



SCIENTIFIC RESEARCH OF THE SCO COUNTRIES: SYNERGY AND INTEGRATION

上合组织国家的科学研究：协同和一体化

Proceedings of the
International Conference

Date:
September 6

Beijing, China 2022

上合组织国家的科学研究：协同和一体化
国际会议

参与者的英文报告

International Conference
“Scientific research of the SCO
countries: synergy and integration”

2022 年 9 月 6 日，中国北京
September 6, 2022. Beijing, PRC

Proceedings of the International Conference
**“Scientific research of the SCO countries: synergy
and integration”** - Reports in English

(September 6, 2022. Beijing, PRC)

ISBN 978-5-905695-82-7

这些会议文结合了会议的材料 – 研究论文和科学工作者的论文报告。它考察了职业化人格的技术和社会学问题。一些文章涉及人格职业化研究问题的理论和方法论方法和原则。

作者对所引用的出版物，事实，数字，引用，统计数据，专有名称和其他信息的准确性负责

These Conference Proceedings combine materials of the conference – research papers and thesis reports of scientific workers. They examine technical, juridical and sociological aspects of research issues. Some articles deal with theoretical and methodological approaches and principles of research questions of personality professionalization.

Authors are responsible for the accuracy of cited publications, facts, figures, quotations, statistics, proper names and other information.

CONTENTS

PHILOSOPHICAL SCIENCES

- 俄罗斯帝国东正教教育机构信息圈研究方法
Methodology of research of the infosphere of Orthodox educational institutions of the Russian Empire
Chumakova Tatiana Vitautasovna, Blinkova Alexandra Olegovna.....7

ECONOMIC SCIENCES

- 地缘政治紧张局势和反俄制裁对欧洲和芬兰全球经济增长放缓的影响
Geopolitical tensions and the impact of anti-Russian sanctions on the slowdown in global economic growth in Europe and Finland
Jilkinė Vladimir Alekseevich.....12
- 创业导向作为一种使公司适应环境条件的机制
Entrepreneurial orientation as a mechanism for adapting a company to environmental conditions
Bulatetskaya Alena Yuryevna.....21

PEDAGOGICAL SCIENCES

- 中国K12远程教育的特点
Features of K12 distance education in China
Zubareva Natalia Pavlovna.....30
- 三宝现阶段的前景
Prospects for Sambo at the present stage
Ivanov Evgeny Sergeevich, Song Il Hoon.....35

PHILOLOGICAL SCIENCES

- 女性气质非语言符号的语言表征：虚构话语
Linguistic representation of nonverbal signs of femininity: fictional discourse
Margarita S. Tatsenko.....44
- 媒体传播空间中社论编辑话语的制度特征
Institutional characteristics of op-ed editor's discourse in the communicative space of the media
Vera L. Ustinova.....48

POLITICAL SCIENCE

- 在特别军事行动时制定任务以解决俄罗斯粮食安全问题的方法
Approaches to the formation of tasks to address Russia's food security at the time of a special military operation
Boboshko Andrey Alexandrovich.....52

乌克兰危机期间俄罗斯国家安全概念形成过程中“红线”变化的规划和趋势分析

Tasks of planning and trend analysis of changes in the "red lines" for Russia in the formation of the concept of national security during the Ukrainian crisis

Kharlanov Alexey Sergeevitch, Likhonosov Alexander Gerontievich,

Boboshko Andrey Alexandrovich, Evans Julia Nailiyevna.....57

EARTH SCIENCES

俄罗斯欧洲东南部杨树杂交造林

Hybridization of poplars for plantation afforestation in the South-East of European Russia

Tsarev Anatoly Petrovich, Tsareva Raisa Petrovna, Tsarev Vadim Anatol'evich..62

MEDICAL SCIENCES

3. 1-7岁急性期严重合并颅脑损伤的药物治疗

Drug therapy of severe concomitant traumatic brain injury in the acute period at the age of 3.1-7 years

Muhitdinova Hura Nuritdinovna, Sabirov Dilmurod Suyunovich.....73

在特应性皮炎患者中激活具有 IgG 类弹性蛋白自身抗体的供体淋巴细胞亚群

Activation of donor lymphocyte subpopulations with IgG-class autoantibodies to elastin in patients with atopic dermatitis

Kibalina Irina Vladimirovna, Fefelova Elena Victorovna,

Thybikov Namjil Nanzatovich, Chikicheva Margarita Andreevna.....81

在 COVID-19 大流行之后，患有冠心病的西伯利亚南部第二个成年女性的饮水百分比

The percentage of water in women of the second adulthood of the South of Siberia, suffering from coronary heart disease, after the COVID-19 pandemic during rehabilitation treatment

Boyarskaya Larisa Aleksandrovna, Prokopyev Nikolay Yakovlevich,

Augusta Elena Nikolaevna.....86

BIOLOGICAL SCIENCES

车臣蜜源植物资源及其分析

Resources of melliferous plants of Chechnya and their analysis

Abdurzakova Aminat Sultanovna, Israilova Satsita Adnanovna,

Khasueva Birlan Alievna.....93

DOI 10.34660/INF.2022.24.99.235

俄罗斯帝国东正教教育机构信息圈研究方法
**METHODOLOGY OF RESEARCH OF THE INFOSPHERE OF
ORTHODOX EDUCATIONAL INSTITUTIONS OF THE RUSSIAN
EMPIRE¹**

Chumakova Tatiana Vitautasovna

*Doctor of Philosophical Science, Full Professor
St Petersburg University, Saint Petersburg State University*

Blinkova Alexandra Olegovna

*Candidate of Philosophical Science, Research Officer
The Herzen State Pedagogical University of Russia*

抽象的。自二十世纪初的信息革命以来，在人文学科中寻找新的方法论方法已成为研究人员的主流，这扩大了研究人员的能力，加速了这些搜索并将技术创新引入其中。首先，它加速了信息的搜索，改变了数据的处理方式。并促进了信息的获取。现在，隔离不再是信息的不可逾越的障碍。书籍和档案的数字化，虚拟存储库的创建，已经改变了人文主义者的世界。卢西亚诺·弗洛里迪(Luciano Floridi)将“信息圈”的概念引入现代科学用途。他在 20 世纪 90 年代表示，新信息系统的出现意味着“第四次革命”的开始，信息圈的出现。但事实上，信息圈和“虚拟世界”存在的更早，它们是与藏书一起出现的。从这个意义上说，我们可以谈论与十九世纪和更早时代相关的信息领域。该报告提出了重建俄罗斯帝国东正教教育机构信息圈的方法和来源的问题。

关键词：信息圈，宗教研究，俄罗斯历史，教会历史。

Abstract. *The search for new methodological approaches in the humanities has become mainstream for researchers since the beginning of the XX century in the Information Revolution, which expanded the capabilities of researchers, accelerated these searches and introduced technological novelty into them. First of all, it accelerated the search for information, changed the processing of data. And facilitated access to information. Now, isolation is no longer an insurmountable barrier to information. The digitization of books and archives, the creation of virtual repositories, has changed the universe of the humanist. The concept of “infosphere” was introduced into modern scientific use by Luciano Floridi. In the*

¹ Prepared with the support of the RSF grant № 22-28-00862 “Infosphere of theological educational institutions of the Russian Empire XIX — early XX centuries

90s of the XX century, he stated that the emergence of new information systems means the onset of the “fourth revolution”, and the emergence of the infosphere. But in fact, the infosphere and the “virtual world” existed earlier, they appeared along with book collections. And in this sense, we can talk about the infosphere in relation to the XIX century and earlier eras. The report raises the question of the methods and sources of the reconstruction of the infosphere of the Orthodox educational institutions of the Russian Empire.

Keywords: *infosphere, religious studies, Russian history, church history.*

Modern researchers note that the “cultural turn” in social and humanitarian knowledge has led to the intensive development of various aspects of the problem of collective ideas, including ideas about the past and the “history of memory”. Today, historians are actively interested in how people perceived the events of which they were contemporaries or participants, how they stored and transmitted information about these events, interpreting what they saw or experienced in one way or another. In an effort to take a fresh look at cultural and historical scholars, they are constantly in search of new approaches. Interdisciplinarity is becoming the norm for researchers. A powerful impetus to the transformation of research approaches has become information technology, the importance of which is growing every day. Databases, digitization of books, newspapers and magazines change the algorithm of information search, its processing and storage. And in the scientific literature, researchers, making bibliographic reviews, sometimes already provide direct links to databases.

Over the past decades, Russian and Western researchers have done a lot of work to study various aspects of the activities of the clergy of the Orthodox Church in the Russian Empire. Also, at the end of the XX - beginning of the XXI centuries, huge arrays of documents and books were digitized. Thanks to this, a new information environment, the infosphere, was created, which increases the ability of researchers to process large amounts of information. These are electronic databases of libraries and archives. Databases of pre-revolutionary journals are being created.

Thanks to this array of information, we have the opportunity, relying both on these studies and on numerous sources, to try to reconstruct the picture of the world of the Orthodox clergy.

By the beginning of the XIX century, the clergy of the Russian Empire acquired the features of a subculture. To a large extent, this was facilitated by the legislative activity of Empress Catherine II, who legally fixed the concept of “estate”. However, the researchers note that, unlike France in the XVIII century, a polymorphic social structure has developed in Russia with competing social hierarchies based not only on legal status, but also on many other characteristics. The point here is

not whether pre-revolutionary Russian society is understood as “neither class nor estate” or as “estates and classes” (a formula perhaps more consonant with the intricate complexities of late imperial Russia), but that social identities remained highly ambiguous and fluid, fluctuating between legal class, economic status, and occupation. Despite the fact that the events and conditions of the revolution of 1905-07 partially destroyed the system of “estates”, it remained largely intact in consciousness and legislation, even when the “estates” were rethought as cultural and everyday groups, that is, social groups defined by their subculture, a special lifestyle contributed to the isolation of the clergy and the state, which, wanting to separate the spheres of activity of secular and religious authorities, actually created structures that duplicated the activities of state institutions, thereby separating it from them. Thus, the Church had its own censorship apparatus, its own theological schools, its own system of academic degrees, its own spiritual courts, and its own secular bureaucracy.

Partially, this subjective community was preserved even by those people from this environment (sons and daughters of the priesthood) who received a secular education and became an integral part of the Russian intelligentsia. Lory Manchester argues that the worldview of the “priests” was based on a special (often secularized) form of religiosity, and they brought such views into the ranks of the intelligentsia, contributing to the formation of modern forms of self-consciousness within the framework of the intelligentsia ethos. The gap between the pre-reform and post-reform intelligentsia, described by Turgenev as a clash of “fathers” and “children”, actually had not so much an intergenerational as a social basis. The children of priests (“popovichi”) perceived themselves as “ascetics in the world”; they sought to recreate the world around them, based on patterns taken from the past, based on the memory of childhood spent among the clergy. The “paternalism” of the intelligentsia in relation to the “people” is considered by researchers to be a characteristic feature of the Russian intelligentsia.

The study of subcultures of past centuries is quite effectively implemented within the framework of such a direction of scientific research as “intellectual history. When studying the infosphere of religious institutions of the past centuries, the method of intellectual history can be used in combination with the methods of sociocultural contextual analysis and historiographic description. At the same time, the emphasis should be made on the methods of microhistorical research, and the study of “local histories” (as pieces of the “rhizome” of the infosphere). An example of such a study is the work of G. Freese “Rediscovering the Orthodox Past: A Microhistorical Approach to Religious Practice”. A rigorous analysis of sources, including textual analysis, is a necessary part of such work.

The formation of the subculture of the clergy was greatly influenced by many factors, one of which was the infosphere into which the members of this estate were immersed.

The term “infosphere” is actively used in the philosophy of information, which arose at the end of the last century, when “digital” technologies began to blur the boundaries between the real and virtual worlds. Luciano Floridi called this revolution in culture the “Fourth Revolution”. At the end of the XX century, he proposed the term “infosphere” to designate a new phenomenon in culture. Luciano Floridi himself wrote that the term was modeled after the “biosphere”. The term “infosphere” successfully fits into the chain of terms denoting a certain reality, natural or man-made. Here we can recall the term “noosphere”, which has taken root in the Russian intellectual space since Soviet times, proposed in 1927 by Eduard Le Roy, a mathematician who became a natural philosopher, trying to understand the evolution of spirituality. Together with his friend Teilhard Chardin, he tried to reconcile science and religion, in search of a holistic relationship between the biosphere and the noosphere. The term “noosphere”, which V.I. Vernadsky, nevertheless, has a fairly strong “spiritual” component, in addition, Vernadsky considers human thought in the context of the life of the cosmos, his view of scientific thought is much more global. However, for scientific research, in our opinion, the term “infosphere” is more acceptable. In the philosophy of information, the infosphere is considered as a semantic space consisting of a set of documents, agents and their operations. By “documents” we mean all kinds of data, information and knowledge encoded and implemented in any semiotic format without any restrictions on size, types or syntactic structure.

The researchers note that the term “infosphere” can be interpreted in two ways, since it has an ecological and metaphysical dimension. Ecological understanding identifies the infosphere with the environment along with all existing things, whether digital or analog, physical or non-physical, and the relationships that occur between them, as well as the relationships between them and the environment. Luciano Floridi considers the infosphere as an environment, together with all the entities inhabiting it, as well as their relationships observed from the informational point of view. Scientists also emphasize that the infosphere should not be confused with the cybersphere, since the latter is only a part of the former. Metaphysically, the infosphere refers to the entire sphere of the reality of being, and is based on the assumption of an information ontology. In this case, the infosphere is the totality of what exists as soon as its informational nature is revealed. Therefore, we can understand the term “infosphere” in this case as a set of sources of different origin (for example, records of verbal sources, memoirs, periodicals, library collections). Library collections play one of the central roles in this study. They can be considered as the most important part of the infosphere - the bibliosphere. Its study began in antiquity, but the peak of interest in libraries as places where various communication channels converge, permeated with complex semiotic connections, similar to the rhizome of J. Deleuze and F. Guattari, came at the end of the XIX century.

Another important source is the religious periodical press. Her repertoire has expanded significantly since the second half of the XIX century. These were both diocesan publications (newspapers) and magazines published by theological academies and private individuals. Also, one should not forget about such a valuable source for studying not only everyday life, but also the intellectual life of the clergy as diaries. A scrupulous analysis of these sources shows that the picture of the world of the Orthodox clergy was formed under the influence of many modern ideas, and, despite the apparent isolation of this social community, was subject to the same trends as secular society. The study of the infosphere of Orthodox educational institutions and the clergy of the Russian Empire, but also a better understanding of the cultural and religious transformations that took place in Russian society in the XIX - early XX centuries.

地缘政治紧张局势和反俄制裁对欧洲和芬兰全球经济增长放缓的影响
**GEOPOLITICAL TENSIONS AND THE IMPACT OF ANTI-
RUSSIAN SANCTIONS ON THE SLOWDOWN IN GLOBAL
ECONOMIC GROWTH IN EUROPE AND FINLAND**

Jilkine Vladimir Alekseevich

Doctor of law, MFA, Law office, Helsinki

抽象的。文章讨论了对俄罗斯实施制裁对芬兰和德国经济的影响。单边措施的出台和欧洲对俄罗斯能源运输公司的拒绝将导致价格进一步上涨并对欧洲经济产生影响。芬兰与俄罗斯的关系彻底破裂，甚至在冬季来临之前就面临电力短缺的问题。一系列能源公司破产，食品、电力、住房和公共服务价格上涨，失业率上升和通货膨胀，已经导致欧洲民众的不满。西方国家的经济变得更加脆弱，供应链的中断不仅导致了欧洲的经济问题，也导致了美国的经济问题。芬兰专家已经将 2022 年的能源危机与芬兰在第一次石油危机期间采取的紧急措施与 1973 年 12 月宣布的紧急状态进行了比较。1990 年代初的经济衰退是经济史上最严重的战后危机。芬兰，并与突然停止与苏联的贸易有关。在申请加入北约后，芬兰失去了多年的中立和独立。全球范式的变化和盎格鲁-撒克逊模式的主导地位导致整个欧盟的衰落。英国退出欧盟，对欧盟实施进一步制裁，以及芬兰支持终止俄罗斯能源供应，成为芬兰经济衰退的开始。

关键词: 经济制裁、能源危机、衰退、俄罗斯能源运输公司、应急措施。

Abstract. *The article discusses the consequences of the imposed sanctions against Russia on the economy of Finland and Germany. The introduction of unilateral measures and Europe's refusal of Russian energy carriers will lead to further price increases and impact on the European economy. Having completely destroyed relations with Russia, Finland faced a shortage of electricity even before the onset of winter. A series of bankruptcies of energy companies, a jump in prices for food, electricity and housing and communal services, rising unemployment and inflation have already led to discontent among the population in Europe. The economies of Western countries turned out to be more vulnerable, and the disruption of supply chains led to economic problems not only in Europe, but also in America. Finnish experts are already comparing the energy crisis of 2022 with emergency measures in Finland during the first oil crisis with the declaration of a state of emergency in December 1973. The recession of the early 1990s was the most severe post-war crisis in the economic history of Finland and was associated*

with a sudden cessation of trade with the USSR. Having applied for membership in NATO, Finland has lost its many years of neutrality and independence. The change in the global paradigm and the dominance of the Anglo-Saxon model led to the weakening of the entire European Union. The exit of Great Britain from the EU with further sanctions imposed on the European Union, as well as Finland's support for the termination of the supply of Russian energy resources, became the beginning of an economic recession in Finland.

Keywords: *economic sanctions, energy crisis, recession, Russian energy carriers, emergency measures.*

The anti-Russian sanctions developed by the United States and presented to the European Union for adoption through Euro-Atlantic structures under the pretext of “common solidarity” dealt a devastating blow to the economies of European countries. The European Union has completely lost its political sovereignty, national legislations have been supplemented and brought into line with the single EU legislation.

Before recovering from the Covid-19 pandemic, the global economy is already experiencing high inflation in the United States and in major European countries, as well as the ensuing tightening of monetary conditions and the slowdown of the Chinese economy.

The International Monetary Fund warned on July 26 that the world economy could soon be on the brink of another global recession. An additional risk factor in the IMF is the possibility of a complete cessation of Russian gas supplies to Europe, which will cause further price increases and impact on the European economy. According to the IMF, Europe does not have a ready-made action plan to manage and minimize this impact.

During the Suez energy crisis of the 50s of the last century, in the context of the rapid rise in oil prices, Finland found itself in a more favorable situation compared to other capitalist countries, since the supplies of Soviet oil were protected by long-term trade agreements and created a solid basis for Finland's trade and economic relations with the USSR.

Finland did not draw conclusions from history and about the role of the USSR in the rise of the post-war economy. According to Professor Vesa Vihriälä of the University of Helsinki, the collapse of trade with the Soviet Union is considered one of the reasons for the depression of the 1990s, which was a huge shock to the Finnish economy.

Russia was Finland's fifth largest trading partner. According to Statistics Finland, the value of Russian imports in 2020 was about six billion euros.

Finland's application to join NATO finally changed the foreign policy based on trusting relations with Russia for decades. The former judge of the Helsinki

Court of Appeal believes that “the process of joining NATO has also shown signs that Finland is becoming a pawn in the game of the great powers”.¹

On May 17, 2022, the Finnish operator Fortum refused to pay in rubles under the current contract with “Gazprom-export”. The refusal to purchase Russian energy resources and the lack of infrastructure for receiving alternative energy sources led to a threefold increase in electricity tariffs from August 1, 2022. Against this background, the bankruptcy of energy companies in Finland took place: Fi-Nergy Voima Oy, Energia 247, Lumo Energia Oy.

The Finnish energy company Fingrid OYJ has already reported that Finland may face a shortage of electricity in the winter of 2022-2023. According to Tuuli Koivu, Chief Economist of NORDEA Bank, the prospects for European economic growth are very weak. “I’m terribly afraid that autumn and winter will be really hard for Europe,” says Koivu².

The President of Finland, Sauli Niinistö, in his speech at the embassy days on 23.8.2022 stated that “Under the current circumstances, little is left of the former relations between Finland and Russia. Trust is gone. And there are no points of contact for a new beginning... Peace reigns in Finland, but we have been living in war conditions in Europe for half a year now.”

At the same time, Finland has been providing free military assistance to Ukraine since 2015. The provided seventh package of financial assistance to Ukraine, including with weapons of mass destruction, does nothing to stop the daily destruction of civilians in Donbass.

Finnish Prime Minister Sanna Marin, in her speech at the embassy days, said that Europe and Finland should completely abandon Russian fossil energy. NATO membership opens up room for maneuver for Finland that might otherwise be closed. One can assume that Russia will not become a better neighbor for us and, unfortunately, for others in the foreseeable future.³

Finland did not find other sources of energy resources. On August 23, gas quotes in Europe crossed the threshold of \$3000/1000 m³.

Olaf Scholz’s talks about additional gas supplies failed. But even if the European leaders try again to start negotiations with Qatar, Norway and Canada, there is no possibility of delivering gas to Europe. At the end of April 2022, the global fleet of LNG carriers consisted of 641 active vessels.⁴

1 Matti Rintala. Suomen muuttunut ulkopoliittinen linja vaatii jatkuvaa arviointia. Helsingin Sanomat. 3.8.2022. B11.

2 Tuomas Niskakangas. Käännä takaisin mökille, jos vielä voit: Euroopan taloudessa edessä historiallisen vaikea syksy ja talvi. HS: 10.8.2022. <https://www.hs.fi/visio/art-2000008983378.html>.

3 Pääministeri Sanna Marinin puheenvuoro Suurlähettiläspäivillä 23.8.2022. <https://valtioneuvosto.fi/-/10616/paaministeri-sanna-marinin-puheenvuoro-suurlahettilaspaivilla>.

4 World LNG Report 2022. Published on July 6, 2022. <https://www.igu.org/resources/world-lng-report-2022/>

Finnish experts are already comparing the energy crisis of 2022 with emergency measures in Finland during the first oil crisis with the declaration of a state of emergency in December 1973.

Thus, Sitra Oy's Oras Tynkkynen, an expert from Sitra Oy, answered a question about restrictions in an interview that "this crisis is different and perhaps much more serious than in the 1970s⁵.

Electricity and natural gas flowed steadily into Finland after the collapse of the USSR, withstanding political upheavals and difficult periods in international politics.

Finland, one of the EU countries most dependent on Russian energy, warned a day before the start of a special military operation in Ukraine, Aalto University professor Peter Lund: "Finland has failed self-sufficiency, and this may soon have consequences. Finland imports most of its uranium, oil and natural gas from Russia"⁶.

In June 2022, EU member states agreed to cut gas demand by 15 percent by winter. The agreement also provided for the possibility of a mandatory reduction in demand for gas. However, each European country is responsible for its own energy policy. Under the 2017 EU gas directive aimed at ensuring energy security (Security Of Supply), EU countries are obliged to show solidarity and supply gas to each other, as well as exchange information. Before the start of the heating season in Europe, EU countries must fill gas storage facilities by 80 percent. Experts note that the above EU Directive provides that gas will be offered only to those countries that have themselves declared an emergency and have done everything possible to reduce consumption.

Hundreds of billions of euros have already been invested across Europe to offset rising energy prices in the form of subsidies, tax breaks and price caps.

One of the most notable victims of this situation has been the German energy company Uniper, which is majority owned by Fortum and majority-owned by the Finnish state.

Since mid-August, the daily losses of the German company Uniper rose to one hundred million euros due to a decrease in the volume of supplies and an increase in gas prices and amounted to 3.8 billion euros, and since the beginning of 2022, more than 12 billion euros, according to the CEO of Uniper Klaus-Dieter Maubach, due to a reduction in Russian gas supplies.⁷

5 Adina Nivukovski. Jo öljükriisin aikaan säästetiin voimakkaasti. Helsingin Sanomat. 30.7.2022. A 12. <https://www.hs.fi/paivanlehti/30072022/art-2000008973602.html>.

6 Suomi on yksi eniten Venäjän energiasta riippuvaisista EU-maista – professorin mukaan Suomessa on epäonnistuttu omavaraisuudessa, ja sillä voi olla kohta seurauksia. 23.2.2022. <https://yle.fi/uutiset/3-12328857>.

7 <https://www.hs.fi/talous/art-2000009006808.html>
Uniperin päivätappiot nousivat jo sataan miljoonaan euroon

In the signed “rescue” package of measures, Fortum’s share decreased from 78% to 56%. Credit ratings agency S&P has estimated that by the end of September, Uniper will suffer losses of around 8.2 billion euros.

On August 17, the German edition of DPA reported that the Siemens Energy turbine has long been ready for operation and is standing on the territory of the enterprise in the city of Mülheim an der Ruhr due to the coordination of all documents between the EU and the UK for transporting the turbine to Russia. According to Gazprom, the reason for the decline in gas supplies to Germany is technical, but the German government and the energy company Uniper found this explanation implausible⁸.

The energy crisis in Finland has led to a general increase in prices in the country, including firewood. Less than 12 years have passed since the question of V.V. Putin at the economic forum in Berlin: “...what are you going to heat? If you don’t want gas, you don’t develop nuclear energy – will you heat it with firewood?”, and Europe, against the backdrop of a jump in energy prices, is already stocking up with firewood in August.

According to Statistics Finland’s latest consumer price index, consumer prices were 7.8% higher in July than a year ago. In June 2022, the annual price change was 7.8 percent.

The last time inflation rose faster in Finland was in April 1984, when prices rose 8 percent over the previous year. In August 1978, the annual rate of price growth was 5.6%; in December 1980 — almost 14%.

Jukka Appelqvist, chief economist at the Central Chamber of Commerce, describes the pace of price growth as “completely exceptional in the 21st century”. Diesel has risen in price by 49 percent, electricity - by 40 percent, gasoline - by 36 percent, food - by 12 percent.

“Electricity and food are really indispensable, which means that avoiding inflation is becoming increasingly difficult. In the past, the rise in prices was mainly related to fuel, in which case it would be possible to alleviate the situation by reducing the number of trips. Now even this is not enough,” says Jukka Appelqvist⁹.

It should be emphasized that the rise in prices in Finland began during the pandemic, and the rise in energy prices since September 2021, that is, has nothing to do with the start of a special military operation in Ukraine, with which Europe is constantly trying to link Russia’s actions. The energy crisis early in December 2021 led to a deepening conflict between Sweden and Norway, with the two Scandinavian countries cutting off each other’s energy supplies.

8 Jarno Hartikainen. Kaasun hinta nousi Euroopassa uuteen ennätykseen – FT:n mukaan vaikutus sama kuin 400 dollarin öljybarrelilla. HS. 17.8.2022. <https://www.hs.fi/talous/art-2000009010571.html>

9 Alma Onali. Suomen inflaatio pysyi odotuksia kovempaan. HS. 16.8.2022. A 25.

On August 18, 2022, according to the energy company Fortum, the average daily price on the Nord Pool electricity exchange on August 18, 2022 exceeded peak prices, and the hourly price temporarily fluctuates at 66.7 cents per KWh hour. According to Nord Pool, the spot price on the exchange rose to 465.52 euros per MWh. This is more than double that of Wednesday and is the highest since Monday last week. The lowest hourly price of electricity from 24.00 - 2.00 am increased by 25 times in one day from August 16, 2022¹⁰.

For comparison, in Estonia on August 17 from 18:00 to 19:00, according to the Nord Pool exchange, the maximum spot price of 4,000 euros per megawatt-hour was recorded, and the average daily price was 682.05 euros per megawatt-hour. In Latvia and Lithuania, the exchange price was 823.98 euros per MWh¹¹.

In July 2022, inflation in the Eurozone was 8.9%, according to preliminary data from the harmonized consumer price index.

