



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

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这些会议文集结合了会议的材料 – 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。

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Foreword

We thank all participants of our conference "Scientific research of the SCO countries: synergy and integration" for the interest shown, for your speeches and reports. Such a wide range of participants, representing all the countries that are members of the Shanghai Cooperation Organization, speaks about the necessity and importance of this event. The reports of the participants cover a wide range of topical scientific problems and our joint interaction will contribute to the further development of both theoretical and applied modern scientific research by scientists from different countries. The result of the conference was the participation of 65 authors from 7 countries (China, Russia, Uzbekistan, Kazakhstan, Azerbaijan, Tajikistan, Kyrgyzstan).

This conference was a result of the serious interest of the world academic community, the state authorities of China and the Chinese Communist Party to preserve and strengthen international cooperation in the field of science. We also thank our Russian partner Infinity Publishing House for assistance in organizing the conference, preparing and publishing the conference proceedings in Chinese Part and English Part.

I hope that the collection of this conference will be useful to a wide range of readers. It will help to consider issues, that would interest the public, under a new point of view. It will also allow to find contacts among scientists of common interests.

Fan Fukuan,

Chairman of the organizing committee of the conference

"Scientific research of the SCO countries: synergy and integration"

Full Professor, Doctor of Economic Sciences

前言

我们感谢所有参加本次会议的“上海合作组织国家的科学研究：协同作用和整合”，感谢您的演讲和报告。代表所有上海合作组织成员国的广泛参与者都谈到此次活动的必要性和重要性。参与者的报告涵盖了广泛的主题性科学问题，我们的联合互动将有助于不同国家的科学家进一步发展理论和应用的现代科学研究。会议结果是来自7个国家（中国，俄罗斯，乌兹别克斯坦，哈萨克斯坦，阿塞拜疆，塔吉克斯坦，吉尔吉斯斯坦）的65位作者的参与。

这次会议的召开，是学术界，中国国家权力机关和中国共产党对维护和加强科学领域国际合作的高度重视的结果。我们还要感谢我们的俄罗斯合作伙伴无限出版社协助组织会议，准备和发布中英文会议文集。

我希望会议的收集对广大读者有用，将有助于在新的观点下为读者提供有趣的问题，并且还将允许在共同利益的科学家中寻找联系。

范福宽，
教授，经济科学博士，中国科学院院士，会议组委会主席“上合组织国家科学研究：协同与融合”

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关于俄罗斯远东地区合理的综合采矿系统的形成
**ON THE FORMATION OF RATIONAL INTEGRATED MINING
SYSTEMS OF THE RUSSIAN FAR EAST**

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俄罗斯远东地区的矿产资源潜力是其竞争优势之一。当前，根本上必须在该地区建立具有较高附加值的工业生产设施。文章显示了自然资源不可获取的许多相互联系的类型，有效开采的特殊要求。为了克服相关问题，提出了在远东地区发展运输和物流系统的需求。

关键词：矿业综合体，俄罗斯联邦远东地区，加工业，当务之急，合理的自然管理，有效发展

Abstract. *The mineral resources potential of the Russian Far East is one of its competitive advantages. At present, it is fundamentally necessary to create industrial production facilities with higher added value in the regions. The article shows a number of interrelated types of inaccessibility of natural resources, specific imperatives of effective mining. To overcome the relevant problems, the thesis is put forward about the need to develop transport and logistics systems in the Far Eastern region.*

Keywords: *mining complex, the Far East of the Russian Federation, processing industries, imperatives, rational nature management, effective development*

The presence of large reserves of oil, coal, non-ferrous and rare earth metals [1], as well as the geographical proximity of the Russian Far East to the rapidly developing countries of the Asia-Pacific region, including China, suggest that the further development of this Russian region will be associated with the strengthening and intensification of its economic relations with these countries. However, it cannot be ruled out that the natural resources of the Russian Far East may

become the main material, resource and financial base for the development of various branches of its industry while reorienting the region's economy to an industrial path of development. The full use of the mineral resource base of the Far East of the Russian Federation in order to create industrial production facilities with a higher added value in it is currently a fundamentally necessary and in-demand condition for the development of the entire country. That is why the mining complex of the Far East of the Russian Federation is considered as the object of research.

A significant part of the natural resources of the Far East of the Russian Federation cannot be used due to the practical impossibility of implementing effective economic operations: supplying energy and delivering the necessary materials and equipment, extracting natural resources, transporting them, processing and selling (that is, creating effective logistics systems) [2]. To a greater extent, this concerns minerals and the existence of a number of interrelated types of inaccessibility of natural resources, located here in ascending order of their importance:

energy inaccessibility - mining, ferrous and non-ferrous metallurgy are based on very energy-intensive industries, the functioning and development of which is directly related either to the construction and operation of various local power plants (nuclear power plants, hydroelectric power plants, state district power stations, etc.), or with the provision of their energy transportation from other regions on the relevant communications (power lines, oil and gas pipelines, etc.);

transport inaccessibility - efficient extraction of natural resources is ensured not only by the transportation of energy, but also by the organization of material flows. For example, if there are no access roads to a known deposit, it is practically impossible to provide supply, industrial mining and transportation of the extracted raw materials to the places of consumption;

technological inaccessibility - both the inapplicability of transportation technologies and the lack of effective technologies for extracting minerals (and valuable components) from rocks naturally leads to the impossibility of their (minerals) practical use in the economic sphere. For example, the well-known Sukhoi Log gold deposit, for the discovery of which a group of Far Eastern specialists was once awarded the Lenin Prize, is still not being developed due to the lack of an effective technology for extracting metals from fine-grained ores and significant territorial dispersion;

ecological inaccessibility - if the withdrawal of reserves of a natural resource in a certain area (water area) either leads to the impossibility of extracting reserves of some other resource in the same area (water area) (for example, the development of oil fields on the Sakhalin shelf can lead to a sharp reduction in water reserves bioresources in the sea areas adjacent to the island), or to the lack of opportunities to restore the natural environment in the event of irreparable damage

to it, or to the impossibility of living in a given area, then the reserves of natural resources planned for removal, from an ecological point of view, should be considered practically inaccessible to economic agents;

“rental” inaccessibility - the presence of rich natural resources does not yet guarantee a high standard of living for the population of the region, since the interests of the Far East do not always coincide with the interests of the federal center, which essentially reflect the interests of the population of the western regions of the country. Uncertainty in the right to own, use and dispose of natural resources of territorial (Krai, Oblast) and regional administrations, changing conditions due to the expansion of sales markets create new conditions in economic activity and nature management. These conditions, coupled with an acute shortage of funds for regional development, general impoverishment of the population, often illegal seizure of natural resources, the development of poaching, can lead to the emergence of new environmental problems and a sharp aggravation of the environmental situation in the region;

economic inaccessibility - in principle, all of the above types of inaccessibility can be overcome. Thus, the use of traditional and non-traditional off-road and therefore expensive vehicles (helicopters, hydraulic pipelines of coal, airships, gliders, ekranolet, etc.) can exclude the transport inaccessibility of almost all deposits, manual labor and expensive technologies - their technological inaccessibility. The inclusion in the cost of extracted raw materials of compensations for the loss (unavailability) of reserves of other resources, the cost of environmental restoration or the relocation of people living in ecologically unfavorable areas, and payment of the rent related to the use of natural resources to the respective territories may, in turn, exclude ecological inaccessibility of some natural resources. However, all this will lead to a sharp rise in the cost of extracted raw materials, to the loss of its competitiveness in the domestic and foreign markets, that is, to the economic inaccessibility of reserves of corresponding natural resources.

Let us single out the following specific imperatives (orders, demands) [3,4] determined in real time for the effective operation and development of the mining industry of the Far East of the Russian Federation:

- neutralization of the negative factor of the remoteness of the country's metallurgical industries from the deposits of iron and non-ferrous metal ores in the region;
- creation of opportunities for obtaining final products (metals);
- creation of prerequisites for the integration of mining and metallurgical industries according to the vertical technological principle;
- preventing the integration of the region's mining industries with large foreign and domestic holding corporations;
- investment of sufficient state budget funds in the creation of mining and met-

allurgical production in the region;

- overcoming difficulties in the implementation of large investment projects related to the extraction of minerals;

- elimination of the influence of the weak development of the regional economy and especially its transport infrastructure on the investment activities of mining enterprises;

- improving the financial stability of the region's mining enterprises;

- formation of institutional prerequisites for the creation of a mining financial and industrial group registered in the region;

- introduction in the mining industry of the region of an expedient concept of its organization - "processing industries for raw materials";

- improvement of the system of tax payments for the mining enterprises;

- the formation of domestic demand for raw materials and a decrease in the orientation of the region's mining enterprises to the world market with its unstable prices.

Successful overcoming of the most serious real-time specific imperatives for the effective functioning and development of the mining industry in the Far East of the Russian Federation is also associated with the use of logistics management. Such management of the functioning and development of regional integrated industrial transport and distribution systems is based on:

- ensuring maximum freedom and independence of all participants in the production of goods (extraction of raw materials), the movement of material flows and the creation of a competitive environment;

- the creation of economic interest in achieving the general goal of the functioning of these systems, consistent with the interests of the development of the region as a whole.

In the aspect of increasing the efficiency of the functioning and development of the mining complex of the Far East of the Russian Federation and the country as a whole, not only the very general goal of the rational use of minerals (mineral resources), but also the specific goal of the formation of rational integrated mining logistics in this Russian region becomes even more relevant. systems [5].

Thus, logistic systems have as their goal the optimal use of financial, material, energy, information and labor resources at their disposal. And the logistics systems of the mining and other sectors of the region's economy are the leading factor in its international economic integration, primarily with the countries of NEA.

In this regard, as part of the main activities that must be taken into account when developing regional strategic programs, it is necessary to consider investment programs in the field of infrastructure development, aimed at increasing transport accessibility, the capacity of the BAM and the Trans-Siberian Railway, improving the quality of transport and logistics services and integrating into in-

ternational transport and logistics systems. Their implementation will increase the competitiveness of the mining industry, make it possible to develop an efficient economy and create comfortable living conditions in the Far East.

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建立保险生态系统-俄罗斯保险业的发展方向
**CREATION OF INSURANCE ECOSYSTEMS - THE DIRECTION OF
DEVELOPMENT OF THE RUSSIAN INSURANCE INDUSTRY**

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本文介绍了可能的保险生态系统的主要内容，并评估了其创建对俄罗斯保险业发展的影响。每个独特特征的描述使您有可能了解任何可能的保险生态系统的特征。在整个保险业的层面上，已经确定了主要问题-加强垄断，这导致了一个独立的保险生态系统的出现。然而，该文章包含了如果俄罗斯保险业拒绝建立保险生态系统将造成更大损失的理由。

关键词：跨部门经济融合，数字化，保险生态系统，生态系统的鲜明特征，收益，保险生态系统的建立问题

Abstract. *The article describes the main content of a possible insurance ecosystem and provides an assessment of the impact of its creation on the development of the insurance industry in Russia. The description of each of the distinctive characteristics makes it possible to understand the characteristics of any possible insurance ecosystem. At the level of the entire insurance industry, the main problem has been identified - the strengthening of monopolization, which leads to the emergence of a separate insurance ecosystem. Nevertheless, the article contains a rationale for even more significant losses that the Russian insurance industry will incur if it refuses to create insurance ecosystems.*

Keywords: *cross-sectoral economic convergence, digitalization, insurance ecosystem, distinctive characteristics of the ecosystem, benefits, problems of creating insurance ecosystems.*

One of the mechanisms of competition that is most in demand in the practice of doing business is economic convergence - the convergence of the activities of various economic entities. Digitalization is a significant factor contributing to the development of intersectoral convergence - the convergence of the activities of economic entities operating in different segments of various sectors of the economy. It is the interaction of these modern trends in economic development that led to the formation of the ecosystem as a new institutional and organizational form of doing business.

Analysis of scientific literature on the creation and functioning of economic ecosystems revealed the following. The ecosystem is really considered as the main institutional and organizational form of doing business with cross-sectoral economic convergence, which develops and is implemented under the influence of digitalization. However, its independent study is still little devoted to purposeful research [3]. Nevertheless, the issue of the relevance of creating ecosystems in various fields of activity in Russia is quite acute. In particular, this concerns insurance, as an industry that is socially oriented and very significant for the development of the entire Russian society, within which insurance ecosystems still do not function.

The purpose of this article is to analyze the possibilities of creating Russian insurance ecosystems, suggesting the disclosure of the content of their main distinctive characteristics, as well as the advantages and problems of creating insurance ecosystems.

The insurance ecosystem and its distinguishing characteristics

It is known that any economic entity engaged in entrepreneurial activity faces competition at various levels. One of the most common modern methods of competitive struggle is economic convergence - the convergence of the activities of different economic entities, aimed primarily at increasing the competitiveness of its initiator.

Depending on the level of emerging competition, there are:

- intra-segment economic convergence - the convergence of the activities of economic entities, due to the competition of those economic entities that operate in the same segment of the economy, for example, the activities of enterprises of the same industry, producing the same or the same type of product;
- intersegment convergence - the convergence of the activities of economic entities caused by the competition of those economic entities that operate in different segments of the same sector of the economy, for example, the activities of a bank and an insurance company in the financial sector of the economy;
- intersectoral economic convergence, - the convergence of the activities of economic entities, due to the competition of those economic entities that operate in various segments of various sectors of the economy, for example, the activ-

ities of financial and industrial organizations.

In the last decade, digitalization has begun to exert a significant influence on the possibility of obtaining an effect from economic convergence - a modern trend of the entire social development based on the transformation of information into digital form.

The impact of digitalization on economic convergence was provided by the new opportunities that an electronic business base can provide, including separate IT, IT platforms and networks that unite them, as well as the use of new information technologies and digital products (BigData, Blockchain, IoT, Wearables, Telematics, Artificial Intelligence, etc.).

The main form of doing joint business in this case becomes the ecosystem - the institutional and organizational form of entrepreneurial activity, due to the interaction of intersectoral economic convergence and digitalization, which, in turn, determines the composition and content of its distinctive features:

1. "The composition of the ecosystem participants and their goals." It includes - the initiator (initiators)¹ of the creation of the ecosystem and others involved in the ecosystem by the initiator, the so-called passive participants or partners.

The initiator of the creation of an insurance ecosystem can be either one of its active participants - a separate Russian insurance company (unilateral convergence), or several insurance companies (multilateral convergence) [4].

The purpose of creating an ecosystem for the insurer-initiator is to increase its own competitiveness by increasing the efficiency of the insurance business, carried out on a new electronic base and involving the convergence of the insurance business with the activities of economic entities operating in various segments and sectors of the economy.

However, it is necessary to understand that, since the electronic base for doing business within the ecosystem requires large investments, only large insurers can be initiators. Currently, there are such insurance companies in Russia - only 5 large insurance companies in Russia cover almost 50% of the entire Russian insurance market [1].

Other economic entities that will be present in the insurance ecosystem, in comparison with the initiator, are its passive participants - partners. Their passivity is manifested only in the fact that not they, but the initiator of the insurance ecosystem can manage the joint business.

All partners of the insurance ecosystem can be conditionally divided into 2 groups. The first group includes those whose activities are related to insurance, and therefore will directly contribute to its development. Such partners can produce, for example, medical equipment that assesses the health status of the insured

¹ Hereinafter, instead of "initiator (s)", the term "initiator" will be used

online (watches, bracelets, etc.). The second group includes any partner that has passed the selection criteria for the ecosystem, which brings it, and, first of all, its initiator-insurer, additional income for using the ecosystem's capabilities. An example is the Russian banking ecosystem Sberbank, which, in addition to banking services (traditional banking services, financial services, lending, etc.), offers the following services that are not directly related to banking - medical, leasing, trade, etc. [5].

2. ***"The basis for doing business within the ecosystem is an electronic database that includes not only individual IT, but the IT platforms and networks that connect them."*** Such an electronic database, in addition to influencing the efficiency of the initiator-insurer itself, would make it possible to voluntarily connect other partners to this joint business - those who see the benefits of a joint business, primarily due to the possibilities of such an electronic business base.

3. ***"Cooperation and partnership of all ecosystem participants is voluntary."*** The possibility of abandoning the aggressive form of convergence of the activities of economic entities and the transition to a voluntary form of convergence are due to the impact on the intersectoral economic convergence of digitalization, which makes it possible to carry out joint business based on the implementation of the "win-win" principle, which provides benefits to all its participants [2].

4. ***"Feature of customer information used within the ecosystem"*** The information used across the entire possible insurance ecosystem for clients should cover both their real life and their virtual behavior, which would allow to have a more complete and accurate understanding of the needs and interests of clients of the insurance ecosystem.

5. ***"Parameters for combining all types of services provided by the ecosystem."*** All services of a possible insurance ecosystem should be united by a single brand², common design, accessories, etc. An example is the brand renewal for the Russian banking financial ecosystem, which was initiated by Sberbank. The new brand uniting all the ecosystem participants is the "Sber" brand.

The listed features of entrepreneurial activity within the insurance ecosystem make it possible to clarify its definition.

The insurance ecosystem is the main institutional and organizational form of doing business within the framework of intersectoral economic convergence, carried out by its initiator-insurer under the influence of digitalization, in a voluntary form, based on a single electronic base that includes IT, IT platforms and IT networks, and is used for all system participants uniform real and virtual information on its clients. It is a set of interconnected services led by an insur-

2 The fulfillment of the condition of a single brand for all participants in convergence within the framework of a common ecosystem is due to the need to form a certain image of this ecosystem for the client.

ance organization (the initiator of intersectoral convergence), united by a single brand, design and other accessories of activity and creating a certain economic value. The insurance ecosystem implements the "win-win" principle, i.e. provides all its participants with benefits.

Benefits and challenges of creating an insurance ecosystem

It is advisable to evaluate them at the level of:

- initiator of the creation of an insurance ecosystem,
- partners of the insurance ecosystem,
- clients of the insurance ecosystem,
- the entire insurance industry.

The level of the initiator of the creation of an insurance ecosystem. Achieving the goal of the initiator-insurer, first of all, becomes possible due to the new content of the electronic business base within the insurance ecosystem. Thus, the initiator increases its economic efficiency by:

- rejection of the form of convergence, which is aggressive on its part, requiring high costs on its part;
- receiving from partners part of their income. Currently, the income received by the Russian Sberbank ecosystem is only half provided by the work of the savings bank itself within the ecosystem. The other half of its income comes from partners;
- attracting partners not only from the insurance sector, but also from any other segments and sectors of the economy;
- development and improvement of insurance technologies and insurance products, which is due to the capabilities of the electronic database, including IT, IT platforms and networks. Currently, there is already sufficient experience in the application of digital InsurTech technologies in the insurance industry, therefore the new electronic database of ecosystems would not only facilitate their application, but would develop them further;
- modification of his strategy. The strategy remains client-oriented, but the range of insurance products offered to the client is expanding and the client base itself is increasing.

Insurance ecosystem partner level. The main advantages of partners are:

- saving resources associated with creating or developing your own business,
- the possibility of accelerated access to the "extended" client of the ecosystem,
- the possibility of stronger and more diversified cooperation with the initiator and other partners of the ecosystem within it.

An additional, joint advantage for the initiator-insurer and any partner of the ecosystem is the following advantage - within the insurance ecosystem, large

amounts of information are formed on clients, which are used throughout the ecosystem and cover both the real life of clients and their virtual behavior.

Customer level of the insurance ecosystem. Through its websites, the insurance ecosystem can provide any of its clients with the following benefits:

- the possibility of obtaining various information, not only on insurance products, but also on the types of products of all partners of this ecosystem,
- the ecosystem can provide this information simultaneously and online,
- in the same mode, the ecosystem enables the client to receive these basic and service types of products and/or services.

An example is the Russian financial ecosystem "Sber". Now customer authorization is available through SberID (password for logging into Sberbank) not only to receive the service of the bank itself, but also to contact all other partners and receive their products and services (travel, cars, equipment, etc.)

The level of the entire insurance industry. The creation of insurance ecosystems can lead to different consequences for the development of insurance.

On the one hand, the creation of an insurance ecosystem will contribute to monopolization in the insurance sector, which can lead to bad consequences for the consumer of insurance services and will have a bad effect on the development of the Russian insurance market. An indirect confirmation of this possibility is the currently observed consolidation of a number of Russian insurance companies, which practically led to the destruction of regional insurance companies.

On the other hand, the refusal to create insurance ecosystems is also accompanied by possible negative consequences:

- Now in the country's economy there is a situation when non-core (non-insurance) ecosystems either create within themselves insurance companies, serving, first of all, ecosystem clients (for example, the creation of Sberbank Life Insurance within "Sber"ecosystem), or attract insurers as partners. However, for the development of the insurance industry, it would be better if insurance companies would initiate the creation of insurance ecosystems - in this case, they would receive a higher income - not as partners of the ecosystem, but as its organizers, and at the same time would have the opportunity to influence the development of the ecosystem itself. insurance.

- The refusal to create insurance ecosystems leads to the fact that not all opportunities for the impact of digitalization on the insurance industry are being realized. The insurance ecosystem could offer new digital technologies and insurance products to the entire Russian insurance market.

- Failure to create insurance ecosystems leads to the loss of resources that could contribute to the strengthening and development of the national insurance market. First of all, these are the resources and capabilities of insurance ecosystem partners. Refusal to create insurance ecosystems leads to the loss of those

new opportunities that could be caused by additional cooperation of the initiator of the insurance ecosystem with those partners whose activities could directly bring an effect for the development of insurance itself. Within the insurance ecosystem, such elements of its infrastructure could be created as a subdivision or an independent organization for risk assessment, for processing insurance statistics, for carrying out pre-insurance expertise, etc. The partnership could cover medicine, the creation of medical technology, services for the sick and the elderly, etc.

Conclusion

The impact of digitalization on all aspects of life is increasing all the time. In particular, the interaction of cross-sectoral economic convergence and digitalization leads to the creation of ecosystems that have great advantages over other institutional and organizational forms of entrepreneurial activity.

And although the creation of insurance ecosystems can be viewed as a manifestation of monopolization, abandoning them can lead to very large losses and a weakening of the national insurance market. The main advantage of creating any insurance ecosystem could be that resources not only from the insurance sector, but also from any other segments and sectors of the economy would flow into it. Such a concentration of capital and the possibilities of an electronic business base within the insurance ecosystem could dramatically increase the efficiency of the initiator-insurer and would contribute to the development of not only the entire insurance industry, but also those areas with which the activities of partners of the insurance ecosystem would be associated.

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对环境负责的酒店业务，作为酒店行业经济创新发展的一种形式
**ENVIRONMENTALLY RESPONSIBLE HOTEL BUSINESS AS A FORM
OF HOTEL SECTOR ECONOMY'S INNOVATIVE DEVELOPMENT**

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众所周知，人为对自然的影响已达到危险的程度。现在，科学，工业甚至是普通百姓都必须重新考虑他们与环境的关系。生产技术和消费者偏好都在变化。这些变化也影响了酒店业。事实证明，特别是借助创新技术，这种情况有可能得到纠正。在发达国家，科学和酒店业对资源节约，减少化学产品的负面影响，合理处置废物，使用可生物降解材料等问题感到困惑。

关键字：酒店业务，创新，生态，绿色技术

Abstract. *It is well known that the anthropogenic impact on nature has reached dangerous proportions. Now science, industry and even ordinary people have to rethink their relationship with the environment. Both production technologies and consumer preferences are changing. The changes also affected the hotel sector. It turned out to be possible to rectify the situation, in particular, thanks to innovative technologies. In developed countries, science and the hotel business are puzzled by such issues as resource conservation, reducing the negative impact of chemical products, rational waste disposal, use of biodegradable materials, etc.*

Keywords: *hotel business, innovation, ecology, green technologies.*

The concept of "innovation" as an economic category was first encountered in the writings of the Austrian economist Josef Schumpeter. His book "Theory of Economic Development", which outlines the theory of innovation, was published back in 1911. Schumpeter's innovation is "creative destruction" and new combinations of production factors: the release of a new product; introduction of a new

production method (production process); development of a new sales market; discovering new sources of raw materials; formation of a new industrial organization (reorganization and / or restructuring of the company). These positions, according to the scientist, are an effective way of making a profit and developing entrepreneurship [1].

Later, scholars adapted Schumpeter's theory to tourism and hospitality, and this interpretation was supported by the International Organization for Economic Cooperation and Development (OECD).

So, Schumpeter's theory of innovation is applicable in the tourism and hospitality industry, but with limitations, because this industry is not industrial.

Modern researchers [2; 3] specify that since the 1980s, studies have been published on intellectual production and the creative economy, which mention innovation in the service sector. The classification of innovations in tourism based on the Schumpeterian theory was presented by the Danish researcher A.M. Hjalager. Later it was modified, and the following categories of innovations were distinguished in it:

- a new or improved product (created taking into account changes in demand and customer buying behavior);
- a new production process (implies the use of technologies new to the industry; in particular, the productivity of tourism enterprises is increased through the introduction of modern information and communication technologies);
- innovation management (aimed at developing new market segments, improving brand perception);
- HR management (effective management capable of coordinating and motivating qualified employees of the company);
- company organization (restructuring).

So, the combinations of innovative factors formulated by Schumpeter were adapted by specialists to the service sector. But at the same time, the essence of innovation in this area is still understood according to Schumpeter - it is a way of making a profit and developing entrepreneurship. In this regard, it is emphasized that innovations differ from minor innovations that do not fundamentally affect business [4].

The trend towards innovative development of the economy is being declared in our time in Russia. In recent years, this has been discussed at all levels. The country's leadership focuses the attention of science, education, business on the thesis: "Today, the rate of technological change in the world is increasing many times, and we must create our own technologies and standards in those areas that determine the future" [5]. The meaning of what has been said should be viewed through the prism of the key problem outlined above - not every innovation turns into an innovation, a mandatory feature of which is commercial success.

However, there are certain difficulties, more precisely, obstacles that noticeably slow down the innovative development of the economy.

The process of innovative development of the Russian economy is influenced by the general economic instability, against the background of which the payback periods of innovative technologies seem uncertain or too long. In contrast, planning horizons appear to be too short. As a result, few people want to enter this risky game. This circumstance is complicated by another problem - low demand for innovative products. Sometimes entrepreneurs themselves talk about the mental inertia of society, but more often the problem is of a different nature. For example, GOSTs, SNiPs and other official documents change extremely rarely, and it is impossible to introduce certain groups of innovative products into the production process without special clarifications. There is also a weak level of information about the market for innovative goods and services.

Bureaucracy is a serious barrier. In practice, it means redundant reporting with duplication of all kinds of documents for submission to different departments, a series of insignificant approvals, inconsistency of legislation and actions between regulatory institutions and government agencies. Many procedures related to documentation (for example, obtaining a patent) are time-consuming. Difficulties arise even in the priority export direction.

The lack of highly qualified personnel is a barrier to the development of innovative activities. Moreover, we are talking not only about personnel for the business entities themselves, but also for state structures that make decisions on state support for innovative enterprises. Decision-makers often do not understand what innovation is and what the objectives of innovation policy are.

The working conditions in science, especially material ones, leave much to be desired; there is a low prestige of scientific activity in general (although the research potential of leading universities is dynamically strengthening) [6, 7, 8].

Under these conditions, the Russian hotel industry reacts in a peculiar way to the challenges of the time and the need to integrate into innovation processes. If Americans associate innovative development with "the ability to do what no one else can do, or do it better than anyone else" [9], then the Russian hotel industry is still setting itself much more modest tasks – "in the hotels of Russia it is necessary to actively introduce innovative technologies used by the world's leading hotel companies" [10]. In other words, our hotels are not yet striving to "do what no one else can do", they want to reach the world leaders of the industry in order to meet the needs of foreign guests and Russian tourists who are familiar with foreign hotel service. It is enough to look at the specialized sites, how the introduction of innovations in the hotel sector is presented today, to understand that this is not about Russian achievements at all. These include:

Key. An electronic lock and a key card (hotel card) - are the safety of the guest,

energy saving in the rooms. In addition, the key card provides the guest with additional amenities, such as the ability to pay for goods and services within the hotel.

Voice assistant. A voice assistant is an artificial intelligence-based program that can recognize human speech, give voice answers to questions, and execute specific commands.

Robot. The robot's function is to tell the guest about the hotel's services, local attractions and restaurants. And there is also a delivery robot.

SaaS. SaaS - software as a service. Thanks to SaaS, even budget hotel establishments can afford fully automated systems to operate and manage their organization [11].

Loyalty program. The essence of any loyalty program is profit. The programs are used mainly by large chains with hotels operating around the world. All loyalty programs are somewhat similar to each other. Members of the programs receive benefits in the form of bonuses during their stay at the hotel, which they can accumulate to receive free services.

Lobby. There are hotels that have transformed the lobby area, for example, into a coworking space. It is often expensive to maintain a lobby, and coworking is seen as a cost-effective use of space.

Healthy lifestyle. In recent years, there has been a marked increase in the number of people focusing on their physical fitness and emotional well-being. Their concerns are focused not only on healthy eating and exercise, but also on quality of sleep, relationships with others, etc. Accordingly, hotels make efforts to meet these needs of guests.

Environmental responsibility. More than 60% of young people are ready to pay more for a product if the manufacturer is responsible for the environmental consequences of its activities. As the practice of eco-friendly hotels shows, taking care of the ecological situation can be beneficial, and the introduced modern technologies, accordingly, can be recognized as innovations.

Innovations are relevant in the hotel sector around the world and in Russia as well. They are developing quite quickly, and lagging behind them threatens to fail in the competition. Each hotelier strives to attract the maximum number of customers and position them to their brand, i.e. make guests regular guests. It is extremely difficult to achieve this goal, ignoring the principles of innovative development.

As a rule, innovative development is associated with the rapid improvement of information and communication technologies. This is largely true, but the experience of hotels in the world has shown that in our century, in innovative projects, scientific knowledge from other scientific fields (physiology, ecology, etc.) is actualized.

The growing trend towards sustainable consumption also speaks in favor of

the environmental focus of innovation in the hotel sector. In Western society, the interest of wealthy tourists in natural landscapes is growing.

New social priorities have become an incentive for scientists, industrial workers, and entrepreneurs. At the end of the twentieth century, the concept of a "green" economy appeared, which is understood by UN environmental experts as "economic activities that increase human well-being and ensure social justice, while significantly reducing the risks to the environment." The green economy is based on green technologies that work not with the consequences, but with the causes of environmental problems, radically changing products, approaches to production processes and, importantly, consumer behavior [12].

The hotel industry was no exception and responded to the challenges of the time. Perhaps the most revealing is the experience of the British hotel operator Inter Continental Hotels Group (IHG). Incidentally, this is the world's largest hotel chain in terms of the number of rooms, which owns a number of hotel brands (Inter Continental, Crowne Plaza, Holiday Inn, Holiday Inn Express, etc.). IHG was one of the first to be concerned about the environmental strategy of hotels. In 2008, two hundred Holiday Inn hotels were considered the greenest - they distinguished themselves by saving materials in construction and using innovative built-in systems, thanks to which they managed to achieve 30 percent energy savings. In 2008, IHG announced the first 100% sustainable hotel under the Innovation Hotel brand. The developers have provided for a large block of "green" innovations:

- solar panels on the roof for water heating;
- windmills that generate electricity;
- reservoirs and rainwater purification system for use in bathrooms and toilets, as well as for washing dishes and watering plants;
- shrubby roof garden for additional heat and sound insulation;
- recycled glass windows and recycled furniture;
- household items made from natural materials (for example, sleeping mattresses and horsehair carpets);
- signs made of natural basalt at the entrance and lawns;
- non-toxic paints in decoration;
- sorting and sending household waste for processing;
- processing food waste into biofuel;
- packaging and transfer to charity funds of ready-made meals remaining on buffets, etc. [13].

In addition, IHG has developed the Green Engage System, which was awarded LEED (Leadership in Energy and Environmental Design) certification from the US Green Building Council in 2011. The source notes that IHG became the first hotel chain to receive a LEED award for its implemented and operating eco-program [14]. Moreover, the eco-hotel concept has proven to be viable. Let's say

more, even tools have appeared that regulate the activities of eco-hotels.

First of all, hoteliers are guided by the international standard ISO 14001 "Environmental management systems. Requirements and Application Guidance" (2004), which establishes general requirements for an environmental management system and can be applied by organizations of all types and sizes, taking into account their geographical, cultural and social conditions. Here we will clarify that in Russia, based on the official translation of the English version of the standard into Russian, the national standard of the same name is in force, approved in 2016 by order of the Federal Agency for Technical Regulation and Metrology. The standard, in particular, defines the concept of "environment", i.e. specifies the objects of protection. These are "air, water, land, natural resources, flora, fauna, people" [15].

In addition to ISO 14001, there are numerous international and national certification programs in the hotel industry in different countries (for example, Green key, Green hotel, etc.). As noted by I.N. Suvorov, in all programs, general environmental criteria can be distinguished: environmental management; power usage; water consumption; cleaning and washing; waste management; food and drinks; green areas; educational environmental activities and nature conservation activities [16].

Thus, if we summarize the collected information, then from the point of view of management, the following main areas of implementation of hotel eco-innovation can be identified:

- hotel amenities (this is the area on which the efforts of hotel management are most concentrated; we are talking about the efficient use of electricity and water, the prevention of technical equipment, about reducing the amount of waste, etc.);
- foundation, building and interior (we are talking about the use of non-toxic building materials in the construction of a hotel building and environmentally friendly materials in the creation of its interiors);
- environmentally friendly raw materials and products (we are talking about the purchase of packaging, consumable, cleaning materials, when choosing which one should take into account their potential danger to the quality of air, soil and water; about minimizing packaging material, etc.);
- waste disposal (talking about the use of recyclable waste);
- cleaning of hotel rooms, corridors and halls (minimizing the impact of harmful chemicals on guests and staff, reducing waste, reducing electricity and water consumption);
- food (we are talking about the purchase of seasonal products mainly from local suppliers, about the purchase of products in natural rather than synthetic packaging, the introduction of technologies in the kitchen that optimize the volume of food waste and water consumption, etc.);

- staff training (we are talking about corporate training events to explain to the staff the essence and significance of the innovations introduced, the environmental policy of the hotel, about creating a system of motivation and rewarding employees for observing the hotel's environmental policy, about attracting employees to special programs that contribute to making environmental decisions in favor of the hotel, employees and guests, etc.).

