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PHYSICS-MATHEMATICS AND TECHNICAL SCIENCES





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INVESTIGATION OF STRUCTURAL DESTRUCTION IN FILTRATION AND FLOW OF HETEROGENEOUS FLUIDS

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Several issues arising during the flow of heterogeneous fluids are related to changes occurring in their composition. Studying these changes within heterogeneous fluids is one of the crucial factors in assessing the structural stability at the interface of the constituent fluids. Therefore, various experiments related to the evaluation of the adsorption process in the filtration of dispersed systems have been conducted, and pressure-recovery curves have been constructed. Additionally, an algorithm has been developed for the numerical and asymptotic solutions of the equations describing the process, taking into account adsorption and convective diffusion during the filtration of solutions.

Keywords: adsorption, pressure, concentration, diffusion, porous medium.

INTRODUCTION

Mechanical and physicochemical changes occurring within many heterogeneous fluids significantly influence flow processes. In this context, the complex systems used can be considered as a unified thermobaric unstable medium impacting flow processes. Changes in solutions may manifest as rheological, sedimentation, thermodynamic, and other instabilities [1, 2, 9]

In order to conduct research in this direction, an experimental setup was created in the laboratory, and various properties of several water-based solutions were studied under thermobaric conditions. The conditions for their stable states were determined.

In oilfield mechanics, several unresolved problems are related to changes occurring within heterogeneous fluids during their flow. Studying such changes both within the composition itself and in contact with artificial additives can be crucial factors for regulating technological processes. It is possible to influence the structural instability of complex disperse fluids, which play an exceptional role in technological processes, and obtain the ability to modify this state [6]. Such conditions are encountered in drilling muds, cement slurries in well cementing, blood, gas-liquid mixtures, and so on.

FORMULATION OF THE PROBLEM

Solutions of polymers in water, containing suspended dissolved substances, undergo diffusion when chemical reagents are injected into oil reservoirs, interacting with the rock skeleton and reservoir fluids.

The most common types of material exchange occurring here are sorption and desorption processes. As a result of simultaneous sorption and desorption processes, macromolecules are distributed between the solution and the solid phase.

Polymer solutions adsorbed on the surface of the solid medium can alter the properties of the boundary layer structure, the compaction and aggregation of macromolecules, and other characteris-



tics. Most importantly, the adsorption process plays a significant role in blocking high-permeability reservoir pores in oil fields [6, 7, 12, 13].

MATERIAL AND METHODS

Various experiments have been conducted to evaluate the adsorption process in the filtration of disperse systems in a porous medium. To evaluate this process, the pressure recovery curves in the medium model were observed and examined for the samples of the studied solution before and after filtration in the porous model under the same conditions, focusing on changes in concentration.

Experiments conducted to check the dependence of the adsorption process on changes in porosity also provide a basis for more accurately confirming these considerations. The pressure recovery curves obtained in the porous medium model can further validate this more accurately (Figure 1).

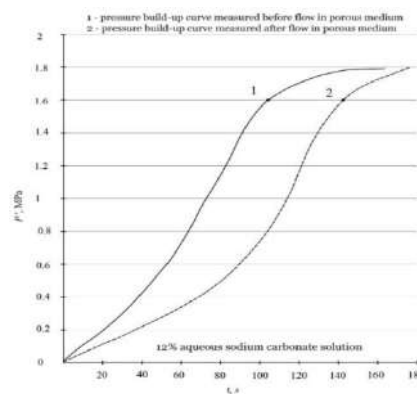


Fig. 1. Pressure build-up curve measure

The one-dimensional filtration equation, which combines the non-loss of polymer substances while considering convective diffusion and sorption kinetics, forms the basis of the mathematical model in this direction [8, 10, 11].

The adsorption process is considered to be in equilibrium, and its relation to concentration is given by the Henry isotherm. This equation, considering adsorption and convective diffusion with $\mathcal{G} = \mathcal{G}_0 = \text{const}$, is written in the following form [3-5].

$$\mathcal{G} \frac{\partial U}{\partial x} + \frac{\partial(mU)}{\partial t} + \frac{\partial a_*}{\partial t} = D \frac{\partial^2 U}{\partial x^2} \quad (1)$$

here

$\mathcal{G} = \text{const}$ - $m = m(x, t)$ - the filtration rate, which depends on the porosity of the medium;

$U = U(x, t)$ - the concentration of adsorption at a distance x from the beginning of the porous tube.

The following relationship exists between $m(x, t)$ - the porosity and $U(x, t)$ - the concentration

$$m(x, t) = m_0 \pm \frac{\Gamma}{2\delta} U(x, t) \quad (2)$$

here

Γ - Henry's coefficient;

δ - the density of the adsorbed model in the solid phase;

m_0 - initial porosity.

We can write the line according to the isotherm:



$$a_*(x, t) = \Gamma \cdot C_*(x, t) \quad (3)$$

Suppose that,

$$C_*(x, t) = \frac{U(x, t)}{2} \quad (4)$$

We derive from equations (1) to (4):

$$\begin{aligned} \frac{\partial m}{\partial t} &= \pm \frac{\Gamma}{2\delta} \frac{\partial U}{\partial t}, \\ \frac{\partial(mU)}{\partial t} &= \frac{\partial m}{\partial t} \cdot U + m \frac{\partial U}{\partial t} = \pm \frac{\Gamma}{2\delta} \cdot U \frac{\partial U}{\partial t} + m \cdot \frac{\partial U}{\partial t} = \\ &= \left(\pm \frac{\Gamma}{2\delta} \cdot U + m \right) \frac{\partial U}{\partial t} = \left(\pm \frac{\Gamma}{2\delta} \cdot U + m_0 \pm \frac{\Gamma}{2\delta} \cdot U \right) \frac{\partial U}{\partial t} = \left(m_0 \pm \frac{\Gamma}{\delta} U \right) \frac{\partial U}{\partial t} \end{aligned}$$

Then equation (1) is replaced by the following equations:

$$A(x, t) \frac{\partial U}{\partial t} = D \frac{\partial^2 U}{\partial x^2} - \vartheta \frac{\partial U}{\partial x} \quad (5)$$

here

$$A(x, t) = m_0 + \frac{\Gamma}{2\delta} (\delta + U)$$

For equation (5), we assume the initial and boundary conditions as follows:

$$U(x, t)|_{t=0} = U(x, 0) = \phi_0(x), \quad x \in D_x = (0, 1) \quad (6)$$

$$U(x, t)|_{x=0} = U(0, t) = \phi_1(x), \quad t \in D_t = [0, T] \quad (7)$$

$$A(x, t)|_{t=0} = a_0(x), \quad x \in (0, 1) \quad (8)$$

$$m(x, t)|_{t=0} = m_0(x), \quad x \in (0, 1) \quad (9)$$

We will discretize equations (5) to (9) for all grid points $(x_m, t_n) \in W_k^n$ as follows

$$\begin{aligned} A(x, t) \frac{U(x, t + \Delta t) - U(x, t)}{\Delta t} &= D \frac{U(x + \Delta x, t) - 2U(x, t) + U(x - \Delta x, t)}{(\Delta x)^2} - \\ &- V \frac{U(x + \Delta x, t) - U(x - \Delta x, t)}{2\Delta x} \end{aligned}$$

For equation (1), we can discretize the initial and boundary conditions as (6)-(9) like this.

$$U(x_k, 0) = \varphi_0(x_k), \quad x_k \in D_k, \quad k = \overline{0, M}$$

$$U(1, t_j) = \varphi_0(t_j), \quad t_j \in D_j, \quad j = \overline{0, N}$$

$$U(1, t_j) = \varphi_2(t_j), \quad j = \overline{0, N}$$

$$A(x_k, 0) = a_0(x_k), \quad k = \overline{0, M}$$

$$m(x_k, 0) = m_0(x_k), \quad k = \overline{0, M}$$



$$A(x, t)^{i=i_x} = A_k^n$$

$$A(x, t) = U(x, t) \Big|_{x=x_k} = U_k^n$$

Indicating, we can express the discretized equation as follows:

$$A_k^n \frac{U_k^{n+1} - U_k^n}{\Delta t} = D \frac{U_{k+1}^n - 2U_k^n + U_{k-1}^n}{(\Delta x)^2} - g \frac{U_{k+1}^n - U_{k-1}^n}{2 \cdot \Delta x} \quad (10)$$

Let's approximate equation (5) using the finite difference scheme:

$$A_k^n \frac{U_k^{n+1} - U_k^n}{\Delta t} = D \frac{U_{k+1}^{n+1} - 2U_k^{n+1} + U_{k-1}^{n+1}}{(\Delta x)^2} - g \frac{U_{k+1}^{n+1} - U_{k-1}^{n+1}}{2\Delta x} \quad (11)$$

$\sigma = 0$ (explicit scheme), $\sigma = 1$ (implicit scheme), and equations (10) and (11) can be written as follows [6]:

$$U_k^{n+1} - U_k^n = A_k^n (U_{k+1}^n - 2U_k^n + U_{k-1}^n) - A_{2,k} (U_{k+1}^n - U_{k-1}^n) = L_1 U_1^n \quad (12)$$

$$U_k^{n+1} - U_k^n = A_k^n (U_{k+1}^{n+1} - 2U_k^{n+1} + U_{k-1}^{n+1}) - A_{2,k} (U_{k+1}^{n+1} - U_{k-1}^{n+1}) = L_1 U_k^{n+1} \quad (13)$$

By multiplying and summing equations (12) and (13) appropriately with σ and $1 - \sigma$, we get

$$U_m^{n+1} - U_m^n = \sigma U_m^{n+1} + (1 - \sigma) U_m^{n+1}, \quad 0 \leq \sigma \leq 1 \quad (14)$$

When $\sigma = 0$, equation (12) is derived from (14), and when $\sigma = 1$, equation (13) is obtained. Explicit and implicit finite difference schemes have their advantages and drawbacks. In the explicit scheme, the number of operations required when transitioning from the n -th time step to the $n+1$ -th time step is proportional to the number of grid points.

This is stable only in a small time domain. In contrast, the implicit scheme requires a number of operations proportional to the cube of the number of grid points n^3 , and it is stable only in a wide time domain

$$N = O(M), \quad N = O(M^3)$$

Let's evaluate the error of approximation. Suppose that,

$$U_m^n = U(x_m, t_n) + \delta U_m^n \quad (15)$$

Here, $U(x_m, t_n)$ represents the exact solution of equation (5) on the grid, U_m^n is the approximate solution, and δU_m^n is the approximation error of the solution on the grid

If we consider equation (15) in light of (14) and assume that $U(x_m, t_n)$ is a smooth solution, we obtain:

$$\frac{\delta U_m^{n+1} - \delta U_m^n}{\tau} = \sigma \cdot \delta U_m^{n+1} + (1 - \sigma) L \delta U_m^{n+1} + \left[\frac{\partial U}{\partial t} - LU \right]_{x_m}^{x_{m+1}} + o(t, (\Delta x)^2) = 0$$

Since $U(x_m, t_n)$ is the exact solution

$$\left[\frac{\partial U}{\partial t} - \alpha, U \right]_{x_m}^{x_{md}} = 0$$

Thus,

$$\delta U_m^n = o(\Delta t, (\Delta x)^2)$$

It follows that discrete equation (14) approximates equation (5) from the first formulation with respect to t , and from the second formulation with respect to x . If we write equation (1) in matrix form, we get :

$$A_m^n U^{n+1} = B_m^n \quad (16)$$

Equation (16) is solved using the method of sweeping. A_m^n is a tridiagonal matrix. The stability condition for the tridiagonal matrix A_m^n is satisfied :

$$b_m^n \geq a_b^n + c_m^n$$

The sweeping method distinguishes itself with high efficiency. The number of operations is proportional to the number of variables. Moreover, besides approximating the solution on the grid and ensuring stability, the exact solution accumulates from the approximate solution found on the grid.

RESULTS AND DISCUSSION

Let's investigate the asymptotic solution of equation (5). Denoting the small parameter in front of the high-order derivative as $\varepsilon = D$, we seek the solution formally in a series form as follows:

$$U(x, t, \varepsilon) = \sum_{k=0}^{\infty} \varepsilon^k U_k(x, t) \quad (17)$$

Let's take the particular sum of n terms

$$U_n(x, t, \varepsilon) = \sum_{k=0}^n \varepsilon^k U_k(x, t) \quad (18)$$

and examine equation (5) for small values of ε .

Let's write the expansion of (17) in equation (5) :

$$L(x, U_n(x, t, \varepsilon)) = 0 \quad x \in W \in R^n, \quad \varepsilon > 0$$

$U(x, t, \varepsilon)$ also satisfies any boundary conditions. Suppose $U(x, t, \varepsilon)$ is a sequence of functions such that the following inequality holds:

$$|L(x, t, U_n(x, t, \varepsilon))| < M \cdot \varepsilon^n$$

M is independent of $(x$ and $t)$. If we express the specific sum of the formal asymptotic expansion (17) as (18), and if the function $U(x, t, \varepsilon)$ approximates the function $U(x, t, \varepsilon)$ for small values of ε , then the series (17) is asymptotic as $\varepsilon \rightarrow 0$ for the solution of $U(x, t, \varepsilon)$.

CONCLUSION

In laboratory experimental research, adsorption processes in the filtration of dispersed systems in a homogeneous environment have been evaluated. Graphs were obtained for pressure recovery curves in the experimental environment model under the same conditions before and after



filtration of samples. Effective algorithms were developed for the numerical solution of equations considering adsorption and convective diffusion in the filtration of substances in a homogeneous environment, using numerical methods and asymptotic approaches. Here, the equation is discretized in the grid domain W_h^r , and the new equation obtained is solved by the algorithm and the driving method. Approximation of the Tor equation with first-order accuracy with respect to time t and with second-order accuracy with respect to x has been proven, and its error has been estimated.

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HETEROGEN MAYELƏRİN SÜZÜLMƏ VƏ AXINLARINDA STRUKTUR POZULMALARIN TƏDQIQI

İ.C. Məmmədov, P.T. Müseyibli

Heterogen mayelərin axınları zamanı yaranan bir sıra problemlər onların tərkibində yaranan dəyişilmələrlə əlaqədardır. Heterogen mayelərin tərkibində baş verən dəyişilmələri öyrənmək tərkibi təşkil edən mayelərin sərhəddində yaranan struktur dayanıqlığının qiymətləndirilməsində vacib faktorlardan biridir. Bu səbəbdən işdə dispers sistemlərin süzülməsində adsorbsiya prosesinin qiymətləndirilməsiylə bağlı müxtəlif eksperimentlər aparılmış və təzyiq-bərpa əyriləri qurulmuşdur. Eləcə də, məhlulların süzülməsində adsorbsiya və konvektiv diffuziya nəzərə alınaraq prosesi ifadə edən tənliklərin ədədi və asimptotik üsullarla həlli üçün alqoritm alınmışdır.

Açar sözlər: *adsorbsiya, təzyiq, konsentrasiya, diffuziya, məsaməli mühit.*

ИССЛЕДОВАНИЕ СТРУКТУРНЫХ РАЗРУШЕНИЙ ПРИ ФИЛЬТРАЦИИ И ТЕЧЕНИИ ГЕТЕРОГЕННЫХ ЖИДКОСТЕЙ

И.Дж. Мамедов, П.Т. Мусейбли

Ряд проблем, возникающих при течении гетерогенных жидкостей, связан с изменениями, происходящими в их составе. Изучение этих изменений в гетерогенных жидкостях является одним из решающих факторов в оценке структурной стабильности на границе раздела составляющих их жидкостей. В связи с этим проведены различные эксперименты, связанные с оценкой процесса адсорбции при фильтрации дисперсных систем, построены кривые восстановления давления. Дополнительно разработан алгоритм численного и асимптотического решения уравнений, описывающих процесс, с учетом адсорбции и конвективной диффузии при фильтрации растворов.

Ключевые слова: *адсорбция, давление, концентрация, диффузия, пористая среда.*



CHEMICAL SCIENCES





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OBTAINING AND STUDYING THE STRUCTURE OF COPPER NANOPARTICLES IN GUM ARABIC CONDITION

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Gum arabic is one of the most important representatives of the natural class of polysaccharides. Widely used in medicine, cosmetics, food and pharmaceutical industries. In this work, copper nanoparticles were immobilized on the surface of a natural polymer, gum arabic. The resulting compound was synthesized using the crosslinking agent glutaraldehyde. Gum arabic matrices were prepared using two types of cross-linking agents. The first option is the immobilization of copper nanoparticles on cross-linked gum arabic, the second is the immobilization of copper nanoparticles on gum arabic matrices. The composite material was studied by physical methods: IR-Fourier and X-ray diffraction analysis.

Keywords: polymer-gum arabic, immobilization, metal nanoparticles, physical methods.

INTRODUCTION

Gummiarabic is one of the most important members of the natural class of polysaccharides [1, 2].

It is widely used in medicine, cosmetics, food and pharmaceutical industries due to its properties such as biological activity, biological degradation, biocompatibility, complexing and sorption capacity. As a result, it is shown that on this basis it is possible to obtain highly mechanically resistant and elastic films [3, 4].

The chemical composition of gummiarabic is heterogeneous. Its high functional properties are due to the complexity of its structure. In terms of chemical structure, it refers to biopolymers that contain both polysaccharides and protein fragments in the molecule. Due to the nature of the ion (hydrogen ion or cations of calcium, magnesium, sodium or potassium) against the carboxyl group, Gum Arabic (GA) creates a weakly acidic or neutral environment in the solution [4, 5].

Gummiarabic consists of elemental units of pentoses, methylpentoses, hexoses and polyuronic acids, which have a certain relationship with each other. The main skeleton of the gummiarabic macromolecule was formed from galactose and mannose, the side arms contain the units of pentose and xylose. Mannose residues are also part of the main chain or branching parts. Uronic acids include glucuronic acid units, mainly connected to galactose or mannose units [6].

Studies have shown that gum arabic consists of 45-46% galactose, 23-24% arabinose, 13-14% rhamnose and 14-16% glucuronic acid residues. Polysaccharide acids allow the replacement of calcium, magnesium and sodium salts (Fig.1).

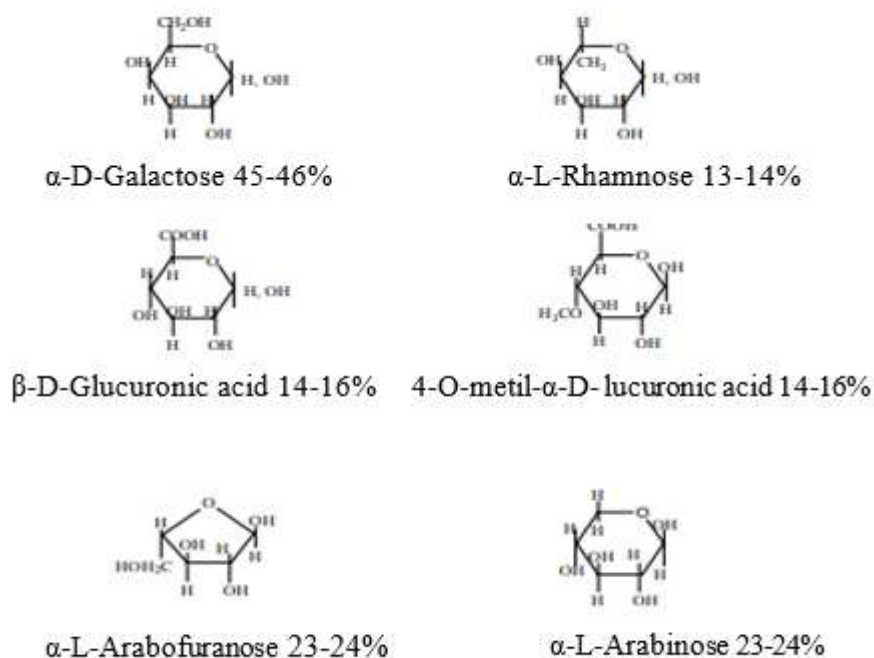


Fig. 1. Composition of gum arabic

Gum Arabic is a natural multifunctional hydrocolloid of arabinogalactan-protein of neutral or weak acid complex with a branched chain, containing calcium, magnesium and potassium. GA is a dried exudate obtained from the branches and core of an acacia tree [7].

Chemical study of GA has shown that it was determined as a result of its complete hydrolysis, aldobionic acid is formed, which consists of glucuronic acid and galactose residues. During gentle hydrolysis, arabinose, rhamnose and 3-galacto-1-arabinose disaccharide are removed from the GA. Partially depolymerized GA consists of elemental units of galactose and glucuronic acid [6, 8].

MATERIAL AND METHODS

Gum arabic is a branched-chain multifunctional hydrocolloid with a highly neutral or slightly acidic, arabinogalactan-protein complex containing calcium, magnesium, and potassium. Gum arabic is soluble in water (Fig.2).

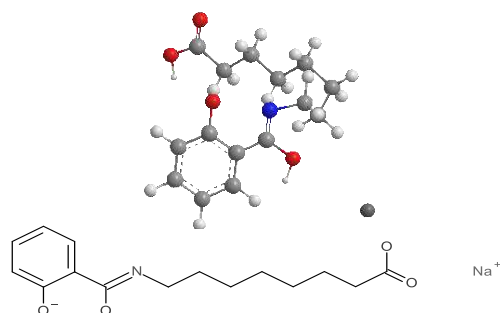


Fig. 2. 3D and 2D structure of gum arabic

Copper (II) sulfate, also known as copper sulphate, are the inorganic compounds with the chemical formula $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$. Copper sulphate is a bright blue salt, exothermically soluble in water. Anhydrous copper sulfate is a light gray powder (Fig.3).

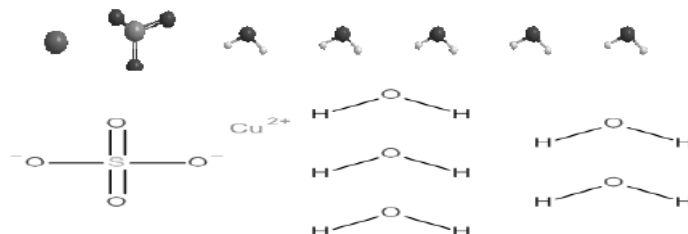


Fig. 3. 3D and 2D structure of copper(II) sulfate

Sodium borohydride (sodium tetrahydride borate) - colorless crystals, readily soluble in polar organic solvents and water.

N,N'-Methylenebisacrylamide (MBAm or MBAA) is a cross-linking agent used during the formation of polymers such as polyacrylamide. Its molecular formula is $\text{C}_7\text{H}_{10}\text{N}_2\text{O}_2$. N, N'-methylenebisacrylamide is a white and crystalline solid that does not dissolve very much in cold water (Fig.4).

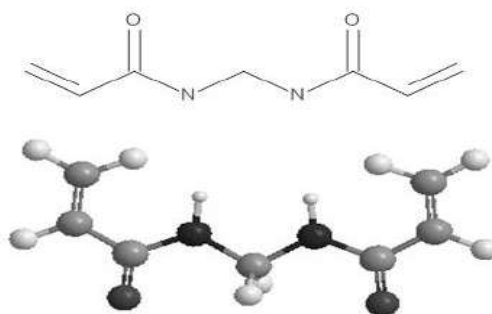


Fig. 4. 3D and 2D structure of MBAA

Obtaining matrices based on gum arabic

Gum arabic-based matrices were obtained using two types of cross-linking agents. 0.5 g of gum arabic dissolved in distilled water at a temperature of 20-30°C. In the first method, after mixing the solution at room temperature for two hours, 0.15 g (in 30% of the polymer) of the cross-linking agent N, N'-methylene bisacrylamide is added. Stir for 4-5 hours and keep at room temperature until the additives evaporate. After drying, the substance was cross-linked in the UV-lamp at a temperature of 40°C for 4 hours. In the second case, 0.03 ml (6% of the polymer) of the cross-linking -glutar aldehyde is added to the medium after mixing the solution with gum arabic. The process continues as in the first method.

1. Immobilization of copper nanoparticles in the cross-linked Gum Arabic matrices.

Immobilization of copper nanoparticles in the cross-linking GA matrices is carried out as follows: first, the GA is dissolved in water at room temperature. Cross-linking agent of N, N'-methylene bisacrylamide add to the solution and mix for 3 hours at a temperature of 20-30 degrees. The resulting product was cross-linked in the UV-lamp at a temperature of 40°C for 4 hours. Then



the degree of swelling is determined. The amount of swelling polymer should be at least 1.5-2 times more than the amount taken. 0.58 g of $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ (in 30% of the polymer) solution is added to the obtained product. In this case, the color of the solution turns blue. We add 0.62 g of reducing agent NaBH_4 in 30% of the metal to the obtained blue solution and bring Cu^{2+} ions to Cu^0 . The color changes from blue to dark brown. At the end of the reduction process, the solution is washed several times with distilled water and dried after removal of additives. The obtained product was studied by physical research methods.

2. Immobilization of copper nanoparticles on gum arabic matrices

Immobilization of copper nanoparticles on gum arabic matrices is carried out as follows. Thus, the gum arabic is first dissolved in water and stored overnight. We add $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ -30% of the polymer to the solution and keep it overnight after mixing. We add 30% reduction metal NaBH_4 to the obtained blue solution and bring Cu^{2+} ions to Cu^0 . In this case, the color changes from blue to black. At the end of the reduction process, cross-linking agent N, N'-methylene bisacrylamide is added to the solution. The resulting product is dried, washed several times with distilled water, cleaned of additives and it was cross-linked in the UV-lamp at a temperature of 40°C for 4 hours (Fig. 5) [9].

RESULTS AND DISCUSSION

The results obtained were studied by IR spectroscopy method and determined that the instead of the 968 cm^{-1} absorption band in the original gum arabic (Fig. 4), a 996 cm^{-1} absorption band is formed in the spectrum of the gum arabic-based composite containing Cu nanoparticles gum arabic (Fig. 6).

At the same time, the study of the immobilization of Cu nanoparticles in the crosslinked gum arabic was carried out by X-ray analysis. In this case, copper ions were observed both in the form of free and compound (Fig. 7).

The substance obtained as a result of the cross-link process after immobilization of copper ions in a natural polymer - gum arabic was also studied by FTIR and X-ray methods. At the same time, the 968 cm^{-1} absorption band observed in pure gum arabic shifted to the 985.2 cm^{-1} absorption band. (Fig. 8) Cu ions in the form of free and compounds were also observed during X-ray analysis. (Fig. 9) In this case, immobilization of copper ions gave better results.

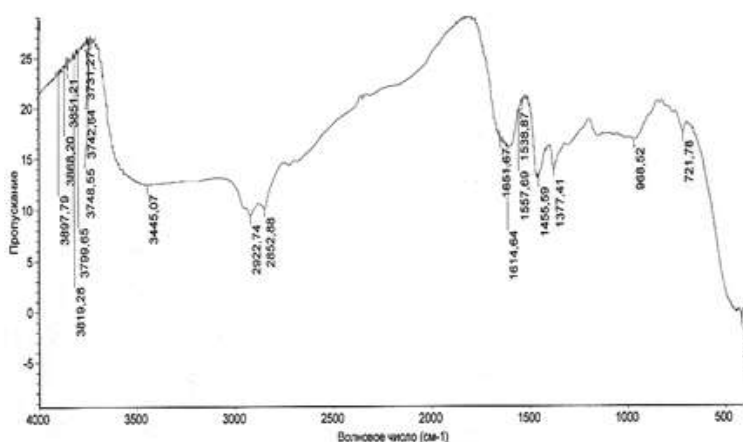


Fig. 5. FTIR spectra of the gum arabic

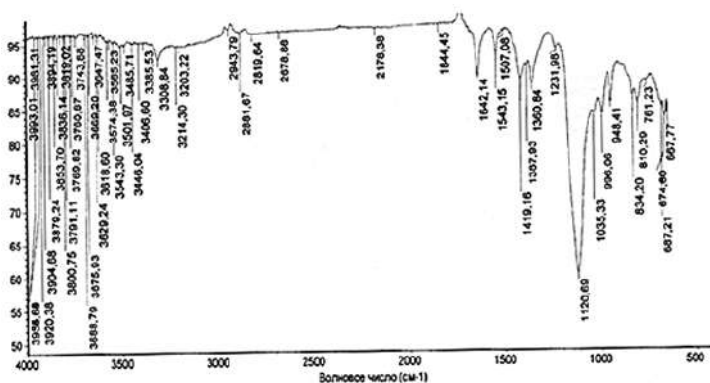


Fig. 6. FTIR spectrum of the cross-linked gum arabic - Cu complex

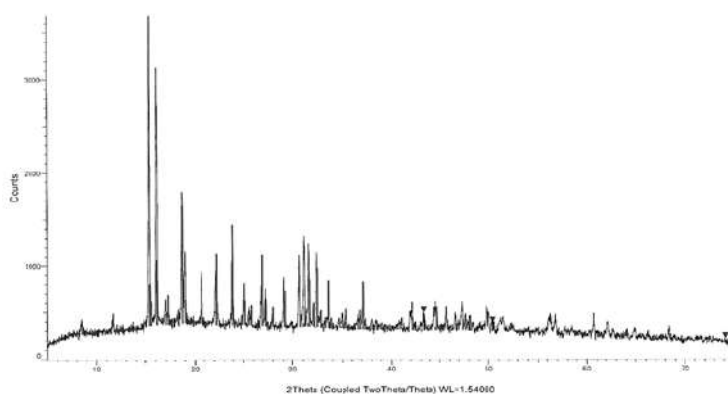


Fig. 7. Diffractogramm of the cross-linked gum complex

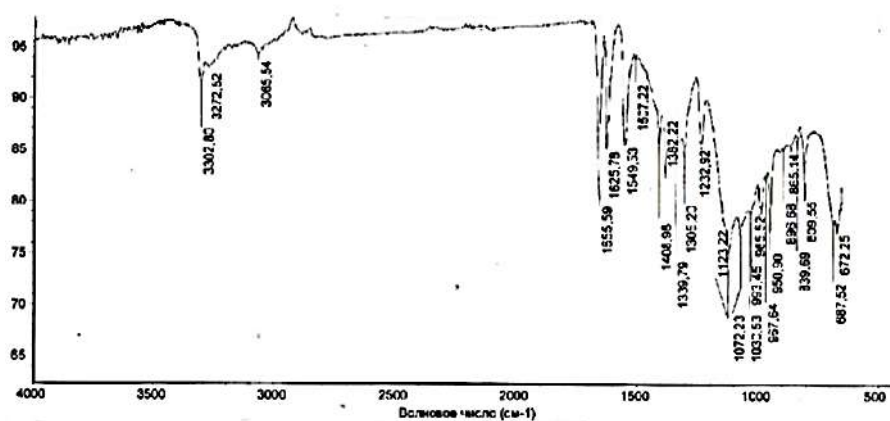


Fig. 8. FTIR spectrum of gum arabic-based composite containing Cu nanoparticles

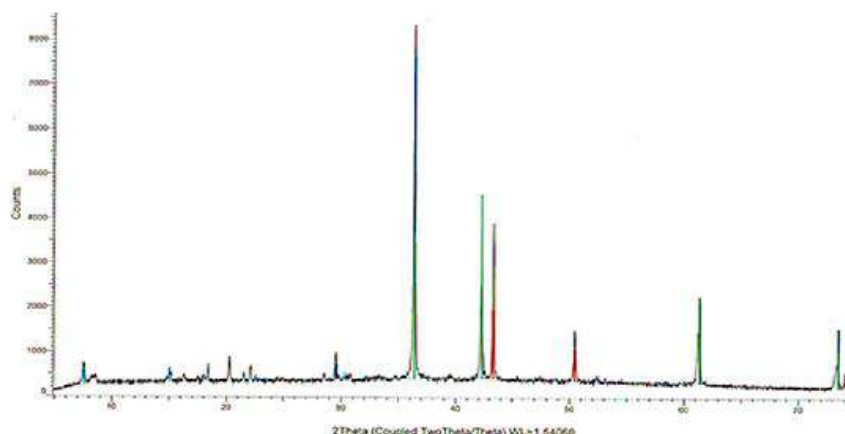


Fig. 9. Diffractogramm of gum arabic-based composite containing

CONCLUSION

Copper nanoparticles were synthesized in gum arabic medium and their structures were studied by IR spectroscopy and RF analysis methods. In the second case, immobilization of copper ions was more successful. Because initially, when the cross-linking is carried out, most of the functional groups of the polymer are combined with the cross-linking agent groups. In this case, when immobilization of copper ions is carried out, the process proceeds poorly, since many of the groups are combined with the cross-linking agent. This reaction is mainly carried out in order to obtain smart polymers. The analysis of the compounds obtained in the presented work, conducted studies and literature materials makes it possible to use these substances as catalysts and adsorbents in various fields in the future.

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QUMMIARABİK MÜHİTİNDƏ MİS NANOHISSƏCİKLƏRİNİN ALINMASI VƏ QURULUŞUNUN TƏDQİQİ

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Qummiarabik təbii polisaxaridlər sinfinin ən vacib nümayəndələrindən biridir. Tibb, kosmetika, qida və əczaçılıq sənayesində geniş istifadə olunur. Bu işdə mis nanohissəcikləri təbii polimer olan qummiarabik səthinə immobilizə olunmuşdur. Alınan birləşmə tikici agent olan qlutaraldehidindən istifadə edilərək sintez edilmişdir. Qummiarabik əsaslı matrislər iki metodla tikilmişdir. Birinci variant mis nanohissəciklərin tikilmiş qummiarabik üzərində immobilizasiyası, ikincisi isə mis nanohissəciklərin qummiarabik matrisləri üzərində immobilizasiyasıdır. Kompozit material IQ və RFA fiziki üsullarla tədqiq edilmişdir.

Açar sözlər: *qummiarabik polimeri, immobilizasiya, metal nanohissəciklər, fiziki üsullar.*

ПОЛУЧЕНИЕ И ИЗУЧЕНИЕ СТРУКТУРЫ НАНОЧАСТИЦ МЕДИ В ГУММИАРАБИЙСКОЙ СРЕДЕ

Х.Ф. Асланова, Н.Т. Рагимли, А.Р. Джавадзаде, У.А. Мамедова, Н.А. Зейналов

Гуммиарабик является одним из наиболее важных представителей природного класса полисахаридов. Широко используется в медицине, косметической, пищевой и фармацевтической промышленности. В настоящей работе наночастицы меди были иммобилизованы на поверхность природного полимера гуммиарабика. Полученное соединение было синтезировано с использованием сшивающего агента глутарового альдегида. Матрицы на основе гуммиарабика были получены с использованием двух типов сшивающих агентов. Первый вариант – иммобилизация наночастиц меди на шитом гуммиарабике, второй – иммобилизация наночастиц меди на матрицах гуммиарабика. Композитный материал исследовали физическими методами: ИК-Фурье и рентгеноструктурным анализом.