Rising electricity prices have also gradually prompted housing communities to think about ways to reduce consumption. Tapio Haltia, a legal advisor to the Real Estate Association, recommends that housing associations prepare in a timely manner for rising energy prices and savings on heating. Motiva recommends that housing associations reduce hot water and electricity consumption.

Despite the approach of winter and the lack of sources of energy supplies, in May the total assessment of the assistance provided by Finland to Ukraine amounted to about 121 million euros. For example, Estonia, according to the Ministry of Defense, exported military equipment to Ukraine for a total of 241 million euros¹².

According to the budget presented by the Finnish Ministry of Finance for 2023, the public debt will amount to 144 billion euros, which will be about 26,000 euros in terms of each citizen of Finland. The government will allocate about 2 billion euros for military spending, as well as 780 million euros to help refugees from Ukraine and promote integration. At the same time, the budget provides for 220 million euros for the security of energy supply and clean technologies.

The surge in fees has become a common cause of concern for Finnish electricity consumers. Mikael Kollan, director general of the State Center for Economic Research of Finland, believes that EU legislation provides for regulation of the electricity market, which requires that prices for electricity grid services be equivalent to costs. However, Finland uses a model that calculates a return on capital that does not match the funds actually invested in the investment¹³. ENERGY VI-RASTO states that the agency's controls are in accordance with the law and have

¹⁰ Harri Pietarinen. Pörssisähkön hinta kohoaa torstaina jälleen huippuhintoihin. HS. 17.8.2022. <https://www.hs.fi/talous/art-2000009010862.html>.

¹¹ Wild electricity price spike tonight. Postimees.17.8.2022. <https://rus.postimees.ee/7586487/grafik-dikiy-skachok-ceny-na-elektrichestvo-segodnya-vecherom>.

¹² Valtiovarainministeriö hylkäsi ulkoministeriön esittämän 30 miljoonan euron määrärahan Ukrainalle. HS. 12.8.2022. <https://www.hs.fi/politiikka/art-2000009001371.html>.

not been challenged in any lawsuit. The model is also in line with EU electricity market regulation, according to the agency¹³.

Norway's Prime Minister Jonas Gahr Støre said at a meeting of Nordic Prime Ministers on 9 August that the Norwegian government is preparing mechanisms to deal with rising temperatures and low reservoir levels, limiting the ability to export electricity. The drought in the south of Norway significantly reduced the level of reservoirs to 68% and on August 24 Norway announced its intention to limit the export of electricity to consumers in the Scandinavian electricity market.

During the winter months in Finland, when electricity consumption exceeds 15000 megawatts, the situation can be catastrophic. Finland's own power plants will not be enough, even if the nuclear power plants operate at full capacity, according to Fingrid, this could lead to periodic short-term power outages throughout the country. Therefore, Norway's restrictive measures will affect prices in Europe as well. On the other hand, even Norwegian imports will not save the deficit situation in the German energy system this winter.

European solidarity can be expected to collapse as the winter energy crisis worsens. It is possible that restrictions on the import of electricity from Norway will primarily affect the countries of Central Europe. Fingrid and other utilities warned in a statement that such actions could lead to a knock-on effect¹⁴.

Import-dependent Finland is on the verge of disaster, dependent not only on electricity supplies from Norway, but also completely dependent on energy, wood and metals from Russia.

City-owned energy company Helen is raising electricity prices for the third time in 2022. Since the beginning of October, electricity prices have already increased by an average of 58 percent. With the new kilowatt-hour price of 23 euro cents, the annual electricity bill for a single-family home with electric heating will already be about 4,180 euros. Sales and customer service director Anu-Elina Hintsala said she could not promise that there would be no further increases¹⁵.

The energy crisis has gripped the whole of Europe. The economy of formerly the largest industrial Germany is suffering huge losses due to the shortage of gas, the energy system of which for decades was built mainly on cheap Russian natural gas. German Chancellor Olaf Scholz was unable to agree with Qatar, Norway and Canada on gas supplies as part of reducing energy dependence on Russia.

¹³ Samuli Niinivuo. Suomalaiset maksavat sähkönsiirrosta liikaa, ja VATT:n ylijohdajan mukaan syy ei ole aineiden yrittysten vaan Energiaviraston. 13.8.2022. <https://www.hs.fi/talous/art-2000009000507.html?share=3e16b825125198c4245c4300fa00d8c0>.

¹⁴ Anni Lassila. Norja aikoo rajoittaa sähkön vientiä. HS. 25.8.2022. A 32.

¹⁵ Helsingin kaupungin energiayhtiö Heleniltä vanhoihin sähkösovimuksiin jättikorotus. 24.8.2022. <https://www.hs.fi/talous/art-2000009025452.html>.

And already in the territory of the former GDR, support for anti-Russian sanctions is weakening, right-wing populists and critics of vaccination against COVID-19 oppose government actions. The far-right “Alternative for Germany” party AfD is demanding the immediate commissioning of the “Nord Stream-2” gas pipeline to ensure the constant availability of cheap gas in Germany. The demand for the opening of Nord Stream 2 is also supported by the Prime Minister of Saxony, Michael Kretschmer.

According to Bloomberg on August 17, 2022, “if Russia stops gas supplies to Germany, then the remaining blue fuel reserves in the country will only last for 2.5 months”.

Analysts in Finland are already referring to a statement by the international energy organization IEA, according to which the first truly global energy crisis may now occur. As early as May 6, 2022, the head of the IEA emphasized that sanctions against Russia and retaliatory measures have and will have great consequences for the energy market. “I believe we are in the middle of the first global energy crisis. In the 70s we saw the oil crisis, which had big consequences for the economy and inflation. But it was only oil. Let’s remember that Russia <...> is the world’s number one oil exporter and the world’s number one natural gas exporter <...> as well as a major player in the materials used by the energy sector”¹⁶.

The imposed Western sanctions, which Finland joined, boomerang back to Europe and caused much more damage to the very countries that imposed them. And already terrible memories from the 90s come to mind for many Finnish analysts when they again talk about a possible economic recession in Finland.

Blind adherence to Washington’s foreign policy and the short-sighted policy of European governments have led to a weakening of the European Union as a whole and to an energy crisis in European countries. European sanctions have dealt a blow to the economy itself, causing inflation and a decline in living standards.

Against the background of the economic downturn, the Finnish government has limited the number of tourist Schengen visas for Russian citizens and, together with the Baltic countries, is proposing the expansion of new sanctions with the preparation of a “pan-European response”. The reduction in the flow of Russian tourists will undermine the budgets of the border cities of Finland and will lead to the closure of the network of border supermarkets focused on trade with Russians, for example, Rajamarket, K-Market, Prisma, as well as the hotel business focused on Russian tourists.

Conclusion

Finnish analysts and economists admit that the anti-Russian sanctions adopted

¹⁶ Statement by IEA Executive Director Fatih Birol in Vienna on May 6, 2022.

for the European Union were not calculated from the point of view of the interests of the European Union itself, even in the short term, especially without taking into account the inevitable further rise in energy prices, record inflation and unemployment.

Amid the economic downturn in Europe in the second quarter of 2022, only one US oil and gas company, Exxon Mobil Corp. increased net profit by more than 3 times to \$17.85 billion from \$5.48 billion in the same period last year.

The collective West is purposefully destroying the system of European security. This was clearly stated by the Russian President in his address on August 16, 2022 to the participants and guests of the Moscow Conference on International Security. “The situation in the world is dynamically changing, the contours of a multipolar world order are being formed. More and more countries and peoples are choosing the path of free, sovereign development based on their identity, traditions and values. These objective processes are counteracted by Western globalist elites, provoking chaos, inciting old and new conflicts, implementing a policy of so-called containment, and in fact, undermining any alternative, sovereign paths of development. Thus, they are trying with all their might to preserve the hegemony and power that is slipping out of their hands, they are trying to keep countries and peoples in the grip of a neo-colonial order”.

Having emerged from the 605-year rule of Sweden and gained independence from Russia in 1917, the sovereign Republic of Finland in 1995 voluntarily joined the European Union, the Schengen Agreement and introduced the euro currency. By amending the Basic Law in 2000, which established the supremacy of the Constitution (§106), Finland fulfilled its obligations to comply with EU regulations and complied with the decisions of the European Commissioners.

Having applied for membership in NATO, Finland has lost its many years of neutrality and independence. Finland’s desire to finally become a member of the collective West led to the destruction of the institutions of property, family and marriage. Fulfilling the requirements of the EU, Finland disciplinedly joined the ban on the supply of crude oil and petroleum products from Russia to the EU and the seizure of the property of Russians, the closing of private accounts of Russians and the accounts of companies with Russian owners in Finland, and also terminated the signed agreement with Rosatom for the construction of nuclear power plants.

The change in the global paradigm and the dominance of the Anglo-Saxon model led to the weakening of the entire European Union. The exit of the UK from the EU with further sanctions imposed on the European Union, as well as Finland’s support for the termination of the supply of Russian energy resources, led to the start of an economic recession in Finland and an increase in public debt in 2023 to 144 billion euros.

DOI 10.34660/INF.2022.32.32.237

创业导向作为一种使公司适应环境条件的机制
**ENTREPRENEURIAL ORIENTATION AS A MECHANISM FOR
ADAPTING A COMPANY TO ENVIRONMENTAL CONDITIONS**

Bulatetskaya Alena Yuryevna

*Doctor of Economic Sciences, Candidate of Sociological Sciences,
Associate Professor
Perm State University*

抽象的。本文分析了创业导向概念作为一种使公司适应外部环境条件的机制的理论基础，以及在资源概念作为可以提高绩效的独特组织资源的背景下公司及其竞争力。情境和配置方法在研究创业导向、公司的主要特征和商业环境及其活动结果方面的应用得到了证实。结果表明，使用情景方法，管理方法的有效性取决于许多背景因素，并考虑了要素之间的二维关系。需要强调的是，在使用配置方法时，会考虑上下文变量系统。提出了一个智力地图，可以确定现代管理研究中创业导向的位置。

关键词：战略管理，外部环境，市场导向，创业导向，创新，主动性，风险准备，资源方法，情境方法，配置方法。

Abstract. *The article presents an analysis of the theoretical foundations of the concept of entrepreneurial orientation as a mechanism for adapting a company to the conditions of the external environment, as well as in the context of the resource concept as a unique organizational resource that can improve the performance of the company and its competitiveness. The application of both situational and configurational approaches to the study of entrepreneurial orientation, the main characteristics and business environment of the company and the results of its activities is substantiated. It was revealed that with a situational approach, the effectiveness of management methods depends on a number of contextual factors and two-dimensional relationships between elements are considered. It is emphasized that when using the configuration approach, systems of contextual variables are considered. An intellect map is presented that allows determining the place of entrepreneurial orientation in modern management research.*

Keywords: *strategic management, external environment, market orientation, entrepreneurial orientation, innovativeness, proactivity, readiness for risk, resource approach, situational approach, configuration approach.*

In an ever-changing business environment, companies are looking for new opportunities that will enable them to grow and increase their market share. They strive to be more innovative by implementing entrepreneurial initiatives in order to maintain competitive advantages and maintain a strong market position. Entrepreneurial orientation is a type of company's strategic orientations, characterized by an emphasis on actively seeking and exploiting new market opportunities [1]. According to the classical approach, entrepreneurial orientation is considered from the point of view of three components: innovativeness (the tendency to experiment and create new ideas), proactivity (search for new opportunities in the market) and risk readiness (the company's tendency to be involved in risky projects) [2]. A broader interpretation of the company's entrepreneurial orientation also includes components of autonomy (independence of the company to develop new ideas and opportunities) and competitive aggressiveness (motivation to achieve through intense competition and improve its position in the market) [3]. There are two approaches to measuring a company's entrepreneurial orientation [4]: a unidimensional approach, according to which only a high level of development of all components of an entrepreneurial orientation makes a company entrepreneurial, and a multidimensional approach, in which a company can be entrepreneurial, even if not all components are developed at a high level. Entrepreneurial orientation can also be viewed as a mechanism for a company to adapt to the conditions of its business environment, or as a special resource that allows a company to improve its performance and increase competitiveness. Differences in the interpretation of the role of entrepreneurial orientation in the company in modern management studies are associated with the possibility of using various theoretical tools to justify the importance of this phenomenon.

The purpose of this article is to highlight the main theoretical approaches used in modern research in the field of strategic management and entrepreneurship in order to explain the role of entrepreneurial orientation in the company.

Entrepreneurial orientation is associated with the willingness of the company to get involved in innovative projects, be proactive in relation to the actions of competitors, and participate in high-risk projects [1]. This definition has become the basis for the operationalization of entrepreneurial orientation as a construct consisting of three components: innovativeness, proactivity and willingness to take risks.

The innovativeness of the company is understood as the ability to create new products, introduce new ideas and processes in the organization [5]. Innovation is manifested in the search for new ideas, in the desire to introduce new processes and methods of doing business, in creativity and willingness to experiment [6]. Innovative thinking can manifest itself in the frequency of launching new products and services, modifying processes within the company, investing in R&D, and fo-

cusing on technological leadership. Innovativeness allows the company to realize the “first mover advantage”, leaving competitors behind, to use the opportunities that arise in the market, to gain competitive advantages, which, in turn, positively affects the company’s performance [7].

Proactivity refers to the desire and ability of a company to anticipate new trends as early as possible, to follow a “pioneer” strategy towards competitors, rather than waiting for new trends to take root and responding to them only after they become apparent. Proactivity is manifested in the willingness to identify and use entrepreneurial opportunities, as well as to actively compete with other companies in the market [6].

Risk readiness implies the desire and ability of a company to invest its resources in projects, the result of participation in which is difficult to predict in advance and in which there is a high probability of significant losses [8]. Acceptance of risks is always associated with complex processes of their identification, analysis, mitigation and planning of costs to protect the company from possible negative consequences. Risk readiness implies, among other things, a proactive approach to working with risky projects. A company’s risk appetite can be affected by factors such as the risk problem analysis process, past experience of being involved in risky projects, and the general ability to demonstrate acceptable performance in a risky environment.

The idea of an entrepreneurial orientation of the company originated within the framework of the ideas of the schools of design and planning that dominated the theory of strategic management until the mid-1970s [9]. Supporters of these schools of management thought saw the essence of the strategy in “docking” the company and the external environment and achieving compliance. Thus, entrepreneurial orientation is a mechanism for adapting a company to the conditions of the external environment. At the same time, within the framework of this direction, the concept of entrepreneurial orientation can be considered from the positions of both situational and configurational approaches. The situational approach assumes that the effectiveness of management methods, techniques and practices depends on a number of contextual factors related to the characteristics of the company’s business environment. Within the framework of this approach, the relationship between two elements of the external or internal environment of the company and their combined impact on the resulting attribute are usually considered. The configuration approach, in turn, involves the consideration of entire systems of interrelations of contextual variables [10].

In addition to the idea of “docking” the company and the external environment, researchers working in the field of strategic management consider the entrepreneurial orientation of the company from the standpoint of the resource concept. According to this concept, a company’s sustainable competitive advantages are

formed on the basis of its rare, valuable, unique and unimitable resources [11]. At the same time, company resources are understood in a broad sense and can include both tangible assets and organizational abilities, knowledge, routines, management practices, and the company's image. Such resources individually and collectively can strengthen the position of the company in comparison with its competitors [12]. This approach can be considered dominant at the present stage of development of entrepreneurial orientation research due to the general strengthening of the emphasis on intra-company factors of competitive advantages in scientific works in the field of strategic management.

Since the entrepreneurial orientation is embedded in intra-company routines and practices, it is a strategic orientation that is difficult to copy for competitors [13]. From the standpoint of the resource concept, entrepreneurial orientation can be considered as a special organizational ability that allows a company to improve its performance and achieve a competitive advantage over those market players that do not have this ability or have developed it insufficiently [14].

In the light of the resource concept, entrepreneurial orientation can also be considered as a factor in the formation of other important organizational abilities. Thus, in [15], a configuration approach is applied to explain the role of entrepreneurial orientation in the formation of organizational abilities to identify and use new opportunities in foreign markets. Thus, the combination of the resource concept and the configuration approach allows us to consider a number of relationships in which entrepreneurial orientation acts as a special organizational ability that directly or indirectly contributes to improving the company's performance. Entrepreneurial orientation, together with the financial and other material resources of the company, can also be the most important factor in the formation of the "scout" strategy, implying the development of new products and active monitoring of the external environment in order to identify entrepreneurial opportunities, which, in turn, will have a positive impact on the growth of the company, especially in a dynamic external environment [16]. In addition, an entrepreneurial orientation promotes the development of a knowledge orientation, which, when combined with following an "analyst" or "intelligence" strategy, positively influences the company's performance.

Looking at entrepreneurial orientation from the point of view of the resource concept allows us to answer the question why are some companies more successful than others? As already noted, entrepreneurial orientation is seen as a valuable resource and a special organizational ability to improve the performance of the company. In addition, the resource approach makes it possible to see another important aspect of entrepreneurial orientation related to the process of its formation. As a critical organizational capability, entrepreneurial orientation is a high-cost strategic orientation; its development requires significant investments from the

company [17]. Due to the significant resource costs required for the development of innovation, proactive behavior and participation in high-risk projects, the positive effect of an entrepreneurial focus on the results of the company's activities can manifest itself after a certain period of time necessary for these investments to reach the payback point. Thus, in the short term, the positive effect of entrepreneurial orientation may not be felt [18, 19]. Therefore, in answering the question about the reasons for the differences between companies in terms of their behavior and the level of success achieved, it should be noted that companies that differ in their resource base will demonstrate a different level of entrepreneurial orientation at any given time. As a result, the positive effect of developing such an organizational capability as an entrepreneurial orientation may differ, including in the case of companies operating in the same industry, which determines the different degree of their success.

Thus, the concept of entrepreneurial orientation originated and developed as an attempt to explain the differences between companies and offer a mechanism for improving performance. The relationship between entrepreneurial orientation and company performance is one of the most studied topics in research in the field of entrepreneurship theory [20]. However, the results of such studies are generally quite contradictory. There are a number of works that have revealed the positive impact of entrepreneurial orientation on the company's performance [21, 22]. In addition, there are studies that did not reveal a statistically significant relationship between entrepreneurial orientation and performance [23], or found a negative [24] or non-linear relationship [25]. Such contradictions in the results can be substantiated using different approaches to defining the role of entrepreneurial orientation. The role of entrepreneurial orientation in a company can be explained either on the basis of the idea of the company's compliance with the conditions of the external environment, put forward by the schools of design and planning in the theory of strategic management, or on the resource concept using both situational and configurational approaches, within the framework of both points of view.

On fig. 1 shows a mind map showing the place of the concept of entrepreneurial orientation in the theory of strategic management [26, p. 31].

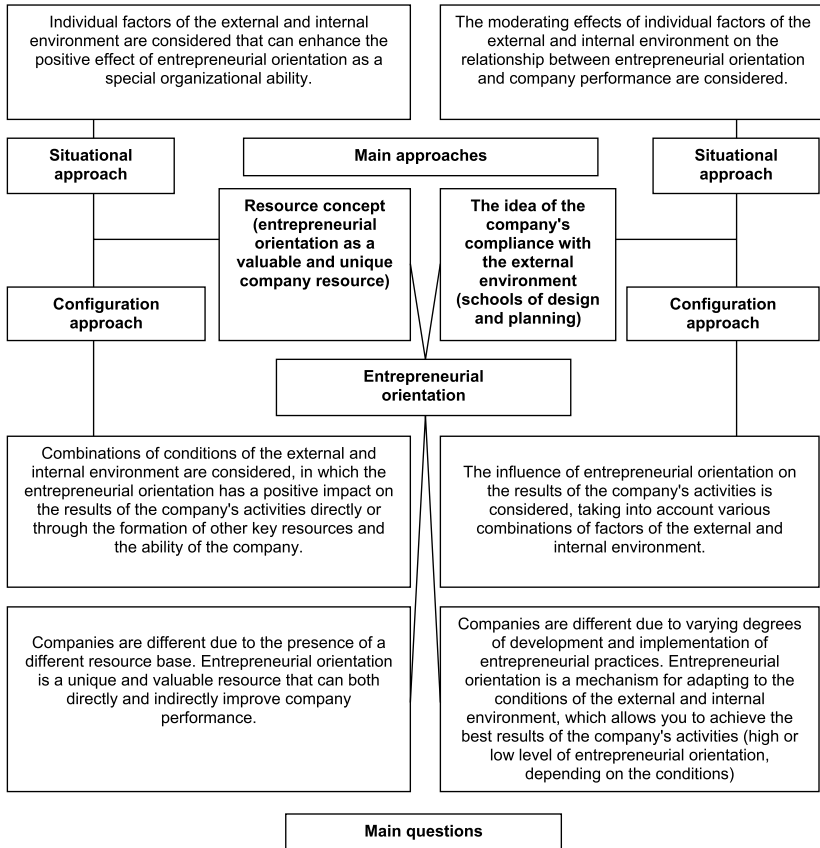


Figure 1. Mind map “The place of the concept of entrepreneurial orientation in strategic management studies”

According to the idea of “docking” the company and the external environment, entrepreneurial orientation is a special mechanism that allows a company to adapt to the conditions of its business environment, thus improving its performance. With this approach to defining the role of entrepreneurial orientation, it can be assumed that a high level of entrepreneurial orientation will not always correspond to the conditions of the company’s business environment, therefore, in certain situations, the active development of entrepreneurial orientation can have a negative impact on performance. With the resource approach, entrepreneurial orientation is considered as a special resource that directly or indirectly contributes to improving the company’s performance. At the same time, since the entrepreneurial orien-

tation is a high-cost strategic orientation, the positive result of its development depends on the resource base of the company and may not appear immediately, which explains the differences in the level of success of companies operating in the same industry.

Both approaches to defining the role of entrepreneurial orientation in a company involve taking into account contextual factors that can enhance the impact of entrepreneurial orientation on company performance. The current stage of entrepreneurship research is characterized by an emphasis on the contextual aspects of the development of the phenomenon of entrepreneurship and its manifestations at the level of the individual, the company and the economy as a whole. Thus, as a promising direction for further research on entrepreneurial orientation, one can single out a comparative analysis of factors that can influence the formation of entrepreneurial orientation in a company, as well as the strength of its relationship with performance.

Thus, the concept of entrepreneurial orientation originated as an attempt to offer an answer to the basic questions of the theory of strategic management. This concept allows explaining the differences in the success of companies and substantiating mechanisms for improving their performance. The role of entrepreneurial orientation in a company can be explained from the standpoint of the idea of the company's compliance with the characteristics of the external environment or the resource concept. In the first case, entrepreneurial orientation is seen as a special mechanism that allows the company to adapt to the conditions of the external and internal environment, which helps to improve performance. In the resource concept, entrepreneurial orientation is seen as a unique resource that directly or indirectly contributes to improving the company's performance.

At the same time, the entrepreneurial orientation is a high-cost strategic orientation, so the positive effect of its adaptation can only appear after investments in its development reach the payback point, which explains the differences in the level of success of companies operating in the same industry. Both points of view on the entrepreneurial orientation of the company suggest the possibility of applying both situational and configuration approaches to explain the relationship between entrepreneurial orientation and company performance, which allows taking into account the role of a number of factors of the external and internal environment in the formation of this relationship.

References

1. Covin J.G., Slevin D.P. *Strategic Management of Small Firms in Hostile and Benign Environments. Strategic Management Journal. 1989. Vol. 10. N 1. P. 75-87.*

2. Kovin J.G., Slevin D.P. *Strategic management in small firms in a hostile and favorable external environment // Russian Journal of Management*. 2012. V. 10. № 3. P. 91-126.

3. Lumpkin J.T., Dess G.J. *Refinement of the concept of entrepreneurial orientation and its connection with performance // Russian Journal of Management*. 2012. V. 10. № 3. P. 73-90.

4. Shirokova G.V. *Entrepreneurial orientation: the origins of the concept and the main approaches to research // Russian Journal of Management*. 2012. V. 10. № 1. P. 55-72.

5. Hult G.T.M., Hurley R.F., Knight G.A. *Innovativeness: its antecedents and impact on business performance. Industrial Marketing and Management*, 2004, vol. 33, no. 5, pp. 429-438.

6. Vij S., Bedi H.S. *Relationship between entrepreneurial orientation and business performance: a review of literature, IUP. Journal of Business Strategy*, 2012, vol. 9, no. 3, pp. 17-31.

7. Kreiser P.M., Davis J. *Entrepreneurial orientation and firm performance: the unique impact of innovativeness, proactiveness, and risk-taking. Journal of Small Business and Entrepreneurship*, 2010, 23, no. 1, pp. 56-71.

8. Frank H., Kessler A., Fink M. *Entrepreneurial orientation and business performance - a replication study. Schmalenbach Business Review*, 2010, vol. 62, pp. 175-198.

9. Katkalo V.S. *Evolution of the theory of strategic management: monograph. SPb.: Publishing house of the Saint-Petersburg state un-ty., 2006. - 548 P.*

10. Dess G., Newport S., Rasheed A. *Configuration research in strategic management: Key issues and suggestions. Journal of Management*, 1993, vol. 19, no. 4, pp. 775-795.

11. Barney J. *Firm resources and sustained competitive advantage. Journal of Management*, 1991, vol. 17, no. 1, pp. 99-120.

12. Grant R.M. *The resource-based theory of competitive advantage: implications for strategy formulation. California Management Review*, 1991, vol. 33, no. 3, pp. 114-135.

13. Newbert S. *Empirical research on the resourcebased view of the firm: an assessment and suggestions for future research. Strategic Management Journal*, 2007, vol. 28, no. 2, pp. 121-146.

14. Wiklund J., Shepherd D. *Where to from here? EO-as-experimentation, failure, and distribution of outcomes. Entrepreneurship Theory and Practice*, 2011, vol. 35, no. 5, pp. 925-946.

15. Lisboa A., Skarmas D., Lages C. *Entrepreneurial orientation, exploitative and explorative capabilities, and performance outcomes in export markets: a resource-based approach. Industrial Marketing Management*, 2011, vol. 40, no. 8, pp. 1274-1284.

16. Moreno A., Casillas J. *Entrepreneurial Orientation and Growth of SMEs: A Causal Model. Entrepreneurship Theory and Practice*, 2008, vol. 32, no. 3, pp. 507-528.
17. Filser M., Eggers F., Craus S., Malovics E. *The effect of financial resource availability on entrepreneurial orientation, customer orientation and firm performance in an international context: an empirical analysis from Austria and Hungary. Journal for East European Management Studies*, 2014, vol. 19, no. 1, pp. 7-30.
18. Kulikov A.V., Shirokova G.V. *Intra-firm orientations and their influence on growth: the experience of Russian small and medium-sized enterprises // Russian Journal of Management*. 2010. № 3. P. 3-34.
19. Grande J., Madsen E., Borch O. *The relationship between resources, entrepreneurial orientation and performance in farm-based ventures. Entrepreneurship & Regional Development*, 2011, vol. 23, no. 3-4, pp. 89-111.
20. Rauch A., Wiklund J., Lumpkin G.T., Frese M. *Entrepreneurial orientation and business performance: an assessment of past research and suggestions for the future. Entrepreneurship Theory and Practice*, 2009, vol. 33, no. 3, pp. 761-787.
21. Martins I., Rialp A. *Entrepreneurial orientation, environmental hostility and SME profitability: a contingency approach. Cuadernos de Gestión*, 2013, vol. 13, no. 2, pp. 67-88.
22. Doorn S. Van, Jansen J.J., Bosch F.A. Van den, Volberda H.W. *Entrepreneurial orientation and firm performance: drawing attention to the senior team. Journal of Product Innovation Management*, 2013, vol. 30, no. 5, pp. 821-836.
23. Li H., Zhang Y., Chan T. S. *Entrepreneurial strategy making and performance in China's new technology ventures - the contingency effect of environments and firm competences. Journal of High Technology Management Research*, 2005, vol. 16, no. 1, pp. 57-67.
24. Arbaugh J.B., Cox L.W., Camp M. *Is entrepreneurial orientation a global construct? A multicountry study of entrepreneurial orientation, growth strategy, and performance. The Journal of Business Inquiry*, 2009, vol. 8, no. 1, pp. 12-25.
25. Dai L., Maksimov V., Gilbert B.A., Fernhaber S.A. *Entrepreneurial orientation and international scope: the differential roles of innovativeness, proactiveness, and risk-taking. Journal of Business Venturing*, 2014, vol. 29, no. 4, pp. 511-524.
26. Bogatyreva K.A. *The place of the concept of entrepreneurial orientation in modern management research // Modern competition*. 2015. V. 9. № 1 (49). P. 22-38.

