers of the steamship “Chelyuskin” ice-bound in the Bering strait. It is fair to say that while naming the people related to the Arctic, the actors of the associative experiment along with the neutral lexemes scientists, researchers, polar explorers, navigators also used attitudinal lexemes pioneers, discoverers, rescuers, fanatics, unique people, and their work and life in extreme Arctic conditions were characterized as hard work, records, struggle, hardening, survival, adventurism. However, the associates obtained did not contain a single example of such naming units as hero, heroism, heroic act, with Chelyuskin and the Chelyuskin rescues were mentioned only once. To verify the experimental results and the conclusions made, students, who took part in the associative experiment, were interviewed freely in the form of an oral discussion. The outcomes showed that they were not aware of the first seven people to become Heroes of the Soviet Union, namely, polar pilots A. Lyapidevsky, S. Levanevsky, V. Molokov, N. Kamanin, M. Slepnev, M. Vodopianov, and N. Doronin, who rescued 104 people from a drifting ice floe (see Fig. 2).
The name of the legendary polar pilot Valeriy Chkalov, who together with A. Baidukov and A. Belyakov completed the world’s first nonstop flight from Moscow to the US across the North Pole in 1937, also did not “ring the bell”. The same can be said about I.D. Papanin, who in the 1930s was in charge of polar stations, including the North Pole, the world’s first drifting station (1937).

These findings are supported by other similar studies, namely questionnaires with elements of association experiments, social surveys, etc. For instance, T.A. Solovieva [24], after investigating psychological aspects of shaping the image of the Arctic in a survey of teenagers of Arkhangelsk, came to a disappointing conclusion. The image of the region the young representatives of the “globalized culture” had was of a very low volume, lacking specific details and clear structured knowledge. For example, 30 % of high school students defined the Arctic as a continent located in the Northern hemisphere, while 17 % were unable to give any answer whatsoever what the Arctic is. The author noted with regret that 89 % of the teenagers surveyed never read any books pertaining to literature about the North, 68 % could not name a single famous Arctic explorer, and only 6 % were aware of Artur Chilingarov, a contemporary Arctic explorer and oceanologist. Nevertheless, the younger generation “should be brought to develop not only the knowledge-based image, but also the meaning-based image, the forecast-based image, and the image of the proper future” [24, p. 96].

We fully agree with the opinion of the V. G. Volovich, a honorary polar explorer, who (together with A.P. Medvedev) made the first in the world parachute jump to land on the North Pole on May 9th, 1949. Already in our days, he said that the Arctic may well become one of the key national ideas, because its image has always carried the charisma of adventure and patriotism. He called the Arctic “the foundry of heroism” and rightly noted that the first time the USSR showed itself as a major power at the very beginning of its existence was in 1928, when the crew of the Soviet icebreaker “Krasin” rescued General Umberto Nobile and the other surviving members of his Arctic expedition after the crash of
their airship [25]. After that there was the glorious story of “North Pole” drifting ice stations and North expeditions, development and exploitation of the Northern Sea Route, founding new cities (Norilsk, Vorkuta, Naryan-Mar) and Arctic sea ports (Igarka, Dikson, Pevek, Tiksi), establishing weather and geophysical research stations, ice arifields, high-altitude submarine and surface expeditions to the North Pole (1962, 1977), discovering major oil fields, including the ones on the Arctic continental shelf, and construction of gas pipelines, railroads and large infrastructure facilities.

Indeed, the basis of the benchmark discourse related to heroic acts in the polar regions in the USSR and present-day Russia was unshakable. We may well consider “Arctic heroism” as one of the dominant categories in the mentality shaped by the older generations in our country. Legendary polar explorers were the elite of their age, and the news reports featuring the Papanin and Chkalov teams and the Chelyuskin crew created the environment that nurtured a whole generation of good citizens. According to A.A. Turkov, creation of a mythologized image of the heroic polar explorer (in particular, the Chelyuskin epic) was necessary “to unite the nation and popularise the exploration and development of the Arctic among the broad masses of people” [26].

Developing the heroic narrative by means of Soviet communications technologies which involved adolescents and children attracted the attention of Petrone Karen, an American researcher [27]. According to A.I. Shcherbinin and E.A. Danilova, the new socio-political reality was structured through the perspective of the Arctic, and today we should accord the highest priority “to the substantial technical and scientific capacity stored up in the Soviet era and to perceiving the Arctic as a vitally important signature resource for the Russian nation which underpins the sense of patriotism and pride for the country” [28, pp. 101-103].