Ключевые слова: *полимер-гуммиарабик, иммобилизация, наночастицы металлов, физические методы.*



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STRUCTURE FORMATION IN OIL DISPERSED MEDIA

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A number of issues with crude oil production and transportation can arise from the presence of water dissolved in the oil as a water-in-oil emulsion. Issues related to transportation are demonstrated by the when water is present, the resulting fluids' viscosity increases. The effects of temperature, disperse phase droplet size, and disperse phase volume on the rheological characteristics of water-in-crude oil emulsions have been studied in order to better understand this undesired occurrence and to support demulsification research. The results obtained with various crude oils show that as the water content and water droplet size decrease, the viscosity of the water-in-light crude oil emulsions increases. The emulsions exhibit Newtonian behavior at low water contents, but deviate from it as water content increases. The results show how the rheological characteristics and dehydration of these emulsions are impacted by the precipitation of specific native surface active components in crude oil. Crude oil reservoirs are nearly invariably connected to gas and briny water. Therefore, it is highly possible that coproduction of water will also happen at some point during the production of crude oil. This often occurs as the reservoir gradually empties. The produced water may come from the reservoir's water-bearing portion or from water that has been injected for secondary or tertiary oil recovery. No matter what kind of water phase exists, as long as it is coproduced, shear and pressure drop at well-head chokes and valves will spread it out easily.

Keywords: Rheological models, settling, drag coefficient, effective viscosity, structure formation

INTRODUCTION

Ranges of experimental data are taken into consideration and rheological models of viscous-plastic heavy oils are created [15-18]. Numerous existing models can be made more universal by including new rheological models for viscous-plastic heavy oils. The criteria for the production of disordered structures in the majority of the oil flow are documented to determine the range of rheological models for heavy oils [1]. Based on the effective viscosity of the oil, pressure gradient, shear stress, and several other factors, a nonlinear equation for filtering in porous media is provided for heavy oils [3, 4, 6, 18]. This equation has an analytical solution that is suggested and agrees with the results of the experiment. A nonlinear equation for filtering in porous medium for heavy oils is provided, which depends on many parameters such as the oil's effective viscosity, pressure gradient, and shear stress. This equation has an analytical solution that is suggested and agrees with the experimental results. Proposed are models for the drag coefficient and settling rate of particles in heavy oils. In order to improve the rheological characteristics of heavy oil during processing as a result of developing a recirculation scheme at an operational oil refining unit, applied rheology difficulties are taken into consideration. The inclusion of naturally occurring surfactants from crude oil stabilizes the resulting water-in-oil emulsions by adsorbing at the oil-water interface and creating an interfacial skin around each water droplet. The physical barrier that prevents coalescence is what leads to the overall high stability of emulsions of water in crude oil [2, 7, 17, 21]. The addition of tiny, solid wax particles has been shown to enhance this skin when combined with specific crude oils. Wa-

ter-in-crude-oil emulsions can cause a number of issues, such as: the cost of pumping or transporting the saline water by tanker or pipeline; corrosion of downstream overhead distillation columns and production equipment; the need for additional production equipment to provide export-quality crude oil; and poisoning of refinery catalysts. Therefore, it is evident that the removal of this emulsified water early in the production scheme is justified for both operational and commercial reasons. However, in other situations, such as when producing crude oil from autonomous offshore platforms or satellite wells, it is not feasible to resolve emulsions before pipeline transmission. Then, the presence of emulsified water droplets in cooling crude oil causes a rise in viscosity, which is the immediate production issue rather than the removal of the water. The current work aims to tackle this topic by concentrating on how the addition of water in an emulsified form alters the rheological characteristics of crude oil. To suggest the appropriate placement of facilities for pumping the generated water-in-oil emulsion, the design engineer must have a thorough understanding of the rheological behavior of the emulsion. In fact, the outcomes might affect whether or not the oil needs to be dehydrated before being transported. We will thus demonstrate how several factors affect the rheological characteristics of water-in-crude oil emulsions, including temperature, disperse phase volume, and water droplet size. Next, we will create a theme that illustrates how the bulk rheology of the emulsions can be impacted by the presence or absence of fine particulates at the crude oil-water interface. There have been several presentations of preliminary evidence for this. The current research has been expanded to allow us to examine the potential effects of other oil-native chemical species, such as asphaltenes, on the rheological characteristics of emulsions made with various types of crude oil [15, 16]. Lastly, we will show how the resolution of water-in-crude oil emulsions corresponds with the observed rheological behavior. Our goal is to draw attention to the significance of emulsion rheology in relation to the extraction and transportation of crude oil, a subject that hasn't gotten much attention up to this point.

A family of dispersion systems called emulsions is made up of two immiscible liquids [9-12]. In a liquid medium, the liquid droplets (the dispersion phase) are distributed (the continuous phase). Different classes can be identified: water with oil in it (O/W), both oil-in-oil (O/O) and water-in-oil (W/O) exist. An emulsion made of polar oil (propylene glycol, for example) dispersed in nonpolar oil (paraffinic oil) and vice versa can serve as an example of the latter kind. One needs the emulsifier, a third ingredient, to disperse two immiscible liquids. For the emulsion to form and remain stable over time, the emulsifier selection is essential [13, 14]. Emulsions can be categorized based on the system's structure or the type of emulsifier used. Table 1. gives an illustration of this.

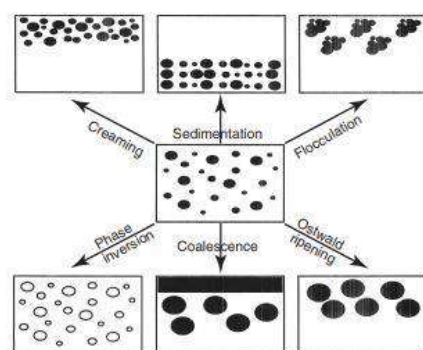


Table 1. Schematic representation of the various breakdown processes in emulsions

It is required to find solutions to a variety of, occasionally contradictory issues in order to regulate the structural and mechanical features of oil dispersion systems in the processes of oil production, transportation, refining, and petroleum product consumption. A high concentration of dispersed particles (water droplets, gas bubbles, and solid particles), along with asphalt-resin and pa-



raffin particles dissolved in heavy oil, are considered the rheological properties of oil dispersed systems. These properties also include the ability of the particles to form different structures as a result of their physical interactions with one another. Particle size, shape, concentration, and characteristics all play a significant part in the creation of structures and the building of rheological models of non-Newtonian fluids. Many rheological models with distinct features that represent the flow of oils from diverse fields are provided in publications [3, 21]. The core of rheological study is, as is well known, the nature of the relationship between shear stress τ , shear strain $\dot{\gamma}$, and their changes in time $d\tau/dt$ and $d\dot{\gamma}/dt$ [19, 20]. Heavy processing products and high viscosity viscous plastic oils are categorized using rheological properties as a criterion. After the system under study's limiting shear stress, τ_0 is overcome, a series of actions of breakage and restoration of links between scattered particles comprise the mechanism of plastic flow. The core of rheological study is, as is well known, the nature of the relationship between shear stress τ , shear strain γ , and their changes in time $d\tau/dt$ and $d\gamma/dt$ [3, 5, 8]. Heavy processing products and high viscosity viscous plastic oils are categorized using rheological properties as a criterion. After the system under study's limiting shear stress, τ_0 , is overcome, a series of actions of breakage and restoration of links between scattered particles comprise the mechanism of plastic flow. When the shear stress exceeds the elastic limit stress, $\tau > \tau_0$, the structure breaks down and the viscosity rapidly decreases. It is possible to assess the basic characteristics of the systems themselves using rheological models of oil dispersed systems. These models are primarily empirical or semiempirical in character since they lack a shared mechanism of flow and deformation. There are several empirical rheological models of structured dispersal systems, but as of yet, no qualitative or quantitative theories exist that relate the structure parameters to the rheological characteristics of the system. This might be the result of the flow, distortion, and creation of an unorganized structure in each unique instance. As a result, the findings demonstrate that several empirical or semiempirical equations can accurately represent the same experimental investigation while maintaining model fidelity.

EXPERIMENTAL PART

Particles that have intermolecular connections with one another produce coagulation structures. If there are liquid interlayers between the particles, the strength of the coagulation structure is strongly influenced by the thickness of these interlayers. The variable state of the 2 Topics on Oil and Gas environment and changes in the physical characteristics of the particles that is, a shift in the size and volume of asphaltene particles as a result of their interaction, collision, coagulation, and crushing at a specific concentration in a closed volume are the hallmarks of aggregate unstable oil systems. A shift in the structure brought about by the creation and disintegration of aggregates from asphaltene particles in the presence of resins explains the relationship between the structure and viscosity of petroleum dispersed systems as well as the characteristics of their non-Newtonian flow. High molecular weight paraffin crystals, resins, and asphaltene particles combined with oil-structured materials form a chain or, in the worst case scenario, a continuous grid (framework) at very low laminar flow rates or without flow. Individual asphaltene nanoparticles coagulate or aggregate sequentially to create nanoaggregates and clusters of nanoaggregates, which ultimately forms a viscoelastic framework that gives heavy oils specific rheological characteristics. The study points out that two structural groups that differ in the kind of intermolecular interactions between particles in an oil-disperse medium are formed from the activation energies of real oil-dispersed systems. These groupings can be divided into two categories based on the amount of asphaltenes and resins they contain: immobile with a low asphaltene content and interactive with a high asphaltene content. The typical variations in activation energies for the two groups are displayed in Figure 1.

The following presumptions can serve as the foundation for the rheological model of the flow of oil dispersed systems [18].

- ✓ As a result of diffusion in laminar and turbulent shear flow and sedimentation (gravitational coagulation), asphaltene particles in structured oil systems can collide, coagulate, and aggregate, forming nanoaggregates. These aggregates can be deposited on the surface, forming a relatively thick layer of deposits on the walls of the porous oil reservoir. In addition, temperature-dependent pressure decreases during vigorous mixing or turbulent flow may cause precipitated asphaltene particles to dissolve or separate;
- ✓ Until they clash with asphaltene particles or other comparable aggregates, nanoaggregates travel as separate flow units;

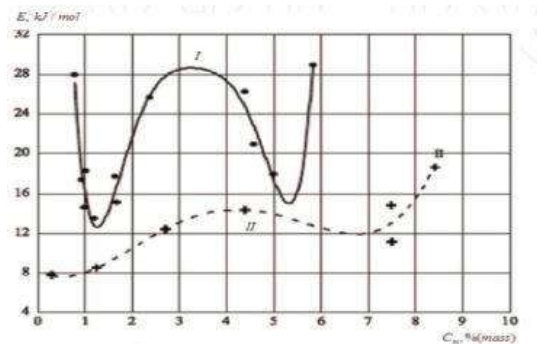


Fig. 1. For both the immobile group (I) and the interactive group (II), the activation energy is dependent on the asphaltene content [18].

Colliding nanoaggregates combine to form clusters, which in turn form a viscoelastic frame of a disordered structure with a loose coagulation structure and the maximum viscosity. The diameters of the channels (pores and pipes) that the flow passes through define the maximum size of the nanoaggregate structure. It is significant to remember that the variety of rheological models arises from the production of disordered structures in the oil volume;

Depending on the pressure gradient or flow rate, nanoaggregates can rotate in a gradient field and fracture due to tensile hydrodynamic forces;

The size of a single asphaltene particle to the largest possible cluster or disordered structure framework is the range of the linear dimensions of nanoaggregates;

Under the condition $\lim_{\tau \rightarrow \infty} (\tau_0/\tau) \rightarrow 0$, all aggregates are annihilated to individual particles in the limiting situation of infinite velocity, which causes the flow of a dispersed system to approach Newtonian;

RESULTS AND DISCUSSION

Asphaltenes dissolve readily in the presence of aromatic hydrocarbons, which inhibits the creation of structures such as clusters and viscoelastic frameworks. The solubility of asphaltenes is influenced by the existence of other compounds, like resins, in the oil.

Maxwell's viscoelastic fluid's rheological equation in considerable derivatives is expressed as follows:

$$\lambda \left(\frac{\partial \tau}{\partial t} + U \frac{\partial \tau}{\partial y} \right) + \tau = \eta_c \dot{\gamma}$$

$$t = 0, \tau = \tau_0, \dot{\gamma} = 0$$

where λ is the relaxation time.

The Eq. (1), presented in the form:

$$\lambda \left(\frac{\partial \tau}{\partial t} + U \frac{\partial \tau}{\partial y} \right) + \tau = 0$$



The solution of Eq. (2) can be represented as:

$$\tau = C_1 f(y - Ut) \exp(-\tau/\lambda)$$

We get an identity by substituting this answer into Eq. (2). Here, $\lambda = \eta_c/G$ is the Maxwell relaxation time, U is the strain front movement velocity $f(y - Ut)$ is a function that determines the strain front in the frame, y is the coordinate, G is shear modulus, $\dot{\gamma} = d\gamma/dt$ is shear rate, γ is the shear gradient, τ_0 is the ultimate shear stress or yield strength. Moreover, if $\tau \leq \tau_0$, then $\dot{\gamma} = 0$. The complete solution of

Eq. (3) takes the form:

$$\tau = C_1 f(y - Ut) \exp(-t/\lambda) \tau_0$$

or this equation can be written in logarithmic form:

$$\ln \tau = \ln \tau_0 - t/\lambda + \ln(C_1 f(y - Ut)), \tau_0 = \eta_c \dot{\gamma}$$

It's clear that the value $t=\lambda$ in Eq. (5) describes the viscoelastic frame's deformation over time and that, when heavy oils flow, it depends on the pressure gradient or velocity, which, in an approximation, can be expressed as follows: $t/\lambda = t\dot{\gamma} / Wi \sim f[(grad P / (grad P)_0)^n]$

(where, $Wi = \lambda\dot{\gamma}$ is the Weissenberg number).

CONCLUSION

For viscous-plastic heavy oils, new rheological models are put forth, allowing for the generalization of numerous previous models. It is observed that the circumstances for the production of disordered structures in the majority of the oil flow dictate the range of rheological models for heavy oils. A nonlinear equation for filtering in porous medium for heavy oils is provided, which depends on many parameters such as the oil's effective viscosity, pressure gradient, and shear stress. This equation has an analytical solution that is suggested and agrees with the experimental results. Proposed are models for the drag coefficient and settling rate of particles in heavy oils. Rheological application issues focused on enhancing heavy oil's rheological characteristics during processing.

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NEFT DİSPERS MÜHİTLƏRDƏ STRUKTURUN FORMALAŞMASI

V.İ. Kərimli, F.R. Şıxıyeva

Xam neftin hasilatı və nəqli ilə bağlı bir sıra problemlər neftdə su-neft emulsiyası kimi həll olunmuş suyun mövcudluğundan yaranan bilər. Daşınma ilə bağlı problemlər suyun mövcud olduğu zaman yaranan mayelərin özlülüyünün artması ilə nümayiş olunur. Bu arzuolunmaz hadisəni daha yaxşı başa düşmək və demulsifikasiya tədqiqatlarını dəstəkləmək üçün temperaturun, dispers faza damcılarının ölçüsünün və dispers faza həcmnin su-xam neft emulsiyalarının reoloji xüsusiyyətlərinə təsiri tədqiq edilmişdir. Müxtəlif xam neftlərlə əldə edilən nəticələr göstərir ki, suyun tərkibi və su damlacılarının ölçüsü azaldıqca, yüngül suda olan xam neft emulsiyalarının özlülüyü artır. Emulsiyalar aşağı su tərkibində Nyuton davranışını nümayiş etdirir, lakin suyun miqdarı artdıqca ondan kənara çıxır. Nəticələr bu emulsiyaların reoloji xüsusiyyətlərinə və dehidrasiyasına, xam neftdə spesifik yerli səthi aktiv komponentlərin çökməsinə necə təsir etdiyini göstərir. Xam neft rezervuarları demək olar ki, həmişə qaz və duzlu su ilə bağlıdır. Buna görə də, xam neft hasilatı zamanı nə vaxtsa suyun birgə istehsalının da baş verməsi çox mümkündür. Bu, tez-tez anbarın tədricən boşalması ilə baş verir. Lay suyu layın su tutan hissəsindən və ya ikinci və ya üçüncü dərəcəli neftin çıxarılması üçün vurulmuş sudan gələ bilər. Hansı növ su fazasının mövcud olmasından asılı olmayaraq, birgə



istehsal olunduğu müddətcə quyu başındakı boğulma və klapanlarda kəsmə və təzyiq düşməsi onu asanlıqla yayacaq.

Açar sözlər: *Reoloji modellər, çökmə, sürtünmə əmsalı, effektiv özlülük, struktur formalaşması*

СТРУКТУРООБРАЗОВАНИЕ В НЕФТЕДИСПЕРСНЫХ СРЕДАХ

В.И. Керимли, Ф.Р. Шихиева

Ряд проблем при добыче и транспортировке сырой нефти может возникнуть из-за присутствия воды, растворенной в нефти в виде эмульсии «вода в нефти». Проблемы, связанные с транспортировкой, демонстрируются тем, что при наличии воды вязкость образующихся жидкостей увеличивается. Влияние температуры, размера капель дисперсной фазы и объема дисперсной фазы на реологические характеристики эмульсий «вода в сырой нефти» было изучено с целью лучшего понимания этого нежелательного явления и поддержки исследований по деэмульгации. Результаты, полученные с различными видами сырой нефти, показывают, что по мере уменьшения содержания воды и размера капель воды вязкость эмульсий «вода в легкой сырой нефти» увеличивается. Эмульсии демонстрируют ньютоновское поведение при низком содержании воды, но отклоняются от него по мере увеличения содержания воды. Результаты показывают, как осаждение специфических природных поверхностно-активных компонентов в сырой нефти влияет на реологические характеристики и обезвоживание этих эмульсий. Резервуары сырой нефти почти всегда связаны с газом и соленой водой. Поэтому вполне возможно, что совместное производство воды также произойдет в какой-то момент во время добычи сырой нефти. Это часто происходит по мере того, как резервуар постепенно опорожняется. Пластовая вода может поступать из водоносной части пласта или из воды, закачанной для вторичной или третичной добычи нефти. Независимо от того, какой тип водной фазы существует, пока она добывается совместно, сдвиг и перепад давления на устьевых штуцерах и клапанах будут легко распределять ее.

Ключевые слова: *реологические модели, оседание, коэффициент сопротивления, эффективная вязкость, структурообразование.*



UDC: 543.25;54-4;628.16;66.087.3;678.5

<https://doi.org/10.59849/2409-4838.2024.3.27>**ADSORPTION STUDIES OF Ni (II) ION REMOVAL FROM AQUEOUS SOLUTIONS BY NOVEL MODIFIED SYNTHETIC COPOLYMER: ADSORPTION ISOTHERMS****Tahir Aliakpar Javadzade^{1,2*} , Esmira Jalil Eyyubova¹ **¹Baku State University, Baku, Azerbaijan²Khazar University, Baku, Azerbaijan

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This work is dedicated to adsorption study of Ni(II) ions by synthetic adsorbent based on maleic anhydride styrene copolymer and 4-Amino-N-2-thiazolylbenzenesulfonamide modified with thiourea. During work different parameters affecting adsorption process were investigated such as influence of pH, contact time, ionic strength and initial metal ion concentration. It was found that maximum adsorption capacity is observed at pH=3 and is equal to 18 mg/g. In order to describe adsorption process different adsorption isotherm models were studied and the results were found to be consistent with the Langmuir model. Dubinin-Raduskhevich model was investigated to show that physical adsorption takes place in the system adsorbent-adsorbate. The present work also includes desorption studies and 0.5 mol/l solution of HNO₃ has shown the highest desorption capacity over Ni(II) ions.

Keywords: adsorption, Ni (II), copolymer, isotherm**INTRODUCTION**

It is known that water is a very valuable natural resource for both humans and other living creatures but currently, water pollution is considered a dangerous problem and is a serious global problem [47, 29]. Among these pollutants, inorganic pollutants, especially heavy metals, differ from others [44]. Thus, the high toxicity of these pollutants and inability to be broken down and eliminated biologically, this group of inorganic pollutants is always in the spotlight [48]. Heavy metals are mainly transition elements (Pb, As, Hg, Cd, Zn, Ag, Cu, Fe, Cr, Ni, Pd, etc.) [34, 27]. The main features of this group of elements are that they are extremely toxic even at the ppm level. The main cause of environmental pollution with heavy metals is mankind's own responsibility. The rapid development of industry has resulted in the same rapid increase in the amount of harmful substances released into the environment [9, 15, 38]. Wide use of these metals in various fields of agriculture and industry has led to the pollution of the environment with these metals. This group of metals also includes nickel also. Nickel is the 24th most common element on earth and makes up 3% of all compounds [40, 22]. Nickel is mainly used for mixing with other metals during the purchase of alloys, so that the obtained product has high corrosion resistance against air, water and alkalis [11]. For this reason, nickel is regularly used in various industrial processes such as electroplating, painting of ceramic products, mineral processing and stainless steel production, batteries, non-ferrous metal coins, metal alloys and so on [30, 38]. Such widespread use of nickel leads its massive release into the aquatic environment through industrial waste and nickel-containing products in wastewater [24].

Nickel is one of the most important trace element for protein metabolism and hormone regulation in the human body [31]. However, exposure to high amounts of it causes various types of chronic and acute diseases [41], as well as genotoxicity [10, 21], neurotoxicity [37], hepatotoxicity [1], nephrotoxicity [43], kidney and lung damage [17], shortness of breath [8, 18], skin dermatitis [49], gastrointestinal tract disorders [36], vomiting [16], diarrhea in the human body so resulting in inhibition of oxidants and increased risk of cancer [13, 20, 12, 35]. Therefore, the World Health Organi-

zation, the permissible concentration of nickel in water should not exceed 0.02 mg/l. This proves how dangerous even a very small amount of nickel is [42].

One of the most important problem of our time is finding novel method for the removal of nickel from aqueous medium. Among the various separation methods, adsorption is one of the most efficient, cost-effective and effective methods used to remove heavy metals from solution. Adsorption has shown high efficiency in the separation of metal ions, including nickel. Thus, adsorption is already used in several industrial processes, including the separation of nickel from wastewater, due to its low cost, rapidity, ease of application, efficiency even for low concentrations [39].

In recent years, significant progress has been made in the purification of nickel ions from water using the adsorption process. However, there is still a need for the synthesis of new sorbents that are more effective in a short time with the ability to effectively separate nickel from the solution at a low or high concentration [32, 26].

The purpose of the presented work is to study the sorption of Ni(II) ions from its aqueous solutions by a polymer chelating sorbent based on a copolymer of maleic anhydride and 2-(4-aminobenzenesulfamido)-thiazole with styrene and modify this sorbent by novel thiourea derivative for the increasing its sorption capacity. The characteristics of sorption, especially pH, time, ionic strength, initial concentration of metal ion were studied. The desorption process was also investigated and the optimal eluent was determined. Several adsorption isotherms have been studied.

MATERIAL AND METHODS

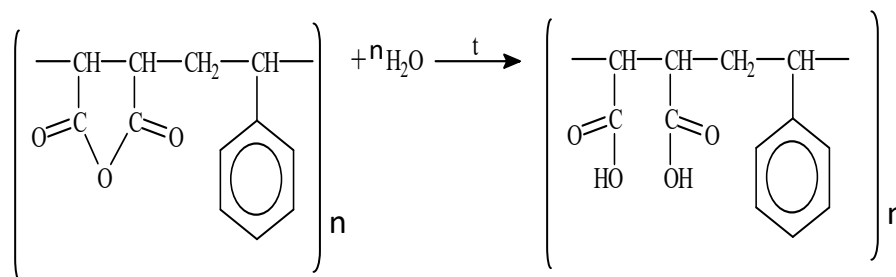
Devices

The optical densities of the solutions were measured with a KFK-3 spectrophotometer using 1 cm thick quartz cuvettes. The pH values of the solutions were measured using a pH-meter equipped with a pH-121 standard solution with a glass electrode. Distilled water was obtained through a-10 device.

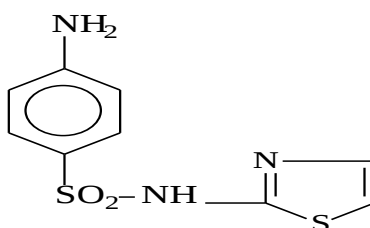
Preparation of solution

Nickel standard solution (1×10^{-2})

All the reagents used are of high purity. The 10^{-2} M solution of nickel was obtained by dissolving 0.2628 g of $\text{NiSO}_4 \cdot 6\text{H}_2\text{O}$ in 100 ml of distilled water. Different concentrations of Ni(II) solution was prepared by diluting 10^{-2} stock solution.



Scheme 1. Hydrolysis of the anhydride groups contained in the copolymer



Scheme 2. Structure of 4-Amino-N-2-thiazolylbenzenesulfonamide

Buffer Solution

The buffer solutions (pH=3-8) used during the experiment were obtained by mixing appropriate amounts of 0.1 M CH_3COOH and $\text{NH}_3\text{xH}_2\text{O}$ and for pH 2 HCl was used.

Synthesis and identification of sorbent

Radical copolymerization of maleic anhydride with styrene in a benzene solution in a water bath (75-80 C) for during 140 min conducted. As an initiator azobisisobutyronitrile recrystallized in ethanol were used.

The obtained copolymer was washed with benzene and dried to constant weight in a drying cabinet at 50°C. The yield of the copolymer is 95-97%. It is known from the literature [33] that maleic anhydride forms a 1:1 (mole ratio) alternating copolymer with styrene. Calculated amounts of formaldehyde and the corresponding amine are added to the obtained copolymer. The reaction is carried out in a sand bath with continuous stirring. Since the reaction is carried out in an aqueous environment, the anhydride groups contained in the copolymer are hydrolyzed (Scheme 1).

In the system, unstable carbonyl-amine is obtained from the interaction of formaldehyde and amine groups. The removed carbonylamine interacts with the carboxyl groups in macromolecules, and the removed amine fragment enters the macromolecule (Scheme 2).

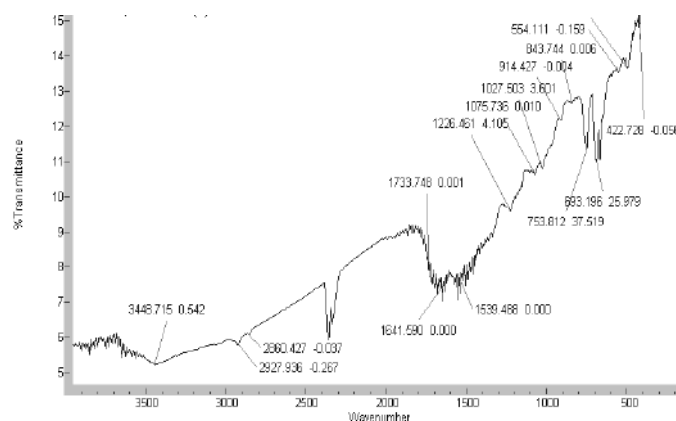


Fig.1. IR spectrum of the sorbent

In the IR spectrum (Figure 1) of the sorbent, 3668-3111 cm^{-1} [valence vibrations of the $-\text{OH}$ group in the carboxyl group, as well as valence vibrations of the $-\text{NH}$ group (3361 cm^{-1})], 1733-1745 cm^{-1} (valence vibrations of the $-\text{C}=\text{O}$ group in the carboxyl group), absorption bands are observed at frequencies 1585-1565 cm^{-1} (C-N valence oscillations and N-H deformation oscillations), 1605-1457 cm^{-1} (valence oscillations in the benzene ring), 730-695 cm^{-1} (deformation oscillations in the benzene ring)

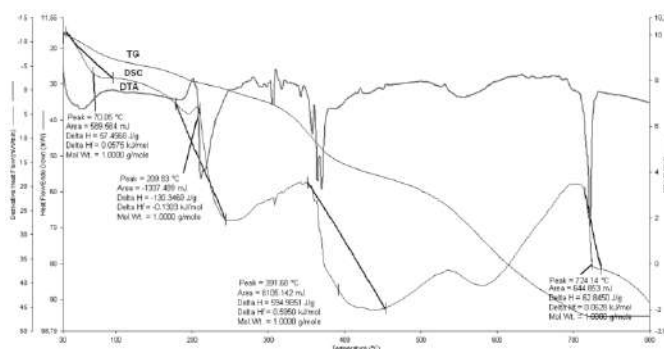


Fig.2. Thermogram of 4-Amino-N-2-thiazolylbenzenesulfonamide fragment containing sorbent

The resistance of the sorbent to temperature was determined by the thermogravimetric method (Figure 2). From the thermogram of the sorbent, it is known that the breakup of water and other mixtures observed with an endothermic effect at 150°C (mass reduction-17.04%). Destruction of the macromolecule and oxidation or burning of destroyed fragments observed with a weak endothermic effect in the temperature range of 70-209°C the mass decreases (mass reduction-42.67%). In the temperature range of 391-724°C, complete combustion of the polymer observed with a strong exothermic effect occurs (mass reduction-35%).

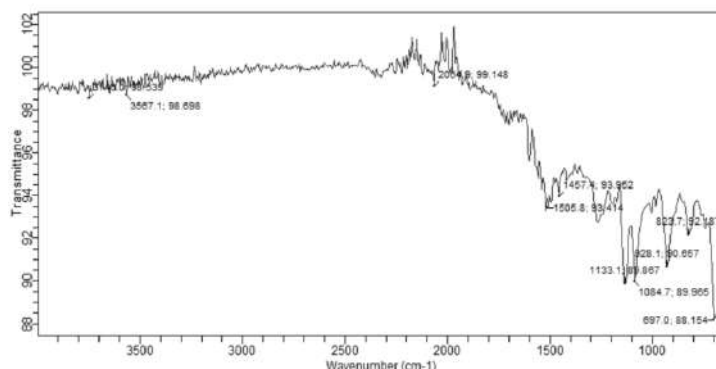
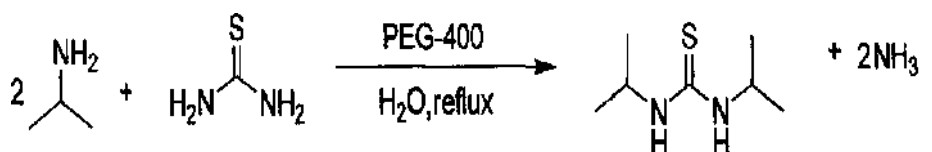


Fig.3. FTIR spectrum of the functionalized sorbent

According to the analysis of the FT-IR spectrum of diisopropylthiocarbamide (Figure 3), N–H vibrations at 3567 cm^{-1} are visible in the spectrum of the ligand in the region of 3450–3100 cm^{-1} . The band at about 1457 cm^{-1} in the compound shows some change in the spectrum after the conversion of that compound. The new band shifts to about 1486–1524 cm^{-1} . These shifts can be attributed to the increase in the double bond character of the C–N bond. The spectrum of the compound confirms that C=S as the main functional group exhibits a peak at a wavelength of 1190–2140 cm^{-1} . Conversion through the exocyclic sulfur atom is associated with a decrease in the π -electron density of the thiourea exocyclic C=S bond. In addition, the ν (C=S) bond of the free ligand is red-shifted to lower frequencies upon conversion.

Synthesis of N,N'-diisopropyl thiourea

The synthesis of N, N'-diisopropyl thiourea was carried out according to the literature [45, 3] (using PEG-400 catalyst) in a 2:1 ratio of thiourea and diisopropylamine, and the reaction was carried out for 36 hours at normal atmospheric pressure. Then the obtained solid mass was washed, filtered and dried. The scheme of the reaction is as follows is in the scheme below (Scheme 3).



Scheme 3. Formation reaction of N,N'-diisopropyl thiourea

Sorption experiments

Sorption studies of Ni (II) ions were carried out at room temperature. For each experiment, 2 ml of metal ion solution of known concentration ($5 \cdot 10^{-3}$ mol/L) was added to 50 ml conical flasks. 30 mg of sorbent and appropriate pH were added to each flask. The pH level of the solutions was monitored using a pH-121 pH-meter. After keeping the obtained mixture for 24 hours, the liquid phase was separated from the solid phase by filter paper.

Then 1 ml of sample was taken from each flask and diluted with a buffer solution of pH-5. The final concentration of Ni (II) ions was 2,2',2'',2'''-{(1,1-Dioxo-2,1λ6-benzoxathiole -3,3(1H)-

diyl)bis[(6-hydroxy-5-methyl-3,1-phenylene)methylenenitrilo]}tetraacetic acid reagent (R) was measured using KFK-3 photoelectrocolorimeter at wavelength $\lambda=580$ nm. The degree of removal of metal ions is calculated by the following formulas:

$$R_{\%} = \frac{C_0 - C_e}{C_e} 100 \quad (I)$$

$$q_e = \frac{(C_0 - C_e)V}{m} \quad (II)$$

Here, C_0 is the initial concentration of the metal ion ($\text{mol}\cdot\text{L}^{-1}$), C_e is the equilibrium concentration of the metal ion ($\text{mol}\cdot\text{L}^{-1}$), V is the volume of the solution (L), and m is the mass of the sorbent (mg).

Desorption process

The preparation of adsorbent is usually a complex process that requires a certain amount of time and energy. At the same time, the substances used for synthesis are often very expensive and difficult to obtain. Therefore, it is very important to investigate the reusability of the investigated sorbent. A number of methods are used for the regeneration of adsorbents, such as biological method (with the help of microorganisms), thermal method (through oxidation) and chemical method, which is the most commonly used method, where the absorbate is expelled with a suitable solvent [28]. In this research, we have studied the effect of different acids and its concentration on the desorption process.

The desorption study was carried out using $0.5 \text{ mol}\cdot\text{L}^{-1}$ solutions of different inorganic acids with the same concentration, that is, HNO_3 , HCl , H_2SO_4 and CH_3COOH acids. To carry out the experiment, 30 mg of sorbent was poured into 4 flasks, 2 ml of 10^{-2} M Ni (II) solution and 18 ml of pH 3 were added and kept for 24 hours. Then, the solid part of the solution was separated from the liquid by filtration. 20 ml of 0.5 M HNO_3 , HCl , H_2SO_4 and CH_3COOH acid solutions were added to the filtered part.