中国K12远程教育的特点
FEATURES OF K12 DISTANCE EDUCATION IN CHINA

Zubareva Natalia Pavlovna

Associate Professor

Rostov State University of Economics

摘要。 这项工作的目的是描述中国远程教育在学前、小学和中学教育水平上的现状,并分析这一领域的最新变化和趋势。通过对这一主题的研究,作者总结了教育电视在中国远程教育体系中的重要作用,并指出了远程教育在这些层次上的连续标志。

关键词: 远程教育,教育电视,学前教育,小学,中学,在线学习,双师课

与许多其他国家相比,中国远程教育的特点是它精心地保留并继续发展其所有的历史形式:函授教育、借助教育电视的学习和在线学习,它们相互补充,有机地融入了传统课堂教育的大背景,帮助解决了现代中国教育体系的许多问题。此外,在现阶段,某些远程教育的形式在中国的各级教育体系中都有代表,并且由某些遗传特征相互联系。这允许学生在每一个新的水平更容易使用远程学习技术,并相应地,使得在他们全生活的过程中更方便,更可供选择,更有效地学习和提高他们的技能。很明显,函授教育,由于其依赖于学生的独立工作,对年幼的儿童是不可用的,但远程学习的其他方法被积极使用,并帮助解决现代教育的许多问题。为了突出K12体系中现代中国远程教育发展的特点和趋势,我们将在学前、小学和中等教育层面考虑使用远程技术。

在学前教育中,由于学龄前儿童的客观心理特征,远程技术最难被纳入教育和抚养孩子的过程中。尽管如此,发展这一领域的某些先决条件仍然存在。例如,尽管近64%的中国人口居住在城市[1],但这些人大多是成年人。据统计,在中国71%以上的学龄前儿童生活在城市三级以下的小城镇或在农村[3]。尽管学前教育机构的数量每年都在增加,2020年达到291,715所[2],但生活在农村地区可能是教师水平不够高或缺乏某些类型的全日制额外课程的原因。这个问题在中国西部的偏远地区尤为典型,在那里使用远程技术进行幼儿班可以部分解决上述问题。新型冠状病毒大流行时期也大大扩大了远程教育的范围,把远程技术带到传统上根本不使用远程教育或使用规模极其有限的教育领域和水平。特别是,这适用于学前教育:自2020冬季以来,远程学习方法显着增加。俄罗斯教师专注于学前教育中远程技术的主要优势:能够确保在紧急情况下的客观条件下,或在逃课

的主观条件(如疾病、家庭情况)下,教育和养育儿童的连续性。一些研究人员提出了这样的观点,即在年龄较大的学龄前儿童中,最好使用电脑游戏,包括远程格式,以发展儿童的认知兴趣,视觉记忆,注意力和运动协调[4]。然而,正是在学前教育水平上,由于受过教育的年龄的特殊性,远程技术的某些缺点出现了,这阻止了在此期间有效使用这些技术。特别是,研究人员注意到,在使用远程教育技术实施所需的技术手段时,学龄前儿童的疲劳,兴奋性,视力下降,姿势曲率增加。也许这是其中一个原因,在七月2021年,中共中央与中国国务院在该文件题为«关于进一步减轻义务教育阶段学生作业负担和校外培训负担的意见»作了清楚的是,为三到六岁的学龄前儿童,一般禁止任何在线培训:«不得开展面向学龄前儿童的线上培训»[7]。因此,目前中国学前教育远程教育的唯一途径就是教育电视。有四个专门的儿童频道,以及在通用频道还有许多儿童节目。除了对儿童内容自然的娱乐功能外,它们还旨在发展儿童的智力领域,向他们灌输对知识的兴趣和热爱,开阔他们的视野,回答学龄前儿童对周围世界的物体、现象和过程的自然问题。

在中小学阶段,远程教育在中国的作用显著增加。在这一教育水平上,除了教育电视的可能性,还有各种远程教育模式,这些模式主要用于农村学校。教育电视也大大扩展其功能和能力。主要面向儿童的专门免费教育频道有在中国各地播出的CETV-4和仅在北京运营的CETV-3[8]。社会卫星频道CETV-4提供将中小学生的学术科目与纪录片相结合的电视节目。在过去的二十年中,这一频道在确保学童继续教育方面发挥了重要作用。人道主义教育频道CETV-3成为中国第一个纪录片频道。它播放«人类»、«科学技术»等类别的记录片,不仅儿童对这些记录片感兴趣,而且成人观众也感兴趣。然而,第三频道的节目主要是分发九年义务教育节目,由中华人民共和国教育部和山东省政府共同制定和实施。CETV-1频道还提供40万中小学学生观看的教育电视节目,但该频道不直接针对儿童观众。此外,还有付费早教频道,2005年开播,复盖中国各省150多个城市。该频道不仅为零到十二岁的儿童提供教育内容,还为父母和孕妇提供教学、心理和医学材料。

教育电视是中国农村学校远程教育项目的基础,该项目自2004年开始实施,并取得了显著的成功。2003年,该项目由中华人民共和国国务院在全国农村教育工作会议上发起,其中一项决定是制定和实施农村中小学现代远程教育项目。任务是在五年内为农村学校配备电脑教室、卫星电视、播放教育光盘的设备和成套光盘。国中央政府为这项工作拨款超过13亿元,五年内所有必要的基础设施开始在中国中西部的十二个省份运行,在随后的几年中逐渐扩展到全国全境。同时,在2000年代初,中央电子教育局以提高农村中小学的教育质量建立了一个广泛的电子教育资源库,数万所学校参与了与中国主要学校和研究机构的教育资源交流。值得注意的是,在这些资源中不仅有课程和教科书,还有大量关于学童道德教育,学校管理和班主任教育工作相关资源的视频[6]。因此,远程技术有助于解决教学和教育任务,因此该项目可以完全称为远程教育。

发展农村学校远程教育项目(农远)是为了克服偏远农村地区合格教师短缺的问题,并为省内学生提供高质量的、在国家水平特别挑选的教育内容。由于复盖了庞大的用户数量,中国农村学校远程教育项目被称为«世界上最大的信息通信技

术在教育中的应用项目»[5]。最初,应该根据教育机构的技术设备,在农村学校使用三种远程教育模式:使用录像播放器、录像带和光盘,记录某些学科的课程;在卫星教育频道上播放中小学的课程;以及通过计算机技术进行培训的模式,包括在线培训。在该方案实施的头五年,11万所农村学校根据第一种模式配备了班级(大多数是最偏远和难以到达的农村学校),38,4万所根据第二种模式开始工作,而仅有3,75万根所根据第三种模式工作,因为它需要最昂贵的设备,还需要教老师如何使用它。在夏季,农村学校的教师被派往城市的特殊课程,学习如何使用教育卫星电视和计算机学习工具。随着数字电视的普及,允许在不参考特定广播时间表的情况下使用学科课程的视频录制,»双师课«模式已成为主导模式。这模型假设部分远程格式,当学生共同查看学校课程的一个学科的一节课的录音,然后,在教师或导师的指导下,执行一项实际任务。这种教育模式有两个目标:首先,提高农村儿童的教育质量;其次,使农村学校教师通过观看中国最有经验的领导教师的讲座来提高自己的工作技能、扩大所教授学科的知识、改进自己的教学方法。»双师课«的模式也形成了农村学校远程教育系统中教师的特殊教学地位,就是辅导老师或导师,其教学活动的重点是咨询和组织学生的实践活动,以及监测他们对学校课程规定的能力的吸收。与此同时,使用远程电视的远程教育模式具有许多毋庸置疑的优势。首先,在标准情况下,它涉及教师和学生的联系工作,允许他们在课堂上多样化活动形式,并为教学过程中的参与者提供基于个人接触和有效反馈的互动。此外,随着中国人口生活水平的提高,以及相当广泛的家庭提供了必要的技术手段,使学童能够在生病或因家庭原因或其他原因无法上课的情况下,通过观看电视节目,独立掌握教材。与此同时,学生可以通过信使,社交网络,小组学校聊天,通过电子邮件甚至只是通过手机发送家庭作业,并在必要时询问有关他传递的材料的问题。这种互动模式保证了学童在任何情况下都有机会掌握小学和中学教育计划,无论健康状况,家庭财务状况和其他因素如何。第三,如果有必要,»双师课«的模式可以迅速转变为完全远程教育的模式,学生可以在家独立观看课程,并通过现代交流手段和众多的教育平台和应用讨论他们所学到的知识并执行实际任务。特别是,在紧急情况下,如SARS爆发(2003年)、四川大地震(2008年)和玉树地震(2010年),以及Covid-19疫情(2020-2022年)的时候,就是为大量中国学童和教师所熟悉的这种模式,让学校教育得以延续。

至于K12级在线教育,主要在非正规教育组织,就是在私立学校和通过辅导实施。直到2021年,几年来,在线教育市场呈现出每年约30%的增长,在这一卷中,学前和学童的在线教育占据了相当大的份额[2]。学校科目的辅导需求不断,这导致了激烈的竞争和相当高的质量水平。然而,在2021的夏天,在上面已经提到的文件«关于进一步减轻义务教育阶段学生作业负担和校外培训负担的意见»中,禁止在复制学校课程的科目中进行付费课程,包括远程学习[7]。这一决定是由于许多因素造成的,从提高学校教育水平的愿望到复杂的人口和经济原因。这从本质上拉低了中学层面的在线辅导行业,这个板块的体量急剧下降。目前,学童在线教育领域只能包括两种类型的课程:1) 学校课程学科的免费课程,前提是教育组织已通过国家认证并使用教育部批准的课程,2) 学校课程中未包括的活动的远程课程,如额外的外语,学习演奏乐器等。这项改革对于减轻中国家庭的经济负担、减轻学童学

业和心理负担、提高学校教育质量、平滑社会分层、实现贫富家庭子女机会均等，在现代中国有巨大的社会意义。

中小学远程教育发展的现代趋势主要与加强国家对教育内容和质量的控制以及现代信息和通信技术能力的发展有关。这两种趋势尤其在教育部推出《国家中小学智慧教育平台》试运行中表现，该平台以提高教学效果而利用人工智能、虚拟现实和增强现实等现代教育技术 [6]。这智能教育平台旨在提高教育资源的质量和可访问性，实现信息技术与教育的深度融合。这平台的前一版本《国家中小学网络云平台》于2020年在教育部领导下创建，在确保新冠病毒感染流行期间持续学习方面发挥了重要作用，既有助于提高远程教学质量，也为学童学科自学创造了条件。

因此，中国教育电视利用现代数字广播能力，成为K12系统实施远程教育的主要途径。教育电视利用学龄前儿童已经熟悉的教育信息渠道，重点放在中小学核准的课程上，并利用类似的教育和培训手段、方法和技术，以及组织教育活动的一般教学方法，实施学前、小学和中学之间连续性的方法方面。小学和中学之间的远程教育连续性的行政方面包括有一个将这两个层次结合起来的管理框架。特别是，CETV-4频道的节目符合国家标准，并由国家广电总局协调和批准；CETV-3频道的节目也是在中国教育部的监督下制定和实施的。连续性的心理方面是因为，中国儿童从小就有通过电视学习的经验，并不把看电视节目仅仅看作是娱乐，他们了解使用教育电视组织课程的方式，并逐渐形成了以这种方式开展教育活动的意愿：首先是在小学，在教育团队中，在教师或导师的指导下（或在家里在家长的指导下），然后在独立模式下，使用与同学和老师的远程交互。学生的这种技能不仅可以在紧急情况下迅速将整个中国教育系统转移到远程工作形式，而且还可以为远程专业教育创造条件，这可能是许多中国人在某些情况下最方便甚至是唯一可能的学习方式。

文献列表

1. *Communiqué of the Seventh National Population Census (No. 7) / National Bureau of Statistics of China, May 11, 2021. URL: http://www.stats.gov.cn/english/PressRelease/202105/t20210510_1817192.html.*
2. *2020 China's Online Education Industry Report / Beijing, iResearch Global, March 01, 2021. URL: https://www.iresearchchina.com/content/details8_66010.html.*
3. *Education in China: dossier. - Statista, 2021. - 47 p.*
4. *Fedina, N. V., Burmykina, I. V., Zvezda, L. M., Pikalova, O. S., Skudnev, D. M., and Voronin, I. V. (2017). Distance educational technologies in the preschool education system: scientific approaches and development prospects // Problems of modern education, no. 5, pp. 178-188.*

5. McQuaide, S. (2009). *Making Education Equitable in Rural China through Distance Learning / International Review of Research in Open and Distance Learning, Volume 10, Number 1. ISSN: 1492-3831*

6. 柴安成。国家中小学智慧教育平台”上线，回忆农村中小学现代远程教育工程 / 时代新生活, 2022-03-04. URL: <https://baijiahao.baidu.com/s?id=1726361448276700982&wfr=spider&for=pc>

7. 关于进一步减轻义务教育阶段学生作业负担和校外培训负担的意见 / 中国政府官方网站, 2021-07-24. URL: http://www.gov.cn/zhengce/2021-07/24/content_5627132.htm

8. 中国教育网络电视台<http://www.ccntv.cn/>

DOI 10.34660/INF.2022.95.23.239

三宝现阶段的前景

PROSPECTS FOR SAMBO AT THE PRESENT STAGE

Ivanov Evgeny Sergeevich

Full Professor, Master

Yong In University; South Korea – Yong In;

Song Il Hoon

Full Professor

抽象的。文章作者从桑搏的历史、其文化根源与俄罗斯文化的独特性、普遍性相联系，试图了解桑搏在现代世界的广阔前景，同时考虑到大规模的文化危机，同时，过渡到后工业社会时代的可能性。强调三宝是一种新型的、现代的摔跤，它符合现代的要求，在这方面有很大的成就；在推广 SAMBO 时应考虑到这一点，分析其前景作为一种帮助人们的文化现象。

关键词：三宝、摔跤、现代世界、前景、后工业社会、公民社会、民主、技术、形象化、自我发展、文化危机、哲学、克服、道德选择、新文化、近代、独特的俄罗斯文化。

Abstract. *The author of the article, touching upon the history of sambo, its cultural roots associated with the unique, universal nature of Russian culture, makes an attempt to comprehend the broad prospects of sambo in the modern world, taking into account the large-scale cultural crisis and, at the same time, the possibilities of the era of transition to a post-industrial society. It is emphasized that sambo is a wrestling of a new, modern type, it meets the requirements of modern times, has great achievements in this capacity; this should be taken into account when promoting SAMBO, analyzing its prospects as a cultural phenomenon that helps people.*

Keywords: *sambo, wrestling, modern world, prospects, post-industrial society, civil society, democracy, technology, visualization, self-development, cultural crisis, philosophy, overcoming, moral choice, new culture, Modern times, unique Russian culture.*

Sambo, as a syncretic type of wrestling of the modern type, based on the deep traditions of the past and bringing a lot of benefits at the stage of modern times, requires a broad and comprehensive consideration from the standpoint of its perspectives.

Of course, in the history of mankind there are many different types of struggle, which is caused by the eternal desire to survive. At the same time, those species that we now know about, remember, those that we value as an important contribution to the treasury of human culture that influences descendants, are based not only on the desire to survive, but on the desire to remain human, to strengthen and improve spirituality. They are based on the ability to accept the challenge of the world in any of its forms, on the knowledge of how to respond to it in actual typical conditions (first of all, respond spiritually, because a person is strong in spirit¹; first of all, it is important for a man). This is taught by the concept of martial arts as a phenomenon of true culture. At the same time, it is clear that the formation of such a system is a derivative of culture, in particular, of a specific national culture, a derivative of the needs of the era.

If we are talking about the traditional era (which in different countries had its own length, depending, for example, on the Western or Eastern type of culture), about the era when there were, one might say, constant wars, then martial arts developed more actively, more diversely, while their traditions were more canonized, ritualized, perceived as “sacred”, etc. This is more noticeable in the mainstream of the culture of the eastern countries that arose earlier and deeply rooted the foundations of traditional society. Like many cultural phenomena of the traditional stage of social development, the effective phenomena of martial arts were formed “through trial and error”, starting from practice, from spirituality of a religious (and, if I may say so, hierarchical type) type. During the transition to the XX century, including in the eastern countries, what can be called a very noticeable socio-cultural turning point was observed²: one way or another, democratization, the activity of the masses, their desire for a better life began to play a significant role. In order to provide the necessary standard of living for an “ordinary person” (however, one can also speak of a reverse causal relationship), science and technology developed, ensuring the mass production of the necessary goods - social relations, the face of culture changed accordingly. We repeat, both Western and Eastern countries fell into the channel of these processes, because the degree of informatization, contacts by the beginning of the XX century were sufficient for a noticeable cultural exchange to take place at a qualitatively new level.

In the processes of the emerging culture of modern times, many phenomena have been influenced by the systems-scientific approach. For example, Russian

1 Prokhorenko A. V. Spirituality as a necessary component of the humanization of personality / A. V. Prokhorenko // *Young scientist*. 2010, № 5 (16), V. 1. P. 257–259; Yartseva V.P. The concept of spirituality: psychological aspect // *Applied Legal Psychology*. 2019, № 1. P. 108–121

2 Grivennaya E. N. Sociocultural situation in Russia at the turn of the XIX–XX centuries. // *Society and law*. 2005, № 3 (9). P. 166–171; Marinich A. A. Influence of the political and cultural situation at the turn of the 19th – 20th centuries on the continuity of traditions and values // *Young scientist*. 2010, № 5 (16), V. 2. P. 106–110

ballet, which had already become an outstanding cultural phenomenon³ by the early XIX–XX centuries, systematized its experience, developments, and methods in the 20th century in order to create the basic system of A. Ya. Vaganova, which was largely created “artificially”, that is, in accordance with the scientific approach, adequate to the times. You can also cite as an example the system of K. S. Stanislavsky⁴, famous throughout the world as a unique embodiment of the experience of the Russian theatrical, dramatic school, multiplied by the most rational approach. Apparently, in this context, one can also talk about the Japanese economic miracle of the 2nd half of the XX century as a result of the unique mentality of the Japanese, who used the latest technological thinking.

Returning to Russia, we must note its cultural universality, which has taken shape as a huge Russian world, friendly uniting a large family of ethnic groups in the process of a very difficult historical path. The openness of Russians to a variety of cultural influences and traditions helped to create a unique Russian ballet, great Russian literature, and later on it - the system of Stanislavsky, etc. In the same way, sambo appears in the XX century as a syncretic wrestling based on the systems of judo, jujitsu, on martial arts of the peoples that were part of the USSR (meaning, for example, the Uzbek “kurash”, the Georgian “chidaoban”, the Azerbaijani “gulesh”), on some traditions of the Slavic, European wrestling. The Russians, being once again in the most difficult historical conditions of a huge forced modernization breakthrough of the XX century, defending the world’s first state of workers and peasants, and with it their great culture, created a unique struggle that was highly appreciated in the world. In a relatively short time, having gone from a new sports, cultural, social, political phenomenon to an Olympic sport, to great popularity⁵, SAMBO never ceases to amaze with how organically it combines various traditions, never ceases to amaze with its economy, compliance with the rhythm of life, style of thinking of modern people. Compared to more traditional martial arts, techniques, the sambo system are simpler in the good sense of the word, they are quite comprehensible for the “ordinary person”⁶. This was greatly facilitated by diligence, enthusiasm, patriotism, along with cultural depth, cultural susceptibility of V. S. Oshchepkov, V. A. Spiridonov, A. A. Kharlampiev, who are

3 Polissadova O. N. “Russian Seasons” by Sergei Diaghilev as an artistic paradigm for the development of the ballet art of the XX century // *Culturology and Art History: materials of the I Intern. sci. conf.* (Perm, April 2015). Perm, 2015. P. 71–77

4 Naidenko M.K. System K.S. Stanislavsky: Sociocultural foundations and cultural foundations: diss. ... dr. cult. Krasnodar, 2005

5 Rudman D. L. Self-defense without weapons from Viktor Spiridonov to Vladimir Putin. M., 2003; Dolgopolov N. Sambo became an Olympic sport // *Russian Newspaper*, 07/20/2021 // Sambo became an Olympic sport - Russian Newspaper (sportrg.ru); International SAMBO Federation // World and national SAMBO federations in the world - on the FIAS website (sambo.sport)

6 Troyan E. I. Sambo in the service of the Russian police: history in faces // *Police activity*. 2019, № 5. P. 1–7

considered the founders of sambo⁷. The role of personality in modern times is hard to deny, while a great personality always reflects the needs of the time. In the XX century, this was done incredibly creatively, really breakthrough!

Sambo is a qualitatively new wrestling, which, of course, has prospects. The prospects of Sambo as a multifaceted, deep phenomenon (having, in the spirit of real martial arts, its own philosophy - the philosophy of the struggle of a man of a new era ...), cannot be considered without the features of modern critical culture⁸, without “analogous cases” of great cultural shifts, associated, for example, with the period of the early XIX - XX centuries and beyond. Modern times are associated with active democratization, social explosions due to the desire to get rid of the heavy inertia of much less democratic periods in the history of mankind. The newest time is a much more active movement of people, a more “simple” (less ritualized) way of life, appropriate clothing, manner of behaving, communicating, working ... The role of mass education and science is immeasurably increasing. It is during this period that sambo arises, which determines the nature of its “style”, techniques, and philosophy.

As for the new, conspicuous transitional period associated with the current state of society, in our time, of course, it is necessary to note the enormous role of technology, automation, informatization, even greater activity of people in terms of movement, cultural contacts. Of course, here we must talk about an even greater desire of man for freedom, democracy. Now the shortcomings of democracy, “simple” culture, active informatization, overproduction with the help of high-level technology, etc., are much more contrasting. The technical component contributes to the acceleration of socio-cultural (and other) processes, as a result - we cannot predict well, identify complex, specific modern phenomena. This is not facilitated by the global spread of negative mass culture, which perverts people

7 Alekseev M. A. “Developed, brave, honest.” V. S. Oshchepkov - scout, translator, trainer, creator of sports and combat sambo // *Military History Journal*. 1998, № 6. P. 65–71; Kulanov A. E. Oshchepkov. M.: Young Guard, 2017 (Life of wonderful people); Lukashev MN The SAM system turns into SAMBO. M.: Budo-Sport, 2003 (The third book from the five-volume hand-to-hand combat in Russia in the first half of the XX century); Oltarzhevsky G. Sambo survived: who really invented the “freestyle wrestling”. The most universal fighting style was invented by a Russian officer and a “Japanese spy” // *Izvestia*, 16.11.2018 // Sambo survived: who really invented the “freestyle wrestling” | Articles | *Izvestia* (iz.ru); Kharlampiev A. A. SAMBO wrestling. Moscow: Physical culture and sport, 1949; Kharlampiev A. A. SAMBO system (collection of documents and materials, 1933–1944). M., 2003; Sambo Legends: Kharlampiev Anatoly Arkadievich // *Sambo Federation of the Nizhny Novgorod Oblast // Sambo Legends: A.A. Kharlampiev, V.S. Oshchepkov, V.A. Spiridonov, A.M. Pushnitsa, A.S. Fedorov, E.M. Chumakov* (xn--80ac6afaer.xn--p1ai)

8 Tuman-Nikiforov A. A. The crisis of spirituality and ways to overcome it // *Bulletin of the Krasnoyarsk State Agrarian University*. 2011, № 3. P. 193–199; Vinokurova A. A., Mikhaleva A. B. The problem of reading in modern society // *International Research Journal*. 2014, № 4–3 (23). P. 97–98; Khakimova M. A. Development of culture in the modern world // *Academy*. 2019, № 2 (41). P. 54–55

(starting from a very young age!) in their original curiosity, the desire to comprehend the world around them, themselves, to take the right place in the world, in the pursuit of self-improvement⁹, progress. Under such conditions, “purely technical progress” is not accompanied by humanitarian progress to the proper extent, which gives rise to a global problem of dehumanization of culture. The legacy of the industrial era - mass culture (generated by active market relations) leads to serious overlaps in the transition to the post-industrial era¹⁰.

In such conditions, the positive phenomena of modern culture, for example, sambo, have prospects, moreover, in fact, they are in great need of a society that is undergoing a deep cultural crisis, from which, due to globalization, “there is nowhere to escape.” At the same time, the “disgust” for real culture, which is observed in many modern people, interferes as a kind of syndrome of a terrible cultural disease. Of course, in the context of the scale of the crisis, the scale of many social processes, it is possible and necessary to think about global methods, forms of influencing people, including, for example, in the aspect of raising interest in SAMBO. However, due to these and other reasons, the political, “big” social component in our time is also experiencing a certain crisis¹¹. Therefore, for the time being, one should probably rely more on a more “local” impact on contemporaries at the level of the family, the study group, the city, of course, at the level of self-education, self-development. Moreover, democracy presupposes a greater role for the individual and interpersonal relationships. In any case, you should use the advantages of the era - technologies, new means, methods of communication in order to contact like-minded people, convince people, present information vividly. Ultimately, the “macro-society” should also use the features of modern informatization in order to fight the cultural crisis, in particular, to promote sambo.

Sports, especially sambo, at the stage of loss of cultural reference points by many people, are intuitively and consciously perceived as a “beacon”, signaling a healthy lifestyle, opportunities, purposefulness, will, the combination of physical and spiritual principles in culture. Given the positive moral choice of people, sambo, having played its great educational, cultural, combat role in our time, is likely to develop further, taking into account the further development of science, informatization, contact of cultures, and social relations in general. It is possible

⁹ Shchukina M. A. Self-development of personality: history and current state of the problem in Russian psychology // Bulletin of St. Petersburg University. Sociology. 2009, № 1–1. P. 154–164;

¹⁰ Kostina A. V. Mass culture as a phenomenon of post-industrial society: diss. ... dr. philos. sci. M., 2003; Prikhodko E. A. Mass culture as the “spirit” of modernity // Young scientist. 2011, № 6 (29), V. 2. P. 199–201

¹¹ Gayazov A. S. Civil infantilism of modern man as a social phenomenon // Problems of Oriental Studies. 2021, № 1. P. 8–15; Lebedeva M. M. Political Foundations of the Modern World Crisis // Journal of Political Philosophy and Sociology of Politics Politiya. Analysis. Chronicle. Forecast?. 2009, № 3. P. 51–57

that on the basis of this martial art a new syncretic type of struggle will appear with its philosophical, cultural, educational, combat features, potential - corresponding to the time. Probably, it is the cultural-educational, philosophical principle that will manifest itself more noticeably here, especially since the passion for philosophy is characteristic of transitional eras, of a global society. Probably, even before the formation of a new type of wrestling, sambo, as a modern type of martial arts, will find the possibilities of actual accents in itself. But in order for this to happen, it is now necessary to find adequate ways to organize culture, social life - in order to get out of the “chaos” of the critical time in which we find ourselves (far from being fully aware of the “chaos”).

