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ARTS

THE ROLE AND SIGNIFICANCE OF COLORS IN DESIGN

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Abstract

This article discusses the problems of color science. As you know, colors play an important role in solving aesthetic problems of creative activity in design and visual arts. From this point of view, this work analyzes the physical properties of flowers, as well as their psycho-emotional impact on a man.

The article deals with the scientific and theoretical views on flowers, some well-known experts in different historical periods. Summarizing the materials studied and based on personal practical experience, the author provides a color classification. On its basis, the use of colors in artistic activities is commented, at the same time, the importance of optimization in this matter is noted.

The article, among other things, deals with the possibility of using colors in the organization of *man-object-machine-environment* systems with a utilitarian-functional purpose.

We hope that the presented scientific article, being the result of our serious research in the field of color research, will be of value in the future in conducting scientific research in this direction.

Keywords: color, theory, design, psychophysiology, method, classification

1. INTRODUCTION

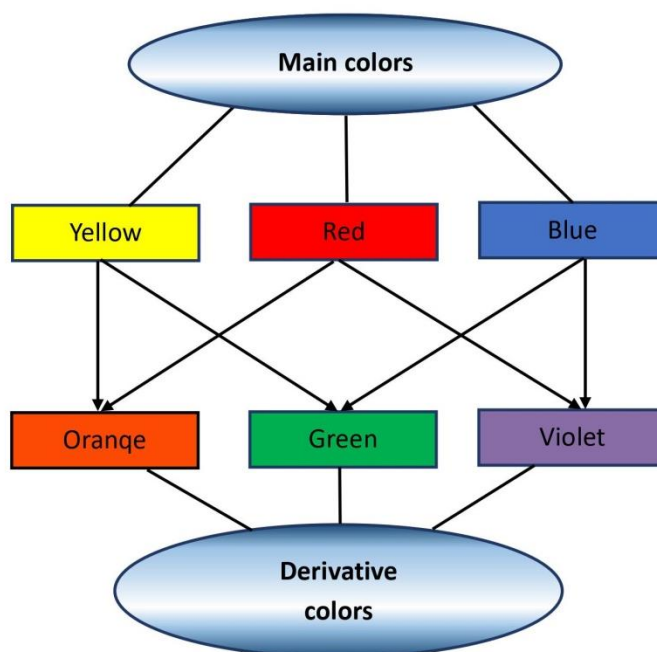
Even from ancient times, people became interested in color and used them in everyday life - dwellings, clothes, objects. Colors, along with their aesthetic meaning in the life of ancient people, also expressed their mythological worldview, religious and ideological views in one form or another, and then, at different stages of social life, also had sociocultural significance.

Color and color schemes have been studied from time to time and have become a separate area of research. It should be noted that the problem of color was also the subject of research by ancient philosophers and thinkers. Famous Greek philosophers Plato, Aristotle and others conducted research in this area. Their scientific work played a role in the further study of colors.

The thoughts and conclusions about the psychological peculiarities of colors by Russian scientist

M.V.Lomonosov, English scientist I. Newton, German philosopher V. Hote, wellknown painter, graphicist, theorist and pedagogy V. Kandinsky, Francis specialist of technicalaesthetic J. Veneno, Francis scientists M. Deribere, Russian psychologist V. M. Bekhterev, Switzerland psychologist M. Lüscher and etc. assume very high importance in the chromatics science. Put forward thoughts and conclusions have played very important role in the mainly investigation and study of colours, including in their practical application opportunities in different spheres too [9, p. 116-117].

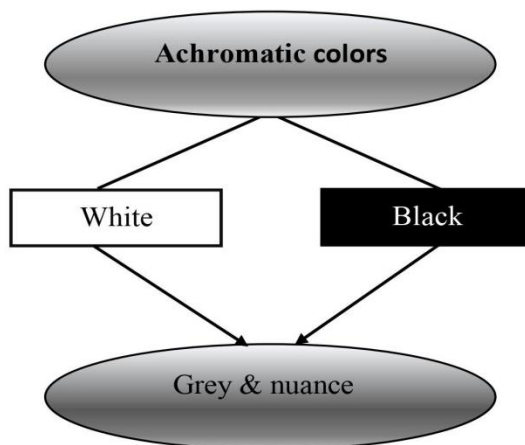
Cording to the scientific literature, there are three of the four primary colors that are considered major - red, yellow and blue; and one is green, obtained by mixing colors. The determined color system is shown in the following diagram (scheme1) [6, p.107].



Scheme 1.

The colours divide into chromate - coloured (in Greek origin means – “chromos” – colour) and achromatic-colourless types. In the scientific specialists literatures yellow, orange, red, blue, cyan, green, violet and other many colour shades includes to chromatic

colours, these colours have characteristics of colours [12, p.87]. Achromatic colors include white, black, gray and their different (dark, light) shades (scheme2).



Scheme 2.

The main characteristics of the color are determined in the following sequence:

- color tone - color property;
- saturation - color quality;
- lightness - the quality of the observed color, built up by the sensation of a greater or lesser degree of relative brightness.

First of all, prominent English physicist and mathematician Isaac Newton explained the colours nature. He defined visible light as a physical factor in the perception of all colors. He showed that white sun shining

joins seven different colours on itself. They are red, orange, yellow, green, cyan (blue), indigo (blue) and violet.

From all these colours' junctions creates the white colour. We should note that red, blue and yellow of those seven colours consider the main colours. Being different from I. Newton, as a poet V. Hote attracted by colours' romance and their influence peculiarities to human's sentiment. He wrote: "The colours can create the emotions on humans ..." Conditionally he divided

on colours into two groups – bringing happiness and cause of sad and investigated them separately [18, p. 62].

Jack Veneno the founder of Technical Aesthetic Institution of France the professional specialists on colours' climate wrote: "The colours are very capable: it can make calmness and irritant light. It can create the harmony and shock; we can expect from them both miracle and commotion" [1, p.37]. Another Francis scientist M. Deribere separately analyzed the different colours' viewpoint of psychology and showed that they directly influenced to the act and humans' health [1, p. 39-40]. The emotional – psychological peculiarities of colour, natural influences and importance has explained in another source too [20]. V. M. Bekhterev the famous psychologist generalized all his experience on colour's influence to organism and come to such conclusion that in the future would be efficiently used from the colours in treatment of nervous diseases. In some scientific works by Timiryazev was about the colours and their emotional and psychological reacts on humans [17, p.129].

The humans with higher skin and optic sense can even determine the colours with their fingers. The humans with higher skin and optic sense can even determine the colours with their fingers. After many practical experiments carried out by ourselves we got know that such "definition" is obviously possible in special position of organism.

Formerly, such interesting experience was created out on the students of the department of "Artistic drawing" in the chair of "Pedagogy and psychology" of the Pedagogical Institute in Nizhny Taghil. Mainly, the same ability was discovered on ten of fifteen students [19, p.64].

Switzerland psychologist Max Lüscher offered the colours' tests which were methods for analyzing of personality and at the same time formed complete direction on the science about the colours [11, p.108].

In the creativity on different types and genres of fine art the colours are one of the most powerful influential means and is investigated and studied their different shades of artistic-aesthetic, emotional-psychological and semantic peculiarities in according level, but in the technical aesthetics and in design creativity the investigation and their studies according to their physical and psychological properties and influences beside above-mentions assume very high importance. Because, in different spheres of design creativity optimal application of colours and the main problems on appointment of objects and things create effective warranty for composition of utilitarian - functional and psychophysiological requirements.

As we noted in design creativity one of the main problems are the creation of welfare things and equipment, including utensils also the organization problem of interior and exterior. In the organization of *human-things-machine- environment* systems the ergonomic factors belonging to the part of composition of architectural design in the organization of interior – beside with anthropometric, biomechanics, hygienic, lighting and etc. problems, the purposely expression of aesthetic and psychophysiological viewpoint of colours, especially should be in the focus of attention. Thus, the specific

peculiarities of colours can make according psychological correction in interior – space environment. At the same time, the colours can make according correction in environmental view of things. For example, the imagination about their object heaviness (of course, illusion), can be created by their colours being different from their natural heaviness. Thus, the light colour that is used in interior (of course, in according level) also the things consisting of light colours create very comfortable and wide space environment influence. But dark colours contrary create rather narrow environment condition and make to be born and tired. These assume according psychophysiological problems too. Taking into attention the same problems, in interior, especially in the spheres being close to the roots, including in the decoration of things (chandelier, decorative curtains, decorative wallpapers) placing in more attractive spheres would be better to use from light colours and from their shades too. It also creates suitable conditions for effective lighting. In generally, in an interior arrangement however to use less dark colours on different things and equipment it would be optimized more effective lightning. At the present-day, in the markets we can see many curtains' samples that on their white background have used from black or dark brown colours' with different forms of elements, also from compositions with botanical ornaments. Of course, such decoration is tasteless, at the same time; with its "heavy" view would be always make eyes to get tired.

The observations shows that for recently, not the only in welfare things and utensils, including in different polygraphic samples prefers to use from red colours too. Of course, such approach intended for more attraction of things and for advertise their. But, we must take into attention that utilization from things with red colour in the interior for a long time would create psychological tiredness on human. As it is known, the wave length of red colour in the spectre is longer (620-800 nm) and has irritative influence. The same colour is differing from other colours for its psychoemotional peculiarities and its symbolic essence. The broad conclusions about its peculiarities have generalized as following: "Be careful with red colour" [16, p.55]. According to experts in the design solution, it is not recommended to use red furniture in the kitchen and in the bedroom. Because, person rests in the bedroom and so that it would be better to use from calming colours. In another source shows that for red, orange and yellow colours influence the breath becomes deepen and pulse becomes more speeders; but from the influence of green, blue and cyan colours occur opposite influence. So that first group of colours' considers as calming colours' [15, p.223].