Each was kept by tightly closed for 24 hours. A day later, the liquid part of the solution separated from the solid again. Then 1 ml of the homogeneous solution was taken, 1-2 ml of 2 mol/l KOH solution was added, diluted with pH 6.0 buffersolution, and the final concentration of Ni (II) ions was determined using the KFK-3 device.

RESULTS AND DISCUSSION

Effect of pH on the sorption of Ni (II)

The pH of the solution is an important factor affecting the sorption capacity of Ni(II), because it affects the stability of nickel in the solution and can change its forms in the solution, for example, at different pH values, nickel in solution Ni^{2+} , $\text{Ni}(\text{OH})^+$, $\text{Ni}(\text{OH})_2$, $\text{Ni}(\text{OH})^{3-}$ forms [19]. Besides, it can change the electrical properties of the sorbent surface. At pH values above 8, Ni^{2+} is the major form of nickel found. The pH of the initial solution was chosen between 2.0 and 8.0 to prevent the formation of hydroxides during sorption.

To conduct the experiment, 30 mg of sorbent was weighed and collected in separate containers, then 2 ml of 10^{-2} M metal ion solution and 18 ml of appropriate pH were added to it and kept for 24 hours.

After 24 hours, the solution was filtered through a filter paper to separate solid particles and measured at a wavelength of $\lambda=580$ nm using a KFK-3 spectrophotometer. The effect of the pH of the solution on the sorption of nickel is shown in the figure below (Figure 4).

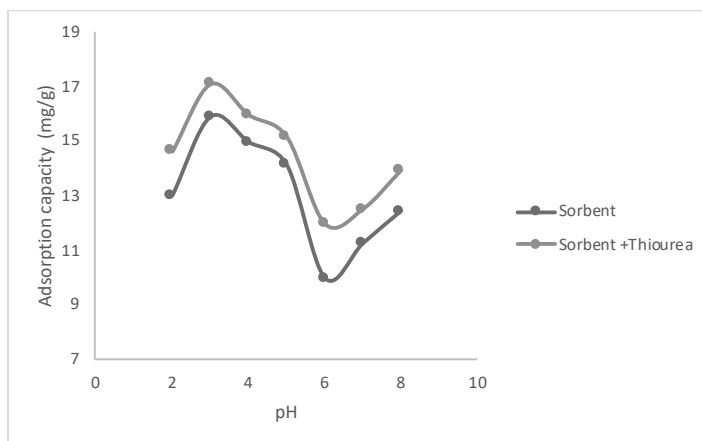


Fig.4. Effect of pH on the sorption of nickel

As a result of the measurement, it was found that the capture of Ni (II) ions with the highest percentage from the solution was at pH 3. Therefore, this value of pH was used in all subsequent experiments. A graphical representation of the result of the experiment is given in the figure below.

After soaking of the sorbent with N, N'-diisopropyl thiourea, the effect of the pH value of the environment on the sorption process was studied and in this case it was determined that the maximum absorption was at the value of pH 3.

Effect of time on the sorption of metal ions

The results of kinetic studies show that the degree of adsorption of Ni(II) ions to adsorbents can be extremely variable and difficult to predict. Thus, it is known in the literature that the equilibrium time of Ni(II) sorption is reached within 15 minutes [7], and another one is completed in 7 days [46]. It is clear that this change depends on the type of sorbent used. Basically, synthetic sorbents reach equilibrium faster than natural sorbents, which in most cases is explained by the fact that they have more sorption centers, have a high surface area, and have more and wider pores.

In order to study the dependence of sorption on time, 30 mg of sorbent was taken and 2 ml of 10^{-2} M metal solution was added to it, and then 18 ml of pH 3 was added and the rate of sorption of metal ions in the solution was studied for 30-270 minutes. The result of the experiment is given in the graph below.

As can be seen from the figure (Figure 5), after 60 min, the sorption has already stabilized and reached the equilibrium state. It can be said that after this time, the metal ion was no longer captured from the solution. The same situation was observed when N, N'-diisopropyl thiourea was absorbed into the sorbent. That is, the sorption after 60 min reached the plateau price. A graphical representation of the result of the experiment is given in the figure below.

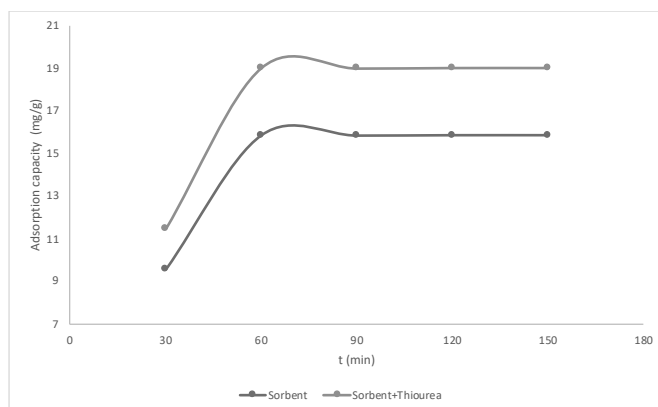


Fig.5. Effect of time to sorption process

In the course of this work, the effect of ionic strength on the capture rate of Ni(II) ion was studied. For these purposes, 2 mol/L potassium chloride KCl solution was used.

Studies have shown that the presence of K^+ and Cl^- ions in the range $\mu = (0.2-1.4)$ mol/L has a negligible effect on metal ion sorption.

Effect of initial concentration of Ni(III) ions on adsorption capacity

The initial concentration of the metal ion is very important in the study of the adsorption process. Because the concentration of metal ions is one of the main factors that ensures its movement towards the surface of the adsorbent [4].

During the experiment, the effect of the concentration of primary metal ions on the degree of adsorption by the synthesized sorbent was studied. For this purpose, the concentration range of Ni (II) ions from 2×10^{-4} mol/L to 8×10^{-3} mol/L was used. For this purpose, 30 mg of sorbent was weighed, and an appropriate volume of metal ion solution and pH 3.0 was added. After 60 minutes, optical densities of homogenous solutions in KFK-3 were measured at $\lambda = 590$ nm with pH 6.0 buffer solution. The result of the experiment is given in the figure below (Figure 6).

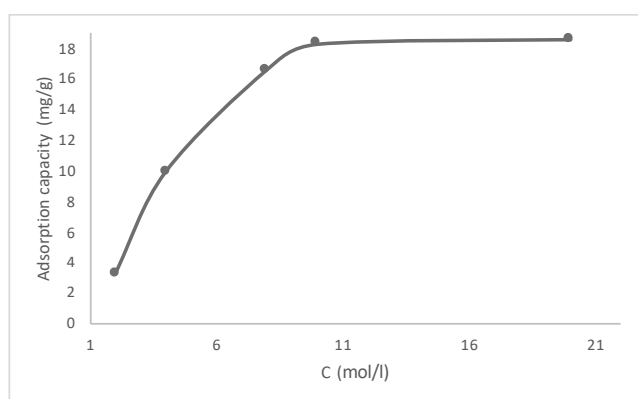


Fig.6. Effect of initial concentration adsorption capacity

Desorption process

This work also includes the study of the opposite process - desorption. It is an important task to have the necessary eluents to adsorb the metal ion. In our article, this process is carried out using different inorganic acids of the same concentration, in particular, 0.5 mol/L solutions of HNO_3 , HCl , H_2SO_4 and CH_3COOH acids. The research results showed that the maximum desorption capacity on Ni(II) ions is 0.5 mol/L HNO_3 solution.

Adsorption isotherm

For a better understanding of the adsorption process, the relevant adsorption equilibrium must be used in the study. The nature of the adsorbate-adsorbent interaction is described by adsorption equilibrium. In the present study the equilibrium data were analyzed using the Langmuir, Freundlich and Dubinin-Radushkevich isotherms.

Langmuir isotherm

The Langmuir equation is often used to give the sorption equilibrium. In the Langmuir isotherm, it is assumed that all areas of the surface of the sorbent are similar to each other, that is, homogeneous. In this model, the sorption of metal ions occurs on a homogeneous surface without any interaction between equally adsorbed ions. assumes and the ability of a molecule to adsorb at a given site does not depend on the occupancy of neighboring sites, adsorption is reversible and the adsorbed molecule is assumed to be unable to migrate along the surface or interact with its neighbor [6].

The Langmuir model is expressed by the following formula:



$$q_e = \frac{q_m K_L C_e}{1 + K_L C_e}$$

Here, C_e (mmol/L) is the adsorbate concentration in the aqueous phase at equilibrium, q_e (mmol/g) is the equilibrium adsorption capacity, q_m is q_e for a complete monolayer, and K_L is the Langmuir isotherm constant (L/mmol⁻¹).

A linear graph of $1/q_e$ versus $1/C_e$ is shown in the figure below. The values of $Q_{\max}$ and K_L were calculated from the slope and intercept of the plot, respectively.

The main characteristic of the Langmuir isotherm can be represented by a separation factor called the equilibrium parameter (R) and has the following form:

$$R_L = \frac{1}{1 + b C_0}$$

Here, b is the Langmuir constant (L/mmol), C_0 is the initial adsorbate concentration (mmol/L). The R_L value indicates the type of isotherm. A value between 0 and 1 indicates a favorable adsorption process.

The results show that the R_L is between 0 and 1 and equal to 0.99 when only sorbent is used and after modification, which indicates that the adsorption is favorable under the experimental conditions determined by the Langmuir model. Also, the value of the regression coefficient is $R^2 = 0.4877$ and 0.6771 , respectively, indicating that this isotherm model is in good agreement with the experimental adsorption data (Figure 7).

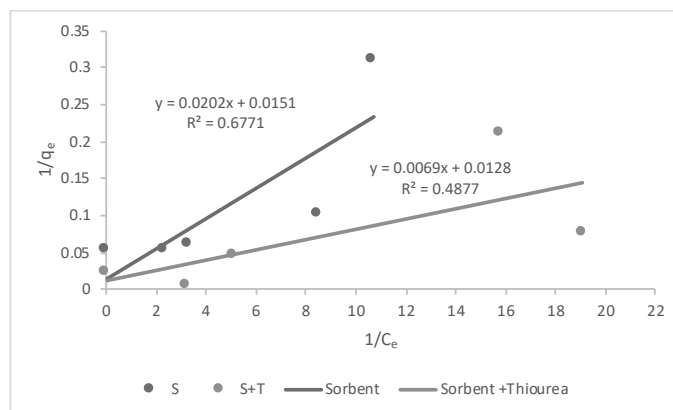


Fig.7. Langmuir isotherm model

Freundlich isotherm

The Freundlich isotherm model determines the degree of heterogeneity of the adsorbent surface. Adsorption sites consist of small heterogeneous adsorption sites, each of which is homogeneous [5].

The isotherm is described by the following equation

$$\ln q_e = \ln K_F + \frac{1}{n} \ln C_e$$

where C_e (mmol/L) is adsorbate concentration at equilibrium, q_e (mmol/g) is the equilibrium adsorption capacity, K_F is Freundlich constant and $1/n$ is the heterogeneity factor.

On average, the more favorable adsorption tends to have a Freundlich constant n between 1 and 10. A larger value of n (a small value of $1/n$) implies a stronger interaction between the adsorbent and the adsorbate, while $1/n$ equal to 1 indicates linear adsorption, which is characterized by the same adsorption energies for all points on the branch. Linear adsorption generally occurs at

very low solute concentration and low adsorbent loading. Our calculations show that $1/n = 0.5674$ and after functionalization case 1.602. So it indicates normal adsorption in both cases (Figure 8).

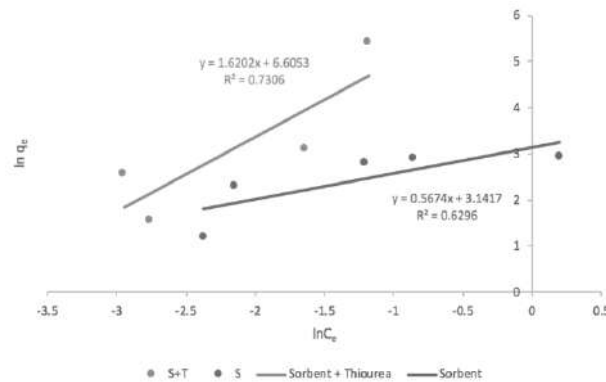


Fig.8. Freundlich isotherm model

Temkin isotherm

According to the Temkin isotherm equation, adsorption is characterized by a uniform distribution of binding energies up to a maximum binding energy, and the fall in the heat of adsorption of all the molecules in the layer decreases linearly with coverage because of adsorbent–adsorbate interactions [2].

The generalized (I) and linearized forms (II) of the model are given by the following equations:

$$q_e = \frac{RT}{b_T} \ln (K_T C_e) \quad (I)$$

$$q_e = \frac{RT}{b_T} \ln(K_T) + \frac{RT}{b_T} \ln(C_e) \quad (II)$$

Here K_T is Temkin isotherm constant (L/g), R - ideal gas constant (8.314 J/mol K), T - temperature (K), b_T constant related to the heat of sorption (J/mol)

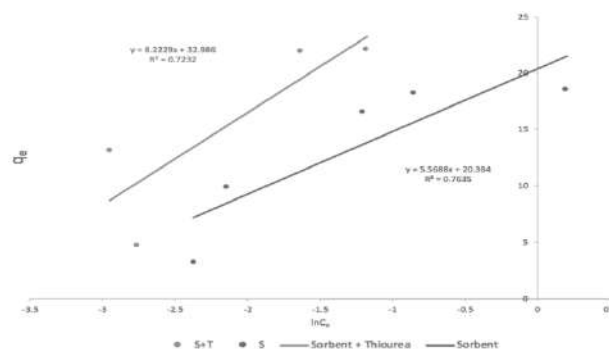


Fig.9. Temkin isotherm model

From the figure 9 the values for B_T is equal 5.5688 for just sorbent and after functionalization it becomes 8.2229. It shows there is physisorption occurs so if the $B_T < 8$ kJ/mol the adsorption process is physical adsorption and $B_T > 8$ kJ indicates chemical adsorption. The value of K_T is 38.8766425 and after functionalization 55.2285558.



Dubinin-Radushkevich (D-R) isotherm

The Dubinin-Radushkevich (D-R) isotherm model is applied to estimate porosity, free energy, and sorption characteristics. It is successfully applied for the adsorption of heterogeneous system including solid and liquid. This model is considered more general than the Langmuir model, because in its derivation a homogeneous surface and a constant sorption potential are not assumed [23]. The isotherm is obtained based on the following equation.

$$\ln q_e = \ln q_s - k_{D-R} \varepsilon^2$$

The Polanyi potential, which depends on temperature, gas constant and equilibrium density is expressed in the following equation:

$$\varepsilon = RT \ln \left(1 + \frac{1}{C_s} \right)$$

The Dubinin-Radushkevich isotherm has found many promising applications for determining whether the nature of sorption is physical or chemical. For this purpose, the k name obtained from the slope of the plot is used in the following equation:

$$E = \frac{1}{\sqrt{2k_{D-R}}}$$

The R^2 value is equal to 0.7993 and 0.5185. E is equal to 3.5 kJ/mol. If E is between 8 and 16 kJ/mol, it indicates a chemisorption process, and an E value below 8 kJ mol⁻¹ indicates a physical adsorption process. Thus, in our both case, the value of E is lower than 8 means that the physical adsorption (Figure 10).

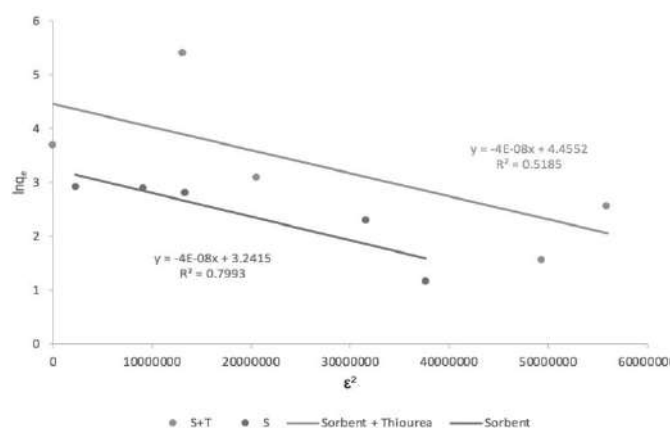


Fig.10. Dubinin-Radushkevich (D-R) isotherm

Application of adsorbent for determination of Ni (II) in waste water of oil field

For the analysis purposes water sample was taken from oil field of Pirallahi island. A sample of around 2 L of drinking water was left to distill for 1 day. An additional 1 L of filtrate was collected and acidified with 10 mL of HNO₃(1:1). The resultant mixture was then evaporated slowly till it reached 70-80 mL. The final solution was filtered, transferred to a 100 mL flask, and diluted with distilled water up to the mark. Resulting solution was passed through the microcolumn filled with adsorbent with 1.0 mL/min of speed. Ni(II) ions absorbed by adsorbent in microcolumn was desorbed by 1.5 M HNO₃ solution. Then eluent is passed into 25 mL flask. 2.5 mL of reactive is added into flask and diluted till mark with pH 5. Absorbances of the resulting solutions were measured at



$\lambda=580$ nm on KFK-3, $l=1$ cm on the background of R. The amount of Ni (II) ions in water samples were calculated on the basis of previously built calibration curve. Results were compared with AAS and are given in the table 1.

Table 1

Determination of Ni (II) in waste water of oil field

Analized object	Adsorbent	Reagent	$\bar{X} \pm \frac{t_{p.f.} \cdot S}{\sqrt{n}}, mg/L$	S_r
Water	S	R	$(0.357 \pm 0.015) \cdot 10^{-3}$	0.02
		AAS	$(0.364 \pm 0.016) \cdot 10^{-3}$	0.04

CONCLUSION

In conclusion, the outcomes of our investigations reveal promising and noteworthy results, that shows this novel functionalized sorbent can effectively be used for the removal of nickel from water. After modification of sorbent adsorption capacity approximately 20% increases. Adsorption isotherms were investigated by several models and it was found that results best fit the Langmuir model. Proposed method was applied for determination of Ni(II) ions in water samples taken from oil field of Pirallahi island.

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YENİ MODİFİKASIYA OLUNMUŞ SİNTETİK KOPOLİMER İLƏ SULU MƏHLULLARDAN Nİ (II) İONUNUN ADSORPSİYON TƏDQİQATLARI: ADSORPSİYA İZOTERMLERİ

T.Ə. Cavadzadə, E.C. Eyyubova

Bu iş Ni(II) ionlarının malein anhidrid stirokopolimeri və tiokarbamid ilə modifikasiya olunmuş 4-Amino-N-2-tiazolilbenzolsulfanilamid əsasında sintetik adsorbent vasitəsilə adsorbsiya tədqiqinə həsr edilmişdir. İş zamanı adsorbsiya prosesinə təsir edən müxtəlif parametrlər, o cümlədən pH-ın təsiri, təmas müddəti, ion qüvvəsi və ilkin metal ionlarının konsentrasiyası tədqiq edilmişdir. Müəyyən edilmişdir ki, maksimum adsorbsiya qabiliyyəti pH=3-də müşahidə olunur və 18 mq/q-a bərabərdir. Adsorbsiya prosesini təsvir etmək üçün müxtəlif adsorbsiya izoterm modelləri tədqiq edilmiş və nəticələrin Langmuir modelinə uyğun olduğu müəyyən edilmişdir. Fiziki adsorbsiyanın adsorbent-adsorbat sistemində baş verdiyini göstərmək üçün Dubinin-Raduskhevic modeli tədqiq edilmişdir. Bu iş həmçinin desorbsiya tədqiqatlarını əhatə edir və 0,5 mol/l HNO₃ məhlulu Ni(II) ionları üzərində ən yüksək desorbsiya qabiliyyətini göstərmişdir.

Açar sözlər: adsorbsiya, Ni (II), kopolimer, izoterm

АДСОРБЦИОННЫЕ ИССЛЕДОВАНИЯ УДАЛЕНИЯ ИОНОВ Ni(II) ИЗ ВОДНЫХ РАСТВОРОВ НОВЫМ МОДИФИЦИРОВАННЫМ СИНТЕТИЧЕСКИМ СОПОЛИМЕРОМ: ИЗОТЕРМЫ АДСОРБЦИИ

Т.А. Джавадзаде, Э.Дж. Эюбова

Данная работа посвящена изучению адсорбции ионов Ni(II) синтетическим адсорбентом на основе сополимера малеинового ангидрида стирола и 4-амино-N-2-тиазолилбензолсульфонамида, модифицированного тиомочевинной. В ходе работы были исследованы различные параметры, влияющие на процесс адсорбции, такие как влияние pH, время контакта, ионная сила и начальная концентрация ионов металлов. Установлено, что максимальная адсорбционная емкость наблюдается при pH=3 и равна 18 мг/г. Для описания процесса адсорбции были изучены различные модели изотерм адсорбции, и было обнаружено, что результаты согласуются с моделью Ленгмюра. Модель Дубинина-Радушевича была исследована с целью показать, что физическая адсорбция происходит в системе адсорбент-адсорбат. Настоящая работа также включает исследования десорбции, и раствор HNO₃ с концентрацией 0,5 моль/л показал наибольшую десорбционную способность по ионам Ni(II).

Ключевые слова: адсорбция, Ni (II), сополимер, изотерма.



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INSTITUTIONAL ASPECTS OF REGIONAL ECONOMIC DEVELOPMENT

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This article examines the institutional aspects of regional economic development. Regional economic development is a strategic process that aims to stimulate economic growth in a specific geographical area. The success of this process depends on a number of institutional factors. This article addresses the importance and impact of these factors, highlighting the institutional aspects of regional economic development.

The article focuses on institutional aspects of regional economic development. These aspects include issues such as the role of local governments, investment incentives, public-private cooperation, and contributions of local businesses and non-governmental organizations. These factors are considered to influence and promote regional economic development.

Consequently, institutional aspects of regional economic development play an important role in the design and implementation of regional development policies. This article aims to contribute to the understanding of these aspects and the more effective development of regional economic development strategies.

Keywords: *Regional economic development, corporate structure, regional development policies, economic development strategies, institutional capacity building, local entrepreneurship and innovation, regional development indicators*

INTRODUCTION

In this article, we will consider the institutional aspects of regional economic development and examine this important issue in depth. Regional economic development is a comprehensive process that aims to increase the economic growth and development potential of a country or region. This process requires both the public and private sectors to work in effective collaboration. Institutional aspects form one of the cornerstones of regional economic development. Institutions have the role of regulating the economy, allocating resources, promoting investments and monitoring and directing many other economic activities. In this article, we will explore the factors that underpin successful development strategies by taking a closer look at the institutional aspects of regional economic development. We will also try to understand why regional economic development is so important and how institutional structures play a critical role in this process. In addition, we will consider how institutional approaches and policies in different countries and regions can lead to different outcomes. This article is an introduction to regional economic development and aims to be an essential source of information for those seeking a deeper understanding of this important topic. It is an important issue to address regional economic development from an institutional perspective under the title of "Institutional aspects of regional economic development". This topic helps us understand how economic growth and development in a region is influenced and guided by institutions. Here are some important factors that generally explain the institutional aspects of regional economic development:



The success of regional economic development is often shaped by policies and programs implemented by the public sector. These policies may focus on areas such as tax incentives, infrastructure investments, education and workforce development. Institutions design, implement and manage these policies. Regional economic development involves encouraging investment and growth of businesses in the region. Banks, venture capital firms, and other financial institutions play an important role in this process by providing resources and offering loans to these businesses. Regional chambers of commerce and industry offer institutional support and networks to increase the growth and competitiveness of local businesses. These institutions are also related to regional economic development, innovation and technological developments, providing cooperation between businesses and new opportunities. Universities and research institutions contribute to the development of new ideas and technologies by conducting studies in these fields [1]. From an institutional perspective, regional economic development requires supporting an entrepreneurial culture. This includes removing barriers for entrepreneurs to start and grow businesses. At the same time, local cultural factors can influence business and shape the economic development of the region. Regional development requires cooperation of different institutions. Cooperation between public institutions, private sector, academic institutions and non-governmental organizations is important in ensuring sustainable development. These factors represent important elements in addressing institutional aspects of regional economic development. Each region may have different dynamics and regional development strategies should be shaped according to these dynamics. Institutions play a key role in the development and implementation of these strategies. Regional development is more relevant in modern times. This is theoretically regulated by the requirements of regional development. The variety of regional development in many states, which is generally characterized by all kinds of goals, is fulfilled by the areas of state policy, depending on its orientation with methods and means. Regional development depends on the economic, public, cultural, social and political characteristics of many countries, both on the progress of the population living in the regions in the material and spiritual sphere, and on the increase in material well-being in the formation of society. For this reason, the socio-economic development of the regions, which determines the regional development, considers the policy implemented by the state based on certain measures to be necessary. It is no coincidence that regional economic policy is the methodological basis of the regulation of the country's territory.

The policy implemented by the state in this direction consists of the division of economic regions that are being formed correctly in the regions and the efficiency of the zoning process. In general, there are the following forms of zoning:

1. Macro-regionalization - specifically, it is carried out through the specialization of zones in any field, which concentrates each economic system of economic regions, implemented on the basis of long-term planning and strategy.
2. Meso-regionalization - is understood as the regulation of each direction of regionalization according to the existing administrative structures, even if it is small.
3. Micro-regionalization – implemented as a form of regionalization at the level of local self-government.

Although the implementation of certain processes in regionalization is regulated by the state, the implementation of economic reforms, the investigation of the problems of regions, affects the formation of their management structures [6].

This is regulated within certain targets as follows:

- socio-economic development of regions;
- effective use of the potential of the regions;
- increasing the role of regions in national economy;



- raising the standard of living of the population.

The implementation of the above goals in the regions is actualized by the directions of many regional policies.

First, the creation and integration of a single market in all regions;

Second, elimination of problems between regional differences and development of economy in backward agrarian regions;

Third, regulation of the urbanization process; Fourth, evaluation of human and natural resources; Fifth, implementation of new industrial projects.

One of the most important issues in the regional economy is the regulation of complex development. Such an arrangement is a purposeful direction of the state's influence on the economic fields of each region and social processes related to it. These directions are realized both in the economic policy and social policy of the state. In order to achieve the goals of the regional policy, certain group regulation tools are implemented, which, as a general rule, affect the all-round and optimal development of the regional economy. In terms of optimal development, attention should be paid to principles such as efficient placement of productive forces in regions and the use of new productive forces. These principles include:

1. To implement their dynamic development by ensuring the proportional development of productive forces in the regions;
2. To improve the sources of raw materials for various production areas and to increase the possibility of using them in a cost-saving mode;
3. To bring socio-economic development closer to each other by canceling the difference between cities and villages of the region;
4. To increase the defense capacity of the region at the republican level;
5. Nature protection by efficient use of natural resources in the regions;
6. Effective use of labor resources in the regions;
7. Maintaining competitiveness in each region [5].

The above-mentioned determines the master plan for the deployment of productive forces in the regions and is carried out in the following order:

- first, an analysis of the deployment of productive forces in the regions in recent years is carried out;
- possibilities of future development and placement of productive forces are investigated;
- the main directions of development in the regions are determined;
- the level and rate of development of industrial hub, agriculture and other areas are determined;
- the economic efficiency of deployment of productive forces is determined;
- the country's master plan for the future period envisages the socio-economic development of the regions.

The connection of regional development with the regional economy is interpreted as the regulation of complex development carried out by the state. The regional policy of the state regulates the purposeful influence process of economic complexity of regions and social processes. In this regard, the policy decisions adopted in the regions should be planned based on purposeful activities and should envisage the development of mutual relations between the region and the regions. Taking into account the potential opportunities of these regions, the state program plays an important role in the further expansion of economic reforms.

Taking into account all this, in the preparation of state programs, based on the world experience, it was considered to develop more economic influence mechanisms than administrative influence mechanisms in each field. This, in particular, leads to the purposeful stimulation of the develop-



ment of entrepreneurship in the regions under market conditions. Strategic programs aimed at the development of regions hinder the implementation of state policy, which affects the implementation of state programs. Thus, the operational nature of the state program has a negative impact through the following factors.

- preparation of an action plan by defining unrealistic goals;
- regions are not taken into account in state measures for separate areas of the economy;
- lack of monitoring in the process of preparing the program;
- application of uncalculated mechanisms at the country and regional level and inefficient use of these mechanisms;
- weak control over program execution, etc.

Nevertheless, the world experience confirms that the development of all areas of the economy in the regions can be carried out in a planned manner according to the measures calculated in the state programs for the socio-economic development of the regions, and this development also brings the state policy to a workable level [6].

In general, regional development programs of countries are solved by the following issues:

- attraction of new production areas to the regions;
- renewal of production structures;
- infrastructure improvement;
- creation of new jobs.

Thus, a successful state policy on socio-economic development of regions depends on a purposefully developed state program and effective measures.

Mechanisms in the economy are realized in the form of sectoral and territorial regulation. In the regional form, the state's monetary and credit, agrarian, financial, customs, tax, regional, scientific-technical, structural, conjunctural, etc. policies included. Here, the types of policy cover some area. The method of territorial regulation is the study, research, study of regions, establishment of interregional relations, etc. territorial regulation methods are concerned. The state has the following directions of influence on the regional economy:

- inability to control;
- increase of regional inequality and differences;
- failure to solve the economic problems of economic subjects with different purposes;
- improper organization of industry and economy;
- failure to prevent the increase of unemployment;
- non-equal and fair distribution of income;
- appropriation of natural resources;
- failure to prevent socio-economic problems in time, etc.

The regional policy prepared by the state to eliminate the above-mentioned directions of influence are social factors that ensure social justice and equal rights of citizens. Social factors contribute to improving the well-being of the population, ensuring their rights and freedoms, meeting their social needs and the quality of health services, information provision, etc. directed. The economic factor of the regional policy is the establishment of production and economic facilities in the regions, the efficient use of natural resources, the establishment of export-oriented industry, and the implementation of programs with socio-economic objectives, which carry out the regional development of the country's economy. In modern times, the regional development of the state has been adapted to the conditions of the market economy and its implementation has begun. Regional development policy is carried out primarily by state management bodies, and in regions by local management bodies in a parallel and complex manner as a social, economic, political and legal activity [4].

**Table 1.**

Types of regional economic development policy

Criteria	Types of regional economic development policy
1. Basics of the economic development policy of the region	- finance; - social; - structure; - employment; - investment; - settlement; - ecological; - scientific and technical; - agrarian etc.
2. Application goals	- balancing the level of socio-economic development of the regions; - optimization of the use of regional resources, etc.
3. Realization mechanism	- automatic (distribution according to quantitative indicators); - problematic (division by special programs); - targeted (distribution by specific regions);
4. Implementation form	- financial (transfers, concessions, fines); - administrative (permit, ban, licensing); - infrastructure, etc.
5. Addressed	- companies; - citizens; - area; - regional authorities.

Source: Table prepared by the author

Economic development should be carried out in such a way that the economic development policy that can be carried out by the state, taking into account the main aspects of regional development, increasing the efficiency of operations in the region, improving the structure of material production, eliminating interregional differences, balancing socio-economic inequalities, etc. are important factors. From the above table, the basis of the economic policy of the state for the regions is the application of the economic policy of the state for the main areas to the regions. This determines the application of the state's economic policy by region. The planned measures in the region are regulated through the financial strategy, which is the first factor to achieve economic balance, economic growth and socio-economic development. Application of financial policy in the regions, its level of efficiency is based on correct distribution between production and service areas. The state allocates financial resources from its budget for each region, and they are implemented by regional authorities for effective use. For the purposeful implementation of agrarian policy in the regions, it is necessary to protect the food supply and food security of the population in each region, as well as the interests of local producers. Natural climate conditions, soil fertility level, etc. depending on the



factors, agricultural policy plans aimed at the development of agriculture are prepared and implemented in each region.

The development of scientific and technical progress in the economy of the region is its application and strengthening in economic spheres. This also affects and regulates the implementation of new researches, scientific researches and laboratory examinations in established research institutes. Despite the implementation of scientific and technical policy in the region with the support of the state, when the research sometimes fails to implement the expected results, the private sectors are not interested in the development of this field and refrain from investing in these fields. The production of competitive and high-quality products that meet international standards is determined as the main direction of the scientific and technical policy, it is aimed at producing maximum products with minimal resources and low production costs and bringing more income.

The employment policy is applied in every region of the country. The main goal of the employment policy in the regions is to improve the job security of the population by opening new workplaces and economic complexes, to protect the rights of the working people with the labor code and normative legal acts, to create normal conditions for the population's labor activity in the workplaces, to train new personnel, etc.

The field of social policy is considered one of the main types of policy in the economic development of our republic. This system, regulated as indicators of the state of well-being of the population, shows a successful result at the level of the republic, which is distinguished by the special weight of the region. The main directions of social policy in the regions are socio-economic, such as the creation of education and health centers, tourism facilities for recreation, culture and health centers, provision of household services to the population, implementation of ecological projects, environmental protection, quality improvement in service areas, improvement of housing conditions, etc. forms the basis. One of the leading goals of every state is the correct implementation of this policy [3]. The investment policy in the regions regulates the investment projects that meet the country's economic interests and standards, and the normative legal acts in the social field regulate both entrepreneurship and other fields. In order to create a favorable investment environment for investors, the state must achieve the goals ahead. In order to ensure regional economic security, investors implement an investment project, and if they make a profit in this area, its job security and profitability level increase.

Regional economic development implements and implements regional complex development according to the requirements of the modern era, reconstruction of production areas within the limits of natural resources in general. The economic policy of the state regulates regional development in the field of regulation and regulates its policy for each region. Regional economic development policies in a different form - creating an economic environment, ensuring minimum social standards in the regions, achieving socio-economic equality, building territorial-economic complexes, creating a favorable environment for investors, creating new jobs, restoring employment and developing social areas realize.

Realization of socio-economic development of regions in different directions is conditioned by the correct determination of the priority directions of these areas, their correct selection and development. Development of state programs is one of the main directions of regional development policy. For this purpose, a system of stages of the program design and progress is established in a correct, quick and easy form.