In any case, it is clear that, based on the foundations of modern democracy, the structures of civil society¹² should play a significant role in progress at the post-industrial stage, which should be associated with Sambo¹³. A bright informational, educational component should play a big role: good feature and other films about unique martial arts, about other types of wrestling; visible, organically perceived events; attractive sites; clear, meaningful, systematic training, etc. In fact, what we are talking about is not difficult for modern people. Here it is important to understand the problem, its complexity, unusual scale, it is important to understand that, taking into account the sharp change in socio-cultural realities, it is literally up to each of us what culture we exist within. Personality is very important at the present stage (such, for example, as the personality of Spiridonov, Kharlampiev, Ovchinnikov!). We do not feel this enough precisely because in the era of the dominance of mass culture, the personality has been “erased”. But it is the personality that is very important in the era of democracy - as, indeed, before, but now it must play a fundamentally system-forming role. And basically, we are talking about the personality of an ordinary person who makes the right moral choice, adequately engages in self-development in areas that are important to him, while using the huge information opportunities of the modern world. There will probably be more and more such people, each of us can be like that. And sport, in particular sambo wrestling, will contribute to this together with other progressive cultural phenomena that are so necessary for contemporaries. The whole system of culture will change in a certain way, including on the principle of syncretism¹⁴, the combination of various elements into an organic whole, into a whole with unusually actively in-

¹² Kanunnikov A. A. Civil Society in the Modern World // Scientific and Analytical Bulletin of the Institute of Europe RAS. 2018, № 3. P. 113–119

¹³ International SAMBO Federation // World and national SAMBO federations in the world - on the FIAS website (sambo.sport); About the All-Russian Sambo Federation // About the All-Russian Sambo Federation (sambo.ru)

¹⁴ Gudoshnikova O.Yu. Formation of human universality in the context of modern syncretic art // Tekhnologos. 2012, № 6. P. 56–63; Arkhipova Yu. V. Syncretism in the structure of culture: diss. ... cand. philos. sci. Saratov, 2005

teracting components. With regard to Sambo, this can manifest itself in an active and interesting combination of competitions and shows, cinema and competitions, sports and public discussions, video demonstrations and new types of training¹⁵.

Conclusions

The spread of Sambo is connected with the position of Russia in the world, with the final recognition of its huge cultural and political role in the world community. This, of course, is connected with overcoming the global crisis, the excesses of capitalism in a culture of the Western type. Let us recall that the mass culture natural for the stage of industrialization in a socialist society, in the Soviet Union, was fundamentally different, progressive. It was she who led to the social, political phenomenon of sambo. Such results are connected both with the political system and with the nature of the culture of our country, as we discussed above. One way or another, overcoming the current crisis is possible based on the principles of true culture, on cultural achievements that are suitable for the current stage and have the potential for development. This should be relied upon when searching for methods, means of changing the situation both at the macro level and at the level of a more local society, the individual, and this should be relied on when spreading SAMBO in the world, contributing to its further development.

References

1. Alekseev M. A. "Developed, brave, honest." V. S. Oshchepkov - scout, translator, trainer, creator of sports and combat sambo // *Military History Journal*. 1998, № 6. P. 65–71
2. Arkhipova Yu. V. *Syncretism in the structure of culture: diss. ... cand. philos. sci.* Saratov, 2005
3. Vinokurova A. A., Mikhaleva A. B. *The problem of reading in modern society // International scientific journal*. 2014, № 4–3 (23). P. 97–98
4. Gayazov AS *Civil infantilism of modern man as a social phenomenon // Problems of Oriental Studies* 2021, № 1. P. 8–15
5. Grivennaya E. N. *Sociocultural situation in Russia at the turn of the XIX–XX centuries. // Society and law*. 2005, № 3 (9). P. 166–171
6. Gudoshnikova O. Yu. *Formation of human universality in the context of modern syncretic art // Tekhnologos*. 2012, № 6. P. 56–63
7. Dolgoplov N. *Sambo has become an Olympic sport // Russian Newspaper*, 20.07.2021 // *Sambo became an Olympic sport - Russian Newspaper (sportrg.ru)*

¹⁵ Plotnikov A. V. Artistic and sports spectacles as a phenomenon of socio-cultural reality // *Service plus*. 2020, № 4. P. 76–86

8. Kanunnikov A. A. *Civil society in the modern world // Scientific and analytical bulletin of the Institute of Europe RAS. 2018, № 3. P. 113–119*
9. Kostina A. V. *Mass culture as a phenomenon of post-industrial society: diss. ... dr. philos. sci. M., 2003*
10. Kulanov A. E. *Oshchepkov. M.: Young Guard, 2017 (Life of wonderful people)*
11. Lebedeva M. M. *Political Foundations of the Modern World Crisis // Journal of Political Philosophy and Sociology of Politics Politiya. Analysis. Chronicle. Forecast». 2009, № 3. P. 51–57*
12. *Legends of Sambo: Kharlampiev Anatoly Arkadievich // Sambo Federation of the Nizhny Novgorod Oblast // Legends of Sambo: A.A. Kharlampiev, V.S. Oshchepkov, V.A. Spiridonov, A.M. Pushnitsa, A.S. Fedorov, E.M. Chumakov (xn-80ac6afaer.xn--plai)*
13. Lukashev MN *The SAM system turns into SAMBO. M.: Budo-Sport, 2003 (The third book from the five-volume hand-to-hand combat in Russia in the first half of the XX century)*
14. Marinich A. A. *Influence of the political and cultural situation at the turn of the 19th – 20th centuries on the continuity of traditions and values // Young scientist. 2010, № 5 (16), V. 2. P. 106–110*
15. *International SAMBO Federation // World and national SAMBO federations in the world - on the FIAS website (sambo.sport)*
16. *International SAMBO Federation // World and national SAMBO federations in the world - on the FIAS website (sambo.sport)*
17. Naidenko M.K. *System K.S. Stanislavsky: Sociocultural foundations and cultural foundations: diss. ... dr. cult. Krasnodar, 2005*
18. *About the All-Russian Sambo Federation // About the All-Russian Sambo Federation (sambo.ru)*
19. Oltarzhevsky G. *Sambo survived: who really invented the “freestyle wrestling”. The most universal fighting style was invented by a Russian officer and a “Japanese spy” // Izvestia, 16.11.2018 //*
20. Plotnikov A. V. *Artistic and sports performances as a phenomenon of socio-cultural reality // Service plus. 2020, № 4. P. 76–86*
21. Polissadova O. N. *“Russian Seasons” by Sergei Diaghilev as an artistic paradigm for the development of ballet art of the twentieth century // Culturology and art history: materials of the I Intern. sci conf. (Perm, April 2015). Perm, 2015. P. 71–77*
22. Prikhodko E. A. *Mass culture as the “spirit” of modernity // Young scientist. 2011, № 6 (29), V. 2. P. 199–201*
23. Prokhorenko A. V. *Spirituality as a necessary component of the humanization of personality / A. V. Prokhorenko // Young scientist. 2010, № 5 (16), V. 1. P. 257–259*

24. Rudman D. L. *Self-defense without weapons from Viktor Spiridonov to Vladimir Putin*. M., 2003
25. Troyan E. I. *Sambo in the service of the Russian police: history in faces // Police activity*. 2019, № 5. P. 1–7
26. Tuman-Nikiforov A. A. *The crisis of spirituality and ways to overcome it // Bulletin of the Krasnoyarsk State Agrarian University*. 2011, № 3. P. 193–199
27. Khakimova M. A. *Development of culture in the modern world // Academy*. 2019, № 2 (41). P. 54–55
28. Kharlampiev A. A. *SAMBO wrestling. M.: Physical culture and sport, 1949*
29. Kharlampiev A. A. *SAMBO system (collection of documents and materials, 1933–1944)*. M., 2003
30. Schukina M. A. *Self-development of personality: history and current state of the problem in Russian psychology // Bulletin of St. Petersburg University. Sociology*. 2009, № 1–1. P. 154–164
31. Yartseva V.P. *The concept of spirituality: psychological aspect // Applied Legal Psychology*. 2019, № 1. P. 108–121

女性气质非语言符号的语言表征：虚构话语

**LINGUISTIC REPRESENTATION OF NONVERBAL SIGNS OF
FEMININITY: FICTIONAL DISCOURSE**

Margarita S. Tatsenko

Postgraduate

Adyge State University

抽象的。 本文旨在研究和描述“女性”概念在艺术话语中的符号表征特征。 该研究的材料是在俄罗斯国家语料库 (NCRL) 中呈现的文学文本。 在使用语境和语言符号分析的过程中, 非语言符号被识别和分析, 代表女性的生理、外在、心理和行为特征 (行为符号、习惯符号、颜色符号、时尚一名称标志)。

关键词: “女性”概念、符号化、非语言符号、艺术话语。

Abstract. *The purpose of the article is to study and describe the features of the semiotic representation of the concept of “femininity” in artistic discourse. The material of the study was literary texts presented in the National Corpus of the Russian Language (NCRL). In the process of using the methods of contextual and linguo-semiotic analysis, non-verbal signs were identified and analyzed, representing the physiological, external, mental and behavioral characteristics of a woman (behavioral signs, habitus signs, color-name signs, fashion-name signs).*

Keywords: *the concept of “femininity”, semiotization, non-verbal sign, artistic discourse.*

This research is conducted within the framework of non-verbal semiotics, i.e. the basic terms are: code, sign, semiotization, non-verbal communicative behavior. G.E. Kreidlin singles out non-verbal semiotics as a science, “the subject of which is non-verbal communication and, more broadly, non-verbal behavior and interaction of people” [Kreidlin, 2004: 3]. The relevance of the study is due to the appeal to the problem of studying the features of the linguistic representation of the concept of “femininity” in artistic discourse in the aspect of linguosemiotics. The process of “semiotization of a concept reflects its symbolic nature, which consists in the possession of a concept as a sign or their cluster (a conglomerate of signs, a semiotic system) of its own structure, hierarchically organized [Barashyan 2020: 22]. We agree with the opinion of A.V. Olyanich that the communicative task of semiotic signs “consists in the formation of a communication space,

presenting the object of influence with the necessary and sufficient information about the qualities, characteristics and status of the influencing subject” [Olyanych 2016: 110]. Thus, non-verbal signs of femininity in artistic discourse represent the gender-based characteristics of a woman.

The term “femininity” along with the term “masculinity” is one of the key in gender studies. Regarding the distinction between the terms “femininity” and “femininity”, “masculinity and “masculinity”, we agree with the opinion of M.A. Sevelova that “the introduction of the terms “masculinity/femininity” into the circulation of the socio-humanitarian sciences is quite justified, since it allows us to avoid the evaluative connotations characteristic of the terms “masculinity/femininity” [Savelova 2011: 44]. By “femininity” we mean the totality of physical, mental and behavioral characteristics inherent in women.

Femininity is semiotically actualized in artistic discourse through non-verbal signs. Appearance representative signs (body build, hairstyle, cosmetics, clothes, shoes, accessories), behavior representative signs (posture, gait, facial expressions, gestures, intonation).

Femininity is actualized through non-verbal signs representing the external characteristics of a woman: *lace garters, a corset, stilettos, a bright skirt above the knees, a bulge of the chest, with the gait of a goddess, coquettish, beautiful, thin, tall, with a long neck, with a slightly large mouth, with plump, like an apple, breasts; magnificent forms*, etc. For example:

But here Olga stepped over the threshold of the investigator, and it seems that she did not come out of the walls of the jail, but descended from the height of the podium: eyes are made up, eyebrows are drawn, lips are artfully tinted in pale crimson, a short skirt barely reaches the knees, and dark gray tights defiantly fit tight calves, thereby emphasizing the slimness of the legs. [Evgeny Sukhov. The end of the matter — the beginning of the term]. In this example, semiotic femininity is represented through signs representing the bodily characteristics of a woman (*slim legs*), coloronyms (*pale crimson*), elements of women’s clothing and fashion (*dark gray tights*).

Habitus signs (physical and physiological characteristics), for example: *He was tall, with an accentuated athletic figure, with a fashionable hairstyle, she was — round, feminine, blond.* [Reed Grachev. The house was on the outskirts].

Signs representing elements of clothing, for example:

Her short skirt pulled up, revealing translucent panties with thin lace. [Vladimir Voinovich. Moscow 2042].

The signs-coloronyms representing the stereotypical “female” colors are highlighted, for example, pink is a “female” color, for example:

Matov found these two transparent allusions by the young girl to his adventures very unpleasant; in addition, he involuntarily drew attention now to the pink

color of her sundress and remembered another similar sundress that had flashed this morning between the trees. [I. V. Omulevsky. Trying- is no joke. Part one].

Fashion signs representing women's fashion (*rhinestones, a down jacket with an edge from the Shanghai leopard*), for example:

A piercing pink short Chinese down jacket with a Shanghai leopard trim was complemented by jeans so generously studded with rhinestones that the back of the girl looked like a map of the starry sky. [Michael Baru. Notes of a visitor].

Consider signs representing feminine behavior (posture, gait, facial expressions, gestures, intonation). For example:

Joan licked her lips carnivorously and, finally returning her skirt to its original position, wiggled her hips and winked playfully at the policeman. [Ekaterina Markova. Caprice of the favorite]. In this example, non-verbal signs of femininity are represented through the description of typically "female" gestures, facial expressions, body movements.

Also: *Nadezhda Igorevna went to her room to change clothes, Lena Ryzhenko, slow, somehow sleepy, but at the same time inexpressibly feminine, with the face of a Madonna, set the table, throwing coquettish glances at Gennady and exchanging meaningless remarks with him.* [Alexandra Marinina. Last dawn].

In this example, femininity is semiotically actualized through locative signs (*setting the table*) and kinema signs (*throwing flirtatious glances*) characteristic of a woman.

Behavioral signs of femininity include non-verbal signs representing a "feminine" gait, for example:

But when a woman falls in love, oh, when a woman falls in love, what a happy light her eyes light up, how flying her gait becomes, how sunny her smile shines... [Arkady Inin. Woman and Love].

Typically "feminine" features of gait or posture can also characterize men in fictional discourse, for example:

"It seems to me that you are always angry with me for something, — whined the annoying ballerina, limping already automatically, out of touch with the role, while wiggling his hips, like a muscular, large woman [O. A. Slavnikova. long jump].

The combination "wag the hips" is usually used in relation to a woman. In this case, the combination of the verb "whining" with the phrase "wiggle your hips" and the comparison "as if a muscular, large woman" allows the author to represent the feminine image of a man.

The study of typical female images in artistic discourse in the aspect of linguistic semiotics made it possible to analyze the clusters of signs that support the process of semiotization of the characteristics of the concept of "femininity". The semiotic representation of femininity in artistic discourse is actualized through

behavioral signs, signs of habitus, signs-coloronyms, signs-locatives, signs-fascionyms.

References

1. Barashyan V.K. *Language representation of gender concepts: cognitive-discursive, semiotic and linguocultural aspects: diss. ... cand. philol. sci.* – Maykop, 2020. – 210 P.
2. Kreidlin G.E. *Non-verbal semiotics: Body language and natural language.* – M.: New lit. review, 2004. – 581 P.
3. Olyanich A.V. *Nonverbal Presentemes as Discursive Units of Influence // Upper Volga Philological Bulletin – 2016 – № 4.* – P. 109-118.
4. Savelova M.A. *Masculinity and femininity as key categories of gender theory // Bulletin of the N.A. Nekrasov Kostroma State University.* – №5-6. – 2011. – P. 43-47.

媒体传播空间中社论编辑话语的制度特征

**INSTITUTIONAL CHARACTERISTICS OF OP-ED EDITOR'S
DISCOURSE IN THE COMMUNICATIVE SPACE OF THE MEDIA**

Vera L. Ustinova

Postgraduate

Adyghe State University

抽象的。 本文致力于对俄罗斯媒体传播空间中专栏作家话语的制度特征的理论理解和描述问题。 定义了专栏作家话语的概念, 揭示了专栏作家话语的构成特征(目标、参与者、时空、价值观的存在、先例文本的存在、主题、品种和体裁、话语公式)。

关键词: 作者专栏, 专栏作家话语, 专栏作家, 制度话语, 媒体话语, 分析性和宣传性媒体话语, 构成特征。

Abstract. *The article is devoted to the problem of theoretical understanding and description of the institutional characteristics of the columnist discourse in the communicative space of the Russian media. The concept of the discourse of columnists is defined, the constitutive characteristics of the discourse of columnists are revealed (goal, participants, chronotope, the presence of values, the presence of precedent texts, topics, varieties and genres, discursive formulas).*

Keywords: *author's column, columnist discourse, columnist, institutional discourse, media discourse, analytical and publicistic media discourse, constitutive characteristics.*

The growing popularity of the media genre of the author's column testifies to the tendency of modern media to move away from simple informing and interpreting facts to artistry and narrative. The genre of the author's column attracts the reader by the fact that he feels himself involved in a dialogue with the author. A journalist-columnist does not just describe an event or some phenomenon, but empathizes, shares his opinion with the reader. This fact indicates that the genre of the author's column combines the characteristics of the analytical-journalistic and artistic-journalistic styles. It is the author's interpretation and author's understanding of reality that "turns the author's column into one of the most sought-after synthetic genres, combining the best features of real journalism and genuine literature" [Sokolova, Koreneva 2020: 115].

The demand for authorial journalism is due to the fact that the author-columnist offers the reader his own understanding and analysis of information, thereby forming and broadcasting value orientations. Journalist Inna Timchenko in her article “The Return of Authorial Journalism” correctly notes that “The immigrant lady Authorial journalism will squeeze the young and daring Industrial journalism out of the common space. Before our eyes, a new effective model of journalism is being born today, which will use all the strengths, best practices and techniques of already learned, successful business models of journalism. For young journalists, this state of affairs in the market opens up new opportunities in the formation of their own unique author’s style. And for mature journalists, this is an opportunity to share experience, not allowing the best traditions of our profession to perish and disappear.” [<https://jrnlst.ru/vozvrashchenie-avtorskoy-zhurnalistiki>].

The term “column” comes from the Latin “columna” and means “pillar”, “column”. The translation indicates another meaning that the word may have: namely, the suggestion of columns in typography, also called a column. This set of columns means that the page of the book is divided into several columns, which can make the text easier to read.

The author’s column is “a free narrative that incorporates elements of a wide variety of genres - from a note to an essay. However, all these elements are included in the narrative in order to strengthen the author’s argumentation, the author’s style of writing, which is preserved from column to column, to maximize the intimacy of the narrative and, leading the reader along the course of his thoughts, to make him an accomplice in the narrative, an interlocutor” [Yartseva 2011: 227]. The author’s column is mainly a way of expressing the author’s opinion, therefore, it is devoted not just to highlighting various topical socio-political problems, events of the cultural and sports life of society, but to their interpretation. The main goal of the author of the column is not only to offer certain information to readers, but “to interest, draw attention to a social problem” [Deyak-Yakobishina 2013: 75]. The concept of “columnism” is adjacent to such concepts as opinion journalism, armchair journalism, and author’s journalism.

V.M. Sokolova and E.V. Koreneva in her article devoted to the problem of studying the main characteristics of the author’s column on the example of the column of the Spanish writer and journalist Arturo Perez-Reverte, highlights the parameters of the column: “The column as a genre of literary journalism has a number of formal restrictions: place, size, frequency of release. The topics and problems of the articles correlate with topical issues in the life of society. But otherwise, the authors are given freedom in interpreting the topic, using stylistic means by which readers can easily recognize the master, the text is always signed with the author’s name. In addition, column articles can be combined into thematic series” [Sokolova, Koreneva 2020: 102]. The main task of a columnist is

to attract as many readers as possible to his column. The publication is interested in this, in which the author has a column under the same heading. The author can interest the reader with an original presentation of an actual problem. As Tatyana Kaminskaya notes, “columnism is also associated with the urgent need to work in a dialogue mode with your audience. The pressure factor of the audience, and the author of the article wrote about this earlier, has become the determining lever for the development of the information market. That is, the columnist must broadcast such a reaction to the events of the surrounding reality, explicate such values of his audience that he shares. At the same time, the requirements for the personality of a columnist and his professionalism are quite high, so columnism is an attribute, first of all, of a quality press” [Kaminskaya 2017: 368].

Some researchers attribute the author’s column to the literary and journalistic discourse, others to the analytical and journalistic discourse. This indicates the difficulty of attributing the column to any one discourse. The author’s column, in our opinion, belongs to the analytical and journalistic media discourse. We consider the author’s column as a certain type of media text; accordingly, the columnist’s discourse belongs to the media discourse.

The discourse of columnists in the communicative space of mass media is an institutional discourse. We adhere to the understanding of the institutional discourse of V.I. Karasik: this is “speech interaction of representatives of social groups or institutions with each other, with people realizing their status-role opportunities within the framework of established public institutions, the number of which is determined by the needs of society at a particular stage of its development” [Karasik 2000: 39].

Thus, based on the concept of V.I. Karasik, we highlight the main characteristics inherent in the discourse of columnists as an institutional discourse: *goal, participants, chronotope, presence of values, presence of precedent texts, themes, varieties and genres, discursive formulas*. The purpose of the discourse of columnists is the subjective description and author’s assessment of reality (an event or phenomenon) and the impact on the consciousness of a mass addressee. The participants in the discourse of columnists are the author (journalist, publicist, famous person) and the reader. The most important discursive characteristic of the author’s column is dialogue, which manifests itself through the interaction of the author and the addressee. A feature of the chronotope of the discusra columnist is its focus on the present tense. The author’s column occupies a certain page in a newspaper or magazine, this is a separate section, i.e. a certain place usually under the headings “opinions”, “columns”, “personal experience”. The axiological nature of media discourse reflects the ability of columnist discourse to objectify and represent basic values and anti-values in accordance with the intentions of the addressee. In the process of updating value dominants in the discourse of column-

ists, strategies and tactics of cooperation, assessment, provocation, and criticism are implemented. Topics: social topics, political topics, economics, business, gender issues, literature, art, sports. Columnist Anastasia Mironova writes about the topic of her column as follows: *From year to year, I write columns in the media and my blog. I tell people about socially significant events, literature, art* [<https://www.gazeta.ru/comments/column/mironova/15190640.shtml>]. We consider the following genres as the main genres of columnist discourse: column-review, column-comment, column-essay, column-blog.

In the conditions of hybridization of styles and genres in modern media, the blurring of genre boundaries, the discourse of columnists combines the constitutive features of analytical-journalistic and artistic-journalistic media discourses. The author's column refers to the author's opinion-oriented forms of media text.

References

1. Deyak-Yakobishina E.M. *Author's column: traditional genre or new form* // *Bulletin of BDU*. – Ser. 4. – 2013. – №3.
2. Kaminskaya T. *Explication of values in Russian media discourse: columnist and addressee* // *Przegląd Wschodnioeuropejski*. – 2017. – №| 2. – P. 367-375.
3. Karasik V.I. *Structure of institutional discourse / V.I. Karasik* // *Problems of speech communication*. – Saratov: SSU Publishing House, 2000. – P. 25-33.
4. Sokolova V.M., Koreneva E.V. *Representation of the Author as a Significant Element of the Impact of the Arturo Peresa-Reverte Column*. *Bulletin of the Moscow University. Series 10. Journalism*. – 2020. – №5 – P.98-126.
5. Yartseva S.S. *Genre features of the column* // *Bulletin of VSU. Series: Philology. Journalism. Genre characteristics of the column*. – 2011, №1. – P. 226-228.

在特别军事行动期间制定任务以解决俄罗斯粮食安全问题的方法
**APPROACHES TO THE FORMATION OF TASKS TO ADDRESS
RUSSIA'S FOOD SECURITY AT THE TIME OF A SPECIAL
MILITARY OPERATION**

Boboshko Andrey Alexandrovich

Candidate of Economic Sciences, Associate Professor

Saint Petersburg State University of Architecture and Civil Engineering

摘要: 在文章中, 作者建议考虑新兴的全球粮食议程标准的选择, 考虑其对俄罗斯国家安全的影响, 并为国内微观和中观农业反制裁发展提出选择。 区域市场日益波动的水平以及对各种 WTO 篮子的剩余限制, 这些限制限制了国内行为者解决俄罗斯在粮食自给自足和转让领域完全主导任务的能力 欧亚经济联盟、金砖国家和上合组织框架内的某些产品。

关键词: 粮食安全、进口替代、制裁、俄罗斯、SMO、世贸组织、上合组织、欧亚经济联盟、金砖国家、欧盟。

Abstract: *In the article, the author proposes to consider options for the criteria of the emerging global food agenda, to consider its impact on the national security of Russia and to propose options for the domestic counter-sanctions development of agriculture at micro- and meso levels in the growing volatility of regional markets and the remaining restrictions on various WTO baskets that constrain the ability of domestic actors to solve the set the state of the task of total dominance of Russia in the sectors of self-sufficiency in food and the transfer of certain products within the framework of the EAEU, BRICS and SCO.*

Keywords: *food security, import substitution, sanctions, Russia, SMO, WTO, SCO, EAEU, BRICS, EU.*

The February events of 2022 divided the world of visible and declared prosperity into 2 irreconcilable camps, which continue the proxy war with each other within the framework of the SMO conducted by the Russian Federation, from the standpoint of denazification and demilitarization of the regime in Ukraine [1]. All the prerequisites for the end of August force us to change our attitude towards the intermediate scale of the ongoing hostilities and recognize our activity in Ukraine not only as an anti-terrorist operation to protect the LPR and DPR, but as a level 7 local counteraction war against NATO, which is being waged in all environments and theaters of military operations [2].

There is a confrontation between the superpowers of the USA and China, which, according to the “theory of power transit”, are fighting in the snares of overcoming the “Thucydides trap” and are being pursued by their rivals, the great powers (Russia, Germany, France, Great Britain and Japan) [3], which enhance the “accommodation” of “structural power” described by the founder of international political economy of S. Strange. And this polarization of the plans of each participant is fueled by the cumulative effect of great, medium and small states, the established status quo.

Based on the understanding that resources on both sides are limited and depend on the political situation and the alignment of external priorities, each state has explicitly or latently expressed its actions either in support of the collective West, or joined the benevolent-neutral position of sympathetic zoning in the processes of formation of the polycentric infrastructure of the new global world order. And it is precisely this format that requires our country to uncompromisingly assess the options for existing and emerging risks and threats for an unconditional victory in this catastrophe locally fomented by our opponents, which was imposed on us by Anglo-Saxon domination over the long years of post-Soviet vigilance and fantasizing about the equality of all countries before the UN [4] and international law, about a possible civilizational dialogue between the capitalist world and the remnants of the socialist camp that lost the Cold War to the West. It was the Phoenix factor that was missed by our yesterday’s Western partners, who relaxed so much in relation to Russia, which, in their opinion, lay in ruins, that they missed the growth of national self-consciousness and the restoration of military power and food self-sufficiency. The issue of ideological consensus, expected by the former communist leaders, was initially devoid of any meaning, because the politicians of that wave were, according to the figurative expression of the classic, “they were glad to be deceived”, pushing the ideas of Westernism in defiance of the degrading Slavophil agenda, indulging “liberal and democratic values”, deforming and ruining with their worldview all the countries of the CMEA and the former USSR from the standpoint of total deindustrialization and the weak-willed introduction of ideas alien to us, about some kind of “suitable for us the same” agenda. It was necessary to understand already then that, apart from our own orientation towards our own national interests, it is impossible for us to achieve with these negotiators any options for our own civilizational survival, except for their enforced following to the “new” inventions of a foreign wheel in the era of a rigid imperialist corporate division of the world into colonies and their role in serving the hegemon, we do not and will not have forgiveness from either descendants or support from contemporaries. And that is why SMO today, like a litmus test, has become the basis for the consensus of Russian society, an indicator of the mood of our elites, which have become part of the international financial international and bankers for 30 years [5].