In the work environment, in industrial condition utilization from right colors harmony straighten the labor activity and prevents physical tiredness. Formerly, the American scientist F. Birren basically was busy with the same problem.

However, taking into attention many objects, especially, the complication level of provision with things and equipment, the appointment of environment in interior organization both in complex form, also in things and equipment also in design solution of interior

during the colours appointment we must prefer such colours which eliminates the tiredness and gives psychological calmness and including the colours' harmony of the nature. Of course, here have some exceptions too. For example, we have such objects (medical, military, fire stations and etc.) that there uses from special colours and from their shades in their things and equipment, including in their interior and exterior. They are based on serious terms and such special colours regulates with the international standards.

In the creation of *human-thing-machine-environment* systems, during the arrangement, instead of the colours' application is dominating aesthetic viewpoint, during some special situations they are intended for utilitarian and functional purposes and are according to these requirements. For example, such informational colour constantly regulates the motions of drivers and foot passengers on the traffic lights. In different institutions, objects, in things and equipment, clothes and etc. widely uses from informational colours. Informational colours, basically has determined in two categories. Here basically considers-red, yellow, green; auxiliary are orange and blue colours [10, p.108]. Even, in the ancient Japan, colours played a role of exactly information bearer [16, p.40].

2. METHODS

Purposely utilization of colours viewpoint of functionality assumes importance not only in any of acting processes, at the same time it assumes importance in things appointment tendencies. Choosing of colours on functionality can create the ergonomic guarantees of utilitarian for condition, environment and time (day and night) on intended objects, things and equipment. This problem is quite accurately solved by instinct in various living beings (for disguise). In this sense, we have yet to learn from nature and its creatures. It means, in the *human-thing-machine-environment* systems, for acting processes viewpoint of functionality the colours should meet ergonomic requirement too. The ergonomic choosing of colours, depending on functionality appointment, contest and the requirement level of things can be based on relative contrast colours for harmony or contrasting. The same problems have to solve seriously and in necessary level but not relatively. For example, electric touch (Camelion ® Super Bright) made in Germany, meets the highest utilitarian and functional requirements for its material quality, form and according to its ergonomics texture. But, its electric torch is in black colour and so that to find it in dark room (even, it is near) is very difficult. In the same thing, viewpoint of functionality has relatively given the ergonomic colour chosen. However, the switch and bulb are yellow and the bulb's diameter is 2 mm. and these indicators creates relatively guarantee for its utilization in darkness. But, if we consider that the switch is not near the user in completely dark space so, for its finding the thin yellow colour of bulb does not completely guarantee the usability. It would be better the corpus of electric torch was yellow, the switch was yellow, the switch and bulb was red, or the corpus was light green, and the switch and bulb was in orange. We should note that there are enough yellow electric torches belonging to the German production in the markets. We just wanted to

analyze one of our using things as a sample viewpoint of utilitarian – functional requirements usability and to give to your attentions [7, p. 174-178].

3. RESULTS AND DISCUSSION

As it is known, even since the previous time have used from colours in the samples of decorative - applied art, and in decoration of interior and exterior and for other purposes. At the present-day, beside utilization from colours in the creativity, specially their application became to be in the focus of attention. And we partially tried to analyze some applied problems of colours in design and in some publications and monograph [5, p.4-7; 6, p.105-109; 8, p.80-85; 9, p. 114-133].

The creation of *human-thing-machine-environment* systems and perceiving of colours in its organization and their psychological influence to humans have seriously investigated by the specialists, and achieved interesting results in this aspect. It is natural that under the modern condition uses from opportunities of chromatics science not only in the solution of artistic-esthetic assignment of interior and exterior, it also uses widely in industrial design-in decoration of things and equipment. Of course, the projecting ware of designer who deeply investigated the problems of colours problems and correctly used their application will be always attract the attention and ensure the tastes of buyers.

4. SUMMARY

The problems about the semantic and psychophysiological influence of colours were based and explained in different scientific-specialists literatures in according level [1; 2; 3; 4; 10; 12; 13; 14; 16; 18; 20]. On the base of scientific-theoretical conclusions, also on the base of individual observations and experience the colours can be classified according to physical properties and psychological-emotional influences on different groups (main colours, derivate colours) as following [9, p. 130]:

- chromatic-achromatic;
- hot-cold;
- active-passive;
- dark-light;
- vivid-weighed;
- contrast-relative;
- optimist-pessimist;
- irritative -calmness;
- symbolic and etc.

5. CONCLUSIONS

In industrial design, in industrial graphic, advertisement, artistic bundle, artistic encase and etc. creative works, the classification of colours application with taking into the consideration the different and multi-sided peculiarities could create effective guarantee to the solution of general composition viewpoint of visual requests of artistic-aesthetic, psychological-emotional and usability.

The creation of *human-thing-machine-environment* system and in its organization the advisable utili-

zation of them according to their psychological influence, including their artistic-aesthetic expression opportunities as the result would increase comfortableness aesthetic value of object.

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CHEMICAL SCIENCES

MODIFIED WITH EPICHLOROHYDRIN COMPOSITE BASED ON BENZOGUANAMINE-FORMALDEHYDE OLIGOMER

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Abstract

Composites made on the basis of oligomers are used in industry and everyday life for various purposes, and demand is growing day by day. The reason is that it is easy to process and economical. However, composites made on the basis of existing oligomers have certain disadvantages during operation. To eliminate these shortcomings, the method of copolycondensation with epichlorohydrin benzoguanamine-formaldehyde oligomer used as the object of the study was modified. The modification process was carried out in two stages. At the first stage of formaldehyde with benzoguanamine 1:2 mol. proportionally, in a slightly alkaline medium, at 70-75^oC, the condensation process was carried out for 60-70 minutes until a homogeneous solution was obtained in a laboratory reactor. At the second stage, the calculated amount of epichlorohydrin is gradually added and continuously mixed until a solid juice of a similar mass is obtained. The resulting polymer is a light-yellow compound, highly soluble in acetone, ethanol, dioxane, tetrahydrofuran and dimethylformamide. In parallel, the main physicochemical, physico-mechanical, operational parameters and spectral analysis of the benzoguanamine-formaldehyde oligomer and the epichlorohydrin-modified benzoguanamine-formaldehyde oligomer were studied for the purpose of comparison. It turned out that after the modification process, fragility was eliminated, adhesion ability increased, and most importantly, the number of free monomers decreased. From the analysis of the analysis results, it became clear that the process is a chemical modification, and the disadvantage is the presence of functional epoxy groups in epichlorohydrines. The curing process of the modified epichlorohydrin cooligomer is carried out thermally at different temperatures and at different times. The optimal solidification rate of the cooligomer was 98.86 % at 140^oC for 5 hours.

Taking into account the functional groups present in the oligomer, the composition of the coating was developed using it as a binder. Organic and inorganic fillers, hardeners and acetone as a solvent were used in the manufacture of the composite. The prepared coating composition is recommended to be used for corrosion protection of equipment operated in various environments.

Keywords: benzoguanamin, formaldehyd, epichlorhidrin

Composites are compact materials obtained by mixing various components. The structure of composites is complex, and the reason is that it depends on the components that make it up. The basic physical, mechanical and technological indicators of composites are higher than the indicators of its individual components.

The main purpose of the research work is to obtain, first of all, a reactive cooligomer and to obtain composites based on it. To obtain a reactive oligomer, the existing benzoguanamine-formaldehyde oligomer was modified into epichlorohydrin, its functionality was further enhanced, and as a result, a new composition cooligomer was obtained. The basic physico-chemical, physico-mechanical, operational and spectral analyses of the oligomer obtained as a result of copolycondensation of components with chemical modification have been studied.

For the purpose of comparison, an unmodified benzoguanamine-formaldehyde oligomer was studied in parallel. A new composition of the paint coating was developed, in which an oligomer was used as a binder, and the main technological indicators were studied. The

durability of the paintwork composition in various environments has been studied.

It is known that a radical improvement in the environmental situation can be achieved by improving both the physical and mechanical and operational performance of composites used in various industries, as well as the development of environmentally friendly technologies [1-4].

Currently, research works aimed at the complete absence of the number of free monomers in their composition are of relevance. The solution to this problem has both economic and environmental significance. Thus, an important role is played by the use of modern system analysis methods that allow to identify the mechanism and the main kinetic patterns of reactions, to determine the optimal conditions for obtaining an environmentally friendly product.

The polycondensation reaction of the benzoguanamine-formaldehyde oligomer with epichlorohydrin leads to the production of an amino-epoxide-containing oligomer when the pH of the medium = 7-8. As a result, the number of free

monomers decreases, and the functionality of the cooligomer increases.

When changing the ratios between the components, it is possible to adjust the main homogeneity indicators obtained in the direction corresponding to the purpose. In the process, the amount of free formaldehyde decreased by about 2.5 times.

Due to the functional groups, the adhesive ability and heat resistance are also increased. It is advisable to obtain composites for various purposes using a new cooligomer composition as a binder, obtained as a result of identifying the main patterns of copolycondensation in an alkaline medium and determining optimal heat exchange conditions.

Aggressive media include coating compositions used in the oil and gas industry to protect operated equipment and installations from corrosion, to reservoir waters, to oils-to gasoline, etc. its durability is explained by the high functionality of the binder, and it is recommended to use benzoguanamine-formaldehyde oligomer modified with epichlorohydrin, as a binder in the preparation of the paint composition.