**Table 2.**

A step-by-step system of the order of preparation of the state program

I and II stage	Managers and specialists learn and conduct their work with the program management method;
III stage	Data collection and processing; - analysis of problems; - identification of the most important problems; - systematic establishment of problems;
IV stage	Forming goals and building a "tree of goals".
	Grading and setting goals
V stage	Preparation of measures for the purposes of lower levels, discussion and grading of measures in groups, costs identification;
	Organizational part: selection of events and experts, experts of events according to reality, importance and costs evaluation;
	Preparation of network model of programs, calculation of forecast efficiency, calendar of events and approval;

Source: Table prepared by the author

It is clear from the shown scheme that the initial concept of measures for each direction is determined and goals are set. Each stage carries out the analysis of the selection, grading, assessment of the goals according to reality and a "tree of goals" is built. The tree of objectives can regulate the study of development alternatives, the selection of less important groups, the removal of some measures from the tree of objectives in terms of resources and finances [2].

For the implementation of regional state programs, production and service areas are carried out in two directions. This is grouped as follows:

- I. Implemented measures and related policies;
- II. Support for implementation measures and policies related to measures.

Practically, the method of calculating regional development in the economy should be such that it can be evaluated by taking into account psychological, aesthetic and social factors that do not have a unit of measurement. In addition, provision of arable land for the population in the region, as well as social areas, natural resources, as well as per capita output are applied by changing prices. For this reason, to increase the similarity, it is necessary to carry out the values of the variable in certain intervals.

The level of development of the regions is evaluated step by step during the implementation of each program. This is applied by defining a system of indicators for individual areas of the regions. Taking into account the evaluation of the human factor and the quality of economic processes, they also use a system of targeted linguistic indicators. At this time, they differ according to the environment of each region according to its natural-geographic environment, economic activity and other specialized areas. Also, the fact that each region is oriented towards both



agriculture and industrial production in its field is defined as its interregional specialization. GDP can be determined by determining each macroeconomic indicator for the country.

Priorities of ensuring sustainable development of regions

Socio-economic development in the economy should be both tactical and strategic. This also plays an important role in regulating the development of regions. In general, the programs implemented in the regional direction are predicted, designed, planned, and priorities are formed for the medium and long term. Economic growth in the regional economy and the improvement of the population's well-being require large expenses in a number of areas, which are determined for the complex solution of scientific and technical problems [5].

The regulation of socio-economic development is based on the following principles from the point of view of regional development:

- to analyze the current state of the production and economic system in order to implement targeted measures of the region;
- selection of spheres in the regional system of the social situation of the population's competitiveness and other areas;
- implementation of systematic measures in environmental, political-legal, innovation, democratic and other areas;
- to ensure decentralized and coordinated subordination of the country in the regional management system;
- effective orientation of new measures;
- carrying out changes in socio-economic fields in the country and in the world;
- acceptance of intra-regional subjects with equal rights;
- manage inclination according to tasks and motives
- to ensure the innovation orientation of the organizational management system in the regions
- determination of the observed indicators according to the new measure of efficiency from sustainable regional approaches of socio-economic development in the modern era one is the transformation of the innovation-oriented economy. Innovation processes become the main driving force of the existing dynamics of the economy, which leads to changes in mechanisms and rates. In such a process, new trends in the economy emerge.

The trends resulting from research and investigations depend on the duration of technological organizational innovations, product quality, and service dynamics. Another reason is that the regional direction of the national economy is implemented within the priorities created and directed by them [6].

1. In order to improve the standard of living of the population, to optimize the development according to the market structure from the economic point of view, and to ensure the economic growth of the regions in each area of the social economic policy. This is one of the priorities that requires the expansion of human capital in each economic region.

2. The global financial and economic crisis is a priority direction put forward for the global provision of anti-crisis development management in the regions. Such a priority direction is to increase the volume of social security by the state, expand the work of corruption, regional employment agencies, the financial sector, and apply state orders to the regions. increases the role of the state in internal crisis conditions.

3. The third priority direction of the regional processes is aimed at the socio-economic development of the innovative areas, and by making changes in the structure of the area, it is directed to the science-intensive industrial areas.



CONCLUSION

Regional economic development can be an important goal aimed at improving the economic growth and quality of life of a region. In this process, the role of institutional aspects is of great importance.

One of the cornerstones of regional economic development is local governments. Local governments are responsible for understanding region-specific needs and developing appropriate policies and programs. At the same time, implementing regional development strategies and managing resources effectively are among the duties of local governments. Interagency collaboration and partnerships are critical to promoting regional economic development. Cooperation between the public, private sector, civil society and educational institutions can help use resources more efficiently and increase the competitiveness of the region. One of the institutional aspects relates to the promotion of education and innovation. Training programs and investments should be made to increase the competence of the region's human resources. At the same time, encouraging innovation and technological developments can increase the competitiveness of the region. Creating a favorable investment environment for business is also one of the institutional aspects. Regional governments should try to attract investment to the region by providing ease of doing business, reducing bureaucratic obstacles and offering incentives to investors [3].

Consequently, institutional aspects of regional economic development have a critical role in supporting the growth and sustainability of the region. The leadership of local governments, the promotion of cooperation and partnerships, the promotion of education and innovation, and the creation of a favorable investment environment are the keys to successfully achieving regional economic development. Effective management of these institutional aspects can increase the prosperity of the region and ensure sustainable economic growth.

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REGIONAL İQTİSADI İNKİŞAFIN İNSTİTUSİONAL ASPEKTLƏRİ

H.H. Əliyev

Bu məqalə regional iqtisadi inkişafın institusional aspektlərini araşdırır. Regional iqtisadi inkişaf konkret coğrafi ərazidə iqtisadi artımı stimullaşdırmaq məqsədi daşıyan strateji prosesdir. Bu prosesin uğuru bir sıra institusional amillərdən asılıdır. Bu məqalədə regional iqtisadi inkişafın institusional aspektləri işıqlandırılmaqla bu amillərin əhəmiyyəti və təsirindən bəhs edilir.

Məqalədə regional iqtisadi inkişafın institusional aspektlərinə diqqət yetirilir. Bu aspektlərə yerli hökumətlərin rolu, investisiya təşviqləri, dövlət-özəl sektor əməkdaşlığı, yerli biznes və qeyri-



hökumət təşkilatlarının töhfələri kimi məsələlər daxildir. Bu amillər regional iqtisadi inkişafa təsir edən və təşviq edən hesab olunur.

Nəticə etibarilə, regional iqtisadi inkişafın institusional aspektləri regional inkişaf siyasətlərinin işlənilib hazırlanmasında və həyata keçirilməsində mühüm rol oynayır. Bu məqalə bu aspektlərin başa düşülməsinə və regional iqtisadi inkişaf strategiyalarının daha səmərəli inkişafına töhfə vermək məqsədi daşıyır.

Açar sözlər: *Regional iqtisadi inkişaf, korporativ struktur, regional inkişaf siyasətləri, iqtisadi inkişaf strategiyaları, institusional potensialın gücləndirilməsi, yerli sahibkarlıq və innovasiyalar, regional inkişaf göstəriciləri*

ИНСТИТУЦИОНАЛЬНЫЕ АСПЕКТЫ РЕГИОНАЛЬНОГО ЭКОНОМИЧЕСКОГО РАЗВИТИЯ

Х.Х. Алиев

В данной статье рассматриваются институциональные аспекты регионального экономического развития. Региональное экономическое развитие — это стратегический процесс, целью которого является стимулирование экономического роста в конкретной географической зоне. Успех этого процесса зависит от ряда институциональных факторов. В данной статье рассматриваются важность и влияние этих факторов, подчеркивая институциональные аспекты регионального экономического развития.

В статье рассмотрены институциональные аспекты регионального экономического развития. Эти аспекты включают такие вопросы, как роль местных органов власти, инвестиционные стимулы, государственно-частное сотрудничество, вклад местного бизнеса и неправительственных организаций. Считается, что эти факторы влияют и способствуют региональному экономическому развитию.

Следовательно, институциональные аспекты регионального экономического развития играют важную роль в разработке и реализации политики регионального развития. Целью данной статьи является содействие пониманию этих аспектов и более эффективной разработке региональных стратегий экономического развития.

Ключевые слова: *региональное экономическое развитие, корпоративная структура, политика регионального развития, стратегии экономического развития, наращивание институционального потенциала, местное предпринимательство и инновации, показатели регионального развития.*



UDC: 550

<https://doi.org/10.59849/2409-4838.2024.3.52>**ABOUT THE SOURCE ROCK OF THERAPEUTIC OIL OF THE NAFTALAN FIELD****Samir Gadir Zeinalov** 

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The Naftalan field is a unique natural object not only because of the widely known healing properties of the oils, but also the variety of the composition of the oils available here. Thus, different types of oil at this field are spatially distributed, namely, therapeutic oil is strictly limited to the Upper horizons of the Maikop formation in the depth interval of 500-600 m, while the Lower horizons of this formation are saturated with fuel oil. Although there are many ideas about the source rock of naphthalene therapeutic oil, this issue remains open among researchers. In this study, we suggest that the source rock of Naftalan oil generated from Eocene deposits based on the biomarker analysis (the 18 α (H) oleanane biomarker and the ratio of diasteranes to regular steranes) of the studied oil and the maturity indicators of the Eocene and the Maikop rock samples in the Middle Kura depression.

Keywords: Naftalan oil, Maikop sediments, biomarker, oleanane, maturity.

INTRODUCTION

The use of Naftalan oil, distinguished by its unique balneological properties, dates back to ancient times. Even at the beginning of our millennium, many people came to this place in the vicinity of Ganja in camel caravans and transported Naftalan oil for treatment purposes.

It is known the presence of two types of oil different by its quality and biomarker-geochemical parameters in deposits of Maikop suite in Naftalan deposit: curative hard oil - in the upper horizons of the Upper Maikop (I, Marl and II horizons) and fuel light - in lower horizons of the Upper Maikop and Lower Maikop [10].

The Naftalan structure is located in the Ganja oil-gas region of the Middle Kura basin, which is the middle segment of the Kura Megadepression. The oil flows in the area of the Middle Kura depression were obtained from the Eocene, Maikop and Upper Cretaceous sediments [8].

The source rock of Naftalan oil remains a controversial and still open issue among researchers. In our research work, we will try to clarify this topic by taking into account the biomarker-geochemical properties of studied oil and the maturity potential of rocks in the structures of the Middle Kura basin.

GEOLOGICAL SETTINGS

Geological section of Naftalan oil field was studied through numerous rock samples taken from structure-exploration and deep drilling wells, well logging diagrams, as well as rock outcrops. These data were then supplemented with new data from deep exploratory, appraisal and production wells drilled in 1959-1966 in order to more accurately base the calculation parameters for the calculation of therapeutic primary oil reserves [9].

Tertiary sediments are included in the geological section of the Naftalan deposit - Agcagilian layer (Upper Pliocene), Maikop formation (Oligocene-Lower Miocene) and foraminiferal layers (Eocene).

The Aghcagilian floor is widespread over the area and overlies Maikopian-aged sediments with a surface erosional unconformity.

In connection with the washing of the ceiling part of the Maikop formation in the Naftalan field, the cutting of the upper Maikop begins with clayey layers in one part of the bed and sandy layers in the other part. According to the general cross-section, the following divisions belong to the upper Maikop: the clayey section between the bottom of the Agcagilian and the ceiling of the I sandy horizon; I sandy horizon; clay section between I sandy and marl horizons; Marl horizon; the clayey section between the Marl and II sandy horizons. The cross-section of the Lower Maikop begins with the II sandy horizon and consists of the II, III, IV, V, VI, VII, VIII sandy horizons separated by different thick clay sections and the sandy-clay stratum (II Gazanbulag horizon) with a large thickness (889 m). The thickness of the Lower Maikop is 1672 m [9].

The foraminiferal layers consist of alternating dense sandstones and clays. Sandstones are brown, dark brown, fine-grained and impermeable. The clays are dense, in some places limestone and mostly sandy. Small and large fragments of greenish marls with the fauna of the lower and upper divisions of the foraminiferal layers are found in the section of the indicated group. The thickness of the foraminiferal layers on the general section is 260 m [13].

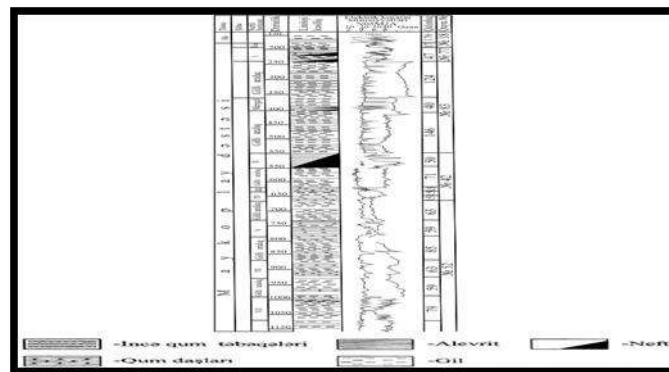


Fig.1. Lithological-stratigraphic section (based on Naftalan-18, 42, 52, 77, 83 wells) [1]

Numerous oil and gas flows were observed in the process of drilling structural, exploration and exploitation wells in the field. The Maikop formation, which is the main source of oil, is of greater importance. The thin sandy layers in the clay sections between I, marl, II, III, IV, V, VI, VII, VIII horizons are saturated with oil [13].

Therapeutic oils are mainly collected in I sandy, Marl and II horizons, and fuel oils, which differ from therapeutic oil in terms of their physical and chemical properties, are collected below them. Thus, the clay section between the II and III horizons can be considered as the boundary separating the therapeutic and fuel oils.

From the tectonic point of view individuality and uniqueness of Naftalan oil field are explained [10, 14] by its confinement to the deep fracture zone. The Naftalan structure is situated within Arpa-Samur fracture zone, which at all times from Paleozoic till now was the zone of active display of tectonic movements, conductor of magmatic melts, ore bearing solutions and seismicity. In the formation of the specific shape of oil the participation of the underlying fluids is possible, both as a result of interaction with the organic matter during its fossilization or at the stage of its transformation into the oil, and at the interaction of the mantle emanations with the already formed oil. At the same time, emanation of fluids into the paleobasin and formation of specific conditions of fermentation of initial organic matter at certain stages of sedimentogenesis, which in principle can explain the presence of different-type oils within the same field, seem to be quite probable. Based on the biomarker-geochemical indicators of Naftalan oils, in order to evaluate the Cretaceous and Eocene



age sediments as potential source rock, it is necessary to consider their lithological composition within the Middle Kura depression.

Eocene sediments have been studied through deep wells in almost all areas of the Middle Kura basin. It is mainly composed of sedimentary rocks.

The section of the Eocene is divided into three parts according to the characteristics of lithological and electric logging: sub-marl, middle-marl, and upper-marl. These layers are conventionally attributed to the Lower, Middle and Upper Eocene.

The Lower Eocene sediments are represented by clays, interbedded with sandstones, tuffaceous sandstones, gravelites, weak carbonate marls and argillites.

The sediments of the marl layer (**middle Eocene**) are characterized by high specific electrical resistance. The washing part of this layer is represented by the alternation of weakly carbonated clays and fine-grained sand interlayers. Marl series and marly clays with interlayers of fine-grained sand lie under it. Interlayers of limestone and dolomite are rarely encountered in the section. **Upper Eocene** (Upper Marl layer) is characterized by relatively low specific resistance. It was represented by alternation of marly-carbonate clays and clayey siltstones [8].

Upper Cretaceous sediments are represented by volcanogenic-sedimentary and sedimentary rocks. Cenomanian, Turonian, Coniacian, Santonian and Campanian-Maastrichtian layers are included in the stratigraphic units.

Upper Cretaceous sediments (Cenomanian-Maastrichtian) were found in several areas of the Muradkhanli field, in Sorsor (well No. 2) and Saatli (support well No. 1) wells. The exposed thickness of the Cenomanian in the Sorsor area is 300 m and consists of dolomite and limestone layers with volcanic-sedimentary layers (tuffaceous gravel and sands), and in the Saatli area 780 m thick limestones of different structural and genetic types alternate with effusive rocks (basalts).

Lower Cretaceous. These sediments consist of volcanic, volcanogenic-sedimentary and sedimentary rocks in all areas exposed by excavation. The sediments of the Hoteriv, Barrem and Apt floors are involved here.

It was opened in the Lower Cretaceous (Hoteriv-Apt) research region in the Carlı (wells Nos. 1, 4, 6, 10), Sorsor (wells Nos. 3 and 4) and Saatli No. 1 deep wells. The section consists of different genetic rock types and they are described as follows.

The exposed lower part of the section is 810 m thick (Saatli well No. 1) and consists of various tuffs, tuffaceous breccias, and tuffogenic-sedimentary assemblages (80 m) alternating with porphyrites. The rocks in this part of the section are composed mainly of Saatli area, sometimes basalts with layers of andesite and porphyrite. The upper part of the transect (Barrem) is represented by 290 m thick sedimentary formations consisting of dark gray argillites with marl, sandstone and siltstone beds. Aptian sediments are described in the lower part by volcanogenic-sedimentary (tuffaceous sands and gravels) and sedimentary assemblages (sandstones, siltstones). The thickness of these sediments is 100 m [8].

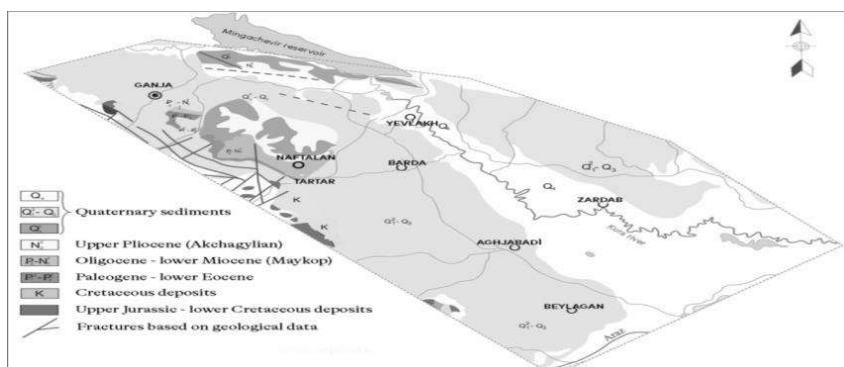


Fig. 2. Geological map of Evlakh-Agjabedi depression [1]

MATERIAL AND METHODS

Biomarker analysis of medicinal Naftalan oil from oil base I-II horizon, filter 151-586 m was performed in this research study.

Biomarkers investigations were made by chromatography-mass spectrometry (GC-MS) on Perkin-Elmer Clarus 680 instrument having interface with high-efficiency mass-selective detector Clarus SQ8T. The chromatograph was equipped with a quartz capillary column of 100 m length, 0.25 mm diameter and impregnated with ZB-1 phase. The carrier gas is helium, with a flow rate of 1ml/min. Evaporator temperature 300 °C; programmed temperature ramp from 80 to 290 °C at a rate of 4 °C/min followed by an isotherm for 70 min. Ionizing source voltage 70 eV, source temperature 250°C. Methylene chloride was used as a solvent.

RESULTS AND DISCUSSION

The geochemical parameters of Naftalan fuel and therapeutic oils have been reflected in articles as a result of numerous studies [2, 3].

Terpanes, steranes, hopanes and adamantanes were identified in oil sample. Here are given mass spectra plots for calculation of hopanes (m/z 191) and steranes (m/z 217) in sample of Naftalan oil (Fig.3, 4 and table 1, 2). Considering that Naftalan oil undergoes biodegradation that the maturity parameters and some other biomarker indicators probably do not correspond to real values. For this reason we will look through only some of the biomarkers that provide geological information about the age of source rock and its lithological composition.

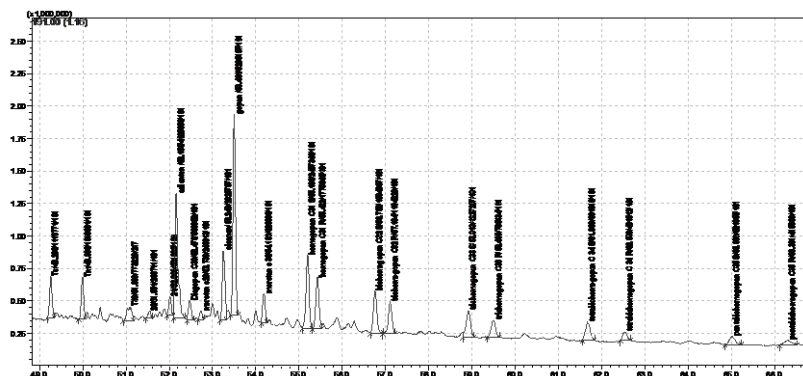


Fig. 3. Chromato-mass-spectrum section of hopanes (m/z 191) in Naftalan medicinal oil

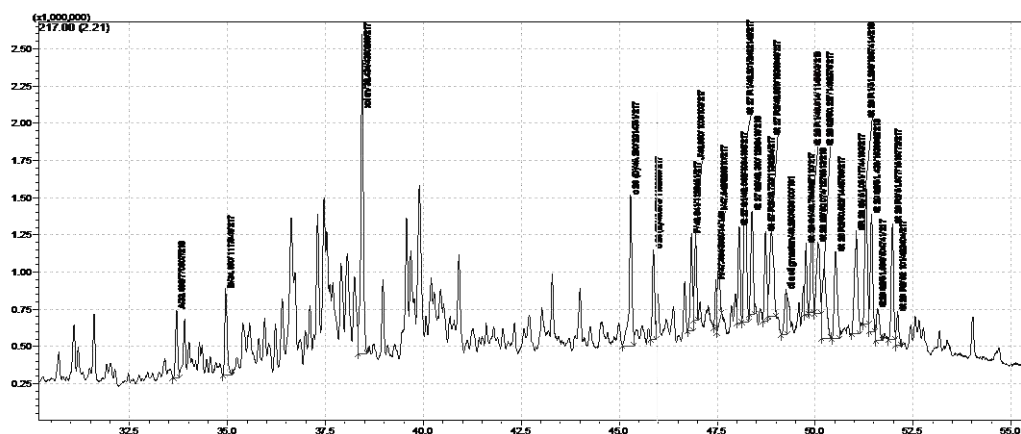




Fig. 4. Plot of the chromatography-mass spectrum of steranes (m/z 217) in Naftalan medicinal oil

Table 1.

Hopane content (m/z 191) in Naftalan oil

Sample	Medicinal oil, %
Hopanes	4.09
Ts	4.09
Tm	4.02
H ₂₈ 17 α H,18 α H,21 β H bisnorhopane	0.77
H ₂₉ Nor- 25- hopane	1.96
Adiantane	14.84
Diahopane H ₃₀	2.2
Moretane H ₂₉	0.92
Oleanane	7.47
Hopane H ₃₀	19.19
Moretane H ₃₀	3.06
Homohopane Hh ₃₁	15.63
Bis homohopane H ₃₂	10.14
TrishomohopaneHh ₃₃	9.45
Tetrakis homohopane Hh ₃₄	4.8
Pentakishomohopane Hh ₃₅	3.35

One indicator of facies conditions of sedimentation is the ratio of diasteranes to regular steranes (dia/reg29). [4,12]. Increasing values of this coefficient indicate that the terrigenous complex dominates in source rocks of oil. Naftalan therapeutic oil has values such as 0.9, which allows us to conclude that the source rock is composed of a clayey rocks.

Terpanes in Naftalan oils are represented mainly by tricyclic C₁₉-C₂₀ (from 20.81 to 28.52) and pentacyclic triterpenoids (18 α (H) oleanane (5-7% RH). This indicates the presence of continental and higher vegetation in the initial OM.

As already mentioned, oil in the Naftalan field is exploited from the Maikop formation. Taking into account the migration of hydrocarbons from the mature source rock (lower layers) to reservoirs (higher layers) via pores and fractures during the oil-gas field formation process, it is reasonable to suggest that the Naftalan oils were generated in the Upper Cretaceous, Eocene or Maikop deposits.

Table 2.

Stearanes content (m/z 217) in Naftalan oil

Sample	Medicinal Naftalan oil
Steranes %	
Diasterane	19.41
Sterane 27	22.31
Sterane 28	17.14
Sterane 29	21.6
Diasterane/sterane 29	0.9

18 α (H) Oleanane in oils is present in higher percentages in sediments of Cretaceous or younger age, coinciding with the evolution of angiosperms. Angiosperms are indicators of both source rock age and surface sediments both of which are useful biomarkers or molecular fossils in petroleum correlation studies and petroleum geochemistry in general. A higher oleanane to hopane ratio (oleanane index > 0.2) indicates that the oil is Paleogene or younger in age [11]. In Naftalan medicinal oil, this index is characterized by values of 0.4. This biomarker proves the Paleogene–Lower Miocene age of the studied oils.

As already mentioned, oil in the Naftalan field is exploited from the Maikop formation. Taking into account the migration of hydrocarbons from the mature source rock (lower layers) to reservoirs (higher layers) via pores and fractures during the oil-gas field formation process, it is reasonable to suggest that the Naftalan oils were generated in the Upper Cretaceous, Eocene or Maikop deposits.

The source rock potential of Maikop sediments in the territory of Azerbaijan was determined as a result of pyrolytic studies conducted in the structures of the South Caspian basin [6]. However, although Maikop is a regional oil and gas stratigraphic unit in the area of the Middle Kura depression, as a result of research, it was found that Maikop is not mature enough as a source rock.

Final temperatures at Maikop in the Evlakh-Aghjabadi depression are about 112-116°C, which is favorable for the generation of mature oil. However, pyrolytic studies of Maikop Formation rocks show that these sediments are characterized by low maturity (Tmax values), rarely reaching Req 0.65%. This result is inconsistent with the maturity of the oils in the Cretaceous and Eocene formations. Oils from these layers are characterized by a greater maturity corresponding to the vitrinite reflectance equivalent Req=0.70-0.73% (calculated by the degree of sterane isomerization and isosteran/normal sterane ratio) [7].

The oil-gas potential of Cretaceous sediments in the area of the Middle Kura depression has already been determined in some structures by the deep drilling method (Muradkhanli, Zardab, etc.). Cretaceous sediments are suggested to be the possible source rock in Middle Kura depression, although absence of oil biomarker and pyrolysis data for Mesozoic deposits in Middle Kura depression. Considering all of this statements researchers suggest Eocene and Cretaceous (most probably Lower Cretaceous) deposits as a source rock in the Middle Kura depression [5].

CONCLUSION

Biomarker analyzes of Naftalan oils give us some new information about the source rock of the oils. Thus, the ratio of diasteranes to normal steranes allows us to put forward the idea that the source rock of the oils consists of a clay complex. Also, the presence of enough oleanane biomarkers (5-7% RH) proves that the oil generated from Paleogene – Lower Miocene stratigraphic units. This result indicates that Cretaceous sediments, consisting of volcanic-sedimentary rocks in Middle Kura basin, do not contribute to the formation of Naftalan oil.

Although the Maikop deposits are the main stratigraphic unit in the area of the Middle Kura Depression, it is already known from pyrolytic studies that Maikop has a low degree of maturity (Req= 0.65%). This means that Naftalan oil was not generated from the Maikop source rocks. We believe that the Eocene deposits are the main source of Naftalan oil since they are composed predominantly of clay rocks in the Middle Kura basin and have a higher degree of maturity (Req = 0.70-0.73%) than Maikop.

All these indications allow us to say that Naftalan oil was generated in Eocene formation then migrated and accumulated in Maikop sediments.



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NAFTALAN YATAĞININ MÜALİCƏVİ NEFTİNİN ANA SÜXURU HAQQINDA

S.Q. Zeynalov

Naftalan yatağı neftləri müalicəvi xüsusiyyətləri ilə yanaşı, həm də burada mövcud olan neftlərin tərkibinin müxtəlifliyinə görə unikal təbii obyektidir. Yataqda müxtəlif növ neftlər məkana görə paylanmışdır, belə ki müalicəvi neft 500-600 m dərinlik intervalında Maykop lay dəstəsinin yuxarı horizontları ilə əlaqəlidir, bu layın aşağı horizontları isə yanacaq nefti ilə doymuşdur. Naftalan müalicəvi neftinin ana süxuru haqqında çoxlu fikirlər olsa da, bu məsələ tədqiqatçılar arasında açıq olaraq qalır. Bu tədqiqat işində biz Naftalan neftinin biomarker analizi (18α (H) olean biomarker və diasteranların müntəzəm steranlara nisbəti) və Orta Kür çökəkliyi ərazisində Eosen və Maykop süxur nümunələrinin yetkinlik göstəricilərinə əsasən tədqiq olunan neftin Eosen çöküntülərində gənərləşmə etdiyini irəli sürürük.

Açar sözlər: *Naftalan nefti, Maykop çöküntüləri, biomarker, oleanan, yetkinlik.*



О МАТЕРИНСКАЯ ПОРОДЕ ЦЕЛЕБНОЙ НЕФТИ НАФТАЛАНСКОГО МЕСТОРОЖДЕНИЯ

С.Г. Зейналов

Нафталанское месторождение является уникальным природным объектом не только в связи с широко известными лечебными свойствами нефтей, но и из-за пестроты состава, имеющих здесь нефтей. Вместе с тем разнотипные нефти на этом месторождении пространственно разобщены, а именно, лечебные нефти строго приурочены к верхним горизонтам майкопской свиты в интервале глубин 500-600м, тогда как топливной нефтью насыщены нижние горизонты этой свиты. Хотя существует множество представлений о нефтематеринской породе нафталиновой лечебной нефти, этот вопрос остается открытым среди исследователей. В данном исследовании мы предполагаем, что нефтематеринская порода Нафталанской нефти образовалась из эоценовых отложений на основании биомаркерного анализа (олеананового биомаркера 18 α (H) и соотношения диастеранов к регулярным стеранам) исследуемой нефти и показателей зрелости образцы Эоценовых и Майкопских пород Средне-Курской впадины.

Ключевые слова: *Нафталанская нефть, Майкопские отложения, биомаркер, олеанан, зрелость*



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RELATION OF CONTRAST IN MICROTTEXTS WITH PARALLEL SYNTAX (BASED ON AZERBAIJANI FOLKLORE)

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The article studies the formation of the relationship of contrast arising from semantic meaning relations in microtexts whose components are connected through parallel syntax. Examples of Azerbaijani folklore are used to elucidate the stated theoretical ideas. Parallel syntax, which is one of the means of connecting the components of microtexts, is based on the structural similarity of the text. Consequently, the components that make up the text should follow each other, having the same structural structure. In the formation of microtexts, not only some text-forming tool, but also its logical-semantic connection is of great importance. This article aims to examine manifestations of the relation of opposition in microtexts created through syntactic parallelism. It is possible to find various structurally different forms of microtexts created by the relation of opposition. In the examples of Azerbaijani folklore, contrast conjunctions, words with opposite meanings, the forms created solely by intonation and the presence of predicate in both affirmation and negation.

Keywords: syntax, parallelism, microtext, folklore, contrast.

INTRODUCTION

While looking at the studies on syntax in the science of linguistics, it is observed that the sentence was taken as the largest syntactic unit until recent times. The existence of a larger syntactic unit is not denied, including in the studies conducted until the late 60s and 70s of the 20th century, and the text, as a complex syntactic unit, is considered the largest syntactic unit. However, starting from the 80s of the 20th century, it was proved that the text has isomorphic properties, carrying syntactic signs, and they began to separate it from syntax. It is true that these researchers also observed non-syntactic signs in the text, and unlike syntax, it was confirmed that the text is an informative unit. After that, a new approach to text gave way to the study of a number of text-related problems in linguistics. Texts are divided into macro and microtexts. The research object of the present study is microtexts. "Thus, the micro-text or simple text and the complex syntactic whole enter into a certain hierarchical system, like other categories of speech activity, for example, a sentence. In other words, a chain of specific mutual relations has been established between it and other linguistic categories. And in fact, the text acts as a syntactic layer above the sentence itself. Because it is a more complex syntactic structure in relation to the sentence, both structurally and semantically" [2, p. 180]. As noted by K.Abdullayev, microtext is a syntactic structure formed from the unity of form and content, which are related to each other both structurally and semantically. There are various means of connecting the microtext structurally and semantically. From the structural point of view, word order, as well as word order violation, i.e., inversion, chiasm, including parallel syntax (or syntactic parallelism), and from the semantic point of view, sequence, simultaneity, juxtaposition, and enumeration relationships can be referred to this order. In this article, there will be a study of the forms of the relationship between the components of microtexts created through syntactic parallelism based on folklore examples.



Folklore texts are created on the basis of the spoken language of the people, retain all the features of the Azerbaijani language, are distinguished by the richness of artistic means of expression, are rhythmic, as well as poetic, and differ according to their impact force. It is precisely because of these comprehensively rich features that the interpretation of the mentioned theoretical studies on the basis of folklore texts offer to conduct the research better.

MAIN PART

Parallel syntax (or syntactic parallelism) is a means of structural communication in which components are arranged sequentially or relatively distantly in the same structure. It is possible to find different forms of parallel syntax in folklore texts. So, looking at the examples, there are complete and incomplete syntactic parallelism, graded parallelism, as well as in the forms of ellipsis. The relationship between the components of microtexts created by syntactic parallelism is also one of the often encountered semantic meaning relationships.

Parallel syntax can manifest itself in various meaning relationships of the microtext. The interesting aspect of the matter is that parallel syntax in the microtext plays an important role in the establishment of meaning relationships, along with other functions.

In the microtext, where there is a contrast relationship between the components of the microtext, the information is divided into two parts, and the boundaries of those parts are determined by the contrast conjunctions. The contrast relationship means the presence of contradiction, opposite information between the components, the opposition of the components to each other, and as a result, the creation of ideas that are the opposite of each other. The contrast relationship between the components is reflected in different shades. The forms of meaning of the conjunction linking the components of a subordinate complex sentence are classified by linguists in different forms. Concession contrast, opposition contrast, comparative contrast [1, p. 282]; opposition contrast, comparative-differentiative contrast [12, p. 297]; for contrast, for opposition [11, p. 263] and other forms of meaning are distinguished.

There are various factors that create the contrast relationship in Azerbaijani folklore samples:

- In most cases, the relation of contrast is created with the help of conjunctions "but, however". These conjunctions strengthen the idea expressed.
- Establishing the relation of contrast through intonation. Here, mainly antonyms are used to fully reflect the relation of opposites.
- In some cases, in the first part of the components, the predicate is affirmative, and in the second part, it is negative. Or, on the contrary, two opinions are opposed, the first part being negative, and the second part being affirmative.

Thus, in some examples of folklore, in the microtexts created by the sequence of components with the same structure, various contrast conjunctions are used between the components and a contradiction arises. For example,

A jewel has a price,
But the proverb has no price. [4, p. 70]
The calf grows, but the sack does not [4, p. 80]

The examples shown are selected from proverbs and the components are connected with each other structurally with complete syntactic parallelism. It should be noted that in proverbs, the relation of contrast is usually created through intonation or antonyms. There are very few examples of adverbs formed through conjunctions. In the two examples mentioned above, the conjunction "**but**" is used to form a relationship between the sentences.