Since it is historically known that the last such empire on Earth, like Portugal, lost the last of all, but finally, its imperial status already in 1974, the decline of the Red Empire was a foregone conclusion from the standpoint of the degradation of the Soviet elites of late communism of the bureaucratic-command model, their desire for conformism and complete anti-communist reform in collusion with the countries of the “golden billion”, promising joint prosperity and racketeering for all the weak, not ready to defend themselves with nuclear weapons, having neither hydrocarbon resources, nor fresh water, nor food to be perceived “equal among equals, at least for some kind of dialogue, for the right guaranteed by God, for their own existence.

Therefore, today our state, having plunged into the reality of the absence of utopian and gratuitous love from all states, in the figurative expression of the Deputy Head of the Security Council of Russia D.A. Medvedev, “we are not a ruble to please everyone”, should not only accept this idea as the basis for our reconstruction of the state-empire and its state-building, from a position of strength and impossibility to continue to tolerate the shift of “red lines” to the borders of Russia, but also accept conceptually verified steps of the “road maps” of ministries and departments responsible for the deoffshorization of the economy, transfer of assets of global TNCs that left their market niches to the jurisdiction of Russia and the creation of a fundamentally new class not of “managers-liquidators for managing non-core assets”, but of patriotic managers who are able to assess the scale of the problems of the current transfer of the national economy to the rails of mobilization, and after already military economics, and strategists of philosophical and practical internationalism, able to use on our territory the world’s leading start-ups and greenfields of international campuses and unicorns [6].

And the trump card in this game can and should be not only mineral resources and regenerating cross-border value chains, but also, most importantly, our primordial wealth, our lands and food, which, like shells and cartridges, become part of diplomatic weapons and creative bargaining “smart” and “soft” power to form new blocs and alliances capable of pursuing a profitable and only our own agenda, based on the ideology of patriotism, altruism in relation to our own people and the involvement of labor resources in the competitive production of scientific schools and technological competencies that are being revived by us, capable of surviving not only in matters of friendly and parallel import substitution, but also reporting in units and percentages of Russian control of one or another market segment of the market, which is losing its “invisible hand” of the imposed monopoly management of international TNCs and TNB, and passing, in the face of threats to national security, into the regime of a planned economy of state regulation.

Therefore, the long-requested cadastre of soils and lands and their accounting in the Food Doctrine of Russia should not become a chimera for unscrupulous

businessmen and speculators, but a coordinate system of our real influence on the mechanisms of effective land turnover by Russian entrepreneurs, farmers, agrarian holdings, not a virtual cloud of a metauniverse of bureaucratic lawlessness and paperwork of bureaucratic maxims, but an ecosystem construction and the gathering of a strategic land alliance around a working man who must return to land fields, and to cinema and television screens, as a natural element of the infrastructure of self-sufficient production everything that agriculture can help to forge victory in Ukraine, and in the queue of potential friends-partners who understand what results our state must achieve for imperial leadership and anti-sanction survival.

The existing features of a long farewell to their offshore addresses of some of our food and agricultural production holdings, storage, logistics and the “last mile” to the consumer-buyer should be assessed from the standpoint of national survival and built as a priority for all participants in business processes and without involving those foreign citizens and structures that only formally and not for a long time left, politically biased, from many Russian structures of micro- and mesolevels [7]. At stake is the peace and health of the nation, the win-win “gold” of always in demand food, the unique exchange of high-quality grains, root crops within friendly states, vegetables and fruits, which can very quickly and effectively rank all of Russia’s international preferences in a dialogue with its counterparties, build currency unions that are beneficial to us, create technologically significant integration military blocs within the SCO and BRICS, sort out technological regulations with the EEC through the EEC and various preferential and not very trade regimes, which allow us to take into account the interests of our allies and partners in a behavioral economy [8].

This task was repeatedly emphasized by our President of Russia V.V. Putin at all levels, and, like the technological priority [9], should be clearly defined and staffed, then each decision of this national project will acquire “addresses, names, appearances” and will cease to be heavy and vague, like “bins of the Motherland” for many businessmen from agriculture who take advantage of the problems of the state and do not want to shorten the chain from the producer and his garden / field to the market / store counter, which seriously increases the cost of the goods and reduces the possibility of state maneuver on the external circuit.

And the time for such steps, indeed, has come a long time ago. With our will and the digital transformation of our business structures and reporting, auditing and taxation, this path is uplifting and very successful.

So the battle for the Russian harvest in Russia continues!!!

References

1. Kharlanov A. S. *Neocolonial Aspects of Global Governance and the Support of Russia's Imperial Aspirations in the New World Order*//SCIENCE AND INNOVATION - MODERN CONCEPTS – Moscow: Infinity Publishing House, 2022.-116 P.
2. Kharlanov AS *Some results of the 25th St. Petersburg International Economic Forum: the introduction of the Marshall Plan 2.0*//SCIENCE AND INNOVATION - MODERN CONCEPTS – Moscow: Infinity Publishing House, 2022.-116 P.
3. Surma I.V., Kharlanov A.S., *Modern military-political doctrine of Japan and the formation of a regional security system in the Asia-Pacific region. Questions of political science.* 2022. V. 12. №4 (80). P.1208-1219.
4. Kharlanov A. S., Likhonosov A. G., Boboshko A. A., Evans J. N., *Fundamentals of military power as the hegemony of the state in the architecture of the world order: features and recommendations. Proceedings of the International University Scientific Forum “Practice Oriented Science: UAE – RUSSIA – INDIA”*.- UAE, 2022.: Infiniti Publishing.
5. *New tasks for politology of 2020 years of the Third Millenium.* Kharlanov Alexey Sergeevitch, Evans Julia Nailiyevna. *Practice Oriented Science: UAE-RUSSIA-INDIA Materials of International University Scientific Forum, June 17, 2022;*
6. Dugin A. G. *Theory of a multipolar world.* - M.: Eurasian movement, 2013. 462-465 P.
7. Khalevinskaya E.D. *International trade relations and international trade organizations.*:textbook/M. Master: INFRA-M, 2014.-211 P.
8. Daniel Kahneman. *Thinking, fast and slow.* Penguin books. London. P.45 - 54. 2011.
9. Klinov V.G. *Forecasting long-term trends in the development of the world economy:* texbook/ V.G. Klinov.- M.: Master, INFRA-M, 2010.- 84 P.

DOI 10.34660/INF.2022.22.54.243

乌克兰危机期间国家安全概念形成过程中俄罗斯“红线”变化的规划和趋势分析
任务

**TASKS OF PLANNING AND TREND ANALYSIS OF CHANGES
IN THE “RED LINES” FOR RUSSIA IN THE FORMATION
OF THE CONCEPT OF NATIONAL SECURITY DURING
THE UKRAINIAN CRISIS**

Kharlanov Alexey Sergeevitch

*Doctor of Economic Sciences, Candidate of Technical Sciences,
Full Professor*

The Diplomatic Academy of the Russian Foreign Ministry, Moscow

Likhonosov Alexander Gerontievich

*Candidate of Military Sciences, Doctor of Political Sciences,
Associate Professor*

*Military Academy of General Staff of the Armed Forces
of Russian Federation*

Boboshko Andrey Alexandrovich

*Candidate of Economic Sciences, Associate Professor
Saint Petersburg State University of Architecture and
Civil Engineering*

Evans Julia Nailiyevna

Master

The Diplomatic Academy of the Russian Foreign Ministry

摘要：在文章中，作者提出通过分析和预测“红线”的出现、劳动力资源以及跨国精英在全球治理和俄罗斯国家安全机构建设中的共识，来考虑俄罗斯反对集体西方的选择。在代理人战争和制裁压力下。

关键词：人工智能、大数据、第七科技模式、制裁、俄罗斯、美国、北约、SMO、WTO、上合组织、欧亚经济联盟、金砖国家、欧盟。

Abstract: *In the article, the authors propose to consider options for Russia's opposition to the collective West through the analysis and forecasting of the onset of “red lines”, labor resources and the consensus of transnational elites in global governance and building Russia's national security institutions in proxy wars and under sanctions pressure.*

Keywords: *AI, Big data, 7th scientific and technological mode, sanctions, Russia, USA, NATO, SMO, WTO, SCO, EAEU, BRICS, EU.*

The ongoing SMO by Russian troops in Ukraine created the prerequisites for fundamental adjustments of some constants and potential dominants when calculating further areas of vulnerability of the Russian state, created the prerequisites for the analysis and audit of relations with the vast majority of the states of the world, which today have their own axes of confrontational or neutral drift in matters of further assembly giant Lego-constructor: the world of geo-economic interests of small, medium and large great powers in zonal and existential zoning between two superpowers - the USA and China. And the ongoing NATO proxy war against Russia in Ukraine [1], the attempts of the British and US intelligence services to shake up the Caucasus and Central Asia, light the Taiwan fuse of Chinese growing dominance in the Asia-Pacific region with Japanese revanchist steps - all these are links in a single chain of that polycentric world that is growing from the transforming Anglo-Saxon paradigm of both H. Mackinder and S. Strange on the strangulation of potential opponents by the Atlanticists by the accommodation of structural power [2], described by the classics of political science of the modern theory of international relations. The theory of “power transit” from the aging transnational elites into the hands of the emerging Bankster and Fintern union, updated with crypto-capabilities, from the hands of the corporate “tutti-frutti” TNC and TNB of the post-industrial world, mired in technological change, make a simple conclusion about the criminalization of the very idea of international treaties and agreements under the guise of imaginary state sovereignties. And this means that the modern clot of nationally declared appeals about the development and evolution of the so-called independent (the only question is: from whom or from what?) State lies in the Procrustean bed of social guarantees and effective management, the goal of which should be inevitable, but practically lost, post-COVID growth, and the expected baskets of ever cheaper, but equally qualitatively acceptable goods and services, while maintaining the status quo of everything that was “nice and kind” in the next post-war thirty years (1950-1970) of the “baby-boomers”, but exploded into a chimera of matrix totalitarianism and revanchist nationalism, bordering on fascism, in an attempt to get rid of excess human labor resources of the era of AI and Big Data, children of “indigo” and “alpha generation” of futuristic loneliness of behavioral economics [3].

Today, when the NBICS-technologies of the 7th scientific and technological mode make it possible to calculate all the weaknesses of each participant in the MEO and MRT, to give predictive estimates in matters of previously incorporated industries and professions, both Bologna and the Jesuit-Sorbonne academic profiles of classical upbringing and education, point to weaknesses in the ideological

worldview and in the managerial apparatus of effective interaction between different levels of government, to calculate the trajectories of “social lifts” of the institutional model of the economy, the “X” hour of those “red lines” comes, where the desired ceases to suit the real that has come, and the latter, without timely correction, becomes either a harmful euphemism, or an article of the criminal procedure code on exposing a section of a trench, front, border - everything that has its own personal responsibility and in digital transformation is determined by identification in percentages and in financial units of damage.

The transparency of such algorithms of humanoid viability of professional and human loyalty will soon be controlled by chips and sensors that read pictures (screenshots) of brain states which, in the form of a background, will guarantee the admission of such a person to the existing labor market, and adapt its involvement in the processes of human life on the evolution of systems and structures of state security [4]. At the same time, the quality of such personalities or individuals, depending on the goals of such a sovereign entity, will be formed by the quality of managerial cross-border elites responsible for the national orientation of their peoples and ethnic groups, capable of mimicking in the area of virtual spatial theater. These ecosystems will either make a person’s consciousness individually responsible and focused on civic responsibility of a patriotic type, or they will continue to drive him to the level of the collective unconscious, dissolving into the metauniverses and virtual worlds of cyberspaces of state-like formations. This means that any solution to the proportions of the society of such profiled massifs (responsible or “grass level”) of the biomass of the future can correct the spectrum and involvement in the mechanisms of maintaining sovereignty or enslave to the level of colonial existence. Moreover, both Phoenix effects and synergistic effects of the all-consuming matrix are possible here, which, like any reflections in the chronicles of Amber, can accelerate the defeat of Avalon and lead to multiple vibrations of eternity in various worlds, which in no way change the very fact of colonial existence, nor allow the prols to raise their heads towards the indefatigable Big Brother [5].

This means that our willingness to resist, immunity to external stimuli and flexibility to change depend on the critical basis for calculating the level of “red lines” of planning. And this is simply considered from the level of practically oriented personnel at all levels of industrial and managerial links, which form the backbone of spiritual citizens meaningfully admitted to power, capable of ensuring the stability of power, its civilizational and cultural reproducibility on a Slavic basis and devotion to the ideal of house building and ethnic polycentricity around Orthodox braces. And at these points, according to the classical geometry of Euclid and F. Klein, each algorithm that considers the viability of any dynamic model must take into account the effect of the zero base, which in some industries fits within the

boundary conditions of a statistical description of certain market conditions or our transformational space, ready to defend itself and to derive the constants of the required transitions not only between the environments of the theater of operations and the worlds around us, but to draw that line of inelasticity of national interests, which, since the time of M. Gorbachev, who is now gone in every sense, are not derived geographically from Foros to the Kremlin, but lie in the plane of a set of requirements to their own self-identity and readiness to wage any type of war, including a proxy war against NATO in Ukraine [6]. We must also remember the sad crosses of the degeneration of the Russian peoples, and taking into account the dynamics in the demography of Russia, and in the orientation of education towards the military-patriotic form of succession of the military contingent and in the cultivation of the technocratic bone, where motivation should go off scale, and the flexibility of our involvement of the state mobilization resource should correlate with those formed in mode of SMO procedure, build mechanisms to meet the trends of evolving patriotism, which changes on the basis of ideological and religious paradigms. And the longer we delay with simple, but putting everything in its place, words, as it was briefly and clearly in imperial Russia, “for God, the Tsar and the Fatherland”, without exposing as a scientific priority the unifying thought of either Eurasianism, or Slavophilism, or the imperial restoration of the post-Soviet space of satellite countries or the Caucasian-Asian direction, which have not lost their desire to go in a single ranks with Russia [7], and are ready at the level of the people and national elites to reunite on partnership terms around our Fatherland, as a future polycentric and multicultural center, historically understandable and accessible to all the former republics of the lost Red Empire, the more we work for the united West, ready to revive Atlanticism and its suffocating nooses or marching phalanxes in all the villages and outskirts of our global interests.

And here the role of the President of Russia, as a philosopher and ideologist who does not allow the existence of a world without Russia, should be specified for all layers of the still class Russian society, the boundaries between which are everywhere blurred by global governance, and declare the agenda of the “road map” of the denazified and demilitarized lands of Ukraine [8] and point to the core of the collection of the empire, which started in February to the concept of a future superpower, to the unity of patriots and a society of winners, ready to defend both traditional values and the peaceful sky of our children and grandchildren [9].

References

1. Kharlanov A. S. *Neocolonial Aspects of Global Governance and the Support of Russia's Imperial Aspirations in the New World Order*//SCIENCE AND INNOVATION - MODERN CONCEPTS – Moscow: Infinity Publishing House, 2022.-116 P.
2. Kharlanov AS *Some results of the 25th St. Petersburg International Economic Forum: the introduction of the Marshall Plan 2.0*//SCIENCE AND INNOVATION - MODERN CONCEPTS – Moscow: Infiniti Publishing House, 2022.-116 P.
3. Surma I.V., Kharlanov A.S., *Modern military-political doctrine of Japan and the formation of a regional security system in the Asia-Pacific region. Questions of political science.* 2022. V. 12. №4 (80). P.1208-1219.
4. Kharlanov A. S., Likhonosov A. G., Boboshko A. A., Evans J. N., *Fundamentals of military power as the hegemony of the state in the architecture of the world order: features and recommendations. Proceedings of the International University Scientific Forum “Practice Oriented Science: UAE – RUSSIA – INDIA”.*- UAE, 2022.: Infiniti Publishing.
5. *New tasks for politology of 2020 years of the Third Millenium.* Kharlanov Alexey Sergeevitch, Evans Julia Nailiyevna. *Practice Oriented Science: UAE-RUSSIA-INDIA Materials of International University Scientific Forum, June 17, 2022;*
6. Dugin A. G. *Theory of a multipolar world.* - M.: Eurasian movement, 2013. 462-465 P.
7. Khalevinskaya E.D. *International trade relations and international trade organizations.:textbook/M. Master: INFRA-M, 2014.-211 P.*
8. Daniel Kahneman. *Thinking, fast and slow.* Penguin books. London. P.45 - 54. 2011.
9. Klinov V.G. *Forecasting long-term trends in the development of the world economy: texbook/ V.G. Klinov.- M.: Master, INFRA-M, 2010.- 84 P.*

俄罗斯欧洲东南部杨树杂交造林
**HYBRIDIZATION OF POPLARS FOR PLANTATION
AFFORESTATION IN THE SOUTH-EAST OF EUROPEAN RUSSIA**

Tsarev Anatoly Petrovich

*Doctor of Agricultural Sciences, Chief researcher
All-Russian Research Institute of Forest Genetics, Breeding and
Biotechnology, Voronezh, Russia
ORCID ID: 0000-0001-8019-0016*

Tsareva Raisa Petrovna

*Candidate of Agricultural Sciences, Leading researcher
All-Russian Research Institute of Forest Genetics, Breeding and
Biotechnology, Voronezh, Russia
ORCID ID: 0000-0002-6949-4665*

Tsarev Vadim Anatol'evich

*Candidate of Agricultural Sciences, Senior researcher
All-Russian Research Institute of Forest Genetics, Breeding and
Biotechnology, Voronezh, Russia
Research Institute of Innovative Technologies of the Forest Complex of
the Voronezh State Forest Engineering University named
after G.F. Morozov
ORCID ID: 0000-0003-1989-0384*

抽象的。近几十年来，杨树育种策略转向增加所用基因型、无性系、杂交种和品种的多样性和数量。这一战略的方向之一是在许多国家进行的大规模杨树杂交。1972-2016年在俄罗斯联邦中部黑钙地区开展了最大的杂交计划之一。该研究的目的是获得该地区生长最快和稳定的杂交种，并将其进一步用于人工林造林。在切割的树枝和切割的树木上进行杂交，使用纸袋或单独的实验室房间隔离雌树的授粉区域。结果，进行了860多个变种杂交，培育了19870株一年生杂交种苗，选出了113个有前途的多年生杂交种。14-20年最佳杨树新品种的平均增量从11.6立方米/公顷/年（‘草原拉达’）到22.3立方米/公顷/年（‘Dryada’），超过自然普通林分至少2-3次。因此获得的新杂交种可用于造林，包括用可再生资源替代矿物不可再生资源的能源短轮林。

关键词：杨树、白杨、育种、杂交、杂交幼苗、人工林造林、短轮作能源林、生长、生产力、选择、俄罗斯东南部。

Abstract. *In the recent decades the poplar breeding strategy changed towards increasing the diversity and number of genotypes, clones, hybrids and varieties used. One of the directions of this strategy was the large-scale hybridization of poplars carried out in a number of countries. One of the largest hybridization programs was carried out in 1972-2016 in the Central Chernozem region of the Russian Federation. The purpose of the study was to obtain the fastest growing and stable hybrids in the region and their further use in plantation afforestation. Hybridization was carried out on cut branches and on cut trees with isolation of pollinated areas of female trees using paper bags or separate laboratory rooms. As a result, more than 860 variants of crosses were carried out, 19,870 annual hybrid seedlings were grown and 113 promising perennial hybrids were selected. The average increments of the best new poplar varieties in 14-20 years ranges from 11.6 m³/ha/year ('Steppe Lada') to 22.3 m³/ha/year ('Dryada') and exceed the natural ordinary stands at least 2–3 times. So the new hybrids obtained can be used in the creation of forest plantation, including energy short-rotation coppices for the replacement minerals non-renewable energy resources with renewable ones.*

Keywords: *Poplar, aspen, breeding, hybridization, hybrid seedlings, plantation afforestation, short rotation energy coppices, growth, productivity, selection, South-East of European Russia.*

1. Introduction

In our rapidly changing world, with the emergence of new needs and new directions of use of previously existing human life support goods, almost the only activity on forest cultivation requires a very long period to obtain the final result. Attempts to replace natural wood with its surrogates are not always successful. In this regard foresters are looking for ways that would speed up the production of the final product.

In naturally growing forests, such main directions can be improvement felling, fire prevention measures, forest protection measures and other technological techniques. In artificial afforestation, a number of technological techniques are added with soil preparation, planting, fertility preservation, wood tending, and others.

In addition to technological methods, genetic and breeding techniques are used to increase the speed of growth, quality and stability of cultivated plants. Initially, the fastest growing poplars and aspens were selected. As a result of such studies, the best natural euramerican hybrids and the best rot-resistant aspens were selected [1].

The era of hybridization and genetic engineering had been come then. Researchers began to create new hybrids, mutants, polyploids and other artificial genotypes. After their testing, new genetic lines and varieties are derived. High

technologies and promising varieties are primarily necessary when creating highly productive forest tree plantations. Such plantations are intensively created from fast-growing woody plants in the southern regions of the world with a temperate and warm climate: South America, South-Eastern Asia, Oceania, and Western Europe. To create them, eucalyptus trees, willows, paulownia, bamboo and other fast-growing woody and semi-woody plants are used, but mostly poplars [2-4].

The largest area of artificially created poplar plantations by 2016 was in Canada mainly from hardy aspens and balsamic poplars (21.8 million hectares) and in China from fast-growing, but mostly thermophilic varieties (8.5 million hectares). This is about 96% of the world's poplar plantations. The remaining 4% (about 1.1 million hectares) of poplar forests were created in France (0.2 million hectares); Turkey (0.15 million hectares); Iran (0.14 million hectares); Spain (0.13 million hectares); USA (0.1 million hectares); Italy (0.09 million hectares); Argentina (0.04 million hectares), as well as in some other countries [5].

In recent decades, in a number of European countries, special attention has been paid to the cultivation of poplars for biomass and bioenergy. Some works in this direction of studies are presented at the 26th Session of the International Poplar Commission of FAO (Rome, 2021). Among them there are the publications of German and French researchers; as researchers from Poland, the Czech Republic, Latvia and Lithuania have been engaged in the same work in the last 5 years. Since 2017 employees in Ukraine have also joined the study of the problem [6]. For receiving poplar energetic production special farms have been creating [7].

Unfortunately, in regions with colder climates, fast-growing, but low-hardy clones and varieties of poplars mostly die. In this regard, researchers are forced to create more winter-hardy hybrids and varieties of poplars, using their most winter-hardy representative – aspen.

The first of such experiments were conducted in the UK at the beginning of the 20th century by Professor Henry, who in 1912 in England (Kew Garden) crossed *P. balsamifera* L. and *P. trichocarpa* Torr. et Gray, received several seeds, grew four seedlings from them and thus created a hybrid poplar *P. generosa* Henry. Then in the USA in 1925 extensive hybridization work began in the New York Botanical Garden (USA).

Then, starting in the 30s, such work began to be carried out in Russia. After the 2nd World War, the breeding of new hybrids and varieties was carried out by P.P. Besschetnov in Kazakhstan; M.M. Veresin in the Voronezh Region; S.P. Ivannikov in the Kursk Region; N.A. Konovalov in the Urals; N.V. Starova in Ukraine. In general, the listed and other Soviet and Russian researchers from the thirties to the seventies of the last century bred a number of fast-growing and winter-hardy varieties of poplars. Unfortunately, only the A.S. Yablokov variety 'Pioneer' was officially patented from them.

Since the seventies of the twentieth century, research on the hybridization of poplars and aspen had begun in the newly created Central Research Institute of Forest Genetics and Breeding. As a result of these works, several dozen poplar hybrids were bred, tested and selected [4]. Among them 6 varieties have been granted with the patents by the State Commission for Testing and Protection of Breeding Achievements of the Russian Federation to date, one variety is under patenting and one is being prepared for transfer to the State Commission for Testing and Protection of Breeding Achievements of the Russian Federation.

Already in the current century, within the framework of the ‘MaRussiA’ project, supported by the German Ministry of Agriculture, a new cycle of research on the hybridization of aspens has been undertaken [4].

The presented results of studies on cultivar breeding and variety testing of new poplar hybrids, carried out initially with the aim of obtaining winter-hardy genotypes for the harsh conditions of Eurasia, later turned out to be important for other purposes as well. So, after the catastrophe of the 60s of the XX century in Western Europe, associated with the disease *Marssonina brunnea*, which destroyed huge areas of poplars, technologies were adopted to create poplar plantations from a combination of many different varieties with similar practical properties, but with different genotypic structure. In particular, O. Lange [8] recommended creating plantings not from one variety, but from 30-50 clone varieties, homogeneous in growth strength, environmental stability and morphological similarity, but differing in genotypic composition. Considering that over 47 years in the Central Chernozem region, more than 860 variants of crosses have been carried out and collections and testing sites had been created from several thousand hybrids, the authors had the opportunity to select dozens of the best genotypes for various purposes.

The purpose of our research and work on the hybridization of poplars is to select the fastest growing and stable hybrids in the study region from the offspring obtained and their further use in plantation afforestation.

2. Materials and methods

For the hybridization, poplars and aspens selected in natural and artificial forest stands of the Central Chernozem region and introduced from other regions of the country and from abroad were used. They were propagated and tested in nurseries and collections of the Central Research Institute of Forest Genetics and Breeding and in a number of forestry enterprises in Russia [4]. After selection, the best of them were used in various hybridization series. The main methods of hybridization was on cut branches and cut trees with isolation of pollinated areas of female trees using paper bags or separate laboratory rooms. Such studies have been conducted by employees of the Central Research Institute of Forest Genetics and Breeding in the Central Chernozem region since 1972. During next 50 years four series of hybridization works were carried out. The first series was started in

1972, the second in 1973, the third in 1980, and the fourth in 2015.

The resulting hybrid seedlings were grown to standard size in nurseries (for forest-steppe zone: the height more than 80 cm; for steppe zone: the height more than 60 cm), and then hybrids of the first three hybridization series were planted in three hybrid collections in the Semiluky experimental site of the Voronezh region. Coordinates: 51°42'41"N 38°57'00"E. The soil is leached heavy loamy chernozem.

The hybrids of the fourth series were planted in the collection near the village of Latnoye, Semiluky district, Voronezh region. Coordinates: 51°42'41.0"N 38°56'20.0"E. The soil is ordinary heavy loamy chernozem.

The climate of the north-west of the Voronezh region is moderately continental with an average annual temperature 4.6-5.6°C. The average temperature of the coldest month of January is -10.7°C to -8.1°C. The average temperature of the hottest month of July is from 19.5°C to 21.7°C. The average annual amplitude of temperature fluctuations is 28-31° C. The average annual precipitation is 550-560 mm.

Variety testing plots were laid in 3-4 repetitions with randomized placement in accordance with widely recognized recommendations [9-11].

Gatherings and periodic observations of survival, growth, winter hardiness, disease damage and damage by entomopests were carried out on the created collections and variety testing sites. The survival was accounted as a percentage of the planted trees. Growth was estimated by height, diameter, trunk volumes and wood reserves. Entomological damage, disease damage and other indicators were assessed according to the appropriate scales [1, 4, and 12]. Statistical analysis of the data was carried out using common approaches [10, 13, 14] and the Excel program.

As a result, the most stable, fast-growing and suitable for various purposes genotypes were selected, some of which were submitted for patenting to the State Commission for Testing and Protection of Breeding Achievements of the Russian Federation. Among them there were hybrids recommended for plantation afforestation [15].

3. Results and discussion

As a result of hybridization works with poplars and aspens in the Central Research Institute of Forest Genetics and Breeding more than 860 variants of crosses had been carried out during more than 50 years. Among them 111 were bred by A P Tsarev, 32 were bred by V P Petrukhnov, 658 were bred by R P Tsareva and 60 were bred jointly by A P Tsarev, R P Tsareva and V A Tsarev (Table 1).

Table 1.