Ekspierimental part

The process of modification of the benzoguanamine-formaldehyde oligomer with epichlorohydrin by copolycondensation was carried out in a laboratory reactor equipped with a stirrer, a thermometer and an anti-cooler. First, benzoguanamine is injected into the laboratory reactor: formaldehyde (37% formaldehyde solution in water-formalin) in a ratio of 1: 2 mol and up to 2% NaOH of the reaction mass. The blender is started and at 70-75 °C the reaction

medium is continuously stirred for 1.0-1.5 hours at pH = 7.0-8.0. Then 0.5 mol of epichlorohydrin is gradually added to the reactor and continuously stirred until a juice-like mass is obtained (~ 1.0-1.5 hours). The resulting oligomer is dried in a vacuum drying cabinet to a constant mass.

The main physico-chemical and physico-mechanical parameters of the benzoguanamine-formaldehyde oligomer modified with epichlorohydrin have been studied [5-7]. The influence of the number of components on the output of the oligomer has been studied.

With the ratio of benzoguanamine : formaldehyde : epichlorohydrin = 1 : 2 : 0.5 mol, the oligomer yield was 70%. Cooligomer is highly soluble in acetone, dioxane, tetrahydrofuran, dimethylformamide and alcohol. Does not dissolve in water, gasoline, CCl₄ and benzene.

The main indicators of the cooligomer are shown in Table 1. It turned out that the corresponding indicators of the cooligomer are higher compared to the main indicators of the benzoguanamine-formaldehyde oligomer.

To determine the effective use of the synthesized new cooligomer, thermal degradation in the temperature range 100 ÷ 500 °C was studied on the G-1500 DMOM derivator. The mass of the sample is 0.2 g., TG is the sensitivity of the scale 200, the sensitivity of the galvanometer DTA = DTG = 50 μV, the rate of temperature increase in the derivatograph is 5°/min., the speed of movement of the automatic writing drum is 2.5 mm/min., the tests were carried out in PT/PtRh putas under atmospheric conditions. The results are shown in Table 2.

Table 1

The main indicators of the oligomer and cooligomer

№	Indicators	Oligomer	Cooligomer
1.	The composition of the element, %		
	Carbon	63.82	65.36
	Hydrogen	4.38	4.74
	Nitrogen	3.59	3.84
	Chlorine	-	6.7
2.	Softening temperature, °C	65	70
3.	Mass of molecules	470	685
4.	Density, kg/m ³	1050	1120
5.	Degree of curing, % (within 5 hours at 140 °C)	96.8	98.86
6.	Adhesive strength, MPa	2.1	2.8

Table 2

Indicators of thermal degradation of the oligomer and cooligomer

№	Examples	Indicators			
		T _{5%} , °C	T _{1/2} , °C	E _{dis.} , kkal/mol	E _a , kkal/mol
1.	Benzoguanamine-formaldehyde oligomer	106	298	56.4	3.1
2.	Benzoquanamine-formaldehyde cooligomer modified with epichlorohydrin	110	483	67.1	3.3

The Molecular Mass Distribution (MMD) of the modified epichlorohydrin benzoguanamine-formaldehyde oligomer was studied by liquid chromatography on a Rovo chromatograph (Czech Republic). The MMD indicators of compounds

obtained both by polycondensation and by copolycondensation are shown in Table 3.

It turned out that the molecular distribution of the oligomer is 1.33, and the molecular distribution of the cooligomer is 2.09, that is, the fraction with a higher molecular weight is precisely the cooligomer.

Table 3

Molecular weight distribution

№	Examples	MMD		
		\overline{M}_w	\overline{M}_n	$\overline{M}_w/\overline{M}_n$
1.	Oligomer	360	270	1.33
2.	Cooligomer	900	430	2.09

From the analysis of IR spectra, it also became known that the process is a chemical modification, and due to the functional groups present in the components (amine, carbonyl and epoxy), the cooligomer was obtained.

From the comparative analysis of the cooligomer of benzoguanamine-formaldehyde, modified for the first time by epichlorohydrin, with the unmodified oligomer of benzoguanamine-formaldehyde, it is known that many factors influence the reduction of free monomers in the cooligomer, the increase in the basic physico-chemical and physico-mechanical parameters (the ratio of components, their structure, nature, temperature, reaction time, etc.) affects. The pH of the reaction medium is 7-8, the temperature is 70-75 °C, the amount of the modifier is 0.5 mol.

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ECONOMIC SCIENCES

INTERNATIONAL MARKETING IN THE CONDITIONS OF THE GLOBAL FOOD AND ENERGY CRISIS CAUSED BY ARMED CONFLICTS AND THE INTRODUCTION OF ECONOMIC SANCTIONS

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Abstract

The main question we are dealing with in the work is how to adapt the traders of agricultural products, energy products from the Russian Federation and Ukraine to the crisis caused by the Russian "special military intervention" and the introduction of various packages of sanctions against the Russian Federation and how the resulting crisis affects Europe, Africa and Asia. Given that in crisis situations, very little attention is paid to marketing activities towards consumers, because the resulting changes affect decision-making and purchasing behavior in different ways. During a crisis, communication with clients is not usual because good practices are not established.

Keywords: sanctions, crisis, agricultural products, energy, inflation.

Introduction

Marketing activities in cases of major crises caused by various disturbances in the global market should be adapted to building lasting relationships with clients, communicating with more empathy, authenticity. Given that market disruptions occur frequently, marketers should not panic and stop marketing activities. Marketers can focus on increasing company value, be creative and think long-term. Therefore, marketers need to adjust their efforts, tone of communication and marketing strategies to the current situation.¹ In these situations, marketers must adapt their goals to lead generation. Traders need to prove to the market that their brand is not primarily about profit, but that their priority is their clients. Many researchers point out that marketing in times of crisis is an exercise in customer retention and brand reputation management. If the marketing mix activities are properly planned, the long-term benefits will be more significant than the temporary loss of income.

In crisis conditions, the CSR action plan for corporate social responsibility is applied. Many CSR strategies create benefits during a crisis. Most often, they increase customer loyalty and significantly improve brand reputation.

Introduction of international sanctions against the Russian Federation in response to Moscow's "Special Military Operation in Ukraine"

By definition: "international sanctions represent unilateral non-violent actions undertaken by states against another state for political reasons, which may be economic, diplomatic or military". Sanctions are in-

troduced to force another country, in this case the Russian Federation, to fulfill certain obligations or to give in to negotiations.

The introduction of a series of Western sanctions against Russia disrupts the economic and financial situation in the market, creates panic in the markets, destroys the banking system, creates a shortage of goods and a sharp rise in retail prices. Sanctions produced a global crisis, which in many countries led to accelerated inflation and a decline in living standards. As an epilogue to the sanctions, the price of energy products increased on the global market: oil, natural gas, coal, electricity.

For now, there is no real oil embargo in the countries of the European Union. If they decide to ban the import of fuel, it will lead to a large number of companies going bankrupt, a sharp increase in unemployment and inflation with unfathomable chaos in the economy.

The application of EU sanctions against the Russian Federation has some effects. However, many sanctions packages, especially in the financial sector, did not have any harmful synergistic effects, but on the contrary, they stabilized and strengthened the Russian national currency. The value of the ruble against the dollar on August 24, 2022, is 59 rubles for 1 dollar. Let's also note that the Russian ruble was worth 133.5 rubles to the dollar in March 2022. This means that the introduction of sanctions only produced a downward trend in the Russian currency for a short time. After the consolidation, the Russian currency is getting stronger. Western countries assumed that "a collapse of the Russian economy and insolvency seemed imminent."

However, the strong ruble produced higher retail prices. Since the beginning of the year, some products have risen in price by 50 to 70%. Today's ruble keeps

¹ Insightly - American computer technology company, San Francisco, California.

inflation at 20%. Many economists believe that the current exchange rate is not marketable. The ruble has been strengthened by many measures of the Central Bank, among which are restrictions on foreign exchange trade. In this way, savings in rubles and not in foreign currency increased. The discount interest rate is currently 14%. Namely, the record surplus is considered to be the main reason for the strong exchange rate. According to some estimates, by the end of the year Russia would have a surplus of about 250 billion dollars due to high energy prices. From the export of gas and oil, Russia earns billions in foreign currency that cannot be spent at all. This is why Russia has introduced gas payments for Europeans in rubles.

It should also be noted that the Central Bank predicts that the Russian gross domestic product will fall by 8 to 10% this year. Earlier expectations were for growth of 2 to 3%.

Russia directed its energy exports to new markets in Asia. This primarily refers to India, China and Iran, France, the United Emirates and Saudi Arabia. According to a report by the independent Center for Energy and Clean Air Research (CREA), Russia earned \$97 billion from fossil fuel exports in the first 100 days of the war in Ukraine. 61% of the total export of energy products was exported to Europe, for which Russia was paid 59 billion dollars.