Let's continue with another example selected from Azerbaijani epics.

"Koroglu's name was spread all over the world. Brave boys who were oppressed by their khan (ruler over the Turkic tribes) and pasha (a man of high rank) from all over the world came to Chanlibel and joined his group. Chanlibel had become a different world like the world has ended.



Some people are building a house, a homeland, others are training, galloping horses, playing a race... Sometimes during training, when swords were drawn, Chanlibel became a volcano, shining light all around. Sometimes it happened that the fog covered Chanlibel in a short time. **A clap of thunder, a strike of lightning, and raining.** An apocalypse was about to break out... But it didn't last long, suddenly **the wind slept, the rain stopped, and the fog disappeared. Still the partridges were singing and the birds were chirping.** The face of the sky became frosty and turned into a mirror. The old grandmother stretched out her belt and struck the sky with seven jewels with seven pens" [5, p. 24].

Before proceeding to the explanation of the microtext, it is noteworthy that the specified types of the mentioned relations can be changed throughout the text. Thus, the relation of meaning between the components of the beginning of the text may not remain valid until the end. For example, if there is a relationship of simultaneity or sequence at the beginning of the text, there may be a relationship of contrast between the middle and final stage components.

In the example we brought from the epics, we also observe the relationship of sequence at the beginning stage. After the middle stage, we can already see the presence of the relationship: **"A clap of thunder, a strike of lightning, and raining.** An apocalypse was about to break out... But it didn't last long, suddenly **the wind slept, the rain stopped, and the fog disappeared."** As we can see, the relationship of mutual contradiction between these components is reflected.

In particular, it should be noted that complete syntactic parallelism is rare in folklore examples in prose form. Incomplete parallelism prevails here. In this example selected from However, the sentences are not completely identical in terms of structure. The sentences listed below of the microtext were arranged in parallel, which led to the formation of the microtext from the stylistic point of view, and the shaping of a more memorable and poetic idea: **"Some people were building a house, a homeland, others were training, galloping horses, playing a race..."**, **"A clap of thunder, a strike of lightning, and raining"**, **"the wind slept, the rain stopped, and the fog disappeared"**, **"the partridges were singing and the birds were chirping"**.

Let's look at one more example:

"In one of the villages of Istanbul, there was a young boy named Belli Ahmed. Obviously, Ahmed's mustache was still sweating. But in terms of strength and power, he would not be defeated by the wrestler Rustam. He was a very full-hearted man.

He had never once in his life eaten the food he bought alone. The poor man's table was always open in front of his friends [5, p. 24]. Here we observe one of the exceptional cases. Thus, the complex syntax is reflected in two whole paragraphs. It is known that there is a relation of opposition and contradiction between the components of a complex syntactic whole. Because the conjunction **"but"** is used between the components. The beginning of the text shows that Belli Ahmed is a young man. The idea of the middle stage is contrasted with the beginning stage, it is noted that despite his very young age, Belli Ahmed is strong and powerful.

As we mentioned before, another tool that creates the relationship of opposition in microtexts created by syntactic parallelism is intonation. Here, in addition to intonation, antonyms and expressions also play an important role in the creation of contradictions and contrasts.

It disappears at the sunrise,
It appears at the sunset. [14, p. 38]
It spoils during the day,
It arranges during the night [14, p. 38]
His body on the ground
Beard in the sky.[14, p. 49]
There is a voice that lifts the mountain,
There is a voice, it drops from the mountain. [7, p. 70]



The mentioned examples are selected from riddles. As can be seen, structurally, the sentences are arranged in a completely parallel sequence, and no additional means were used to create a juxtaposition relationship. Here, the relation of contrast is formed with the help of intonation and antonyms. "**sunrise**" "**sunsets**", "**day**" "**night**", "**ground**" "**sky**", "**lift**" "**drop**" are antonyms and by using opposite words, the reader or listener is presented with different ideas to find the answer.

Examples of intonation as the most widespread form of a juxtaposition relationship can be found in almost all types of folklore.

Bitter buttermilk at the bottom of churn,
Black raisins in gentlemen's pockets. [13, p. 263].
Iron rots with moisture, man rots with sadness. [13, p. 266].

As can be seen from the examples, no special tool was used for the formation of semantic relations. The components are compared to each other, and intonation is involved in creating this relationship.

"Once upon a time, when there were many helpless servants of God, one of them was a man called Almardan who lived in our Kura valley. This poor man's hand was doughy and his stomach was hungry. Yes, he worked, plowed, sowed, and when the harvest was finished, on the one hand, a rich man, a poor man, and on the other hand, an indebted man would thresh the harvest. When autumn came, the man would once again go door to door begging for money. He would cut thorns and sell them, steal firewood from the forest and sell them. He was extremely hungry [9, 21].

In this example, which we have drawn to the explanation, parallelism clearly stands out from the point of view of both textual and stylistic penetration of the function into each other. In this text, the words "**one of them**", "**on the one hand**", "**hungry**" are repeated at different points, connecting the components of the text with each other, and serving as the carrier of the stylistic function of Azerbaijani folk tales. In addition, the parallelism of the particle "was" in the text seems to have created an environment for morphological time within the text, and the events throughout the text are based on it. As for the explanation of the given example from the semantic point of view, the relationship of opposition is clearly manifested here as well. Thus, even though it is mentioned that the man from Almardan worked throughout the year, the fact that he was still hungry in the end shows that there is a contradiction between the main part of the text and its conclusion.

Another tool that creates a relationship between the components of the microtext created through syntactic parallelism is the opposition of ideas by processing the predicates of the sentences into confirmation and denial.

He calls to prayer, he does not pray.
He marries, he does not know wedlock. [10, p. 25]
I have a horse that won't stand still
Hey, a horse walks and it never gets tired. [10, p. 25]
I threw it off the mountain and it didn't die.
I threw it off the stone and it didn't die.
I threw it into the water and it died. [10, p. 26]
Let the hundreds die outside, let not one die at home. [7, p. 68]
The bread should not be cut with a knife, it should be divided by hand. [7, p. 68].

In the first two examples above based on parallelism, the first parts are affirmed and the second parts are denied. In the second example, on the contrary, in the first part, the predicates of the sentences is given in the negative, and then the text is concluded with the predicates used in the affirmative. Such cases, which we often encounter in riddles, are a result of their being more laconic in terms of structure and content, and at the same time rhythmic.



“Deli Hasan and Koroglu got into a fight. They drew their swords and attacked each other. The sword did not work, they tried with flail. They did not get what they wanted with flail, so they reached for the spear. The fight with the spear was not won either. In the end, they dismounted and started to wrestle. Deli Hasan and Koroglu wrestled a lot, sometimes Deli Hesén got stronger, and sometimes Koroglu got stronger. At last, Koroglu finally let out a mad roar and took Deli Hasan and threw him to the ground. When he put his knee on his chest and threw his hand to the sword, Deli Hasan sighed.” [5, p. 22].

We observe incomplete parallelism in the text above. Although the initial and concluding parts of the text are given in a partially different sentence structure, the main part shows the arrangement of the sentences with the same syntactic structure and syntactic parallelism comes to the fore. **(The sword did not work, they tried with flail. They did not get what they wanted with flail, so they reached for the spear. The fight with the spear was not won either. In the end, they dismounted and started to wrestle).** A more interesting point in the mentioned example is that we find a chiasm in the middle stage. Here the chiasm serves the overall content of the microtext. In the microtext, we witness the quarrel between Koroglu and Deli Hasan. It is in the middle stage that this quarrel, which continues throughout the text, finds its confirmation with chiasm **(Sometimes Deli Hesén got stronger, sometimes Koroglu got stronger).** When analyzed from a logical-semantic point of view, the events in the microtext progress sequentially, but in the main part, the relationship of contrast between the components in terms of content is visible.

After nine months, nine days, nine hours, nine minutes, and nine seconds passed, a son of Ziyad Khan and a daughter of Gara priest were born. Ziyad Khan gathered the people and held a celebration, the boy was named Mahmud and the girl was named Maryam. They entrusted the children to nurses. As they say, the language of fairy tales is speedy. The children grew up to be eight years old. Ziyad Khan left his son with Mullah (an honorific title for Muslim clergy). The Gara priest also began to educate his daughter himself. [8, p. 5].

The text is distinguished by a variety of structural and semantic means. Semantically, from the very beginning, the text clearly shows the presence of both the relation of sequence and the relation of comparative-distinctive opposition. The presence of the son of Ziyad Khan and the daughter of the Gara priest, the khan's son going to the mullah, and the priest's daughter being educated by her father are compared and contrasted. As it can be seen from the text, in this type of oppositional relation, in contrast to contradiction, not predicates, but names are distinguished from each other.

The structural integrity of the mentioned text is distinguished primarily by the parallels of the same structure of the text and the repetition of the word **"nine"** in the parallels, forming both structural and stylistic features of the text. At the same time, the arrangement of the components of the subordinate complex sentence **(the boy was named Mahmud, the girl was named Maryam... Ziyad Khan left his son with the mullah. The Gara priest began to teach his daughter himself)** serves the cohesion of the text.

CONCLUSION

Taking into account the above, it can be said that one of the main means of ensuring the semantic connection of microtexts in Azerbaijani folklore examples is the relation of contrast. Syntactic parallelism plays an important role in ensuring the structural integrity of the components that are confronted with each other within the microtext. The analyzes based on the examples show that the relation of contrast reflects different shades of meaning and the means of forming this relation realize the contrast of the ideas that make up the content of the text. At the same time, the predominance of the contradiction formed in terms of content in the folklore examples created through syntactic



parallelism suggests that the examples that stylistically include a comparison, difference, contrast and opposition are structured on the basis of order and symmetry.

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SİNTAKTİK PARALELİZMLƏ YARANAN MİKROMƏTNLƏRDƏ QARŞILAŞDIRMA ƏLAQƏSİ (AZƏRBAYCAN FOLKLOR NÜMUNƏLƏRİ ƏSASINDA)

A.C. Günəşli

Məqalədə komponentləri sintaktik paralelizm vasitəsilə əlaqələnmiş mikromətnlərdə semantik mənə əlaqələrindən qarşılaşdırma əlaqəsinin yaranma formasına nəzər salınır. Göstərilən nəzəri fikirlərin izah olunması məqsədilə Azərbaycan folklor nümunələrindən istifadə olunmuşdur. Mikromətnlərin komponentlərini əlaqələndirən vasitələrdən biri olan sintaktik paralelizm mətnin struktur etibarilə eyniliyinə əsaslanır. Belə ki, mətni əmələ gətirən komponentlər eyni struktur quruluşa malik olmaqla bir-birini izləməlidir. Mikromətnlərin formalaşması üçün yalnız hansısa bir mətnyaradıcı vasitə ilə yanaşı, onun məntiqi-semantik cəhətdən də bağlılığı mühüm önəm daşıyır. Bu məqalədə sintaktik paralelizm vasitəsilə yaranan mikromətnlərdə qarşılaşdırma əlaqəsinin təzahür formaları öz əksini tapacaqdır. Qarşılaşdırma əlaqəsi ilə yaranan mikromətnlərin struktur etibarilə müxtəlif formalarına rast gəlmək mümkündür. Azərbaycan folklor nümunələrində qarşılaşdırma bağlayıcıları, əksmənalı sözlər, yalnız intonasiya, predikatın təsdiq və inkarda olması ilə yaranmış formalar üstünlük təşkil edir.

Açar sözlər: *sintaksis, paralelizm, mikromətn, folklor, qarşılaşdırma.*



СООТНОШЕНИЯ СОСТАВОВ В МИКРОТЕКСТАХ, ОБРАЗОВАННЫЕ ПРИ СИНТАКСИЧЕСКОМ ПАРАЛЛЕЛИЗМЕ (НА ПРИМЕРЕ ФОЛКЛОРА)

А.Дж. Гюнешли

В статье рассматривается форма возникновения обратной связи из семантических смысловых связей в микроязыках, компоненты которых связаны посредством синтаксического параллелизма. Для объяснения указанных теоретических идей были использованы образцы азербайджанского фольклора. Синтаксический параллелизм, один из видов взаимосвязи компонентов микротекстов, основан на структурной однозначности текста. Таким образом, некоторые или все компоненты, составляющие текст, должны последовательно следовать друг за другом, имея одинаковую структурную структуру. Для формирования микротекстов важное значение имеет не только какое-то текстообразующее средство, но и его логико-семантическая связность. В данной статье будут отражены формы проявления противопоставления в микротекстах, порожденные синтаксическим параллелизмом. Микротексты, созданные путем сопоставления структурно можно найти в различных формах. В азербайджанских фольклорных образцах преобладают встречные союзы, слова с противоположным значением, формы, образованные только интонацией, наличием сказуемого в утверждении и отрицании.

Ключевые слова: синтаксис, параллелизм, микротекст, фольклор, контраст.



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<https://doi.org/10.59849/2409-4838.2024.3.69>DISEASE AND PESTS OF OLIVE (*OLEA L.*) PLANTAfet Mehman Javadova*¹ , Rukhsare Adil Gasanova² ¹Ministry of Agriculture of the Republic of Azerbaijan Scientific Research Institute of Fruit and Tea Growing, Baku, Azerbaijan²Baku State University, Baku, Azerbaijan

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The research paper mentions olive leaf spot [*Spilocaea oleagina* (Cast.) Hughes, Syn: *Cycloconium oleaginum* Cast], as well as olive moth (*Prays olea* Bern.), olive psyllid (*Euphyllura olivina* Costa.) pests that are widespread in the olive plant and their control measures. The experiments were carried out on the territory of the Absheron Experimental Station of the Scientific Research Institute of Fruit and Tea Growing on Azerbaijani olive, *Pikvales*, *Agbaba*, *Jigrina* varieties. As a result, it was determined that although olive leaf spot disease infection was observed in all 4 varieties, the degree of infection was different according to the varieties. Thus, against the disease, the Azerbaijani olive variety is the most unstable variety, with 23.5% in 4-point infection, and the *Jigrina* variety (12%) is more resistant. 16.5% infection was observed in *Agbaba* variety and 15% in *Pikvales* variety. The degree of pest infestation of the varieties was also evaluated with a point and a resistant variety was selected. It was determined that *Jigrina* variety (1 point) is more resistant to pests. The degree of durability of other varieties was relatively low and was evaluated with 2-3 points. From this point of view, it is more appropriate to cultivate the *Jigrina* variety more widely and use on the farm. Chemical and agrotechnical measures against diseases and pests found in varieties have been developed.

Keywords: Absheron, pathogen, infection, variety, degree of resistance

INTRODUCTION

Olive (*Olea L.*) is a widely used fruit plant of industrial and economic importance. Although this plant can be grown in many regions of Azerbaijan, the main fertile soil and climatic conditions for olives are found in Absheron. For the normal development of plants, especially to improve the productivity of fruit plants and quality of products, it is important to protect them from diseases and pests. Because diseases and pests damage not only fruits and leaves, but the entire plant and in some cases even destroy it. Taking all this into account, it should be noted that the subject under study is very relevant [8, 10].

Diseases and pests of the olive plant have been studied by some local and world scientists. J.Mammadov determined that 30-40% of the leaves fall off in trees infected with olive leaf spot disease [2]. G. Ismayilova has learned that if the number of nymphs on the inflorescence of the plant infected with olive psyllid pest is more than 20, then the yield loss is up to 60% [1]. S.Mammadova and B.Khalilov noted that adult olive psyllid overwinters in tree trunks, under bark, leaves and hollows [4]. D.Bayraktar and others studied the development of the fungicide in *in vitro* and *in vivo* conditions [8]. N.P.Lishkhina determined that the amount of organic and plastic substances formed as a result of the disruption of photosynthesis in leaves infected with olive leaf spot disease decreases and the plant weakens [3]. D. Mack et al. investigated olive leaf spot disease in New Zealand [9].



The purpose of the research was to study the pests found in olive varieties grown in the collection area of the Absheron Experimental Station of the Scientific Research Institute of Fruit and Tea Growing.

MATERIAL AND METHODS

The object of the research is Azerbaijani olive, Agbaba, Jigrina, Pikvales olive varieties cultivated in the collection area of Absheron Research Experimental Station and the diseases and pests detected on these varieties. 200 leaf samples were taken from at least 25 newly formed shoots (the shoots developed after the first application) obtained from all four sides of the tree for foliar disease estimation and assessment. The value of the scale obtained as a result of counting the disease was calculated by the Towsend-Heuberger method. Abbott's method also calculated the percentage of drug effects. The calculation method with the Towsend-Heuberger formula [disease severity % = $\frac{\sum(\text{scale value} \times \text{number of plants in scale value})}{(\text{total number of plants} \times \text{highest quantity value})} \times 100$] was applied [10].

Visual observations on leaves, flowers and fruits were carried out throughout the year in order to determine the degree of infestation with common pests in different phenological periods of plants in gardens. For this purpose, pheromone traps were set up in different trees in the garden. The infection of fruits collected from each tree was recorded as a percentage. The degree of infection of 1 kg of damaged fruits was determined [5, 6].

The distribution area of pests in the region was determined by the method of N.Y. Polyakov [7]. Since the height of the plants in the field and the size of the umbel are of different sizes, the number of pests was counted not per tree, but per several sample trees, and the pests on 1 m² plant surface consisting of leaves, shoots and branches were counted and the density was evaluated.

RESULTS AND DISCUSSION

Olive leaf spot disease in olives is usually more common in spring and autumn, when the weather is humid. Olive leaf spot is caused by the fungus *Spilocaea oleaginea*. The disease is first observed by the formation of dark brown bordered spots on the leaves (Figure 1). The leaves in which the disease was observed turned yellow and fell prematurely, and in the years when the disease was more widespread, drying of young shoots and branches was also observed. No diseases were observed in 47 out of 200 leaves collected from 25 shoots of Azerbaijani olive. 1 or 2 spots less than ½ cm in size were found on 30 leaves, and 3 or 4 spots less than ½ cm in size were observed on 18 leaves. In 58 of the remaining leaves, 1 or 2 spots larger than ½ cm in size or many small spots were determined, and in 47 leaves, more than 2 spots larger than ½ cm in size or many small spots were determined. In Agbaba variety olive trees, 36 out of 200 leaves had a level of damage of 0, the remaining 54 leaves had a level of damage of 1, 23 of the leaves had a level of damage of 2 and 54 leaves had a level of damage of 3, and the remaining 33 leaves had a level of damage of 4. In the Jigrina variety, 44 of the leaves obtained by the same procedure had a disease degree of 0, and the remaining 47 olives had a damage degree of 1. Of the remaining leaves, 28 had a level of damage of 2, the remaining 57 - 3, and 24 - 4. The most infection was observed in Azerbaijani olive, and the least in Jigrina variety (Table 1).

Table 1.

Evaluation of olive leaf spot disease infection in olive varieties

Name of the variety	200 leaves from 25 shoots				
Azerbaijani olive	47/0	30/1	18/2	58/3	47/4
Agbaba variety	36/0	54/1	23/2	54/3	33/4
Jigrina variety	44/0	47/1	28/2	57/3	24/4
Pikvales	33/0	57/1	20/2	60/3	30/4



Fig. 1. Olive leaf spot disease of olive plant

Pest infection rate was determined by hanging pheromone traps in the experimental area. The olive moth was observed in different numbers in different phenological periods of olive. The pest was found in the traps first at the beginning of budding and lastly during the ripening period of olive fruits. The greatest increase in the number of olive moth was observed at the beginning of flowering. Thus, there was a sharp increase in the number of pests in the traps during this period. The least pests were observed at the beginning of budding and during the period when the fruits were newly formed. With the darkening of the fruits, the increase in the number of the pest was found again. In the period of the beginning of budding, olive psyllid pest was found in the leaves and newly formed shoots, and in the period of the beginning of flowering, the infection occurred in the flowers. During full flowering, the pest was single on the leaves. In this period, the flowers are more infected (Figure 2).



Fig. 2. Olive moth (*Prays olea*) pest found in olive varieties

According to the observations, different degrees of infection were observed. In olive moth pheromone traps hung on Azerbaijani olives, the number of pests in each trap was 96 at the beginning of budding, while this number was 240 at the time of flowering. During the fruit ripening period, the number of pests in the trap was 165. In Agbaba variety, this indicator was 78 at the beginning of budding, 198 during the flowering period and 110 during the fruit ripening period. In the Jigrina variety, it was 50 during the budding period, 120 during the flowering period, and 82 during the full ripening period of the fruits (Table 2), (Figure 3). To determine the damage in fruits, fruits collected from different directions on 10 trees of each variety were visually inspected. It was observed that out of 500 olive fruits collected from different directions on Azerbaijani olive, 89, 70 of Agbaba variety, and 45 of Jigrina variety were infected (Table 3). Olive psyllid pest: 30-40 pests (3 points) were detected on 1m² of the tree in Azerbaijani olive, 15-20 (2 points) in Agbaba, and 6-8 (1 point) in Jigrina variety (Table 4).

**Table 2.**

Observation of the olive moth in different phenological periods (in numbers)

The name of the variety	The period of start of budding	Flowering period	Fruit ripening period
Azerbaijan olive variety	96 pieces	240 pieces	165 pieces
Agbaba variety	78 pieces	198 pieces	110 pieces
Jigrina variety	50 pieces	120 pieces	82 pieces

**Fig. 3.** Olive psyllid pest (*Euphlyllura olivina*) found in olive varieties**Table 3.**

Determination of damage in fruits

The name of the variety	500 pieces of fruit
Azerbaijan olive variety	89 pieces
Agbaba variety	70 pieces
Jigrina variety	45 pieces

Table 4.

The infection number of olive psyllid in points

The name of the variety	On the surface of 1m ²	Evaluation in points
Azerbaijan olive variety	30-40 pieces	3
Agbaba variety	15-20 pieces	2
Jigrina variety	6-8 pieces	1



In order to fight the disease, as a preventive measure, fallen leaves and fruits should be collected and burned in autumn, and pruning should be done. Agrotechnical rules such as watering and fertilizing should be monitored, and the use of nitrogen fertilizers should be stopped in gardens where diseases are spread. In soils with poor permeability, excess water should be removed by installing drainage. Spraying with a 1.5% solution of Bordeaux preparation has a good effect in chemical control. Drugs containing fungicides such as Topas, MZ-72 and others can be used. Spraying should be done in early spring and before the flower buds begin to swell.

The use of drugs containing Deltamethrin against the olive moth is quite effective. Spraying against the pest is not recommended during the flowering period. However, if at the beginning of the season more than 10% of the pest is observed on the leaves and fresh shoots, spraying is carried out 7-10 days after the period when the pest butterflies appear in the flowers. If live eggs and caterpillars are observed again during the formation of fresh fruits, spraying should be carried out. Control measures against olive moth should be carried out during March, April and May. If the orchards have been pre-sprinkled against the olive moth, then there is no need for additional sprinkling against the pest. However, if the pest spreads excessively in gardens, then Lambda-cyhalothrin insecticide of 50 g/l should be used in addition.

CONCLUSION

The Azerbaijani olive variety was the most resistant against olive leaf spot disease, it was evaluated with 23.5% in 4-point infection. 16.5% infection was observed in Agbaba variety, 15% in Pikvales variety, and 12% in Jigrina variety. When comparing the taken olive varieties, it was observed that the Jigrina variety is the most resistant variety to pests.

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ZEYTUN (*OLEA* L.) BİTKİSİNİN XƏSTƏLİK VƏ ZƏRƏRVERİCİLƏRİ

A.M. Cavadova, R.A. Həsənova

Tədqiqat işində zeytun bitkisinin geniş yayılmış həlqəvi xallanma xəstəliyi [*Spilocaea oleagina* (Cast.) Hughes, Syn: *Cycloconium oleaginum* Cast], həmçinin Zeytun güvəsi (*Prays olea* Bern.), Zeytun ballıcası (*Euphyllura olivina* Costa.) zərərvericiləri və onlara qarşı aparılan mübarizə tədbirlərindən bəhs edilir. Təcrübələr Meyvəçilik və Çayçılıq Elmi Tədqiqat İnstitutunun Abşeron Təcrübə Stansiyasının ərazisində Azərbaycan zeytunu, Pikvales, Ağbaba, Jıqrina sortları üzərində aparılmışdır. Nəticədə müəyyən olunmuşdur ki, hər 4 sortda həlqəvi xallanma xəstəliyinə yoluxma müşahidə edilsə də, sortlara görə yoluxma dərəcəsi fərqli olmuşdur. Belə ki, xəstəliyə qarşı Azərbaycan zeytunu sortu ən davamsız, 4 ballıq yoluxmada 23,5%-lə, Jıqrina sortu (12%) daha davamlıdır. Ağbaba sortunda 16,5%, Pikvales sortunda 15% yoluxma müşahidə edilmişdir. Sortların zərərvericilərə yoluxma dərəcəsi də balla qiymətləndirilmiş və davamlı sort seçilmişdir. Müəyyən olunmuşdur ki, Jıqrina sortu (1 bal) zərərvericilərə qarşı daha davamlıdır. Digər sortların davamlılıq dərəcəsi isə nisbətən aşağı olmuş və 2-3 balla qiymətləndirilmişdir. Bu baxımdan Jıqrina sortunun daha geniş şəkildə becərilərək təsərrüfatda istifadəsi daha məqsədəuyğundur. Sortlarda rast gəlinən xəstəlik və zərərvericilərə qarşı kimyəvi və agrotehniki tədbirlər işlənib hazırlanmışdır.

Açar sözlər: *Abşeron, patogen, yoluxma, sort, davamlılıq dərəcəsi.*

БОЛЕЗНИ И ВРЕДИТЕЛИ ОЛИВКИ (*OLEA* L.)

A.M. Джавадова, Р.А. Гасанова

В научной статье упоминается пятнистость листьев оливы (*Spilocaea oleagina* (Cast.) Hughes, Syn: *Cycloconium oleaginum* Cast), а также оливковая моль (*Prays olea* Bern.), листовертка оливковая (*Euphyllura olivina* Costa.), широко распространенные на оливе вредители. растений и меры борьбы с ними. Эксперименты проводились на территории Апшеронской опытной станции НИИ плодоводства и чаеводства на сортах азербайджанской маслины, Пиквалес, Агбаба, Джигрина. В результате было установлено, что хотя заражение пятнистостью листьев оливы наблюдалось у всех 4 сортов, степень заражения была различной в зависимости от сорта. Так, по отношению к заболеванию наиболее неустойчивым сортом является азербайджанский сорт оливы с 23,5% при 4-балльной инфекции, а более устойчивым является сорт Джигрина (12%). Заражение отмечено у сорта Агбаба в 16,5%, у сорта Пиквалес - в 15%. Также балльно оценивали степень пораженности сортов вредителями и отбирали устойчивый сорт. Установлено, что сорт Джигрина (1 балл) более устойчив к вредителям. Степень долговечности остальных сортов была сравнительно низкой и оценивалась в 2-3 балла. С этой точки зрения сорт Джигрина целесообразнее шире культивировать и использовать в хозяйстве. Разработаны химические и агротехнические меры борьбы с болезнями и вредителями сортов.

Ключевые слова: *Абшерон, возбудитель, инфекция, сорт, степень устойчивости.*



SOCIAL SCIENCES





THE IMPACT OF SOCIAL MEDIA, THE LATEST MODEL OF A DEMOCRATIC PLATFORM, ON INTERNATIONAL POLITICAL RELATIONS

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At the end of the 20th century and the beginning of the 21st century, the development of information and communication technologies became an important element in many aspects of social life and led to the emergence of new media used by the majority. Real-time, new media, considered as an "interactive product" of digital technology, attracts scientific and political attention as an urgent issue that expands its role in the social-political communication process. The emergence of social media has led to the formation of modern forms of foreign policy communication that transforms the system of modern international relations, influences the activities of state institutions, and shapes ideas and attitudes about the country as a whole. Diplomatic institutions are also actively using networking opportunities to communicate online with domestic and foreign audiences to create a sense of citizen participation in the state's foreign policy actions. By creating user profiles in various social networks, the Ministry of Foreign Affairs and diplomatic missions "give information" about their activities, form an attitude towards the state's foreign policy, influence the consciousness of target groups (creates the feeling of "my opinion" is decisive), social networks also provide information between the public and state institutions. contributes to the exchange.

Keywords: social media, political relations, technology, international relations

INTRODUCTION

Just as the invention of the printing press, the discovery of gunpowder, or the splitting of the atom brought about important changes in the nature and structure of regional and international politics, the rapid development of information technology and the widespread use of the Internet are equally decisive. Every technological development that mankind has developed in every century, from the telegraph to the television, from the television to the railway, has clearly boosted the military structures and militaristic activities of the countries, as well as its benefits in the daily life of the public. All these events have affected the relationship between states of relative capacity in terms of the potential of the creature. In our age, thanks to the rapidly increasing internet networks, the phenomenon of communication appears to have very effective qualities in terms of cheap and instant global spread. In the first quarter of the second millennium, this development and expansion of the Internet crossed national borders and led to the development of platforms such as social media, virtual communities of socially connected networks that allow the real-time sharing of content such as text [1].

The unrestricted nature of these social networking technological developments, defined mostly within the parameters of Web 2.0, inevitably creates changes in the structure of international relations and the behavior of actors. This change; shapes international politics by further politicizing the interstate arena [1].

In particular, the Facebook, YouTube and Twitter platforms have functioned as a means of agitation and propaganda unprecedented in human history due to their ability not only to communicate online about political issues, but also to mobilize the public [2].

Especially in developing countries where parliamentary democracy is not fully established, the rapid increase in the use of the Internet in the social sphere and, as a result, social networking si-



tes, in the first quarter of the 21st century, mobilizing civil protests, spreading democracy and human rights began to be perceived as an effective phenomenon based on mass activism. However, as a natural consequence of the nature of cyber communication and globalization, the political effects of new communication techniques, borders and the possible interference of the state apparatus in these borders still remain ambiguous [2].

Emphasizing the possible role of the Internet as a catalyst for democracy, academics in the International Relations discipline discuss the limitations and possibilities of social media as a means of influencing policy in their research, and the use of the Internet and, in some cases, social media. In recent years, it has been emphasized as an effective revolutionary mobilization tool for political action under democracy and equal sharing of social opportunities in the world [2].

In addition, Alan Kluver claims that the phenomenon of new media does not have a functional advantage over traditional media in terms of improving public discourse in the field of international relations [3].

Only recently has the International Relations literature become interested in the rapid growth of social media and its implications for global politics. Research on social media has focused primarily on its use as a means of generating voice [3].

The theoretical understanding required to comprehensively understand the problem of whether social media can cause revolutionary or devastating global epidemics requires an interdisciplinary fiction [3].

MAIN PART

Network Society and New Media

Communication sociologist Manuel Castells focuses on the ability of communication technologies to shape and strengthen global social networks, particularly so-called "new media" networks. By saying that society consists of values and institutions; the understanding of structural capacity and politics that impose their will on the phenomenon of power; defines it as the process of determining where power rests and managing the practice of power. However, for every society influenced by technology, economy, customs and conventions, politics emerges as a specific concept when viewed from a cultural perspective [4].

Castells builds his main argument around the network society's pressure on politics and power and the crisis of information security politics. The first of two arguments important in the analysis of the network society; It is a crisis of global political legitimacy caused by distrust of the ruling class [4].

In this context, the younger the electorate, the greater the discontent that allows for a crisis. The second argument is the individualization of society, which is characterized by a decrease in political participation in the general population, but an increase in social mobility. Individualization has eclipsed unionism, the traditional form of socialization in politics, and the mission of unions in search of rights. In addition, they are considered neo-state institutions [4].

Acceleration of non-governmental organizations thanks to public funding also means the transfer of moral authority. Although this dynamic of individualization and non-governmental organizations does not mean the end of ideologies, it can be interpreted as the end of trust in the political mechanism [4].

Castells assesses these changes in dynamics in two main frameworks, changes in the nation-state, including changes in international relations, and changes in the media. Financial mobility, internet communication, dependence on energy resources, transnational crimes, interdependence and global division of labor are factors that reduce the power of the nation state. The reaction to this process, which is seen as a crisis of the nation-state, finds an answer in the form of an increase in emphasis and meaning given to ethnic, regional and religious identities. However, today politics is defined as a new public in the media [5].

This situation stands out in real practice as a tool created to influence the minds of the voters and thus the votes. However, on the other hand, new media act as a powerful filter for people in the face of the growing global crisis of neoliberal political economy and the colorful but hollow discourses of politics through the media. Digital networks have key features that increase the autonomy



of communication, with this autonomy the nature of power changes, as network power matters for politics [5].

Soft power and social media in international relations

Today, social media is used more than just a fun tool that people use in their personal lives to communicate with others and share personal information. Social media has also become a platform for promoting political and social causes. Online sites that create global organizations and activities with the slogan "Support the people and causes that inspire you" have fostered the discourse that anyone can change the world from the comfort of their own home. Founded in the United States and having a large number of users worldwide, the social media network website Facebook was launched in 2004, Twitter was launched in 2006, and YouTube was launched in 2005. These three social media platforms are one of the popular movements described as the "Arab Spring" in the Middle East in the last 15 years, and Wall Street, which is protesting neoliberal economics in the United States [6].

It has been actively mediated to mobilize the masses and spread the opposition to almost every geography [6].

In particular, since 2017, Facebook has allowed its two billion users to create a network of friends with whom they can share personal content, create groups and events to organize and dislike pages such as pages of interest to them [6].

The power of social media to communicate quickly both internationally and nationally has contributed to economic-political momentum not only in the international arena, but also in activities related to interstate and global governance. It also focuses on efforts to unite individuals, states, and non-state actors on conflicting agendas [7].

Moreover, these social media networks, which are expanding with the help of globalization, create an opportunity to increase soft power in international relations. Soft power is a phenomenon that combines state powers and military capabilities against traditional power, and can be evaluated as a change in the form and strategy of the ultimate hegemonic goals of states [7].

The classical realist point of view in international relations believes that the phenomenon of power can be maximized by countries' raw materials, military superiority and international spheres of influence. Today, factors such as the quality of technological infrastructure and specialist workforce created by strong educational systems of countries are also important. However, the realist perspective is thought to be deficient in the assessment of international politics, especially the trend of rapidly increasing interdependence after the Cold War, current settings, and the consideration of a "knowledge-based" approach to third world politics [7].