Results of poplars and aspens hybridization in the Central Research Institute of Forest Genetics and Breeding

| Number of crossing variants | Number of annual hybrid seedlings have been grown | Number of annual hybrid seedlings have been grown | Certified varieties | |
|---|---|---|---------------------|--|
| | | | general number | including for plantation afforestation |
| Series I – the years of hybridization 1972-1978 (A P Tsarev). Certified varieties: ‘Bolide’, ‘Veduga’, ‘Steppe Lada’, ‘Belar’, ‘Dryada’ | | | | |
| 111 | 1,667 | 72 | 4+1* | 2+1* |
| Series II – the years of hybridization 1973-1992 (V P Petrukhnov). Six of the best hybrids are preparing for mass reproduction | | | | |
| 32 | 1,020 | 16 | 0 | 0 |
| Series III – the years of hybridization 1980-1994 (R P Tsareva). Certified varieties: ‘Breeze’, ‘Surprise’ | | | | |
| 658 | 16,524 | 20 | 2 | 2 |
| Series IV – years of hybridization 2015-2016 (A P Tsarev, R P Tsareva, V A Tsarev) | | | | |
| 60 | 660 | 5 families** | 0 | 0 |

*Hybrid ‘Dryada’ after variety testing submitted for certification to the State Commission for Testing and Protection of Breeding Achievements of the Russian Federation.

**The average height of the top 5 hybrid aspen families at the age of three years was 364-380 cm. It is expected to select at least 5 best genotypes.

As can be seen from the data in Table 1, as a result of all stages of research, including field variety tests in various environments [4], seven promising hybrids have been selected to date. Six of them are certified by the State Commission for Testing and Protection of Breeding Achievements, and another one is undergoing the patenting procedure. Five of these hybrids can be recommended for plantation afforestation, including for bioenergy purposes.

The forest estimation characteristics of hybrid varieties that are promising for use in plantation afforestation are presented in Table 2.

As can be seen from the data in Table 2, the forest estimation characteristics of the varieties recommended for plantation afforestation in the Central Chernozem region are quite attractive at the young age under study. Their average increments in 14-20 years range from 11.6 m³/ha/year (‘Steppe Lada’) to 22.3 m³/ha/year (‘Dryada’).

For a comparative assessment of the results obtained during the studies, in particular in Table 2, it can be noted that in natural aspen stands of the first quality of

locality in this region at the age of 10-20 years, the average total increment ranges from 5.1 to 7.5 m³/ha/year.

Table 2.
Forest estimation characteristics of poplar cultivars perspective for plantations

| Varieties | Age, years | Height, m | Diameter, cm | Trunk volume, m ³ | Density of placement, pcs/ha | Wood reserve, m ³ /ha |
|-------------------------|------------|-------------|--------------|------------------------------|------------------------------|----------------------------------|
| White poplars varieties | | | | | | |
| ‘Belar’ | 15 | 16.9 ± 0.84 | 33.3 ± 1.57 | 0.665 ± 0.033 | 376 | 250 |
| ‘Dryada’ | 20 | 24.0 ± 0.47 | 34.8 ± 2.17 | 0.890 ± 0.040 | 500 | 445 |
| Black poplars varieties | | | | | | |
| ‘Breeze’ | 14 | 16.5 ± 0.75 | 26.3 ± 0.74 | 0.359 ± 0.050 | 610 | 219 |
| ‘Steppe Lada’ | 15 | 15.7 ± 0.63 | 31.0 ± 1.14 | 0.464 ± 0.044 | 375 | 174 |
| ‘Surprise’ | 14 | 16.0 ± 0.60 | 26.1 ± 0.62 | 0.334 ± 0.040 | 598 | 200 |

Birch natural stands of the first quality of locality in 10-20 years had an overall average increment of 4.1-6.0 m³/ha/year [16]. So the best new varieties of poplars exceed the natural ordinary stands by an average increment at least 2-3 times. Consequently, they are very promising for the creation of energy tree plantations.

In recent decades, the problem of replacing non-renewable energy resources with renewable ones has become more urgent, among which wood occupies one of the first places [6, 17, 18]. Moreover, if earlier the main emphasis was on the cultivation of business and large-sized wood, in recent decades more and more attention has been paid to the cultivation of biomass for processing it into bioenergy. For example, a lot of similar studies are being conducted in Germany [6, 18, 19]. In Sweden, renewable energies accounted for almost half of their gross available energy in 2020 (48.6 %), while in Latvia and Denmark this figure stood at 39.6 % and 37.8 %, respectively). The lowest results in this respect were registered in Malta (1.9 %), the Netherlands (8.4 %) and Belgium (8.5 %) [20]. The renewable energy from biomass may be reached in some forest countries from 37.2% (Belarus) to 46.5% in Germany [21].

For the production of bioenergy, the development of short-rotation plantations is of the greatest interest, which in recent years has received special attention also in Germany [22, 23], Spain [24], USA [7], and other countries. In our country in the Central Chernozem region some short rotation plantations also were created [1, 25, 26].

In general, long-term research on selection, hybridization, variety breeding and variety testing of poplars in the Central Chernozem region has allowed us to create a collection of clones, hybrids and varieties, which is the largest in Russia.

Comparison with existing collections in a number of other foreign countries, it can be seen those in terms of richness and diversity it is included in a small number of collections in the world. The next stages will require research in order to develop new recommendations for the creation of various target plantations. It is necessary to continue research on the features of growth, stability and quality of promising varieties in different growing environments, with different technologies of cultivation, operation and use.

4. Conclusion

Research on the hybridization of poplars by employees of the Central Research Institute of Forest Genetics and Breeding and of the Voronezh State Forestry Engineering University in the Central Chernozem region of European Russia has been conducted for more than 50 years.

During this time, four series of hybridization works were carried out. The first series was started in 1972, the second in 1973, the third in 1980, and the fourth in 2015. As a result, more than 860 hybridization variants were carried out within sections of white (including aspens), black and balsamic poplars, as well as a number of intersectional crosses between them.

Totally 19,870 annual seedlings were grown, of which 113 (less than 0.6%) promising hybrids were selected. To date, a number of hybrids have passed field variety testing in various growing environments. Patents have been obtained on six of them and one is undergoing the procedure of state certification [15].

The average increment of the best new poplar varieties in 14–20 years ranges from 11.6 m³/ha/year (‘Steppe Lada’) to 22.3 m³/ha/year (‘Dryada’). While in natural aspen stands of the first quality of locality in this region at the age of 10–20 years, the average increments range from 5.1 to 7.5 m³/ha/year. So the growth of the best new varieties of poplars exceeds the natural ordinary stands at least 2–3 times.

Five of these varieties can be recommended for use in fast growing forest plantations, including for the creation of short-rotation energy plantations.

Acknowledgments

The authors thank the employees of the Semiluky experimental breeding nursery and the industrial forestry enterprises of the Central Chernozem region for their help in creating reproductive and experimental field objects, taking care of them and protecting them.

References

1. Tsarev A, Plugatar' Yu and Tsareva R 2019 *Breeding and variety testing of poplars: Monograph ed A Tsarev (Simpheropol': Publ. partnership 'ARIAL') p 252 (in Russian)*
2. Stanton B, Serapiglia M and Smart L 2014 *The domestication and Conservation of Populus and Salix Genetic Resources. 'Poplars and Willows: Trees for Society and the Environment' eds J Isebrands et al. (London: FAO) chapter 4 pp 124-199*
3. Inge-Vechtomov S 2015 *Genetics with the basis of breeding (St Petersburg: Publ. house N-L) p 720 (in Russian)*
4. Tsarev A, Tsareva R, Tsarev V and Evlakov P 2021 *Hybridization of poplars: Monograph ed A Tsarev (Voronezh: Publ. house of the Voronezh Forestry Engineering University) p 289 (in Russian)*
5. Carle J 2016 *Trends & Perspectives in Poplar & Willow Cultivation – A Global Synthesis of National Progress. Proc. from the 25th IPC Session 'Poplars And Other Fast-Growing Trees – Renewable Resources For Future Green Economies' 6 105*
6. *The role of Salicaceae and other fast-growing trees in economic recovery, sustainable wood supplies and climate change mitigation Abstr. of subm. papers and posters from the International commission on poplars and other fast-growing trees sustaining people and the environment 26th session 5-8 October 2021 (Rome, Italy: Organized by Council for Agricultural Research and Economics, Italy (CREA), Italian Ministry for Agricultural Food and Forest Policies (MIPAAF), Food and Agriculture Organization of the United Nations) p 143 <http://www.fao.org/ipc/meetings/twenty-sixth-session/en/>*
7. Townsend P, Kar S and Miller R 2019 *Poplar (Populus spp.) trees for biofuel production Farm energy <https://farm-energy.extension.org/poplar-populus-spp-trees-for-biofuel-production/>*
8. Lange O 1976 *Zum Stand der Pappelforschung in Westdeuthland (The state of poplar research in West Germany) Allg. Forstz. Bd 31 pp 430-431 (in German)*
9. Cochran W and Cox G 1957 *Experimental Designs [2nd Edition] (Published online by New York: John Wiley & Sons Inc. 1992) p 640 <https://www.wiley.com/en-ru/Experimental+Designs,+2nd+Edition-p-9780471545675>*
10. Snedecor J 1961 *Statistical methods in application to research in agriculture and biology (Moscow: Publishing House of Agricultural literature, Journals and Posters) p 503 (in Russian)*
11. Dospekhov B 1979 *Methodology of field experience (with the basics of statistical processing of research results) [4th Edition] (Moscow: 'Kolos') p 416 (in Russian)*

12. *Methodology of state variety testing of forest species (general part) 1981 (Moscow: State Commission for Variety Testing of agricultural Crops under the Ministry of Agriculture of the USSR) p 43 (in Russian)*

13. *Ivanter E and Korosov A 2014 Introduction to Quantitative Biology [3rd Edition] (Petrozavodsk: Publ. house of the Petrozavodsk State University) p 300 (in Russian)*

14. *Bondarenko A and Zhigunov A 2016 Statistical processing of forest investigation results (Saint-Petersburg: publ. house of Polytechnic University) 125 p (in Russian)*

15. *State Register of Breeding Achievements Approved for Use in the Russian Federation (status on March 12, 2020) https://gossortrf.ru/wp-content/uploads/2020/03/FIN_reestr_dop_12_03_2020.pdf (in Russian)*

16. *Tyurin A, Naumenko I and Voropanov P 1956 Forest Auxiliary Book [2nd Edition] (Moscow-Leningrad: 'Goslesbumizdat') p 532 (in Russian)*

17. *Energieholzplantagen. Die Erstellung dieser Broschüre wurde durch die Europäische Union in Rahmen des OPTFUEL Projekts (Energy wood plantations. The preparation of this brochure was supported by the European Union as part of the OPTFUEL project) 2013 (FP7, No. 218890) (Unterstützt. Lignovis GmbH) p 35 https://www.lignovis.com/fileadmin/user_upload/PDF/Energieholzplantagen_Lignovis_Broschuere_06_2013.pdf (in German)*

18. *Poplars and Other Fast-Growing Trees – Renewable Resources for Future Green Economies 2016 Abstr. of subm. papers and posters from the International Poplar Commission 25th Session (Berlin, Germany, 13-16 September) p 222*

19. *Wuehlich G 2012 Status of short-rotation coppices (SRC) with poplar and willow in Germany Proc. from the International poplar commission 24th Session 'Improving lives with poplars and willows' Abstr. of Subm. Papers (Dehradun, India, 30 October-2 November 2012: Working Paper IPC/11 FAO Rome, Italy) Forestry Bulletin 12(1) p 112*

20. *Energy statistics – an overview 2022 Gross available energy EU 1990-2020 Data extracted in February 2022 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview*

21. *List of countries by renewable electricity production 2021 https://en.wikipedia.org/wiki/List_of_countries_by_renewable_electricity_production*

22. *Meyer M, Gebauer K, Janßen A and Krabel D 2018 The importance of fuel characteristics of poplars and aspens (Populus spp.) from German short rotation plantations and Russian forests Proc. from the German-Russian Conf. on Forest Genetics 21-23 November 2017 Thünen Report 62 (Ahrensburg, Braunschweig/Germany: Johann Heinrich von Thünen Institute) pp. 61-66 https://www.thuene.n.de/media/publikationen/thuenen-report/Thuenen_Report_62.pdf*

23. Liesebach M 2020 *Poplars and other fast-growing tree species in Germany – Report of the national poplar Commission 2016-2019 (Großhansdorf, Braunschweig/Germany: Thünen Working Paper 141a)* p 34 https://www.thuenen.de/media/publikationen/thuenen-workingpaper/ThuenenWorking_Paper_141a.pdf

24. Oliveira N, Pérez-Cruzado C, Cañellas I, Rodriguez-Soalleiro R and Sixto H 2020 *Poplar Short Rotation Coppice Plantations under Mediterranean Conditions: The Case of Spain Forests* 2020 11(12) 1352 p 43 <https://doi.org/10.3390/f11121352>

25. Tsarev A, Plugatar Yu, Tsareva R, Tsarev V and Laur N 2021 *Promising introduced Black Cottonwood species for bioenergy and forage production IOP Conference Series: Earth and Environmental Science* v 875 012088 *International science conference “Forestry-2021”*. – *International Forestry Forum ‘Forest ecosystems as global resource of the biosphere: calls, threats, solutions’* 9-10 September 2021 (Voronezh, Russian Federation) Published online 10 November 2021 <https://doi.org/10.1088/1755-1315/875/1/012088>

26. Tsarev A, Tsareva R, Tsarev V and Miligula E 2021 *Biofuels: a return to the past or a modern renewable source of bioenergy Proc. from the All-Russian science and practical conference ‘Modern machines, equipment and IT solutions of the timber industry: theory and practice’* 17 June 2021 (Voronezh: Voronezh State Forestry Engineering University) pp 136-142 https://vglu.ru/files/nauka/sbornik_sovremennye_mashiny_oborudovanie_i_it-resheniya.pdf (in Russian)

DOI 10.34660/INF.2022.61.41.245

3.1-7岁急性期严重合并颅脑损伤的药物治疗
**DRUG THERAPY OF SEVERE CONCOMITANT TRAUMATIC
BRAIN INJURY IN THE ACUTE PERIOD AT THE AGE
OF 3.1-7 YEARS**

Muhitdinova Hura Nuritdinovna

Doctor of Medical Sciences, Full Professor

Center for the Professional Development of Medical Workers

Sabirov Dilmurod Suyunovich

Head of department

Republican Scientific Center for Emergency Medical Aid

抽象的。由于损伤严重，需要延长机械呼吸支持，这解释了第 2 组 17 天的大量镇静剂给药频率。在第 3 组中，最广泛的镇静剂治疗持续了 30 多天。药物治疗主要具有压力保护性质，恢复血液动力学参数、呼吸系统、肾功能和消化系统的生理水平。最积极的是第 3 组儿童血管扩张剂的使用，第 2 组稍少，第 1 组相当有限。引入非甾体抗炎抗组胺药、限制类固醇激素给药的抗炎治疗在第 3 组儿童中最为活跃。

关键词：治疗，严重合并颅脑损伤急性期，儿童。

Abstract. *The need to prolong mechanical respiratory support due to the severity of the injury explains the large frequency of sedative administration for 17 days in group 2. In group 3, the most extensive sedative therapy lasted more than 30 days. Drug therapy was primarily of a stress-protective nature, restoring the physiological level of hemodynamic parameters, the respiratory system, kidney function, and the digestive system. The most active was the use of vasodilators in children of the 3rd group, somewhat less in the 2nd group, quite limited in the 1st group. Anti-inflammatory therapy with the introduction of non-steroidal anti-inflammatory antihistamines, limited administration of steroid hormones, was the most active in children of the 3rd group.*

Keywords: *therapy, acute period of severe concomitant traumatic brain injury, children.*

Relevance. *The combination of TBI with damage to other organs and systems exacerbates the severity of brain damage. On the one hand, this is due to the inadequacy of systemic compensatory reactions in the shock period, and on the*

other hand, to direct or indirect damage to various organs or systems. An important role is played by the progression of extracranial disorders, coinciding in time with the period of subcompensation of hemo- and liquorodynamic shifts. Intensive therapy aimed at compensating for multisystem disorders may conflict with the regularities of the course of sanogenic and reparative processes in the CNS. The main ways to optimize intensive care are to use intensive care methods as early as possible to ensure adequate regional (brain) and systemic perfusion (timely replenishment of BCC, inotropic support), to prevent the formation of additional intracranial mechanisms of CNS damage (ventriculostomy), and to prevent the development of systemic disorders fraught with systemic hypoxemia, hypercapnia and hypodynamia (early enteral hydration and nutritional support, respiratory therapy, rational antibiotic therapy, etc.). At present, most researchers involved in the treatment of brain injuries agree that the basis for successful treatment of severe traumatic brain injury is to ensure cerebral blood flow adequate to the metabolic demands of the brain. Optimization of cerebral perfusion and oxygen transport is the most important task in the intensive care of neurotrauma [1-4]. Due to the lack of information on the characteristics of intensive drug therapy for severe concomitant traumatic brain injury in children of preschool age (3.1-7 years), we tried to study the results of drug therapy monitoring and evaluate the effect on hemodynamic parameters, the effectiveness of therapy in severe concomitant traumatic brain injury.

Objective. To study and identify the features of drug therapy depending on the severity in children with severe concomitant traumatic brain injury at preschool age.

Material and research methods. The results of monitoring of clinical and functional parameters, hemodynamics, heart rate of 34 children aged 3.1-7 years with SCTBI were studied. Of these, 12 children were assigned to a less severe group with a duration of intensive care in ICU conditions up to 10 days, patients with a duration of therapy of 11-20 days were included in group 2, and 10 patients with a duration of intensive care for more than 21 days were included in group 3. In each group, male patients predominated, amounting to 9 in group 1, 2-8 in group 3, 8 boys in group 3 (table 1) aged on average 5.4-5.1 years. The cause of the injury was RTA in 9,7,10 children in groups, respectively, and a fall from a height in group 1, 3 children, in 2-5 children. All those admitted to RSCEMA were operated on in the first hours after the injury, in extremely severe cases, with simultaneous, urgent resuscitation and correcting serious disorders of vital organs and systems (tab. 1).

Table 1

Characteristics of SCTBI patients admitted at the age of 3.1-7 years

| Groups | Num. of patients | Gender m/f | Age, years | RTA | Cata-trauma | Traum shock 2, 3 deg | Oper. on admission | Num. of days in ICU | Num. of days in hospital |
|--------|------------------|------------|------------|-----|-------------|----------------------|--------------------|---------------------|--------------------------|
| 1 | 12 | 9/3 | 5,4±1 | 9 | 3 | 12 | 12 | 5,4±1,4 | 16,2±5,2 |
| 2 | 12 | 8/4 | 5,25±1,2 | 7 | 5 | 12 | 12 | 15±2,8 | 24±5,9 |
| 3 | 10 | 8/2 | 5,1±0,9 | 10 | 0 | 10 | 10 | 39,9±15,8 | 46±18,6 |

Table 2

Duration of respiratory support

| Groups | CMV | IPPV | SIMV | CPAP | Spont. breath |
|-------------|--------------|-------------|--------------|-------------------|---------------|
| 1(12 pat.) | 2,2±1,4 (5) | - | 3±1 days (2) | 1 (1) | 3,5±1,4 (12) |
| 2 (12 pat.) | 6±3 (6) | 2 (1) | 7,6±2,8 (9) | 3,2±1,5 hours (8) | 5,4±2,7 (12) |
| 3 (10 pat.) | 10,5±8,5 (6) | 10,3±4,4(2) | 14,7±8,6 (9) | 6,6±2,8 (7) | 15,8±8,9 (10) |

As shown in tab. 2, almost all patients admitted to the clinic needed prosthetics for external respiration after a severe injury. Differences in the duration of ALV/AALV according to the severity of the condition were not identified. The determining factors in the severity of the condition of injured children in group 3 were severe CTBI (50%), severe OSTBI (50%), fracture of the skull bones with transition to the base (50%), SBC (100%), traumatic shock grades 2-3 (100%).

Results and its discussion. Drug therapy was primarily of a stress-protective nature, restoring the physiological level of hemodynamic parameters, the respiratory system, kidney function, and the digestive system. One of the key positions was anti-inflammatory, antibacterial therapy, according to indications, hemostatic or anticoagulant correction, maintaining prolonged moderate blood hyperosmolarity under mechanical ventilation, striving for a possible restoration of the delivery of an adequate oxygen concentration to damaged tissues that are in hypoxia, ischemia, but still in reversible condition. Conducted stress-protective, anticonvulsant, relaxant therapy itself has the property of reversible inhibition of tissue respiration. In this regard, it has been proven that the earliest administration of Llysine excinate makes it possible to increase the effectiveness of restorative therapy for brain dysfunction after injury. It is logical to assume that the early correction of mitochondrial failure caused by primary, after a short time and secondary brain damage can increase the possibility of maintaining the reversibility of structural and functional disorders of CNS cells using coenzyme preparations (vitamins, especially group B), nootropics. Monitoring of drug therapy was carried out taking into account the change in the frequency of drug administration step by step as the dynamics of the general condition, controlled parameters of hemodynamics, and homeostasis as a whole changed. Sedative therapy included hypnotics, anticonvul-

sants, relaxants, and sedatives. The most active sedative therapy in group 1 was carried out on days 1-2 due to surgical intervention with a gradual decrease to 7-9 days. In group 2, due to the need to prolong mechanical respiratory support due to the severity of the injury, up to two weeks explains the relatively large multiplicity for 17 days in group 2. In group 3, the most extensive sedative therapy lasted more than 30 days (fig. 1).

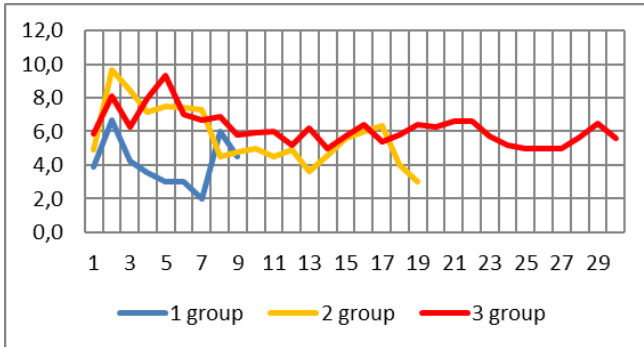


Figure 1. The frequency of administration of sedatives

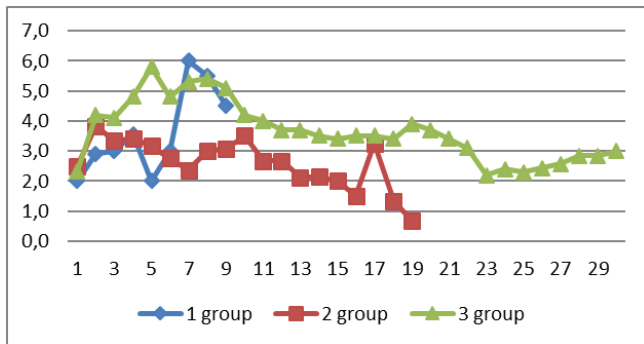


Figure 2. Anti-inflammatory therapy

Anti-inflammatory therapy consisted of the introduction of non-steroidal anti-inflammatory drugs, limited administration of steroid hormones, antihistamines was most active in children of group 3 and approximately 50% less in groups 2 and 1 on days 2-9 (fig. 2). The need to increase anti-inflammatory on day 7 in group 1 is due to the instability of the achieved effect. But due to the absence of life-threatening deviations, the preservation of the restored brain function, the adequacy of compensatory reactions, these patients continued treatment in the specialized

department. The greatest frequency of antibiotic administration was in children of the 3rd group with a maximum increase on days 6-14. The need for repeated strengthening of antibiotic therapy was observed on the 20-22nd day. Two doses of antibiotics were limited in group 1. An increase in administration on days 6-12 was noted in the injured group 2 (fig. 3). The most active broad-spectrum drugs were antibacterial therapy in children of the 3rd group.

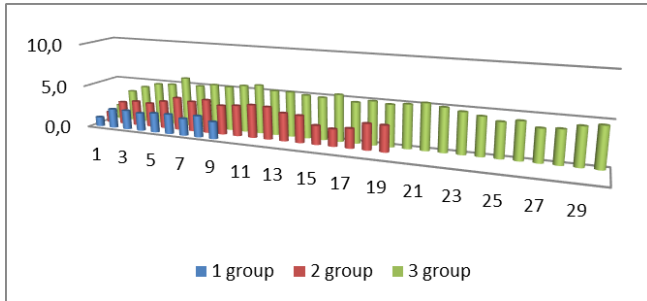


Figure 3. Antibacterial therapy

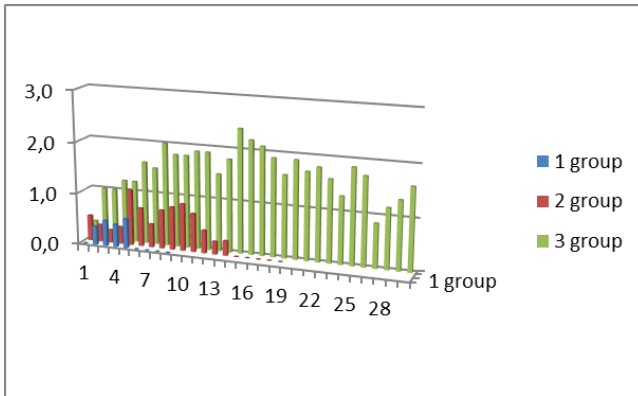


Figure 4. Anticoagulants

Hemostatics were used only in 1, according to indications 2 days. However, the frequency of heparin administration correlated well with the severity of SCTBI (fig. 4). In group 1, anticoagulants were started from day 2 and continued in some patients up to 5 days. In group 2, an increase in the introduction of an anticoagulant on days 5, then 8-10 was due to the need to correct the tendency to coagulopathy due to exacerbation of the systemic inflammatory reaction, to improve capillary blood flow, oxygenation, and prevention of DIC. Due to the ambiguous attitude towards the use of metabolite therapy in critical conditions, despite the

positive effect, such as maintaining immune reactivity, a beneficial effect on the permeability of the vascular wall, increasing resistance to oxygen starvation, an inhibitory effect on free radical oxidation of drugs such as vitamin C, B vitamins and others, metabolic therapy is limited, as evidenced by the data in fig. 5.

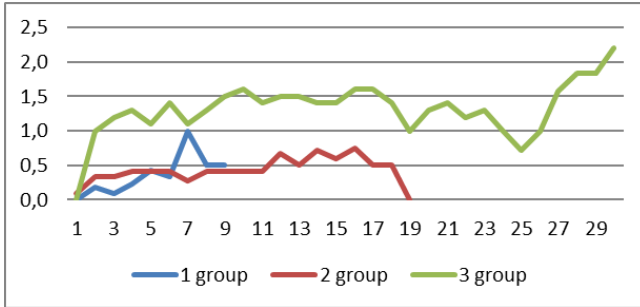


Figure 5. The frequency of administration of metabolites.

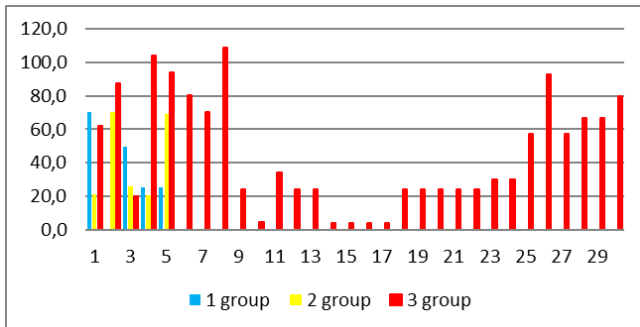


Figure 6. Correction of hypoproteinemia, blood transfusions in ml per day.