The armed conflict in Ukraine is having ongoing effects on the world economy, which is already struggling with COVID-19 and climate change. According to the presented projections of UNCTAD² it is estimated that the world economy will have a lower GDP growth than expected. Given that Ukraine and the Russian Federation produce about 30% of the world's wheat and barley, one-fifth of the corn and more than half of the sunflower oil needs.³ Also, according to UNCTAD data, the Russian Federation is the largest exporter of natural gas and the second largest exporter of oil. Together with Belarus, Russia exports about a fifth of its needs for artificial fertilizers. Thus, the crisis in Ukraine contributed to a huge increase in the price of goods around the world. United Nations Food and Agriculture Organization (FAO)⁴ report that the price of food has increased by 34% compared to last year. The price of crude oil has increased by about 60%, while the prices of gas and artificial fertilizers have tripled.⁵

The European Union's needs for natural gas in 2019 amounted to 560 billion m³, while slightly less than 200 billion m³ was delivered to gas pipelines from Russia. The import of liquefied gas was 21 billion m³. The remaining quantities needed by the European Union were delivered from Qatar 32.7 billion m³, Algeria

30 billion m³, the USA 17.7 billion m³ and Nigeria 15.7 billion m³.⁶ Therefore, the export of Russian natural gas to EU countries amounts to about 35.6% of the total European consumption.

According to Eurostat data, in 2020 the EU met 58% of its energy needs through imports, and the largest supplier of gas, oil and coal, the main raw materials in the Union's energy mix, was the Russian Federation. The import of energy from the Russian Federation in 2020 covered 24% of the EU's needs. More precisely, 35% of the energy mix is imported oil and oil derivatives, 24% natural gas, 17% renewable energy, 13% nuclear energy and 11% solid fossil fuel. According to the data of the European Statistical Service, in the EU, Russian gas had a share of 46% of imports and oil and oil derivatives of 26%.

The crisis in Ukraine disrupted global supply chains, increased transport costs, so that global inflation rose to 5.2%.⁷ According to the 2022 Financing for Sustainable Development Report, "60% of low-income least developed countries are at high risk or in debt".⁸

Export of agricultural products in crisis conditions

According to the statistics portal <https://www.statista.com/>, the global volume of wheat production in 2021/2022. year was 778.6 million metric tons. The Russian Federation and Ukraine are among the most important producers of agricultural products. 75.5 million metric tons refer to the Russian Federation and 33 million metric tons to Ukraine. In 2021, the Russian Federation and Ukraine are grouped among the world's top three exporters of wheat, corn, canola and sunflower oil. Also, the Russian Federation is the largest exporter of nitrogen fertilizers, the second producer of potash fertilizers and the third producer of phosphorus fertilizers.⁹

In the conditions of the Russian "special military operation", the question arises: how does the war affect Ukraine's export of wheat needed by Europe, Africa and Asia? Large quantities of Ukrainian grain are "captured" on the Polish-Ukrainian border. Transporting wheat by land by road or rail is complicated and time-consuming and significantly more expensive.

After the recent agreement between Russia and Ukraine, mediated by Turkey and the United Nations, regarding the export of Ukrainian wheat through the sea corridor, high insurance premiums were imposed. The export of Ukrainian grain was prevented by the blockade of the Russian navy and Ukrainian sea mines. Based on the agreement, the first ship exported 23,000

² United Nations Conference on Trade and Development UNCTAD-Conference of the United Nations on Trade and Development. The primary objective of UNCTAD is to define rules that apply to all aspects of development, including trade, aid, transport, finance and technology.

³ UNCTAD (2022), The Impact on Trade and Development of the War in Ukraine, BRIEF NO1, p. 3.

⁴ United Nations Food and Agriculture Organization (FAO)

⁵ Bloomberg & MarketWatch Data, 8th of April 2022.

⁶ <https://www.grenef.com/potrebe-evrope-za-gasom/>, retrieved: 16.05.2022.

⁷ United Nations, Inter-agency Task Force on Financing for Development (2022). Financing for Sustainable Development Report 2022.

⁸ Ibid, p. xiii

⁹ Food and Agriculture Organization of the United Nations THE IMPORTANCE OF UKRAINE AND THE RUSSIAN FEDERATION FOR GLOBAL AGRICULTURAL MARKETS AND THE RISKS ASSOCIATED WITH THE WAR IN UKRAINE, Information note, June 2022.

tons of wheat under the World Food Program to Ethiopia and other parts of Africa to prevent famine. According to data from Ukraine, 600,000 tons have been exported to the global market so far.

Ambitious estimates are coming from Ukraine that they will achieve revenues of over 5 billion euros, which will be generated by additional export potential.¹⁰ Since the security of the sea corridor is relative, the costs of transportation vary daily. According to the data presented by the Ukrainian company from Odessa "BPG Shipping", at the beginning of the implementation of the wheat export agreement, the insurance premiums were 4 to 5% of the market value of the ships for a period of 7 days, and today it is at the level of 1 to 1.5%, which amounts to an average of \$200,000 to \$270,000 per week. To all this combinatorics, we should add the renting of ships from Russia, which are more expensive than Romanian ones by 10,000 euros per day. The inspection of ships carried out in Istanbul additionally increases the costs of Ukrainian exporters. Therefore, the export of a ton of cargo going by sea costs Ukraine 25-35 dollars more than from Romania.

On the other hand, Russia expects a record wheat income of over 90 million tons. Since the Russians are able to give discounts on grain, they have pushed Ukrainian out of other markets such as Turkey and Egypt. The same thing happens with sunflower oil. Many Ukrainian factories are unable to process sunflower seeds, so they are forced to export unprocessed sunflower seeds, which greatly reduces their income.

Food experts estimate that another 18 million tons of grain are in Ukrainian silos. The problem for corn is especially highlighted because there will be a shortage of capacity in the silos for about 10 million tons. If there are no exports and international support for Ukraine, there will be big problems. Many researchers agree that in order for Ukraine to get out of the grain problem, the EU and the US need to bear the costs of reinsurance, so that Ukrainian exports become more competitive.

Turbulent energy prices caused by the crisis in Ukraine

The resulting events in Ukraine create energy uncertainty in terms of energy supply. According to data presented by The New York Times, in recent years energy funds have grown up to 18.4% in the first half of the year and as such were the best sector to own in 2021.

Political factors also affect the price of energy, reaching a daily high of almost \$140 per barrel on March 7, 2021. Given that the imposed sanctions prohibit the import of Russian oil into the EU, excessively high prices cause recession and economic slowdown for a long time.

The price of Russian liquefied natural gas has increased significantly today compared to the period before the start of the "special military operation" in Ukraine and the imposition of sanctions on the Russian Federation. In addition to gas, the price of electricity also increased. German benchmark power for next year rose by 2.8% to 369 euros per megawatt-hour on the

EEX exchange.¹¹ EU countries without Russian gas and high prices are facing major economic problems. In the middle of August 2022, the price of gas on the stock exchange recorded an incredible growth, \$3,600 for 1,000 cubic meters, so it represents an all-time record.¹² According to the data of the Russian news agency TASS Russian News Agency, the price of gas for delivery in April (futures contracts) increased at the Dutch hub to 3,639.1 dollars for 1,000 cubic meters or 322 euros per MWh. The price of oil on the stock exchange in mid-August 2022 is 100 dollars and electricity is 600 euros per megawatt-hour.

Conclusion

In the paper, we pointed out that all actors in the crisis understand the importance of the changes in the global market and that the implementation of marketing strategies is related to retaining clients and improving the reputation of the brand. We have shown that military conflicts and the introduction of sanctions create crises that produce unrealistic price jumps, shortages and turbulent relations on the global market. The increase in the prices of energy and agricultural products causes inflation. We have observed that in cases of crisis, marketing activities must be adapted to building lasting relationships with clients and not to temporary loss of income.

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¹¹ Source: Bloomberg.com

¹² Source: ICE Stock Exchange London.

PEDAGOGICAL SCIENCES

ENHANCING THE EFFECTIVENESS OF LEXICAL APPROACH IN EFL-CLASSROOM VIA USING SONGS

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Abstract

The present work examines the effectiveness and possible limitations of the lexical approach in the process of teaching and learning vocabulary. The authors suggest ways to solve the issues of this approach that arise during its application, while maintaining its main advantages, by using Song-Based Approach in a foreign language classroom.

Keywords: Lexical Approach, Song-Based Approach, Vocabulary learning, Memory Retention, foreign language teaching

Introduction

One of the most difficult part of learning a foreign language is undoubtedly expanding students' vocabulary. The number of new words and expressions can be overwhelming for most students. But not only do they face the difficulty of getting aware of plethora of expressions, but also students have to retain the learned expression in their vocabulary and, if possible, use them actively. This paper gives some possible options on through what means we can help students achieve this aim.

Literature review

1.1 Overview of Lexical Approach.

Michael Lewis (1993), who is considered to be the first scholar of the lexical approach, suggests that vocabulary is the foundation of language, not grammar - vocabulary is misunderstood in language teaching when grammar is traditionally considered the foundation of language and mastery of the grammatical system is the basis for effective communication. According to Lewis (1993), a key principle of the lexical approach is that "language consists of grammaticalized vocabulary, not lexicalized grammar" [7, p.36]. One of the central organizing principles of any meaning-oriented curriculum must be the lexicon.

Within the lexical approach, lexical units in their various forms are considered to play an important role in the teaching and learning of mother and second languages. Nattinger (1980) believes that teaching should be based on the idea that language production is the collection of ready-made units, which are called chunks in Lexical Approach (Lewis, 1993), suitable for a particular situation. Basically, chunks and collocations which Lexical Approach is based on, can be represented as patterns, which has a certain meaning if spoken, read or

listened together in a sequence. Chunks and collocations, according to M. Lewis are the result of "an increasing ability to break down wholes into parts"

The idea of using chunks as "pre-fabricated units" has roots in the analysis of English language. At the turn of the 20th century, researchers have found frequently repeated multi-word lexical pieces of language in texts, suggesting that language is more repetitive than was assumed (Biber et al., 1999; Cortes, 2004; Sinclair, 1991). Therefore, a new term "Corpora Studies" was coined. According to Lewis (2000), corpora studies deeply analyze the English language; they give new descriptions of the English language and improve it as a result of analyzing large amounts of natural oral and written texts on computers. Moreover, a large number of corpora studies have shown that vocabulary plays a more considerable role in language organization and construction of meaning than it was thought before (O'Keeffe et al, 2007).