It is clear that the hospitality business is aimed at generating profit, and any innovative solutions should contribute to this goal. Therefore, the top management of the company evaluates the benefits of innovations and the associated risks. Risks may be associated with the duration of the payback period of innovative projects, the churn of customers due to environmentally sound restrictions (for example, limiting the water pressure), the hotel's failure to comply with the conditions of eco-certification, etc.

However, in general, the experience of introducing "green" technologies in hotels in developed countries and popular tourist centers demonstrates the promise of the very principle of environmental and social responsibility of the hotel sector and the growth in demand for the services of eco-hotels.

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价格稳定是实现经济安全方面的预算预测指标的一个因素
**PRICE STABILITY AS A FACTOR IN THE FULFILLMENT OF
BUDGET FORECAST INDICATORS IN TERMS OF ECONOMIC
SECURITY¹**

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Annotation. *The article examines the draft federal law "On the federal budget for 2021 and for the planning period of 2022 and 2023" in the following sections:*

- *"Problematic aspects of the formation of federal budget revenues in the formation of non-oil and gas revenues";*
- *"Expenditures of the federal budget for financial support for the implementation of national projects and government programs".*

The author examines the reasons for the excess of federal budget expenditures over revenues and justifies this not only by the lack of funds as a result of falling oil prices, a decrease in export revenues, but also by an increase in expenditures. When forming budget revenues, a second wave of coronavirus not envisaged, which will entail an increase in both the revenue and expenditure side of the budget and negatively affect the economic growth declared in the Project.

It is proposed to consider the possibility of introducing indicators on "Economic security" with the words of indicators that should reflect passport data or indicators of economic security used in statistical information by the Rosstat service and the Ministry of Economic Development in analytical materials. In addition, it proposed, when formulating the budget, to link the implementation of state programs with the words of limit indicators, which should reflect passport data or indicators of economic security based on the current statistical data.

Keywords: *formation of budget revenues and expenditures, prices, non-oil and gas revenues, national projects and government programs, pricing, economic security.*

¹ The article was prepared in accordance with the topic of the state assignment "New challenges and threats to socio-economic security: measures of budgetary and financial regulation."

The general economic budget characterizes the demand for monetary resources (expenditures) based on social needs, as well as the proposal for their satisfaction in the form of income in accordance with their types and directions of receipt.

The budget reflects not only the financial balance of the economy, but also the balance of goods and resources. The budget deficit, as a rule, is associated with the imbalance of the entire economy, weak diversification of the economy, failures in the structure of the economy, which additionally create an unnecessary burden on the import of goods and services.

The state budget is one of the most important channels that affect the release of money into circulation, and therefore, a factor in the formation of the level of monetization and the accumulation of financial resources. Price stability largely depends on fiscal policy. The budgetary part of the costs, for example, on science, education, health care, environmental protection, energy absorbs, taking them out of the turnover of market prices, and thereby creating conditions for minimizing the general level of prices. It is necessary to take into account one of the following most important properties of budget expenditures, that their increase affects not only money demand, but also its supply, since the potential of commodity production, the volumes of commodity and stock markets expand significantly “with the effective use of budget funds” [13]. In the budgetary policy, at present, there are practically no real instruments of influence on the economy, and especially on the development of the real sector.

The budget process is functionally segmented and divided in time, which facilitated by the transition to the programmatic principles of budget execution. This circumstance will require strengthening the control and supervisory functions over the movement of budgetary resources. Initially, this concerns the strengthening of the participation of parliamentarians in the budget process, as well as the development of strict mechanisms and instruments to ensure the regulation of these flows, both incentive and penalties in the presence of serious violations.

Problematic aspects of the formation of federal budget revenues for 2021 and for the planning period 2022-2023 [8]. The draft federal law "On the federal budget for 2021 and for the planning period of 2022 and 2023" (hereinafter referred to as the Draft Law) was drawn up taking into account the planned excess of federal budget expenditures over revenues in accordance with Article 199 of the Budget Code [1]. The bill drawn up with a federal budget deficit for 2021 and for the planning period of 2022 and 2023. But is it so obvious, and is there really a reduction in expenditures not according to the indicators presented in the Draft Law, but in fact of real reductions, we will consider in the section Expenses.

The decrease in expenses is due to the lack of funds, and due to crisis in the economy. World oil prices are far from the levels at which they were at the beginning of the year and in future will not recover to their previous levels [7]. The

volume of raw materials exports in physical terms fell sharply. As a result, in value terms, Russia has lot of export earnings and the losses will persist.

So, in the first half of 2020, oil exports fell by 34.8% compared to the corresponding period last year, and gas exports fell 51.2%. This tangible failure that is not over yet, so the budget for 2021 and beyond must this reality into account. As a result, the total budgetary expenditures should be in 2021 by 927 billion rubles, in 2022 by 970 billion rubles, in 2023 by 900 billion rubles. Budget still remain in deficit, which will not be the same as in 2020 with expectation of 4.4% of GDP.

In order to balance the budget deficit, the government proposes to reduce the financing of unprotected budget items by 10%, and to reduce the financing of the state armaments program by 5% in 2021-2023 [6]. As a result, national defense spending will drop to 2.7% of GDP in 2021, while in 2020 it should amount to 2.9% of GDP. Defense spending will continue to decline in 2022 to 2.6% of GDP, in 2023 - 2.5% of GDP.

Another problem in the budget project is maintaining a balance between optimizing budget expenditures and maintaining conditions for the growth of the Russian economy. It is important to ensure the mobilization of "additional income sources" [2]. The budgetary policy should be aimed not only at the development of industries, but also its influence directly on regional problems and its balance on the entire consolidated "budgetary system of the country as a whole" [4]. "To combat the consequences of the coronavirus, anti-crisis programs are envisaged" [9], which are designed to provide support to the most vulnerable categories of citizens and affected industries.

Control over the withdrawal of capital abroad should become a solid source of replenishment of the revenue side of the budget. Net capital outflow from Russia by the private sector in January-September 2020, according to the Central Bank of the Russian Federation, increased by 65.9% compared to the same period last year and amounted to \$ 35.5 billion. According to the results of nine months of 2019, "the indicator was at the level of 21.4 billion dollars" [12]. Control over the withdrawal of capital abroad will not only replenish the revenue side of the budget, but will also allow investing in the domestic economy.

Against the background of increased economic activity and growth in employment, in 2021, real wages expected to recover "by 2.2% and real disposable incomes of the population by 3.0%, followed by their entry into the trajectory of sustainable growth at the level of 2.3-2.5% in 2022-2023" [1]. Such an optimistic forecast [3], associated with an increase in real wages, according to expert opinion, is not confirmed not only by an increase in prices, presumably by 10%, but also by a reduction in persons transferred to remote access to work by up to 30%, and in connection with this wages.

The main emphasis in the formation of the budget should be directed to the

implementation of state programs, with the written limit indicators" [10], which should reflect passport data or indicators of economic security.

Federal budget expenditures for financial support for the implementation of national projects. All expenses in connection with "decisions made on optimization in order to prioritize activities aimed at social support of citizens, economic growth and long-term structural changes in 2021-2023" [1, p. 88]. The Draft Law mentions the word "optimization" with the disclosure of its true meaning, namely, reduction, means cutting the expenditure side of the budget for both national projects and state programs.

National projects are the main instrument for achieving the development goals of the country, determined by the Decree of the President of the Russian Federation dated May 7, 2018 № 204 "On national goals and strategic objectives for the development of the Russian Federation until 2024." On October 1, 2018, the Government of the Russian Federation submitted passports to the Council under the President of the Russian Federation for Strategic Development and National Projects, initially in 12 "areas of strategic development" [5].

In general, budgetary allocations for financial support for the implementation of national projects are planned in 2021 the amount of 2,245,781.0 million rubles, in 2022 – 2,608,544.4 million rubles, in 2023 – 2,780,483.0 million rubles. (Table 1).

Table 1 shows that the overall cost reduction in 2021 is 91.4%, in 2022 87.5% only in 2023 there will be an increase of 10.2%. Similar costs, that is, their decrease in 2021-2023, observed in almost all national projects, by about the same percentage and the same growth by 2023, except for the costs of the projects: "Safe and high-quality highways" and "Culture".

As follows from the conclusion of the Accounts Chamber of Russia, "expenditures of the federal budget of the Russian Federation for the implementation of national projects and the Comprehensive Plan for the Modernization and Expansion of Basic Infrastructure for January-September 2020 were fulfilled by 55%, which is 1.2 trillion rub. from appropriations established by the revised budget plan, in amount of 2.19 trillion rub. (Figure 1)" [11].

Table 1. Dynamics of expenditures for national projects, million rubles

Name	2021				2022				2023		
	Law No. 380-FZ	Bill	Δ to the law, %	Law No. 380-FZ	Bill	Δ to the law, %	Project passport	Bill	Δ to the Project passport for 2023, %		
1	3	4	$5=4/3*100$	6	7	$8=7/6*100$	9	10	$11=10/9*100$		
TOTAL for the implementation of national projects including:	2 190	2 245	91,4	2 980	2 608	87,5	2 522	2 780	110,2		
<i>including:</i>	521,8	781,0		892,4	544,4		853,1	483,0			
National project "Demography"	735 326,7	742 509,8	89,9	840 688,4	762 392,2	90,7	464 134,7	855 919,6	184,4		
National project "Health"	306 748,4	243 204,4	96,2	262 584,9	251 076,9	95,6	218 569,0	212 132,4	97,1		
National project "Education"	132 179,5	171 631,6	94,6	162 897,9	155 737,8	95,6	119 536,1	184 631,9	154,5		
National Project "Housing and Urban Environment"	118 899,7	102 592,6	94,7	189 138,3	125 729,5	66,5	192 050,0	178 355,0	92,9		
National project "Ecology"	72 014,0	108 010,1	85,1	153 748,0	131 926,7	85,8	151 844,0	140 297,3	92,4		
National project "Safe and high-quality roads"	149 014,8	124 794,0	94,1	23 881,3	34 034,2	142,5	23 152,6	26 265,4	113,4		
National project "Labor productivity and employment support"	5 230,1	6 390,3	92,6	7 480,8	6 906,9	92,3	7 840,3	7 238,0	92,3		
National project "Science"	45 672,5	54 892,6	99,5	76 365,7	76 256,0	99,9	97 804,9	97 756,3	100,0		
National program "Digital Economy of the Russian Federation"	113 386,9	150 212,7	84,4	258 039,5	211 081,6	81,8	233 278,5	190 679,3	81,7		
National project "Culture"	16 133,6	21 656,8	106,8	23 214,8	24 262,9	104,5	21 915,5	25 138,1	114,7		
National project "Small and Medium Business and Support of Individual Entrepreneurial Initiative"	64 778,5	56 302,7	118,7	87 947,6	60 957,8	69,3	94 237,8	78 654,0	83,5		
National project "International cooperation and export"	69 329,2	97 544,7	78,7	219 358,6	205 988,7	93,9	212 605,4	192 994,1	90,8		
Comprehensive plan for the modernization and expansion of the main infrastructure	361 808,0	404 496,8	92,3	675 546,6	562 193,2	83,2	685 884,3	590 421,6	86,1		

* — indicators of the KBU as of September 1, 2020

Source: compiled by the author based on the materials of the draft federal law "On the federal budget for 2021 and for the planning period of 2022 and 2023".

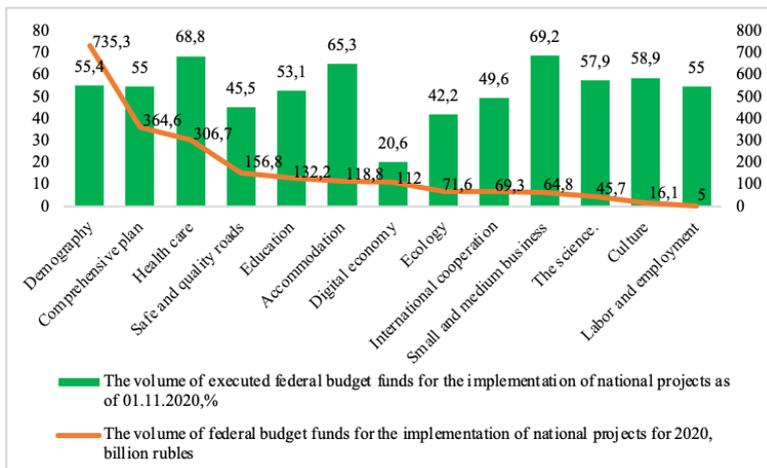


Figure 1. Execution of the federal budget for national projects for January-September 2020

Source: compiled by the author based on statistical materials: Rosstat and the respective states.

Figure 1, shows that the lowest performance indicator for the allocated budgetary funds is the digital economy national project, which allocated 112 billion rubles, which is 20.6% of the money transferred to the program. The second in terms of the amount of allocated budgetary funds and the percentage of its development should be attributed to the national project "Safe and High-Quality Roads", which was allocated 156.8 billion rubles, and 45.5% was mastered. According to the information of the Accounts Chamber, the federal project "Popularization of Entrepreneurship" became the most executed – 84.7%.

In the "Culture" project, the execution is 58.9% in January-September 2020, and the most executable project to create conditions for the realization of the creative potential of the nation is 70.9%. At the same time, according to the Draft Law (Table 1), growth planned in 2022 by 42.5%, in 2023 by 13.4%.

In the national project "Safe and High-Quality Roads", the highest performance is for the "Roads of the Ministry of Defense" – 75%. At the same time, according to the Draft Law (Table 1), growth planned in 2022 by 4.5%, in 2023 by 14.7%.

Thus, the increase in expenditures on these, as well as on other national projects, is most likely a fixation in which the supposedly increased expenditures are not actually spent.

What does this indicate? It seems that we should not talk about the peculi-

arities of the expenditure side of the Federal budget for financial support of the implementation of national projects, but about the entire system of expenditures and not only the funds allocated for national projects. This situation manifests itself from year to year, only the amount of allocated funds and the percentage of its implementation change. It turns out an interesting situation, money allocated from the budget, half of it used at best, and then, the unused amount transferred for development to the next year.

It is important that none of the regulatory authorities worried about this, only the Accounts Chamber notes the current situation every year.

On the one hand, this is a good indicator for the budget execution report. Incomes targeted, costs are determined, and the savings achieved between income and costs are excellent performance. On the other hand, if money allocated and not used, then it is responsible accounts. They must pay dividends, or not. There should be bank interest in certain accounts. It turns out that structures that are eager to receive an order or a contract for the performance of work are not able to receive it. At the same time, expenses not fulfilled annually, and the money transferred to the next financial year.

It possible legally determine procedure for spending budget funds if they not used during the year. You can set a bank interest when "tracking" money in accounts. You can connect the competent authorities on the issues of obtaining the allocated funds, interested in the performance of work. It is possible for regulatory authorities to provide or empower the right to impose administrative fines, financial sanctions and criminal liability.

It should be noted that for the section of both revenue and expenditure, it proposed to consider the possibility of introducing indicators for "Economic security" with the words of indicators that should "reflect passport data or indicators of economic security" [3].

In the revenue part, this can be a separate line of receipts, in the form of sanctions, fines, in the field of economic crimes, including foreign exchange, bank customs control in the expenditure part under the section "National security and law enforcement." In the expenditure part, such an indicator not provided, but meanwhile, in the expenses it provided for in 2021 – 2,456,681.5 million rubles, in 2022 – 2,408,910.2 million rubles and in 2023 – 2,544,479.4 million rubles.

It must admitted that one of the historical tasks – to ensure a balance between demand and supply of consumer goods – has been largely solved, but at the cost of an increase in imports and an extremely high level of consumer prices and high rates of their growth. At the same time, the market, as shown by many years of Russian experience, is not a panacea for solving all the socio-economic problems of modern society [13].

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俄罗斯联邦在融入国际金融和经济组织过程中的适应性经济安全政策
**ADAPTIVE ECONOMIC SECURITY POLICY RUSSIAN FEDERATION
IN THE PROCESS OF INTEGRATION TO INTERNATIONAL
FINANCIAL AND ECONOMIC ORGANIZATIONS**

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该研究提出了确保俄罗斯联邦经济安全的新方法。结论是，在实施和定位国家金融和经济利益的基础上，可以采用国际金融和经济组织的成员资格作为加强国家经济安全的因素。但是，这要求在每个特定的国际金融和经济组织中采取单独的战略，并发展长期和优先参与的领域，这对于国家国际金融和经济组织是最重要的。

关键词：适应性政策，经济安全，一体化进程，俄罗斯联邦参与国际金融和经济组织

Annotation. *The study presents new approaches to ensuring the economic security of the Russian Federation. It concluded that membership in international financial and economic organizations can be used as a factor in strengthening the economic security of the state on the basis of adaptive policy for the implementation and positioning of national financial and economic interests. However, this requires the adoption of a separate strategy in each specific international financial and economic organization and the development of long-term and priority areas of participation in the most important for the state international financial and economic organizations.*

Keywords: *adaptive policy, economic security, integration process, participation of the Russian Federation in international financial and economic organizations.*

"The problems of the economic security of the Russian Federation in modern conditions are increasing due to the globalization of the world economy, its integration into international financial and economic organizations and world financial and commodity markets" [6, p. 2422]. Foreign economic factors of national

security have a priority from the point of view of ensuring the economic security of the Russian Federation, since this is the level of the country's economic development, which largely determines its potential ways of protecting against external and internal threats.

Russian scientist-economist Senchagov V.K. defines economic security as an area of scientific knowledge, within which:

- study the state of the economy, in which a sufficiently high and stable growth of economic indicators ensured;
- effective satisfaction of economic needs;
- state control over the movement and use of national resources;
- protection of country's economic interests at national and international levels [9, p. 424].

Abalkin L.I. believes that "economic security is a set of conditions and factors that ensure the independence of the national economy, its stability and sustainability, the ability to constantly renew and improve" [1].

The problems of the economic security of the Russian Federation are complex due to their multidimensionality [8]. Therefore, a preliminary scientific study of both theoretical and methodological issues is necessary, as well as the determination of the main directions, forms and methods of implementing the knowledge gained. Conceptual and categorical approaches to economic security widely presented and analyzed in domestic and foreign scientific literature. However, the author considers it necessary to define a specific position in relation to the research topic – the economic security of the Russian Federation with its participation in international financial and economic organizations in the process of integration. A number of subjective and objective reasons violated the global controllability of the economy [2], which made it necessary to highlight the economic security of the Russian Federation in international financial and economic organizations in the process of integration. In practice, a system of economic security of the Russian Federation should be formed with its participation in international financial and economic organizations, which will provide for the provision of necessary, guaranteed level of security in such segments as financial, currency, investment, innovation, credit and fiscal security.

In this connection, the author believes that a systematic approach and adaptive policy are needed, according to which the economic security of the Russian Federation will be considered as ensuring the development of the national economy:

- in the context of globalization of the world economy;
- in the process of financial, economic and other crises;
- the competitiveness of the products of its leading industries in the global economy.

"Integration is an irreversible process of internationalization of all social life,

meaningfully filled with the liberalization of the most diverse forms of social and economic communication, as well as their harmonization, and in some cases unification" [10, p. 33]. Integration transforms the world financial architecture as the interpenetration of domestic and foreign economic policies of national states that depend on world finance, concentrated in international financial and economic organizations [4, p. 153]. Consequently, the impact of integration processes on the functioning of the economy of the Russian Federation and its provision of economic security in international financial and economic organizations should be considered in the following approaches.

Creation of a single global economic space. The world economic community is turning into an integral economic system, where national economies are constituent elements of the global economy, linked by:

- with the international division of labor;
- worldwide production and sales structures;
- global financial system and information technologies [5].

Transformations in relation to state and supranational administration. In the process of integration, state and international economic relations begin to change their roles. With the formation of state and transnational structures, international economic relations acquire the role of defining ones. Therefore, countries are forced to adapt to the realities of the global economy.

Changes in the organizational and economic architecture of the world economy. Economic architecture, historically established in 1944, is a relatively simple architecture that has worked well for several decades, is under serious pressure today. At the Bretton Woods conference, various international financial and economic organizations formed. One reason is that the governance of the old architecture system does not reflect the transition from a unipolar to a multipolar world.

Transformational processes in the structure of international economic relations. The main processes take place between transnational companies and within them, and not between sovereign economies. World trade in goods has given way to global capital flows and financial transactions. The changes also affected the very structure of international capital flows. Foreign direct investment has moved to a greater extent into international portfolio investment. The international movement of financial instruments from the service sector has moved into an independent sphere, divorced from real production.

Capital market globalization. The effect of globalization has progressed through the integration of the capital market into a common global system of providing and accumulating financial resources, based on fierce competition. As a result, savings, investments, capital are interconnected all over the world.

Transformation in the system of distribution relations. In the world economy, supranational institutions perform tasks similar to the tasks of redistributing state

financial resources in the national economy [3]. However, the scale of actions is greater, since the redistribution of all aggregate world financial resources between the centers carried out.

The Russian Federation is a full member of almost all international financial and economic organizations, uses their services and contributes. These organizations play an important role in the development of the economy of the Russian Federation. The participation of the Russian Federation in international financial and economic organizations opens up broad opportunities for it to attract financial resources necessary for reforming the economy. However, it is necessary to take into account the economic sovereignty, which provides for the interests and priorities of the Russian Federation.

Membership in international financial and economic organizations inevitably entails a certain redistribution of the economic sovereignty of the state [11] in favor of these organizations. This redistribution is justified primarily for developed countries that have the ability to influence the decisions of the governing bodies of international financial and economic organizations. "For developing countries, the inevitable rejection of a part of economic sovereignty in connection with participation in international financial and economic organizations should be coupled with the development of a strategy and an adaptive policy for the implementation of national interests in relation to the main decisions of international financial and economic organizations on the national territory." [7] In essence, economic sovereignty implemented in blocking the obviously ineffective or unprofitable claims of international financial and economic organizations in relation to national counterparties.

In this connection, membership in international financial and economic organizations can be used as a factor in strengthening the economic security of the state on the basis of a flexible approach to the implementation of national interests and economic sovereignty. However, this requires the adoption of a separate program in each specific international financial and economic organization, and the development of strategic and priority areas for participation in the most important for the state international financial and economic organizations.

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创造和发展创新集群的地区增加投资指令的机制
**MECHANISMS OF INCREASING INVESTMENT INSTRUCTIONS OF
REGIONS FOR CREATION AND DEVELOPMENT OF INNOVATIVE
CLUSTERS**

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本文定义了研究的理论意义，包括研究创新集群的活动并获得有关区域层面集群竞争力的新数据。在对各国在国家一级对集群政策的国外经验进行回顾的基础上，对各种形式的集群形成进行了分析。如今，创新集群的“最佳实践”集中在美国，欧盟和东南亚。据专家称，迄今为止，集群覆盖了世界主要国家约50%的经济。确定了该地区采矿和冶金集群的发展条件及其在所研究行业中的形成特征。据指出，在哈萨克斯坦建立创新的冶金集群被认为是最有前途的项目之一。介绍了该地区创新集群的发展前景，以及在哈萨克斯坦实践中运用国外经验的可能性。

关键词：投资，集群，创新，资本，产业，经济，企业，区域

Abstract. *The article defines the theoretical significance of research, which consists in studying the activities of innovative clusters and obtaining new data on the competitiveness of clusters at the regional level. The analysis of various forms of cluster formation based on a review of foreign experience of cluster policy at the state level in various countries is carried out. Today, the “best practices” of innovation clusters are concentrated in the United States of America, the European Union and Southeast Asia. According to experts, to date, clustering covers about 50% of the economies of the leading countries of the world. The conditions for the development of the mining and metallurgical cluster in the region and the features of its formation in the industry under study are determined. It was noted that the creation of an innovative metallurgical cluster in Kazakhstan was recognized as one of the most promising projects. The prospects of the development of innovative clusters in the region and the possibilities of applying foreign experience in Kazakhstani practice are presented.*

Keywords: *investment, cluster, innovation, capitalization, industry, economy, enterprise, region.*

In any developed country, the state pays special attention to the development of the industry that most favorably affects the country's macroeconomic indicators. Kazakhstan is no exception. Current crisis conditions suggest the need to create clusters as a tool to increase the country's competitiveness. Now most companies are in bankruptcy. This is preceded by a reduction in workers, sending them on vacation without maintenance, a reduction in wage rates. The crisis has spread its influence on the real sector of the economy. These clusters are designed to reduce the effects of the economic crisis: bankruptcy of second-tier banks; decrease in bank deposits of legal entities and individuals; decline in production, construction; increased costs for the introduction of new technologies; a decrease in the potential market for consulting services for small and medium enterprises, as well as a decrease in the capitalization of companies. Currently, the main tasks of cluster projects in industry is to create favorable conditions for cluster members and develop a competitive environment that would ensure the effective use of the development potential of the mining and metallurgical industry of Kazakhstan. In the near future, within the framework of innovative projects, it is planned to further support the cluster and enter the high-tech products market. The purpose of this study is the scientific substantiation of theoretical approaches to the study of cluster activities at the regional level.

The term cluster as an economic category was coined by foreign scientists. American scientist Michael Porter defines a cluster as a group of companies geographically united by one goal and directly related enterprises operating in a certain direction, interconnected and mutually reinforcing [1].

The theoretical rationale for geographic localization is not new. As far back as the 19th century, the famous economist Alfred Marshall focused on the phenomenon of special regions formed from firms specializing in a certain type of product or service and also located close to each other [2]. Later in his work, he identified 3 main types of the impact of the external effect on the economy: the simplest exchange of knowledge and new technologies (effects of overflow of knowledge), the joint use of human resources (savings from the use of labor), and unlimited access to suppliers (localized creation chains value, or the chain "buyer-seller") [3].

The cluster development of foreign countries can be described using the concept of "industrial cluster", which was first introduced by scientists S. Zamanski and L. Ablas.

Cluster modern literature refers to a network of independent production and / or service companies (including their suppliers), developers of new technologies

(universities, research institutes, engineering companies), linking market economy institutions (brokers, consultants) and consumers interacting with each other within a single value chain [4].

According to the analysis of the world practice of cluster development, increasing competitiveness based on the cluster approach has become widespread in the development strategies of most countries of the world. Various mechanisms of cluster construction were studied. The study allows you to highlight the factors that affect the investment attractiveness of the region to create a mining and metallurgical cluster: financial sphere; highly qualified personnel, consisting of specialists trained in the best domestic universities; regulatory framework, its focus on cluster development in the region, taking into account the possibility of applying foreign experience.

The authors consider the mining and metallurgical complex as the basis for the formation of the mining and metallurgical cluster. Therefore, the authors determine the relations within the mining and metallurgical complex, which are very diverse and can be divided into material and technical relations for raw materials, fuel, auxiliary materials, finished products, relations for cooperation between enterprises, and combinations based on sequential processing and processing feedstock. They can be vertical, horizontal and combined.

As the information base of this study, the results of the author's approaches to understanding the formation of investment foundations of cluster development at the regional level were used. The study allows the use of modern and effective methods of business analysis based on the company's business model, such as a cluster approach, a "value grid", gap analysis in strategic competencies, and value migration analysis. In addition, the study also used methods such as empirical research, synthesis and analysis of theoretical and practical data, and systematic analysis.

Currently, the cluster acts as a tool to increase the competitiveness of the region in the following aspects: enhancing innovation processes in market conditions, the effectiveness of managing the cluster's investment activity by attracting foreign direct investment.

Despite the fact that there are many varieties of clusters, but for the socio-economic and political orientation of the state towards the development of investment projects - the creation of a mining and metallurgical cluster - is a priority, because, thanks to this, firstly, the state treasury is replenished due to increase in tax payments, and, secondly, this affects the development of the export direction of cluster products. The cluster plays an important role not only in the country's economy, but also for the whole industry, including both mining metallurgy and energy [13].

Today, the basis of industry clusters is mining and processing plants, as well

as individual enterprises.

The Concept for the Formation of Promising National Clusters of the Republic of Kazakhstan until 2020 provides an analysis of foreign experience in the creation and formation of regional clusters. According to this analysis, the focus of the state on increasing the competitiveness of regions in the global economy, increasing the production of high-tech products within one strategic industry has occurred since the development of the innovation strategy by foreign enterprises and the period of implementation of innovative projects in certain areas, products and services. This shows an analysis of more than 500 cluster initiatives implemented over the past 10 years in 20 countries.

At present, the United States of America (hereinafter referred to as the USA), the European Union (hereinafter referred to as the EU) and Southeast Asia are recognized as the best "leaders" in the development of industry clusters in the regional economic system. According to experts (experts), the clustering process has captured most of Western Europe [6]. As illustrative examples, we can cite innovation centers and clusters created in France, Finland, South Korea, and the People's Republic of China (the Shanghai zone of the People's Republic of China, Finland's clusters, Japan's engineering clusters, Silicon Valley, and the Eindhoven – Leuven – Aachen international cluster (ELAt), France's competitiveness clusters, shipbuilding cluster in South Korea and the Biotechnology Valley).

Analysis of existing world practice in the field of clustering the economy as a promising direction of its development in relation to the economy of Kazakhstan shows:

1) the use of the cluster approach in the management of the regional economy is a key tool for the development of innovative entrepreneurship, and its widespread use can act as the main sign of highly developed economies;

2) the basis for clustering is the interaction of all cluster members - companies, corporations, commercial banks, higher education institutions, scientific and educational and state institutions that complement each other and gain competitive advantages through interaction with each other and the production of high-tech products;

3) the formation of industry clusters occurs in the process of continuous development of science, technology, the implementation of promising projects. This is due to state support, which creates favorable conditions for the active development of cluster infrastructure. The most promising innovative clusters can be called those clusters that are formed and developed under the increasing influence of the development of new technologies, scientific research and design in the field of production of high-tech products with its subsequent entry into new market niches;

4) the main feature of the cluster is that the organizations included in it are

oriented towards increasing competitiveness within the framework of one strategic industry in comparison with individual economic entities;

5) unlike old industrial clusters, a distinctive feature of new generation clusters is their innovative orientation. If large industrial enterprises were the “growth point” in industrial clusters, then in innovation clusters the impetus comes from new entities in the form of new generation universities, high-tech companies, and innovation centers. At the same time, innovation clusters focus on the formation of an innovative ecosystem, a creative environment, the preparation of innovative start-up companies and businesses, rather than classic investment projects [6].

Nowadays, against the background of many models of cluster policy, two models are most widespread - liberal and conducting. If in countries with liberal politics the role of the state is to develop measures aimed at removing barriers to the effective functioning of the cluster, then in countries with conducting policies the state is actively involved in the process of forming industry clusters (from choosing priority areas of research and development to financing cluster development projects). In turn, if a liberal cluster policy is characteristic of countries in which the state pursues a liberal economic policy (USA, UK, Australia, and Canada), then a conducting cluster policy is characteristic of countries in which the state is an active subject of a market economy (France, South Korea, Singapore, China, Saudi Arabia) [6].

One of the most striking examples of creating favorable conditions for the development of industrial clusters is Japan. In this country, the formation of innovative clusters is both due to the support of the central government and the active participation of regional authorities in this process. Thanks to this “power-cluster” interaction, cluster members develop such advantages — using their own resources to develop clustering, creating a venture business, and also introducing new technologies into production.

In this case, regional clusters appear to be a new form of territorial organization of industrial production, in which research institutes, universities and innovative clusters actively interact. As a result, research and development of companies began to focus more on commercial success, good sales, mutually beneficial cooperation with foreign researchers, leading universities and research institutions.

In foreign practice, the concept of NBIC-economy based on original technologies and knowledge has gained wide popularity.

Therefore, now there is a need to develop completely new approaches and measures to support the state in the development of clusters in Kazakhstan.

The most important component of the national economy is the mining and metallurgical complex, which is the most dynamically developing sector of the country's industry. Kazakhstan is no exception.

The authors distinguish four main structures reflecting the territorial and

industrial organization of the productive forces of the mining complex (table 1).

Table 1

The main structures of mining clusters

Geological structure	The geographical scale of the territory	Cluster structure
Mineral region, province, basin	Multiple countries, country, region, or multiple regions	Transnational, national, regional mining cluster
Mineral areas, zones	District, area, inter-district territory	Local mining cluster
Mineral and raw material node, field, complex mineral deposits	Area, site, microdistrict center	Point-focal mining cluster

Source: Compiled from materials [7].

The stabilization and growth of production in the industry confirms the justification of the government’s actions to transfer the industry to a market system and transfer ownership to private management, including investment and management. Thus, large monopolistic companies under foreign control have formed in the country, which have no alternative. In essence, they are the legislators in pursuing innovative and foreign economic policies in the industry.

In modern conditions, the investment attractiveness of the region cannot do without creating the most favorable conditions for investors. For this purpose, the possibility of creating a Special Economic Zone in Aktobe that promotes the development of an international multimodular logistics center is being considered. Currently, foreign investors are interested in profitable investments in the economy of the Aktobe region. This is evidenced by the fact that, according to the World Bank, Kazakhstan is one of the most investment-attractive countries [8].

In order to maintain and increase production volumes of metallurgy products in Kazakhstan, a plan has been developed for the prospective development of the mining and processing complex of Kazakhstan, which includes more than 70 projects with a total investment of over \$ 50 million, with 7 projects included in the government's Industrial and Innovative Development Program of Kazakhstan for the period 2010 - 2014 [9].

As a result of the implementation of this program in Kazakhstan, investment in the mining and metallurgical industry of Kazakhstan was over 10 million dollars.