Correction of hypoproteinemia, blood transfusions were most intensively carried out in the injured of the 3rd group in 1-8, and then on the 25-30th day. The volume of albumin transfusion in groups 1 and 2 was explained by the need to enhance the anti-edematous effect. In group 3, due to progressive anemia, repeated transfusions of erythrocyte mass were performed (fig. 6).

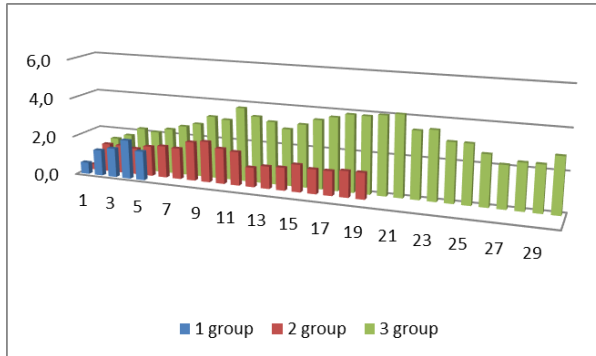


Figure 7. Nootropic therapy

The place and time of initiation of nootropic therapy has not yet been clearly defined. Although low efficiency is known in the later stages of a traumatic disease, due to the onset of irreversible changes in the brain, a prolonged inflammatory reaction, edema-swelling of the brain, and a large array of irreversibly damaged brain tissue. Patients of the 3rd group represent such critical conditions when there are no longer protective compensatory mechanisms that ensure adaptability in the new conditions of existence. There is no more or less active immune defense, a high concentration of endotoxins from damaged tissues is constantly in the bloodstream, a translocation syndrome is expressed, which explains the long-term severe intoxication of the body. The intracellular metabolism in the remaining viable cells is on the verge of complete exhaustion. It seems that the earliest possible use of mitochondrial activity stimulators, substrate maintenance of cellular hypermetabolism, may create conditions for maintaining the viability of the remaining cells of the brain and other organs and will contribute to a more complete restoration of the structural and functional characteristics of vital organs and systems after SCTBI.

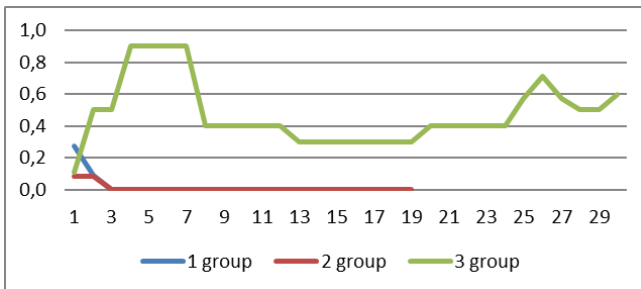


Figure 8. Dopamine.

Vasopressors were used mainly in group 3 in order to stabilize the optimal level of hemodynamics (fig. 8).

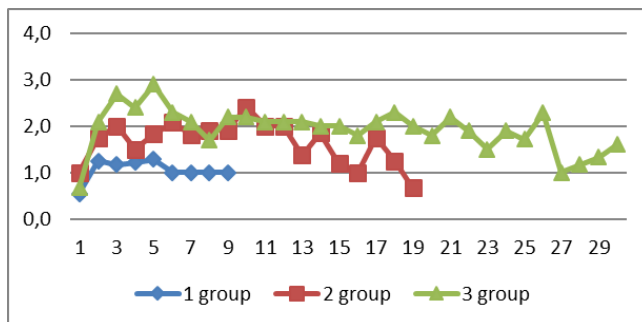


Figure 9. Vasodilators

An almost mandatory component of intensive care was the use of vasodilators, mainly starting from the 2nd day (fig. 9). The most active was the use of vasodilators in children of the 3rd group, somewhat less in the 2nd group, quite limited in the 1st group. That is, the activity of vasodilator therapy corresponded to the severity of SCTBI.

Conclusion. The need to prolong mechanical respiratory support due to the severity of the injury explains the large frequency of sedative administration for 17 days in group 2. In group 3, the most extensive sedative therapy lasted more than 30 days. Drug therapy was primarily of a stress-protective nature, restoring the physiological level of hemodynamic parameters, the respiratory system, kidney function, and the digestive system. The most active was the use of vasodilators in children of the 3rd group, somewhat less in the 2nd group, quite limited in the 1st group. Anti-inflammatory therapy with the introduction of non-steroidal anti-inflammatory drugs, limited administration of steroid hormones, antihistamines was the most active in children of the 3rd group.

References

1. https://studbooks.net/2470966/meditsina/intensivnaya_terapiya_sochetannoy_cherepno_mozgovoy_travmy
2. <https://studopedia.org/9-106966.html>
3. <https://infovet.ru/lib/travmaticheskie-povrezhdeniya-nervnoy-sistemy/intensivnaya-terapiya-tyazhelyoy-cherepno-mozgovoy-travmy-tchmt/>
4. https://vuzlit.com/849222/tyazhelaya_cherepno_mozgovaya_travma

DOI 10.34660/INF.2022.22.67.246

在特异性皮炎患者中激活具有 IgG 类弹性蛋白自身抗体的供体淋巴细胞亚群
**ACTIVATION OF DONOR LYMPHOCYTE SUBPOPULATIONS
WITH IGG-CLASS AUTOANTIBODIES TO ELASTIN IN PATIENTS
WITH ATOPIC DERMATITIS**

Kibalina Irina Vladimirovna

*Candidate of Medical Sciences, Associate Professor
Chita State Academy of Medicine*

Fefelova Elena Victorovna

*Doctor of Medical Sciences, Full Professor
Chita State Academy of Medicine*

Thybirov Namjil Nanzatovich

*Doctor of Medical Sciences, Head of Department
Chita State Academy of Medicine*

Chikicheva Margarita Andreevna

*Dermatologist
Krai Dermatovenerologic Dispensary*

Relevance. Atopic dermatitis is an allergic disease with characteristic clinical manifestations according to the age of the patient [1]. However, at the present stage of development of the dermatological service, the main diagnostic criterion for the disease has not been defined, and the diagnosis of the pathological process is based on the data of the anamnesis and examination of the patient [2]. In the pathogenesis of the disease, an imbalance between T-helper types 1 and 2, IgE synthesis was identified. However, in the studies of Kibalina I.V. and co-authors found that collagen and elastin fibers are damaged in atopic dermatitis and the synthesis of the corresponding IgG class autoantibodies is triggered [3, 4, 5].

Purpose of the study. To study the process of activation of subpopulations of lymphocytes in healthy volunteers by autoantibodies of the IgG class to elastin isolated from immune complexes in the blood serum of patients with atopic dermatitis.

Material and research methods. For the experimental part of the study, blood was taken from 14 individuals in the control group and 14 patients in remission of atopic dermatitis in the complete absence of clinical manifestations of the disease.

To the obtained blood serum of patients with atopic dermatitis in the amount of 50 μ l was added 50 μ l of 10% polyethylene glycol-6000, followed by incubation for 10 minutes at a temperature of 23°C. The formed immune complexes were precipitated by centrifugation at 3100 g for 10 minutes, and then dissolved in 0.01 M Tris-HCl buffer with a volume of 50 μ l at pH 7.4, containing 0.15 M NaCl and 0.02% NaN₃, and the level of autoantibodies of the class IgG to elastin.

Mononuclear leukocytes from volunteers of the healthy group were isolated on a Ficoll density gradient of 1.077 (Histopaque®-1077, Sigma, USA), in a ratio of 1 ml: 1 ml by layering followed by centrifugation (30 minutes, 400g) in a horizontal rotor. From the formed interphase ring, mononuclear leukocytes were collected for triple washing in a culture medium, followed by counting the total number of cells and subpopulations of lymphocytes (CD3+CD16+CD56+; CD3+CD8+) bearing CD 137 on their surface using the Cytomics FC-500 flow cytometry method (Beckman Coulter, USA), using monoclonal antibodies to which 7-aminoactinomycin-D dye was added to determine viable cells. The purity of leukocyte mononuclear cells was 98%. Cells were cultured in 5% CO₂ at 37°C in low adhesion six-well plates (Costar 3471; Corning Glass, Corning, NY) at 1×10⁶/ml in 1 ml volume of medium supplemented with 10% FCS, 2 mM L-alanyl -L-glutamine, gentamicin 50 μ g/ml (Sigma-Aldrich, St. Louis, MO, USA) for 24 hours. Mononuclear activators were: Invitrogen Dynabeads Human T-Activator CD3/CD28, which mimics dendritic cells by inducing CD3/CD28-mediated activation of T-cells in vitro and dissolved immune complexes with a maximum content of IgG autoantibodies to elastin, obtained from the blood of patients with atopic dermatitis. Samples of a short-term culture of mononuclear cells with saline added to them served as control. After 24 hours, the above indicators were determined. Statistical processing of the obtained laboratory data was carried out using statistical analysis packages of Microsoft Excel, IBM SPSS Statistics Version 25.0 application programs.

Results. For the experimental study, two clinical groups of 14 people were formed. The first group consisted of healthy volunteers, the second - patients with atopic dermatitis in remission in the complete absence of clinical manifestations of the disease. In the blood serum of donors and patients, the content of IgG autoantibodies to elastin in immune complexes was determined (Table 1).

Table 1

The level of IgG class autoantibodies to elastin in immune complexes in blood serum in patients with atopic dermatitis

| Control group | Autoantibodies to elastin IgG class, mg/ml | Patients with atopic dermatitis | Autoantibodies to elastin IgG class, mg/ml |
|----------------------|---|--|---|
| 1 | 0,2 | 1 | 19,2 |
| 2 | 0,6 | 2 | 26,1 |
| 3 | 0,4 | 3 | 22,4 |
| 4 | 0,3 | 4 | 17,9 |
| 5 | 0,4 | 5 | 24,3 |
| 6 | 0,2 | 6 | 20,8 |
| 7 | 0,1 | 7 | 19,6 |
| 8 | 0,1 | 8 | 22,3 |
| 9 | 0,1 | 9 | 20,9 |
| 10 | 0,5 | 10 | 25,1 |
| 11 | 0,4 | 11 | 22,6 |
| 12 | 0,7 | 12 | 19,8 |
| 13 | 0,1 | 13 | 20,1 |
| 14 | 0,2 | 14 | 22,7 |
| M±m | 0,31±0,2 | M±m | 21,7±2,37 |

It was revealed that the concentration of autoantibodies of the IgG class to elastin in donors is 0.31 ± 0.2 mg/ml, in patients with atopic dermatitis it is 70 times higher - 21.7 ± 2.37 mg/ml, which indicates a permanent synthesis of autoantibodies and their high concentration even in the absence of clinical manifestations of the disease. In donors, the total number of lymphocytes and the percentage of dead cells did not have significant differences compared to those before incubation, while the activation marker CD137 was not identified on lymphocytes before incubation, which indicates the absence of their activation in healthy volunteers. The introduction of immune complexes containing autoantibodies of the IgG class to elastin into the cell culture caused an increase in the number of activated T-lymphocytes, even more pronounced than after the introduction of the Invitrogen Dynabeads Human T-Activator CD3/CD28 activator, which mimics dendritic cells in accordance with figure 1.

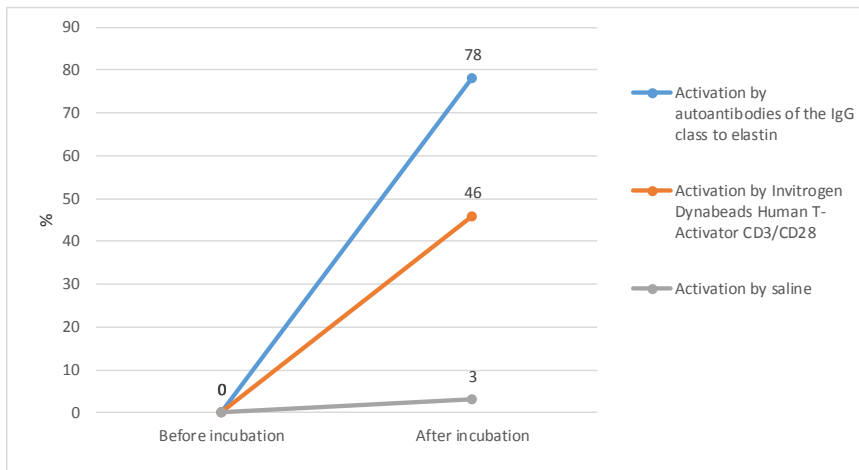


Figure 1. The level of activation of donor lymphocytes (CD3+CD16+CD56+, CD3+CD8+) by IgG autoantibodies to elastin (%)

Conclusions. In the experimental part of the study, it was shown that immune complexes formed during atopic dermatitis, the content of IgG autoantibodies to elastin, are able to activate subpopulations of donor lymphocytes, which confirms the assumption about the mechanism of activation of lymphocyte phenotypes in patients with exacerbation of atopic dermatitis.

References

1. *Atopic dermatitis and disease severity are the main risk factors for food sensitization in exclusively breastfed infants* / C. Flohr, M. Perkin, K. Logan [et al.] // *Journal of Investigative Dermatology*. – 2014. – Vol. 134, № 2. – P. 345–350.
2. *Atopic dermatitis and the atopic march revisited* / S.C. Dharmage, A.J. Lowe, M.C. Matheson [et al.]. – DOI 10.1111/all.12268 // *Allergy*. – 2014. – Vol. 69. – P. 17–27.
3. *Kibalina I.V. The study of the concentration of autoantibodies to elastin in the blood serum of patients with atopic dermatitis* / I.V. Kibalina, E.V. Fefelova, N.N. Tsybikov // *Modern problems of science and education: electronic scientific edition*. – 2021. – № 5. – URL: <https://science-education.ru/article/view?id=31116> (appeal date: 06.10.2021).

4. *Dynamics of the level of autoantibodies to collagen types I and III in blood serum and skin exudate in atopic dermatitis / I.V. Kibalina, E.V. Fefelova, N.N. Tsybikov, A.S. Kotenko – DOI 10.15789/1563-0625-TCO-2471 // Medical immunology. – 2022. – № 3 (24). – P. 597–604*

5. *Kibalina I.V. Phenotypes of lymphocytes in exudate in atopic dermatitis / Kibalina I.V., Tsybikov N.N., Fefelova E.V. – DOI 10.17816/KMJ2022-357 // Kazan Medical Journal. – 2022. – №3(103). – P. 357-363.*

在 COVID-19 大流行之后,患有冠心病的西伯利亚南部第二个成年女性的饮水百分比

THE PERCENTAGE OF WATER IN WOMEN OF THE SECOND ADULTHOOD OF THE SOUTH OF SIBERIA, SUFFERING FROM CORONARY HEART DISEASE, AFTER THE COVID-19 PANDEMIC DURING REHABILITATION TREATMENT

Boyarskaya Larisa Aleksandrovna

*Candidate of Medical Sciences, Associate Professor
Tyumen State Medical University, Tyumen*

Prokopyev Nikolay Yakovlevich

*Doctor of Medical Sciences, Full Professor
University of Tyumen, Tyumen*

Augusta Elena Nikolaevna

*Candidate of Medical Sciences, Associate Professor
Tyumen State Medical University, Tyumen*

抽象的。在本文中,首先,基于身体成分分析仪 Tanita BC - 545N 的读数,其次,基于根据 P.E. 的简单人体测量学测量的形态学数据的计算。Watson 提供了生活在西西伯利亚南部的 Covid-19 大流行后接受缺血性心脏病 (IHD) 康复治疗第二个成年女性体内总含水量的数据。为了客观评估个体发育第 9 期女性体内水分的百分比,我们有条件地将其分为相等的 5 年期: 36 至 40 岁、41 至 45 岁、46 至 50 岁和从 51 岁到 55 岁。已经确定,通过指定方法研究的女性中的水分百分比与她们的年龄没有太大关系,护照年龄越大,水分百分比越高。

关键词: 第二个成年女性、冠心病、水、Covid-19 大流行的后果。

Abstract. *In the article, based, firstly, on the readings of the body composition analyzer Tanita BC - 545N and, secondly, on the basis of a calculation based on morphological data of simple anthropometric measurements according to P.E. Watson provides data on the total water content in the body of women of the second adulthood receiving rehabilitation treatment for ischemic heart disease (IHD) after the Covid-19 pandemic, living in the south of Western Siberia. For an objective assessment of the percentage of water in the body in women of the 9th period of ontogenesis, we conditionally divided it into equal 5-year periods: from 36 to 40 years, from 41 to 45 years, from 46 to 50 years and from 51 years to 55 years. It has been established that the percentage of water studied by the indicated methods in women does not depend much on their age, and the greater the passport age, the higher the percentage of water.*

Keywords: *women of the second adulthood, coronary heart disease, water, consequences of the Covid-19 pandemic.*

Relevance. The Covid-19 pandemic has brought significant and so far not fully understood changes in the state of human health, especially women of the period of the second adulthood [2, 5, 8].

In modern cardiology, especially in the post-COVID period, it is important to carry out competent medical control of the functional state of the body of a sick person at various stages of treatment [3, 6, 7, 11, 12], which will significantly reduce mortality [4, 6, 10, 14].

It can be assumed that the duration and severity of the clinical manifestations of IHD in a specific way affects not only the functional state of the human body, but also its morphological state, including the component composition of the body, in particular the water content. We should note that for many years the study of the composition of the human body has been given great and worthy attention of domestic researchers [1, 9]. At the same time, in the available medical and pedagogical literature, we have not found scientific and practical studies that shed light on the percentage of water in women of the second adulthood living in the south of Western Siberia and suffering from IHD, especially after the Covid-19 pandemic.

Purpose of the study: based on the indicators of the body composition analyzer Tanita BC - 545N and on morphological data, to calculate the water content in the body of women of the second adulthood with IHD after covid-19.

Material and methods. The survey was conducted in 49 women of the second adulthood (47.4±1.7 years) undergoing inpatient treatment at the FSBHCI WSMC FMBA of Russia in Tyumen for chronic IHD without signs of heart failure, who had Covid-19. From the anamnesis it was established that all women permanently reside in the south of Western Siberia.

Given that the duration of the period of the second mature age of women is from 36 to 55 years, i.e. is 20 years, we consider it not entirely correct to judge the water content of a woman, for example, 36 years, and compare it with a woman of age, for example, 54 years old. In this regard, we conditionally divided the period of the second mature age into intervals of 5 years: from 36 to 40 years (n = 11), from 41 to 45 years (n = 13), from 46 to 50 years (n = 12) and from 51 to 55 years (n = 13).

The total volume of water was studied, firstly, by using the body composition analyzer Tanita BC – 545N, and secondly, anthropometric measurements, based on our large-scale study, according to the formula [15]: $WV = 2,447 - 0,09156 \times A + 0,1074 \times BL + 0,3362 \times BL$, where: WV – water volume; A – age (years); BL – body length (cm); BL – body weight (kg).

The length of the body is determined by our proposed stadiometer (RF Patent for utility model № 153076) with an accuracy of 0.5 cm. Body weight was measured on a balance scale with an accuracy of 50 g.

During the study, we asked women to sleep 8-9 hours a night; try to be in the ward or rooms of the clinic department at an air temperature in the range of 18-220 Celsius; try to maintain the usual level of physical activity; do not use medicines without a doctor's prescription; eat at least 4 times a day and drink at least two liters of drinking water; limit the use of salt in food.

The results of the study were processed on a personal computer using modern electronic programs (STATISTIKA) [Glantz]. The assessment of the significance of differences was carried out using Student's t-test, while the differences were considered significant at $p < 0.05$. The principles of voluntariness, the rights and freedoms of the individual, guaranteed by Articles 21 and 22 of the Constitution of the Russian Federation, as well as the Order of the Ministry of Health and Social Development of Russia №774n dated August 31, 2010 "On the Ethics Council" were observed. The study was conducted in compliance with the ethical standards set forth in the Declaration of Helsinki and the Directives of the European Community (8/609EC) and the informed oral consent of women.

Results and discussion. In the study, we proceeded from the fact that the percentage of water in the female body is its amount from the total body weight. We believe that maintaining an optimal level of water content in the body contributes to the most efficient functioning of functional systems.

Studies have shown (tab. 1) that the body length of women in the period of the second mature age from 36 to 55 years has changed slightly and only in the direction of its decrease - in absolute values by 1.3 cm, which is not statistically significant ($p > 0.05$).

Table 1
Body length and weight in women of the second adulthood living in the south of Western Siberia suffering from IHD (M±m)

| Indicator | Age, years | | | | Averages |
|-------------|-------------|------------|------------|--------------|----------|
| | 36-40 | 41-45 | 46-50 | 51-55 | |
| Body length | 168,8±2,4 | 168,3±2,4 | 168,1±2,3 | 167,5±2,3 | 168,17 |
| Age change | - | 0,5 | 0,2 | 0,6 | - |
| Body mass | 64,26±2,30* | 66,83±2,39 | 67,74±2,33 | 69,31±2,26** | 67,03 |
| Age change | - | 2,57 | 0,91 | 1.57 | - |

Note: * and ** – the difference is significant ($p < 0,05$)

It can be noted that such an important indicator of physical development as body length in women living in the south of Western Siberia differs somewhat

from the average height of women in various countries of the world (fig. 1). At the same time, the most important research factor should be taken into account, which is that in women living in various countries of the world, the age period of ontogeny was not taken into account, while we studied only the period of the second mature age.

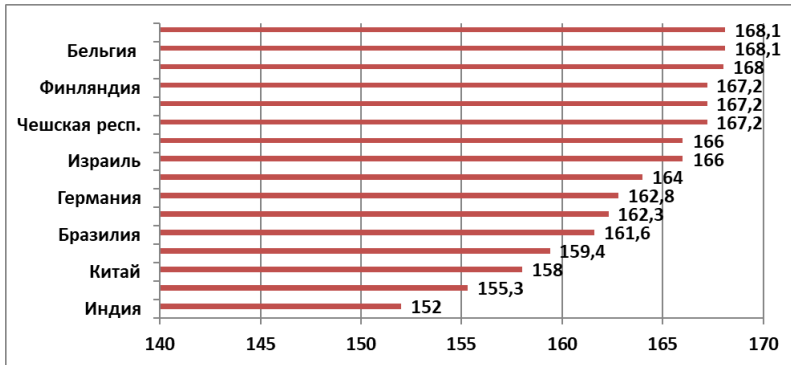


Figure 1. Average height (body length) of women from different countries of the world.

As for body weight, due to the increase in passport age, it increased by 5.5 cm in absolute values for the period from 36 to 55 years. Body mass (weight) in women of the age we studied (fig. 2) in absolute values was 67.03 kg, which is lower than women in the United States, Canada, Germany, Great Britain, Chile, Australia, Kuwait, but more than women in Vietnam, Japan, Brazil, Ethiopia, Croatia and South Korea.

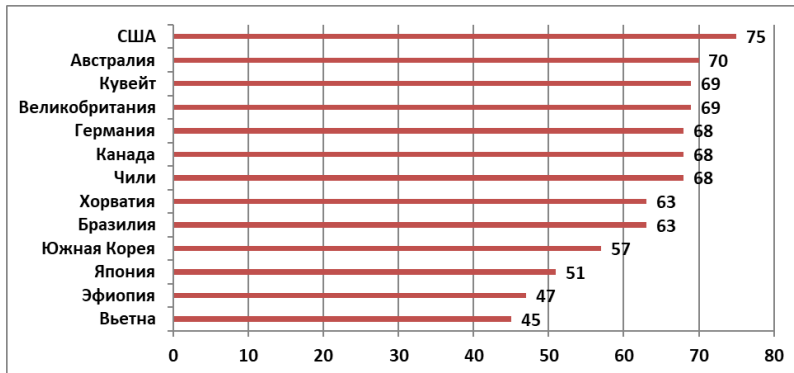


Figure 2. Body weight of women from different countries of the world.

Based on the study, we can conclude that the calculated values of the percentage of water in the body of women with IHD examined by us were (row 1, fig. 3): at the age of 36-40 years old - 40.58, 41-45 years old - 41.85, 46-50 years old - 42.52, 51-55 years old - 43.51.

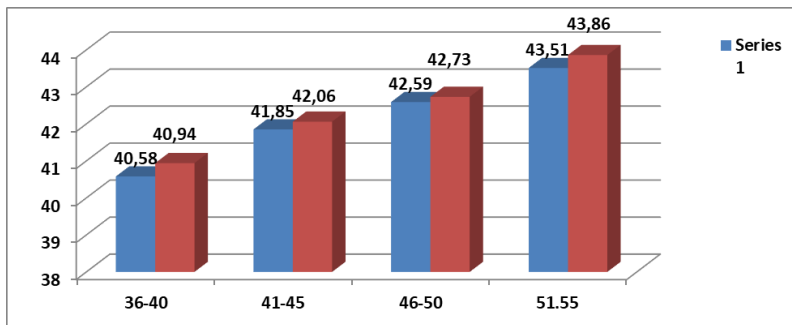


Figure 3. The percentage of water in the body of women of the period of the second mature age, suffering from coronary heart disease, after suffering COVID-19.

It should be noted that the indicators of the percentage composition of water obtained by the body composition analyzer Tanita BC - 545N (row 2, fig. 3) were practically equal to the calculated values, which we regard as a good indicator, allowing us to consider the calculation method for determining water in the body, firstly, simple and very acceptable in a therapeutic clinic in cases of emergency and, secondly, not requiring material costs.

Thus, the percentage of water in the body of women in the 9th period of human ontogenesis somewhat increases due to the increase in passport age. Over the period from 36 to 55 years, the water content in women of the second mature age, suffering from IHD, increased by 2.93%.

Based on the research carried out, the following can be **concluded**:

1. In conditions when it is impossible to determine the water content in the body using equipment, it is possible and necessary to apply a calculation method that allows you to reliably control the water content at the time of the examination.

2. In clinical therapeutic practice, the 9th age period of human ontogenesis should be considered not as a single one (36-55 years), and it should be conditionally divided into equal time intervals, which will allow not only to individualize the process of examination and treatment, but also to carry them out taking into account the individual passport age. The percentage of water in women of the period of the second mature age, suffering from IHD, after suffering a Covid-19 pandemic, does not significantly depend on their passport age.

Conflict of interests. The authors declare no conflict of interest.

Research transparency. The study was not sponsored. The authors are solely responsible for providing the final version of the manuscript for publication.

Declaration of financial and other relationships. All authors were involved in topic development, study design, and manuscript writing. The final version of the manuscript was agreed and approved by all authors. The authors did not receive a fee for the study.