Hence, a need for a systematic understanding of a new perspective on lexical units aroused. Lewis in 2002 suggested the taxonomy of lexical items presented below [8, pp. 91-94]:

- Words (e.g., Book, pen).
- Polywords (e.g., By the way, upside down).

- Collocations or word partnerships (e.g., Community service, absolutely convinced).
- Institutionalized utterances (e.g., I'll get it; we'll see; that'll do; If I were you...; would you like a cup of coffee?)

- Sentence frames and heads (e.g. That is not as ... as you think; The fact is that/ The suggestion/ problem/ danger was ...) and even text frames (e.g. In this paper we explore...; Firstly... ; secondly... ; Finally ...)

Richards and Rodgers [12, p. 133] add that many other lexical units also occur in language. For example:

- Binomials: clean and tidy, back and front, pros and cons, up and down.
- Trinomials: cool, calm and collected.
- Idioms: dead drunk, to run up a bill.
- Similes: as old as the hills.
- Connectives: finally, to conclude.
- Conversational gambits: Guess what

1.2 The effectiveness of Lexical Approach

The use of Lexical Approach has been proven its efficiency by plenty of empirical researches. For example, Abdulqader et al. in their experiment proved that application of LA can enhance learners' performance in writing: "...significant difference in the mean scores of the post-test in favour of the experimental group taught according to the LA". For instance, Ying (2006) conducted research and as presented the approval of LA efficiency as the conclusion, because students feel affiliation between themselves and the language. Sewbihon-Getie as an outcome of his empirical work states that "...the current research work reveals the importance of the lexical instructional approach in teaching English as a Foreign Language" and "This study is congruent with studies by Tang (2012), Eidian et al. (2014), Chun-guang (2014), Chao (2016)". All aforementioned scientific works prove the effectiveness of implementing Lexical Approach in teaching English as a Foreign Language.

1.3 Limitation of Lexical Approach

Despite its indisputable advantages in learning foreign languages, Lexical Approach does have some limitations and issues. First and foremost, it's a heavy load on students' memory. Sinclair (2004a: 282) states that there can be "the risk of a combinatorial explosion, leading to an unmanageable number of lexical items" and Harwood [6, p. 142] warns teachers about "learner overload", highlighting that "implementing a lexical approach requires a delicate balancing act between exploiting the richness of fine-grained corpus derived descriptions and keeping the learning load at a manageable level". The authors cannot help agreeing with these statements, since Lexical Approach-oriented student books for EFL usually present more lexical units, that more traditional ones. For example, in Outcomes Elementary (2011, Dellar and Walkley) there are 24 new lexical units presented on one page, whereas in more traditional Solutions (2013, Falla, Davies, 2013) this number is usually limited by 10 new lexical units per page. Harwood in his work says: "...this low frequency of collocations in selected course books implies is that

textbook writers do not pay much attention to the recycling of collocations and the studied course books in this research are not reliable sources in directing students' attention toward collocational patterns and cannot have effective influence on increasing learners' collocational knowledge».

The problem

As it can be seen, the most criticized component of Lexical Approach is memory retention of a large number of chunks learnt. Therefore, the authors can formulate the problem: How to enhance learners' memory retention and adjust comfort revision of the lexical units within Lexical Approach for better performance?

Methods of the research

The major method of the research is literature review and analysis of empirical data. Moreover, in this work we will use the method of modelling to work out the possible implementation of the outcomes of this research in EFL-classroom.

Key Results

In the seek for solution of the problem stated above, the authors decided to pay attention to other teaching methods, which could help to enhance the memory retention and spur learners' academic performance when studying English using Lexical Approach. One of the ideas was to embark on using songs or chants to better remember the whole language units. This method seemingly has the following advantages:

- 1) Songs or chants can be constructed appropriately for Lexical Approach, so they contain the whole chunks
- 2) Songs or chants enhance memorizing new lexis, because the melody and rhythm help students to do so
- 3) Songs or chants offer not explicit and non-compulsory way of revising new lexis

Nevertheless, suggested thesis needs empirical basis and here it is needed to refer to previously conducted researches.

The problem of music and enhanced vocabulary retention has been discussed in many researches as stated in Rockell's work "Musical looping of lexical chunks: An exploratory study" (Hashim & Abd Rahman, 2010, p. 4; Medina, 1990, p. 18; Mora, 2000, p. 152; Salcedo, 2010, p. 19). Moreover, recently this issue has been empirically examined Pavia et al. (2019) in his work exposed one group students to listening to the songs while learning vocabulary and another one was taught without song-based approach. The first group showed better result in memorizing the vocabulary. As the author states "a frequency of exposure to songs in the EFL classroom leads to improved vocabulary acquisition and retention". The research directly interconnected with Lexical Approach was conducted by Tomczak and Lew (2019). In the study "The Song of Words": Teaching Multi-Words Units with Songs" they claim that the group of students exposed to listening to the songs while learning chunks had better performance than a non-song group. Authors state that multi-words lexical unit would retain better in students' memory when taught through songs. Shakerian et al. (2016) as well argues for better vocabulary learning and

retention when using songs in EFL classroom. Tegge (2015) in her massive work "Investigating Song-Based Language Teaching and Its Effects On Lexical Learning" proved in a classroom-study that use of songs in teaching language is effective: "The main findings of the quasi-experimental intervention study provided evidence that the presentation of text in the format of a song can result in higher retention of verbatim text both in immediate and one-week delayed testing".

As it can be seen, the effectiveness of songs when implemented in learning vocabulary and especially chunks have been proved. It has positive impact on both

student's retention and their active use of focus vocabulary in free speech (Rockell, 2015).

Discussion

Based on the conducted research, which showed an effectiveness of Lexical Approach and prospect for enhancing its use via the use of songs in EFL classroom, the authors worked out a model lesson which incorporates these principles. The procedure is fully described below:

1) Presentation (Figure 1). Students are given new chunks (ranked 1-6) and their equivalents in the familiar words. They need to match them correctly.

- | | |
|--|--|
| 1. No bed of roses | a) To achieve the goals |
| 2. To take a bow | b) To stop because of death |
| 3. To kick off | c) To be praised because of the great job |
| 4. To cool it off before you burn it out | d) A situation when not only good things happen |
| 5. We're gonna make it | e) To stop doing something not to become too tired |
| 6. To reach the top | f) To do something that is top-notch for you |

Figure 1. The presentation stage

2) Controlled practice (song-based). Students are given short pieces of songs where they can hear the chunks in use. Their task is to identify the chunks used in songs (Figure 2). After this part students make their own examples with the chunks.

Listen to 0:30-1:05 of "Vienna" by Billy Joel. What two phrases from the last exercise did you hear? Write one sentence for each of them. (3 minutes)

<https://youtu.be/wccRif2DaGs>

Listen to 1:15-1:40 of "We Are The Champions" by Queen. What two phrases from the last exercise did you hear? Write one sentence for each of them. (3 minutes)

<https://youtu.be/KXw8CRapp7k>

Listen to 0:40-1:00 of "We're Gonna Make It" by Twisted Sister. What two phrases from the last exercise did you hear? Write one sentence for each of them. (3 minutes)

https://youtu.be/l4v2_KPkcrs

Figure 2. The controlled stage

3) Semi-controlled practice. Students are given the statements about the video they are about to watch (Figure 3). These statements contain the focus vocabulary (chunks). Students watch the video and mark statements True or False.

Now watch the video about the successful Queen's song "Killer Queen". Mark these statements T or F. (8 minutes)

<https://youtu.be/iVuXKpzWnEQ>

1. Not **to kick off**, Brian May decided **to cool it off before he burnt it out** while recording the song
2. Queen didn't **take their bows** for "Killer Queen", it wasn't a hit
3. Freddie Mercury was sure that it was necessary to repeat the same song formula **to reach the top**
4. Queen's promoter was sure than the song was **going to make it** and he did his best to put it on every radio station
5. It was **no bed of roses** for Queen before the release of this song

Figure 3. Semi-controlled practice stage

4) Free practice (Figure 4). Students need to retell the story, using the target vocabulary (chunks).

Find any story of success in English (it should be a short interview or audiopodcast) that inspires you. Write a brief summary of it using all the phrases from the previous exercise. (10 minutes)

If you're struggling with searching for the appropriate option, here's one I like.

https://youtu.be/ta1_jTiduSc

Figure 4. Free practice stage

5) Homework. As the part of homework are to listen to the songs containing chunks and pay attention to the use of them. Hence, students will revise the vocabulary in a fluent way.

Conclusion

Lexical Approach, being one of the most advanced innovations in ESL, has proved its efficiency through many of empirical researches conducted in last decades. However, it has some downsides, for instance, heavy load of vocabulary on students and hence, difficulty of memorizing new lexical units. The authors believe, that songs when implemented on the fusion with Lexical Approach in the EFL-classroom would spur the efficiency of learning vocabulary and students' motivation.

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PHILOLOGICAL SCIENCES

LINGUISTIC DEVIATION AND ACTUALIZATION

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Abstract

Linguistic deviations surround poetic forms based on individual creativity. In poetic language, grammatical anomalies allowed for specific purposes are not errors. There are no limitless linguistic deviations that do not fit into the framework. The role of semantics and human cognition is prominent in understanding the text, free from strict grammatical rules, which resonates with the views of anthropocentrism in linguistics.