Today, the Aktobe region remains one of the most developed regions with high investment attractiveness. Its natural resources are concentrated in its bowels - oil, gas, chromite, copper-zinc, gold-bearing, nickel-cobalt, titanium-zirconium ores and many others. The region has a favorable geographical location. Due to this and the provision of transport and communication systems, it rightfully deserves

special attention of investors. A vivid illustration of this interest are foreign and joint ventures created jointly with Russia, China, the USA, Great Britain, Germany, Denmark, Turkey and other countries of the world that successfully operate in the region.

World experience gives examples of increasing the competitiveness of territories and production complexes through the implementation of cluster-oriented regional policies. Clusters are known in the field of small and medium-sized businesses (furniture, footwear, food), in the innovation sphere (biotechnology, telecommunications), in large-scale industrial production (automotive), in the field of motorsport [13].

The authors noted that the creation of an innovative metallurgical cluster in Kazakhstan was recognized as one of the most promising projects. A promising and strategic task for the development of the Mining and Metallurgical Complex cluster in the region is to solve the problems of its functioning in the mining and metallurgical industry. The most important place here is occupied by the analysis of foreign experience of the role and importance of the mining and metallurgical industry in achieving the success of such projects [14].

To apply foreign experience in the development of the mining and metallurgical complex cluster in the Aktobe region it is necessary:

1) to provide the mining and metallurgical complex with high-quality raw materials by maintaining capacities at existing mining enterprises and developing new mineral deposits to replace retired ones;

2) to improve equipment and technological processes that contribute to reducing resource consumption and a significant improvement in the environmental situation;

3) to intensify the implementation of environmental programs to improve the environment in the centers of the mining and metallurgical industry, which provides for the strengthening of environmental activities in the industry, including through environmental payments, which it is advisable to partially leave at the disposal of enterprises;

4) increase the output of a high degree of technological readiness.

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学龄前儿童的体育教育：学习方法和系统表示

**PHYSICAL CULTURE EDUCATION OF PRESCHOOL CHILDREN:
METHODOLOGY OF STUDYING AND SYSTEM REPRESENTATION**

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人力资本的创造（作为社会发展的主要因素）是由于教育系统的质量，从学前教育阶段开始，包括在掌握体育文化的过程中，这种教育系统本质上是连续的。学龄前儿童体育的相关性的主要因素有：学前教育的联邦州教育标准的内容，该标准确定了学龄前儿童的身体和精神性质的培养和发展的目标；社会和体育文化价值观发展的自然前提；不利的遗传和周围现实的负面因素；主要是孩子生活和活动的运动性质，以及为体育文化的发展创建需求激励领域的重要性，以及学前组织活动的监管特征。优化学龄前儿童体育的优先方向-位置是：证实独立研究区“学龄前儿童体育理论和方法”的方法学特征；在哲学，一般科学，特定科学和技术水平上为学龄前儿童开发体育方法论基础；证实“学龄前儿童的体育教育”教育领域与联邦州教育标准的其他教育领域之间的关系的性质和特征；确定学龄前儿童体育文化的结构，内容和标志，作为其综合个人素质；对掌握体育文化的过程的教学支持进行系统化和实证化，并在此基础上，就学龄前儿童体育教育与教育组织和家庭之间的互动关系提供科学和方法上的支持；为体育专业人员的培训和专业再培训奠定方法基础；为学龄前儿童的体育运动创造先决条件。

关键词：体育教育；相关因素；优先发展方向

Abstract. *The creation of human capital (as the main factor in the development of society) is due to the quality of the education system, which is continuous in nature, starting from the stage of preschool education, including in the process of mastering physical culture. The main factors of the relevance of preschooler physical education are: the content of the Federal State Educational Standard of preschool education, which determines the target guidelines for the upbringing and development of a preschooler in relation to his bodily and spiritual nature; natural*

prerequisites for the development of the values of social and physical culture; unfavorable heredity and negative factors of the surrounding reality; predominantly the motor nature of the child's life and activity and the importance of creating a need-motivational sphere for the development of physical culture, as well as the regulatory characteristics of the activities of preschool organizations. The priority directions-positions of optimization of physical education of preschoolers are: substantiation of methodological characteristics of an independent research area "Theory and methods of physical education of preschoolers"; development of methodological foundations of physical education for preschoolers at the philosophical, general scientific, specific scientific and technological levels; substantiation of the nature and characteristics of the relationship between the educational area "Physical education of preschoolers" with other educational areas of the Federal State Educational Standard; determination of the structure, content and signs of the formation of a preschooler's physical culture as his integrative personal quality; systematization and substantiation of didactic support of the processes of mastering physical culture and, on this basis, scientific and methodological support of physical education of preschoolers in relation to the interaction of the educational organization and the family; creation of methodological foundations for training and professional retraining of specialists in physical culture; creation of prerequisites for sportization of physical education of preschoolers.

Keywords: *physical culture education, factors of relevance, priority directions of development.*

Introduction

The development of society to a significant degree (if not mainly) is conditioned by the quality of the created and operating human capital, which is the embodiment of socially (and personally, in this regard) significant cultural values in a person; his ability and readiness to consume (initially) and then to produce new cultural values [7]. Such fundamental characteristics of human capital develop and are formed in the course of mastering the content of socially important educational practices in which a person is included (including, first of all, the category of "learner") throughout his life.

Against the background of the above, it is quite natural that the creation of the human capital of society and its reflection in the person of the educational resource is, mainly, the prerogative of the education system, which, in our opinion, should be distinguished precisely by continuity and characterized as a system of continuous education and really carried out throughout all stages education (its levels) and human ontology.

At the same time, lifelong education should be understood as the activity of all social institutions for the implementation of programs of "personality creation" in

accordance with social needs and abilities throughout life.

It also seems quite natural to think that the activity of the lifelong education system to create human capital should begin already at the early stages of the formation and development of a person (personality) and, in our opinion, in the preschool education system.

Nevertheless, among the socially significant values of culture, the "transfer" of which to the person should be carried out at all stages of education, the values of physical culture are of essential importance. They are the most natural way to harmonize the biosocial principles of a person and which in the best way contribute to the specific features of preschool life and activities of a child, his age development.

Literature review

It is generally accepted that the system of preschool physical education is a responsible system for transmitting the values of physical culture to a preschooler.

In this regard, the study of numerous psychological and pedagogical in the field of preschool education [4, 5], as well as special literature in the field of theory and methodology of physical education and development of a preschooler made it possible to reveal a fairly wide representation of predominantly applied programs for the education and development of a child in the process of physical education. exercise; [2, 3, 6, 9, 11, 14] the development of his motor readiness; correction and optimization of physical development (in the classical sense of the term). The existing theory and practice of preschool education in general and physical education in particular made it possible to identify the main contradiction between the existing value potential of physical culture as a comfortable, natural and highly productive factor in the formation and upbringing of a preschooler's personality (as an essential prerequisite for the formation of human capital at this stage of ontogenesis) and insufficient substantiation and representation of the theoretical-methodological and methodological foundations of the directed use of the values of physical culture in the systemic activity of preschool educational institutions in ensuring the upbringing and formation of the main cultural characteristics of the preschooler.

Research methodology

The methodological basis of this theoretical research was formed by the dialectical method, which guides research activities in the realities and needs of human, sociocultural practice based on the laws of dialectics, its categories and basic principles. At the general scientific level of the research methodology, the system and activity approaches were also used, setting the cognition of the object, respectively, as a system and understanding, at the same time, activity as a fundamental factor in the creation of sociocultural values and the reproduction of human capital. At the private scientific level, personality-oriented, anthropological, complex,

cultural, axiological and differentiated approaches to the study of psychological and pedagogical knowledge and knowledge of the theory and methodology of physical culture were used in the development of priority areas - the provisions of physical education for preschoolers.

We believe that this contradiction is reflected in the **factors of the relevance** of reconstruction and optimization of the modern system of preschool physical education:

- social need for the upbringing of a preschooler as a person of culture, which is reflected in the elaboration and acceptance for implementation of the Federal State Educational Standard of preschool education with the designation in its content of the main educational areas (Socio-communicative, Cognitive, Speech, Artistic and aesthetic), target guidelines in achieving a "portrait" the preschooler and the essential tasks of the FSES content, which in general orients the orientation of the theory and practice of the preschooler's education towards the upbringing of his basic culture (including an essential component of physical culture); [10]

- social need for systemic upbringing of the preschooler's motor abilities in connection with psychophysical development, the creation of an idea about sports, the development of outdoor games and game tasks, the development of a value attitude towards individual health and a healthy lifestyle and is reflected in the content of the educational area of the Federal State Educational Standard "Physical Development";

- natural - biological preconditions of preschool children, determined by: readiness (in the psychophysical, social aspect) to master the values of culture in general and physical, in particular; predominantly motor way of life and activity of preschoolers and the ability to comprehensively influence the formation of motor and personal needs and abilities in the "cultured" physical culture and sports activity (PSA); features of the early postnatal period of ontogenesis, when a lack or "disorganization" of environmental influences (read the influence of factors of socialization, education) significantly - negatively (in fact - destructive) affects the formation and development of social and motor functions of children [1].

- unfavorable socio - psychological, economic and ecological - hygienic factors of modern life practice and activities of children;

- unfavorable (in some cases) hereditary characteristics, initially and to a significant extent creating the preconditions for a low level of individual health.

- predominantly the basic character of physical culture and PSA of a preschooler in the matter of his successful socialization due to the equally successful interaction with adults and peers.

- social need (due to the preschooler's readiness for this) to create the need-motivational prerequisites for physical culture improvement and, most importantly, self-improvement at this stage of education and in subsequent stages of education

(age periods).

- favorable regulations for the combination and correlation of the daily life of a preschooler and his educational activities, adopted in the work of preschool educational organizations (PEI) and creating an appropriate educational environment [3, 12, 13]

Results

The designation of the main factors of relevance sets the priority directions, firstly, the improvement of the entire system of preschool education and, secondly, the reconstruction of the physical education system in the activities of PEI and the full implementation of the educational area "Physical development".

In this regard, it is necessary to present the main **scientific provisions** that need scientific substantiation and determine the contribution of this theoretical research to pedagogical science.

1. Development of the main methodological characteristics of a new and relatively independent research area "Theory and methodology of physical education of a preschooler" with the definition of its object, subject, goal and objectives, methodological directions for the implementation of the values of physical culture in the formation and education of the basic culture of the individual (Civil, Moral, Aesthetic, Labor, Intellectual and, of course, Physical) [8].

2. Development of methodological foundations of physical education for a preschooler on the philosophical (more dialectical research method), general scientific (system and activity approaches), specific scientific (personality-oriented, anthropological, complex, cultural, axiological and differentiated approaches) and technological (private methods and technologies for organizing the implementation of content PSA) levels.

3. Adoption of the terminological name "Physical education of a preschooler" (instead of "Physical development according to the Federal State Educational Standard). Establishment and substantiation of the nature and characteristics of the relationship of the educational area "Physical education of a preschooler" with other educational areas (Socio-communicative, Cognitive, Speech, Artistic and aesthetic) in ensuring the general focus of preschool education on the education of the basic culture of a preschooler (including physical).

4. Determination of the structure, content and signs of the formation of physical culture of a preschooler as his integrative personal quality, which sets the direction of systemic pedagogical interactions of subjects of preschool education and directed use of the values of physical culture in this fundamental goal of physical education of a preschooler.

5. Systematization and substantiation of the didactic support of the directed use of the values of physical culture (principles, means, methods, forms of organization), as well as (on this basis) software and content support of PSA and

pedagogical conditions for its implementation in the upbringing of each of the components of physical culture of a preschooler.

6. Development and substantiation of methodological support for physical education of a preschooler in relation to the unidirectional interaction of the main subjects of education - PEI and its staff and parents (family) - in terms of PSA content, its consistency, tasks); identity of diagnostics and complex control of physical culture of a preschooler; organization and implementation of parenting training in the basics of organization and implementation of family physical education.

7. Determination of the theoretical-methodological and methodological foundations for the training and professional retraining of specialists for the preschool education system in general and specialists in the physical culture profile, in particular, trained for the targeted implementation of the relevant values of general social and physical culture in the practice of teaching, upbringing and development of children in PEI to educate their basic culture.

8. Creation (at the methodological, regulatory and scientific-methodological level) of the prerequisites for the sportization of physical education of preschoolers on the basis (mainly) of the homogeneity of the groups of students, material and technical support and the implementation of PSA on the theoretical and methodological foundations of sports training.

Thus, (as a conclusion) the creation of theoretical-methodological and methodological foundations of physical education of a preschooler is a rather urgent socio-economic problem, the solution of which will ensure the production and reproduction of general social and physical culture of children; creating a full-fledged prerequisite for the formation of human capital, an educational resource for a preschooler and, on this basis, build tactical and strategic directions for the development of society.

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行为因素的两个组成部分模型：不一致如何影响投票以及如何选择以改善选举预测

TWO-COMPONENT MODEL OF BEHAVIOR FACTORS: HOW INCONSISTENCY AFFECTS VOTING AND WHAT ONE OPTS TO DO TO IMPROVE ELECTORAL FORECASTS

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根据选民的大规模民意测验，最近几次选举和公投均以选举预测的严重失败为标志。反映公众和政客的不满，诸如预测市场，IAT，基于期望的预测等替代方法开始发展自己的方法。对此，选举民意调查行业进行了几项调查，这些调查宣布抽样偏差是预测准确性相对较低的主要原因。本文解决了该问题的阴影部分，特别是基于意图的显式预测的有效性有限。可以通过“不一致”现象的示例来了解隐含因素对常规模型的“丰富”是如何工作的，该现象被选为分析方面的一个示例，以说明一般概念的功能。

研究的主要结果证明，明确和隐含的态度/意图的不一致是许多选民的典型特征。此外，它极大地影响了他们的选举行为，同时考虑到这一事实大大提高了预测的准确性。后者很可能意味着更好地了解选民及其行为的驱动因素。

关键字：选举行为，选举预测，选举民意调查，行为预测，行为因素，TRA / TBP，基于期望的态度模型，态度结构理论，态度一致性，外在态度，内在态度，GATA，可能的选民，IAT。

Abstract. *Several latest elections and referendums were marked by dramatic failures of electoral forecasts, based on mass polls of voters. Reflecting the dissatisfaction of the public and politicians, alternative approaches like prediction markets, IAT, expectation-based forecasts and so on start to develop their own methods. Reacting to this, the industry of electoral polls has conducted several investigations, which declared sampling bias the main cause of relatively poor forecast accuracy. This paper addresses a shaded part of the problem, in particular, the limited validity of explicit intentions-based forecasts. One can see*

how “enrichment” of the conventional model by implicit factors works by the example of the “inconsistency” phenomenon, which was selected as just a sample of the analytical aspect to illustrate the functionality of the general concept.

The main findings of the study prove that the inconsistency of explicit and implicit attitudes/intentions is typical for many voters. Moreover, it dramatically affects their electoral behavior, while taking this fact into consideration significantly improves the accuracy of forecasts. The latter most probably means a better understanding of voters and the drivers of their behavior.

Keywords: *electoral behavior, electoral forecast, electoral polls, prediction of behavior, factors of behavior, TRA/TBP, expectance-based model of attitude, structural theory of attitude, consistency of attitude, explicit attitude, implicit attitude, GATA, likely voter, IAT.*

1. Introduction

Political planning and electoral forecasting based on voters’ “intentions-based” surveys remain the key strategy adopted by the main political strategists and pollsters and are supported by electoral participants all around the world. According to this traditional approach that dominates in both academia and industry, the anticipated electoral results and their drivers are assessed on the basis of voters’ self-reported intentions to participate in the voting procedure and to vote for a specific candidate or party. Technically, the current mainstream paradigm is based on the explicit declarations of voters about their future behaviors, or, more precisely, on two types of variables extracted from their statements, “likelihood to vote”, and “vote intentions” constituting the so-called “likelihood to vote – vote intention” model. Although there can be various forecasting strategies using different weighting and correction procedures applied to survey responses, explicitly declared intentions are the core for almost any calculations [Erikson et al., 2004; Newport, 2008; Perry, 1960, 1962, 1973, 1979; Vermunt and Magidson, 2005].

Unfortunately, despite the impressive progress in the pollster industry during the 20th century, its current state can be characterized as rather problematic. Recent history shows numerous cases when nation-wide election forecasts failed to correctly predict the outcome, caused undisguised irritation from political actors.¹ The incomplete list of such failures that occurred at the level of the whole industry includes: 2014 parliamentary elections in Moldova; 2015 parliamentary elections in the UK; 2015 Knesset elections in Israel; 2015 Referendum in Greece; 2015

¹ See, for example: Mercer A., Deane C., McGeeney K. Why 2016 Election Polls Missed their Mark? // Pew Research Center. URL: [<http://www.pewresearch.org/fact-tank/2016/11/09/why-2016-election-polls-missed-their-mark/>]; Whiteley P. Four Reasons Why the Polls Got the U.S. Election Result so Wrong // Newsweek (US Edition). 2016. Nov. 14. URL: [<http://www.newsweek.com/polls-2016-us-elections-trump-potus-hillary-clinton-520291>].

presidential elections in Poland; 2015 presidential elections in Belarus; 016 Brexit Referendum in the UK; 2016 presidential elections in the USA; 2017 parliamentary elections in the UK.

Meanwhile, the opinion survey methodology remains the main source of information in electoral studies. This can explain why remarkable failures of the key pollsters during some of the recent elections are taken so seriously by the industry and political actors. In some cases, failures to correctly predict the winner of the election led to industry-level investigations. The reports by the Market Research Society and the British Polling Council in the UK and AAPOR in the USA are probably the most prominent examples [Sturgis et al., 2016; Kennedy et al., 2017]. These reports cover a wide range of possible sources of errors including sampling issues, late swing effects, deliberate misreporting, etc. It is worth noting, however, that generally, they do not address the problem of the validity of the “intentions”-based approach itself.²

The proposed perspective looks quite biased. Most pollsters would definitely agree that voters’ behavior can and often is determined by factors which are poorly recognized even by the actors and/or are misreported by them. These methodical problems are well-known and usually are referred to as “lack of introspection” and “deliberate misreporting”.

In this study, the author proposes an integrated approach where explicit and implicit factors are assumed as acting simultaneously. They have their own sources of origin and affect behavior in an interactive way; no one should be omitted from analysis. Therefore, explicit and implicit attitudes and intentions may be consistent (both positive or both negative) or inconsistent (explicit – positive, implicit – negative and vice versa).

2. Inconsistency model application: electoral forecasting

2.1. Likely voter concept and the method of experiment

As AAPOR have aptly stressed, “...one problem election pollsters face is that not all respondents who tell them they plan to vote will do so. The actual turnout (known only after the election) is generally lower than respondents’ self-reports of voting intentions in pre-election polls. So the pollster’s challenge is to try to identify those who will really vote on the Election Day and which ones will stay home”.³ To address this problem, a concept of likely voters was developed by G.

² See for details: Chernozub O. L. (2017) Detection of validity-related faults in the modern electoral studies. *Monitoring of Public Opinion : Economic and Social Changes*. 2017. № 5. P. 31—48. DOI: 10.14515/monitoring.2017.5.03. (In Russian); Chernozub O. L. (2018b) Intention-based electoral forecasting: limits of accuracy of conventional model and its development perspectives with regard to emotional factors. *Monitoring of Public Opinion: Economic and Social Changes*. No. 4. P. 4—24. <https://doi.org/10.14515/monitoring.2018.4.01>. (In Russian).

³ <https://www.aapor.org/Education-Resources/Election-Polling-Resources/Likely-Voters.aspx>

Gallup Institute [Likely voters IV – The Gallup model], and now is commonly adopted.

The basic idea of this model is to filter out from the poll's sample those who most probably will not vote. If the pollster manages to do it correctly, the intentions of the ignored respondents will not affect the forecast and the subsample of the “true voters”, corrected in this way, will automatically reproduce the distribution of voting choices for the actual election. This model assumes that the declaration of a “vote intention” reflects the real intentions of the respondent and if the general sample is correct, almost the only source of error could be “late swing” factors.

Thus, to test the implementability of the model of inconsistent intentions in forecasting practice, one can construct several typical “likely voter” models. All of these models are based on the idea to filter out specific groups of respondents who could be considered as “unlikely” voters. The first set of models is not affected by any of implicit/inconsistency factors and is deemed as “control”. Then, each of these basic models is to be supplemented with an additional filter which abandoned the groups of “inconsistent intentions” for the respective candidate. One supposed that the elimination of all the groups of voters driven by inconsistent intentions will lead to unequal changes of the predicted results for candidates but the total quality of the forecast will increase. This second set of models is deemed as “experimental”.

Finally, one should set up an average weighted error of forecast as a general indicator of quality of the forecasting model. The weighted error is calculated as a difference between the forecasted and actual result divided by the actual result of the respective candidate. Thus, all the error values are comparable for all candidates and across all the elections.

2.2. The forecasting models

To calculate the *voting forecast (VF)* for any given election and estimate the effect of applying the implicit/inconsistency factors on prediction accuracy, several alternative models have been developed.

Set of control models:

1. *Vote intention (VI)*. The share of respondents choosing a specific candidate or a party in response to a direct VI question is considered as a prediction of this candidate's future share of votes.

2. *Vote intention, confirmed (VIc)*. This model is almost the same as VI but filters out voters who gave a negative answer to the auxiliary question “Is your intention to vote for this candidate unchangeable or it could be altered? (Y – unchangeable, N – could be altered)”.

3. *Likelihood to vote – vote intention (LVVI)*. This is the most common approach among basic forecast models. It regards vote intentions only of those

who declared they will vote answering the question “Would you vote in the coming elections of..., or no?” Thus, respondents who do not declare their plan to vote are filtered out.

Set of experimental models:

Vote intention (VI), Vote intention, confirmed (VIc), Likelihood to vote – vote intention (LVVI). Experimental models were set up as the control ones altered only with an additional filter: the group of inconsistent voters was dismissed from the subsample of “likely voters” assuming that these voters affected by contradictory intentions have relatively fewer motives to invest their time and efforts in voting actions. As “inconsistent” voters were counted those, who declared positive explicit attitude, but had negative implicit one. Explicit attitude was measured with Graphic Association Test of Attitude. [Chernozub, 2018, 2020].

2.3. Comparative results

This section considers the aggregated results providing an opportunity to compare the effectiveness of the used models. The author structured 30 cases of control and 30 mirror cases for the experimental models (10 candidates multiplied by 3 models for each set). To elaborate a general picture, all of these are aggregated in Table 1. The first and second sections of the table encompass average modules of weighted errors for all the candidates within the corresponding set of models. The third part and the bottom line provide the values of average improvement of forecasts by experimental models comparing to the respective control one.

Table 1. Experimental and control models: prediction improvement tendency.

	VI	VIc	LVVI	In average
Control models, average weighted error.				
State Duma-2016	25.3%	16.6%	24.9%	22.3%
President-2017	44.5%	40.1%	39.1%	41.2%
President-2018	24.7%	25.3%	9.6%	19.9%
Experimental models, average weighted error.				
State Duma-2016	20.7%	9.9%	18.0%	16.2%
President-2017	38.0%	25.7%	40.1%	34.6%
President-2018	21.3%	26.1%	8.5%	18.6%
Improvement, points of average weighted error.				
State Duma-2016	4.6%	6.7%	6.9%	6.1%
President-2017	6.5%	14.5%	-1.0%	6.6%
President-2018	3.5%	-0.8%	1.1%	1.3%
In average, points of average weighted error.	4.8%	6.8%	2.3%	4.7%

As the data demonstrate, in terms of the weighted error module, the overall average incremental accuracy effect is about 4.7%. This effect proved to be quite stable: at the level of average values, it has been detected for each of the three models (VI – 4.8%, VIc – 6.8%, LVVI – 2.3%) and for each of the three forecasting attempts (2016 – 6.1%, 2017 – 6.6%, 2018 – 1.3%). Out of 9 aggregated results (4, section “Improvement”), only 2 cases revealed a light negative effect, while 6 others refer to a strong positive effect (range 3.5-14.5%) and 1 case to the light positive one (1.1%).

3. General conclusions

Aggregating all the data presented, one has to accept several conclusions.

1. Voting inconsistency proved to be an empirical phenomenon. It has been reliably detected at all the levels of attitude, intentions, and behavior.
2. Implicit and explicit drivers work simultaneously and controversial attitudes/intentions affect behavior making it inconsistent and less predictable.
3. At the same time, some evidence points to supposition these controversial intentions suppress the act of behavior itself, and contradictory-motivated behavior is less probable to realize.

In the theoretical aspect, these findings support the initial concept of the independent nature of implicit and explicit factors of attitudes, intentions, and behavior. They may match but may mismatch each other. That opens the gate to the entire world of theoretical problems encompassing the questions of the origin and nature of implicit factors, followed by the questions of the mechanism of their interaction with the universe of explicit drivers.

In practical application, the presented data and conclusions grounded on them lead to the understanding of the importance of “inconsistent” voters. These groups are unreliable, and being unidentified, they disturb the perception of the electoral landscape which could lead forecasts, political planning, and the electoral strategy into a deep dead end. If one does not clearly know how many “inconsistent” voters are among his or her “declarative” supporters and who are they, he/she tries to apply makeup in front of a curved mirror: in this case, one shouldn’t be surprised by the people’s reaction when one turns to the public. Thus, an obvious application of the inconsistency model to political planning is to separate the “inconsistent” group from the core part of supporters in order to understand their differences in the spheres of values, beliefs, most appealing incentives, etc.

For further studies, it looks extremely promising to test inconsistency effects at the individual level. Maybe not directly on the data of the electoral behavior, but using any case where explicit/implicit factors could be reliably identified along with the fact of a person’s actual behavior. An outstanding study by Rogers and Aida (2012) provides an inspiring example of such an approach.

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估计的流行病威胁和对未来的计划能力：评估乌拉尔学生的时间观点-使用
ZIMBARDO检验的志愿导师

**ESTIMATED PANDEMIC THREATS AND THE ABILITY TO PLAN
FOR THE FUTURE: ASSESSING THE TIME PERSPECTIVES OF URAL
STUDENTS - VOLUNTEER TUTORS USING THE ZIMBARDO TEST**

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本文介绍了参与培训志愿者以应对COVID-19大流行的教师中的时间观点感知算法的试点研究结果。Zimbardo检验用于研究两组年轻人对过去，现在和未来的看法：民办大学的学生和俄罗斯EMERCOM系大学的学员。得出结论，关于群体在当前观念上的相似性。过去的消极经历和对未来的计划意愿的差异。为了在大流行后维持社会的可管理性，建议成立志愿者指导团队，并考虑他们对未来的看法。

关键字：帮助行为，时间观点，Zimbardo检验，志愿者培训，大流行COVID-19

***Abstract.** The article presents the results of a pilot study of algorithms of the perception of time perspective among tutors involved in training volunteers to work in the COVID-19 pandemic. The Zimbardo test was used to study the perception of the past, present and future in two groups of young people: students of a civil university and cadets of a departmental university EMERCOM of Russia. A conclusion is made about the similarity of groups in the perception of the present; differences in experience of the negative past and willingness to plan for the future. In order to preserve the manageability of society after the pandemic, it was proposed to form teams of volunteer mentors, taking into account their algorithms for perception of the future.*

***Keywords:** helping behavior, time perspective, Zimbardo test, volunteer training, pandemic COVID-19.*

The COVID-19 pandemic has become a challenge to the social foundations of modern states, regardless of their geographic location, national borders and forms of government. Most projections of the delayed consequences of the pandemic focus on the analysis of economic indicators: estimates of the decline in gross domestic product; the share of small and medium-sized businesses that have left the market for goods and services irrevocably; calculating the timing of the return of household income and budgets to the pre-crisis level; drawing up possible scenarios for the redistribution of global sales markets, reformatting the structure of international financial, corporate and communication ties. At the same time, less attention is paid to the social consequences of a prolonged pandemic.

At the same time, it is obvious that a pandemic can transform the models of economic, social, communicative and demographic behavior of the planet's inhabitants. The objective reason for this is the long-term self-isolation of individual cohorts of the population, the widespread restriction of interpersonal and group communication, the transition to online communication, which has a different balance of verbal and non-verbal components than was typical for direct communication between people before the pandemic.

When predicting the social consequences of the pandemic, in our opinion, it is necessary to take into account the complexity of the phenomenon of communication. As postulated in the reference literature [1, p. 213], "communication is a complex multidimensional process of establishing and developing contacts between people, generated by the needs of joint activities and including the exchange of information, the development of a single strategy of interaction, perception and understanding of another person." The versatility of communication includes a number of important aspects (communicative, interactive, perceptual, motivational, activity) and, as a process consisting of alternating behavioral acts, actions and interactions of participants, inevitably unfolds in time, and is realized at the micro-, meso- and macro levels [2], shaping the picture of the future.

It is known that the perception of time by an individual as a person and by groups of people is socially and situationally conditioned. The heterogeneity of the speed of social time by the communities of megalopolis residents [3], the acceleration and/or deceleration of the biological time of the individual as a result of the transfer of a vital threat to him is shown, a close relationship between the chronotype of a person and the transformation of his social roles is demonstrated [4]. The fact of the existence of bifurcation phenomena in the structure of social behavior of people under the influence of external threats has been established [5]. Both the consolidation of the participants in the events to coordinate joint efforts to overcome difficulties, and the psychotic transformation of the personality with the appearance and/or strengthening of the previously hidden signs of Machiavellianism, narcissism, psychopathy are possible. It is important

to emphasize the dose-dependent effect of personality destruction: the frequency and severity of psychopathic manifestations is more pronounced with intense and prolonged stress compared to less intense and shorter stress [6, 7].

This circumstance, in our opinion, is extremely significant for predicting social consequences in a long-term pandemic, the duration of which significantly exceeds the duration of the protective action of short-term mechanisms of psychophysiological adaptation, and when the mechanisms of coping strategies come to the fore in social adaptation, in which the transformation of the biosocial time of an individual and cohorts of stressed people becomes an inevitable element of adaptation to new, steadily changed conditions of life.

In the context of repeated waves of the coronavirus pandemic, there is a high probability that the activation of long-term adaptation mechanisms, accompanied by the transformation of the biosocial time of the planet's inhabitants, will become a mass phenomenon. Under normal conditions, the stability and repeatability in generations of algorithms for organizing the biosocial time of people is carried out through their socialization within the reference groups. In the current pandemic, habitual social relationships have been disrupted; the previously established connections and stereotypes of the organization of social and personal life are not confirmed by current events; meaningful interpersonal contacts that served as timers and timekeepers have been replaced by casual interactions with social workers and volunteers. The new format of social contacts creates an objective, subjectively colored, basis for a different algorithm for the perception of the current time and schemes for the formation of a personal and group future than before.

In connection with the above considerations, it seems to us theoretically important and practically significant to assess the variability of the perception of the future by volunteers, as well as to characterize those models of perception of the future that exist among potential mentors of volunteers and their tutors. In the established practice, mentors of potential volunteers focused on participating in social work during a pandemic are employees of state and municipal authorities, as well as employees of security and rescue services, in particular, the Russian Emergencies Ministry. It can be assumed that the algorithm for the perception of the future by precisely these categories of people will be most widely replicated in the population during and after the pandemic. Consequently, the study of algorithms for the perception and construction of their future by representatives of civilian social assistance services and security forces of rescue can become an empirical basis for predicting the basic outlines of the image of society after a pandemic.

In connection with the above hypothesis, the purpose of our work was a comparative examination of algorithms for the perception of the future in two

groups of people, representatives of civilian and security services.

Our previous studies, conducted on the example of students of a civilian and cadets of a departmental university, using a personality self-actualization test and measuring an individual minute, found significant differences in the level of optimism with which the two groups of respondents perceive their future in the speed of perception of astronomical time. It was also found that a change in lifestyle and the need to integrate into civil life significantly modifies the indicators of short-term adaptation of cadets. Our previous studies, carried out using the quantitative WBAM method (well-being, activity, mood), showed that even in persons adapted to increased physical and psychological stress (senior cadets of a departmental university), a change in their usual way of life in the form of a transition from barracks to free living in the city, causes negative deviations in the indicators of psychophysiological status, since it is associated with the need for strict self-control, time management and self-management.

The present communication continues the previous research. It presents the results of a comparative analysis of the algorithm for the perception of social time among students of the Ural Federal University named after the First President of Russia B. N. Yeltsin, students in the specialty "State and municipal management" and cadets of the Ural Institute of state fire service of EMERCOM of Russia, who are trained in the direction of training "Technosphere Safety" (n = 45; 13 and 31 respondents, respectively).

The Zimbardo Time Perspective Inventory (ZTPI) questionnaire was used as a tool for studying the algorithms of respondents' social time. The test was developed by F. Zimbardo in 1997, adapted to the ethnolinguistic characteristics of Russians on the example of students from universities in Moscow and St. Petersburg, contains 56 items, the answers to which are distributed on a 5-point scale. In the Russian-language version, the test results were checked for correlation with other psychodiagnostic techniques (Beck Depression Scale, Rosenberg Self-Assessment Scale, Spielberg Anxiety Scale, five-factor personality questionnaire, "Impulsivity" questionnaire, Bass-Darki aggressiveness level questionnaire). The test results are grouped into five scales: perception of the negative and positive past, hedonistic and fatalistic present, and the degree of orientation towards the future. According to experts, the most consistent are the "negative past" and "hedonistic present" scales. The factor of perception of the negative past expresses the degree of rejection of one's own past, causing disgust, full of pain and disappointment; positive—the degree of acceptance of one's own past, in which any experience is perceived as a starting point that led to the current state and an incentive for further development. The factor of perception of the hedonistic present indicates a break in the chronological connection between the past and the future and indicates that the only purpose of the present is to enjoy the present moment. The factor

of perception of the fatalistic present indicates that the respondent is alienated from what is happening and perceives his present, regardless of his own will as originally predetermined. The factor of the degree of orientation towards the future reflects whether the respondent has goals and plans for the future.

The respondents performed this test online using the link [8]. Statistical processing of the test results was carried out using the "Descriptive Statistics" tool for complex statistical analysis of the Excel program, the differences between the groups were checked for reliability using the Student's test and the nonparametric chi-square test. The test results are shown in table 1.