Two heroic topics, the conquest of space and exploration and development of the Arctic, formed a solid foundation to educate the new generation, as reflected in school curricula, books and magazines, feature and science popular films and even in mass games for children, such as “Following the Papanin crew” or “The Chelyuskin rescue”. Playing “the Arctic” was so favoured and popular that the descriptions and instructions could be found published separately as dedicated brochures, for example, the ones developed by N.S. Panova [29]. In order to explain the success of interpreting the key events in the national history as rites and symbols, A.I. Shcherbinin introduces the concept of “political game discourse” [30, p. 219]. Here political game is not an oxymoron but a reality of the time, one of the highly effective ways of framing the concept of “Motherland” in collective consciousness.

It is interesting the opinion of L.D. Bugaeva, who draws attention to the fact that the heroic myth perfectly correlates with the “naive” children’s consciousness. The children’s audience has become the ideal object of “northern rhetoric”, i.e. the addressee to whom you can turn an enthusiastic story about the conquest of the North without risking seeming infantile. As a result, a behavioral model is set that children will have to implement when they become adults or when they choose “who to be”. As a result, Soviet children were naturally inspired by the heroism of polar explorers [31].

One of the favourite children’s games was described by V. Kataev in his tale “The Flower of Seven Colours”: a girl named Zhenia wants to play “the Papanin crew” with the boys sitting on the boards in the courtyard imagining these are ice floes, but they refuse to take a girl to the North Pole, and then one of the magical petals makes her wish come true, and she finds herself right on the North Pole surrounded by polar bears, and the next petal brings her back.

Equally well-known was “Chuk and Gek”, a story by Arkady Gaidar telling about two brothers taken by their mother on New Year’s Eve to the taiga in Far North to visit their
father, a geologist. The use of an indicative toponym “The Blue Mountains” to name the place where the geological exploration unit is located is symbolic: despite all the difficulties, the family is reunited and happiness is attained not in Moscow, where the children lived with their mother, but in the conventional magical domain of the North – in the opinion of the children, in the most remote place of the world, where “it is too cold to even wave your hands”. Specific mythopoetic elements representing the fairy-tale domain of the North in the story became a subject of a special research [32].

Many authors pay attention to the fact that for older schoolchildren a must-read book was novel “The Two Captains” by Veniamin Kaverin. The book describes the history of the search for the lost expedition of Captain Tatarinov that went along the Northern Sea Route (with three Russian Arctic expeditions of 1912 serving as prototypes). The motto of the novel was the final line “To strive, to seek, to find and not to yield” of “Ulysses”, a poem by Lord Alfred Tennyson. These words are carved on the memorial cross erected on the Hut Point Peninsula in honor of the polar explorer Robert Scott and his comrades who died in 1912 during the return journey from the South Pole. This phrase has become a catch phrase and was used, for example, as the motto of the Olympic and Paralympic Games in London (2012). It should be noted that thanks to Kaverin’s novel and its film adaptations, this proverbial phrase, which has become entrenched in the Russian linguistic consciousness, illustrates the most important feature of the Russian national character (see Fig. 3). Indeed, fortitude and courage, along with spiritual generosity, are the hallmarks of the mentality of Russian people. In fact, all the world literature about the Arctic is, first of all, “about us, about people, about a person in an extreme situation when all his real qualities manifest themselves” [33, p. 111].

![Figure 3 Arctic heroic myth in literature for children and youth](image-url)
Books, films, games of imagined travels, stories told by adults – all this merged in an arc of verbal and visual information, “linking inseparably, with hundreds of mental threads, the Arctic and Motherland in the consciousness of the Soviet people” [28, p. 104]. The data we have received confirms that for contemporary young people feature and educational books, films, works of visual art, meetings with polar explorers, stories told by representatives of the older generation and even geography lessons are not the key sources to shape the mental image of the Arctic and the North.

Conclusions and Study Potential

The results of the free associative experiment involving students of Saint Petersburg Mining University, enquiry-conversations on the topic of the Arctic and the North, as well as systematic pedagogical observations in general showed that this notional concept is characterised by wide semantic range and a slight degree of individualisation shown by perceptions of the respondents. The prevailing idea in the aggregate picture of stereotypes related to the Arctic is that the circumpolar region is severe, extreme, remote and dangerous, but at the same time it is a place abundant in mineral and extremely diverse biological resources, which offers conditions for all kinds of research activity and technological developments.

In this connection it is important to note that the framework of “the Arctic” conceptual field as present in the linguistic consciousness of student youth shows a very low proportion of the ethno-cultural component, with the geopolitical component or any spiritual-ideological connotations pertaining to either of the components practically non-existent. Today’s young people know not much about the heroic events and legendary people of the Soviet era. Therefore, the analysis of the ideological orientations of students and schoolchildren regarding the value-semantic field of the Arctic and the North inevitably becomes the pedagogical, educational and disciplinary problem.