Keywords: deviation, actualization, foreground, an abnormal regularity, poetry.

As an introduction to our article, we consider it helpful to consider as an example the first part of the poem "Ode to the West Wind" by the 19th century English poet Percy Bysshe Shelley, presented by J. Leach, and conduct our analysis on it.

Ode to the West Wind

*O wild West Wind, thou breath of Autumn's being
Thou, from whose unseen presence the leaves
dead*

Are driven, like ghosts from an enchanter fleeing,

*Yellow, and black, and pale, and hectic red,
Pestilence-stricken multitudes: O thou,
Who chariotest to their dark wintry bed*

*The wingèd seeds, where they lie cold and low,
Each like a corpse within its grave, until
Thine azure sister of the Spring shall blow*

*Her clarion o'er the dreaming earth, and fill
(Driving sweet buds like flocks to feed in air)
With living hues and odours plain and hill:*

*Wild Spirit, which art moving everywhere;
Destroyer and preserver; hear, oh, hear! (Shelley)*

Deviation determines the criteria for the selection of linguistic features of literary nature. The deviation is especially characteristic of poetic language. The poet goes beyond the "observed norms" of linguistic expression. In a broad sense, it exercises poetic license. Depending on the type of norm, the kind of deviation also changes. M. Mahlberg refers to J. Leach to justify this opinion and distinguishes first-order, second-order and third-order types of deviation [9, pp. 20-21].

There are two primary forms of first-degree deviation:

- 1) the poet goes beyond the usual range of choices;
- 2) the poet uses the same subject in successive positions, depriving himself of the right to choose.

In many cases, the first type of deviation corresponds to Jakobson's famous criterion of the poetic function of language: "The poetic function projects the principle of equivalence from the axis of selection to the axis of combination" [7, p.358].

The first type of deviation can easily explain in the following verses:

*Who chariotest to their dark wintry bed / The
winged seeds, where they lie cold and low*

Here we encounter a lexical deviation in the choice of the rarely used verb *chariotest*. On the other hand, a collocational deviation that is relatively accurately reflected in the standard form:

*The wind (adverb) chariots (verb) the seeds (com-
plete) to their bed (adverb)*

Here we can see a deviation related to the syntactic word order (hyperbaton - introduction and postponement) in the sequence of subject + verb news + adverb + complement, which can be considered abnormal for the grammatical rules of the English language. The shared strangeness of the wind carrying the seeds to bed provides the basis for a metaphor that personifies the wind and the seeds. Thus, standard deviation or inconsistent juxtaposition of words is the basis of semantic deviation, more precisely, poetic metaphor. We must be able to distinguish simile and metaphor. Aristotle said that the creation of good metaphors depends on understanding similarities in things [1, p.61].

A simple example of the second type of first-order deviance is the alliterative example *O wild West Wind* with which the poem begins. The poet chooses the same /w/ consonant in successive syllables. In this word-initial position, a large number of phonemes can find. But the poet focuses on only one of these phonemes in his choice: the example that catches the reader's or listener's attention. A more straightforward example at the lexical-syntactic level is the example of repeated structural choice in the first three stanzas. C. Leach shows it schematically as follows:

I O... Wind, O+Vocative
Thou breath..., Vocative + Appositive
Thou, from whose... Vocative + Relative Clause
O Thou, who chariotest... O + Vocative + Relative Clause
Wild Spirit, which... Vocative + Relative Clause
Destroyer Vocative
hear, oh, hear! Imperative + O + Imperative

II Thou on whose... Vocative + Relative Clause
Thou dirge... Vocative + Appositive

to which... + Relative Clause
 from whose... + Relative Clause
 Oh, hear! O + Imperative

III Thou who didst... Vocative + Relative Clause
 Thou for whose path... Vocative + Relative Clause
 oh, hear! O + Imperative

Although the model is incorrect, the above summary shows that the poet associates the change with only five structural elements: the exclamatory O, the vocative, the adjunct, the relative clause, and the imperative verb hear. Briefly, deviation exhibits either abnormal irregularity (hyperbaton) or abnormal regularity (syntactic parallelism and other types of schematic patterns). The form of verse (weight, rhyme, line) is an abnormal regularity.

Nevertheless, it is a set of schematic structures that allows its specific stylistic variation rather than a form of stylistic variation [8, p.56].

The foreground is a term the reader elicits through linguistic or other forms of deviance. Unexpected deviation draws the reader's attention to the foreground as a "deautomization" of normal language processes [14]. In his work, Jan Boas Beyer, referring to J. Leach, considered the foreground and deviation as "the key to the stylistic explanation of literature" [2, p.120]. Maryana Hundt includes foregrounding, deviation and parallelism in her discussion of stylistic concepts. The author noted that stylistics began in the 20th century with the ideas of Russian formalism and showed that it is closely related to the concepts of foreground and deviation. Based on John Douthwaite [4] and J. Leach's propositions, he writes that foregrounding is related to the process by which the individual features of the text are distinguished. Deviation includes one of these means, divided into internal and external deviation. External deviation refers to features that differ from language norms, and internal deviation does not differ from the norms manifested in the text [6, p. 675]. Foreground, or aktualisace in Czech, is understood as a deviation from the norm or norm. Stefano Cotrozzi claims that the term comes from the Prague school of linguistics, which was perfected by the Russian formalists. In a broader sense, this term is synonymous with emphasis, focus, or emphasis [3, p.1]. Foregrounding is related to linguistic mechanisms at all levels of language. It sets against the background of the text or contextual factors such as literary genre. Actualization is a relative concept compared to norms and established rules. They are associated with complex contextual cues. Deviation and parallelism can be examples of actualization [10 p. 95].

In addition to the normal processes of interpretation applied to a text, whether literary or not, actualization also characterizes creative interpretation by the reader. It is necessary to use the power of imagination to clarify the reasons for the existence of the unusual. In the case of poetic deviation, it would be appropriate to ask such a question: What does the poet mean by this? Specific communicative values of poetry are the basis of creative acts. John Strachan compares the real meaning with the figurative meaning and claims that the essence of figurative language in prose or poetry is

related to creating deviation or actualization [13, p. 111].

The communicative essence of deviation can be determined by its lower and upper standards. While the lower standard of deviation narrows the range of meaning, its upper standard covers a broader range of meaning [12, p. 139]. The deviations between the texts in each communicative sphere can be explained by various types [11, p.48].

According to Jeffrey Leach, communicative values can be explained in the following essential categories:

a) contrast, for example: (destroyer) and (preserver) from the mountain in line 14.

b) similarity; for example, the similarity is expressed through metaphor. In lines 6 and 7, the wind is likened to a coachman, the seeds to passengers, and the earth to a bed.

c) parallelism, for example, the lexical-syntactic parallelism of verses, is mentioned in the above poem.

So, 1) the force of the wind on the ground (terrestrial nature), 2) the force of the wind in the sky (aerial nature), and 3) the force of the wind in the sea (aquatic nature).

d) mimesis: Referring to Plato in his ideas, Aristotle interpreted the concept of mimesis in different ways. Although Aristotle approached this concept on an aesthetic level and limited it to poetry and music, in all cases, the meaning of the term "imitation" gained more priority [5, p.53]. The /w/ sounds at the beginning of the words in the phrase O wild West Wind in Shelley's poem and the hissing (sibilant) sounds in the following line (from whose unseen presence the leaves dead) can be shown as examples of onomatopoeia imitating the sound of the wind. Although some critics consider analogical concepts unimportant, one can agree with J. Leach that mimesis with an abstract and complex form has a vital role in the analysis of the meaning and structure of the poem.

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MINOR HUMAN TRAGEDY IN THE NOVELS OF MIKHAIL NUAYMAN

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МАЛАЯ ЧЕЛОВЕЧЕСКАЯ ТРАГЕДИЯ В РОМАНАХ МИХАИЛА НУАЙМАНА

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Abstract

Already in the first quarter of the 20th century, the novella genre had a special place in Arabic literature. Researchers give different answers to the question "who is the first in the creation and application of this genre?" Nuayma takes the first place in the short story genre, because it was he who was able to revive real life here. In his novellas, Nuayma describes the life of her compatriots, who are often victims of illiteracy and superstition. Harmful customs and traditions are sharply criticized. It exposes the inner face of ambitious and profit-seeking people and opposes women's rightslessness.

Аннотация

Уже в первой четверти 20 века жанр новеллы занимал особое место в арабской литературе. При создании и применении этого жанра исследователи дают разные ответы на вопрос, «кому принадлежит первое место». Нуайма занимает первое место в жанре новеллы, ведь именно он смог оживить здесь реальную жизнь. В своих новеллах Нуайма описывает жизнь соотечественников, которые часто становятся жертвами пошлости и суеверий. Вредные обычаи и традиции подвергаются резкой критике. Он обнажает внутреннее лицо амбициозных и корыстолюбивых людей и выступает против женского бесправия.

Keywords: Mikhail Nuayman, novella, little man, tragedy, idea

Ключевые слова: Михаил Нуайман, новелла, маленький человек, трагедия, идея

Nuayma's creativity is multifaceted. His talent manifests itself equally successfully in all genres. Besides, novellas occupy a special place among his works. The writer's novellas are distinguished by features such as brevity, simplicity of expression, accuracy in describing the surrounding reality, variety of characters, plot dynamics and readability, subtle lyricism, and psychological richness.