Table 1

Zimbardo test results (M± m)

Groups	Test factors				
	Negative past	Positive past	Hedonistic present	Fatalistic present	Future-orientation
Students (n=13)	3,17±0,22	3,73±0,13	3,53±0,15	2,69±0,15	3,94±0,15
Cadets (n=31)	2,60±0,09*	3,95±0,08	3,39±0,05	2,56±0,10	3,61±0,08*

Note: * - differences between the groups for this indicator are statistically significant.

A statistical analysis of the results obtained showed that, for three out of five factors, the test data of civilian students coincided with the data of the test of cadets of a departmental university. These factors included perceptions of a positive past, hedonism and fatalism in the present. Significant differences between the groups concerned the perception of the negative past and the degree of orientation towards the future. The values of both of these factors were higher in the group of students (according to the factor of the negative past, Student's test $t = 2.38$, which corresponds to the level of significance of differences $p < 0.05$; according to the factor of orientation towards the future, the occurrence of high values of 4 points and higher in the group of students according to the criterion chi-square was higher with a high degree of confidence $\chi^2 = 5.23$, $p < 0.05$).

The data obtained confirmed the hypothesis formulated at the beginning of the article that tutors of volunteers in social assistance to the population in a pandemic from among civilians belonging to social protection services and from among representatives of law enforcement agencies that ensure the safety of citizens are characterized by different perception of time and will to replicate various models of building the future in society. For civilian students involved in training volunteers for work in a pandemic, compared with their peers from among the cadets of a military university, who are also involved in mentoring volunteers, there is a richer social experience, including negative episodes in the past, and

more active work on setting personal goals for the future and making plans for the future. The cognitive, motivational, emotional, worldview and activity meaning of the identified differences is subject to detailed and in-depth study. However, on the basis of the above pilot study data, it can be concluded that in order to maintain the stability, reliability and manageability of society after the pandemic, it is already advisable to think over an acmeological model for training volunteers, as well as to develop an algorithm for forming teams of tutors who, through interaction with volunteers and further along the chain with the population will create a new configuration of social relations in the near future.

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离婚中冲突调解的相关性
THE RELEVANCE OF CONFLICT MEDIATION IN DIVORCE

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离婚和离婚后冲突的情感张力决定了该领域对调解的需求，这是解决争端的最佳方式，重点是当事方的利益和未成年子女的利益。本文概述了离婚中冲突调解的相关性，以引起与家庭合作的专业人员的注意，以证明这一过程的重要性。特别是讨论了改变社会对婚姻的态度问题，并进行了统计分析。指出了调解在解决离婚配偶与未成年子女冲突中的重要性。作者还研究了世界上复杂的流行病学状况对配偶之间冲突的影响问题，并分析了俄罗斯地区监察员的观点。结论揭示了调解对现代社会的重要性。

关键词：家庭调解；调解的相关性；保护儿童利益；离婚调解

Abstract. *The emotional tension of divorce and post-divorce conflicts determine the demand for mediation in this area as the optimal way of resolving disputes, focused on the interests of the parties and the interests of minor children. This article provides an overview of the relevance of conflict mediation in divorce in order to attract the attention of professionals working with families, to justify the importance of this process. In particular, the issue of changing the attitude of society towards marriage is discussed, and a statistical analysis is carried out. The importance of mediation in resolving conflicts of divorced spouses with minor children is indicated. The author also examines the problem of the influence of the complex epidemiological situation in the world on conflicts between spouses, analyzes the opinions of the ombudsmen of the regions of Russia. The conclusion reveals the importance of mediation for modern society.*

Keywords: *family mediation; relevance of mediation; protecting the interests of the child; divorce mediation.*

Conflicts have always existed, starting from ancient times, including conflicts among people associated with a common life and children. In different countries, they tried to resolve conflicts in various ways - from appeal to the ministers of the church to the creation of special bodies.

The problem of growing conflicts that provoke divorce in modern society is acute all over the world. Over the past few decades, the attitude towards divorce has undergone major changes, including in Russia. In tsarist Russia, divorce was recognized as possible only for very good reasons (physical inability of one of the spouses to coexist, long-term unknown absence of a spouse, conviction of one of the spouses, adultery). The XX century made adjustments to people's ideas about divorce towards accepting this phenomenon as negative, but acceptable. Soviet ideology is again changing the vector - to assign the stigma of "shame" to divorce.

In the XXI century, the system of human values has seriously changed, the attitude towards divorce has become as simple as possible, and divorce has become commonplace. According to A.I. Antonov, professor at Moscow State University, author of many works devoted to family problems, today marriage has ceased to be lifelong and legitimate, divorce, single-parent families and single mothers have turned out to be the norm, the modern family is in crisis.

In 2019, according to the data published by the Federal State Statistics Service (Rosstat), the percentage of divorces relative to registered marriages was 65%, the exact same figure was observed in 2018. For comparison, 30 years ago this ratio was 42%, and 70 years ago it was only 4%.

In the conditions of modern reality, according to statistics from the All-Russian Center for the Study of Public Opinion, the number of divorces due to adultery and jealousy has significantly increased and decreased due to the inability to compromise, lack of understanding, selfishness, and unwillingness to overcome difficulties. That for you and me brings forward the mediation of divorce and post-divorce conflicts, since in this case the severity of the conflict directly depends on the reasons that caused it.

The nature and state of upbringing, its correspondence or inconsistency, on the one hand, with the objective possibilities of personality formation, on the other hand, with the needs of society in this period of its development¹.

Most of the basic needs of modern society are helped by external systems - the world is a well-functioning machine. A large empirical and theoretical material of sciences has been accumulated, which makes it possible to make satisfaction of needs more accessible. And in this regard, in the author's opinion, the need for self-realization is actively promoted among the needs of a technically and intellectually developed society.

In modern times, Karl Marx began to talk about self-realization as the highest value of society, expounding the idea that it is necessary to overthrow all relationships that enslave a person, make him a helpless being.

Self-realization within the framework of this article is understood by the au-

1 Kharchev A.G., Matskovsky M.S. The modern family and its problems (Socio-demographic research). M., 1978. P. 125-127.

thor both as the realization of the potential of the individual in the classical sense and as the realization of lower needs (according to A. Maslow) independently.

When parting, both parents in such a situation "pull the blanket over themselves", in an attempt by each parent to put himself as a priority over the child, completely unaware of what problems divorce can bring in raising a full-fledged personality.

In analyzing the relevance of mediation of conflicts in divorce, one cannot but mention the results of long-term self-isolation in connection with the outbreak of the pandemic. According to the head of the All-Russian Center for the Study of Public Opinion V.V. Fedorov, after the lifting of the restrictions imposed in connection with the coronavirus, "the peak of divorces will definitely appear." It will be possible to objectively judge how Russian families survived a long stay at home at the beginning of next year, after the publication of official statistics several months after the lifting of restrictive measures².

The main psychological problem of divorce lies not so much in the conflict between two adults as in the condition and upbringing of the child who inevitably exists in this conflict. Whatever the reasons for the divorce, children after the divorce of their parents always remain the most affected party. The concepts of divorce and the problems of personality upbringing are inextricably linked, since the termination of family relationships often becomes the cause of psychological problems in children in their present and future life. Children whose parents have failed to save their marriage are at risk of future divorce. The parental family behavior pattern is most often copied in the families of their children³.

At the same time, studies show that the cooperation of divorced spouses in the performance of their parental responsibilities contributes to an easier and faster overcoming of the consequences of divorce by children⁴.

Family mediation first appeared in the United States in the late 1960s. This area of practice includes, accounting for the largest share, the resolution of disputes in divorce and separation of spouses, especially in cases affecting the interests of children.

In Russia, mediation is a new, not fully understood phenomenon. Since many people do not know about the existence of this institution, and if they do, they do not fully trust it, preferring to resolve conflicts on their own, hence the large number of divorces in our country.⁵

2 <https://wciom.ru>

3 Lagoida N.G. The problem of stability of marriage and the growth of the number of divorces in modern society // Bulletin of the Buryat State University 2017, Iss. 2, P.89.

4 Parkinson L. Family Mediation - M: MCUPC, 2016, P.152.

5 Dobryak, K. Yu. Effectiveness of family mediation. Why it should be introduced in Russia / K. Yu. Dobryak. — Text: direct // Young scientist. — 2017. — № 47 (181). — P. 188-190. — URL: <https://moluch.ru/archive/181/46309/> (appeal date: 14.12.2020).

According to the Concept of the State Family Policy of the Russian Federation for the period up to 2025, the main tasks of our state are to promote family well-being and traditional family values, strengthen the institution of marriage, reduce the number of divorces, first of all, divorce of spouses with minor children, as well as children born out of wedlock⁶.

The relevance of this topic is emphasized by the children's ombudsmen of the regions of Russia - in the structure of appeals to the Ombudsman for the Rights of the Child, they are the leaders in the number of appeals on the protection of the family rights of children in family and marriage conflicts. "At the same time, it is children who become hostages of quarrels between parents, I'm not afraid of this word - victims," says Lyubov Mikhailovna, children's ombudsman of the Novosibirsk region. - The child turns out to be an instrument of influence on the former partner. He is constantly experiencing psychological pressure from both sides, is in a state of stress. Not to mention situations when children are hidden from another parent, abducted, when bailiffs are forced to use forceful removal of the child, etc. What happens to the children in these families, their situation cannot leave me indifferent. And if there is a way to reduce tension or end disagreements between the parties to a family conflict, then our task is to do everything possible to use it"⁷.

In such situations, children often begin to behave inappropriately - they stop learning, fight with classmates, drink alcohol, etc. Such actions are designed to draw the attention of a father or mother to their child, and if you do not react in time, the consequences can be the most sad.

Analyzing such consequences, such authors as V.V. Bessonova⁸, L. Parkinson⁹, E.L. Syukiyainen¹⁰, propose to consider mediation as one of the technologies of the restorative approach within the framework of juvenile justice. In the above, we see another important aspect of the relevance of the topic under consideration.

Authors such as Yu.F. Bespalov, O. Yu. Ilyina N.M. Kostrova, O. G. Mirolyubov, who study the relevance of the mediation procedure in family relations, call a significant problem that makes the issue relevant - the lack of legislative regulation, which does not really allow structuring and harmonizing the process of mediation of conflicts in divorce.

Summing up the above, it is necessary to note the importance of mediation of divorce and post-divorce proceedings both for individuals and for society as a whole, and highlight the main features of significance.

6 Concept of the state family policy of the Russian Federation for the period up to 2025 (public project): in 3 parts / Compiled by Ye.B. Mizulina [et al.]. – Part 1. – M., 2013.

7 <https://nskdeti.nso.ru/news/1419>

8 Bessonova V.V. Mediation as a way of conducting negotiations in a constructive spirit / V.V. Bessonova // Legal world. – 2012. – №1. – P. 65–66

9 Parkinson L. Family mediation / L. Parkinson. – M., 2009. – P. 11

10 Syukiyainen E.L. Mediation in International Family Conflicts: Russian Aspect / E.L. Syukiyainen // Family and Housing Law. – 2014. – №2. – P. 27–30.

1. In mediation, the conversation takes place in a language understandable to the parties in a familiar environment, and also in the process of mediation it becomes possible to discuss the spouses (close relatives) those issues that cannot be discussed in a family setting.
2. Mediation helps parents to focus on the individual needs and feelings of their children and to develop a scheme for further relationships, and in the event of divorce, maintain their parental status and equal relationship with each other.
3. Mediation brings universal human values to the settlement of disputes and tries to maintain normal relations and, as many scientists note, a balanced state of those who applied it¹¹.
4. Mediation enhances the sense of security, reduces crime.

¹¹ Zagainova S.K. Commentary on the Federal Law "On an alternative procedure for resolving disputes with the participation of a mediator (mediation procedure)" / S.K. Zagainova, V.V. Yarkov [et al.]. – M. – Berlin, 2011. – P. 54

俄罗斯心理学中的个人自我问题研究的起源

GENESIS OF THE STUDY OF THE PROBLEM OF THE SELF OF THE INDIVIDUAL IN RUSSIAN PSYCHOLOGY

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当前的社会变革增加了个人对自己的个人和专业发展采取负责任和积极的态度重要性，从而使对自我现象的研究变得至关重要。自我作为一种心理现象的发展和实现反过来与当前的社会状况有关，因为二十世纪的教育依赖于个人成为自己生活的作者的能力。

在此背景下，本文分析了自我问题在当代研究中的地位，揭示了自我建模的理论基础，并证明它可以被视为一种真正的复杂心理现象。自我问题尽管不是没有研究基础，但仍然很重要，在定义其特征，动态和发展模式时会遇到困难。

本文介绍了俄罗斯和国际上研究自我的方法，并根据其结构，含义的解释和心理内容来定义其本质，类别和概念上的不规则之处。

所分析的概念构成了自我建模的充分基础，自我建模是人格系统所有要素的整合因素，可以用作心理现象分析的单位。

关键词：自我，意识，人格，自我概念，心理对象，发展

Abstract. *The current social transformations increase the importance of a responsible and active attitude of an individual to his personal and professional development thus making the research into the phenomenon of Self vital. The development and realization of Self as a mental phenomenon is, in turn, relevant for the present social situation as the education of the twenty first century relies on the ability of an individual to become the author of his own life.*

In this context, the paper analyzes the status of the problem of Self in contemporary research, reveals the theoretical basis for the modeling of Self, and proves that it can be viewed as a real complex mental phenomenon. The issue of Self, although not without a research basis, is still important and poses difficulties in defining its characteristics, dynamics and development patterns.

The paper addresses Russian and international approaches to studying Self, defining its essence, category, and conceptual irregularities depending on its

structure, interpretation of meaning, and psychological content.

The analyzed concepts make up a sufficient basis for the modeling of Self, which acts as an integrating factor for all elements of the system of a personality and can be used as a unit of analysis of mental phenomena.

Keywords: *self, consciousness, personality, self-concept, mental object, development.*

The aim of the research is to analyze and summarize the main trends in the contemporary research of the phenomenon of Self and reveal the theoretical and methodological approaches to studying it. We hypothesize that Self is a complex mental object with multiple components and multilayered structure which reflects the variety of factors determining personality development.

The research is based on the following psychological principles: psychic determinism, unity of consciousness and activity, systemic development, integrative approach to studying personality (B. G. Ananiev, K. A. Abulkhanova–Slavskaya, A. A. Bodalev, S. L. Rubinstein, etc.), anthropocentric standard and personal self-development (V. I. Slobodchikov, E. I. Isaev, etc.). The research is supported by the following fundamental concepts: the general methodology of contemporary human study viewing a personality as a self-regulating system (B. G. Ananiev), the unity of activity and personality (K. A. Abulkhanova–Slavskaya, A. G. Asmolov, V. P. Zinchenko, A. V. Petrovsky), the contemporary paradigm of subjectness with an emphasis on the active transformational function of a personality revealing self-actualization of individual abilities (A. A. Bodalev, A. V. Brushlinsky, S. L. Rubinstein), the idea about the interconnection and interdependence between the potential and the actual (A. A. Derkach and others). Other research methodologies included: S. L. Rubinstein’s concept of the unity of consciousness and action and two ways of life; V. Rosin’s (1992) idea about a personality’s need to continuously change and transform oneself; the development of a ‘possible’ human being as ‘the measure of all things’ and his uniqueness (M. M. Bakhtin, L. S. Vygotsky, V. P. Zinchenko, D. A. Leontiev, M. K. Mamardashvili, V. S. Merlin and others); the idea of higher (creative) Self containing the plenitude of possibilities that a personality can realize through its development within the space–time limits and a certain socio-cultural environment (A. A. Bodalev, A. A. Melik–Pashaev, M. G. Seliuch); the research into activating the creative potential of personality (D. B. Bogoyavlenskaya, V. N. Druzhinin, Ya. A. Ponomarev, etc.). to test the hypothesis, we performed the theoretical analysis of publications based on the Russian research.

The self–concept of the modern psychological research encompasses: a cognitive component — Self-image that reflects sex, age, role and social identity; an image of one’s body (similar to and different from other people’s); an emo-

tion—and–value component that reflects the attitude to oneself in general and to a particular component of one’s personality, character, and activity; a behavioral component that reflects mutual influence and manifestation of the first two components in behavior.

In the subjective paradigm of psychology, the mental system is represented by the notions of ‘core’ and ‘periphery’. Research (L. S. Vygotsky, I. S. Kon, A. N. Leontiev, etc.) denotes the existence of the essential core in the structure of personality by the notion of ‘Self’.

Placing Self (ego) in the center of the structure of personality as an active subject defines its role in managing the mental processes of personality’s internal world. In an absolute sense, Self is a personality. Psychologically, Self is the center of self-cognition (self-awareness) and self-regulation; its content is based on social memory and the mechanism of identification. Self acquires personal meaning in environmental phenomena and psychologically merges with them; therefore, Self reflects them in its content.

Certain provisions allow us to trace the genetic unity of Self and personality: “‘Self’, both for oneself and objectively, is primarily not an abstract subject of cognition but a particular reality of a person” (Rubinstein, 2003, 284); “if it is impossible to limit personality to its self-awareness, to ‘Self’, it is also impossible to tear one from the other... Self is formed in a personality, consequently, it is a personality. Self is a personality in general, in the unity of all parts of being, reflecting in self-awareness” (Rubinstein, 1997, 29); “a person realizes himself as a personality throughout his life in activity and communication and manifests the qualities of an individual, a subject and an individuality (Abulkhanova–Slavskaya, 1991, 43); “pure personality is Self — the limit of everyone’s aspirations and self-building (Florensky, 1990, 27).

The conceptual variety in defining Self is explained by the peculiarities of the process of its structuring and is revealed in the following approaches: “the core of a personality with certain interconnection of basic trends genetically associated with personality and potencies genetically associated with the subject of activity, character and talent of a person with their uniqueness — all these are the latest products of human development” (Ananiev, 2004, 278); the centers of a subject’s activity, “their hierarchies form a mysterious ‘center of personality’ that we call ‘Self’” (Leontiev, 1975, 229); an internal structure which can be described by meaningful emotional dimensions: sympathy, respect, proximity contained in different proportions in internal actions — mindsets expressing self-attitude to the processes of auto-communication or internal dialogue (Stolin, 1983, 220); a subjective core encompassing the system of substantial (self-reasoning and self-acting) intuitions: existential, intentional, potential, virtual, actual, reflexive, and experimental, which define a psychological possibility of a personality’s develop-

ment (Tatenko, 1998, 13); a structure that drives orientation in the environment, course of thoughts and actions in everyday life (Chesnokova, 1977, 21); a spiritual layer of consciousness represented by two rows: an optimistic, inspiring one based on the power of self-manifestation: ‘Greatness of Spirit’ – Greatness of Self, and a tragic one including the disharmony of Self (Zinchenko, 2004, 98).

V. Kuvakin (2006) presents a more detailed characteristic of Self as a center of a human being, whose features and needs become the features and potentials of a normal, healthy, free and infinitely rich personality. His approach states that, “Self is something existential, actual, existing and experiencing itself as a life unity that encompasses: (1) intuition and thinking toward oneself; (2) signs of its existence; (3) some basic needs including self-identity, non-reduction, uniqueness, non-absolute compatibility with and involvement in the external world, thinking, dialogism (ego alter and prima ego), monodualism (unity of two egos in one), givenness and, at the same time, non-givenness to oneself, self-obviousness and inconclusive certainty, obvious presence in us everywhere and always, mystery, ‘opacity’ etc.” (pp. 109–110).

These characteristics of Self imply that one of important “though poorly realized internal, free and responsible (but not imposed from outside) duties of a man ... is to clarify the architectonics of his internal world as much as possible, to establish optimal relations between his personal source and supra-personal beliefs, between basic needs and decent ways to realize them using beliefs and knowledge. The acquisition of this dynamic harmony is the best platform for a wealthy, happy and creative life” (Kuvakin, 2006, 112).

The analysis of psychological research shows that Self is structurally and processually associated with self-awareness which performs a crucial function of “movement of consciousness along the vertical”, as metaphorically described by A. N. Leontiev (1975, 204), who refers to the space of personality’s own motives.

Self-awareness provides the unity and wholeness of the structure of personality through a “very complicated synthetic formation” (Merlin, 1996): (a) consciousness; (b) awareness of identity (self); (c) awareness of mental properties and self-esteem of personality; (d) social and moral self-esteem. Merlin sees the condition for becoming aware of one’s Self in voluntary actions, successful and active coping with competing motives and tendencies as well as external and internal actions. Coping with contradictions by taking action is a condition for clear awareness of Self.

L. P. Grimak (1989, 293) emphasizes that “the notion of Self as a subjective mental phenomenon is closely associated with the notion of self-awareness. Both of them are formed and developed by the function of long-term memory, which provides a pivotal property of a personality — continuity of consciousness. This is the only reason why Self is manifested as a chain of continuous oppositions of

itself to any other non-self.”

Self-awareness is aimed at not just becoming aware of the leading motives, but also at full integration and coordination of the motivational sphere of personality including the creative Self. The realization of a “self-unfolding prophecy” in the sense that “a person as a creature that has a project, a plot, a task, a goal” as a “reason in oneself” involves both self-awareness and realization of “the universal Self” (Rubinstein, 1997, 49).

I. Kon (1978) defined three components of Self in the structure of self-awareness that have their hierarchy: (1) the active Self is a regulative organizing principle of being, which corresponds to such psychological mechanisms as self-regulation and self-control; (2) the reflexive, categorical Self is an individual’s representation of himself arranged in the Self-concept performing the function of internal mechanisms of self-cognition and self-esteem; (3) the non-verbalized, non-categorical and often unconscious Self representing the sense of self (p. 71).

V. V. Stolin’s (1983) states that personality can be defined as a functional mental ‘organ’ enabling an individual to integrate his Self and activity in the system of multiple relations with the world, or a special means of integrating mental life. He writes, “It is clear that the phenomenological Self does not appear immediately, automatically at a person’s birth, it grows in a complex process of the person’s development” (p. 24). Stolin treats the process of development of the phenomenal Self as the process of development of self-consciousness. The notion of Self is treated as one of the components of the Self-concept of personality including: (a) a representation of one’s individuality (identity); (b) some unity of interests, aptitudes, and value orientations; (c) self-esteem and self-respect.

It is self-awareness that helps a person to (a) regulate the system of interactions of the structural components of the creative Self among each other and with the environment, retaining individuality of Self; (b) demonstrate the unity of Self through self-distinction and realization which, in return, increase self-awareness (Soloviev, 1989, 87).

The essence of Self is closely linked to self-awareness as understanding oneself in the variety of individual features. The changeableness and lability of Self do not imply the presence of several Selves. Not all components in the structure of Self are changeable; the most unstable part is the one which is not connected with the core, basic properties of personality. Yet, these properties, too, are finessed, deepened, and enriched throughout life. At the same time, they retain a certain identity, which creates individual uniqueness and originality of a personality.

The research on this issue mostly identifies Self with consciousness and self-awareness of personality on the ground that functioning of consciousness and addressing of consciousness to itself represent Self as a ‘reason’ in itself.

N. A. Berdyaev (1993) considers Self from the standpoint of person’s destiny

in the world. He assumed that “consciousness is an intuitive act of human Self toward itself, after which the experience enters memory, and, at the same time, the difference of Self from ‘non-Self’, from the world around. Consciousness is a unity of Self and its difference from ‘non-Self’. Consciousness is not identical to knowledge; however, it always means the relationship with a logical element rising above the spiritual world. Self becomes aware of itself only through what is above Self. Consciousness is personal and produces personality; however, it is also collective, supra-personal and social” (p. 77).

However, A. A. Bodalev (1998) assumes that “deeper penetration into the essence of the phenomenon of Self, on the one hand, and the phenomena of consciousness and self-awareness, on the other hand, proves that they rather represent unity than identity. It is obvious that consciousness is manifested in Self, while Self is manifested through consciousness” (p. 14).

V. N. Myasishev’s research (1996) states that Self objectifies the uniqueness and originality of each particular person. Self is objectified in the originality of body and soul, and, certainly, in the peculiarities of its awareness of them, its attitude to them and dealing with them.

We support the position of A. A. Derkach (2002) who treats Self as an integral expression of self-cognition and self-consciousness. “Psychologically, ‘Self’ is the center of self-cognition (self-awareness) and self-regulation. The content of Self is based on social memory and the mechanism of identification. As a result, there is a discovery of personal meaning in environmental phenomena and psychological identification with them (personification). What a person has experienced as ‘his’ enters the content of his Self. The more developed a personality (as a type of sociality and individuality) is, the brighter and more prominently formed and expressed its core — Self — is. This implies that Self is a social quality of an individual with a psychological status of ‘We’” (p. 334).

The following concepts are useful in describing the structure of the creative Self and its essential characteristic:

- S. L. Rubinstein’s (1997) idea that the qualities of a personality do not come down to its individual peculiarities; there is subordination between the individual peculiarities and personal qualities;

- V. S. Merlin’s (1996) understanding of a combination of individual peculiarities as a large hierarchical self-regulating system, or integral individuality. Its biochemical properties, the properties of the nervous system, temperament, personal qualities, and personal states represent various hierarchical levels;

- B. G. Ananiev’s (2001) view about the intra-individual structure of personality: (1) its functioning is possible only through interaction of various properties of personality’s structural components and establishing the types of interactions between the components themselves; (2) this relatively closed system is

‘built’ into the open system of interactions with the world, which brings about parallelism in the tendencies and potencies of an individual, his self-awareness and Self;

· V. Brushlinskiy’s (1996) approach to separating personal qualities into formal and meaningful, non-disjunctive, mediating, interpenetrating, and inter-conditioning each other, joining in one mental process;

· V. N. Myasishchev’s (1996) relationship concept stating that there are no boundaries between the inner and the outer; they are a unity joining Self with the world.

We can definitely judge about many properties of Self in all its simple and complex manifestations by the character of content and forms of functioning of the internal world of a personality; we can also judge about the prevailing interests and needs, level of social intelligence and peculiarities of emotional sphere by its activity.

In the meaningful characteristics of Self, we distinguish between the real Self, the actual Self, and the ideal Self. There is always mismatch in their content. Bearing in mind that it is natural for a person to have and build not only a theory of himself as he actually is today, but also a theory of his ideal future Self, this concept of the ideal Self is supposed to be a crucial motivating factor, which stimulates a person to perform actions aimed at self-development, self-realization and self-actualization.

The multiple definitions of Self influence the development of the Self-concept. Before turning to the understanding of Self and its interrelations in the integrated system of the Self-concept, let us study the views on this mental object.

Russian psychology gave rise to various approaches to the description and study of the Self-concept, which define its specifics, essence and components. The contemporary works on research methodology view the Self-concept as a structured and hierarchical system representing the relevance of oneself and the objects and phenomena of the environment in consciousness and self-consciousness.

The common denominator in the approaches of the domestic researchers is the understanding of the Self-concept as a system of self-representations including multiple Self, having various aspects and developing in the process of self-actualization on the basis of positive attitude to the self from others. Each methodology has its system of essential features of the Self-concept. As the notion of Self-concept has multiple dimensions and meanings, it is closely connected with the ideas of personality, individuality, actualization, consciousness, self-consciousness, unconscious, Self-phenomenon. One of the components of the Self-concept is Self-consciousness as a complicated process of mediated self-cognition. It happens over time and is revealed in the unity of inner processes of self-understanding, emotional and value-driven attitude to oneself, and behavioral self-regula-

tion. On this basis, a changeable component of the Self-concept is formed — the Self-image.

The study of Self can be analyzed through the cognitive component of the Self-concept, which is described in terms of cognitive mental process — intellectual, rational, mental, reflexive. The cognitive component of the Self-concept consists of content (knowledge about oneself) and structure of the Self-image (Self-object, cognizable Self); it is expressed in self-awareness and self-cognition reflecting the processual side of self-cognition (self-development, self-improvement, self-actualization).

According to the degree of creativity, Russian psychology defines the following modalities: the higher Self, the creative Self, the unique Self, the essential Self, the true Self, the real Self, the deep Self, the spiritual Self, the ‘big’ Self.

The creative Self is studied in the works of A. A. Bodalev (1997, 1998), L. M. Mitina and O. V. Kuzmenkova (1998), M. G. Seljuch (2008). Generally, the creative Self is realized in the destruction of stereotypes, actualization of individual abilities, existing in time and above time. The phenomenon of the creative Self functions as the creative power of the unity of form and content (image and meaning). The contradiction between the real Self and ideal Self functions as the driver of self-development and self-improvement: the ideal Self becomes a guideline of personal growth through correction and correlation with the real Self; the understanding of ‘real vs. other’, ‘idea vs. reality’ create ideal form as a special reality. Creative activity of a person in the frameworks of culture leads to uniqueness on the cultural and historical scale, to realization of individual existence in the common culture of the humankind, to actualization of Self-image.

Melik–Pashaev believes that the higher Self has a universal character and possesses the ‘intense and loving find–it–all’ opportunity which is the necessary condition for creative process. The process of ‘creating oneself’ is the realization of the higher creative Self in the self-awareness and activity of individual. A significant role in the realization of the creative Self is played by the psychological phenomenon called ‘meeting oneself’ — the acknowledged breakthroughs of the creative Self into everyday consciousness and perception that give the feeling of anticipation of real capabilities or even the general direction of future creative activity.

The higher (creative, authorial) Self differs from the ordinary and has two meanings: (1) in creative activity man becomes ‘bigger than himself’ and synergistically creates something exceeding his ordinary capabilities; (2) in creative activity man becomes ‘different’, he is “not like himself in everyday life” (Melik–Pashaev, 1999, 104).

N. A. Berdyaev (1989) believes that the deep Self of a person is connected with spirituality. Spirit is a synthesizing source sustaining the unity of personality. A

man should be continuously creative towards himself. This creative process forms personality. It is an endless fight with multiple false Selves in a person (p. 53).

We studied various approaches to different aspects of the Self-concept in Russian psychology: general issues (Abulkhanova, 1994; Agapov, 1996; Derkach, 2000; Kon, 1978; Stolin, 1983; Chesnokova, 1977), the creative Self (Basin, 1996; Bodalev, 1998, 1999; Melik-Pashaev, 2001; Mitina, 1999; Seljuch, 2008), the leader's Self (Zhuravlev, 1982), the emotional Self (Yakovleva 1997), productive thinking (Brushlinsky, 1996, Matyushkin, 1991; Rubinstein, 1997). It is stated that the notion of Self has several main and multiple additional meanings. Depending on the school of thought, it is viewed as (a) an independent active mental formation; (b) a mental construct — the Self-concept; (c) specific processes and structures; or (d) has other meanings.

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童话在儿童社交中的作用

THE ROLE OF A FAIRY TALE IN THE SOCIALIZATION OF A CHILD

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本文试图确立童话故事在年轻一代的社会化中的作用。毕竟，这是儿童最容易理解的童话。在她的例子中，孩子们开始学习，发展，选择自己的理想，并在这一生中坚持自己的“我”。

关键字：童话，社会化，孩子，团队

Abstract. *This article attempts to establish the role of a fairy tale in the socialization of the younger generation. After all, it is a fairy tale that is most understandable for children. It is on her examples that children begin to learn, develop, choose their own ideals and assert their "I" in this life.*

Keywords: *fairy tale, socialization, child, team*

The process of assimilation by an individual of patterns of behavior, psychological attitudes, social norms and values, knowledge, skills that allow him to function successfully in society [1] is called socialization. The process of socialization is inextricably linked with communication and joint activities of people. For effective interaction in society, one must have a certain set of skills and knowledge necessary for existence. For successful and painless socialization, it is necessary to lay the foundations of morality from early childhood, to bring up moral values. Socialization of a child is an important, necessary process for acquiring the skills that he needs for a full life in society. There are many methods, teaching aids for preparing a child for this life. But, in our opinion, a fairy tale was and remains the easiest and most understandable for children. This is exactly the information that we receive from early childhood. Through a fairy tale, the child learns to live, sets certain ideals for himself, she adapts him to the surrounding reality. Acquaintance with her enriches the inner world of the child. The fairy tale, being a product of the activities of people of many generations, has combined in itself all the positive qualities, moral values, priorities that they aspired to, that they would like to see in their children.

1. As noted by A. V. Gorskiy, "Each fairy tale has its own plot, its own

motive, which points us to its origin, it distributes roles, sets accents" [2]. It is in folklore that those values are reflected that were priority for a particular culture. Depending on the reasons and motive, fairy tales can be durable and short-term in safety. Any fabulous story reflects the customs and rituals, traditions of the people. With a new stage of life, they are transformed, overgrown with new plots. For example, the most ancient Mansi tales reflected the life, customs of ancient peoples, over time, new plots began to appear in fairy tales, new characters such as the king, priest, people of other nationalities, the functions of some fairy-tale characters were transferred to other characters. As V.Ya. Propp notes, this explains the twofold quality of the tale: its striking diversity, its variegation and colorfulness, on the other hand - eē is no less striking monotony, its repetition [3]

Based on the judgment of V.Ya. Propp, note that the tale itself is binary in its fundamental principle: male/female, evil/good, Alien/one's own. It is on this understanding that the first impressions of the child are built, the concepts of good and evil are formed. Every Mansi fairy tale almost always begins with the division of such a fundamental principle, with such an inception. For example

1. Female/male: *Әквaг-бйкaг блэг* 'husband and wife live', *агиг-пыгиг блэг, тәнккетән блэг* 'Girl and boy live alone', *Әквa-пыгрись сянентыл блэг* 'Ekva-pygris lives with her mother', *Әквa-пыгрись эсентыл блсыг* 'Ekva-pygris with his sister were living', *Әквa-пыгрись мәнсьи павылныл аги хонтас* 'Ekva-pygris found a bride in the Mansi village' etc.