Modern youth gets separate scattered pieces of information about the Arctic region and the life of its people not from fiction and educational literature, but from the Internet and other media. For the most part it is not the result of targeted search but colourful pictures, interesting photos, and hot news. One example is Arctic Curling Cup 2021, an international curling event that was held in a small Russian city of Dudinka located beyond the Arctic Circle, which for the first time generated vast media coverage (as a matter of fact, an anglicised hashtag #dudinka appeared in social networks) [34]. The large-scale sports event took place at the same time as the ice shift, a natural phenomenon peculiar to the Yenisei River. The fascinating sight of chunks of blue and turquoise-coloured ice rising high to pile one onto another has made Dudinka a unique photo location for the residents of Dudinka, Norilsk and for many tourists, including foreigners (see Fig. 4).

Young people are primarily attracted by news reports about extreme events involving their peers. For example, in June 2021 news websites and online media [35] told about Mila Polyakova from Novosibirsk and Evgenia Kotlyarova from Tolyatti, two young girls, trailblazer enduro kiting (“endurance and survival” snow kiting) champions, who are famous for their autonomous ski and snow-kite treks in northern regions, including Norway and Finland. In April 2021 in just 9 days they travelled 750 kilometres over the snow-covered tundra of the Russian Arctic, starting in Yamalo-Nenets autonomous district. The team of two courageous girls, named “Belka and Strelka” (after the first Russian space dogs) hauled a load of almost 80 kilograms over the ice and rough snow, crossed the frozen rivers, stayed overnight in tents and lairs in most severe frost, survived being chased by
wild animals, equipment breakdowns and many other difficulties that even strong men would consider insuperable (see Fig. 5). Now the two girls are contemplating a similar trek over Greenland and the Antarctic.
Unfortunately, today we can observe individual attempts to restore the lost traditions of building the Arctic narrative in the linguistic consciousness of adolescents and children. For instance, in November 2016 the Lumiere Brothers Centre for Photography in Moscow organized science games “Conquer the Arctic” and “The Papanin Rescue” for schoolchildren as part of exhibition dedicated to photoreports of Yakov Khalip, who in 1938 travelled to the North Pole with the expedition organized to rescue the “North Pole 1” drifting ice station (see Fig. 6). The project was thoroughly planned and well arranged: the participants had at their disposal “The Diary of Ivan Papanin” containing questions to be answered, as well as a variety of additional materials: route maps, telegrams, photographs, video footage of the rescue operation, etc. Answering questions, the guys from the two teams are gradually moving towards the pole to save the Papanin crew [36]. It is beyond argument that events and projects of such kind should not be just isolated cases, they need to be organized on a mass scale.

Especially valuable is the live communication of students and schoolchildren with people (including from other countries) who are well acquainted with Arctic issues and have visited this region. For example, Professor Lassi Heininen of the University of Lapland (Finland), who has been studying the history of the development of the circumpolar region and international relations in the Arctic for more than a decade, often visits Russia and participates in various conferences. He met many times with Russian students (in particular, NArFU – Northern (Arctic) Federal University named after M.V. Lomonosov), lectured at summer schools (in Petrozavodsk). Of great interest are his stories about a unique event in

![Figure 6 Science games about the Papanin crew](image-url)
his life: at the special leg of the Sochi 2014, L. Heininen was one of 11 torchbearers who, for the first time in history, were honored to deliver the Olympic Flame to the North Pole (see Fig. 7). He openly shared his unusual feelings from being a person at the pole, because it was a polar night for five days during this trip. In the interview posted on the website of the NArFU under the title “Russian students are very smart”, the scientist admitted that it is always very interesting for him to discuss with our students, because their activity in comparison with the Finnish young people is “surprising” [37].

Figure 7 Professor Lassi Heininen at the North Pole

Therefore, now it can be seen that the message charge of the image of the Arctic and the North is in many respects determined by life priorities and orientations of today’s Russian young people, by key ideas present in the collective linguistic consciousness. Another important fact to consider is that in the context of enhancing the symbol status of the Arctic the task of shaping the uniform socio-humanistic Arctic paradigm is becoming increasingly relevant. As rightly pointed out by V.P. Zhuravel, the importance of the Arctic area has not been lost with time, on the contrary, it has increased, with its economic and pragmatic essence complemented by metaphysical and sacral merit, which “necessitates systematic efforts in cultivating the Arctic conscience and sense of involvement with the Arctic events among Russian citizens” [38, p. 75].

It is beyond doubt that in order to analyze the full picture of emerging tendencies in understanding the semiotics of the Arctic area and to conceptualizing of the polyphonic concept “the Arctic”, it is necessary to apply and perfection various research techniques in the socio-humanitarian aspect. Finding the constant content dominants and cultural-symbolic codes in perception of the region will contribute to implementation of a multilevel interdisciplinary approach to investigating the current status and evolution of the Arctic and to promoting integrated processes in its exploration and development. The restitution of the significance of the “Arctic ideologemes” and the Arctic as a stable commemorative symbol seems to us extremely important in the context of the formation of value-semantic narratives in modern science and education.
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