The study of Mikhail Nuayma's novellas provides valuable material for illuminating the main aspects of modern Arabic literature.

Already in the first quarter of the 20th century, the novella genre had a special place in Arabic literature. Researchers give different answers to the question of

"who is the first" in the creation and application of this genre. Some give the right of primacy to Muhammad Lutfi Juma: His collection of stories called "In the Houses of the People" ("Fi bûyt en-nas") was published in 1904. Muhammad Rushdu Hasan stands at the head of writers who confirm that the first place belongs to M. L. Jume. He confirms his point of view in his research devoted to the creation of a short story in Arabic literature [3, p.90].

Another group of researchers considers Muhammad Teymur (1892-1921), known mainly as a playwright, to be the founder of the Arabic novella. The writer's first story "On the Train" was published in 1917. In the same year, his collection of stories "What

do my eyes see?" ("Ma Tarahu al-yyun") was published.

According to the supporters of the third position on this controversial issue, the first step in the creation of the novella genre in Arabic literature was taken by Mikhail Nuayman in 1914 with his story "His New Year". Abd al-Aziz Abd al-Majid commented on this point of view in his book "A Short Story in Modern Arabic Literature" ("al-Qissa al-Qasirah fi-l-adab al-arabi al-jadid"), published in English and Arabic. Despite the fact that Nuayman's first novella was published abroad - in the United States, it became very popular throughout the Arab world, because the work was "written in pure Arabic and the author created works that organically connect with the spiritual world of the Arabs." Lebanese critic Naim Hasan al-Yafi writes: "There is no doubt that the first place in the field of short stories belongs to Nuayman, who published his first story in 1914. He is the first novelist who has deep knowledge of literary forms and enriched the temple of art by writing his own stories for half a century" [2, p.90]. Nuayman takes the first place in the short story genre, because it was he who was able to revive real life here. Vital logic and depth of thought are integral features of these stories. The meaning of life is felt in these stories, created by the skillful hand of a skilled artist, they are also simple and understandable. The reader gets great pleasure while reading Nuayman's stories" - these words belong to modern Arab literary critic Ibrahim Abd al-Huri.

Nuayman emphasizes the importance of the impression that the ending of the novella will give, and at the same time shows the need for all parts of the work to form an organic unity. The writer himself strictly followed these rules. His novellas have a clear and fluent structure. Nuayman chooses more precise, concrete expressions to reveal the inner world of his heroes. The language of his novellas is clear and understandable. The writer talks about the most complex things in a language accessible to everyone (but not in a simple way). Also, despite rarely resorting to dialectics at this time, the norms of the literary language, to which Nuayman's novels follow all the rules, sound very natural even in the language of rural people.

Mikhail Nuayman's stories are collected in three main collections, but they can also be found in the writer's collection of articles ("The Voice of the World", "Light and Darkness", "Roads", etc.).

Mikhail Nuayman was able to publish his first collection of short stories only in 1937, a few years after returning to his homeland. All the stories included in the collection were written between 1914 and 1925 and were published in "as-Saih" newspaper and "al-Funun" magazine. After Nuayman's return to Lebanon, "Alf Leyla wa Laylat" ("1001 Nights") magazine publishes them on its pages.

Nuayman, who uses the traditional beginning of the Eastern fairy tale, calls his first collection of short stories: "It was or it was not." These stories describe the life of a Lebanese village and talk about the destructive effect of illiteracy and ignorance on the people's minds.

In 1956, Nuayman's second collection of stories called "Superiors" was published in Beirut. Its theme is

also taken from the Lebanese reality. The life of the village, the hard fate of simple workers - all this attracted the writer's attention.

Nuayman has created a whole garland of bright images. In the fate of his heroes, the contradictions of his time were reflected as in a mirror. Poor peasants who believe in the benevolence of landlords, representatives of the lower classes of the city, poor people who are ready to help those who are in trouble, profiteers, stingy statesmen and many other memorable images pass before the reader's eyes.

Humanism is the most important aspect of novelist Nuayman's creativity. In this regard, he was close to Chekhov, who loved "man not only because he is a highly intelligent, powerful and intelligent creature, but also because he is extremely weak, small, poor and helpless." [1, p. 69].

Nuayman's artistic skill lies in the fact that behind the fate of the person he describes in specific life conditions, the characteristic features of the social structure that causes injustice, inequality and hostility are visible.

Sadiq, the young hero of the story "Sadiq", always wants to lead a dignified and correct life. He was born in a poor family and was orphaned at an early age. A wealthy peasant takes pity on him and takes him to the pasture to feed his cows.

But the master demands from his shepherd not only honest labor, but also lies and hypocrisy at the command of the master. But Sadiq is honest and committed to his work. The enraged master beats him and throws him on the street. Soon, Sadiq finds another job and again makes a "mistake", or rather, tells the truth where he is asked to lie, and still remains without a piece of bread. Finally, Sadiq gets a chance to become a lawyer's driver. But he is still unlucky. As it happens, a lawyer hits a child with a car while driving. The lawyer orders all witnesses to remain silent about what happened. But when he cannot keep this secret, he puts the blame on Sadiq. The driver is sentenced to ten years in prison. Sadiq, whose hopes have been dashed, commits suicide. In his last letter it was written: "Cursed be the world that has no place for the faithful!" [5, p. 190].

The writer skillfully reveals the inner world of his heroes, demonstrates the contrast between Sadiq's pure intentions and bright dreams and the insidious and hypocritical nature of the current structure that deprives people of an honorable life path.

Sadiq encounters different people in his hard life. Here is a rich master who is ready to beat a destitute orphan to death for a few pennies, or to cheat a friend, a rich widow who only competes with her rival - the minister's wife, and thinks of ways to outdo her, blames an innocent, defenseless person for the crime they have committed. . By putting these cruel, lying and greedy people against people who make a living with lawful labor, Nuayman not only shows the misfortune of a person, but also reveals the flaws of the social structure where lies prevail over the truth. Thus, the writer is satisfied with showing the balance of forces in society, making the reader think about looking for a way out.

The story is instructive, kind of a cautionary tale with a modern theme. His instructive style of writing is noticeable from the beginning, which is already unique

and somewhat funny: "There are so many funny things that happen in life that you can't stop counting them. One of the incidents is related to names. A number of people carry their names as if they are mocking themselves. For example, let's take the name Jamila (beautiful). How many girls are given this name, but there are those who are so ugly that they almost remind of the devil himself, or when you pass by someone named Wardat (rose), it is as if you are passing by a pile of dung. When several Asads (lions) see a rabbit, they run away without looking back, it is easier to take a bone from the dog's hand than to extract a (generous) penny or two from some Karims. There are certain people (honor, conscience) who cannot be trusted even with the skin of an onion..." [2, p. 79]. But Sadiq, according to the author, is an exception, "as the skin suits the body", so his name suits him. However, the hero's name, which is so suitable for him, brings him immense difficulties, which ultimately leads to his death.

The story "Abu Batta" tells about the hard life of the poor. Abu Batta is the strongest porter of Beirut, "one of the poor workers who wanders around the city, and in fact carries the entire trading life of this city on his back. Wealthy merchants look down on these people, they treat them as indifferently as their old slippers" [1, p. 7].

Abu Batta is old and his legs are sick. He was stung by a scorpion when he was still a child, and the swelling of the poison remained in his leg for life. Swollen thick veins "were intertwined all along the leg, they were so blue that it seemed as if they were filled with blue slime. Most of all, they swelled in hot weather and on days when Abu Batta was carrying a heavy load" [6, p. 9]. During his hard and difficult life, he was able to collect only eleven pounds of gold coins. And now a certain shop owner is looking for a porter to carry a heavy cask full of white oil. No one agrees to carry such a heavy burden except eighty-year-old Abu Batta. Neither the merchant nor the passers-by are interested in the old man's health. Even when he could not bear the weight of the barrel and fell to the ground, trembling from weakness, the master only cared about the barrel containing a thousand pounds of oil. Abu Batta thinks a lot about life, sees all the contradictions of life, feels all its injustices in his soul. "Truly, the lie is in the yeast in the world, and the truth of an honest person turns into a liar's lie first and last, because the truth has become a kind of madness, the reason for insult that leads to death, or to avoid people" [4, p. 11]. Abu Batta and Sadiq are different people, but their thoughts about life are very similar.

Nuayman appreciates the spiritual qualities of Abu Batta. Eternal need and humiliation did not change his character. Like the other porters of the city, he has suffered so much that he doesn't even think about defending his human dignity. For example, Nuayman created the image of a writer who observes the life of people like Abu Batta. He often talks with Abu Batta and helps him with money. However, the writer does not even think of explaining his human rights to the old porter. When Abu Batta dies, one of his sons, who inherited his father's rare physical strength, takes his place, and it all begins again.

The story "Superiors" is closer to Nuayman's creative style. Like other works dedicated to the life of Lebanese villagers, Nuayman's work is written with sensitive love and compassion for people. Suffering and lonely people who are unable to fight against injustice... They come to life in front of us on the pages of Mikhail Nuayman's stories...

Abu Rashid and his wife Umm Rashid are no exception. The entrepreneur sends them a message that he will come to divide the product. It was necessary to welcome the master in a solemn way, with a festive table. There was nothing in their house except a few tin plates, clay cups, a pair of wooden spoons and a low table. Abu Rashid and Umm Rashid had an only son named Rashid. The child does not have even a single toy, the most dear to him in the world are his kid named Ifrit and rooster named Sultan. The child feeds them, takes care of them and is proud of them. That is why, despite his parents' reprimands, Rashid does not agree to slaughtering either the rooster or the kid to entertain the master, to whom his family owes three thousand kurus. But if this year's harvest is twice less than last year's, how to pay the debt? The master comes to the village in a car with his wife and Rashid-year-old daughter. Villagers invite them home. But the master's French-speaking wife refuses to enter the poor hut with her fashionable clothes. He doesn't even want to hear about eating from a tin plate with a wooden spoon. Abu Rashid and Umm Rashid are insulted.