1. Evil/good: *Порнэг-Мбсьнэг блэг* 'Pornne (cannibal) and Mosne (girl) live' etc.

1. Alien/one's own: *Мәнкв бйкa яукылмат ел-сялтум. Та торыг тот Әквa-пыгрись ёми* 'Menkv the giant fell into the swamp. At the same time, Ekva-pygris was passing there', *Акв мәнсьи бйкa ворт ёмиматэ мән лёухыт кәсалас. Юил та миньтэ, аквмат юил ёхтыстэ: такем мән бйкарись ёми. Сүйтил лүпта пәухвит ёсау хум* 'One man, while hunting, noticed small footprints in the forest. He began to chase him, but in one place he caught up with him: such a small little man was walking. With the size of a lingonberry leaf, the width of its skis' etc.

It is worth noting that the opposition "Alien/one's own" and evil/good in Mansi tales are intertwined. Sometimes "Alien" in fairy tales does not always personify "evil". Mythical, supernatural beings can also fall into the category of "aliens" in the Mansi culture [4,].

Returning to the topic of our research, we note that a fairy tale, being one of the genres most beloved by children, is necessary for parents to establish emotional contact between the child and the symbolic world of nature. It has shown its great ability in making the transition of children from the world of childhood to the world of adulthood. As mentioned earlier, a fairy tale, due to its nature, is the soft-

est mechanism for the socialization of a child, in contrast to modern ideologized ways of education. On artificially created plots of a fairy tale, the child plays in his psyche the relationship of internal mental objects and thereby learns how to interact with external objects in the future. In a general sense, the tale teaches how to overcome the conflict of opposites. Without such experience, an adult already perceives everything new with greater anxiety.

1. All fairy tales contain the real and the surreal, the natural and the supernatural, the true and the fantastic. Positive heroes, as a rule, are endowed with courage, confidence, perseverance in achieving goals, captivating directness, honesty and other physical and moral qualities that are of the highest value in the eyes of the people. For Mansi girls, this is Misne the 'forest girl' (she possesses a set of certain qualities, including supernatural ones, she is not devoid of deceit). Misne, in general in the Mansi culture, not only for children, is a kind of standard of beauty, kindness, love. She is the ideal of a real woman. Poems are dedicated to her, her image is included in works. For boys - *Ākva-pygris*. He is brave, strong, kind, hardworking, loving his people, can be crafty, sometimes even a little rude, merciless to enemies. Sometimes even negative characters have positive qualities, such as conscience, regret, help. In general, for the Mansi culture it is common to see in people only the positive side, aggression is not characteristic of them. The ideal for the child is a distant perspective to which he will strive, comparing his deeds and actions with the ideal. The ideal acquired in childhood will largely define him as a person.

The tale does not give direct instruction to children, but its content always contains a lesson that they gradually perceive, repeatedly returning to the text of the tale.

The specificity of a fairy tale is that it is always a product of the creativity of a certain people. In fairy tales, the plot, the characteristics of the characters, the beginnings, the endings can vary. This is of great importance for social and pedagogical practice, since it allows the listener to develop the creative imagination, his compositional thinking on the basis of standard elements, as well as internal anticipation, thinking out, completing the plot.

The fairy tale activates the child's imagination, makes him empathize and internally contribute to the characters. As a result of this empathy, the child acquires not only new knowledge, but also, most importantly, a new emotional attitude to the environment: to people, objects, phenomena.

Any fairy tale is focused on the social - pedagogical effect: it teaches, educates, warns, encourages action, heals. At the same time, the potential of a fairy tale is much richer than its artistic and imaginative significance.

From time immemorial, a fairy tale has been used as a means of positively influencing the emotional state of a child. The problems of children with falling

asleep are widely known to all. Due to its nature, a fairy tale helps a child to overcome this problem. The child listens to the calming, lulling rhythm of words, hears his own voice, the fairy tale takes him further and further from the day's sorrows and joys, and finally, he falls asleep. The evening tale, as it were, sums up the daily still insufficiently skillful interrelationships of internal mental processes. The storyteller helps the child to feel their integrity and omnipotence. A fairy tale is especially needed for a child from four to seven years old. During this period, he instinctively asserted his "I", he discovers a world wider than the family. This striving for social realization is carried out through deepening into one's inner emotional world and only after that - through following logically formed social models. The best means for this is a fairy tale, because it touches the already known reality, but not yet realized, best of all. A child is looking for his adult life in a fairy tale, and an adult, as it were, sets a task for a child to bring a fairy tale reality to life.

Thus, a fairy tale for a child is a road from the world of fairytale reality to the world of conscious reality, from the predominantly unconscious sphere of the psyche to the predominantly conscious sphere of the psyche, from parental internal objects to external objects.

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现代技术世界与生态：哲学话语
**MODERN TECHNOGENIC WORLD AND ECOLOGY:
PHILOSOPHICAL DISCOURSE**

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这篇文章专门讨论了文明理解的概念核心。该核心由生态，人本主义和安全性概念构成。特别关注人文主义对世界的态度，这导致建立新的范式并维持人类-社会-技术-自然复合体的脆弱平衡。该文章的作者之所以提出这样的想法，是因为现代人文主义与建立环境思想，改善环境教育和增强环境安全有关。本文分析了影响环境安全的力量和决定因素。最后得出的结论是，首先，新文明意识的概念核心发生了变化。其次，生态学是一种新的人文主义形式。人文主义的重点已经从人类转移到了活跃的空间。第三，人类生存环境中自然与人工的碰撞赋予了文明无限的存在。环境安全应确定环境政策的优先事项，制定准确的原则，手段和方法，以通过分析和研究所有因素来确保环境安全和可持续发展，这些因素可以预测环境发展的未来并形成新的环境世界观。

关键词：人造世界；生态；环境安全；环境需求；人道主义；性质

Abstract. *The article is devoted to the conceptual core of civilization's comprehension. This core is formed by the concepts of ecology, humanism and safety. Special attention is paid to the issue of humanist attitude to the world that lead to establishing new paradigms and maintaining fragile balance of the anthropo-socio-techno-natural complex. The author of the article reasons the idea of that modern versions of humanism are related to the establishment of environmental thinking, improvement of environmental education and enhancement of environmental safety. The paper analyzes forces and determinants affecting environmental safety. Finally, it is concluded that, firstly, conceptual core of new civilization's consciousness is altered. Secondly, ecology acts as a new form of humanism. The point of humanism intensity had moved from human to the alive space. And thirdly, indefinite existence of civilization is given by the collision of the natural and the artificial in the human habitat. Environmental safety should define the priorities of environmental policy, develop precise principles, means and methods to ensure environmental safety and sustainable development through the analysis and study*

of all the determinants that allow to predict the future of environmental development and form a new environmental worldview.

Keywords: *man-made world; ecology; environmental safety; environmental demand; humanism; nature.*

Introduction

The basis collision of the man-made society and environment interaction consists in an imbalance between human needs and environmental capabilities of the biosphere. This circumstance makes it important to answer the question concerning the priorities of social development: the escalation of needs that ultimately leaves in doubt maintaining the conditions for human existence. Appropriate self-restriction would contribute to further progress and, at the same time, wouldn't violate the fragile balance of the anthro-techno-sociological complex operation. The principal path of further human development should act as a principle of compliance between natural and social; and human activity should be dictated by environmental demand, education, and also safety.

Materials and methods

The environmental area has found to be disintegrated by science and engineering, that is the habitat of a modern human. Within it the human lives, thinks, feels and gets an experience. The latest technological structures have become a thorn for human instead of being a part of a whole living body. Therefore, to form a new conceptual paradigm that requires a sober, more humane approach to nature is necessary to human. Nature is a complex body, and a human should interact with it in such a way that not to cause an imbalance between consumption and remediation of the environment, but to forge more functional relations with nature.

At all stages of engineering and technology evolution there is a phenomenon entitled an "alienation". It denotes a human status in the man-made world (Ioseliani, Tskhadadze, 2019). The philosophical concept of "alienation" is multidimensional. It covers the world of phenomena: human's break with nature, human's isolation from other people, detachment of individuals from the results of their labor, society, property, social and political institutions.

Scientific and technological progress (NTP) has increased manifold human capabilities in respect of natural development. However, enormous-scale transformation of human activity led to anthropogenic impact on nature. The latter is comparable with the largest natural disasters and is fraught with irreversible consequences, such as annual extinction of dozens species of plants and animals (neither wildlife sanctuaries nor artificial breeding can seize this process); the forestland is reduced due to cutting, soil alkalization and waste landfilling; desert area is increased, and water reservoirs are polluted (annually million tons of oil is spread

over the ocean surface); oxygen volume is decreased, and total composition of the atmosphere is deteriorated (emissions of ashes, hydrogens, coal, sulfur dioxide, etc.). As estimated by scientists, if other countries equal their industrial level with one of the United States, then the ecosystem won't withstand the load.

Thus, the question "Whether a human will ruin the planet?" becomes very topical. The answers to this question divide roughly the whole humanity in two groups: one with optimistic view (people believe that scientific and technological progress will solve all the issues) and another with pessimistic one. In addition, it is remarkably that environmental movements are keep on growing (for example, the Green movement has been constantly expanding). Organizations and committees carrying out environmental protection programs has been established (Karako, 2016).

A human is a part of nature, but there are some differences in understanding of what way relations between human and natural world should be built. In the first situation, people recognize primacy and power of nature. In the second one, people claim the status of Apex of creation and the fact that the world is an instrument and an object to satisfy human needs. And according to the third one, people acknowledge the fact that human is one of the examples of living matter having superhuman absolute meaning. It is very harmonious combination with the Eastern religions (Buddhism, Taoism, Hinduism, Confucianism) based on the harmony of human and nature.

Also, as noted by Chumakov A. N. (2015): "Western (man-made) pattern of cultural and civilizational development is featured by the intention to possess natural power and wealth... The East, on the contrary, is associated with the continuity of culture and tendency of non-interference in natural processes. Here the collectivist principle is traditionally prevailing, while in the West - an individual one; therefore, a human in the East is more oriented to adaptation, than to transformation that is typical for the Western mindset".

As regards the modern versions of humanism establishing environmental thinking, in the European mindset they are dated back to the late 19th century. And only by the end of the 20th century the idea of safe environment as a form of civilizational self-determination was ultimately acknowledged.

The environmental approach is defined by a new type of thinking, the so-called "monistic thinking". It is born owing to system studies and methodology of systemic approach. A new type of thinking is based on the fact that the object of study is taken in an entire haecceity as a hierarchical system.

Present approach proved to be leading-edge in cognitive psychology and allied disciplines, such as linguistics, artificial intelligence, symbolic logic, epistemology, and also in other disciplines studying cognitive processes. That is, the chain reaction began and led to appearance of interdisciplinary programs studying think-

ing and cognition (epistemological, cognitive and psychological).

Topic of environmental safety is highlighted in the papers by foreign scholars and researchers, such as (Joonas et al., 2019), (Lee, 2019), (Liet al., 2018), (Wahid et al., 2018), (Renton et al., 2018).

In studies of thinking an environmental approach is based on theory-cognitive foundations.

The old paradigms of thinking have outlived themselves. Some premises contained in the traditional versions turned out to be limited. Namely:

- a) isolation of thinking from other conscious experience,
- b) mental functions and properties were studied in terms of an object that they defined, while the subject had been left behind analysis,
- c) the issues of thinking were out of practice, communication, history and culture.

To overcome the above-mentioned disadvantages, it is necessary to state the issue of thinking at interdisciplinary junction points of philosophical and special theoretical approaches. Focus on the specification of subjective and objective grounds of thinking is typical for the strategy of studying at the interdisciplinary level.

Results

The Environmental approach suggests that the essence of thinking is natural (i.e., related with nature); it is the result of biological and social development, phylo- and ontogenesis.

The environmental approach has a progressive nature. It is directed against reductionism (physiological, mechanistic, informational, biological, social). At the same time, this direction is limited, since it is based on the positivist-analytical and cultural tradition in philosophy (Mamedov, 2016).

Environmental approach is defined by philosophical reductionism. It leads to a decrease in its efficient application that is related to disadvantages of the system methodology. However, it is possible to alleviate them through a synergetic approach. The time demands to alter human thinking in accordance with the development of the self-organization theory.

In terms of civilizational development there is a need to reveal the relationship between the development of humanitarian and industrial intelligence; to ensure the maintenance of technohumanitarian balance law that depends on the capacity of production technologies. The higher it is, the more advanced the means to affect the environment, and less competition in the struggle for human survival.

As Nazaretyan A. P. (1997) notes, “a planetary civilization that has possessed an enormous technological capacity is able to avoid self-destruction, only then people manage to improve in time the system of basic values, rules and mecha-

nisms of self-organization in accordance with modern demands of history”. Nazaretyan A. P. sees this opportunity in a wider use of electronic networks “that liberate human contacts from spatial dependencies.”

Let us review a number of features of a new world attitude leading to establishment of new paradigms of thinking.

Firstly, attitude to the nature suffers changes. Nature is no longer considered as a treasure-house satisfying human needs.

Secondly, the attitude to human and his morals is also changing – what extent it meets the needs of modern times;

Thirdly, humanity is globalizing; in addition, the value and interdependence of several regions and countries is increasing, basis of the policy is the priority of universal values, violence is renounced;

Fourthly, there is no opposition of object and subject.

In the opinion of Peccei A. (2018) (the founder of the Rome Club), the environmental understanding of humanism should have three basic principles: love of justice, intolerance of violence and sense of globality.

Today, humanism is not an abstract ethical notion, i.e., no matter what idea is put therein by the human. This notion reflects the results of advanced scientific research on potential death of mankind, or rather, scientific research to prevent this disaster. The content of the “humanism” is defined through investigating two capacities: human-space and human-society.

The aim of personal humanization is to establish person-society harmony and also nature-person one. This process is not confined only to socialization, since if humanization contributes to progress, then socialization is sometimes the dominant of personal destruction. Humanization can lead to a safe world, but socialization - to risks. The level of perfect humanization depends on the extent of relationship openness to qualitative changes and whether they are a premise to further development.

Certainly, society plays a significant role in developing human consciousness.

In the 20th century a notion of “humanistics” emerged. It is a new way to cognize the living and achieve an understanding of the world through the understanding of human. Then the way of knowing is an empathy, i.e. a human is identified with a living being, and sees the world through the eyes of this one. Able to feel for another being, a human gets the opportunity to understand the animate nature of living beings. And there is no logical reason to it (Oleskin, 1992).

In the late 20th century the understanding of humanism was detailed in terms of “dialogue”, “non-violence” and “education”.

The modern philosophy of postmodernism has identified the issues of unconditional environmental requirements of globalization and their contradiction; issues of environmental homogeneity of the world caused by cultural fragmentation; is-

sues of microecology, environmental fundamentalism (which was contributed by the Green movement) and ecological expertocracy.

Ultimately, a new civilization consciousness as a modern form of environmental consciousness and humanism changes the main conceptual core, where the point of intensity is not a human, but an alive space. A certain uncertainty and fragility of civilizational existence is explained by the collision of the natural and the artificial in the human habitat.

The issue of new humanism is genetically related to environmental safety. Environmental humanism and environmental safety are in relations of interdependence and determination.

Environmental crisis with multiple signs pointing at general destabilization of the planet's ecosystem is a civilizational one by its nature, typical reasons and essence.

A specific nature of philosophical analysis of safety issues consists in that safety is analyzed as a phenomenon common to a certain system, as a result of the activity of political entities, states; and a process of activities aimed at achieving the purposes to ensure safety of human, society and the state is studied through logical generalization of specific facts.

The core of philosophical issues of environmental safety lies in the scientific solution, analysis of the key forces affecting environmental safety, consideration of present and possible environmental threats to human' life, health, their interests, needs, goals, ideals and rights, and the modern nature of signs and possible transformations of environmental threats and dangers.

The issues of environmental safety become escalated with the development of industry, technology, transport, infrastructure facilities, continuously increasing anthropogenic impact on nature and natural ecosystems. The current state of environmental safety throughout the world raises great concerns: all living beings, including people are under threat of extinction; scope of environmental and technological disasters keeps on growing, globalization-caused danger of environmental terrorism has developed; new types of danger are arising (also at the genetic level); tendencies of degradation of living beings and loss of biological diversity are deepening. Nature doesn't manage to self-restore under increasing anthropogenic pressure and consumption.

Environmental safety covers development paths that determine priorities of environmental policy, develop principles, standards, means and methods to ensure environmental safety, stability and sustainable development.

Environmental safety is a part of an integrated multi-level social, technical and natural system. The development of environmental safety takes place due to objective processes (under the influence of various forces, such as external and internal, political and economic, climatic and natural, environmental and technological).

These forces, in turn, are also influenced by the environment, the developmental level of civilization, etc.

If the term “force” is understood as a determinant and a cause of a process, then forces ensuring environmental safety from threats caused by human pressure on the environment should include those phenomena of social life, as well as those objective and subjective processes that induce the security of vital interests of state, society and human.

In modern conditions of the civilizational development, it’s possible for facts of social life to arise (or to be created) that together with the elimination or decrease of the negative impact of adverse forces on environmental safety may have a beneficial effect on environmental protection or at least allow for a wider use of current forces of this type. In this vein, it is necessary to note the determinants, such as demographic, social, cultural and psychological ones.

Thus, we are talking about determination of the process to ensure environmental safety, analysis of subjective and objective, negative and positive natural, technological and social forces affecting this process. In addition, most of them are interdependent; they are often overlapped, when having an integrated impact on environmental safety. However, several forces may influence indirectly and not subject to direct observation and analysis. These situations complicate developing the methods to cement environmental safety and take necessary decisions at local, regional, economic, political and other levels.

Conclusions

In conclusion, let’s make several assertions:

Firstly, a new civilizational consciousness changes its conceptual core. Secondly, ecology acts as a new form of humanism. The point of humanism intensity had moved from human to alive space. And, thirdly, indefinite existence of a civilization is given by the collision of the natural and artificial in the human habitat.

Environmental safety should define the priorities of environmental policy, develop precise principles, means and methods to ensure environmental safety and sustainable development through the analysis and study of all the determinants that allow to predict the future of environmental development and form a new environmental worldview.

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网上人类社会和数字国家的重建
RECONSTRUCTION OF HUMAN SOCIETY AND DIGITAL STATES ON
THE WEB

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作者认为，权力是通过故事，讲故事吸引他人注意力的能力而产生的，因此，权力具有社会和心理基础，因为它是通过人们的意志传递的。多亏了意志的表达，国家，社会网络，集体等才得以诞生。

现代时代的一个特征是，新的权力领域正在出现，与传统社会相比，如此众多的独立权力领域导致了一个更加复杂，动态，竞争性的社会。

未来的政治冲突不仅可能是国家之间的冲突，而且可能是国家与数字帝国的冲突，这种冲突的结果并不明显。

关键字：Adams, Berezkin, Dunbar, Internet, Facebook, Twitter, 社交媒体, 数字帝国

Abstract. *The authors believe that power is generated by the ability to attract the attention of others through stories, storytelling, and therefore the power has social and psychological foundations, since it is transmitted through the will of people. Thanks to the expression of will, states, social networks, collectives, etc. are born.*

A feature of the modern era is that new domains of power are emerging, such a large number of independent domains of power gives rise to a more complex, dynamic, competitive society in comparison with the traditional society.

Future political conflicts can be not only conflicts between states, but also conflicts of states with digital empires, and the result of this conflict is not obvious.

Keywords: *Adams, Berezkin, Dunbar, Internet, Facebook, Twitter, social media, digital empires*

The social network is currently the most effective way to communicate with a huge number of people at the same time. The social network, involving users in

communication, plays today the role of a unifying, not separating force. The Internet is taking on the form of a social cyberspace called a social network. The day is near when the social network will be the main arena of human action: shopping, learning, communication, etc.

Rumors and fakes are the forms of mass media that have the greatest influence on decision-making. People become messages when a huge amount of advertising / propaganda does not generate a need for a product, stops its onslaught. People avoid buying products that are overly advertised. The meaning of the message of people in the expressed desire to reduce the onslaught of advertising messages. People become messages when their intentions are sincere.

When human consciousness appeared, people started telling stories to each other. A person is physiologically dependent on these stories: when the human body falls asleep, the brain remains awake and begins to tell stories to itself. A person who is an inventor has a brain capable of telling stories. Stories to humans are like water to fish: they are also pervasive and imperceptible. The human body is always at a specific point in the space-time continuum, while consciousness is capable of traveling through fantastic worlds.

There's no need to worry about squeezing stories out of our lives. We will witness the strengthening and improvement of what attracts us in artistic creation. The gravity of the storytelling world is multiplying. We find ourselves in digital Neverland, and we will love that as the reality of the future is going to be pretty grim. Humanity is in the process of the greatest migration in history, moving into the digital world, driven by a rejection of reality. [1]

This means on the Internet, on social networks, human society is being recreated once again through storytelling. Within the framework of evolutionary epistemology, it is necessary to add the thesis to the Darwinian triad "heredity - variability - selection": "Ontogenesis is an abbreviated repetition of phylogeny."

Politics and technology are closely interrelated, as was convincingly demonstrated by R.N. Adams - professor of social anthropology at the University of Texas (later his methodology was used by Yu.E. Berezkin in the study of the Inca empire).

Adams believed that the power of one person or group of people is determined by the ability to control or dispose of resources that are significant for other people, since a person, being a biological being, needs energy and substances obtained from the outside for the functioning and renewal of the body, and as a social creature needs constant contact with other people. A person's ability to influence others, or power in this context, depends on the ability to attract attention with their stories, to capture the attention of others.

Thus, power is of a socio-psychological nature, not physical, and lies in the sphere of culture, not technology, since power is transmitted through the will of

people. This method of transferring power, concentrating power in one hand or distributing it among several persons gives rise to complexly organized collectives, social networks, states.

An example of a community created by the unity of goals, self-awareness, symbolic exchange of values is a tribe without a leader, for modern society - a group of open source software developers.

In the 1990s, Microsoft's monopoly on the OS market prompted young programmers to embrace the hacker ethic. "Open source" - is not just software, it is also a way of developing it, maintaining the public good.

Participation in a group implies compliance with the rules of fair play. Strict control and sanctions ensure compliance with the rules, as unwillingness to comply leads to sanctions - refusal of contact. Faced with such ignorance, those who break the rules leave the group on their own, they don't even have to be excluded from it.

For such a group, the internal motivation of its volunteers is important; the group itself has a core that leads and controls. Core activities are not financially beneficial, but are highly regarded by their peers. [3]

A tribe led by a chief storyteller on a social network can be called a simple identity. The number of members of such a tribe is determined by the number of Dunbar. We can only regularly communicate with a part of the whole population of people you know, and this part is about 150 people. More precisely, this number is between 150 and 230. Huge metropolises full of people, social networks where hundreds of people follow each other's status updates, corporations with branches around the world - our brain is not able to cope with all this variety of human contacts. Robin Dunbar, the anthropologist who pioneered the concept, calculated that the size of the average group is directly correlated with how effectively its members are at social grooming. This efficiency is determined by the thickness of the neocortex.

According to Dunbar, the more people there are in a group, the more time it takes to maintain social connections. Each person must groom each member of the group. Since efficiency determines the size of the group, humans have an advantage over primates in the form of speech, since social grooming is much more effective than finding fleas.

All sciences studying tribes, groups and settlements agree that ancient associations usually numbered a maximum of 150 people. Dunbar's number explains why large groups are made up of smaller, more manageable groups, such as companies, platoons, and detachments, or as branches, departments, ministries and committees.

With better tools available, such as phone, Twitter, Facebook, email and the like, you can maintain relationships more effectively, which means that this num-

ber can increase, but not by much. Recent studies show that even advanced Facebook users, with more than 1,000 friends, nevertheless regularly communicate with about 150 of them, and densely - with less than 20.

This social organization is called a complex chiefdom. The leader-storyteller does not read all of his followers, but only the confidants who inform him about what is happening on the social network, that is, the leaders of a more local rank.

Social media has revolutionized the way institutions work and the way people communicate, but ultimately it didn't have that much impact on the size of the main social group with which we truly bond. [4]

The progress of technology leads to the fact that the sources of power and forms of control are becoming more and more diverse, there are more and more independent domains of power, and a high position in one domain does not automatically mean the transfer of this position to another domain: at the same time, one person is a bearer of many social roles, and in each of his roles, he forms different spheres of influence.

With an abundance of independent domains of power, society becomes more complex and dynamic, more competitive than societies where the levers of power are in the hands of a few, and the levers themselves are monotonous. [5]

The hallmarks of an empire are the transmission of power to the localities, the speed and adequacy of information exchange, and the imitation of a state of siege. If one of these attributes of the empire is violated, then it will face big problems. We are at the beginning of the era of the formation of digital empires, only they do not need to simulate a state of siege.

Facebook currently dominates social networks (1.6 billion users), Twitter has approximately 330 million users, of which 145 million use it daily. It has been criticized in recent years for its involvement in US political events, Twitter has responded to the criticism by removing 70 million fake accounts. Although Twitter cannot compete with Facebook in terms of the number of users, the fact that Twitter is read by about 500 million monthly is a good indicator. [6]

In this context, at least Facebook can be called a digital empire given the number of loyal users. The main contradiction of modern society is this contradiction between traditional state-political institutions and nomadic network sources of power. Traditional politics lags behind technological developments and is late in making decisions. The outcome of this struggle is not predictable. The current century will not be a century of religious wars, it will be a century of clashes between states and digital empires.

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上合组织国家之间的主要合作领域

MAIN AREAS OF COOPERATION BETWEEN THE SCO COUNTRIES

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本文专门讨论最重要的区域组织上合组织的主要合作方向。对上海合作组织的兴趣不仅在该地区的邻国，而且远远超出其边界。突出了《上海合作组织宣言》，《上海合作组织宪章》和《上海合作组织发展战略》中规定的至2025年的主要任务。请注意2020年的特殊性和即将到来的2021年（上海合作组织周年）。

关键词：上合组织，峰会，合作，国家，文件

Abstract. *This article is devoted to the consideration of the main directions of cooperation of the most important regional organization - the SCO. There is a growing interest in the SCO not only in the neighboring countries of the region, but far beyond its borders. The main tasks specified in the SCO Declaration, the SCO Charter and the SCO Development Strategy until 2025 are highlighted. Attention is drawn to the peculiarity of 2020 and the upcoming 2021 - the anniversary year for the SCO.*

Keywords: *SCO, summit, cooperation, states, document.*

The summit of the Shanghai Cooperation Organization (SCO) was held in the format of a videoconference chaired by Russian President Vladimir Putin on November 10, 2020. During the summit, the heads of the SCO member states and observer states discussed topical issues of world politics: the impact of the pandemic on the modern world, the situation in zones of military conflicts, the inadmissibility of interference in the internal affairs of states, joining efforts in the fight against modern challenges and threats, cooperation in sulfur of the digital economy. Recall that the Shanghai Cooperation Organization on a permanent basis includes 8 countries: Russia, China, India, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan and Uzbekistan. Belarus, Afghanistan, Iran and Mongolia have observer status. Azerbaijan, Armenia, Cambodia, Nepal, Turkey and Sri Lanka are in the status of dialogue partners.

The Shanghai Cooperation Organization was formed on June 15, 2001 - a

permanent intergovernmental regional international organization. The following states are SCO members: India, Kazakhstan, Kyrgyzstan, China, Pakistan, Russia, Tajikistan, Uzbekistan. The territory of the SCO countries makes up 60% of the territory of Eurasia, it is home to the second part of the world's population - 3 billion 40 million people [4]. The SCO includes observer states: Afghanistan, Belarus, Iran, Mongolia. There are a number of candidate states for the observer states Bangladesh, Egypt, Syria, and six more countries with the status of "dialogue partner" are: Azerbaijan, Armenia, Cambodia, Nepal, Sri Lanka, Turkey. Note that "in recent years, Ankara has been increasingly showing itself in the international arena, trying to play an increasingly independent role in relation to the West. Turkey is a NATO member and a "long-term" candidate for membership in the European Union, a state belonging to the Eurasian region, while maintaining relations with the West, it develops and strengthens its influence in the East"[8].

It should be noted that the observer states actively support the activities of the organization and strive in the future to become its full members. Mongolia was the first to receive this status, it happened in Tashkent in 2004 [2]. The fundamental documents of the Shanghai Cooperation Organization are: the Declaration on the establishment of the SCO, signed in China in Shanghai 2001, the Charter of the Shanghai Cooperation Organization from 2002, adopted in St. Petersburg [4].

These documents proclaim the main goals of the SCO:

*strengthening mutual trust and good neighborliness between the participating countries; *assistance of countries to their effective cooperation in the political, trade, economic, scientific, technical and cultural fields, as well as in education, energy, transport, tourism, environmental protection, etc.; *joint provision and maintenance of peace, security and stability in the region; *progress towards the creation of a democratic, just and rational new international political and economic order. Regional security is one of the key tasks of the SCO, which is reflected in the Shanghai Convention on the Suppression of Terrorism, Separatism and Extremism, i.e. with a sharp intensification of destabilizing forces in the region [3]. SCO Secretary General Vladimir Norov noted the global initiative of the President of the People's Republic of China Xi Jinping "Belt and Road" as uniting the efforts of states and developing new opportunities to ensure stable and sustainable development [9].

In accordance with the Decision of the Council of Heads of SCO Member States №3 dated September 12, 2014 in Dushanbe "On the Draft Development Strategy of the Shanghai Cooperation Organization until 2025", taking into account the provisions of the "Main Directions of the SCO Development Strategy for the Medium Term" of the SCO member states in 2012 in Beijing. This document has been drawn up taking into account the forecast of the SCO activities, as well as the regional and international situation. The Strategy notes that "Globaliza-

tion and technological progress will contribute to the growth of interdependence of states" [7]. "The ground remains for radical sentiments, including those based on inter-confessional and intra-religious contradictions, which is fraught with internal political excesses and an increase in tension in international relations."

It is quite obvious that in view of the aforementioned that in order to preserve peace and stability, it is necessary to make the most of the specific opportunities and advantages of the SCO to prevent emerging challenges and threats.

Among the priority directions of the SCO's activities is the task of ensuring sustainable and balanced economic growth, social and cultural development of the region on the basis of equal partnership.

Cooperation in the field of education is one of the most important areas for strengthening cooperation between the SCO countries. The participating countries strive to create a long-term mechanism for cooperation in the field of education and science. The main focus of promoting Chinese culture and language all over the world, is the structure of the Confucius Institute. This is the official network of international cultural and educational centers, which are established by the State Agency for the Promotion of Chinese Language Abroad, Hanban, Ministry of Education of China. The main goal of the organization of Confucius Institutes is to promote understanding and acceptance of Chinese culture and China in general in the world, as well as the development of China's friendly relations with other countries. Today their number is growing every year. All in all, today in 146 countries there are 525 Confucius Institutes and 1113 Confucius classes in primary and secondary schools.

In addition, there are numerous Confucius Classes that carry out similar activities. There are as many Confucius institutions in the countries of Central Asia as in Russia. "It is curious, however, that 80% of these institutions are concentrated in Kyrgyzstan, one of the smallest countries in the region with a population of only 6 million people ... it reflects both the position of the host and the importance that Kyrgyzstan attaches in Beijing" [1]. The first Confucius Institute in Moscow was opened on September 4, 2007 on the basis of the RSHU. Educational partner from the Chinese side Peking University of Economics and Trade. The Chinese side has allocated 100 thousand US dollars. A language laboratory for studying Chinese was opened. There are 19 Institutes and 4 Confucius Schools in Russia.

The first pilot project was opened in June 2004 in the capital of Uzbekistan, Tashkent. The founders of the Confucius Institute are the Tashkent State Institute of Oriental Studies, from the Uzbek side, and Lanzhou University (Lanzhou, Gansu Province), from the Chinese side. According to the Ministry of Education and Science of the Kyrgyz Republic, Chinese is taught in 8 largest universities in the country: BSU n.a. K. Karashev, KNU n.a. J. Balasagyn, KSU n.a. I. Arabaev, KRSU n.a. B.N. Yeltsin, Naryn State University, Osh State University, Osh Tech-

nological University, as well as the Osh Humanitarian Pedagogical Institute and the Bilim Lyceum at Osh State University. In Kazakhstan Confucius Institutes were created at KazNU named after al-Farabi (Almaty), ENU n.a. L.N. Gumilyov (Astana, now Nur-Sultan), Aktobe State Pedagogical Institute (Aktobe) and KSTU (Karaganda). Within the framework of the Shanghai Cooperation Organization agreement, the first Confucius Institute at the Tajik State University was opened in Tajikistan in 2009, the second Confucius Institute was opened at the Mining and Metallurgical Institute of Tajikistan (MMIT) in the city of Chkhalovsk, Sughd Oblast.

And a truly innovative form of integration in the field of education, science, technology and culture between countries and contributing to the development of new ways and ideas of cooperation through the mobility of students and faculty can be safely called the SCO University (SCOU). Within its framework, international programs are being implemented on a permanent basis that expand cooperation between the SCO countries. In the RK SCOU operate on the basis of fifteen higher educational institutions that conduct research in such important areas as nanotechnology, ecology, IT technologies, etc. The initiator of the creation of SCOU was the President of the Russian Federation Vladimir Putin in 2007. Three years later, at a meeting in Beijing, where the working group of the SCO member states on cooperation in the field of education from China, Russia, Kazakhstan, Tajikistan, Kyrgyzstan took part, they decided to launch SCOU in early September 2010 school year. It is important to note that each country itself determines the universities as a base for SCOU and its own program.

A significant area of university science activity is to stimulate all-round cooperation, which includes a full cycle: from joint research and development to the implementation of the results directly into the production process. For the development of the scientific field, it is necessary to constantly maintain contacts in order to achieve the set goals.

"Experts and scientists of the SCO member states will exchange experience in the field of research and development of medical technologies, transfer of the achievements of clinical therapy." "Russia donated about half a million kits for coronavirus diagnostic laboratories as well as devices for non-contact temperature measurement to the partners in the unification. And groups of medical specialists were sent to Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. Nine such missions have already been carried out" [4]. In his speech, President of the People's Republic of China Xi Jinping urged: "Let us raise high the knowledge of the Shanghai spirit in order to develop trusting cooperation and make active efforts to create great prospects for our common future" [4].