The theoretical analysis of multidimensional interdependence revealed the uniqueness of the actor applied to the state apparatus by the realist hypothesis in international relations and the need to share the militaristic superiority position with the "soft power" phenomenon. Keohane and Nye, in an article titled "Power and Interdependence in the Information Age," define soft power as the ability to achieve goals through attraction and voluntariness rather than force and violence. This is the soft power that states have long ignored in the practice of international relations. Globally widespread information technology networks have become easier to apply in countries with the creation of web 2.0 tools and social media. According to Nye, information; Soft power is as important as hard power in the 21st century, and if a state manages to assert its legitimacy in the international system by spreading its norms and values, it will be less likely to resist its policies. The neoliberal economy entered the 21st century and the relatively growing trend of nationalism pushed states to operate in less costly, more abstract and indirect and less attractive non-traditional soft power players. combines with [8].

New social media and political persuasion

New social media and political persuasion Regarding new media political persuasion, the use of new social media and news can contribute to the diffusion of controversial politics. Here, individuals can simultaneously express their objections and opinions through social networks while consuming news. As Gil et al. have argued, without new information, people are unlikely to revise their opinions,



and when it comes to politics, the news media is one of the primary sources of new information that citizens trust. Revising one's political attitudes in terms of political attitudes or exposure to new information was examined under three headings: Indecision in attitude, strength and consistency of one's attitudes and views, and tendency to change one's mind based on information encountered in the social environment. Recent findings suggest that news consumption on political topics can have a direct and relatively strong effect on political persuasion. Researchers have made varying interpretations of the direct effects. For example, Feldman et al. examined climate change coverage on three major news channels and found that individuals may follow cues from their party's elites in their study assessing the relationship between viewership and beliefs about global warming. At the same time, Nelson and others argue that news media can be influenced by agenda setting and framing. Feldman shows that using news can persuade people regardless of party affiliation. In new social media, political information can have a particularly strong influence on persuasion, because in social media formats, news is presented together with information about social characteristics and public opinion [9].

Bode points out that in networked spaces, individuals are often presented with conflicting opinions based not only on partisan cues in the news media, but also on their personal social connections that broadcast the story. Therefore, political news consumption in new social media environments offers users overlapping and often conflicting dimensions of information communication. Social/new media news consumption can be an ideal catalyst for exposure to new political information. The potential diversity of information through social connections can make people relatively unstable and therefore more open to opinion change. Therefore, Gil et al. argue that the use of political news on social media will be positively associated with political persuasion on social media. People encounter new information not only through news media, but also through interactions in social networks. While experts have long pointed to the importance of interpersonal networks for the spread of political information, Gil and others say a new wave of scholarship is focusing on the ways in which online and offline social networks are increasingly isomorphic.

There is much debated convergence in the structure and composition of online and offline social networks due to the new social media online social networking sites that largely transform offline social networks into online platforms. It is important to observe the growing importance of new social networks. media as a source of political information, current research suggests that it may promote exposure to political differences, especially among those who use these platforms for news. Survey evidence and "big data" analysis show that social media exposes people to news from both sides of the political spectrum, resulting in new social media users being exposed to a broader spectrum of news than they normally would. The results of these studies suggest, in part, that social media users are more easily accessible to more diverse networks and, as a result, are exposed to more diverse views. On the other hand, as stated by Gil et al., the increased tendency to encounter more political disagreements in social networks is also important because encountering political disagreements makes political belief more likely. As suggested by Huckfeldt et al., social influence is less when individuals are exposed only to information they agree with. A frequent description of social communication in politics is that most citizens are situated in politically homogeneous groups, surrounded by individuals who share their political views and attitudes, and thus political conflict becomes rare. Potentially, this process occurs because political differences have the capacity to make people ambivalent about their prior attitudes and preferences, and this ambivalence makes people more susceptible to the influence of new information. Given this theoretical perspective, we can see that exposure to political opposition in online and offline debates will be positively associated with openness to political persuasion on social media, according to Gil et al. According to him, disagreement in political debates will be positively associated with political persuasion on social media. More specifically, the idea that conflict makes people more uncertain and therefore more sympathetic to the variety of information they encounter in the public sphere implies that exposure to political conflict moderates the relationship between news exposure and political persuasion. Political communication researchers emphasize that the political effects of media use are often indirect. When individuals talk about news, they also engage in



cognitive processes that influence subsequent reflection on the topic they are discussing, leading to other behaviors such as countermotivated news consumption or further political discussion. Thus, simply arguing with those who hold opposing views on politics should make individuals less stubborn in their political views because it forces them to think about the information they are exposed to. According to Gil et al., the relationship between social media news use and social media political persuasion will be moderated by political debate conflict. The positive relationship between new social media news consumption and political persuasion will be stronger for individuals who disagree with their arguments. In other words, people do not persevere when they encounter only well-meaning and well-intentioned information on social networks. But persuasion is most likely to occur when both factors are involved. That is, when people engage in good-natured, civil debates about the news and information they receive on social networks, their views are defeated. According to Gil et al., these results provide a relatively optimistic view of the contribution of new-social media to democratic discourse, especially in light of the growing trend of debate in western societies [10].

CONCLUSION

In this study, the socio-political dimension of the new-social media was discussed, a literature review including theoretical and experimental studies on this topic was performed in recent years, and a summary of the research on the topic was presented and an assessment was made. It is important to contribute to democracy that a significant part of government services are provided to citizens through electronic media. We can say that users have the potential to learn political information through new social media, new-social media platforms can provide the most current information, and therefore citizens are more exposed to political news. The growth of new social media and Internet opportunities, the rapid appearance of ideas from all layers of society, also paves the way for politicians in decision-making processes. Moreover, new social media can reduce the tendency of the public to be politically ignorant and offer new opportunities for political learning, slowing the trend of political apathy among some young citizens who are not politically connected but use new social media as a dominant communication platform. Findings that political discourse, including online political discourse, play an important role in increasing the political knowledge of new social media news users are encouraging for democracy.

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DEMOKRATİK PLATFORMANIN ƏN SON MODELİ OLAN SOSIAL MEDIANIN BEYNƏLXALQ SİYASİ MÜNASİBƏTLƏRƏ TƏSİRİ

A.A. İsayeva

XX əsrin sonu və XXI əsrin əvvəllərində informasiya-kommunikasiya texnologiyalarının inkişafı sosial həyatın bir çox aspektlərində mühüm elementə çevrilmiş və əksəriyyət tərəfindən istifadə olunan yeni medianın meydana çıxmasına səbəb olmuşdur. Real vaxt rejimində, rəqəmsal texnologiyanın “interaktiv məhsulu” kimi qəbul edilən yeni media ictimai-siyasi kommunikasiya prosesində rolunu genişləndirən aktual məsələ kimi elmi və siyasi diqqəti cəlb edir. Sosial medianın yaranması müasir beynəlxalq münasibətlər sistemini transformasiya edən, dövlət institutlarının fəaliyyətinə təsir göstərən, bütövlükdə ölkəyə dair ideya və münasibətləri formalaşdıran xarici siyasət kommunikasiyasının müasir formalarının formalaşmasına səbəb olmuşdur. Diplomatik qurumlar da vətəndaşda dövlətin xarici siyasət addımlarında iştirak hissi yaratmaq üçün daxili və xarici auditoriya ilə onlayn ünsiyyət qurmaq üçün şəbəkə imkanlarından fəal şəkildə istifadə edirlər. Müxtəlif sosial şəbəkələrdə istifadəçi profilləri yaratmaqla Xarici İşlər Nazirliyi və diplomatik nümayəndəliklər öz fəaliyyətləri barədə “məlumat verir”, dövlətin xarici siyasətinə münasibət formalaşdırır, hədəf qrupların şüuruna təsir (“mənim fikrim” hissini yaradır) həlledicidir, sosial şəbəkələr də ictimaiyyətlə dövlət qurumları arasında informasiya mübadiləsinə öz töhfəsini verir.

Açar sözlər: *sosial media, siyasi münasibətlər, texnologiya, beynəlxalq əlaqələr*

ВЛИЯНИЕ СОЦИАЛЬНЫХ МЕДИА, ПОСЛЕДНЕЙ МОДЕЛЬ ДЕМОКРАТИЧЕСКОЙ ПЛАТФОРМЫ, НА МЕЖДУНАРОДНЫЕ ПОЛИТИЧЕСКИЕ ОТНОШЕНИЯ

A.A. Исеева

В конце 20-го и начале 21-го веков развитие информационных и коммуникационных технологий стало важным элементом во многих аспектах общественной жизни и привело к появлению новых медиа, используемых большинством. Новые медиа в режиме реального времени, рассматриваемые как «интерактивный продукт» цифровых технологий, привлекают научное и политическое внимание как насущная проблема, расширяющая их роль в процессе общественно-политической коммуникации. Появление социальных сетей привело к формированию современных форм внешнеполитической коммуникации, которые трансформируют систему современных международных отношений, влияют на деятельность государственных институтов, формируют представления и отношения о стране в целом. Дипломатические учреждения также активно используют сетевые возможности для онлайн-коммуникации с внутренней и зарубежной аудиторией, чтобы создать у граждан ощущение участия во внешнеполитических действиях государства. Создавая профили пользователей в различных социальных сетях, МИД и дипломатические представительства «дают информацию» о своей деятельности, формируют отношение к внешней политике государства, влияют на сознание целевых групп (создает ощущение «моего мнения» решающее значение), социальные сети также обеспечивают информацию между общественностью и государственными учреждениями. способствует обмену.

Ключевые слова: *социальные сети, политические отношения, технологии, международные отношения.*



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THE ROLES OF NON-GOVERNMENTAL ORGANIZATIONS IN THE CONTEXT OF THE CONCEPT OF SUSTAINABLE DEVELOPMENT: A SOCIO-PHILOSOPHICAL ANALYSIS

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This study examines the role of non-governmental organizations in key issues such as sustainable society and social change in the context of the concept of sustainable development, analyzing their societal contribution socio-philosophically. Taking into account the historical and theoretical framework of civil society, the research aims to understand the structure of the relationship between sustainable development goals and NGOs and how these relationships manifest themselves in practice.

The article uses different methodological approaches to understand the roles of NGOs in contributing to sustainable development goals. Previous studies on sustainable development and the role of NGOs through various literatures have been analyzed in depth. In addition, the contributions of project activities of NGOs to the goals of sustainable development have been shown through field research and observation.

NGOs support sustainable development goals by organizing awareness-raising events and promoting social justice. At the same time, they promote the active participation of local communities in development processes by increasing social participation and promoting the sustainable management of natural resources through environmental protection efforts. These organizations contribute directly to the sustainable development goals by lobbying for policy changes and implementing their projects. This multifaceted approach emphasizes that NGOs play an effective role in the field of sustainable development and pave the way for positive changes in society.

Keywords: NGO, sustainable development, UN, social change.

INTRODUCTION

The concept of sustainable development includes universal goals that emerge against the backdrop of growing environmental problems, economic inequalities, and social injustices around the world. This concept aims to achieve a balance in which people can meet their own needs, while at the same time using natural resources efficiently to meet the needs of future generations. Sustainable development aims to ensure the long-term well-being of societies and find collective solutions to global problems by bringing together environmental, economic, and social dimensions.

In the context of this universal goal, non-governmental organizations (NGOs) play an important role. NGOs carry out various projects with the ideal of sustainable development and perform tasks such as raising public awareness, education, and leadership in social change processes. Effective participation and leadership of civil society in this process are vital to successfully achieve sustainable development. Therefore, this study aims to examine the interaction of NGOs and their contribution to social change from a socio-philosophical point of view.

In this context, the main goal of the research is to understand how civil society organizations contribute to sustainable development processes and to analyze this contribution from a socio-philosophical perspective. The goal of the article is to determine how environmental sustainability, economic development, and social justice, which are the main principles of sustainable development,



come together, what is the influence of civil society on these areas, and the degree of influence of this influence. The importance of the study is to contribute to the scientific literature in the field by shedding light on future policy-making processes.

The research examines the activities, strategies and multidirectional effects of NGOs through the analysis of scientific literature and statistics, questionnaires in this field. This methodological approach aims to provide a comprehensive analysis by addressing the social and philosophical dimensions of civil society.

MAIN PART

1. Basic concepts

The beginning of the concept of sustainable development is related to the nature protection activities of the UN. In 1984, the International Commission on "Environment and Development" was established under the leadership of the Secretary General of the United Nations. Under the leadership of the United Nations, this commission was headed by Gro Harlem Brundtland, the former prime minister of Norway. The main goal of the commission was to develop a long-term strategic program in the fields of environment and development. This strategy envisaged the continuous development of various countries of the world, especially in the year 2000 and later. Since 1984, Gro Harlem Brundtland has collected the recommendations of world scientists on the environment and development, and with the contributions of experts from 23 different countries, prepared the main report entitled "Our Common Future", which was presented to the UN General Assembly in 1987 [1, p. 20].

The report "Our Common Future" is an important document that brings the concept of sustainable development to the world agenda. This report, led by Gro Harlem Brundtland, provides a framework for addressing environmental and economic challenges in an integrated manner. The report discusses key elements of sustainable development across a wide range of topics, including environmental issues, poverty, population growth, health, and education. It also emphasizes that economic growth must be compatible with environmental sustainability. The report presents various recommendations aimed at the fair and balanced distribution of resources worldwide, education and awareness of societies, leadership roles of politicians, global cooperation, and policy implementation at the national level. In short, the report "Our Common Future" offers a holistic approach that combines environmental and economic dimensions, calling for global action to achieve sustainable development goals [17].

In September 2000, the UN General Assembly held a special session to discuss the organization's goals (MDGs). Delegates attending the General Assembly agreed to achieve a significant improvement in the economic, environmental and social conditions of the world's poor by 2015. Until that day, there was no such consensus among the decisions taken by the international community. Although the performance in meeting the targets during that period was uncertain, the need for urgent action against poverty was unanimously accepted. At the same time, the problem of poverty became a priority item of the global development agenda [5, p. 267].

Sustainable development is a concept that combines ecological balance and economic growth, emphasizes the quality of the environment, and promotes the efficient use of natural resources. This concept offers a model by which the needs of today's generations can be met without compromising the ability of future generations to meet their own needs. According to this concession, achieving sustainable development in a country can be achieved by ensuring environmental, economic sustainability and social sustainability. The phenomenon of sustainable development with efficient use of intergenerational resources is ecologically sustainable economic development that takes into account the needs of future generations, maintains the balance between the economy and the ecosystem, without depleting natural resources. In the sustainable development approach, four main issues are taken into account: social and economic policy, natural resource management, environmental pro-



tection, and the needs of future generations [1, p. 7]. The engaged in research on sustainable development and climate change, revealed that achieving sustainable development requires a multidisciplinary approach, and for this purpose, a new framework called "sustainomics" is needed. Figure 1 shows the main elements of sustainable development and the relationships between these elements in Munasinghe's proposed approach. Each area at the corners of the triangle has its driving forces and goals. While the economy is primarily focused on improving human well-being by increasing the consumption of goods and services, the environmental field aims to preserve the integrity and sustainability of ecosystems. The social field, in addition to strengthening human relations, emphasizes ensuring that individuals and groups achieve their goals [15, p. 34, 35].

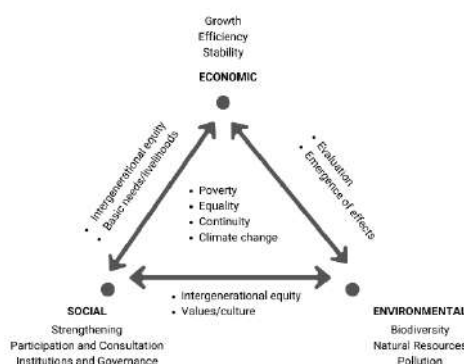


Fig. 1. Integrity and sustainability of ecosystems

The sustainable development triangle was first introduced in 1992 at the UN Conference on Environment and Development in Rio de Janeiro, Brazil [2, p. 11]. This triangle is presented to emphasize that its interior and edges are as important as its corners. For example, issues such as poverty or climate change are at the center of the triangle because it is important to address problems in all three dimensions. Although the "Sustainomics" framework avoids the hegemony of any one discipline and aims to attract attention to sustainable development impartially and clearly, this idea has been strongly resisted due to multidisciplinary contradictions [13, p. 201].

Understanding the different dimensions of sustainable development implies balanced development both economically and environmentally. However, the philosophical dimensions underlying this complex approach create a deeper meaning of sustainable development. These philosophical foundations include various systems of thought such as natural philosophy, environmental ethics, and utilitarianism. Aiming to ensure sustainable development so that not only current generations but also future generations have a suitable environment for living, these philosophical dimensions emphasize that development should be formed not only with material gains but also based on ethics and social responsibility. In this context, understanding the philosophical underpinnings of sustainable development also requires embracing the interplay of values and ethical principles. In short, the philosophy of sustainable development is based on the sociological-philosophical study of providing materially and socially quality life to the present generations without harming the right of future generations to live decently. At the same time, it should be noted that the development of human capital is an integral part of this process. Therefore, economic, social, cultural, legal, technological, psychological, gender, and other similar aspects of human development in any society are the main indicators of sustainable development [1, p. 25]. Another of the main concepts is the concept of civil society. Civil society is emerging as a crucial factor in understanding the complexities of sustainable development and shaping its role in this process. The term civil society, first used by Locke in 1690, remained on the agenda until Tocqueville solved the democratization process. This concept regained importance in the 1970s after a long period of silence in the campaigns for the democrati-



zation of Soviet-style political systems in Eastern Europe beginning in the 1850s. The new political searches that began after the fall of the Eastern Bloc regimes played an important role in reviving the debates about civil society. This situation shows that the priority of the new democratic systems established by those who left the former Soviet bloc is the reconstruction of the organizational structures that make up civil society. Although civil society was not considered together with democracy in the first discussions at the beginning of modern society, today civil society and democracy are considered inseparable from each other. Today, when talking about civil society, the importance of civil society and global problems, the question "how to make civil society more healthy and functional" is always brought to the agenda concerning democracy. In this regard, civil society is considered the most important means of getting rid of authoritarian or military regimes and transitioning to democracy [11, p. 90]. In the modern sense, civil society is voluntary, self-sustaining, independent from the state, and subject to a legal order consisting of a set of established rules. As a rule, it differs from "society" in that it involves citizens acting collectively in the public sphere to express their interests and ideals, exchange information, achieve mutual goals, fulfill the demands of the state, and hold state institutions accountable. Society, in its most general sense, is the name for organized human communities operating in an environment of institutions and rules. The way people organize themselves changes over time according to different perspectives and is divided into certain classifications in this respect. For example, primitive society, feudal society, modern society, etc. Civil society is, in a certain sense, the general name of the developed and democratic societies of our time. To this extent, civil society is a union of individuals and organizations that are constantly developing, independent from the state, capable of directing their own development, without resorting to any supreme personality and reality, and which include the dynamics necessary for development [3, p. 1300]. Although every organization operating in the field of civil society is considered non-governmental, in modern societies, organizations that do not pursue economic goals and work for collective benefit, and operate on a voluntary basis in order to educate and guide the public, are defined as non-governmental organizations. The main characteristics of NGOs are that they not only serve their own goals and values, they are independent of governments, state bodies and political parties, they act as mediators between the central authority and citizens without seeking commercial interests or profit. By operating within these criteria, those organizations fulfill the requirements of being an NGO in a certain sense. With this, they assume the role of mobilizing the whole society to solve social problems [4, p. 91]. It can be said that the civil society has an autonomous structure in terms of the strengthening of social groups and the direction of the state. However, civil society has a pluralistic feature in terms of interaction between groups and reconciliation. Civil society, which plays a critical role in ensuring political participation, also supports social organization through voluntary associations. As an independent organization, civil society defends the common interests of underrepresented vulnerable individuals, groups, and communities [4, p. 101].

Individuals and communities in society always need solidarity with other individuals to be more effective in their various interests and interests. Based on this need, people come together in non-governmental organizations. Non-governmental organizations also convey their problems, needs, wishes, and demands to society. In this context, NGOs primarily perform the function of "forming public opinion in society" regarding relevant issues.

In addition to conveying people's problems and demands to society, NGOs also oppose the decisions or practices adopted by the political authorities, practices of the market economy that are far from social benefits. Therefore, some negative policies are eliminated or mitigated by the resistance of these organizations. In this context, it can be said that NGOs play the role of a bridge between society and the state. At the same time, they can take on some functions to solve problems in times of crisis [8, p.35].



2. Civil society in the context of sustainable development

Sustainable development is an important concept that aims to find solutions to complex and inseparable problems faced by societies today. In this context, civil society stands out as one of the main driving elements of sustainable development. It takes a holistic approach that incorporates various dimensions such as sustainable development, economic growth, social justice, environmental security, and cultural richness. By actively participating in this development process, civil society supports a participatory and equitable structure that promotes social change through the collaboration of various stakeholders. Under this heading, a broad perspective will be taken to understand and appreciate the role of civil society in the context of sustainable development. Within the framework of challenges and opportunities presented by sustainable development, the unique contributions and potential of civil society in this field will be discussed, thus the function of civil society within this important concept will be examined more closely. Non-governmental organizations (NGOs) play an important role in the context of sustainability by solving environmental and social problems from different perspectives. In this context, NGOs function effectively by carrying out several activities such as public advocacy, social service provision, research, innovation, and partnership. NGOs can be effective in raising awareness of environmental and social issues and supporting sustainable policies and practices. To this end, they use a variety of communication channels, including public awareness campaigns, media relations, and lobbying with governments and businesses. NGOs offer a variety of services to help people and communities lead more sustainable lives. These services include initiatives such as renewable energy installations, and environmental education programs for sustainable agriculture. Today, many NGOs work with landowners to protect forests and other natural areas. Some NGOs provide financial support for research on sustainable forestry practices [16].

One branch of NGOs' contributions to sustainable development goals is the area of environmental protection. Currently, excessive pollution of the environment requires the activities of international organizations, NGOs, and scientists operating in the environmental field. These studies aim to take steps to prevent environmental pollution that has consequences such as the melting of glaciers and depletion of the ozone layer. For this reason, organizations that are sensitive to the environment and take action have gained more importance. Environmental sustainability has become an area actively pursued by NGOs. NGOs have an important role to play in influencing or guiding decision-makers, both in terms of education and environmental policy development. It is also important for NGOs to join forces to communicate environmental sustainability to decision-makers. To protect resources, priority should be given to social responsibility projects and activities aimed at efficient use of renewable energy sources, reducing the environmental impact of production and service activities, and increasing environmental awareness of all employees [10, p. 306]. The most important way to achieve sustainable development is to create a culture where sustainable lifestyles are accepted and rewarded. In addition to the sustainability practices of organizations, individuals in isolation can also influence the dynamics in the formation of a culture of sustainability. Thus, in societies where there is a cultural change in this field, the indirect effect of private and public organizations on sustainability will be higher [14, p. 540].

The most important tool that can guide people on the path of sustainable development is environmental NGOs. In this field, their main target group is society. For this reason, NGOs are structures that can contribute to the cultural change necessary for a culture of sustainability that will ensure development. The social dimension of sustainability expressed in the Brundtland report in 1987 refers to the networks and social institutions that can influence the building of a culture of sustainability. This again emphasizes the importance of NGOs in the implementation of the concept of sustainability. It is known that today, in the context of environmental protection, NGOs have started to work actively and carry out actions that have a voice all over the world. In this context, the most well-known environmental non-governmental organization is "Greenpeace" with its headquarters in



the Netherlands [9, p. 823-824]. Although this organization is not fully active in Azerbaijan, some NGOs in our country cooperate with this high-level organization.

In societies where the democratization process is going fast, NGOs, which are its indicators, are also starting to have very fast development dynamics. The number of civil society institutions such as foundations, associations, associations and civic initiatives that aim to undertake voluntary social responsibilities is increasing day by day. Their purpose is to help ensure a pluralistic social structure by creating public opinion and enabling individuals to express their wishes. Today, NGOs play an important role in public participation by creating a dialogue between democratic institutions and the population.

Interaction between government, private sector, educational institutions, and NGOs in the field of sustainable development should include a comprehensive understanding of dialogue and cooperation. While the state defines the sustainability policy, the private sector has an important role in the implementation of these policies. By creating knowledge and awareness of sustainability issues, educational institutions can train future generations as conscious leaders. NGOs represent different layers of society, express their concerns about sustainability, and contribute to policy formation processes [12, p. 113]. The interaction between these four key stakeholders has the potential to bring together different perspectives and combine areas of expertise to achieve sustainability goals. Effective dialogue builds trust between all stakeholders, contributing to more effective implementation of sustainability policies. In addition, these dialogues can generate broader support for sustainability goals by encouraging broad public participation. The roles of civil society institutions in the process of sustainable development have undergone significant changes over time. From this point of view, the stages can be grouped as follows:

Stage 1: After World War II, NGOs continued their activities to help people in distress based on social assistance.

Phase 2: NGOs began to focus on helping people start their own businesses and improving their professionalism through micro-projects, along with social assistance.

3rd stage: In our modern era, which is considered the third stage, NGOs, in addition to the tasks assigned to them in the first two stages, approach the issues more deeply and try to make structural changes. For example, they began to contribute to the planning of activities in the direction of poverty eradication, economic, social and cultural development [6, p. 154].

Civil society is organized as a third sector and becomes an important area of activity in terms of employment. It has become a source of work and livelihood for many people with various professions and skills. For this reason, non-governmental activities and institutions become functional as employment policies and gain importance for social life. For example, according to 2004 data, approximately 7 million people in the United States work full-time in non-governmental organizations. This rate represents 6.8% of total US employment and 15.4% of service sector workers. In the countries of the European Union, for example, in Germany (1 million), France (0.8 million), and Great Britain, the share of non-governmental organizations in total employment is 4%; If we focus on the service sector, this ratio rises to 10%. In Japan, 1.4 million people work in non-governmental organizations. In the United States and Europe, non-governmental organizations have a total employment of 11.8 million, while the six largest companies in these countries (Daimler-Benz, General Motors, Hitachi, Fiat, Alcatel Alsthom, and Unilever) have a total employment of about 2 million people (Source: <http://www.atonet.org.tr/yeni/index.php?p=236>, Access date: April 15, 2014).

NGOs have many advantages in promoting sustainable development. These advantages can be listed as follows:

- They are more innovative, flexible, and socially experienced than governments;
- They are more effective than government agencies in mobilizing poor and marginalized communities;
- They can implement their projects more efficiently with lower costs;



- They use public participation and small group and community support in project implementation;
- Potentially, NGOs are more organizational and representative in society. They have functions that can provide national and social development by using their advantages in the local/regional development of the region where they operate [7, p. 175].

As mentioned earlier, civil society institutions aim to support the economic and social development of society with their activities. When we look at the development programs implemented in the developing countries of the world, it is obvious that these organizations are an effective force in development. The success of NGOs plays an important role in improving the living conditions of people, especially those living in rural areas, and ensuring their participation in development activities. These organizations fill an important gap with their success in reaching poor groups in regions where the state has failed to reach or reached too late. NGOs, which have become global actors with globalization, are expected to play an important role in the development and implementation of development programs in the future [6, p. 165]. As in the whole world, the cooperation and participation of the third sector, as well as the public and private sectors, is especially emphasized in development programs in our country. It is important to support and protect these organizations financially and morally.

Analysis of the role of NGOs in the context of the concept of sustainable development reveals that these actors can make effective contributions to society in different dimensions. These organizations primarily play an important role in promoting sustainable development. Through projects, campaigns and awareness-raising activities, it can raise public awareness of environmental and social issues, promote the adoption of sustainability principles and support social change. In addition, NGOs can make concrete contributions by focusing on sustainable development goals such as efficient resource management, ensuring justice and protecting disadvantaged groups. In this regard, civil society institutions play an important role in the successful implementation of sustainable development.

CONCLUSION

Sustainable development is a concept with a perspective that includes universal goals against global environmental problems, economic inequalities and social injustices. Non-governmental organizations (NGOs), on the other hand, have the potential to lead social changes with various projects in accordance with the ideal of the concept of sustainable development.

Non-governmental organizations are organizations that represent different layers of society and operate on various issues. These organizations, which stand out with their social responsibility and sensitive approach to social problems, have an important role in achieving the goal of sustainable development. NGOs primarily ensure understanding and support for the SDGs by raising public awareness of the SDGs and organizing training activities.

They also support the basic principles of sustainable development by advocating social justice and human rights issues. In this sense, NGOs increase social participation, promote the effective participation of local communities in development processes and support the strengthening of social opportunities.

NGOs also work on solutions to environmental problems and promote sustainable and sustainable management of natural resources. Environmental sustainability is considered an important element of sustainable development. In addition, NGOs interact at the political level to support sustainable development goals by lobbying for policy and legislative changes. They directly contribute to the sustainable development goals by implementing their projects and programs, and participate in processes such as monitoring, evaluation and reporting of the goals. This multifaceted approach allows NGOs to play an effective role in achieving sustainable development goals and to contribute to positive changes in various segments of society.



As a result, non-governmental organizations act as key stakeholders in achieving sustainable development goals. They are active on environmental, economic and social dimensions, raising public awareness, ensuring economic justice and increasing social well-being, while promoting democratic participation from a socio-philosophical perspective. Therefore, active involvement of NGOs in sustainable development efforts will help create a comprehensive and balanced understanding of sustainability.

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DAVAMLI İNKİŞAF KONSEPSİYASINDA QEYRİ-HÖKMƏT TƏŞKİLATLARININ ROLLARI: SOSİO-FƏLSƏFİ TƏHLİL

Ç.K. İsmayılbəyli

Bu araşdırmada qeyri-hökumət təşkilatlarının dayanıqlı cəmiyyət və sosial dəyişiklik kimi əsas məsələlərdə rolu dayanıqlı inkişaf konsepsiyası kontekstində araşdırılır, onların cəmiyyətə verdiyi töhfələr sosial-fəlsəfi baxımdan təhlil edilir. Vətəndaş cəmiyyətinin tarixi və nəzəri çərçivəsini nəzərə alaraq, tədqiqat davamlı inkişaf məqsədləri ilə QHT-lər arasındakı əlaqənin strukturunu və bu əlaqələrin praktikada özünü necə göstərdiyini anlamaq məqsədi daşıyır.

Məqalədə davamlı inkişaf məqsədlərinə töhfə verməkdə QHT-lərin rollarını anlamaq üçün müxtəlif metodoloji yanaşmalardan istifadə edilir. Müxtəlif ədəbiyyatlar vasitəsilə davamlı inkişaf və QHT-lərin rolu ilə bağlı əvvəlki araşdırmalar dərinlən təhlil edilmişdir. Bundan əlavə, QHT-lərin layihə fəaliyyətlərinin davamlı inkişaf məqsədlərinə töhfələri sahə tədqiqatları və müşahidələr vasitəsilə göstərilmişdir.

QHT-lər maarifləndirmə tədbirləri təşkil etməklə və sosial ədaləti təşviq etməklə davamlı inkişaf məqsədlərinə dəstək verirlər. Eyni zamanda, onlar ətraf mühitin mühafizəsi səyləri vasitəsilə sosial iştirakçılığı artırmaq və təbii ehtiyatların davamlı idarə olunmasını təşviq etməklə yerli icmaların inkişaf proseslərində fəal iştirakını təşviq edirlər. Bu təşkilatlar siyasət dəyişiklikləri üçün lobbichilik etməklə və layihələrini həyata keçirməklə davamlı inkişaf məqsədlərinə birbaşa töhfə verirlər. Bu çoxşaxəli yanaşma QHT-lərin davamlı inkişaf sahəsində səmərəli rol oynadığını və cəmiyyətdə müsbət dəyişikliklərə yol açdığını vurğulayır.

Açar sözlər: QHT, davamlı inkişaf, BMT, sosial dəyişiklik.

РОЛЬ НЕПРАВИТЕЛЬСТВЕННЫХ ОРГАНИЗАЦИЙ В КОНТЕКСТЕ КОНЦЕПЦИИ УСТОЙЧИВОГО РАЗВИТИЯ: СОЦИАЛЬНО-ФИЛОСОФСКИЙ АНАЛИЗ

Ч.К. Исмаилбеيلي

В данном исследовании рассматривается роль неправительственных организаций в таких ключевых вопросах, как устойчивое общество и социальные изменения в контексте концепции устойчивого развития, анализируется их общественный вклад с социально-философской точки зрения. Принимая во внимание исторические и теоретические основы гражданского общества, исследование направлено на то, чтобы понять структуру отношений между целями устойчивого развития и НПО и то, как эти отношения проявляются на практике.

В статье используются различные методологические подходы для понимания роли НПО в содействии достижению целей устойчивого развития. В различных литературных источниках был проведен глубокий анализ предыдущих исследований по устойчивому развитию и роли НПО. Кроме того, с помощью полевых исследований и наблюдений был показан вклад проектной деятельности НПО в достижение целей устойчивого развития.

НПО поддерживают цели устойчивого развития, организуя информационно-просветительские мероприятия и содействуя социальной справедливости. В то же время они способствуют активному участию местных сообществ в процессах развития, расширяя социальное участие и содействуя устойчивому управлению природными ресурсами посредством усилий по охране окружающей среды. Эти организации вносят непосредственный вклад в достижение целей устойчивого развития, лоббируя изменения в политике и реализуя свои проекты. Такой многогранный подход подчеркивает, что НПО играют эффективную роль в области устойчивого развития и прокладывают путь к позитивным изменениям в обществе.

Ключевые слова: НПО, устойчивое развитие, ООН, социальные изменения.



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REPRESENTATION OF "WEATHER" AND "CLIMATE" CONCEPT IN PROVERBS (BASED ON AZERBAIJANI, ENGLISH AND RUSSIAN LANGUAGE MATERIALS)

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As a part of folklore and as an object of phraseology, the study of proverbs is considered relevant for every era, as they form an integral part of speech. These wise sayings, which have been passed down from language to language since ancient times, are the most effective paremic units that enrich our speech. Proverbs are a living, moving organism that absorbs all the realities, all the changes that occur in the life of society like a sponge, and reflects it in its many variants and transformations. Proverbs are composed of knowledge filtered by reason, will and intuition from experiences in the formation of the general consciousness of society. Since proverbs are created as a result of human life, proverbs belonging to the semantics of climate and weather are not a minority. Investigating this semantic field is important from linguistic, paremic, geographical and meteorological aspects. Since the climate type is not the same in the geo-graphical areas, the proverbs that are born from the life and experiences of different people can not be the same. Different and similar proverbs belonging to the same semantic field are rich from a linguistic point of view. They also have lingucultural characteristics due to differences in climate type. In this article, some examples of proverbs related to the semantic field of climate and weather in Azerbaijani, English and Russian languages are linguistically investigated.