References

1. *Bioimpedance study of the body composition of the population of Russia* /S.G. Rudnev, N.P. Soboleva, S.A. Sterlikov and others. – M.: RIO TsNIIOIZ, 2014. – 493 P.
2. Goroshko N.V. *Healthy life expectancy in an aging population: global trends in the era of covid-19* / N.V. Goroshko, E.K. Emelyanova, S.V. Patsala // *Social aspects of public health*. 2021. V. 67. № 2. P. 9.
3. Dubovik A.V. *Influence of some factors on the effectiveness of the treatment of coronary heart disease* / A.V. Dubovik, Yu.O. Bryzhataya, E.A. Kontovsky // *Bulletin of emergency and reconstructive surgery*. 2019. V. 4. № 4. P. 99-107.
4. Kanorsky S.G. *Ischemic heart disease with a high risk of complications: how to identify such patients and choose management tactics?* / S.G. Kanorsky // *Rational pharmacotherapy in cardiology*. 2020. V. 16. № 3. P. 465-473.
5. Kondashevskaya M.V. *Therapeutic targets for coagulopathy covid-19* / M.V. Kondashevskaya // *Thrombosis, hemostasis and rheology*. 2021. № 1. P. 12-17.
6. *Treatment of patients with stable manifestations of atherosclerosis: new opportunities (Conclusion of the expert council of November 16, 2018, Rostov-on-Don)*. / S.G. Kanorsky, Yu.A. Vasyuk, R.A. Gridasova, and others // *Cardiology*. 2019;59(9):97-100. EDN: YOCBDQ
7. Likholetova E.A. *Modern methods of treatment of coronary heart disease* / E.A. Likholetova // *Eurasian Union of Scientists*. 2017. № 11-1 (44). P. 32-33.
8. Mikhailov N.G. *On the methodology of studying the state of health during a pandemic* / N.G. Mikhailov, L.B. Zinnatullina // *Bulletin of the MSPU. Series: Natural Sciences*. 2022. № 2 (46). P. 94-100.
9. *Body structure and sports* /P.N. Bashkirov, N.Yu. Lutovinova, M.I. Utkina, V.P. Readers. – M.: MSU publishing house, 1968. – 236 P.
10. *Association of Multiple Enrichment Criteria With Ischemic and Bleeding Risks Among COMPASS-Eligible Patients*. / A. Darmon, E. Sorbets, G. Ducrocq, et al. // *J Am Coll Cardiol*. 2019; 73(25): 3281-3291. DOI: 10.1016/j.jacc.2019.04.046 EDN: AYTNZS

11. *Effect of evidence-based therapy for secondary prevention of cardiovascular disease: Systematic review and meta-analysis.* /Ma T.T., Wong I.C.K., Man K.K.C., et al. // *PLoS One*. 2019; 14(1):e0210988. DOI: 10.1371/journal.pone.0210988

12. *Fox K.A.A. The myth of 'stable' coronary artery disease.* Nat /K.A.A. Fox, M. Metra, J. Morais, D. Atar // *Rev Cardiol*. 2020; 17(1): 9-21. DOI: 10.1038/s41569-019-0233-y EDN: IAEDAO

13. *Kruger P.C. How can the results of the COMPASS trial benefit patients with coronary or peripheral artery disease in Poland?* / P.C. Kruger, T.J. Guzik, J.W. Eikelboom // *Kardiol Pol*. 2019; 77(7-8):661-669. DOI: 10.33963/KP.14855 EDN: RPFABD

14. *Long-term use of ticagrelor in patients with prior myocardial infarction.* / M.P. Bonaca, D.L. Bhatt, M. Cohen, et al. // *N Engl J Med*. 2015; 372(19): 1791-1800. DOI: 10.1056/NEJMoa1500857 EDN: UJVANF

15. *Watson P.E. Total body water volumes for adult males and females estimated from simple anthropometric measurements* / P.E. Watson, I.D. Watson, R.D. Batt // *The American Journal of Clinical Nutrition*. 1980. – Vol. 33. – P. 27-39.

DOI 10.34660/INF.2022.33.10.248

车臣蜜源植物资源及其分析
**RESOURCES OF MELLIFEROUS PLANTS OF CHECHNYA AND
THEIR ANALYSIS**

Abdurzakova Aminat Sultanovna

*Candidate of Biological Sciences, Associate Professor
CSPU*

Israilova Satsita Adnanovna

*Candidate of Biological Sciences, Associate Professor
CSPU*

Khasueva Birlan Alievna

*Candidate of Biological Sciences, Associate Professor
CSPU*

抽象的。这篇文章提供了对车臣共和国蜂蜜植物区系研究的监测，以及蜂蜜植物最重要的特征，它们的开花时间。已经开发了一套方法系统，用于客观评估环境 - 气候、土壤、地形、地理、人为、热原和其他因素对植物的花蜜容量分布和水平的影响。提出了合理使用蜜类植物的建议。在车臣珍贵的蜂蜜植物中，有 13 种是稀有和受保护的。其中，领先的品种有：Amygdalus nana L.、Cerasus avium (L) Moench.、Cerasus incana (Pall.) Spach、Cydonia oblonga Mill.、Malus orientalis Uglitzk.、Padus avium Mill.; Clematis integrifolia L.、Berberis vulgaris L.、Hippophaë rhamnoides L.、Althaea officinalis L.、Acer laetum C.A. Mey., Dracocephalum ruyschiana L.

关键词：植物区系，蜂蜜植物，开花，授粉，车臣。

Abstract. *The article provides monitoring of the study of the honey flora of the Chechen Republic, as well as the most important characteristics of honey plants, their flowering time. A system of methods has been developed for an objective assessment of the influence of environmental - climatic, soil, orographic, geographical, anthropogenic, pyrogenic and other factors on the distribution and level of nectar capacity of plants. Recommendations on rational use of melliferous plants are offered. Among the valuable honey plants of Chechnya, 13 species are rare and protected. Among them, the leading positions are occupied by the following types: Amygdalus nana L., Cerasus avium (L) Moench., Cerasus incana (Pall.) Spach, Cydonia oblonga Mill., Malus orientalis Uglitzk., Padus avium*

Mill.; Clematis integrifolia L., Berberis vulgarisL., Hippophaë rhamnoides L., Althaea officinalis L., Acer laetum C.A. Mey., Dracocephalum ruyshiana L.

Keywords: *Flora, honey plants, flowering, pollination, Chechnya.*

The extremely rich variety of flora in the Chechen Republic is underused. The richest sources of products useful to man, which our Caucasian flora conceals, have not yet been studied far and are extremely little used. Suffice it to say that for only one thousand species of plants, the methods of their use are known, and the number of plants whose beneficial properties have been studied in detail is truly insignificant.

Therefore, one of the most important tasks of botanists and florists of the Chechen Republic continues to be the study of the natural wealth of Chechnya and the adjacent republics of the North Caucasus and the identification of plant resources for their use in the national economy, as well as the development of methods for the integrated use of plant materials in order to increase the profitability of its use [1].

To date, sufficient information has not been accumulated on the total stock of food, medicinal, tannin, ether-bearing, melliferous, pollen-bearing and other plants for various regions of our country.

These problems are especially relevant for the post-war Chechen Republic, where plant resources are a source of raw materials for industry and food products for the population, necessary for agricultural production.

Of particular importance as a branch of agriculture is beekeeping, which is a supplier of valuable food products - honey, pollen, wax, royal jelly, bee venom, and bee pollination can significantly increase the yield of entomophilous agricultural and forest plant species. In general, in the republic, beekeeping produces no more than 25 thousand tons of honey per year, and improving the methods of its management and methods of developing honey resources can triple this figure.

In the flora of the Chechen Republic there are many paramount honey and pollen plants, which are insufficiently studied and not used in full. In particular, in the republics of the North Caucasus, the collection of honey is not high enough, mainly due to the poor knowledge of honey species and the mode of nectar excretion. Meanwhile, the long growing season of flowering of honey and pollen plants is a prerequisite for the successful development of a highly profitable apiary economy here.

When developing the scientific foundations for the use of wild plants in the national economy, it is recommended to pay special attention to the study of sources of plant materials of regional flora and start research in this area with the certification of useful plants [2–4]. In order to most rationally use the plant resources of our republic in the interests of beekeeping, an inventory of honey plants in each

administrative region is necessary [5]. The intensive development of beekeeping in the last decade has set specific tasks for botanists: to make an inventory of honey flora, to establish its nectar productivity and to determine the total honey resources of individual regions.

The same plant species in different altitudinal zones produce nectar in different quantity and quality. In the process of evolution, melliferous species have adapted to certain soil and climatic conditions, and in connection with this, their nectar productivity has become different.

Flora and vegetation cover was formed gradually, and like any science, it has its own problems and tasks, some of which have been successfully resolved, others are waiting for their solution.

An in-depth study of useful plants like honey plants and pollen plants [7,8] has greatly expanded our knowledge of the formation and structure of nectaries, the formation and release of nectar, depending on environmental and other factors. In particular, a theoretically interesting assumption was made about new functions of nectar [7–11].

The study of melliferous plants of the Caucasus is an unopened field of interesting and important work, and there is an urgent need for Caucasian botanists to pay special attention to this area [4]. Honey plants are an integral part of plant resources and are characterized by the ability to produce large amounts of nectar and pollen. First-class honey plants are those species in which nectar is easily available to bees and the flowering time is extended. The reference species in this sense is *Echium vulgare*. Not all plants are of equal importance to beekeeping. The main criterion for efficiency is the amount of nectar or pollen they produce, and the number of specimens per unit area. Knowledge of the species and quantitative composition of melliferous plants makes it possible to determine the honey supply of the area with great accuracy.

The sustainable development of beekeeping in modern conditions is based on the wide use of biological diversity and the ecological potential of plants and their systemic formations - biocenoses. An important role in the implementation of this task is occupied by the study and development of plant resources, which equally applies to the bioresources of the North Caucasus.

Hundreds of valuable species of honey, medicinal, fodder and other plants grow on the territory of the NCFD. Meanwhile, plant resources have not been studied enough, which negatively affects the development of the beekeeping industry and its productivity. The increase in plowing and agricultural development of the territory of the region, the destruction of weeds in the fields and borders leads to a decrease in the area occupied by wild honey plants and an increase in the role of cultivated honey plants. With the wide use of cultivated and wild species of honey plants, it is important to predict their yield, nectar and pollen productivity.

To do this, it is necessary to find out the ecological relationships of plants and the influence of environmental factors on them. This is especially important in those populations where, as a result of selection, part of the adaptive reactions has been lost and is compensated by agrotechnical measures.

Flowering is one of the most important stages in the seasonal development of plants and one of the most dynamic periods in the development of a community [12]. Studying the duration of this stage allows us to estimate the time that the plant spends on the process of generative reproduction. Flowering is a multi-level process; consider the flowering of a single flower, individuals, populations and communities. Taking into account the phenological state of honey plants of the main phytocenoses of the Chechen Republic, the following groups can be distinguished: 1. early spring a) blooming in February and March - *Corylus avellana*, *Scilla sibirica*, *Tussilago farfara*, *Gagea lutea*, *Primula macracalix*, *P. woronowii*, *Taraxacum officinalis*,; b) blooming in April and May - (*Petasites albus*, *Alyssum saxatiie*, *Anemone ranunculoides*, species of the genus *Iris*, *Primula*, *Viola*, *Caltha palustris* *Acer platanoides*, *Acer campestre* *Quercus robur*, *Salix cinerea*, *Vaccinium myrtillus* and etc.

Among the species of spring and early summer melliferous plants blooming from May to June, the most valuable are: *Spiraea crenata*, *S. hypericifolia*, *Paliurus spina-christi*, *Padus avium*, *Cerasus incana*, *Cerasus avium*, *Dictamnus caucasicus*, *Elaeagnus caspica*, *Lamium album*, *Lamium purpureum*, *Ligustrum vulgare*, *Morus alba*, *Morus nigra*, *Malus*, *Tilia*, *Cydonia* and etc.

The largest number of species is represented by a group of summer honey plants blooming in June-July. They number 301 species. Among them are the types of genera: *Trifolium*, *Limonium*, *Lythrum*, *Leontodon*, *Lathyrus*, *Malva*, *Mentha*, *Melilotus*, *Onobrychis*, *Rosa*, *Crataegus*, and etc.

Among the types of late summer honey plants that bloom from July, the most common honey plants are: *Cirsium arachnoideum*, *Cirsium arvense*, *Cirsium canum*, *Cirsium ciliatum*, *Cirsium elodes*, *Cirsium incanum*, *Cirsium vulgare*, *Centaurea cyanus*, *Centaurea depressa*, *Centaurea ruthenica*, *Taraxacum mucronatum*, *Taraxacum officinale*, *Taraxacum prilipkoi*, *Taraxacum serotinum*, *Thymus daghestanicus*, *Thymus marschallianus*, *Vicia angustifolia*, *Vicia cracca*, *Vicia grandiflora*, *Vicia hybrida*, *Vicia pannonica*, *Vicia sativa*, *Vicia sepium*, *Vicia tenuifolia* and etc.

The classification of all melliferous plants according to the timing of flowering showed that 280 species bloom in May-June; 301 species in June-July; 437 species in June-September. Honey plants of the main ten families of linden, legume, pink, labial, Compositae, buckwheat, etc. have the same flowering periods [13], the rest belong to plants with extended flowering periods.

The timing and duration of flowering of honey plants characterizes the volume of honey collection in the spring and summer periods, reflects its peculiarity. To do this, you should know the sequence and duration of flowering of melliferous species, as wild – (*Cerasus avium*, *Malus domestica*, *Prunus divaricata*, *Tilia caucasica*, *T. cordata*, *Symphytum asperum*, species of the genus *Rosa*, *Acer* etc.), and cultivated – (*Cucurbita pepo*, *Citrullus vulgaris*, *Cucumis melo*, *Zea majus*, *Nicotiana tabacum* and etc.).

On different altitudinal zones and on different slopes there may be fluctuations in the timing of flowering of the same plants. If the duration of flowering of the main honey plants in the city of Grozny and its environs lasts an average of 8-10 days, then in the area of the village of Shatoy - 16 days, and in the semi-desert regions of the republic - 5-8 days. So, *Prunus divaricata*, in the floodplain forests of the Terek River, blooms on average 5-8 days, in the black mountains - more than 2 weeks, in the territory of Grozny up to 10 days [2,3,5,6].

According to Pelmenev, [8] the timing of flowering of melliferous plants is directly dependent on meteorological conditions and deviates from the average date in one direction or another. According to phenological data, it has been established that the decisive factor for the initial moment of flowering is the sum of positive temperatures accumulating over the period from the beginning of vegetation to the beginning of flowering of each particular plant species [9, 10].

The sums of effective temperatures are calculated from the beginning of the growing season. In the course of accumulation of amounts, it is possible to carry out short-term forecasting of the beginning and end of flowering. In forest plantations, where the warming up of air and soil in spring is slower, the flowering of trees and shrubs is delayed. The relief affects the timing of flowering plants [11]. The slopes of the southern exposures receive more heat than the northern ones, and flowering begins earlier there, and later on the northern ones compared to the flat terrain [12].

The onset of flowering in herbaceous cultivated honey plants depends on the timing of their sowing, the number of sunny days per year, fertilizer application, etc. But the difference in flowering time between wild plants can be large: for example, *Taraxacum officinale* in the republic it begins to bloom on average on March 3, in mountainous areas - around April 1; *Corylus avellana* L. in the Parabochsky reserve of the Shelkovsky region, it blooms in early February, while in the Venedo region at the end of February; the beginning of flowering of *Sorbus aucuparia* L. for the CR, on average, occurs on May 15-20, and in the Sharoi region - on May 14.

In the normal course of spring, the intervals between the flowering of various plants remain constant each year. But with the onset of earlier or late spring, the timing of flowering differs from the average long-term data. For example, the

flowering of *Tussilago farfara* L. in the Vvedensky district of the Chechen Republic in 2008 was observed in early February, because the spring of this year was characterized by earlier weather in terms of temperature, mostly with intermittent rains. The beginning of flowering of *Tussilago farfara* L. in the spring of 2015 was noted in the last decade of January, since April 2015 was characterized by warm weather, the average daily air temperature was -8-10°C, the maximum air temperature on the warmest day increased to 22°C.

In order to improve the food base of beekeeping and ensure continuous honey collection during the season, in addition to the flowering of wild honey species, it is important to know the timing and duration of flowering of cultivated honey plants. Among the most valuable melliferous field crops, the following types can be distinguished: *Citrullus vulgaris*, *Fagopyrum sagitatum*, *Cucumis melo*, *Coriandrum sativum*, *Zea majus*, *Helianthus annuus*, *Barbarea vulgaris*, *Nicotiana tabacum*, *Cucurbita pepo* and etc.

From the analysis of all that has been said, it can be seen that the main wild and cultivated melliferous plants in the conditions of the CR bloom constantly, from April to September. The flowering of cultivated honey plants, with the right selection of crops, follows without interruption, making together a flower conveyor, which makes it possible to create a continuous honey flow from June to September.

Forest flora of honey plants and their flowering. The growing season of an adult plant is traditionally divided into five major seasonal phases or phenophases: vegetation, budding, flowering, fruiting and dying off. Two cycles should be distinguished: the phases of development of vegetative organs and the phases of development of generative organs [13].

To solve practical issues, and in particular the issue of extending the time of honey collection by creating a flower-nectar conveyor, it is necessary to know not only the duration of the interphase periods of cultivated and wild plants, but also to have information about the duration of flowering and the dates of the onset of the flowering phases of the main honey plants.

In this regard, in our research, we tried to analyze the most typical and widespread honey-bearing wild and agricultural plants of the CR in terms of the timing and duration of their flowering. We traced the dates of the onset of the flowering phase, the duration of flowering and the order of flowering of species in honey and pollen plants in the following phytocenoses of the republic: forest, steppe, meadow and agrophytocenosis.

From the literature data, it is known that the outstanding honey plants of the flora, giving from 500 to 1000 kg of honey per hectare of pure thickets, include: *Melilotus albus* – 550 kg, *Urtica urens* – 540 kg, *Lamium album* - 540 kg, *Salvia verticillata* - 700 kg, *Chamerion angustifolium* up to 500 kg, and in especially

favorable years up to 1000 kg, *Echium vulgare* up to 1000 kg, *Tilia cordata*, *T. begoniifolia* up to 1000 kg, *Leonurus quinquelobatus* – 400 kg, etc. [14].

Good honey plants producing 150-200-500 kg of honey per hectare include *Onobrychis cyri* up to 200 kg, *Melilotus officinalis* – 200 kg *Alhagi pseudalhagi* up to 400kg, *Berberis iberica*, *B. vulgaris* up to 500 kg, *Cichorium intybus* up to 500 kg, etc. Depending on the saturation with outstanding or good honey plants, the economic value of the land is also determined.

It should be noted early spring honey plants, which give bees nectar and pollen of *Tussilago farfara*, *Cornus mas*, etc. The following species are also widespread honey plants: *Ranunculus repens*, *R. sceleratus*, *Adonis aestivalis*, *Papaver rhoeas*, *Hypecoum pendulum*, *Quercus pubescens*, *Q. robur*, *Hypericum perforatum*, *Primula macrocalyx*, *Anagallis arvensis*, *Viola odorata*, *V. arvensis*, *Tamarix* (2 species), *Salix* (8 species), *Populus tremula*, *Capparis herbaceae*, *Capsela bursa-pastoris*, *Sisymbrium officinale*, *Barbarea* (2 species), *Berteroa incana*, *Bunias orientalis*, *Hesperis matronalis*, *Helianthemum* (4 species), *Malva* (3 species), *Lavatera thuringiaca*, *Alcea rugosa*, *Althaea officinalis*, *Hibiscus trionum*, *Pyrus caucasicus*, *Malus orientalis*, *Sorbus caucasica*, *Crataegus* (4 species), *Rubus caesius*, *Fragaria vesca*, *Potentilla reptans*, *Filipendula* (2 species), *Rosa* (11 species), *Padus avium*, *Lythrum* (2 species), *Epilobium hirsutum*, *Medicago caerulea*, *Trifolium pratense*, *T. medium*, *T. repens*, *T. hybridum*, *Lotus* (3 species), *Galega orientalis*, *Acer* (3 species), *Dictamnus caucasicus*, *Polygala* (4 species), *Paliurus spina-christi*, *Rhamnus cathartica*, *Hippophae rhamnoides*, *Elaeagnus* (2 species), *Astrantia maxima*, *Chaerophyllum bulbosum*, *Ch. aureum*, *Anthriscus sylvestris*, *Falcaria vulgaris*, *Carum carve*, *Pimpinella aromatica*, *P. saxifraga*, *Daucus carota*, *Sambucus nigra*, *S. ebulus*, *Viburnum opulus*, *Linnaea borealis*, *Lonicera* (5 species), *Dipsacus laciniatus*, *D. strigosus*, *Cephalaria gigantea*, *Verbascum thapsus*, *Linaria vulgaris*, *Scrophularia* (3 species), *Melampyrum arvense*, *Verbena officinalis*, *Ajuga reptans*, *A. orientalis*, *Teucrium polium*, *T. chamaedrys*, *Marrubium vulgare*, *M. leonuroides*, *M. catariifolium*, *Sideritis nuda*, *S. cataria*, *Glechoma hederacea*, *Prunella vulgaris*, *Stachys* (6 species), *Satureja* (2 species), *Thymus* (4 species), *Mentha* (3 species), *Onopordum acanthium*, *Taraxacum* (5 species).

A huge mass of plants of meadows, forests, weedy places and other lands belong to mediocre or secondary honey plants. However, their wide distribution significantly increases the value and honey potential of the lands where they grow.

As a result of studies of honey resources of the Chechen Republic, it was found that honey plants belong to 31 families, 89 genera and 209 species [15].

The most numerous families are: Asteraceae - 41 species, which is 19.6% of the total number of species of honey plants, Pink - 37 species, which is 17.7%, Legumes - 29 species, which is 13.8%, Lamiaceae - 27 species (12.9%), Willow

- 8 species (3.35%), Villiaceae - 6 species (2.9%), Borage, Maple, Malvaceae - 5 species each (2.4%). Other families are represented by 1-4 species, which is 0.48%, 0.96%, 1.43%, 1.9%, respectively.

Families containing honey plants are distributed according to the number of species in the following (descending) order:

Asteraceae (41) → *Rosaceae* (37) → *Fabaceae* (29) → *Lamiaceae* (27) → *Salicaceae* (8) → *Dipsacaceae* (6) → *Boraginaceae*, *Aceraceae*, *Malvaceae* (5) → *Caprifoliaceae*, *Polygonaceae*, *Limoniaceae*, *Asclepiadaceae* (4) → *Rhamnaceae*, *Tiliaceae*, *Elaeagnaceae* (3) → *Lythraceae*, *Brassicaceae*, *Cistaceae*, *Ranunculaceae*, *Scrophulariaceae* (2) → *Berberidaceae*, → *Colchicaceae*, → *Betulaceae*, → *Caryophyllaceae*, → *Capparaceae*, → *Onagraceae*, → *Oleaceae*, → *Euphorbiaceae*, → *Rutaceae* (1).

Among the studied 224 species of honey plants, 13 species from 7 families are listed in the Red Book of the Chechen Republic. These are such as: *Rosaceae* – *Amygdalus nana* L., *Cerasus avium* (L) Moench., *Cerasus incana* (Pall.) Spach, *Cydonia oblonga* Mill., *Malus orientalis* Uglitzk., *Padus avium* Mill.; *Ranunculaceae* Juss. – *Clematis integrifolia* L.; *Berberidaceae* – *Berberis vulgaris* L.; *Elaeagnaceae* Juss. – *Hippophay rhamnoides* L.; *Malvaceae* Juss. – *Althaea officinalis* L.; *Aceraceae* – *Acer laetum* C.A. Mey.; *Lamiaceae* Lindl. – *Dracocephalum ruyschiana* L.

Conclusions:

1. Flora of melliferous plants of the Chechen Republic is represented by 31 families, 89 genera and 224 species.

Among them: *Asteraceae* - 41 species, *Rosaceae* - 37 species, *Fabaceae* - 29 species, *Lamiaceae* - 27 species, *Salicaceae* - 8 species, *Dipsacaceae* - 6 species, *Boraginaceae*, *Aceraceae*, *Malvaceae* - 5 species each. Other families are represented by 1-4 species.

2. According to life forms, the melliferous flora of the Chechen Republic is distributed: trees - 35 species, shrubs and semi-shrubs - 36 species, annual, biennial and perennial herbs - 138 species.

3. Among the valuable melliferous rare and protected plants of the Chechen Republic, 13 species are rare and protected. Among them, the leading place is occupied by the following families: *Rosaceae* - 6 species: *Amygdalus nana* L., *Cerasus avium*(L) Moench., *Cerasus incana* (Pall.) Spach, *Cydonia oblonga* Mill., *Malus orientalis* Uglitzk., *Padus avium* Mill.; *Ranunculaceae* Juss. – 1 specie: *Clematis integrifolia* L., *Berberidaceae* – 1: *Berberis vulgaris*L., *Elaeagnaceae* Juss. – 1: *Hippophaë rhamnoides* L., *Malvaceae* Juss. – 1: *Althaea officinalis* L., *Aceraceae* – 1: *Acer laetum* C.A. Mey., *Lamiaceae* Lindl. – 1: *Dracocephalum ruyschiana* L.

4. The main wild and cultivated honey plants bloom from April to September.

With the right selection of crops, their flowering can continue without interruption, making together a flower conveyor, which makes it possible to create a continuous honey flow from June to September.

5. Depending on the weather and climatic conditions, the timing of flowering of cultivated honey plants in different years, as a rule, does not coincide. However, the intervals between the flowering of individual honey plants and the rhythm of their flowering remain constant.

References

1. Taysumov M.A., Umarov M.U., Astamirova M.A.-M., Abumuslimov A.A. *History of the study of the vegetation cover of the Chechen Republic (late XIX – early XXI centuries)* // *History of Science and Technology* № 7 Moscow, 2012. – P. 18-29
2. Taysumov M.A., *Floristic and faunal resources of the Chechen Republic* // *Bulletin of the AS of the CR, Issue 1.(18) 2013. P. 44-55.*
3. Galushko A.I. *Vegetation cover of Checheno-Ingushetia. - Grozny: Chechen-Ingush book publishing house, 1975. -117 P.*
4. Grossgeim A.A. *Flora of the Caucasus. - 2nd rev. and add. edition V.5. - M.-L.: Publishing House of the AS of the USSR, 1952. - 456 P.*
5. Taysumov M.A., Umarov M.U., Gadaeva T.Z., Khalidova H.L., Omarkhadzhieva F.S. *Economically useful plants of the flora of Grozny and its environs, their state and prospects for use in the national economy* // *Actual problems of biology and ecology / Mater. All-Russ. Sci.-pract. Conf. Grozny, 2014.–P. 76-84.*
6. Taysumov M.A., Umarov M.U. *Some wild economically useful plants of the CR, promising for phytorecultivation* // *Materials of Internat. conf. In memory of E.S. Sinskoy Genetic resources of cultivated plants* // *Problems of evolution and taxonomy of cultivated plants* // (December 9-11, 2009) St. Petersburg, 2009. P.384-393.
7. Kartashova N.I. *Linden nectar in the conditions of Tomsk: Bul. / N.I. Kartashov Siberian Botanical garden.-Tomsk: Ed. Tomsk Un-ty, 1965.*
8. Pelmenev V.K. *Honey plants / V.K. Pelmenev. M.: Rosselkhozizdat. – 1985. – 144 P.*
9. Glukhov M.M. *Honey plants* // *M.M. Glukhov M.: Selkhozgiz.- 1955. – 512 P.*
10. Glukhov M.M. *The most important honey plants and methods of their cultivation. 7th ed., rev. and add. - M.: Kolos. 1974. – 304 P.*
11. Ponomareva E.G., Deterleeva N.B. *Honey resources and pollination of agricultural plants / E.G. Ponomareva, N.B. Deterleev. – M.: Agropromizdat, 1986. 224 P.*

12. Kulygin A.A. Forecast of flowering honey plants / A.A. Kulygin // *Beekeeping*. - 1992. - №5. - P.16-17.

13. Shults G.E. *Methods of phenological observations in botanical research*. - M.-L.: Science. 1966. - 101 P.

14. Alekseev B.D., Aliev T. Honey plants of the outer mountainous Dagestan on the example of the Sergokalinsky region. J. "Plant Resources". V.3. 1967.

15. Taysumov M.A., Omarkhadzhieva F.S. *Analysis of the flora of the Chechen Republic* // Grozny, 2012. - 320 P.

科学出版物

上合组织国家的科学研究：协同和一体化

国际科学大会的材料

2022 年 9 月 6 日，中国北京

编辑 A. A. Siliverstova

校正 A. I. 尼古拉耶夫

2022 年 9 月 6 日，中国北京

USL。沸点：98.7。 订单253. 流通500份。

在编辑和出版中心印制

无限出版社