The chairmanship was assumed by the Republic of Tajikistan and the summit will be held in September 2021, timed to coincide with the 20th anniversary of

the SCO. Emomali Rahmon said: "We must enter a new qualitative stage within the organization. Look for new ways and means of cooperation also in the fight against terrorism and extremism, transnational organized crime, especially drug trafficking and cybercrime. Organize and conduct planned events, including a high-level jubilee meeting in Dushanbe" [7].

Summing up the above, it can be stated that one hundred to its 20th anniversary, which will be celebrated in 2021, it can be argued that the Shanghai Cooperation Organization seeks to develop cooperation in accordance with the adopted strategy, as well as due to its growing influence, it attracts more and more attention of the countries not only adjacent to the designated region.

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顿巴斯的阶级斗争
CLASS STRUGGLE IN THE DONBASS

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In 2020, the class struggle of Donbass miners intensified. This is a great achievement of the Independent Trade Union of Miners (hereinafter ITUM) organized by the Labor Party of Russia (hereinafter LPR) in November 2019. The exploitation of miners and other workers in Donbass was concealed for over 7 years by the need for martial law, although the results of the unpaid labor of miners are largely appropriated by Ukrainian capitalists.

Until 2014, no one was involved in organizing the labor movement in Donbass. All the trade unions in Donbass were yellow, and the parties calling themselves communist, in fact, proved to be bourgeois. None of these parties took part in the creation and formation of the Donetsk People's Republic (hereinafter DPR).

In the main law of the DPR - the Declaration of Sovereignty of the Donetsk People's Republic, proclaimed on April 7, 2014, we secured a ban on the appropriation of the results of someone else's labor and issues of nationalization. But without an organized labor movement, these decisions remained only on paper.

In the fall of 2014, a coup took place in DPR based on the Minsk agreements, as a result of which the Republic was turned into a colony with a large industry and skilled workers who were forced to work for food. The coup was formalized by early elections in the fall of 2014, completely contrary to the DPR Declaration of Sovereignty, on the basis of the non-existent Constitution and the Minsk agreements. The persons who signed the Minsk agreements allegedly from the DPR did not have any authority to do so. According to the DPR Declaration of Sovereignty, international negotiations do not even belong to the competence of the Supreme Council, but to the competence of national voting, i.e. referendum. There was no vote before the Minsk agreement, no one discussed where the demarcation line should pass, who should go to Mariupol, Kramatorsk, Slavyansk and other cities, under what conditions we will give coal to Ukraine, as well as whom the DPR people will send to negotiations in Minsk and with what instructions. Therefore, without any mandate, as well as instructions, Purgin, Zakharchenko, and later Pushilin, signed the statement that 70% of the territory of the Republic was given

to Ukraine, and the remaining 30% of the territory was turned into slaves. For visibility, elections were held on 30% of the territory of the Republic. There are still workers and militias who have not read the Minsk documents, which do not mention DPR. Everywhere our territory is called - separate areas of the Donetsk region of Ukraine (hereinafter SADRU) and the autumn elections were elections for SADRU, not DPR. DPR symbolism is simply used to fool immature workers. After the fall of 2014, all anti-fascist resistance began to reformat into a treaty war. All opponents of the Minsk conspiracy and the militia who continue their just struggle were repressed or killed.

These are the prerequisites for the struggle of miners and the organization of the labor movement in Donbass as a whole, it is necessary to say a few words about the industry of Donbass. Until 2014, Donetsk region subsidized the budgets of 14 regions of Ukraine (Kiev, Odessa, Transcarpathian, Lvov, Volyn, Vinnytsa, Zhytomyr, Ivano-Frankivsk, Chernivtsi, Kharkiv, Khmelnytskaya, Rivne, Chernigov, Ternopil) out of 24. Mariupol alone gave 40% of foreign exchange earnings to the budget of Ukraine. That is, without the labor of the Donbass workers, the military machine now in the hands of Ukrainian war criminals would have stopped long ago. At the same time, the workers of Donbass provided the wealth of Ukraine's largest oligarchs.

In order to understand the degree of exploitation of workers in Donbass after the events that followed the Minsk conspiracy, I will quote the price of the labor force of a Donetsk miner, which averages 15 thousand rubles, and a metallurgist, which averages 11 thousand rubles. Compared to the pre-war period, the price of labor has dropped 5 times! The cost of living means such as food is the same as in Moscow, and the cost of gasoline is 15-20% higher than at Moscow gas stations. Such a low price of labor forced many workers to leave for the Russian Federation and other countries. After the lack of labor resources began in the Donbass, the exploiters came up with a villainous scheme to create debt to workers. On average, miners and other workers have debts of 2 months. If a person quits and leaves, then no one returns the debt to him.

Since 2017, we have started work in yellow trade unions such as the coal workers union, but this work has not led to positive results. Even in those primary organizations where it was possible to convince the workers to re-elect the chairman to our person, the chairman was still appointed the one to whom the director of the mine pointed. For this reason, at the end of 2019, it was decided to establish the Independent Miners' Union.

The first collective actions that we managed to organize took place in the mines:

Cold beam, Makeevka

Shcheglovskaya - Deep, Makeevka

Named after Zasyadko, Donetsk

Nikanor-Novaya, Zorinsk

Komsomolskaya, Anthracite

During the suspension of work at the "Kholodnaya" "Balka and "Shcheglovs-kaya – deep" mines, the miners were threatened with reprisals, calling their actions sabotage during the war. Therefore, at the "Zasyadko" mine during the suspension of work, the miners remained underground. Under the ground, the actions of the security forces sent by the exploiters are very limited, and weapons cannot be used due to the presence of methane and coal dust in the mine atmosphere. In addition, the underground suspension of work in accordance with labor protection standards is an emergency. If the miners are in the mine for more than 6 hours, the director and chief engineer are obliged to report this to the mining department, after which the mine rescuers are obliged to start a mining rescue operation to provide the miners with food, water, and charged lanterns.

Positive experience of underground collective action at the "Zasyadko" mine was used at the "Nikanor-Novaya" mine and the "Komsomolskaya" mine.

At the "Nikanor-Novaya" mine in the city of Zorinsk, 60 miners remained underground and spent 6 days there until they were paid most of the debt. Collective actions at the "Nikanor-Novaya" mine showed that it is necessary to control those who negotiate on the surface and transmit information underground. As a result of the uncertain position of those who were on the surface, the underground miners came to the surface ahead of time and could not get the full payment of debts. This moment was taken into account in organizing collective actions at the Komsomolskaya mine, where 120 miners spent 8 days underground and secured payment of their current debt in full. During the suspension of work at Komsomolskaya, there were attempts to turn off ventilation at the mine, and the blockade of Anthracite was organized under the pretext of quarantine measures; there were also armed abductions and torture of miners who were on the surface. But the coordinated actions of the Komsomolskaya miners ensured not only the repayment of the debt, but also forced the enemies of the working class to release all the kidnapped miners.

The events at the "Komsomolskaya" mine and other mines and factories have best shown that the real owners of mines, factories and plants are not the capitalists, but the workers. The tougher the capitalists behave, the more ground they lose.

In 2021, the class struggle in Donbass will be brought to a new level. The coal industry and metallurgy, power engineering and mechanical engineering inextricably linked with it, constitute the industrial and economic basis of DPR and the Lugansk People's Republic (hereinafter LPR). According to the main law - the Declaration of Sovereignty of DPR:

- it is forbidden to appropriate the results of someone else's work,

- the people are the bearers of sovereignty and the source of state power,
- only the DPR Supreme Council can act on behalf of the people...

Some of the deputies of the DPR Supreme Council changed their oath, betrayed DPR and went over to the side of Ukraine, joining the so-called "people's council" of certain regions of the Donetsk region of Ukraine (SADRU). In autumn 2014, on the basis of the Minsk documents, the legislative, executive and judicial structures of SADRU were formed. From that moment on, the systematic destruction of DPR began, and the struggle against the defenders of the principles proclaimed in the Declaration of Sovereignty began. Despite the unleashed repression of some of the deputies of the Supreme Council, DPR managed to preserve the structure of the Council. The same events took place in the Lugansk People's Republic, with the exception of the safety of the Supreme Soviet of the LPR.

Replenished by co-optation of the advanced representatives of the labor movement, labor collectives of mines, factories and plants, who have shown themselves, among other things, in the strike struggle, the composition of the DPR Supreme Council is able to return the Republic to the principles enshrined in the DPR Declaration of Sovereignty, which were confirmed by a majority vote in a referendum May 11, 2014. One by one, labor collectives are not able to solve the problem of increasing the price of labor and move to political demands; such problems can be solved only by uniting in the Council. The workers of the LPR today have a structure for unification - the DPR Supreme Council, which is open for them too. The main thing is to get together with the leading representatives of the struggling labor collectives, and the name in terms of the territorial characteristic can be corrected. DPR and LPR have already firmly inscribed themselves in history and will remain in it forever.

Everyone in DPR and LPR saw what a commotion begins in case of stopping one mine or several workshops of a plant, how fair demands of the workers are fulfilled against the background of the helplessness of the authorities of "certain areas of Donetsk and Lugansk regions of Ukraine". When collective action stops the shipment of finished products from a dozen mines and several factories that violate workers' rights, then this will be a forceful superiority over the exploiters and traitors. Only if most of the labor collectives of mines, factories, plants and other large industrial enterprises of Donbass are united, can a significant increase in the price of labor be achieved, the exploiters can be forced to upgrade equipment and perform repairs, the shameful border between DPR and LPR can be removed, DPR and LPR can be merged, you can end the slave curfew - the longest curfew in world history, you can stop the war, you can bring the organizers of the genocide in Donbass to a fair trial, and much more.

The DPR Supreme Council appealed to all labor collectives of industrial enterprises in Donbass, fighting for their interests, to send their forward and militant representatives to the Council.

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新生儿胃内容物微吸和长期机械通气：原因或结果？

MICROASPIRATION OF GASTRIC CONTENTS AND PROLONGED MECHANICAL VENTILATION IN NEWBORNS: CAUSE OR EFFECT?

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该研究包括276名在新生儿期接受侵入性呼吸治疗的儿童。通过检查气管支气管抽吸物与胃蛋白酶的释放并通过消光值确定其活性来进行微抽吸的验证。在研究的3到14天（相当于生命的5-17天）期间，发现有胃内容物微量吸出的儿童数量增加且灭绝增加。发现在妊娠37-35周出生的孩子的气管支气管抽吸物中的胃蛋白酶活性在研究的10-14天（生命的12-17天）增加，然后在研究的21天减少（生命的23-24天），而在妊娠34周或更短的时间内出生的患者在生命的24-28天时具有逐渐消失的最大吸气过程。胃蛋白酶活性的增加伴随着人工通气时间和随后氧疗时间的增加，这增加了患慢性支气管炎肺病的风险。

关键词：新生儿；人工肺通气；气管支气管抽吸物；微量抽吸；消光

Abstract. *The study included 276 children undergoing invasive respiratory therapy in the neonatal period. Verification of microaspiration was carried out by examining the tracheobronchial aspirate with the release of pepsin and determining its activity by the value of extinction. An increase in the number of children with microaspiration of gastric contents and an increase in extinction were revealed in the period from 3 to 14 days of the study, which corresponded to 5-17 days of life. It was found that the activity of pepsin in the tracheobronchial aspirate of children born at 37-35 weeks of gestation increased by 10-14 days of the study (12-17 days of life), followed by a decrease by 21 days of the study (23-24 days of life), while patients those born at 34 weeks of gestation or less had a progressive course of microaspiration with maximum extinction values at the age of 24-28 days of life.*

The increase in pepsin activity was accompanied by an increase in the duration of artificial ventilation and subsequent oxygen therapy, which increased the risk of developing chronic bronchopulmonary pathology.

Keywords: newborns, artificial lung ventilation, tracheobronchial aspirate, microaspiration, extinction

Introduction

Improvements in perinatal medicine and neonatal resuscitation techniques have increased the survival rate of children in need of respiratory support. However, against the background of a decrease in mortality in this group, there is an increase in chronic bronchopulmonary pathology, in the etiopathogenesis of which, in addition to structural and functional immaturity, infectious and hypoxic factors, oxidative stress and artificial lung ventilation (ALV) play an important role [1, 2, 3, 4]. Considering the interconnection of all organ systems and the polyetiology of bronchopulmonary pathology in newborns, it is expedient to study the nature of the effect of comorbid conditions on the structural and functional formation of the respiratory system in postnatal ontogenesis.

Bronchopulmonary pathology, combined with microaspiration of gastric contents, proceeds against the background of hyperplasia of epithelial cells producing endothelin-1 (in high concentrations with a vasoconstrictor effect), NO-synthase (an enzyme with the participation of which inhibitory neurotransmitter of non-adrenergic - necholenergetic nature is produced, nitrogen oxides lower esophageal sphincter), as well as a decrease in the level of calretinin and melatonin, which increase the tone of the esophageal sphincter apparatus [5]. The release of biologically active substances against the background of the damaging effect of the components of gastric contents, an imbalance in the regulatory link of the esophagogastric zone in the form of a decrease in the expression of esophageal epithelial cells producing calretinin, gastric epithelial cells producing melatonin, and an increase in the number of esophageal epithelial cells producing NO-synthase and endothelin-1, lead to further progression of gastrointestinal dysfunctions [6, 7]. As a result, there is a prolongation and increase in the severity of gastroesophageal regurgitation and microaspiration of refluxate with an increase in structural, and, accordingly, functional changes in the bronchopulmonary system [8]. Thus, the interaction of bronchopulmonary and functional gastrointestinal pathology is carried out according to the type of mutual burdening, based on the relationship of pathophysiological mechanisms, the combined action of which leads to an increase in the duration of artificial ventilation and subsequent oxygen therapy with the need for high oxygen concentrations.

Purpose of the study – to establish the nature of the relationship between the duration of respiratory support and the severity of microaspiration of gastric con-

tents in newborns in order to optimize complex therapy.

Materials and methods

The study included 276 children aged from 1 day to 4 months of life, who were on artificial lung ventilation in the neonatal period and who had microaspiration of gastric contents.

Diagnostics of microaspiration of gastric contents was carried out by means of pepsin isolation in tracheobronchial aspirate (TBA) by gel filtration on Sephadex, with determination of pepsin activity by extinction value [9]. TBA was collected on days 1, 3, 10, 14 and 21 of the study through an endotracheal tube, during sanitation of the upper respiratory tract of the newborn 2 hours after feeding.

The first group consisted of 44 infants with TBA extinction from 0.3 to 0.8: 23 full-term infants (subgroup 1A) and 21 infants born prematurely (subgroup 1B) at 35-37 weeks of gestation.

The second group included 185 infants with TBA extinction from 0.8 to 1.2: 77 term infants (subgroup 2A) and 108 preterm infants (subgroup 2B) with gestational age at birth 34-32 weeks (56 infants) and 31-29 weeks (52 children).

The third group included 47 infants with TBA extinction from 1.2 to 1.7, born prematurely with a gestational age of less than 29 weeks.

Research results and discussion

According to the data obtained, on days 1 and 3 of the study, microaspiration with the detection of pepsin in TBA occurred in 38.6% of children in group 1. The main number of children with a positive reaction to pepsin in TBA was in subgroup 1B (27.3% of 38.6%). In the period from 10 to 14 days of the study, microaspiration of gastric contents was verified in all children in group 1. In long-term ventilated patients, on day 21 of the study, there was a slight decrease in the number of cases of microaspiration, which was more pronounced in subgroup 1B, which was obviously associated with an increase in the maturity of anti-aspiration mechanisms, restoration of adequate functional activity of the gastrointestinal tract. This led to an improvement in gastrointestinal motility, a decrease in severity and a decrease in the number of cases of microaspiration.

In group 2 patients, pepsin release in TBA on day 1 of the study took place in 49.1% of cases, followed by an increase in the number of patients with a positive reaction to pepsin to 100.0% in the period from 3 to 10 days of the study in subgroup 2A and a period from 1 to 3 days of the study in subgroup 2B. By day 21, there was a regression in the number of cases of microaspiration, less pronounced in comparison with the indicators in group 1.

Patients of group 3 were distinguished by the earliest positive reaction to pepsin in TBA. On the 1st day of the study, clinically significant activity of pepsin in TBA was recorded in 68.1% of children. On the 3rd day of the study, 100.0% of patients in group 3 had microaspiration of gastric contents, while there was no

regression in the number of patients with a positive reaction to pepsin in TBA by the end of the first month of life (typical for premature infants of groups 1 and 2) in this group, which is associated with pronounced gestational immaturity and an unfavorable antenatal background, leading to a slower rate of development of the functional activity of the gastrointestinal tract and antireflux mechanisms.

Pepsin activity in TBA increased with decreasing gestational age at the time of birth, with maximum values in children born at gestational age less than 29 weeks (extinction 1.2-1.7). In subgroups 1A, 1B, and 2A, a wave-like change in pepsin activity in TBA was noted with an increase in extinction values, and, consequently, the severity of microaspiration by 10-14 days of the study (which corresponds to 12-17 days of life) with a subsequent decrease by 21 days of the study (23 -24 days of life). In subgroups 2B and 3, the microaspiration of gastric contents was progressive with maximum extinction values on day 21 of the study. The data obtained are consistent with the results of previous studies [8], which revealed an increase in dysfunctions of the upper gastrointestinal tract at 3-4 weeks of life in children born prematurely, in particular, due to the maturation of the lower esophageal sphincter against the background of a violation of its functional activity.

Analysis of the duration of mechanical ventilation and the duration of subsequent oxygen therapy showed that an increase in the extinction values in TBA was accompanied by an increase in the duration of mechanical ventilation ($p = 0.0028$) and oxygen therapy ($p = 0.00047$). Thus, the average duration of mechanical ventilation and subsequent oxygen therapy at an extinction level of 0.712 ± 0.385 was 19.62 ± 7.35 and 39.26 ± 12.41 days, respectively. Whereas at the maximum extinction values of 1.492 ± 0.237 , which corresponded to a more pronounced microaspiration of gastric contents, the duration of invasive respiratory therapy and oxygen therapy against the background of spontaneous breathing increased sharply - 39.26 ± 12.41 and 94.26 ± 12.57 days, respectively.

Conclusion

Thus, there was an increase in the number of cases and the severity of microaspiration of gastric contents with decreasing gestational age. An increase in extinction values in TBA was accompanied by more prolonged mechanical ventilation and oxygen therapy, on the basis of which it can be assumed that there is a relationship between the activity of pepsin in TBA and the duration of respiratory therapy, which is realized against the background of morphofunctional features determined by gestational age and comorbid pathology, which should be taken into account when developing regimens of complex therapy of this category of patients.

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子宫肌瘤鉴别诊断困难的临床病例
**A CLINICAL CASE DEMONSTRATING DIFFICULTIES IN
DIFFERENTIAL DIAGNOSIS OF ADENOMYOSIS**

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在该临床病例中，证明了子宫腺肌症的鉴别诊断的复杂性，这表明需要对患者的临床和血吸虫病特征进行全面分析。为了确定正确的诊断并选择最佳的管理策略，必须进行额外的检查。

关键词：子宫腺肌病，肌瘤，盆腔器官超声检查

Abstract. *In this clinical case, the complexity in the differential diagnosis of adenomyosis was demonstrated, which dictates the need for a thorough analysis of the patient's clinical and anamnetic features. Additional examination is necessary to establish the correct diagnosis and select the optimal management tactics.*

Keywords: *adenomyosis, fibroids, ultrasound examination of the pelvic organs.*

Endometriosis of the uterus mainly manifests itself as violations of the menstrual cycle, often leading, due to hyperpolymenorrhea, to severe anemization of the patient. In 40%, endometrial hyperplastic processes are detected. Intermenstrual bleeding is possible. Diagnosis of endometriosis is based on history data and additional research methods. In the anamnesis there are complaints of menorrhagia, painful menstruation, blood anesthesia before and after menstruation. Particular attention is paid to the long-term unsuccessful treatment of "inflammation", numerous therapeutic and diagnostic curettage of the uterus for bleeding, failure in the implementation of fertility [1].

Differentiating uterine fibroids and adenomyosis is difficult, especially if the fibroid nodes are not large or the adenomyosis is diffuse. For differential diagno-

sis, an ultrasound scan of the pelvic organ is necessary on the eve of the expected menstruation.

Myoma of the uterus in combination with adenomyosis clinically proceeds in exactly the same way as any of these diseases separately. Characterized by chronic pelvic pain of a pulling nature, difficulties with conception [1].

The purpose of this clinical case: to demonstrate the complexity of the differential diagnosis of adenomyosis.

Patient P-yang, 40 years old.

Complaints: profuse, prolonged, painful menstruation, weakness, brittle hair and nails.

Medical history: With menarche - menstruation is profuse, prolonged, painful.

Since 2010 - at the dispensary observation in the ZhK with the diagnosis "Small uterine fibroids". DEK for stationary endocervicosis - in 2014. Since 2016, has been observed by a hematologist for chronic iron deficiency anemia, receives treatment for this pathology.

Life history: Menstruation from 13 years of age to 5-7 days (up to 8-9), profuse, painful, after 28-30 days. In 2004 - urgent spontaneous childbirth without complications.

In 2016 - a spontaneous abortion at 6 weeks of gestation. Curettage of the uterine cavity was not performed.

Gynecological status (on the 25th day of the menstrual cycle)

The external genital organs are developed correctly, the walls of the vagina are not changed, the cervix is cylindrical, the epithelium is not changed, the body of the uterus is in the anteversio, anteflexio position, increased to 6 weeks of gestation, round in shape, softish consistency, limited in mobility, sensitive to palpation. Appendages - somewhat more than normal, limited in mobility, sensitive to palpation. Locks, parameters are free, discharge is light, slimy.

Diagnosis: Adenomyosis.

An ultrasound of the pelvic organs was prescribed.

Conclusion of ultrasound of the pelvic organs on the 25th day of the menstrual cycle: Adenomyosis.

Recommended: Study of hormones and their metabolites in blood serum (FSH, LH, prolactin, freeT4, TSH, testosterone, cortisol, DEA - C, 17-OH progesterone, estradiol, progesterone). Ultrasound of the thyroid gland, mammary glands. A smear for the degree of purity of the vagina, oncocytology, PCR smear for STDs. After an additional examination - start taking di-nogest 2 mg (vizanne) daily from the 5th day of the cycle for 6 months in a continuous mode, with a repeated ultrasound examination of the pelvic organs after 6 months.

This clinical case demonstrates the difficulties in the differential diagnosis of uterine myoma and adenomyosis. Areas of endometriosis can be visualized us-

ing modern methods of radiation diagnostics (ultrasound, computed tomography (CT), magnetic resonance imaging (MRI) in the form of formations, the cavity of which is filled with hemorrhagic, hypoechoic contents [2-7]. Transvaginal ultrasound diagnosis of endometriotic lesions is highly specific, errors in diagnosis are rare. At the same time, the absence of ultrasound signs of endometriosis is not a reason to exclude this diagnosis, and patients with severe symptoms should undergo laparoscopy. The accuracy of ultrasound diagnosis depends on the location and volume of endometriotic foci [8 According to domestic and foreign researchers, the diagnostic accuracy of modern transvaginal ultrasound examination is comparable to MRI examination of the pelvic organs (retrocervical endometriosis - 80 and 95%, adenomyosis - 85 and 95%, endometrioid cysts 75 and 100%, respectively) [9].

In this clinical case, an underestimation of the anamnesis data is abundant, prolonged menstruation, leading to chronic iron deficiency anemia, spontaneous miscarriage that occurred in early pregnancy. These symptoms may be typical for uterine fibroids, but, given the similarity of these manifestations with the manifestations of adenomyosis, it was necessary to carry out a differential diagnosis earlier. An ultrasound study of the pelvic organs, carried out in the premenstrual period, would have made it possible to establish the correct diagnosis and prescribe treatment earlier.

Thus, the obstetrician - gynecologist must carefully consider all the clinical - anamnestic data of the patient being examined, using the necessary additional diagnostic methods to increase the effectiveness of therapy.

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一种抗痤疮皮肤杆菌的抗菌肽，具有治疗寻常痤疮的潜力
**AN ANTIMICROBIAL PEPTIDE AGAINST CUTIBACTERIUM ACNES
AND IT'S THERAPUTIC POTENTIAL FOR TREATMENT OF ACNE
VULGARIS**

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目的。在治疗轻度或中度痤疮对其他疗法有抵抗力的患者时，确定局部抗菌肽（粒细胞溶血素衍生肽-GDP-20）的有效性和安全性。

材料与amp;方法。该研究包括33人。使用痤疮皮肤病学指数（ADI）（生活质量评估-皮肤病生活质量指数（DLQI））确定痤疮的严重程度。在痤疮治疗中，患者使用GDP-20作为单一疗法。

结果。局部GDP-20治疗有助于消除DIA指标的剧烈和快速变化，据报道有46.7%的患者形成了临床缓解。33.3%的患者表现出显着改善，20%的患者表现出改善。

结论。局部GDP-20可用作潜在的治疗剂，可治疗皮肤中与痤疮相关的微生物，该微生物可抑制痤疮皮肤的痤疮并具有消炎作用。

关键词：抗菌肽寻常痤疮痤疮表皮杆菌；GDP-20。

Objective. *To determine the effectiveness and safety of the topical antimicrobial peptides (granulysin-derived peptide - GDP-20) when treating patients with mild or moderate acne resistant to other therapies.*

Material and methods. *The study included 33 people. Determining the severity of acne was conducted using the Acne Dermatology Index (ADI), the assessment of quality of life — Dermatology Life Quality Index (DLQI). In the acne treatment*

patients were using the GDP-20 as monotherapy.

Results. Topical GDP-20 therapy contributed to erase the severe and rapid dynamics of indicators DIA, the formation of clinical remission was reported in 46.7% of patients. 33.3% patients showed significant improvement and 20% patients showed improvement respectively.

Conclusion. Topical GDP-20 that could be used as potential therapeutic agents against microorganisms located in the skin and related to acne disease, which suppress of cutibacterium acnes and has anti-inflammatory effect.

Keywords: antimicrobial peptide; acne vulgaris; cutibacterium acnes; GDP-20.

Acne vulgaris (acne) is a common chronic inflammatory skin disease that affected pilosebaceous units, characterized by comedones, papules, pustules, nodules, cysts and later on sometimes as widespread scarring. It mainly affects adolescents, usually begins with the onset of puberty. Affecting mostly the visible areas of the face but also the neck and upper trunk. Acne is not limited to adolescence, may persist into adulthood, it can occur at any stage of life. If left untreated, it may among the disease that can cause significant psychological and emotional impact like depression, anxiety, and low self-esteem in patients with acne. The prevalence of acne has been reported more than 90 percent of world population is affected, making it the eighth most common disease worldwide[1].

The pathogenesis of acne is multifactorial. The key factor is genetics.[2] In addition, numerous studies have established that the most important factors, which interact to produce acne lesions: a) Increased sebum production; b) Cutibacterium acnes (formerly Propionibacterium acnes) proliferation; c) Altered follicular keratinisation; d) Inflammation.[3].

Increased sebum production, either by overstimulation of the gland by high levels androgens or by hypersensitivity of normal levels androgens. Androgens, such as testosterone, dehydroepiandrosterone sulfate (DHEAS) and dihydrotestosterone (DHT), are known to regulate genes responsible for sebaceous gland growth and sebum production[3]. There is a possibility of increased androgen production within the pilosebaceous follicle. The pilosebaceous unit possesses the steroid metabolising enzymes that convert DHEAS to testosterone and DHT[4]. Testosterone is also converted to the more potent androgen i.e. DHT by the enzyme 5 α -reductase[4-5]. In particular, correlates with the degree of comedonal acne in perpubertal girls[6].

Cutibacterium acnes (C.acnes) is the main organism and an anaerobic resident of pilosebaceous unit that colonises acne prone areas of the sebaceous hair follicle[7]. The proliferation of these bacteria is responsible for the initiation of inflammation. C. acnes releases many enzymes such as proteinases, lipases and hyaluro-

nidases which break down sebum to free fatty acids and peptides. It also releases chemotactic factors which are integral to the inflammatory cascade. It also releases chemotactic factors which are integral to the inflammatory cascade. These factors contribute to the inflammatory nature of acne by inducing monocytes to secrete proinflammatory cytokines such as tumour necrosis factor- α (TNF- α), interleukin (IL)-1 β and IL-8. The inflammatory response to the bacterium and these metabolic by products leads to the formation of papules, pustules, and nodules[8]. Studies have shown that *C. acnes* also stimulates the host's innate immune response by activating Toll-Like Receptor (TLR)-2 then leads to the production of multiple proinflammatory cytokines, including IL-8, IL-12, tumour necrosis factor- α and IL-1 β [7]. Activation of the TLR-2 via activation of nuclear factor- κ B (NF- κ B) which promotes expression of genes, the final products of which degrade and alter the dermal matrix.

In patients with acne, the rate of keratinocyte desquamation at the follicular infundibulum is altered. The keratinocytes accumulate and become interwoven with monofilaments and lipid droplets. This accumulation of sebum- and keratin-filled microcomedones, the microscopic precursor to all acne lesions[9].

Inflammatory responses is a factor in the development of acne, occur prior to the hyperproliferation of keratinocytes. Cellular products from *C. acnes* stimulate the recruitment of CD4+ T cells and subsequently neutrophils. These inflammatory cells penetrate the follicular wall, causing disruption of the follicular barrier. This leads to the release of lipids, shed keratinocytes and *C. acnes* into the surrounding dermis, inciting further recruitment of inflammatory cytokines and macrophages activate local endothelial cells to up-regulate inflammatory mediators such as vascular cell adhesion molecule-1 (VCAM-1), intercellular adhesion molecule-1 (ICAM-1), and human leukocyte antigen (HLA)-DR in the vessels around the pilosebaceous follicle. [10]

Currently, there are numerous drugs and new methods of treatment are constantly used in clinical practice. Treatment should be maintained remission of skin lesions, directed toward the factors involved in acne and improved the quality of life. The most appropriate treatment is based on the grade and severity of the acne. Therefore, topical therapy is the mainstay of treatment for mild acne. Oral antibiotics and systemic isotretinoin have been widely used for moderate to severe acne vulgaris. In the rapidly growing resistance of microorganisms, including *C. acnes* to antibiotics, it becomes important to search for other antimicrobial agents, such as antimicrobial peptides(AMPs).

AMPs are characterized by thermal stability, a broad antimicrobial spectrum, low minimum inhibitory concentration, low level of drug resistance development and good inhibitory efficacy against fungi, gram-negative and gram-positive bacteria [11]. Recently, the results of some studies have demonstrated evidence that

antimicrobial peptides (AMPs) play an essential role in the skin's immune defense system due to direct microbial toxicity, as well as by modulating the components of the innate and adaptive immune system [12-13]. AMPs are key factors in the body's natural defense against pathogens. At the same time, AMP has long been considered as a potential alternative to antibiotics treatment.

GDP-20 is a new granulizin-derived peptide with a unique amino acid sequence that directly acts on bacterial membranes, plays a significant role in the development of broad bactericidal spectrum, particularly in *C.acne*.

We observed 33 patients (23 women and 10 men) aged 15 to 30 years. The severity of the disease was determined using the dermatological index of acne (DIA) by counting skin lesions- open or closed comedones-papules, pustules and nodules.[14] 13 (39.4%) patients were diagnosed with mild severity, 20 (60.6%) patients with moderate severity of acne that resistant to other therapies. Average the group DIA indicator before the start of therapy was 12.7 ± 0.8 .

The topical GDP-20 were applied to the affected skin twice per day: in the morning - cleansing gel, in the evening - soothing moisturizing gel and moisturizing lotion for 4 weeks.

At the end of the therapeutic study, the number of skin lesions of all patients and compared the result with the before indicators. As a result, the number of open comedones decreased by 3.5 times, closed comedones - 4 times, and the number of papulo-pustular down to be 3 times less than the initial indicator. Average group showed that DIA at the end of therapy was 3.5 ± 0.4 , which demonstrates 72% reduction in the DIA index in relation to its indicator before the start of therapy. During the treatment, no one had side effects such as erythema, swelling, itchiness, irritation.

Assessment of the quality of life of patients showed pronounced changes as a result of the therapy. It was showed that application of topical GDP -20 significantly improved of patients'life. After the treatment the mean index decreased to $4,03 \pm 0,15$ scores. By the comparison of index before the treatment there were statistically significant differences between them (19.4 ± 3.03 , $p < 0.05$).

Treatment with topical agents which contain GDP-20 therapy contributed to erase the severe and rapid dynamics of indicators DIA, the formation of clinical remission was reported in 14 (46.7%) of patients. 10 (33.3%) patients showed significant improvement and 20% patients showed improvement respectively. The best results were achieved by patients with mild severity of acne.

It should be noted that the treatment of acne should not be limited to the use of standard treatment methods. For mild to moderate acne, topical GDP 20 has achieved significant clinical effects. It shows that the effectiveness of topical antimicrobial peptides could be used as an option for combined treatment of different severities of acne.