Keywords: weather variability, climat zone, climatic elements, semantic field, folk meteorology

INTRODUCTION

Proverbs are considered as one of the main “codes” of culture, as “the language of an everyday culture formed over centuries”, passed down from generation to generation and reflecting all the categories and attitudes of the life philosophy of the people - native speakers [2, p. 21]. Proverbs “autobiography of the people”, “mirror of culture”. By studying the proverbs of a particular people, you can learn a lot about the people themselves and their culture. Each language of the world has a special picture, and the linguistic personality is obliged to organize the content of the utterance in accordance with this picture. The concept of a picture of the world (including a linguistic one) is based on the study of a person’s ideas about the world. Representatives of cognitive linguistics rightly argue that our conceptual system, displayed in the form of a linguistic picture of the world, depends on physical and cultural experience and is directly related to it [3, p. 65]. Although there is no unequivocal definition in modern linguistics, proverbs are defined as anonymous sayings of a didactic character that are fixed in the language and repeated in speech [2].

Proverbs are literary products that reflect the way people understand the world and the language they speak. The proverbs of every nation are a mirror of its existence, itself. The thought, lifestyle, beliefs and traditions of a people appear in proverbs. Proverbs are the most valuable examples that show the sharpness of people's intelligence, the breadth of their dreams, and the delicacy of their feelings. Proverbs, which are a part of culture, are characteristic of human life and bear traces of human life. Proverbs are considered as a reflection of a culture, and depending on the culture of any society, proverbs indicate what individuals are doing, what they value in their relationships, and what their value judgments are. Proverbs are extremely important in explaining the past or present



characteristics of the environment in which people live. Some of our proverbs, which have existed for centuries, reflect the relationship of people with nature. In this sense, the primary source of inspiration for proverbs, which are among the invaluable sources of information in our cultural geography, are geographical elements. Climate makes up the most of the physical geographical elements that can be counted among geographical elements. For centuries, people have been observing the weather and trying to make connections between phenomena. These observations later became signs such as proverbs, tales and other folklore genres. [6]. Learning proverbs about weather allows you to explain the cultural roots of any weather event. The concept of "weather and climate" is one of the basic concepts for any culture and language. The study of proverbs with the semantic field "weather and climate" allows to reveal the internal relations of compounds and to determine their sources, figuratively, to determine the composition of semantic indicators and to characterize the phraseological activity.

MAIN PART

Climate and proverbs

When societies were building their culture, they were influenced by the natural environmental conditions they lived in and tried to reveal their perception of the world. It is possible to see the effects of the natural environment in which all societies live in their traditions and customs, eating habits, clothing styles and behavioral characteristics. The influence of the natural environment on humans has given rise to ecological determinism, which has been widely discussed by geographers since the mid-1800s. Ecological determinism is a point of view that advocates that humans control nature and that natural environmental factors affect humans and all elements related to humans. In the Middle Ages, the idea of environmental influence and adaptation to the environment was used to reveal differences in terms of race and culture. Indeed, a person living in a certain geographical environment often works and struggles under the control of its natural processes. From clothing to food, shelter to behavior, environmental factors determine human life. In this direction, it can be said that proverbs have a guiding quality in the study of various characteristics of a society.

Climate is one of the natural elements that influence human behavior. Climate is the average conditions of weather phenomena that do not change over a large area and over many years. The climate, which has a many sided affects on human life, directly or indirectly influence human life in many areas from settlement, clothing, economic and social activities, lifestyles, cultural life. Proverbs about climate have the ability to guide people and contain important messages and advice. For this reason, the analysis of proverbs is one of the most important indicators that reflect human relations with nature and the environment and is an important treasure of information for geography. Proverbs are cultural elements used to capture this concept. Because every proverb is used both figuratively and literally. For example, every dark night has a bright morning. This proverb has both a literal and a figurative meaning. Indeed, after night comes morning, after darkness comes clarity. In another sense, every difficulty has a solution, every downfall has an upswing.

The difference between weather and climate

Climate and weather are two concepts that many people confuse. Even the former president of the United States, Donald Trump, could not avoid this mistake in one of his speeches in 2018. [8]. Climate is the long-term weather pattern characteristic of a particular area, and is the sum of air temperature, cloudiness, precipitation, and wind characteristic of that area. It turns out that the main difference between weather and climate is time. The weather can change several times a day, but the climate can stay the same for decades or even hundreds of years. Imagine a man walking his dog on a leash. A person walks straight without turning anywhere. And the dog moves chaotically: running from one direction to another. They have the same path with different trajectories. In this example, the dog is the variable weather, and the climate is the owner. Climate is more precisely the "arithmetic mean" of weather changes.



Weather is the state of the atmosphere at a given physical moment or period, characterized by a set of meteorological quantities and phenomena. Weather is characterized either by simplified, generalized terms (cloudy, rainy, hot, dry, hot, cold, windy, wet) or by all values of meteorological quantities (brightness, cloudiness, precipitation, air temperature). The terminological feature of the ancient Greek word "climate" excludes any stylistic features, except for its compatibility with the word "climax". Originally, the word climate meant a slope. But several centuries before our era, used by the astronomer Hipparchus to define the five main climate regions of the Earth, depending on the inclination of the sun's rays to the earth's surface. However, despite the considerable terminological age of this word, it has not gained certainty and unambiguity: there are at least a dozen different definitions of climate in meteorology. But the word weather was not borrowed from anywhere, and, moreover, is heavily overloaded with all sorts of ambiguities, uncertainties and stylistic colors. Weather is a "continuously changing state of the atmosphere", characterized by "a set of meanings of meteorological elements." Such elements usually contain only properties that are important for nature, human life and activity. Therefore, "the concept of weather can change with the impact of economic activity." It turns out that the problems related to the ambiguity of this word are no less serious than the word climate.

The influence of climatic conditions on proverbs

Climate is a stable weather pattern that constantly repeats in a certain area. Climate is unique because it can change depending on various factors. Thus, climate processes differ significantly in lowland and mountainous areas, plains and mountains, land and sea. The specificity of these differences depends on the factors that create the climate. Consider the main ones: Geographical latitude, elevation above sea level, distribution of water space and land, ocean currents, human activity.

There are 7 climate zones designated for their different characteristics. Climate zones are also divided into climate types according to their internal changes. According to these types, the areas where the peoples are located are different in terms of weather and nature. Such diversity has shaped human life and made language unique. Individual proverbs were created by those who talked about the influence of climate types on their lives. Although these proverbs belong to tribal peoples, they can sometimes have the same semantic meaning because they are located in the same climate zone. In order to show examples of proverbs related to climatic semantics of the languages studied in this study, it is necessary to first mention the geographical area where they are located. Azerbaijan is located on the border of Eastern Europe and Western Asia, west of the Caspian Sea, in the South Caucasus. Azerbaijan is characterized by temperate and subtropical climate zones. There are 8 out of 11 climate types belonging to these zones. This indicates the richness of his nature. England is located in the southern part of the island of Great Britain on the European continent. It has temperate and oceanic climate zones typical of its location. Russia is the largest country located in Eastern Europe and North Asia. Due to its vast territory, Russia has a rich climate zone. This diversity can be seen in the nature and weather conditions of Russia, where there are arctic, subarctic, temperate and subtropical climate zones. According to the types of climate the density of the sun's rays falling on the ground, the flow of air masses, the geographical position and the diversity of relief show changes. Weather conditions are one of the main factors that shape people's daily life. Rainy, windy and sunny weather shapes people's lives and future plans. Such proverbs are predictive in nature. In Table 1, some examples belonging to the category of predicative proverbs are grouped by language. These proverbs are anonymous predictions made by people based on their natural experiences. [1], [4], [5], [7].



Table 1.

Classification of some proverbs according to languages

Azerbaijani	English	Russian
İri yağış tez kəsər	When small clouds join and thicken, expect rain	Высокая радуга к хорошей погоде, пологая и низкая к ненастью.
Qara bulud yağış yağdırar	With dew before midnight, the next day sure will be bright	После грозы дождь
Yaz yağışı tez keçər	If you see clouds going crosswind, there is a storm in the air	Кольцо вокруг солнца к ненастью, Кольцо вокруг луны к ветру
Günəş istiləşəndə yağış gətirər	A curdly sky will not leave the earth long dry.	Солнце красно заходит погода будет ветреная
Yel ilə gələn sel ilə gedər	Red sky at night is a shepherds delight, red sky in the morning is a shepherds warning	Коли берёза перед ольхой лист распустит, то лето будет сухое; если ольха наперед мокрое
Göy guruldamayınca yağmur yağmaz	Red sky at night, sailor's delight; red sky in morning, sailor's warning	Кошка мирно спит будет тёплая погода

When studying proverbial mentality, E.V. Ivanova identifies the following categories of proverbs. 1. Proverbs are markers of a general proverbial mentality that are characterized by coincidence meaning and internal form. 2. Proverbs are markers of a single proverbial mentality of the first order, having a unique meaning and unique internal form. 3. Proverbs are markers of a single proverbial mentality of the second order, which have in common meaning and unique internal form [2, p. 71]. During the study, it turned out that among the proverbs we examined, in which certain natural phenomena are reflected, markers of a general mentality (1) and markers of a single mentality predominate second order mentality (2).

1. Yağışdan sonra gün çıxar. After rain comes fine weather. После бури — ведро.

2. Göy guruldamayınca yağmur yağmaz. While the grass grows the horses starve. Покуда солнце взойдет, роса очи выест.

Characteristics of the weather calendar in proverbs

The concept of weather could not bypass the language as it affects every aspect of life. Mainly speaking about the weather is an important issue for the English people. In the communication process, they definitely voice predictive ideas about the weather or weather concept idioms. That's why there are so many idioms about the weather in English. For example Break the ice, Get wind of something, Under the weather, To chase rainbows and etc. The languages used in the study suggest weather conceptual ideas to describe people's cities based on the areas they are located. Windy Baku (Azerbaijan), Rainy London (England), Frosty Moscow (Russia). These data already form an idea about cities from a metrological point of view. Since ancient times, people have created and kept their own calendars. therefore, the peasant looked at the weather in the yard, watched weather events and talked about the coming season with proverbs. After all, it depended on how the harvest would be in the year, and therefore when and how to prepare for work in the garden and field. This weather diary was called the folk calendar, which passed down the knowledge of the people about nature from generation to generation. Many of them do not lose their relevance even now; they predict the weather and the upcoming season change. Folk meteorology is not only a source of



primary knowledge, it is an element of our cultural heritage, indeed a repository of national folklore - one of the links connecting the past with the present. The dependence of natural life, animal and plant life on the state of the atmosphere is vividly and multifacetedly reflected in the appropriate folk sayings. Numerous proverbs and sayings contain advice for farmers, short and long-term weather forecasts and everyday experience. Just as we divide the year into seasons, idioms and proverbs can also be systematized according to seasonal characteristics. The modern calendar consists of 12 months. There are proverbs that describe not only the signs of these months, but also their more precise names.

A warm *January*, a cold *May*.
Февраль силён метелью, а март – капелью.
Martda mərək, *yarı* görək.
April showers brings *May* flowers.
Как в *мае* дождь, так будет и рожь.
A swarm bees in *June* is worth a silver spoon.
A swarm of bees in *July* is not worth to fly.
Кто в *августе* спит, тот голодный будет ходить.
Сентябрь кафтан с плеча срывает, тулуп надевает.
В *октябре* ни на колесах, ни на санях.
Thunder in *November* indicates a fertile year to come.
Декабрь снежный и холодный — будет и год плодородный.

Spring months are considered more important for people who earn their living from agriculture. Rainfall in summer means crop failure and destruction. According to these meteorological features, the folk calendar was formed, and these words were passed down from generation to generation. Through proverbs related to this semantic field, the importance of geography in everyday life is once again noticeable. The dependence of nature, animal and plant life on the atmospheric conditions is prominently and multifacetedly reflected in folk proverbs. Folk meteorology is not only a source of primary knowledge, it is an element of our cultural heritage, indeed a treasure of national folklore - one of the ties that binds the past to the present. Numerous proverbs and sayings contain advice for farmers, short and long-term weather forecasts and everyday experience. Just as we divide the year into seasons, sayings and proverbs can be systematized according to seasonal characteristics. Seasons can also be included, as can climate elements. When looking at proverbs about the seasons, most of them are proverbs about winter and spring. In the proverbs of the Azerbaijani, Russian and English languages, it can be observed that the winter is harsh, and the spring blooms and renews.

For a long time, man was not only interested in food and shelter, he tried to understand the surrounding world, compared various phenomena, created new things in nature and in his imagination. The fruits of centuries-old observations and thoughts of the people have been embodied in tales, legends, proverbs, sayings. Many centuries ago, there were no meteorological stations that could determine the weather forecast. But since most of the people were engaged in agriculture, observing nature was extremely important. As a result, proverbs appeared that reflected people's observations of weather changes in different seasons of the year. There are enough proverbs in Azerbaijani, English and Russian languages. They not only make the speech colorful and figurative, but also have practical importance. Such idioms indicate the characteristics of the seasons. Some of them are related to labor, field work and daily human concerns. We often come across proverbs related to the folk calendar. Table 2 shows the grouping of some proverbs related to the folk calendar in all three languages according to the seasons. [1], [3], [4], [7]



Table 2.

Classification of some proverbs according to seasons

winter	spring	summer	fall
Qışda ocaq başında, yayda dağlar başında	Yazda işləməyənin qışı sərt gələr	Yaz bitirir, yay yetirir, payız gətirir, qış itirir	Yazın hərəkəti, payızın bərəkəti
Yay işini qışda gör, qış işini yayda	Yazda arpa yeyən at, qışda ətini tökməz	Yay gününün yağışı, qış gününün ya- vanlığıdı	Payız cücəsindən xoruz olmaz
Зима весну пугает, да всё равно тает	Если весной не вспотеть, так и зимой не согре- ешься	Что летом соберёшь, то зимой на столе найдёшь	Осень идёт и дождь за собой ведёт
Готовь зимой телегу, а летом сани	Весною слышно, как трава растёт	Лето бурное зима с метелями	Вешний дождь растит, осенний гноит
If we had no winter the spring would not be so pleasant	Never yet was a spring time, when the buds forgot to bloom	One swallow does not make a summer	Autumn showers bring spring flowers
One kind word can warm three winter months	No matter how long the winter, spring is sure to follow	Twice a year, summer does not happen	A leaf fell from the tree - wait for fall

Some of the examples in Table 2 are paradoxical proverbs. The semantic and stylistic function of proverbs is enriched by using opposite slogans in one finished idea. The use of seasons with opposite meanings, such as summer-winter, spring-autumn, in same proverbs makes proverbs more memorable and their semantic meaning is further emphasized. Proverbs in all three languages are semantically similar and some-times identical due to the similarity of climate types of the peoples to which they belong. The comparison of hyponymic rows of thematic indicators in the examples, cold-hot, point of view convincingly shows that temperature fluctuations and contrasts are embodied with special care in Azerbaijani, English and Russian phraseological materials and are characterized by great variety. It is interesting that the anthro-pocentric nature of the meteorological landscape of the world is highlighted in a particularly prominent way in modern times through proverbs.

CONCLUSION

From the conducted research it is concluded that weather and climate issues are those concepts that have interested humanity throughout history and guide its life. When this important essence is considered as one of the semantic field of proverbs that form the identity of a people we can conclude that proverbs with the concept of weather and climate are predictions or the information of calendar that have become objective ideas created by the subject. From the examples of proverbs in three languages, it can be concluded that the quality of daily life of the people depends on the weather changes specific to the climate zone in which it is located. Linguistically researched, this semantic field of proverbs will always remain actual as it is rich in relevant information.



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**“HAVA” VƏ “İQLİM” KONSEPSİYASININ ATALAR SÖZLƏRİNDƏ TƏMSİL
EDİLMƏSİ (AZƏRBAYCAN, İNGİLİS VƏ RUS DİLLƏRİNDƏ
MATERİALLAR ƏSASINDA)**

Ə.Ş. Əfşari

Folklorun tərkib hissəsi və frazeologiyanın obyektı kimi atalar sözləri nitqin tərkib hissəsini təşkil etdiyi üçün hər dövr üçün aktual hesab olunur. Qədim zamanlardan dildən-dilə ötürülən bu müdrik kəlamlar nitqimizi zənginləşdirən ən təsirli paremik vahidlərdir. Atalar sözləri bir süngər kimi bütün reallığı, cəmiyyətin həyatında baş verən bütün dəyişiklikləri özündə cəmləşdirən, bir çox variasiya və çevrilmələrində əks etdirən canlı, hərəkətli orqanizmdir. Atalar sözləri cəmiyyətin ümumi şüurunun formalaşması təcrübəsindən ağıl, iradə və intuisiya ilə süzölmüş biliklərdən ibarətdir. Atalar sözləri insan fəaliyyəti nəticəsində yarandığından iqlim və hava semantika ilə bağlı atalar sözləri azlıq təşkil etmir. Bu semantik sahənin öyrənilməsi lingvistik, paremik, coğrafi və metroloji aspektlərdən vacibdir. Coğrafi ərazilərdə iqlim tipi eyni olmadığı üçün müxtəlif xalqların həyatından, təcrübəsindən doğan atalar sözləri eyni ola bilməz. Eyni semantik sahəyə aid olan fərqli və oxşar atalar sözləri dilçilik baxımından zəngindir. İqlim tipindəki fərqliliklərə görə də lingvokulturoloji xüsusiyyətlərə malikdirlər. Bu məqalədə Azərbaycan, ingilis və rus dillərində iqlim və hava semantika-kasına məxsus bəzi atalar sözləri nümunələri lingvistik cəhətdən araşdırılmışdır.

Açar sözlər: *hava dəyişkənliyi, iqlim qurşağı, iqlim elementləri, semantik sahə, xalq meteorologiyası*

**РЕПРЕЗЕНТАЦИЯ КОНЦЕПТОВ «ПОГОДА» И «КЛИМАТ» В ПОСЛОВИЦАХ
(ПО МАТЕРИАЛАМ АЗЕРБАЙДЖАНСКОГО, АНГЛИЙСКОГО
И РУССКОГО ЯЗЫКОВ)**

А.Ш. Афшари

Как часть фольклора и как объект фразеологии изучение пословиц считается актуальным для каждой эпохи, так как они составляют неотъемлемую часть речи. Эти мудрые изречения, издревле передававшиеся из языка в язык, являются наиболее действенными паремическими единицами, обогащающими нашу речь. Пословицы — это живой, подвижный организм, впитывающий в себя, как губка, всю действительность, все изменения, происходящие в жизни общества, и отражающий ее во многих ее вариантах и превращениях. Пословицы состоят из знаний, отфильтрованных разумом, волей и интуицией из опыта формирования общего сознания общества. Поскольку пословицы созданы в результате жизнедеятельности человека, пословицы, относящиеся к семантике климата и погоды, не составляют меньшинства.



Исследование этого семантического поля важно с лингвистического, паремического, географического и метрологического аспектов. Поскольку тип климата в географических районах неодинаков, то и пословицы, рожденные из жизни и опыта разных народов, не могут быть одинаковыми. Разные и схожие пословицы, относящиеся к одному смысловому полю, богаты с лингвистической точки зрения. Они также имеют лингвокультурные особенности из-за различий в типе климата. В данной статье лингвистически исследуются некоторые примеры пословиц, связанных со семантическим полем климата и погоды в азербайджанском, английском и русском языках.

Ключевые слова: *изменчивость погоды, климатическая зона, элементы климата, семантические поле, народная метеорологи*



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I BAKU TURCOLOGICAL CONGRESS OF 1926 AS AN ATTEMPT TO UNIFY TURKIC NATIONS

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I Baku Turcological Congress, which took place in 1926, had a great political and cultural significance for the Turkic communities of the former Russian Empire, who went under the Soviet rule in 1922. Being the first ever scientific congress on Turcology it had a curious purpose of creating of a unified spelling of the new Turkic alphabet based on a Latin script for all Turkic societies of the Central Asia and Caucasus, the unification of terminology and the printing of new textbooks with the introduction to the new alphabet.

Present article deals with the development of the idea of Turkism within Turkic societies of the former Russian Empire, the first political and cultural congresses held by them and the I Baku Turcological Congress as a climax of the unification intentions of these peoples.

Keywords: Turkic, unification, Baku, Turcology, Turkism.

INTRODUCTION

The idea of “Turkism” as a political concept emerged in the second half of the 19th century initially as a movement of enlightenment and national awakening of the Turks in the cultural field among the enlightened people in the Russian Empire, and only later it turned into a political issue.

In the 18th and 19th centuries, Central Asia, home to the majority of Turkic peoples, became one of the arenas of geopolitical competition between the British and Russian Empires. In the world history, this competition gained the name of “The Great Game”. This struggle, mainly for the territories of Afghanistan, Iran, Central Asia and Tibet and the trade routes located on them, was one of the important events that determined world politics in the second half of the 19th century. The two colonial empires used numerous military interventions and diplomatic negotiations to gain land in Central and South Asia. In this regard, in 1878, even the British satirical newspaper called “Punch” published a caricature (Fig. 1.) depicting an angry bear on one side, an angry lion on the other, and the emir of Afghanistan standing between them with his shoulders hunched in fear. Under the title “Save me from my friends!” in its short description this caricature says: “At this moment it has been decided to invade the ameer’s territory. We are acting in persuasion of a policy, which in its extension has been uniformly *friendly* to Afghanistan” [15, p. 247].

During this struggle, the Russian Empire sent border battalions to Turkestan to protect its southern borders and create political influence in the Middle East and Central Asia. Thus, this “Game”, which began in 1722 with the occupation of the western lands around the Caspian Sea, ended in 1890 in Central Asia, i.e., the territories under the name of Turkestan in the official documents of that time went completely under the control of the Russian Empire [12], and India became a colony of Great Britain [14]. Thus, by the early 20th century a number of independent states, tribes and monarchies from the coast of the Caspian Sea to the Eastern Himalayas became protectorates and territories of the two empires. The first step taken by the Russian Empire on the occupied territories was a policy went down in history under the name of “Russification”.



Fig. 1. Punch magazine, November 30, 1878, “Save me from my friends”.

The policy of Russification is the term used to describe the measures aimed to destroy the languages, cultural and religious traditions of the indigenous peoples on those territories and instead spread the Russian language, Orthodox Christianity and Russian culture: “According to some Russian bureaucrats, this policy aimed to create a better civilized society” [3, p. 538]. In fact, this policy was aimed at rising a new generation of pro-tsarist society, which will serve and be loyal to the tsarist government. As a counteraction to this cunning and aggressive policy the Turkic people tried to figure out the no less effective response measures to preserve their national identity. Thus, the idea of “Turkism” started to spread among Turkic societies.

MAIN PART

I Baku Turcological Congress as a mean of unification

As it is known, after the Great French Revolution of 1789, the concept of “nation”, whose main principles were formed, soon began to spread throughout the world. In fact, this concept, which caused many philosophical discussions in the European philosophical thought, already found its scientific definition in a number of dictionaries at the end of the 18th century. For example, in 1776, the German philologist, one of the most prominent representatives of the German Enlightenment J. Adelung in his dictionary identifies “nation” as “communities that have the same origin, speak the same language, have a special way of thinking (mentality) and behavior, and differ from other peoples due to their national spirit. These societies can form one state or be divided into many” [4, p. 105]. However, as a political concept, this idea was more widespread in the 19th century. After the Great French Revolution, the basic premises of the concept of “nation” were determined by the commonality of language and religion, material and spiritual culture, origin, “historical destiny” and mentality, what motivated small peoples living under the servitude of large empires to start various activities in the direction of acknowledging their national culture, the development of the national press and education in the national literary and local spoken languages. This was how the “nationalist” ideas started to penetrate the cultural and philosophical thoughts of the minor peoples in the Russian Empire. And the Turks making the vast majority of the population did not skip the chance to start their own Enlightenment movement. Later, these goals from the cultural field moved to the political level.

The very first chance for the Turkic people to organize their own political party appeared after the Russian Revolution of 1905. That time due to “the October Manifesto” by czar Nicolas II, the second term of which declared, that “in order to participate in the Duma (Parliament) the sections of the population who have been completely deprived of electoral rights have to be involved to the



elections, thereby laying the foundation for the development of general electoral rights for everyone in the future” [13, p. 40], in August 1905 the First All-Russian Congress of Muslims was held.

The significance of this historical event profoundly lays in its nature: this was the first ever political endeavor to unify all Turkic societies of the Central Asia and Caucasus under one concept of common nation and unified political body.

On April 8, representatives of the Caucasus A. Topchubashev, A. Aghaoglu, A. Huseynzade, representatives of the Volga regions - G. Maksudov, I. Ahtyamov, L. Ishakov, as well as prominent Tatar figures of the Turkism such as I. Gaspirali, Y. Akchura, A. Ibrahimov met in A. Ibrahimov's apartment to discuss the organization of the all-Turkic congress. That day the decision was made. After the meeting of public figures held in the city of Chistopol on May 20-22, 1905, preparations for the congress were started and it was decided to use mass media for this event. Thus, A. Ibrahimov published information about the upcoming congress to be held in Nizhny Novgorod in “Hayat” newspaper published in Baku by A. Topchubashev. I. Gaspirali started to publish articles about the prospects of “the Muslim social movement” in his “Tarjuman” newspaper, of which he was the editor. In June 21, 1905 issue under the title “Muslim congress” it was declared, that a meeting will be held in Nizhny Novgorod during the fair to discuss “social issues and needs of Muslims. It is assumed that as a result of this discussion, in addition to the numerous applications, a joint application would be sent to the government. According to the evolutionary law of life, a party of progressive young people has already emerged among Muslims, and its members undoubtedly feel the need to exchange ideas, build a program of action in the areas of people's needs and struggle against centuries-old narrow-minded conservatism” [7]. Thus, in August 1905, the first congress of All-Russian Muslims was held in the city of Nizhny Novgorod.

Although this first attempt managed to reach some significant aims, such as establishing schools in national language, establishing religious self-rule and development of human rights of national minorities, its achievements did not last long: in one year the Duma was dissolved.

In total the Turks of the Russian Empire held four congresses from 1905 till 1914. In February 1917, a coup took place in Petrograd, the capital of the Russian Empire, which went down in history under the name of the Great February Revolution, which overthrew the Russian Tsarist Government and put an end to the monarchy. A new government appeared in October 1917, after the Great October Bolshevik Revolution.

The Bolsheviks who came to power issued a number of decrees. The first decree issued under the name “Appeal to the citizens of Russia!” announced the overthrow of the Provisional government and the establishment of the Soviet government. This decree was followed by “the Decree on Peace”, “Decree on Land”, “Decree on the Establishment of Workers' and Peasants' Government”, “Decree on the Press”, “Decree on Elections to the Parliament”, etc., and the most important “Declaration on the Rights of the Peoples of Russia” [6].

In the Declaration it says: “Only the peoples of Russia who were not liberated, they endured oppression and continue to endure it. Their liberties must be started immediately and must be firmly and irreversibly realized” [6]. It was also stated that during the tsarist period, the peoples of Russia were systematically opposed to each other, and the result of such a policy was massacres and pogroms on the one hand, and the enslavement of peoples on the other. For this reason, the Bolsheviks promised further freedoms to every nation that supported them and their revolution. The promises made by the Bolshevik government included: 1) equality and sovereignty of all peoples lived under the Russian Empire; 2) the right of the people of Russia to freely determine their own destiny, even up to the creation of an independent state; 3) cancellation of all and any national and national-religious privileges and restrictions; 4) The free development of national minorities and ethnographic groups living on the territory of Russia [6] and other rights had to be ensured.

A number of nations used these freedoms and tried to establish an independent state. Among the Turkic nations, only Azerbaijan declared the first independent democratic Republic of the Tur-



tic and Muslim world on May 28, 1918 - the Azerbaijan Democratic Republic. Other Turco-Muslim nations continued to argue and could not yet decide on their future. However, despite all these promises, the Bolshevik government did not want to lose its power over the vast territories of the Russian Empire and by the 1922 it established its power over whole former territories of the Russian Empire. And following the steps of the Russian Empire the first measure taken by the Bolshevik government was an application of the program called "Elimination of Illiteracy - Likbez". A noble goal at first glance this tactic turned out to become the most powerful weapon of the Bolshevik government.

As was mentioned earlier, the education of the population started even during the Tsarist Russia. However, in 1913, according to the Russian Statistical Office, the number of educated men was only about 27% of the population, including the urban population, intellectuals and nobles. The fact that women were not included in this list ensured that the numbers were relatively high. Furthermore, this result was only applicable to the urban population. It can be safely concluded that among the peasants this number was much lower and only one out of every tenth peasant could read and write. Seeing this situation, the Bolsheviks decided to use it for their own purposes. In the revolutionary movement, the issue of educating the population was very acute. The Bolsheviks' plan aimed primarily at teaching the peasants to read and write, as well as introducing them to new socialist ideas. They also tried to combat their illiteracy in order to transform peasants and urban dwellers from subjects to citizens - to inculcate an active life stance and participation in the country's political life. Attempts to independently raise the level of education among the peasants, who make up the absolute majority of the agrarian country, and at the same time to instill revolutionary ideas in them, were defined as the main plan of action. A report sent to the Bolshevik government after the 1917 revolution stated that, in fact, the literacy of the population of the Russian Empire was not an end as a means: mass illiteracy contradicted the political activity of citizens, prevented their full participation in local governance, and made it difficult to transform Russia on the basis of socialism. But the Soviet government needed a new person who fully understands the situation [11, p. 3-10].

One of the most important stages of the process of eliminating illiteracy, which began in the first years after the establishment of the Soviet government was the instillation of "literacy" in the population that uses Arabic, the Old Mongolian and other special scripts of its own. One of the peoples who will suffer the most from this process and the result of which will show itself in their cultural life for many years was the Turkic peoples. By the decision of the Soviet government, all peoples using the Arabic alphabet (80% of the population using this alphabet in the territory of the Russian Empire are Turkic peoples) had to be ensured the transition to the alphabet established on the basis of the new Latin alphabet. For this, scholars from these nations were given the task of preparing projects for such an alphabet. In 1922, the "Committee for the Implementation of the New Turkic Alphabet" was established, and in 1926, the I Baku Turcological Congress was held.

The I Baku Turcological Congress is a significant historical event of great political and cultural importance.

First of all, the choice of Baku to hold the Congress is of great interest.

In 1920, after the collapse of the Azerbaijan Democratic Republic and the transfer of Azerbaijan to the Bolshevik regime, Grigory Zinoviev, who was considered the second man of the revolution after Lenin, explained the importance of Baku for the Bolsheviks as follows: "Every old revolutionary knows that in our strikes and demonstrations, uprisings and revolutionary struggle, after Petrograd and Moscow, the names of cities like Baku, Warsaw and Riga are usually mentioned. Comrades, the Communist International was created only a year and a half ago. At the first convention of the international organization, we were still a group of propagandists promoting our ideas. Only a year and a half passed - and at the second congress of the Communist International held in Moscow, we were already represented in 37 countries of the world. And now it's time to take the second step. We clearly understand that there are hundreds of millions of people in the world, not just white pe-



ople, Europeans, but also living in Asia and Africa. Your city (Baku) is the gate through which the Western proletarians will pass to reach out to the peasants of the East. Your city will play the role of an arena for new events that have not yet happened in human history, representatives of hundreds of millions of peasants of the East will gather here" [10, p. 9-13].

Thus, Baku, located between Europe and Asia, was seen as a "door" that opened to both sides to the East and West, and was defined as the only place that could unite both societies. The city, transformed into a modern cosmopolitan city as a result of the efforts of Baku's millionaires, has combined both western and eastern cultures, and thanks to the "founding fathers" of the Azerbaijan Democratic Republic, the city has a society that was cultivated with democratic values for the first time among all the eastern states and peoples.

Karl Radek, another leader of the revolution, said: "When we thought about the Congress of Eastern Peoples, it was not by chance that we chose the city of Baku. Here, in Baku, where Persians, Turks, Tatars, and Slavs worked for many years, where capitalism oppressed and exploited the workers, the socialist thought was very widely developed. We know how socialism was born here. We have also witnessed how the idea of the revolution, the struggle against Russian tsarism, came from here, and how the workers returning to Iran took with them the ideas of struggle not only against tsarism, but also against capitalism. It is for this reason that we are sure that this workers' city will be the site of the international revolution, the electric current of political consciousness will flow from here, the flag of the struggle for the freedom of the East will be planted here" [10, p. 9-18].

Here it should be clarified, that with the implementation of oil refining in Azerbaijan in the middle of the 19th century, Azerbaijan turned into a large trade center. The decision of the tsar's government in 1872 to provide long-term lease of oil fields through a tender led to the influx of large capital companies of the world to Azerbaijan. The oil company founded by the Swedish Nobel brothers in Baku in 1879 soon became the largest oil company in the world. Following them, 6 English, 3 French, 2 German, 2 Belgian and 1 Greek companies started operating in Baku from the 1890s [16]. The creation of these companies led to the opening of many new jobs. The opening of workplaces, in turn, caused an influx of workers from the surrounding areas to Baku. Persian, Armenian and Russian workers made up the majority of workers in the oil industry. With the development of the oil industry, the number of workers increased and insurgents and opponents of the Tsarist regime appeared among the workers. Especially among Russian workers, the Russian Social Democratic Labor Party (RSDLP), which split into two under the names of Bolsheviks and Mensheviks in 1903, gained more influence. The Balakhani and Bibi-Heybat Workers' Organization, founded in 1904 by the brothers Lev and Ilya Shendrikovs, focused on finding solutions to the economic problems of local workers. Armenian workers in Azerbaijan also turned to their Social Democratic Hinchak Party, or the Armenian Revolutionary Federation, known as the more nationalist Dashnaksutyun. As a result of the tension in the political environment in which the Turks (Azerbaijani people) did not participate, the first general strike took place in 1903 and the second general strike in 1904. These strikes, which took place with the participation of RSDLP and Armenian organizations, were able to achieve the signing of a labor contract for the first time in Russia [1, Chapter I]. About the people who created the independent Azerbaijan Democratic Republic in 1918, these insurgents were calumniating, that "Azerbaijani capitalists, khans and beys tried with all their might to isolate themselves from the results of October Revolution without resorting to any means, resorted to the help of British capitalists and the sultan's troops, and instilled chauvinism and inter-ethnic struggle. The only desire of the bourgeoisie hidden behind statements about the freedom and independence of Azerbaijan - to preserve their property and capital". By denigration the founding fathers of the ADR, whose only intention was to lead the nation to independence and freedom, the revolutionaries tried to deceive the masses to go to their side [8, p. 10-11]. It was at the hands of these Russian and Armenian Bolsheviks that the genocide of Azerbaijanis took place on March 31, 1918 and the fall



of the Azerbaijan Democratic Republic, which entered Soviet history under the name “Baku Operation” in 1920 [5, p. 4-6] change the history of the state. On December 30, 1922, the Union of Soviet Socialist Republics (USSR) was established as a single state.