Nuayman writes: "Now they would rather die from this shame without hesitation." But the villagers do not dare to express their grievances. The master demands his debt from them. Abu Rashid explains that he collected a small amount of crops because of the drought. "This is your business - says the master - I don't care about it. Tomorrow I will send my driver to pick up my share of crops." When the guests are about to leave, the master's daughter tells her mother in French that she wants to take the rooster and the kid with her. All this time, Rashid was playing with them without paying attention to anyone. Her mother answers the girl that "whatever your heart desires, it will be yours." The owners take the rooster and the kid and leave. Although Abu Rashid and Umm Rashid were hardworking and kind people, they were also public and superstitious. For example, he takes a handful of grains in his hand and thinks in his heart that if the number of grains comes out even, they will stay on this land and the master will not demand usury from them, or if he comes out alone, he and his family will be kicked out of the land they occupied. Abu Rashid and Umm Rashid used to obey. When the master's wife ordered him to take the rooster and the kid to the car, Abu Rashid knew very well that he was depriving his child of his only joy, but he obeyed the order without saying a word. His wife was obediently silent.

Another couple is a cruel lord and his wife. They believe that with wealth, any evil can be removed. The image of the rich man, who does not ignore the sufferings of Keridli, is reminiscent of the image of the gentleman in the famous poem "Farmer" by the great Azerbaijani poet M.A. Sabir. Nuayman notes that modern "civilized" gentlemen are even more cruel and greedy

than the previous "past" masters. The author mentions in the story that the master's late father was a kinder and simpler person. It reminds him to sit together with the peasants, share the poor table with them, and not take usury from anyone. In fact, the deceased master and his current master, as well as his family, which includes his youngest daughter, are among the "superiors" in the eyes of the peasant. Nuayman reveals the inner face of these "superior" people - those who have no heart and conscience, who "eat from porcelain dishes and use knives and forks in a modern fashion". Although the writer calls them "superiors", he uses this word with sarcasm and irony.

The reader feels disgusted with the hard-heartedness of such people, and feels sensitive and compassionate towards the hard fate of others. Nuayman opposes the oppression of the rich over the poor by exposing the unjust laws that leave the peasants in a state of disenfranchisement. With the power of the artistic word, he stigmatizes the privileged classes who show indifference to the needs of the common people.

Nuayman's story "The Gift" also has a deep tragic content. His hero Banna Masud works in construction. This is a young man with "a strong back, broad chest, strong shoulders, strong legs and hands." He has a secret dream for a long time - to give his wife a mirror. Therefore, he works from dawn to dusk, does not eat sugary food, and saves every penny. Finally, he can collect thirty pounds. On the way home, Masud wants to calculate his money and make sure that the diamond will be enough to buy a mirror. After all, the small shard of a mirror he found in a garbage heap near a wealthy house cannot be considered a mirror. Every time he sees his wife looking at this broken mirror, the sufferings of Masud make the reader ache for the fate of this young man.

Mikhail Nuayman's rich life experience did not allow him to uncover the deep roots of social contradictions in human destiny and deeds, to reveal them in specific circumstances. Any typical social event is not presented in the form of an abstract generalization in Nuayman's novels, but in a concrete landscape, in the fate and lives of concrete people. This is why his works are convincing and vital. As mentioned, many heroes of Nuayman are not ready to fight for a better life, for the protection of human rights. In Nuayman's stories, there are open calls to fight against the existing structure. Depicting life correctly, the author makes people think about the flaws of modern society.

In several of her works, Nuayman talks about the difficult fate of Arab immigrants in America. He exposes the flaws of the western civilization and works for the Arab emigrants to return to their homeland as soon as possible. It describes their alienation, the Arabs being changed and transformed by the corrupting influence of the American way of life.

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SOCIAL SCIENCIES

ARTIFICIAL INTELLIGENCE AND BLOCKCHAIN IN HEALTHCARE

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Abstract

The article is devoted to increasing the efficiency of blockchain technology and artificial intelligence in the field of health care in their combination. The problem of a high number of medical errors and the possibility of informatization of the health sector is put. Examples of advantages and weaknesses of both technologies are given. It is proved that the combination of artificial intelligence and blockchain can improve the security of big data, make decisions made by artificial intelligence more transparent, explainable and trustworthy, to reduce the number of medical errors, to make a step towards individualized medicine.

Keywords: healthcare, blockchain, artificial intelligence, their combination.

The volume of medical knowledge in the world is increasing exponentially: a new medical article appears every 20 minutes. But the physician's ability to track the necessary information, to comprehend it and to apply it in practice is limited. In Europe alone, every tenth patient encounters medical errors annually. In the United States, about 100,000 patients die each year from misdiagnoses, and deaths from medical errors are the fifth leading cause of death. Globally, the discrepancy between postmortem and vital diagnoses is 20-25%, that is, every fourth death occurs from a disease that was not detected during life by doctors [4].

Artificial intelligence is able to reduce the risk of errors in diagnosis and treatment by about 70%, because it has the full amount of medical information. Artificial intelligence is capable of processing thousands of pages of text per second to find the necessary information, which no doctor can do.

Examples of the use of artificial intelligence include recognition of MRI scans, ultrasound scans, cardiograms, development of drugs with preset properties; design of comfortable prostheses taking into account individual anatomical features of the person; analysis of the clinical picture of the patient's condition and assistance in the diagnosis and treatment of cancer; determination of risk groups, development of treatment options, and so on. The World Health Organization has developed an application in the smartphone mHealth based on artificial intelligence for preventive purposes. With its help, everyone can assess their health status, get acquainted with a preliminary diagnosis and find out which doctors they should consult. There is a mobile application (Sense.ly) with a rehabilitation focus, for those who are discharged from clinics. Artificial intelligence makes it possible to decipher genetic analysis data (Sophia Genetics app) and diagnose genetic diseases. The DermaCompare app can identify melanoma moles on the skin. Artificial intelligence selects drugs not only according to the disease, but also according to the individual's personality (MedClueRx) [2,3,9,10,14].

There are many such examples. Artificial intelligence technologies in health care are developing rapidly. A new area of their application is the International Classification of Functioning, Disability and Health - ICF - developed and published by the World Health Organization [6]. It was developed not to describe nosologies and diagnose a person, but to measure an individual's state of health (body functions and structure), including social environmental factors that affect health. According to the ICF, assessing the state of functioning of an individual as a biological and social being requires the participation of different specialists, that is, an interdisciplinary approach (psychological, psychophysiological, neuropsychological, pedagogical, physiological, medical), that is, working with big data. But there are problems associated with the storage of such data, their invariability, persuasiveness of interpretation, preservation of personal privacy rights. Blockchain technology could help solve these problems in processing big data [3].

Blockchain is an open, distributed registry of records that form a chain, shared by agreement by all users in the network. One of the advantages of blockchain is that it is virtually impossible to change information without the consent of the entire network. Blockchain is now seen as the basis for creating a serverless Internet, a decentralized World Wide Web in which users have control over their personal data. However, blockchain also has weaknesses related to scalability and efficiency issues [2,3].

Combining artificial intelligence and blockchain technologies gives rise to the possibility of their mutual complementarity and optimization. In this tandem, blockchain secures big data, allows people to control their data, explains the decision-making steps of artificial intelligence, makes them transparent decisions, explainable and trustworthy [7].

In doing so, artificial intelligence enhances its security, personalization and control, and provides protection against tampering. It helps to facilitate decision making, promotes automation and blockchain optimization for higher performance and better control, get-

ting away from the implicit stages of the decision-making procedure. Artificial intelligence can help blockchain improve the performance of mining algorithms, reduce blockchain size, and improve data storage management. Such an alliance helps to increase the field of application of artificial intelligence and the trust in it [1,2,3].

Doctors and science will have access to a huge amount of anonymous medical data. The search for drugs will be accelerated. Care for people with rare diseases will increase. Increased confidence in patients that they will not be compromised and their personal data will not be hacked by intruders.

Medical professionals will have the rationale for decisions that are given by machine intelligence ("black boxes"), will be able to review logs describing the decision-making process. This is important when investigating incidents [5,8].

Many experts believe that the future of blockchain and artificial intelligence are interconnected. Their synergy will be one of the most significant in the coming decades, because only in tandem will these two technologies be able to realize their full potential: reliable unchanged data storage (that is, verifiability) and transparency of decisions, which will increase trust in them [13].

Decentralized blockchain can facilitate the development of decentralized artificial intelligence. Sharing a huge amount of computing resources is more productive than individual supercomputers. Decentralized management of medical data, where all stakeholders can control access to the same medical records, patient charts, patient histories and predictive treatment programs while being completely incognito about who owns them, will improve the quality of medical diagnoses and reduce medical errors. It will increase evidence-based relationships between methods of prevention, treatment and rehabilitation; between treatment protocols, patient monitoring and the results obtained [2,3].

Transition to ultra-precise, individualized medicine will be possible, taking into account genetic and other characteristics of the patient, taking into account lifestyle, quality of the environment, social and economic status of the person. Such possibilities will increase the effectiveness of diagnosis and treatment of coronavirus infection [11,12].

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