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饮食性肥胖女性的代谢健康指数与身体组成和生活方式的相关性
**CORRELATION OF METABOLIC HEALTH INDEXES WITH BODY
COMPOSITION AND LIFESTYLE IN FEMALES WITH ALIMENTARY-
CONSTITUTIONAL OBESITY**

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背景：肥胖问题在很长一段时间内并没有使其流行度下降。目前，最大的兴趣是代谢健康类型的形式。

目的：本研究的目的是评估饮食性肥胖的女性的代谢状况和身体成分，并根据代谢综合征的征象研究生活方式的特殊性。

材料和方法：检查了135名具有饮食结构性肥胖的女性（ 39 ± 10 , 50岁，BMI $34,9 \pm 6,60 \text{ kg} / \text{m}^2$ ，肥胖持续时间 $12,1 \pm 9,13$ 岁）。对照组中有30名患者（ $39,0 \pm 6,8$ 岁，BMI $21,4 \pm 1,47 \text{ kg} / \text{m}^2$ ）。检查内容包括人体测量法（BMI，腰围和股骨围；腰围/股骨指数）和BP（血压）的测量以及许多代谢指标：空腹血糖，基础胰岛素，胰岛素抵抗指数（HOMA，CA-RO），胆固醇总量和脂蛋白，甘油三酸酯，ALT，AST，Gamma-GT，瘦素的胆固醇；人体成分通过生物电阻抗分析。此外，还对所有患者的生活方式和体育锻炼进行了采访。为了研究生活方式，形成了一组对照组（30名相同年龄和正常BMI的女性）。肥胖女性根据新陈代谢指标进行区分：第一组 - 61位年龄在 $36.5 \pm 10,69$ 的具有代谢“健康”肥胖症（有或没有代谢综合征迹象）的女性，第二组-74岁 $41 \pm 10,01$ ，具有两个或多个新陈代谢征兆-新陈代谢的“非健康”肥胖症。

结果：检测到每位肥胖的3d女性只有一个MS征象，在大多数情况下（61
国际会议

%) 是腰围升高。在超过一半的病例中，独立于任何传统的MS标准，都可以观察到肥胖女性中脂肪代谢的紊乱（低密度和极低密度脂蛋白的总胆固醇和胆固醇的升高）。每三位患有“健康”肥胖症的女性对胰岛素都有抵抗力，血浆瘦素水平升高。代谢指标与身体组成的主要指标（脂肪质量，总水，细胞内液体，细胞外液体，游离脂肪质量，干细胞质量，活性脂肪质量）之间具有很强的相关性。

结论：脂肪和碳水化合物代谢指标以及肝功能不仅与脂肪组织总量有关，而且与液体（水）成分也有关。据观察，导致肥胖女性每日饮食热量增加的原因之一是更频繁地饮酒。儿童时期缺乏正常的饮食习惯和必须的饮食习惯是增加体重和肥胖症发展的良好基础。患有代谢性“非健康”肥胖的女性会忽略有氧运动，用额外的零食代替压力，而偏爱甜食（巧克力）。

关键字：代谢性“健康”肥胖，代谢性“不健康”肥胖，身体成分，生活方式

Abstract

Background: *The problem of obesity doesn't lose its popularity for a very long time. At the moment the biggest interest is on metabolically healthy types forms.*

Aims: *Goal of present research was to assess metabolic status and body composition in women with alimentary constitutional obesity, as well as to study the peculiarities of lifestyle depending on the presence of signs of metabolic syndrome.*

Materials and methods: *There were examined 135 females with alimentary-constitutional obesity (39±10,50 years old, BMI 34,9±6,60 kg/m², duration of obesity 12,1±9,13 years). and 30 patients from the group of control (39,0±6,8 years old, BMI 21,4±1,47 kg/m²). Examination included anthropometry (BMI, Waist and Femur Circumference; Waist/Femur index) and measurement of BP (blood pressure) and a number of metabolic indexes: glucose fasting, basal insulin, indexes of insulin resistance (HOMA, CARO), Cholesterol total and Cholesterol of Lipoproteins, Triglycerides, ALT, AST, Gamma-GT, Leptin; Body Composition by bioelectrical impedance analysis. Besides all patients were interviewed on their Lifestyle and physical activity. To study lifestyle a group of control was formed (30 females of same age and normal BMI). Females with obesity were separated depending on metabolic indexes: 1-st group – 61 females aged 36,5±10,69 with metabolically “healthy” obesity (with/without one sign of metabolic syndrome) and 2-nd group -74 persons aged 41±10,01 with two or more metabolic signs - metabolically “non healthy” obesity.*

Results: *It was detected that each 3-d female with obesity has only one sign of MS, in most of cases (61%) it was an elevated Waist Circle. Disturbances in fat metabolism (elevation of total Cholesterol and Cholesterol of Lipoproteins of Low and Very Low Density) in females with obesity is observed in more than half*

of cases independently on presence of any traditional criteria of MS. Each third female with “healthy” obesity has resistance to insulin and elevation of plasma leptin level. It is strong correlation between metabolic indexes and main indexes of body composition (Fat Mass, Total Water, Intracellular Liquid, Extracellular Liquid, Free Fat Mass, Dry Cellular Mass, Active Fat Mass).

Conclusions: *Indexes of Fat and Carbohydrate Metabolism and liver function correlate not only with total amount of fat tissue but with Liquid (water) component too. It is observed that one of reasons which leads to increasing of daily dietary caloricity in females with obesity is more frequent taking of alcohol. Absence of normal regimen of meal and imperative taking of meal in the childhood are good base for increasing of body mass and development of obesity. Females with Metabolically “non-healthy” obesity ignore aerobic physical exercises, replace stresses by extra snacks and prefer sweet meal (chocolate).*

Keywords: *Metabolically “healthy” obesity, metabolically “non-healthy” obesity, body composition, lifestyle.*

Obesity for a long time has been taking a leading place among the urgent problems of medical science. It is well known that excessive weight correlates with number of serious, leading to invalidization, diseases [1]. However, most of patients with obesity, tend to underestimate the problem, because of absence of any complaints, especially in the very beginning. In 1982 E.Sims was the first who mentioned the conception of “metabolically healthy obesity” and indicated that obesity in all cases isn’t an obligatory factor, which increases cardio-metabolic risk and mortality [2]. Last years phenotype of metabolically healthy obesity (MHO) has been studied actively. A number of investigations really demonstrate an absence of correlation between MHO and development of type 2 diabetes, myocardiac infarction and death [3,4,5]. At the same time some researchers agree that MHO is unstable transient state, finally increasing risks of states mentioned above [6,7].

Till now days there is no unified definition of MHO. At the same time, an adequate therapeutic recommendations, leading to decrease cardio-metabolic risks, depends on accurate diagnostic criteria in MHO [8].

Goal of present research was to assess metabolic status and it’s correlation with body composition in females with alimentary constitutional obesity, as well as to study the peculiarities of lifestyle depending on the presence of signs of metabolic syndrome.

Cross-sectional observational multicenter study was performed. There were examined females aged 18 up to 60 with overweight and obesity (BMI >25 kg/m²) without any acute and chard chronic diseases, who came to endocrinologist in outpatient department for correction of body mass (main group) and females of

the same age with normal BMI (group of control). An exclusion criteria in both groups there were the following: acute infections, chronic somatic diseases at the period of relapse, chronic virus (B,C) and alcohol hepatitis. It was performed common clinical examination in both groups, including anamnestic examination, objective state with anthropometry: body mass (kg), height (m), Waist Circumference (WC, sm) and Femur Circumference (FC, sm) with calculation of Body Mass Index (BMI, WHO, kg/m^2) and Waist/Femur index (WC/FC). Patients of main group passed laboratory tests to check main indexes of fat metabolism: Cholesterol total (CH, reference 3,2-5,2 mmol/l), Triglycerides (TG, 0,0-2,3 mmol/l), Low Density Lipoproteins Cholesterol (LDLP Cholesterol, 0,0-3,5 mmol/l) and Very Low Density Lipoproteins (VLDLP Cholesterol, 0,0-0,9 mmol/l), High Density Lipoproteins (HDLP Cholesterol $>1,15$ mmol/l); Leptin (1,1-27,6 ng/ml); Glucose (3,88-6,38 mmol/l) and Insuline (2,6-24,9 mcU/ml) of plasma, with calculation of insuline resistance indexes (IR):HOMA-IR (normal $<2,55$ U) and CARO-IR (normal $>0,33$ U); and liver enzymes: aspartate-aminotransferaze (AST, up to 45 IU/l), alanine-aminotransferase (ALT, up to 40 IU/l) and gamma glutamyl-transpeptidaze (Gamma-GT, up to 35 IU/l). Groups were formed depending on metabolic health criteria by NCEP ATP III (2001). According to NCEP ATP III (2001), metabolic syndrome includes: abdominal obesity (WC in males >102 sm, in females >88 sm), TG $>1,7$ mmol/l, HDLP Cholesterol (in males $<1,04$ mmol/l, in females $<1,3$ mmol/l), BP (blood pressure) $>130/85$ mm Hg, fasting glucose level $>6,1$ mmol/l. Metabolically healthy obesity was confirmed in females without any diagnostic criteria of MS or only one by NCEP ATP III (2001). In patients who had more than one MS criteria, metabolically nonhealthy obesity was confirmed (MNHO) [9].

Body Composition (BC) was studied by bioelectrical impedance analysis (Body Composition detector "Diamant" 8804), main principle of work is measurement of tissue resistance before and after the influence by irregular electricity of different current frequency. There were detected the following indexes in conclusion: Fat Mass (FM, kg, %), Total Liquid (TL, l), Extracellular Liquid (ECL, l), Intracellular Liquid (ICL,l), absolute and relative indexes of Total Water (TW,l, %), Fatfree Mass (FFM, kg,%), Active Cellular Mass (ACM, kg,%) and Dry Cellular Mass (DCM, kg, %) of body. All examined were interviewed to detect Life Style features. For this purpose the special questionnaire, investigated by Endocrinological department of Tver State Medical University, was used. It included 31 questions: № 1-8 reflected goals of patient, planning body mass correction and patient's motivation, possible reasons of elevation of body mass, and also methods of body mass correction used before. Questions № 9-11 allowed to evaluate physical activity of responded person, № 13-25 were on meal (features and eating behavior), № 26-31 – on family meal anamnesis in childhood. Patient could choose one or more

answers.

Results. There were examined 135 females (main group) with overweight and alimentary-constitutional obesity (age $39 \pm 10,50$ years, BMI $34,9 \pm 6,60$ kg/m², duration of obesity $12,1 \pm 9,13$ years). There was formed a group of control - 30 volunteers: females of similar age ($39,0 \pm 6,8$ years) and normal body mass (BMI $21,4 \pm 1,47$ kg/m²) to study a life style. According to our data, more than a half of females with over weight and obesity (54,8%) had signs of metabolically unhealthy obesity (two and more criteria of MS by NCEP ATP III, 2001). In 30,4 % of cases only one sign of MS was detected and only 14,8% of examined didn't have any metabolic problems.

Depending on metabolic state all patients were divided in two groups: 1-st group – MHO - 61 females aged $36,5 \pm 10,69$ with one sign of MS or without it and 2-nd group – 74 patients aged $41 \pm 10,01$ ($p < 0,002$) – MNO with two or more signs of MS.

As expected, females with MNHO had more severed levels of classical MS characteristics. Besides, patients of 2-nd group had more severed elevation of BMI ($37,9 \pm 6,65$ kg/m² at the opposite to $31,2 \pm 4,27$ kg/m² in patients with MHO, $p < 0,0001$), FC (respectively $125,9 \pm 13,13$ sm at the opposite to $115,1 \pm 8,72$ sm, $p < 0,0001$), WC/FC (respectively $0,85 \pm 0,06$ at the opposite to $0,80 \pm 0,06$, $p < 0,0001$).

A number of indexes of carbohydrate metabolism and liver function, which are not classical characteristics of MS were also elevated in 2-nd group. Likewise, the level of insulin in females with MNHO was $16,3 \pm 8,99$ mcU/ml at the opposite to $10,4 \pm 5,40$ mcU/ml in females with MHO ($p < 0,0001$). Insuline Resistance was also more severed in females of 2-nd group (HOMA-IR- $4,03 \pm 2,56$ in MNHO at the opposite to $2,3 \pm 1,26$ in MHO; $p < 0,0004$; Caro-IR - relevantly $0,42 \pm 0,23$ at the opposite to $0,59 \pm 0,27$; $p < 0,0003$). MNHO was accompanied by more high activity of liver enzymes: ALT $25,8 \pm 15,56$ IU/l at the opposite to $20,2 \pm 12,85$ IU/l in females with MHO, $p < 0,02$; Gamma-GT (relevantly $41,4 \pm 48,79$ IU/l at the opposite to $23,5 \pm 20,89$ IU/l; $p < 0,01$) and Leptin (relevantly $35,2 \pm 18,22$ ng/ml at the opposite to $25,6 \pm 20,16$ ng/ml; $p < 0,03$).

We want to highlight the fact that MS indexes had correlations with other metabolic disturbances. Likewise, WC had relevant correlation with glucose level ($r_s = 0,32$; $p < 0,05$), Triglycerides ($r_s = 0,42$; $p < 0,05$), HDLP Cholesterol ($r_s = -0,46$; $p < 0,05$). Correlation of Carbohydrate and Fat metabolism indexes were also awaited: Glucose with triglycerides ($r_s = 0,26$; $p < 0,05$) and HDLP Cholesterol ($r_s = -0,33$; $p < 0,05$). BP (blood pressure) level had correlative association not only with classical MS characteristics - Glucose (BPs: $r_s = 0,22$; $p < 0,05$; BPd: $r_s = 0,22$; $p < 0,05$) and Triglycerides (BPs: $r_s = 0,20$; $p < 0,05$; BPd: $r_s = 0,18$; $p < 0,05$), but also with the level of Insuline (BPs: $r_s = 0,22$; $p < 0,05$; BPd: $r_s = 0,20$; $p < 0,05$); Insuline Resist-

ance Indexes: HOMA-IR (BPs: $rs=0,27$; $p<0,05$; BPd: $rs=0,24$; $p<0,05$), Caro-IR (BPs: $rs=-0,19$; $p<0,05$); and liver function: AST (BPs: $rs=0,26$; $p<0,05$; BPd: $rs=0,23$; $p<0,05$), ALT (BPs: $rs=0,26$; $p<0,05$) and Gamma-GT (BPs: $rs=0,31$; $p<0,05$; BPd: $rs=0,26$; $p<0,05$).

Correlative analysis detected, that Body Composition components had relevant correlation with Metabolical State of patients (absolute and percentages). Herewith, more strong correlation was observed with WC, that had right middle and over than middle correlation with Fat Mass and % of Fat Mass (respectively $rs=0,69$; $p<0,05$ и $rs=0,42$; $p<0,05$), Total Water ($rs=0,67$; $p<0,05$), Total Liquid ($rs=0,55$; $p<0,05$), FatFree Mass ($rs=0,67$; $p<0,05$), Active Cell Mass ($rs=0,68$; $p<0,05$), Dry Cell Mass ($rs=0,63$; $p<0,05$) and inverse correlation - with Total Water % ($rs=-0,45$; $p<0,05$), Fat Free Mass % ($rs=-0,46$; $p<0,05$), Active Cell Mass % ($rs=-0,50$; $p<0,05$) and Dry Cell Mass % ($rs=-0,47$; $p<0,05$). On the second place by correlative relationship HDLP Cholesterol was, it had, on the contrary inverse correlation with Fat Mass and Fat Mass %, Total Liquid ($rs=-0,46$; $p<0,05$), Fat Free Mass ($rs=-0,37$; $p<0,05$), Active Cell Mass ($rs=-0,38$; $p<0,05$), Dry Cell Mass ($rs=-0,33$; $p<0,05$) and positive correlation with Total Water % ($rs=0,53$; $p<0,05$), Fat Free Mass % ($rs=0,47$; $p<0,05$), Active Cell Mass% ($rs=0,46$; $p<0,05$), and Dry Cell Mass% ($rs=0,44$; $p<0,05$). Glucose, Triglycerides and BPs and BPD had light middle correlation only with absolute indexes of Body Composition, and no any correlation with percentages of Body Composition indexes was detected.

In present study there was also detected a correlative relationship between Body Composition indexes and metabolic disturbances, not included in MS criteria in females with obesity. Likewise, the level of insulin had right correlation with Fat Mass ($rs=0,52$; $p<0,05$) and Fat Mass % ($rs=0,42$; $p<0,05$), Active Cell Mass ($rs=0,45$; $p<0,0001$), Fatfree Mass ($rs=0,42$; $p<0,05$) and Total Water ($rs=0,42$; $p<0,05$), Total Liquid ($rs=0,39$; $p<0,05$), Dry Cell Mass ($rs=0,39$; $p<0,05$), and also inverse correlation with Total Water % ($rs=-0,38$; $p<0,05$), Fat Free Mass % ($rs=-0,36$; $p<0,05$), Active Cell Mass % ($rs=-0,39$; $p<0,05$), Dry Cell Mass% ($rs=-0,31$; $p<0,05$). HOMA-IR had correlation similar to Insulin with all these indexes, at the contrary to Caro -IR, that had more weak and inverse correlation with all absolute indexes of Body Composition and Fat Mass % and right correlation with percentages of all Body Composition indexes. Leptin blood level had middle positive correlation with Fat Mass, Total Water, Fat Free Mass, Active Cell Mass and Dry Cell Mass. More weak correlation was detected between absolute indexes of Body Composition (Active Cell Mass, Total Water, Fat Free Mass, Dry Cell Mass, Fat Mass) and Gamma-GT.

Evaluation of interview results presented that the main reason to decrease body mass in females, independently on metabolic state, was unsatisfaction of their look (relevantly 85,5% in 1-st group and 76,6% in 2-nd group). At the same time,

patients with MNHO more often than patients with MHO came for body mass correction because of degradation of their health state (relevantly 54,7% at the opposite to 18,2%, $\chi^2=14,13$; $p<0,005$). Females with MHO and MNHO indicated nutrition as the main reason of their excessive weight (relevantly 58% at the opposite to 54,8%), insufficient physical activity (relevantly 48% at the opposite to 54,8%), and stresses (relevantly 30% at the opposite to 24,2%). Females with MNHO, also indicated diseases as the reason to decrease their body mass (relevantly 38,7% at the opposite to 18% patients with MHO, $\chi^2=5,71$; $p<0,01$).

The most widespread methods of body mass correction in females with MHO and MNHO were diet (relevantly 77,8% and 83,9%) and physical activity (relevantly 42,6% and 32,3%). In the group of MHO females also used some medicines (37% of cases), and in the group of MNHO in addition to medicines (20,9% cases) food additives (25,8% of cases) and food coding (20,9%) were used.

Unsuccessful attempts in body mass correction females of both groups associated with comeback to previous life style (70,2% in the group of MHO and 60,4% in the group of MNHO) and insufficient physical activity (relevantly in 23,4% and 37,5% of cases). Females with MNHO indicated an age as the reason that discouraged to normalise their body mass (10,4% at the opposite to 4,6 % of females with MHO, $\chi^2=5,53$; $p<0,05$).

It is important to note: interview detected, that 33,3% of females with normal body mass and 26,6% of females with MNHO hadn't any physical activity at the opposite to 7,3% of females with MHO ($\chi^2=7,26$; $p<0,05$). At the same time, in 26,6% cases females of the control group in their physical exercises preferred shaping, and at the contrary responded with MHO preferred it only in 14,9% of cases and patients with MNHO never used this type of physical exercises ($\chi^2 = 11,99$; $p<0,005$).

In the group of MHO 58,2% of responded, in the group of MNHO 71,6% of responded and in the group of healthy persons 76,6% of responded had 3 main meals. Breakfast was presented in 76,4% of females with MHO, in 75,4% of females with MNHO and in 56,7% of healthy persons; regular snacks were observed relevantly in 65,5%, 60% and 66,7%. Hunger was indicated as the main reason to take meal by 61,9% of responded in group of MHO, 65,6% in group of MNHO and in 90% of females with normal weight; stress was indicated as the reason to take meal by relevantly 18,2% and 22,9%, in the group of healthy it wasn't the reason to have and extra snack; it was normal to eat for company in relevantly 18,2%, 21,3% and in 10% of females. More than a half of examined females of all groups took enough fruits and vegetables (65,5% - MHO, 61,5% - MNHO, 66,7% in the group of control), and enough meat, fish and bird (relevantly 75,9%, 68,9% and 76,7%). Herewith, most of responded preferred fat-free milk products (66,1% of MHO, 59,7% of MNHO and 59,3% in the group of control). In patisse-

rie females with obesity preferred chocolate (relevantly in 71,2% of MHO patients and in 68,4% of MNHO patients), females with normal weight took it more rare (40,7%, $\chi^2= 6,55$; $p<0,05$). Responded of the group of control more frequently in comparison to obese patients took ice cubes (relevantly, 29,6% at the contrary to 9,6% in MHO and 5% in MNHO, $\chi^2= 8,63$; $p<0,05$).

In alcohol free drinks females preferred tea (77,8% in the group of MHO, 83,9% in the group of MNHO, 60% in the group of control), in alcohol containing drinks vine was preferred most of all (54,7% in group of MHO, 54,2% in group of MNHO, 36,7% in the group of control). Herewith, females with obesity more frequently took an alcohol in comparison to females with normal weight. Likewise, weekly it was taken by 60,4% of females with MHO, 46,8% of females with MNHO and only 13,3% of healthy persons ($\chi^2= 15,39$; $p<0,001$); at the same time females with normal body mass reported that took an alcohol containing drinks only in holydays (relevantly, 63,4% at the contrary to 18,9% in MHO and 41,9% in MNHO, $\chi^2=14,83$; $p<0,001$).

Study of family meal customs detected that 61,9% of females with MHO and 54,2% of responded with MNHO didn't have in the childhood regular regimen of meal, and at the opposite side - in females with normal weight regimen of meal wasn't regular only in 10% of responded ($\chi^2=14,87$; $p<0,001$); 4,2% of families of patients with MNHO preferred to use semiproducts, no one family of females with MHO and persons with normal weight used semiproducts; 38,1% of responded with MHO and 33,3% of responded with MNHO were ordered to take meal and to eat all food in the plate, at the same time in group of healthy persons it was detected only in 3,3% ($\chi^2=8,33$; $p<0,05$); in 28,6% of females with MHO, in 33,3% of females with MNHO and in 13,4% of healthy meal was used as a prize for good behaviour in the family and in 35%, 33,3% и 43,4% relevantly sweet meal was always available.

Thus we may say, that among examined patients each third female had one sign of MS, predominantly it was Waist Circumference size (61% of patients). In a half of females with obesity independently on metabolic health indexes, increased Total Cholesterol, LDLP Cholesterol and VLDLP Cholesterol levels were confirmed. Likewise, each third female, seemed to have "healthy" obesity, had insulin resistance and elevation of blood leptine level. MS indexes not only had a correlation with each other, but with Insulin level, Insulin Resistance index and liver function. Moreover than middle positive correlative connection was detected between most of absolute indexes of Body Composition and Waist Circumference, however it was negative with percentages of Fat Free, Active Cell Mass and Dry Cell Mass. Other metabolic indexes, such as HDLP Cholesterol, had more significant negative correlation with Fat Mass and it's percentage and with Liquid components of Body Composition. Glucose and BP had also negative correlation

with Fat Free and Active Cell Mass and Total Water. Insulin, Insulin Resistance index and Leptin were connected with Fat Mass, Fat Free and Active Cell Mass and Water Component. Additional calorificity of meal in females with obesity is determined by alcohol containing drinks, and absence of regimen of eating and eating without hunger in the childhood form predisposition for development of obesity. Females with metabolically Non Healthy obesity ignore aerobic physical exercises, eat more in stresses, don't reduce patisserie (chocolate).

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伯基特淋巴瘤和怀孕。 当代概念
**BURKITT LYMPHOMA AND PREGNANCY. CONTEMPORARY
CONCEPTS**

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近几十年来，在怀孕期间肿瘤疾病，特别是非霍奇金淋巴瘤（NHL）的诊断频率有所增加，这使这一问题变得迫在眉睫。

有关与怀孕有关的NHL的基本数据仅限于病例报告，这使得难以制定治疗淋巴瘤和管理血液学妊娠的策略。

伯基特氏淋巴瘤（BL），一种罕见的NHL变体。我们提供的临床观察结果证明了BL和妊娠的罕见结合。在我们的案例中，R-DA-EPOCH化疗方案的选择使成功实现患者淋巴瘤的治疗成为可能，并确保延长妊娠的可能性以及随后的围生期良好结果。

关键词：妊娠，淋巴瘤，伯基特淋巴瘤，非霍奇金淋巴瘤。

Abstract. *In recent decades, there has been an increase in the frequency of diagnostics of oncological diseases, in particular, non-Hodgkin's lymphomas (NHL), during pregnancy, which makes this problem urgent.*

Basic data on the NHL associated with pregnancy are limited to case reports, which makes it difficult to develop strategies for the treatment of lymphoma and management of pregnancy with hematologic cancer.

Burkitt's lymphoma (BL), one of the rare NHL variants. The clinical observation presented by us demonstrates a rare combination of BL and pregnancy. In our case, the choice of the R-DA-EPOCH chemotherapy program made it possible to achieve successful treatment of lymphoma in the patient and ensured the possibility of prolonging pregnancy with a subsequent favorable perinatal outcome.

Keywords: *pregnancy, lymphoma, Burkitt's lymphoma, non-Hodgkin's lymphoma.*

In recent years, the frequency of childbearing after the age of 30 has significantly increased, which is associated with a high risk for the mother and child, as well as more frequent diagnosis of cancer during pregnancy [1].

Until now, there is a dogma in Russia, according to which the detection of hematological cancer during pregnancy requires urgent interruption [2]. However, the emergence in recent years of new treatment programs using drugs that do not disrupt fetal development required a revision of this approach [3].

Lymphoma is the fourth most common malignant neoplasm diagnosed during pregnancy, and the incidence of highly aggressive lymphomas in pregnant women is significantly higher than in non-pregnant women of reproductive age [1].

Burkitt's lymphoma (BL) is a rare variant of the NHL, accounting for about 2% of all lymphomas. BL is distinguished by an aggressive clinical course, predominantly extranodal tumor localization, rapid growth, and high chemosensitivity [4].

Despite its aggressive clinical course, BL is a highly treatable lymphoma. Intensive polychemotherapy, including rituximab and high doses of cytarabine and methotrexate, achieves remission in 80–90% of patients, with a 5-year overall survival rate of 70–85% [5, 6].

In Russia, NHL accounts for 2.6% of all malignant tumors, ranking fifth among the most common tumors in women (after cancer of the breast, lung, intestine, rectum and uterus) [3].

Taking into account the fact that BL occurs mainly in boys (men) and belongs to rare variants of NHL, we present the first case in Russia of managing and successfully prolonging pregnancy in a patient with BL.

Patient P., 39 years old. Went to the antenatal clinic in connection with the onset of spontaneous pregnancy. Pregnancy 3. Labor is coming 1.

History of 2 spontaneous miscarriages at 12 and 9 weeks of gestation.

Anamnesis of the disease: at the 6th week of this pregnancy, a cyst of the right ovary was detected. During the 3 months preceding hospitalization, she lost 20 kg. She did not actively present any complaints.

On 12.01.2016, magnetic resonance imaging (MRI) of the pelvic organs was performed. Conclusion: pregnancy 20 weeks. MR signs of a mass of the right ovary (the right ovary is not visualized in a typical place). Above the uterus on the right, a formation with dimensions 46×31×30 mm is determined, which is similar to the ovary by the nature of the signal. Next to it is determined, probably emanating from it, a formation of 174×152×128 mm with clear, in places bumpy, contours. In the groin areas, enlarged lymph nodes up to 18 mm are visualized. Free fluid is determined in the posterior space and in the abdominal cavity. Taking into account the MRI data, for the purpose of additional examination and solving the issue of further management tactics, the patient was sent to Moscow.

On 20.12.2016, a laparotomy, right adnexectomy, multiple biopsy of the peri-

toneum, subtotal omentectomy were performed in one of the hospitals in Moscow.

The results of histological examination of the removed tumor from 12.20.2016 - diffuse large cell ovarian lymphoma, probably BL. Immunohistochemical study of ovarian tumor from 20.12.2016: CD45, CD79a - pronounced cytoplasmic expression in 100% of tumor cells; Vimentin is expressed in the tumor stroma. Inhibin alpha, S100, Keratin Pan - no expression. FISH study of ovarian tumor from 12.20.2016: translocation t (8; 14) (q24; q32) was detected, no rearrangement of the *BCL2* and *BCL6* genes was found.

For further examination, treatment and determination of further management tactics on 30.12.2016 the patient was transferred to City Clinical Hospital №52. At the time of admission, there were symptoms of intoxication, weight loss during pregnancy by 20 kg, night sweats.

Myelogram from 31.12.2016: blasts 0.8%, lymphocytes 6%.

In the cerebrospinal fluid from 12/31/2016, the cytosin was 2/3.

MRI of the abdominal cavity and small pelvis dated 12.30.2016. Conclusion: MRI in three mutually perpendicular planes in modes T1, T2 and with fat suppression, in a diffuse-weighted image mode, without intravenous contrast: the liver is enlarged in size - 123×82×230×160 mm, has smooth and clear contours, signal characteristics parenchyma is not changed. Intrahepatic bile ducts are not dilated. Focal changes in the parenchyma were not revealed in the native study. The gallbladder is 70×32 mm in size, with an inhomogeneous fluid content (due to bile sedimentation). The common bile duct is enlarged to 5.5 mm, calculi in the gallbladder and ducts are not reliably visualized. The pancreas is not enlarged in size, 22×19×22 mm, the structure is heterogeneous due to small fatty inclusions, its contours are clear, small-knobby. Wirsung's duct is not widened, up to 2.5 mm in diameter, visualized throughout, not deformed. Parapancreatic fiber without reliable signs of inflammation, infiltration. The spleen measures 116×46×98 mm, its contours are clear and even. The structure is homogeneous. The right and left adrenal glands were normal. The kidneys are typically located, the right kidney is 108×58×56 mm in size, the left kidney is 119×53×58 mm, the parenchyma is not thinned, and focal changes in the parenchyma are not revealed. The calyx-pelvic system is not expanded, not deformed. Lymph nodes: not enlarged, the number of mesenteric lymph nodes is not increased. Free fluid in the abdominal cavity and retroperitoneal space was not detected. In the projection of the small pelvis, an increased amount of free fluid is not detected. The rectum without visible changes, wall thickening and the presence of neoplasms were not detected. The bladder is moderately full, the walls of the bladder are not fully extended, without areas of altered signal, including in diffusion-weighted images. The content is liquid, no calculi were found. Paravesical fiber was unremarkable.

Pregnancy 24-25 weeks. One fetus is visualized in the uterine cavity. The

amount of water is moderate. Placenta along the anterior wall in the area of the bottom. On the right to the uterus there is a solid formation with a wide radius (in the projection of the right ovary), with clear large-tuberous contours, inhomogeneous structure, predominantly hypointense in modes T2, T1, fat suppression, a high signal on an isotropic series of diffusely weighted images - $46 \times 21 \times 48$ mm. The left ovary, $38 \times 21 \times 30$ mm in size, contains few follicles up to 7.5×3.0 mm, the rest of the structure is without features, areas of diffusion limitation in the diffusion-weighted image mode were not revealed. The contours of the ovary are clear, even, accumulations of fluid around are not detected. The lymph nodes are not enlarged: the size of the iliac nodes is up to 4–5 mm, the inguinal nodes on the right are up to 11×5 mm, and the inguinal nodes on the left are 8×12 mm. Their differentiation is not disturbed. No bone-destructive changes were found. Conclusion: MRI picture of a space-occupying lesion on the right (in the projection of the right ovary). Pregnancy 24-25 weeks A picture of mild hepatosplenomegaly, congestive gallbladder, diffuse changes in the pancreas.

On the basis of complaints, anamnesis data, the results of laboratory and instrumental studies, a diagnosis was made: Burkitt's lymphoma, stage III according to S.B. Murphy with damage to the right ovary (bulky), ascites. Condition after laparotomy, right-sided adnexectomy, multiple biopsy of the peritoneum, subtotal omentectomy (12.20.2016). Continued tumor growth. Pregnancy 27 weeks.

With a cytoreductive purpose, from 12.31.2016 to 01.04.2017, a pre-phase was performed (cyclophosphamide 400 mg, dexamethasone 20 mg). On 01.05.2017, chemotherapy was started under the R-DA-EPOCH program (rituximab-etoposide-prednisolone-vincristine-cyclophosphan-doxorubicin) with intrathecal administration of cytostatics (prevention of neuroleukemia). After 2 courses, the tumor was not detected by MRI. The disease is in remission. Completed the 3rd course on the R-DA-EPOCH program.

On 27.02.2017, at the next examination of the pregnant woman in the inter-course period, signs of fetal distress were revealed (with Dopplerometry - zero diastolic blood flow, with cardiotocographic examination of the fetus, the pathological type of curve). Considering fetal distress in a 39-year-old primiparous woman with a burdened obstetric-gynecological and somatic history, it was decided to deliver the pregnant woman by caesarean section on an emergency basis in the interests of the fetus.

On 27.02.2017, a lower midline laparotomy was performed, a cesarean section in the lower uterine segment with a transverse incision under spinal epidural anesthesia. A live premature girl was retrieved, weighing 1930 g, 46 cm long, with an Apgar score of 6 and 6 points. The operation was performed without technical complications. The early postoperative period was uneventful.

According to multispiral computed tomography (MSCT) of the neck, thoracic

and abdominal organs, and small pelvis dated 03.09.2017, axillary, mediastinal lymph nodes are not enlarged, there is no fluid in the pleural cavities. Pulmonary parenchyma without focal changes. Mesenteric, retroperitoneal lymph nodes are not enlarged. There was a single lymph node in the left groin area 23×8 mm in size. The spleen is of normal shape and size, with clear, even contours, the structure and density of the parenchyma in the native study is not changed. The liver is not enlarged, the density of the parenchyma is 47 HU, the foci of pathological density were not revealed in the native study. In the parenchymal organs, interintestinal spaces, volumetric formations were not found. Conclusion: CT data for lymphadenopathy were not obtained. Focal pathological changes in the organs of the chest, abdominal cavity and retroperitoneal space, pelvic cavity were not revealed. Thus, BL remission was maintained.

From 16.03.2017 to 17.05.2017, 3 more courses of polychemotherapy were carried out under the R-DA-EPOCH program. According to the results of positron emission tomography combined with computed tomography (PET-CT) after 6 courses of polychemotherapy, the patient received a complete metabolic response. Subsequently, the patient was safely discharged from the second stage of nursing with a healthy newborn.

The last follow-up examination (PET-CT) was performed on 12.03.2019: the patient is in remission of Burkitt's lymphoma. Taking into account the absence of late relapses of the disease in BL (all events occur within the first year after completion of treatment), we can talk about the patient's recovery [7]. Over the next two years, the patient was under the supervision of hematologists at City Clinical Hospital №52: CT studies with contrast were performed every six months, and the clinical status was assessed.

We analyzed all cases of pregnancy described in the literature in the presence of NHL. By 2009, 101 cases of a combination of NHL and pregnancy have been described in the literature [3]. By 2013, 74 works with a description of 121 clinical observations were presented in the foreign literature [8]. At the same time, in recent decades, there has been an increase in the incidence of NHL, which makes this problem urgent [9]. The most common among NHLs is the detection of primary mediastinal B-cell lymphoma during pregnancy [9].

The main data on NHL associated with pregnancy are limited to case reports, which complicates the development of tactics for the treatment of lymphoma and management of pregnancy in the presence of hematologic cancer [8]. The combination of BL and pregnancy is even rarer - isolated cases of combination of BL and pregnancy have been described in the world. Some of them are presented in table №1.

Table 1. Clinical cases of BL and pregnancy combination

Source	Number of cases	Age of the patient	Stage of the disease	The gestational age at the time of diagnosis verification	Outcome	The child
G.W. Bornkamm, 1980 [10]	1	34 years	IIIB	No data	Death during pregnancy	Dead
P.L. Selvais, 1993 [11]	1	27 years	IIIB	31 weeks	Death	Alive
A. Illes, 1996 [12]	1	24 years	IIIB	Less than 37 weeks	Death after childbirth	Alive
M.S.H. Lam, 2006 [13]	1	21 years	IIC	28 weeks	Remission (more than 12 months)	Alive
Cielo Gnecco, 2018 [14]	1	34 years	IIA	32 weeks	Remission (more than 5 months)	Alive

To further characterize the pathophysiological and clinical aspects of this disease complicating the course of pregnancy, joint prospective studies are needed [9].

In Russia, termination of pregnancy up to 12 weeks is indicated for patients in the following cases: lymphomas from high-risk groups (follicular NHL; diffuse NHL; peripheral and cutaneous T-cell lymphomas; other and unspecified types of NHL; malignant immunoproliferative diseases; multiple myeloma); stage III-IV lymphogranulomatosis. In the II and III trimesters, the issue of interruption is decided individually by the council.

The standard treatment for BL is protocols that include high doses of methotrexate and cytarabine: R-Hyper-CVAD, R-CODOX-M/IVAC, NHL-BFM. However, due to their ability to penetrate the blood-placental barrier, they cannot be used during pregnancy. The R-DA-EPOCH program has been included in the Russian national clinical guidelines as a protocol for patients who, due to the severity of their condition, cannot receive more intensive chemotherapy. In our case, the choice of this chemotherapy program made it possible to achieve remission in the patient and ensured the possibility of prolonging pregnancy.

Conclusion. The presented clinical case demonstrates the possibility of successful treatment of lymphoma against the background of prolonged pregnancy. It is important to note that pregnancy in the II and III trimesters is not a contraindication for polychemotherapy. The emergence of new anticancer drugs that do

not affect the development of the fetus makes it possible to experience the joy of motherhood for almost any woman who was previously denied pregnancy due to the presence of cancer.

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血栓性微血管病复杂病程发展的预测因素
**PREDICTORS OF THE DEVELOPMENT OF A COMPLICATED
COURSE IN THROMBOTIC MICROANGIOPATHY**

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溶血性尿毒症综合征是一组罕见但严重的疾病，基于血栓形成的微血管病变和对内皮细胞的严重破坏。通常，tHUS发生严重并发症，尤其是中枢神经系统病变。仍无法准确预测每个特定患者中tHUS的病程，因此，本研究目的是评估炎症和内皮功能障碍的许多实验室指标，作为tHUS中神经系统并发症的可能预测指标。该研究纳入了122例处于tHUS急性期的儿童。根据是否存在神经系统并发症，将其分为两组，其水平分为可溶性纤维蛋白单体复合物（SFMC），D-二聚体，CRP，C3补体成分，ADAMTS 13，可溶性粘附分子（sICAM-1，和sVCAM-1）。发作时患有tHUS的神经系统并发症的儿童CRP水平明显升高，C3补体水平较低，而ADAMTS 13活性明显升高，这反映了该组中更明显的全身性炎症和内皮功能障碍。

关键词：溶血性尿毒症综合征，神经系统并发症，预测因子，炎症，内皮功能障碍

Abstract. *Hemolytic uremic syndrome is a heterogeneous group of rare, but severe diseases, which are based on thrombotic microangiopathies and severe damage to endothelial cells. Often, tHUS occurs with severe complications, in particular, lesions of the central nervous system. An accurate prediction of the course of tHUS in each specific patient is still impossible, thus, the aim of this study was to assess a number of laboratory markers of inflammation and endothelial dysfunction as possible predictors of neurological complications in tHUS. The study included 122 children in the acute phase of tHUS. Depending on the presence or absence of neurological complications, they were divided into 2 groups and the levels of soluble fibrin-monomer complex (SFMC), D-dimer, CRP, C3 complement component, ADAMTS 13, soluble adhesion molecules (sICAM-1, and sVCAM-1) were accessed. Children with neurological complications of tHUS at the onset had significantly higher CRP levels, lower C3 complement levels, and ADAMTS 13 activity, which reflects more pronounced systemic inflammation and endothelial dysfunction in this group.*

Keywords: *hemolytic uremic syndrome, neurological complications, predictors, inflammation, endothelial dysfunction*

Introduction

Thrombotic microangiopathy (TMA) is a pathological process accompanied by systemic thrombosis due to occlusion of the vessels of the microvasculature (arterioles, capillaries) of various organs, which leads to microangiopathic hemolytic anemia, thrombocytopenia and organ damage. The most famous diseases based on TMA are thrombotic thrombocytopenic purpura and hemolytic uremic syndrome. Typical (diarrhea-associated) HUS (tHUS) develops against the background of intestinal infection (often hemocolitis) and manifests itself as a triad of symptoms: anemia, thrombocytopenia, acute renal injury (AKI). In the pathogenesis of tHUS, the main role is played by damage to the endothelium with shiga toxin, which is accompanied by secondary activation of complement, microthrombosis of the capillary bed of target organs, primarily the kidneys. Due to microthrombosis, platelets are consumed, microangiopathic hemolytic anemia develops, and AKI occurs. Despite the achievements of modern intensive care, renal replacement therapy, tHUS remains a serious life-threatening disease. In some cases, tHUS occurs with severe necrotic lesions of the gastrointestinal tract (intestines, pancreas), involvement of the central nervous system (CNS), heart damage, and the development of multiple organ failure [1,2]. The frequency of neurological manifestations in tHUS, according to various sources, ranges from 19-25 to 41% and does not change significantly over time [3]. Neurological symptoms range from headache, irritability, agitation to such severe manifestations as convulsive syndrome, oculomotor disorders, hemiparesis, cortical blindness, coma. Damage to the central nervous system largely determines the prognosis and outcome of the disease. In the study by S. Nathanson, 2010, in the outcome of tHUS with central nervous system damage, 10% of children had minor residual symptoms, 23% had severe disabling residual CNS lesion, 17% of patients died (total mortality with tHUS is 1-5%) [4]. Damage to the central nervous system during tHUS is caused by the pathological effects of a number of factors: arterial hypertension, metabolic disorders, hyponatremia, hyperhydration, intoxication, and systemic inflammatory response. The massive release of pro-inflammatory cytokines plays a role in the induction of apoptosis in nerve cells. The development of thrombotic microangiopathy with subsequent ischemia of the brain tissue is also possible. It is also assumed that the immune IgG-mediated mechanism of damage to the nervous system is involved in tHUS [4,5]. An accurate prediction of the course of tHUS in each specific patient is still impossible, thus, the aim of this study was to assess a number of laboratory markers of inflammation and endothelial dysfunction as possible predictors of neurological complications in tHUS.

Material and methods

The study included 122 children (58 boys, 64 girls) in the acute phase of tHUS at the age from 4 months to 12 years 4 months (median - 24 months). Depending on the presence or absence of neurological complications, they were divided into 2 groups. All patients underwent standard physical, instrumental and laboratory examinations. Comparison of the levels of soluble fibrin-monomer complex (SFMC), D-dimer, CRP, C3 complement component, ADAMTS 13, soluble adhesion molecules (sICAM-1, and sVCAM-1) was made.

Results

In the overwhelming majority of patients (107 out of 122), tHUS proceeded with oligoanuria, while 25 patients received peritoneal dialysis, 54 patients underwent prolonged veno-venous hemodiafiltration (hemodialysis), both types of therapy were alternately in 43 patients. In this group of patients, tHUS was complicated by neurological symptoms in 48 (39.3%) patients. Convulsions were observed in 75% of patients with neurological symptoms, depression of consciousness of varying degrees in 62.5%, delirious states were less common (6.3%), hemiparesis and other focal symptoms (8.3%), oculomotor disorders (nystagmus) (4.2%).

In children with neurological complications, the duration of the intestinal prodrome was slightly higher, the clinic of multiple organ failure syndrome developed more often, and the need for mechanical ventilation arose. In addition, according to ultrasound data, this group had more severe kidney damage. The results of determining the levels of the studied markers of inflammation and endothelial dysfunction are presented below.

Table 1. Indicators of inflammation and endothelial dysfunction in patients with tHUS (M ± σ, number of observations is indicated in brackets)

Index	Children with neurological complications	Children without complications	p
SFMC, mg%	8,7±4,2 (n=64)	8,7±4,7 (n=34)	0,9
D-dimer, ng/ml	3202±2257(n=64)	4513±7016 (n=34)	0,3
C3, mg/dl	77±18 (n=42)	82±17 (n=67)	0,03
ADAMTS 13, %	65,7±18,7 (n=31)	52,1±14,5(n=22)	0,006
CRP	47,2 ± 63,9 (n=34)	24,2±47,0 (n=64)	0,046
sICAM-1, pg/ml	247 ±58 (n=14)	279 ±50(n=20)	0,14
sVCAM-1,pg/ml	1025 ±659 (n=14)	1160±1336 (n=20)	0,8
IL-10, pg/ml	45 ±66 (n=8)	35 ±43 (n=10)	0,8

Children with neurological complications of tHUS at the onset had significantly higher CRP levels, lower C3 complement levels, and ADAMTS 13 activity, which reflects more pronounced systemic inflammation and endothelial dysfunction in this group. It should be noted that the level of ADAMTS 13 reflects the

severity of inflammation and activation of complement: negative correlations of ADAMTS 13 with maximum leukocytosis ($r = -0.268$, $p = 0.007$) and CRP level ($r = -0.262$, $p = 0.013$) were revealed, a positive correlation with the level C3 ($r = 0.420$, $p = 0.000$). However, there were no significant differences in the levels of adhesion molecules of sICAM-1, sVCAM-1 and IL-10 between these groups, which may be due to the relatively small number of observations. It should be noted that in 14 patients the level of IL-10 ranged from 6 to 10 pg / ml, i.e. was close to normal (7.2-12.9 pg / ml), while 4 children showed a sharp increase in IL-10 - up to 40.2 - 121.8 pg / ml. At the same time, one child developed cortical necrosis, one child developed severe neurological complications (convulsions, coma 2, apalic syndrome), which subsequently resolved; in two, tHUS proceeded relatively easily, with complete restoration of renal function

We have previously established that neurological damage in children with tHUS is associated with more severe renal damage. Reanalysis of these connections was confirmed: in children with neurological complications of tHUS, the duration of anemia, anuria, dialysis, hospitalization was significantly higher and the estimated glomerular filtration rate (eGFR) at the time of discharge from the hospital was lower. The timing of normalization of platelet and LDH levels did not differ in these groups.

At follow-up examination one year later, 46 patients who underwent tHUS (16 with neurological complications, 30 without neurological complications) did not differ in eGFR levels in these groups (91 ± 32 and 97 ± 25 ml / min, respectively, $p = 0.5$), however, in children of the first group, moderate and pronounced residual changes in the renal parenchyma according to ultrasound data were more often observed (56% vs 23%, $p = 0.03$)

Conclusion

Thus, as a result of the analysis, the unfavorable prognostic value in the onset of tHUS (high risk of severe inflammation and neurological complications) is demonstrated for high CRP levels, complement activation (low C3 levels), and ADAMTS 13 consumption.

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农村建筑节能与能效
**ENERGY SAVING AND ENERGY EFFICIENCY IN RURAL
ARCHITECTURE**

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本文讨论了在农村环境中设计节能设施的现代方法。提出了减少能耗和能耗的建筑措施，并考虑了建筑围护结构热防护设计的建议。考虑了在各种设施上应用的渐进式外墙围墙设计解决方案，最有效的建筑物热防护技术解决方案。

郊区环境建筑中的节能和能效不仅解决了定居点的经济问题，而且首先创造了良好的居住环境。俄罗斯联邦建筑发展新阶段的重点是通过改善居住区的生态环境，减少能源损失和能源消耗来创造居住环境。所有这些都决定了俄罗斯定居点的可持续发展。

关键词：生物燃料，热能消耗，建筑物的热防护，可再生能源，可持续建筑。

Abstract. *The article discusses modern methods of designing energy efficient facilities in a rural environment. Architectural measures to reduce energy losses and energy consumption are stated, proposals for the design of thermal protection of building envelopes are considered. The progressive design solutions of external fences, the most effective technical solutions for thermal protection of buildings, applied at various facilities, are considered.*

Energy saving and energy efficiency in the architecture of the suburban environment solves not only the economic problems of settlements, but, first of all, creates a favorable living environment. The priorities of the new stage of the architectural development of the Russian Federation are aimed at creating a living environment through improving the ecology in settlements, reducing energy losses and energy consumption. All this determines the sustainable development of settlements in Russia.

Keywords: *biofuels, thermal energy consumption, thermal protection of buildings, renewable energy sources, sustainable architecture.*

Russian Federation, the special conditions of the construction region are taken into account: the maximum use of local materials and resources, the search for local architectural and planning solutions, the search for ways to reduce energy consumption by studying regional renewable energy sources. Based on the analysis of our own and regional traditional wisdom, it is possible to solve the main cost-effective tasks. This determines the sustainable development of settlements.

The concept of sustainable development of regions requires special attention to environmental protection, the development of ecological thinking among the local population, priority in solving environmental problems over economic ones. This priority of today and the future is aimed at conserving local resources, reducing the total energy consumption, for the extraction and manufacture of building materials and for construction [1, 3,4].

The general picture of contamination of suburban areas with agricultural waste, waste from the construction industry is today a special problem, where there are significant volumes of construction of new buildings and structures in the countryside with a low ecological culture of the local population. In these cases, recycling and reuse of construction and agricultural waste is required. Recycling technology allows you to recycle construction waste, unsuitable reinforced concrete structures and metal and re-launch it into the production or economic cycle. It uses recycled raw materials for a new purpose. Recycling and reclamation of waste improves the quality of the environment, reduces air pollution, preserves nature and animals, and improves the quality of reservoirs and drinking water with the introduction of innovative environmental technologies [2,5].

In the regulatory documents of the Russian Federation, the transition to new increased requirements for the heat-shielding functions of enclosing structures has been completed, in which the required resistance to heat transfer of the enclosing structures is to be increased by 3-6 times. The required level of thermal protection of buildings is determined according to SP 23-101-2004 in accordance with SNIIP 23-02 for individual enclosing structures according to the standardized values of the heat transfer resistance of the enclosing structures (for all buildings) or according to the standardized specific consumption of thermal energy for heating (for residential and public buildings). Solving this problem by introducing modern highly effective insulation materials, we preserve the ecology by reducing the emission of heat flux into the atmosphere and reducing the energy costs for building operation.

The American Council for the Environment of Buildings testifies that green buildings help conserve natural resources, use 40% less energy and 50% less water than their traditional counterparts. They emit significantly less greenhouse gases into the atmosphere, and the indoor air quality is much better.

In the architecture of suburban settlements, energy saving and energy efficien-

cy measures include the following measures:

1) increasing the compactness of the development of suburban settlements, taking into account the reduction of energy losses in engineering networks, a rational solution for territorial zoning and the complexity of development (saving up to 60% losses depending on the configuration and length of the settlement);

2) in the northern settlement - optimization of the settlement structure, development of indoor "domed" settlements with an artificial environment and with the functions of life support;

3) development and implementation of new principles of heat and power supply of rural settlements with the use of autonomous power plants-blocks of low power based on different types of renewable energy sources (RES) with their interchangeability;

4) use of gas generators with long-burning furnaces, which provide power supply, heating and hot water supply (up to 10-30% of fuel is saved);

5) use innovative heat sources - gas turbine mini-CHPPs, min-HEPPs, autonomous gas mini-boiler houses with automatic control mode;

6) introduction in the architecture of rural buildings and settlements of innovative installations powered by renewable energy sources, using the energy of the sun, wind, water, heat of the earth, biofuel, etc.;

7) the search for compact space-planning solutions, the use of rational blocking and zoning of groups of premises, allowing to reduce the building area;

8) the formation of a flexible space in industrial agricultural buildings with equal spans and steps that meet the requirements of technology changeover and phased commissioning of capacities,

9) ensuring the non-waste of the functional process taking place in the building using engineering and technical systems;

10) use environmentally friendly construction materials, products and equipment, make the most of local renewable environmental materials;

11) applying increased sealing of window and door fillings and use double-glazed windows with a higher energy efficiency class [6,7].

In Russia, the following gradation of building classes in terms of energy consumption and energy efficiency is used.

Energy efficiency class / Energy consumption class (kW*h/m² per year): **A** - very high / 15 or less, **B** - high / 15-40, **C** - increased / 40-100, **P** - normal / 100-160, **E** - low / 160-250, **F** - low / 250-350, **G** - very low / 350-600.

The problems of environmental safety and cleanliness in rural settlements are very acute. The development of the agro-industrial complex of agriculture, energy and transport has led, with a lack of ecological culture, to significant pollution of the environment - air, water, soil.

In the rural environment of Russia, there are about 80 thousand small boiler

houses operating on solid fuels. Waste in the form of ash and slag reaches 1.5 million tons per year, and the total volume of harmful emissions is 6 million tons. Agricultural activity in the settlements and a significant volume of industrial and household waste, with a low ecological culture, complicate the solution of the ecological problems of the rural environment [3,4].

This shows the relationship between the organization of energy efficient solutions in modern design practice and the improvement of the environmental situation in the suburban environment while forming a sustainable architecture.

Objects of the agrarian sector of Russia annually create 250 million tons of biomass (livestock and poultry farming about 150 million tons, crop production 100 million tons).



Fig. 1 Potential biogas production in Russia, billion m³/year (source: <http://www.infobio.ru>)

The potential for biogas production in Russia is huge (fig. 1), and the active introduction of biological energy systems will improve the energy efficiency of the rural environment. Biological energy is obtained from the processing of crop and livestock waste. The resulting biogas (methane) from methane tanks is sent through pipes for use in domestic or industrial purposes in individual or farms, as well as in agricultural enterprises. Modern technologies make it possible to effectively use biogas energy systems in the conditions of continental climatic zones prevailing in Russia. This ensures wastelessness of the functional processes of the rural environment with the help of engineering systems and various architectural and planning techniques.

Primary and secondary biomass is converted into technically convenient fuels or energy in the following ways: thermochemical conversion of biomass to fuel: direct combustion, pyrolysis, gasification, liquefaction, fast-pyrolysis; biotechnological conversion of biomass (at a humidity of 75% and above) into fuel: low-atomic alcohols, fatty acids, biogas. Renewable energy in Russia is developing in accordance with the State Scientific and Technical Program “Environmentally friendly energy.” For biogas production from animal waste, see fig. 2.

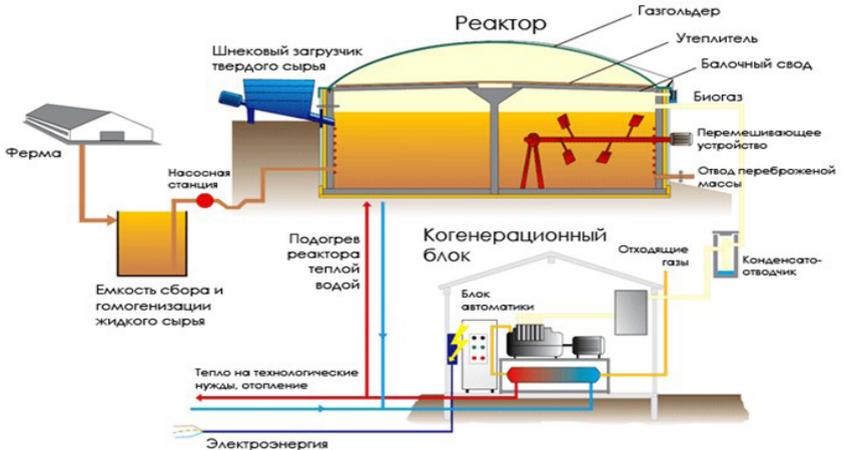


Fig.2 Biogas production from animal waste

Designing the energy efficiency of the rural environment and improving the ecological state occurs during the construction of energy efficient buildings, buildings with low energy consumption of class **A** or **B** in terms of energy efficiency.

Energy efficient building with low energy consumption - passive building. The specific energy consumption of this class **A** building is less than 15 kW·h/(m²-year), developed by the Passivhaus-Institut, Germany). This concept is aimed at reducing capital and operating costs for heating due to powerful insulation and additional passive use of solar energy and reducing heat loss due to ventilation. In buildings of this type, a large number of windows are provided on the south-facing facade.

For more efficient operation of passive systems, additional renewable energy sources are used, which either partially or completely cover the energy costs of the house. These buildings are called non-volatile [6,8].

Autonomous houses are not only non-volatile houses, but also include a closed-loop life support system. This system includes closed premises and equipment that pro-

vide residents with food and water, and human waste is recycled and reused (use of a waste-free complex and primarily biomass energy) [7,8,9].

Houses that use the energy of the sun are divided into "passive" and "active" systems. Passive systems include direct solar heating, heating an insulated glazed volume, heating (cooling) of a building through enclosing structures. Active systems include the use of a solar collector, the use of a solar panel.

In low-rise suburban residential buildings, it is necessary to introduce innovative engineering equipment in heat supply systems, in power supply systems, which is more expedient in remote regions of Russia.

The energy efficiency of the rural environment is based on the use of fuel cells, utilization of household waste, water conservation and technologies for collecting rainwater and reusing treated water for technical needs. The use of recovered energy leaving the premises - 1) air in the ventilation system (recuperation), 2) return water in the radiator heating system (warm floors, heat exchangers) also contributes to an increase in the energy efficiency of buildings [9,10].

Resource saving and energy saving requirements, increasing the efficient operation of the building became the basis for the creation of an intelligent building. These buildings have a unified monitoring dispatch system based on a network of sensors. This architecture makes it possible to set parameters and control the situation in buildings; the possibility of direct control of equipment from the dispatcher's workplace is not excluded. Automated smart home technology sets and monitors the operating modes of all engineering systems and is controlled by a single control center.

Conclusion. Energy-saving technologies are becoming popular in many countries around the world. The reason for this phenomenon was the high cost of energy resources, their limitedness, as well as environmental pollution. Rational energy consumption can significantly reduce the cost of heating houses and apartments.

Russia has developed a strategy for the transition to the design and construction of energy efficient and environmentally friendly integrated development and buildings. Modern settlements with autonomous heating systems for residential buildings based on the use of fuel cells (FC) or RES and partially with autonomous power supply are beginning to appear in different regions of the Russian Federation.

Mixed power supply systems that are efficient when using alternative energy sources (solar energy, wind energy, ebb and flow, biogas, biological and wood mass, hydropower and geothermal energy) are necessary for the creation of energy efficient and ecological buildings and buildings in a rural environment.

The use of resource-saving and environmentally friendly technologies of life support systems in low-rise residential buildings is based on the development of proposals for the planning organization of low-rise residential buildings in a rural

environment for various regions of Russia.

Actions listed include minimizing resource consumption, recycling, reusing waste, managing energy, reducing the consumption of building materials and other needs. It is necessary to create specific programs for energy conservation and energy efficiency in the architecture of rural environment, combining economic profitability and non-destructive methods to conserve resources in consumption.

Energy efficient buildings have become very popular in many Western countries. Based on their example, projects are being developed in Russia that use energy-saving technologies. Energy saving technologies are becoming more affordable and in demand.

The main obstacle hindering the development of energy-efficient housing construction in Russia today is the population's illiteracy in this matter. Despite the availability of technology, they are in no hurry to use them. The high market cost of such buildings scares off, although over time it fully pays off due to the low cost of the construction of the building, as well as the reduction of heat and electrical losses.

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在相同条件下及其MOR体形态组成下饲喂羔羊和羔羊肉的产量的研究
**THE STUDY OF MEAT YIELD OF LAMBS AND KIDS FED UNDER
THE SAME CONDITIONS AND MORPHOLOGICAL COMPOSITION
OF THEIR CARCASSES**

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该研究的主要目的是研究在相同条件下喂养的羔羊和儿童（小山羊）的肉产量及其cas体形态指标。这项研究涉及在阿塞拜疆共和国西部地区，甘贾市及其周边地区，天然牧场中生长的家养小羊和博萨克羔羊。在甘贾市的其中一个区域中，选择了中等体重的羔羊和小羊，活重大致相同（约17公斤），每头三个。屠宰前动物的活重大致相同。当谈到冷热尸体的重量时，羔羊占了上风。结果是，羔羊尸体的结果要比儿童尸体的结果高出11,9%和18,49%。可靠性系数高（ $P < 0.001$ ），羔羊的内部脂肪是孩子的两倍。羔羊屠体的敷料百分比也较高（51.67%），而小孩子屠体为42.79%。冷羊羔的体重比孩子高18.4%。因此，儿童的软肉产量略高于羔羊。

关键词：羔羊，孩子，car体，肉，骨头，内部脂肪，尾部脂肪

Abstract. *The main objective of the research was to study the meat yield of lambs and kids (baby goat) fed under the same conditions and the morphological indicators of their carcasses. Domestic kids and Bozakh-breed lambs grown in the western region of the Republic of Azerbaijan, Ganja city and its surrounding regions, in natural pastures were involved in the study. In one of the sections of the city of Ganja, lamb and kid of medium size with approximately the same live weight (about 17 kg), three heads each, were selected. The live weights of the animals were approximately the same before the slaughter. When it comes to the weight of the hot and cold carcasses, the lambs prevailed. The results were 11,9% and 18,49%, respectively, higher in the lamb carcasses than in the kid carcasses. With a high reliability coefficient ($P < 0,001$), inner fat of lamb was two times more than kids. The dressing percentage was also higher in the lamb carcasses (51.67%) than in the kid carcasses (42.79%). The weight of cold carcasses of lambs is 18,4% higher than that kids. Therefore, the yield of soft meat was slightly higher in the kids than in the lambs.*

Keywords: *lamb, kid, carcass, meat, bone, inner fat, tail fat.*

Introduction

Meat is an irreplaceable part of a human diet. Thus, this product is a source of dietary protein, fat, vitamins and mineral substances for the population. From 1961 to 2011, meat consumption of the world's population increased from 23.1 kg to 42.2 kg for 1 person per year [18]. In addition, meat and meat products besides being a high source of energy, are also important in meeting the demand for fat-soluble vitamins. Along with these positive qualities of meat and meat products, there are also disadvantages. So, red meat contains a large amount of saturated fatty acids and cholesterol. When these substances are absorbed by humans, regularly and in large quantities, cause many metabolic disorders, obesity, diabetes, hypertension, atherosclerosis and even cancer [13, 20]. Therefore, recently, people began to give up meat and meat products containing heavy fats and cholesterol, trying to take care of their health. In this regard, compared to beef and pork, the amount of saturated fatty acids and cholesterol in lamb and kid meat is low [10,15]. On the contrary, it is noted by many researchers [2,3,4,14,17] that the amount of unsaturated and polyunsaturated fatty acids in lamb and kid meat is rather high compared to other meats.

According to predictions, the world's population will reach 9 billion by 2050 [5,19]. Such growth rate of population will dictate an increase several times in the demand for meat and meat products [8,9,21].

Given the above, the demand for lamb and kid meat is expected to increase in the future. Also, noting the traditional use of meat of these animals in the Republic of Azerbaijan, we aimed to carry out this research.

Material and methodology

The main objective of the research consisted of studying the meat yield and the morphological indicators of the carcasses of lambs and kids (baby goat) fed under the same conditions. Domestic kids and Bozakh-breed lambs grown in the western region of the Republic of Azerbaijan, Ganja city and its surrounding regions, in natural pastures were involved in the study. In one of the sections of the city of Ganja, lamb and kid of medium size with approximately the same live weight (about 17 kg), three heads each, were selected. It should also be noted that Bozakh lambs reach the mentioned weight in 2-3 months, but domestic kids in 3-5 months. Then all the animals (3 head of kids and 3 head of lambs) were cut in Halal order. After the cut, the veterinary specialist of the Food Safety Agency of Azerbaijan conducted veterinary sanitation expertise and presented us with certificates of food suitability for each of the six carcasses. After that, animal carcasses were weighed, the weight of the hot carcasses was determined. Then we divide the carcasses into two parts (Image 1.) and put them in the refrigerator at a temperature of +5°C for 36 hours. After weighing the cold carcasses, we began to cut them into portions. That is, we separate the soft meat from the bones and weigh them separately. The

inner fat and the tail fat of the lambs were weighed as well. The data obtained were statistically processed.



Image 1. Appearance of lamb and kid carcasses.

Results and discussion

First of all, it should be noted that when visual inspection of lamb and kid carcasses, there was no difference in the color of their meat (Image 1) and smell. So, both Lamb and kid meat have the same specific smell. This was also mentioned in the researches of S.Keskin [12], as well as Dehouegnon Jerry Agossou and others [6]. By determining the organoleptic indicators of mutton and goat meat (color, smell, taste, etc.) grown under different conditions, it was defined that sheep and goat meat doesn't differ in these indicators. It was found that the organoleptic indicators of sheep and goat meat fed on natural pastures are superior to the indicators of meat of animals subjected to intensive technologies.

Meat yield of animals is characterized by the quantity and quality of meat obtained during slaughter. The main indicators here are the live mass of slaughter animals, dressing percentages and morphological indicators of their carcasses.

The indicators showing the meat yield of the lambs and kids used in practice are presented in Table 1.

Table 1. The meat yield of lambs and kids.

Indicators (kg)	Lambs	Kids
Weight before cutting	17,05±1,15	17,20±1,49
Hot carcass weight	8,66±0,56	7,74±0,78
Cold carcass weight	8,49±0,64	7,17±0,78
Inner fat	0,32±0,03	0,19±0,04*
Tail fat	0,87±0,51	-
Dressing percentage	51,67	42,79

Note: *P<0.001

As can be seen from the table, the live weight of the animals involved in the slaughter was approximately the same level as it was before the cutting. When it comes to the weight of the hot carcass and cold carcass, the lambs prevailed. The results were 11,9% and 18,49%, respectively, higher in the lamb carcasses than in the kid carcasses. However, the difference between these results is statistically insignificant. With a high reliability coefficient ($P < 0,001$), inner fat of lamb was two times more than kids. The dressing percentage was also higher in the lamb carcasses (51.67%) than in the kid carcasses (42.79%). José Lois Guzmán and others [7] researched 12 head of male and 12 head of female kids and studied the morphological characteristics of their carcasses and the chemical composition of their meat. It has become known that the soft meat yield of the carcasses of kids fed under natural conditions (organic) is higher. However, the fatness of the meat of kids (baby goats) kept in farm conditions was more than that of the animals kept in natural conditions. Mioc B. and others [16] by conducting a study on 92 head of lambs and 90 head of kids, studied the morphological indicators of the carcasses. The live mass, the weight of cold carcass and the weight of the internal organs (except the spleen) of the lambs, ready for slaughter, was more than that of the kids. The live mass and slaughter indicators of female animals are lower than that of males. In these experiments, it is noted that the color of lamb meat is slightly lighter than that of kid. Given that animals used in our experiments are also grown in natural conditions, we can say that the results obtained are well matched with this data.

One of the main indicators reflecting the commodity quality of slaughter animals is the study of the morphological composition of their carcasses. When saying the morphological composition of a carcass, the ratio of soft meat to bones is understood. To determine the morphological composition of the animal carcasses used in experiments, we separated the soft meat of the cold carcasses from the bones after the control cut, weighed them separately, and determined the coefficient of fleshiness. The morphological composition of the carcasses of lambs and kids used in the practice is given in Table 2.

Table 2. Morphological composition of lamb and kid carcasses.

Indicators	Lambs	Kids
Cold carcass (kg)	8,49±0,64	7,17±0,7
Soft meat (kg)	5,57±0,34	5,08±0,82
Bones (kg)	2,05±0,22	2,09±0,27
Soft meat (%)	65,50	70,80
Bones (%)	24,15	29,15
Tail fat (%)	10,25	-
Fleshiness coefficient	2,72	2,43

As can be seen from the table, the weight of cold carcasses is 18,4% higher in the lambs than in the kids. However, when it comes to the weight of soft meat and bones, no difference was observed between the lambs and kids. Therefore, the yield of soft meat was slightly higher in the kids than in the lambs. The reason for this is that there is no tail fat in kid carcasses, but about 10% of lamb carcasses is tail fat. There was no significant difference between lamb and kid carcasses in the fleshiness coefficient. R Niedziółka and others [17] by using lambs and kids fed under the same conditions in experiments for 150 days, note that the live weight and the weight of the hot carcasses of lambs are higher than of kids. Other researchers [1,11] also reported that the live weight and the weight of the carcasses of lambs fed under the same conditions was higher than of kids.

Thus, our experiments show that the meat yield and the morphological composition of the carcasses of lambs fed in the same conditions, that is, in natural pastures, is higher than of kids. However, it should be noted that if the tail fat is not taken into account, then the soft flesh of kids does not lag behind lambs at all.

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