Thus, one of the reasons for holding the I Baku Turcological Congress stems from the “unifying” nature of Baku between Europe and Asia, where representatives of a number of nationalities living in multicultural and multinational conditions can make a great contribution to the spread of the ideas learned here after returning to their societies, and in this way, the “world, envisioned by the Bolsheviks revolution” would further increase the power and help spread their rule over a wider area.

Another reason for holding the I Baku Turcological Congress in Baku is hidden in its purpose. At the first meeting of the Congress held on February 26, 1926, the chairman of the event Samad Bey Aghamalioglu announced the main purposes of the Congress. In his speech, he emphasized that the event was of a scientific nature, and for the first time in history, the representatives of the Turkic peoples gathered for a scientific conference, not for a political reason: “First of all, comrades, let me convey my sincere greetings to you on behalf of the workers and peasants of Azerbaijan, the entire people of Azerbaijan. Azerbaijanis understand very well the happiness that has come to them and the value of opening the first congress of Turkic studies in the world and in history in their homeland. But this is not all: representatives of the Turko-Tatar peoples came here for the first time in history, and we had the opportunity to meet them” [9, p. 6].

It should be mentioned here that all the Turkic-Muslim congresses mentioned before were never held in Azerbaijan. The main questions of the congress were the transition from the Arabic alphabet to the new Turkic-latin alphabet, the creation of a unified spelling of the new alphabet, the unification of terminology and the printing of new textbooks with the introduction to the new alphabet.

Since 1924 S. Aghamalioglu tried to convince the Turkic people to accept the new alphabet. That year he undertook a long trip to the Turkic communities of the USSR with the presentation of the initial project of the new Turkic-latin alphabet. Within the framework of the visits, the delegation visited the cities of Simferopol, Tashkent, Orenburg, Ufa and Kazan, where they met both opponents and supporters of the new alphabet. Later, answering the questions about this trip, he always stated that during his trip he got the impression that if a congress of representatives of the Turkic-Tatar peoples was called, the issue could be resolved positively. Thus, gathering all these experiences, on the initiative of S. Aghamalioglu, on February 26, 1926, the first meeting of the I Baku Turkological Congress was announced in the hall of the Ismailliya building in the center of Baku city. In his opening speech, S. Aghamalioglu emphasized: “I don’t think and I’m sure I’m not wrong when I say that no scientific congress held so far has attracted the attention of such a large number of workers. Of course, all congresses attracted the attention of a number of scientists and partly educated people, and were held under their accompaniment. However, this is the first time we have observed the interest of the masses in such a congress. This means that all the issues set for consideration and resolution by the congress are practically important for the Turkic-Tatar peoples. Therefore, in order to properly respond to such a congress, it is necessary to show a perfect structure and maximum productivity. And this, of course, will be possible if it is thought out. All the participants would be given the opportunity to make a speech, and for the effectiveness of the congress, it is important to voice thoughtful criticisms prepared on scientific grounds. However, words spoken just for the sake of criticism, speeches made for the sake of speech, aggressive and intent to forcibly accept ideas will spoil the work of the congress... I want to conclude my speech by saying that I am sure that every participant of the congress should express their opinions at a high level. It will help to solve the difficult problems that he has set before him. Long live the First Turcological Congress!” [9, p. 8]. In this congress, most of the Turkic peoples of the USSR, namely Tatars, Kazakhs, Uzbeks, Chuvash, peoples of the North Caucasus, Azerbaijanis, Turks of Siberia, Yakutia, as well as scientists and representatives of the Academy of Sciences of the USSR, the Scientific Association of Oriental Studies, the Association of Transcaucasian Oriental Studies, and the Ukrainian Academy, participates in the meetings. In addition, using the “unifying of Europe and



Asia nature of Baku” in order to give greater importance to the Congress and to expand the geography of Bolshevik propaganda, representatives of Turkey, Germany, Austria, Hungary and Iran were also invited here. A total of 131 representatives participated in the congress. The main outcome of the event was acceptance of a new mutual Turkic-latin alphabet, which was seen as a first step and solid foundation for the further unification of the Turkic nations.

CONCLUSION

The I Baku Turcological Congress, which has an immeasurably important influence on the history and culture of the Turkic people, had an equally great impact on the future development of the Turkic people and societies with its results. When talking about the I Baku Turcological Congress, Prof. Dr. Ahmet Buran writes that this congress is of great importance not only for the Turkic peoples living in the Russian Empire, but also for the Turks who were in the transition stage from the Ottoman Empire to the Republic of Turkey. The creation of scientific institutions such as the Turkish Historical Society, the Turkish Language Society and the Faculty of Language and History and Geography in Turkey, and the periodicals published since 1932 by these institutions under the name of History and Language Conferences, were the factors that showed the intention to turn Turkey into the center of Turcology: “The idea and desire to research and scientifically present the Turkish language, literature, history, geography, folklore and art has turned into action under the influence of the I Baku Congress. Atatürk, who followed the I Baku Turcological Congress with a great interest, while creating these institutions, on the one hand, wanted to ensure the research of the Turkish language and history with scientific methods, and on the other hand, he wanted to remove Turcology from being a branch of science that serves the purposes of orientalism and imperialism, and bring it to a national and local ground” [2, p. 301]. In 1928, the Republic of Turkey switched to the Latin alphabet. Perhaps, precisely after this event, starting from 1930, movements against the transition of the Turkic peoples to the Latin alphabet were started in Soviet Russia. The Soviet society, which previously considered the Latin alphabet to be the alphabet of the world proletariat, now began to search for a single alphabet that would “unite the Soviet people”. And since the 1930s, the Cyrillic alphabet began to be used in the territory of the USSR under various pretexts: instead of learning two different alphabets and two different languages, learning just one single alphabet will make it easier to spread knowledge; having all documents written in Russian makes it easier for local representatives to participate in the management process; Cyrillic alphabet will reduce the influence of the capitalist West; and, in this way, it will break away the Turkic peoples from Turkey. Thus, after the death of S. Aghamalioglu in 1930, the achievements of the I Baku Turcological Congress, which he worked on and which he was able to maintain for years due to his influence, were erased and new political games began to emerge.

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1926-cı il I BAKI TÜRKOLÖJİ QURULTAY TÜRK MİLLƏTLƏRİNİ BİRLƏŞDİRMƏ CƏHDİ KİMİ

N.Q. Ağayeva, H.C. Günəşli

1926-cı ildə keçirilən I Bakı Türkoloji Qurultay 1922-ci ildə sovet hakimiyyətinə keçən keçmiş Rusiya imperiyasının türk icmaları üçün böyük siyasi və mədəni əhəmiyyət kəsb edən mühüm tarixi hadisədir. Türkologiya üzrə ilk elmi qurultay olması Orta Asiya və Qafqazın bütün türk cəmiyyətləri üçün latın qrafikası əsasında yeni türk əlifbasının vahid orfoqrafiyasının yaradılması, terminologiyanın ümumiləşdirilməsi və yeni əlifbaya girişlə yeni dərsliklərin çapı kimi maraqlı məqsədlərə xidmət edirdi.

Təqdim olunan məqalədə keçmiş Rusiya imperiyasının türk xalqları daxilində türkçülük ideyasının inkişafından, onların keçirdiyi ilk siyasi-mədəni qurultaylardan və bu xalqların birləşmə niyyətlərinin kulminasiya nöqtəsi kimi I Bakı Türkoloji Qurultayından bəhs edilir.

Açar sözlər: *türk, birləşmə, Bakı, türkologiya, türkçülük.*

I ВСЕСОЮЗНЫЙ ТЮРКОЛОГИЧЕСКИЙ СЪЕЗД 1926 ГОДА В БАКУ КАК ПОПЫТКА ОБЪЕДИНЕНИЯ ТЮРКСКИХ НАРОДОВ

Н.Г. Агаева, Г.Дж. Гюнешли

I Всесоюзный тюркологический съезд, состоявшийся в 1926 году в Баку, имел большое политическое и культурное значение для тюркских народов бывшей Российской империи, перешедших в 1922 году под советское руководство. Будучи первым в истории региона научным конгрессом по тюркологии, он преследовал любопытную цель создания единой орфографии нового тюркского алфавита на основе латиницы для всех тюркских обществ Средней Азии и Кавказа, унификации терминологии и печатания новых учебников с введением нового алфавита.

В настоящей статье исследуется развитие идеи тюркизма в тюркских обществах бывшей Российской империи, проведенные ими первые политические и культурные съезды и I Всесоюзный тюркологический конгресс а Баку как кульминация объединительных намерений этих народов.

Ключевые слова: *тюркский, объединение, Баку, тюркология, тюркизм.*



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"STRATEGIC EVOLUTION: THE ROLE OF DIVERSIFICATION IN MODERN BUSINESS"

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Diversification is a risk management strategy that involves spreading investments across various assets or types of assets within a portfolio. The main aim of diversification is to reduce the overall risk of the portfolio by minimizing the impact of any single investment's poor performance on the entire portfolio. As businesses navigate the complexities of an ever-evolving marketplace, the strategic imperative of diversification emerges as a cornerstone for sustainable growth and development. This article explores the nuanced role of diversification in business development, shedding light on its multifaceted contributions to organizational resilience, innovation, and market expansion. Through a comprehensive analysis of real-world examples and strategic frameworks, we delve into how diversification acts as a dynamic force, not only mitigating risks but also driving strategic growth initiatives. From entering new markets to optimizing product portfolios, the article presents a holistic view of diversification's transformative impact, offering valuable insights for organizations seeking to thrive in the dynamic landscape of contemporary business.

In the contemporary business landscape marked by volatility and rapid change, the strategic role of diversification has become paramount for organizations seeking sustainable growth and adaptability. This article explores the multifaceted impact of diversification on business development, dissecting its role as a catalyst for innovation, a shield against uncertainties, and a dynamic driver of strategic growth. Through an examination of real-world examples and best practices, the article navigates the strategic dimensions of diversification, showcasing how it shapes the trajectory of businesses in a globalized and ever-evolving economy.

Keywords: Strategic evolution, diversification, strategy, competitive advantage, risk management

INTRODUCTION

In the intricate tapestry of the business world, the concept of diversification has emerged as a transformative force, redefining traditional paradigms of growth and resilience. Businesses, in their quest for sustained development and adaptability, are increasingly recognizing the pivotal role that diversification plays in shaping their destinies. This article delves into the nuanced landscape of business development, unraveling the multifaceted role that diversification assumes as a strategic linchpin for organizations navigating the complexities of the contemporary market.

The business environment today is marked by unprecedented volatility, uncertainty, and rapid technological advancements. In this ever-changing landscape, the traditional adage of "putting all your eggs in one basket" has given way to a more dynamic and strategic approach – diversification. Beyond a mere risk-mitigation strategy, diversification has evolved into a proactive catalyst for innovation, expansion, and sustainable business development.

At its essence, diversification involves the deliberate expansion of a business's portfolio—whether through exploring new markets, introducing innovative products or services, or even venturing into complementary industries. It is the strategic pursuit of variety that empowers organizations to not only withstand economic downturns and market fluctuations but to thrive in the face of adversity. This article aims to dissect the multifaceted role of diversification in business development,



examining how it acts as a potent driver for growth, a shield against unforeseen challenges, and a mechanism for unlocking untapped potential. From market entry strategies to portfolio optimization, the exploration of diversification's impact on business development is a journey into the heart of strategic management and adaptability. Through real-world examples, case studies, and an exploration of best practices, we will navigate the strategic dimensions of diversification. Whether companies are seeking to expand their market reach, fortify their competitive position, or foster innovation within their operations, diversification emerges as a dynamic force that shapes the trajectory of businesses in a globalized and ever-evolving economy. As we embark on this exploration of diversification dynamics, we invite readers to uncover the strategic insights that will redefine their understanding of business development. Join us on this journey through the intricate interplay of strategic decisions, market insights, and innovative thinking, as we unravel the role of diversification in sculpting the future landscape of business development.

MAIN PART

1. Strategic Basis of Diversification

Diversification is a risk management strategy that involves spreading investments, resources, or business activities across different areas to reduce overall risk and enhance the potential for returns. It is commonly applied in finance, business, and investing, and it aims to minimize the impact of adverse events in any single investment or business segment. In business, diversification involves expanding a company's product or service offerings, entering new markets, or engaging in different business activities. The goal is to reduce reliance on a single product or market, thereby decreasing the risk associated with external economic factors or industry-specific challenges. Business diversification can take various forms, such as horizontal diversification (expanding into related products or services), vertical diversification (engaging in different stages of the supply chain), or conglomerate diversification (entering unrelated industries). Horizontal diversification is a business strategy that involves expanding a company's product or service offerings within the same industry or market. Unlike vertical diversification, which involves moving into different stages of the production process or supply chain, horizontal diversification focuses on adding new, but related, products or services to a company's existing portfolio [12].

Key characteristics of horizontal diversification include:

Product or Service Expansion: In horizontal diversification, a company introduces new products or services that are related to its existing offerings. This expansion allows the business to cater to a broader range of customer needs and preferences within the same industry.

Leveraging Core Competencies: Companies often leverage their existing capabilities, knowledge, and expertise when horizontally diversifying. This helps in maximizing the use of core competencies developed in their current business activities.

Targeting the Same Customer Base: Horizontal diversification typically targets the same customer base or market segment. The idea is to cross-sell or upsell to existing customers by providing complementary products or services that enhance the overall customer experience.

Risk Mitigation: While introducing new products or services, companies aim to mitigate risks associated with dependence on a single product or market. By diversifying horizontally, a company reduces its vulnerability to market fluctuations, changes in consumer preferences, or disruptions in specific product categories.

Increased Market Share: Horizontal diversification can lead to an increase in a company's market share within its industry. By offering a more comprehensive range of products or services, a business may attract a larger share of customers and strengthen its competitive position.

Brand Synergy: If executed successfully, horizontal diversification can create brand synergy. The new products or services may benefit from the established brand reputation and customer loyalty that the company has built through its existing offerings.

Cost and Efficiency Benefits: Shared

resources and economies of scale can be realized when diversifying horizontally. Companies may find cost efficiencies by utilizing existing distribution channels, manufacturing facilities, or marketing strategies for the new products or services.

Examples of horizontal diversification include a smartphone manufacturer introducing new models with additional features, a software company expanding its product line to include related applications, or a fast-food restaurant introducing new menu items. While horizontal diversification offers opportunities for growth and risk reduction, it also comes with challenges. Companies need to carefully assess market demand, competition, and potential cannibalization of existing products. Successful implementation requires a thorough understanding of customer needs and effective integration of the new offerings into the existing business model [10].

Vertical diversification, also known as vertical integration, is a business strategy where a company expands its operations by entering different stages of the production process or supply chain. Unlike horizontal diversification, which involves expanding into related products or services within the same industry, vertical diversification involves moving either upstream or downstream in the production or distribution process.

There are two main types of vertical diversification:

1. **Forward Integration:** Forward integration occurs when a company expands its operations into downstream activities, moving closer to the end consumer. This often involves taking control of distribution, marketing, or retail activities. By engaging in forward integration, a company aims to capture a larger share of the value chain and have a direct influence on how its products reach the end customer. Example: A coffee bean producer opening its own chain of coffee shops to sell directly to consumers.
2. **Backward Integration:** Backward integration involves a company moving upstream in the supply chain by taking control of activities that were previously handled by suppliers. This might include acquiring or establishing operations related to manufacturing, raw material production, or sourcing. Backward integration allows a company to secure its supply chain, reduce dependence on external suppliers, and potentially achieve cost savings. Example: An automobile manufacturer acquiring a steel production company to ensure a stable and cost-effective supply of raw materials [14].

Key characteristics of vertical diversification include:

Control over the Value Chain: Vertical diversification provides a company with greater control over its entire value chain, allowing for improved coordination, efficiency, and responsiveness to market changes.

Risk Mitigation: By integrating backward or forward, a company can reduce dependence on external suppliers or distributors, mitigating risks associated with disruptions in the supply chain or changes in market conditions.

Cost Efficiency: Vertical integration can lead to cost savings by eliminating intermediary margins and achieving economies of scale. It also allows for better coordination in production, distribution, and marketing activities.

Strategic Positioning: Vertical diversification can enhance a company's strategic positioning in the market. For example, forward integration can help establish a strong brand presence and direct interaction with customers.

Increased Profitability: Successful vertical integration can lead to increased profitability through improved efficiency, cost control, and a more seamless operation across different stages of the value chain. However, vertical diversification also presents challenges, such as increased complexity in managing diverse operations, potential resistance from existing suppliers or distributors, and the need for significant investments in new capabilities. Companies considering vertical diversification must carefully assess market conditions, evaluate potential benefits and risks, and ensure that the integration aligns with their overall business strategy and objectives.



Diversification does not eliminate risk entirely, but it aims to manage and minimize it by spreading exposure. The effectiveness of diversification depends on the correlation between the different components; ideally, they should not all move in the same direction under various market or economic conditions. Strategic diversification requires careful planning and consideration of the specific risks and opportunities in the chosen areas of investment or business expansion. Diversification is a business strategy that involves expanding a company's portfolio by entering into new markets, introducing new products or services, or engaging in new business activities [13]. The primary goal of diversification is to spread risk and create a more resilient and adaptable business model. By participating in multiple, unrelated business areas, a company aims to reduce its reliance on a single product, market, or industry [3].

There are two main types of diversification:

Related Diversification: In related diversification, a company expands into businesses that are somehow connected or complementary to its existing operations. This may involve entering a new market with related products or services, leveraging synergies and shared resources to create economies of scale. For example, an automobile manufacturer diversifying into the production of electric vehicles would be considered related diversification.

Unrelated Diversification: Unrelated diversification, also known as conglomerate diversification, occurs when a company expands into businesses that have no apparent connection to its current operations. This type of diversification is often driven by the desire to reduce overall business risk by participating in different industries. An example of unrelated diversification could be a technology company entering the hospitality industry. The decision to diversify is influenced by various factors, including market conditions, industry trends, risk management considerations, and the desire for growth. Diversification is not without challenges, as it requires careful strategic planning, resource allocation, and effective management to ensure success. When executed well, diversification can provide several benefits to a company, such as reducing vulnerability to economic downturns, tapping into new revenue streams, and enhancing overall business resilience. However, poorly planned diversification efforts can lead to increased complexity, resource strain, and diminished focus on core competencies [2]. Ultimately, diversification is about expanding a company's activities strategically, whether by entering new markets, developing new products, or acquiring businesses, with the overarching goal of achieving sustainable growth and mitigating risk. Diversification is a strategic business decision that involves expanding a company's portfolio by entering new markets, introducing new products or services, or engaging in new business activities. The strategic basis of diversification is grounded in several key principles and considerations:

Risk Mitigation: Diversification as a Hedge: One of the primary strategic bases for diversification is to spread risk across different business segments. By operating in multiple markets or industries, a company can reduce its exposure to economic downturns, industry-specific risks, or other external factors that may impact a single business area.

Synergy and Integration: Leveraging Core Competencies: Companies often diversify into areas where they can leverage their existing core competencies. This strategic basis ensures that the new ventures benefit from the knowledge, skills, and resources already possessed by the organization, fostering synergies and efficiency [4].

Market Expansion: Seizing Growth Opportunities: Diversification is driven by the desire to tap into new markets and capitalize on growth opportunities. This strategic basis involves identifying underserved or untapped markets where the company's products or services can find a new customer base.

Portfolio Optimization: Balancing Risk and Reward: Diversification is strategic when it involves optimizing the overall portfolio of business activities. This could mean investing in different types of assets, industries, or geographic locations to create a balanced and diversified business portfolio.



Innovation and Adaptability: Fostering Innovation: Diversification can be a strategic response to changing market dynamics and consumer preferences. By exploring new product lines or services, companies position themselves as innovators and demonstrate adaptability in the face of evolving market trends.

Economies of Scale: Efficiency and Cost Reduction: Diversification can lead to economies of scale, especially if similar resources, technologies, or distribution channels can be shared across different business segments. This strategic basis aims to reduce costs and improve overall operational efficiency [7].

Competitive Advantage: Building a Competitive Edge: Strategic diversification aims to create a competitive advantage. By offering a diverse range of products or services, a company can differentiate itself from competitors and become more resilient to competitive pressures in individual markets.

Stabilizing Cash Flows: Smoothing Revenue Streams: Diversification can stabilize a company's cash flows by offsetting the cyclical or seasonality inherent in certain industries. This strategic basis helps maintain a more consistent financial performance over time.

Entering Adjacent Markets: Adjacent Diversification: Companies strategically diversify into related or adjacent markets where they can leverage existing knowledge and capabilities. This approach minimizes the learning curve and enhances the chances of success in the new venture.

Global Expansion: International Diversification: Companies may diversify globally to reduce dependence on a single market or to access new customer bases. This strategic basis involves understanding and navigating different international markets [5].

2. Diversification strategies

Diversification strategies are business approaches that involve expanding a company's portfolio by entering into new markets, introducing new products or services, or engaging in new business activities. These strategies are designed to spread risk, improve resilience, and create a more adaptable business model. Diversification strategies can be broadly categorized into related and unrelated diversification.

Related Diversification Strategies:

Horizontal Diversification: Expanding into businesses that are directly related or similar to the company's existing products or services. For example, a smartphone manufacturer diversifying into the production of tablets or smartwatches.

Vertical Diversification: Involves moving into businesses that are part of the company's supply chain or distribution channels. This could include backward integration (moving towards raw material production) or forward integration (moving towards distribution and retail).

Concentric Diversification: Entering new businesses that share similarities with the company's existing business activities, often involving the same core competencies. An example is a food company producing both snacks and beverages [6].

Unrelated Diversification Strategies:

Conglomerate Diversification: Expanding into businesses that are unrelated to the company's current products, services, or industry. This strategy aims to reduce risk by participating in different and independent markets.

Financial Diversification: Involves investing in financial instruments or acquiring financial assets that are unrelated to the company's core business. This strategy aims to spread risk by diversifying investment portfolios.

Internal and External Diversification Strategies:

Internal Diversification: Involves the development of new products, services, or markets through internal resources and capabilities. This may include research and development efforts to create innovative offerings.



External Diversification: Occurs when a company expands its portfolio through external means, such as mergers, acquisitions, partnerships, or joint ventures with other companies. This allows the company to quickly enter new markets or gain access to complementary technologies.

Geographic Diversification:

Global Diversification: Expanding operations and entering new markets on a global scale. This strategy can help companies reduce dependence on a single market and tap into diverse customer bases worldwide [8].

Product Development and Market Development:

Product Development Diversification: Involves introducing new products or services that cater to different customer needs or segments. This can be achieved through research and innovation.

Market Development Diversification: Entering new geographical markets with existing products or services, targeting different customer demographics or market segments.

Diversification strategies should be aligned with a company's overall business goals, resources, and capabilities. While these strategies offer opportunities for growth and risk mitigation, they also present challenges such as increased complexity, resource allocation dilemmas, and the need for effective management across diverse business activities. The success of diversification strategies often depends on careful planning, market analysis, and the ability to leverage synergies across different business segments [9].

3. Examples of businesses growing through strategic diversification

General Electric (GE): General Electric, traditionally known for its focus on electrical appliances, power, and lighting, successfully diversified into various industries. GE expanded into financial services, healthcare, aviation, and renewable energy. This diversification allowed GE to become a conglomerate and a leader in multiple sectors.

Virgin Group: Virgin Group, founded by Sir Richard Branson, is a prime example of conglomerate diversification. Originally a music record retailer, Virgin Group expanded into various industries, including airlines (Virgin Atlantic), telecommunications (Virgin Mobile), and space travel (Virgin Galactic). The brand's success lies in its ability to enter diverse markets under a unified brand.

Samsung: Samsung, initially focused on trading and food products, strategically diversified into electronics, semiconductors, and telecommunications. The company's expansion into smartphones, TVs, and other consumer electronics has made it a global technology giant.

Amazon: Amazon started as an online bookstore but strategically diversified its product offerings over time. The company expanded into e-commerce (selling a wide range of products), cloud computing (Amazon Web Services), streaming services (Amazon Prime Video), and hardware (Kindle, Echo). This diversification contributed to Amazon's status as one of the world's largest and most diverse technology companies.

3M: Originally known for its core competency in abrasives and adhesives, 3M (Minnesota Mining and Manufacturing) strategically diversified its product portfolio. The company entered markets such as healthcare, electronics, and consumer goods. Today, 3M is recognized for its innovative solutions in various industries, from healthcare products to office supplies [11].

Johnson & Johnson: Johnson & Johnson, primarily a pharmaceutical and healthcare company, strategically diversified its product lines. The company expanded into consumer healthcare (bandages, baby products), medical devices, and diagnostics. This diversification has contributed to its resilience and prominence in the healthcare industry.

Walt Disney Company: Starting as an animation studio, Disney strategically diversified its entertainment empire. Disney expanded into theme parks, television networks (ABC), film studios



(Pixar, Marvel, Lucasfilm), and digital streaming services (Disney+). The diversification allowed Disney to create a vast and interconnected entertainment ecosystem.

Alphabet Inc. (Google): Originally known for its search engine, Google, now a subsidiary of Alphabet Inc., strategically diversified its business. In addition to its core search and advertising business, Alphabet expanded into various areas, including online video (YouTube), autonomous vehicles (Waymo), and life sciences (Verily).

These examples demonstrate how strategic diversification, whether through entering new markets or introducing new products and services, can contribute significantly to a company's growth and resilience in the ever-changing business landscape [1].

4. The transformative role of diversification in shaping the future landscape of business development

The transformative role of diversification in shaping the future landscape of business development is multifaceted, influencing how companies strategize, innovate, and navigate the complexities of the global market. Here are key aspects that highlight the transformative impact of diversification:

Resilience in Uncertain Environments: Diversification serves as a powerful tool for building resilience in the face of uncertainties. By operating in multiple markets or industries, companies can reduce their vulnerability to economic downturns, geopolitical events, and industry-specific shocks. This resilience enhances a company's ability to weather challenges and emerge stronger in dynamic environments [3].

Innovation and Adaptability: Diversification fosters a culture of innovation and adaptability within organizations. As companies explore new markets or develop new products, they inherently embrace change and are more likely to stay ahead of evolving consumer preferences and technological advancements. Diversification encourages a forward-thinking mindset, positioning companies as drivers of innovation in their respective industries.

Mitigation of Risk and Volatility: The transformative role of diversification lies in mitigating risk and reducing the impact of volatility on a company's performance. By avoiding overreliance on a single product or market, businesses create a risk-mitigation strategy that allows them to maintain stability even when specific sectors face challenges [4].

Strategic Portfolio Optimization: Diversification enables strategic portfolio optimization, where companies carefully balance their mix of business activities. This strategic approach involves allocating resources to different segments to create a well-rounded and efficient portfolio. Through thoughtful optimization, companies can maximize returns and allocate resources where they generate the most value.

Expansion of Growth Horizons: Diversification expands growth horizons by providing avenues for entering new markets and tapping into diverse customer bases. This strategic expansion allows companies to explore untapped opportunities and increase their market share. It positions them to capitalize on emerging trends and demographic shifts, ensuring sustained growth over the long term.

Enhanced Competitive Advantage: Companies that strategically diversify gain a competitive advantage by differentiating themselves in the market. Offering a diverse range of products or services not only attracts a broader customer base but also allows companies to position themselves as versatile and adaptable competitors in their industries.

Creation of Synergies and Economies of Scale: Diversification allows businesses to create synergies by sharing resources and capabilities across different segments. This integration often leads to economies of scale, reducing overall costs and increasing operational efficiency. Companies



that can leverage synergies are better equipped to compete and thrive in the evolving business landscape [7].

Adaptation to Changing Consumer Preferences: Diversification enables companies to adapt to changing consumer preferences by offering a varied portfolio that caters to diverse needs. This adaptability is crucial in consumer-driven markets where preferences can shift rapidly. Companies that can anticipate and respond to these changes through diversified offerings are more likely to remain relevant.

Global Market Participation: Diversification facilitates global market participation, allowing companies to expand their footprint internationally. This globalization not only broadens the customer base but also exposes businesses to diverse market dynamics, enabling them to learn, innovate, and adjust their strategies for different regions [13].

Holistic Business Development Strategies: Diversification encourages a holistic approach to business development, where companies strategically plan for long-term sustainability. Rather than relying on a single avenue for growth, businesses embracing diversification consider the interplay of various factors, creating comprehensive strategies that address multiple dimensions of their operations.

In summary, the transformative role of diversification in business development is about creating adaptable, innovative, and resilient organizations. By strategically navigating different markets and industries, companies position themselves not only to survive but to thrive in the future business landscape, responding effectively to evolving challenges and opportunities.

CONCLUSION

In conclusion, the strategic evolution of diversification in modern business represents a dynamic and essential approach to navigating the complexities of today's markets. As businesses face increasing competition, rapid technological advancements, and evolving consumer preferences, diversification emerges as a crucial tool for sustaining growth and mitigating risks. By expanding into new markets, products, or services, companies can capitalize on synergies, unlock new revenue streams, and enhance their competitive position. However, successful diversification requires careful planning, execution, and continual adaptation to changing circumstances. It is not merely about spreading resources thinly across multiple ventures but rather about leveraging strategic synergies to create value and drive sustainable growth. Moreover, businesses must remain agile and responsive to emerging trends, market shifts, and disruptive forces to stay ahead in an ever-changing landscape.

Ultimately, the role of diversification in modern business extends beyond mere survival; it is about thriving in a dynamic and interconnected global economy. By embracing diversification as a fundamental aspect of their strategic evolution, businesses can position themselves to seize opportunities, manage uncertainties, and chart a course toward long-term success in the years to come.

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“STRATEJİ TƏKAMÜL: MÜASİR BİZNESDƏ DİVERSİFİKASIYANIN ROLU”

N.Ə. Əliyeva

Diversifikasiya bir portfel daxilində müxtəlif aktivlər və ya aktiv növləri üzrə investisiyaların yayılmasını nəzərdə tutan risklərin idarə edilməsi strategiyasıdır. Diversifikasiyanın əsas məqsədi hər hansı bir investisiyanın zəif performansının bütün portfelə təsirini minimuma endirməklə portfelin ümumi riskini azaltmaqdır. Müəssisələr daim inkişaf edən bazarın mürəkkəblikləri ilə üz-üzə gəldikdə, şaxələndirmənin strateji imperativi davamlı böyümə və inkişaf üçün təməl daşı kimi ortaya çıxır. Bu məqalə biznesin inkişafında diversifikasiyanın nüanslı rolunu araşdırır, onun təşkilati dayanıqlığa, innovasiyaya və bazarın genişlənməsinə çoxşaxəli töhfələrinə işıq salır. Real dünya nümunələrinin və strateji çərçivələrin hərtərəfli təhlili vasitəsilə biz diversifikasiyanın təkcə riskləri azaltmaqla deyil, həm də strateji artım təşəbbüslərini irəli sürən dinamik güc kimi çıxış etdiyini öyrənirik. Məqalədə yeni bazarlara daxil olmaqdan tutmuş məhsul portfellerinin optimallaşdırılmasına qədər müasir biznesin dinamik mənzərəsində inkişaf etmək istəyən təşkilatlar üçün dəyərli fikirlər təklif edərək diversifikasiyanın transformativ təsirinin vahid mənzərəsi təqdim olunur. Dəyişkənlik və sürətli dəyişikliklə səciyyələnən müasir biznes mənzərəsində şaxələndirmənin strateji rolu dayanıqlı böyümə və uyğunlaşma axtaran təşkilatlar üçün əsas məsələyə çevrilib. Bu məqalə diversifikasiyanın biznesin inkişafına çoxşaxəli təsirini tədqiq edir, onun innovasiyalar üçün katalizator, qeyri-müəyyənliklərə qarşı qalxan və strateji inkişafın dinamik sürücüsü kimi rolunu təhlil edir. Məqalə real dünya nümunələrinin və ən yaxşı təcrübələrin araşdırılması yolu ilə qloballaşan və daim inkişaf edən iqtisadiyyatda biznesin trayektoriyasını necə formalaşdırdığını nümayiş etdirərək diversifikasiyanın strateji ölçülərini nəzərdən keçirir.

Açar sözlər: *Strateji təkamül, diversifikasiya, strategiya, rəqabət üstünlüyü, risklərin idarə edilməsi*



«СТРАТЕГИЧЕСКАЯ ЭВОЛЮЦИЯ: РОЛЬ ДИВЕРСИФИКАЦИИ В СОВРЕМЕННОМ БИЗНЕСЕ»

Н.А. Алиева

Диверсификация-это стратегия управления рисками, которая предполагает распределение инвестиций по различным активам или типам активов в портфеле. Основная цель диверсификации-снизить общий риск портфеля за счет сведения к минимуму влияния плохой эффективности любой отдельной инвестиции на весь портфель. По мере того, как предприятия преодолевают сложности постоянно развивающегося рынка, стратегический императив диверсификации становится краеугольным камнем устойчивого роста и развития. В этой статье исследуется тонкая роль диверсификации в развитии бизнеса, проливающая свет на ее многогранный вклад в организационную устойчивость, инновации и расширение рынка. Благодаря всестороннему анализу реальных примеров и стратегических рамок мы углубляемся в то, как диверсификация действует как динамическая сила, не только снижающая риски, но и стимулирующая инициативы стратегического роста. От выхода на новые рынки до оптимизации портфеля продуктов-в статье представлен целостный взгляд на преобразующее воздействие диверсификации, предлагая ценную информацию для организаций, стремящихся преуспеть в динамичном ландшафте современного бизнеса. В современной бизнес-среде, характеризующейся нестабильностью и быстрыми изменениями, стратегическая роль диверсификации стала первостепенной для организаций, стремящихся к устойчивому росту и адаптивности. В этой статье исследуется многогранное влияние диверсификации на развитие бизнеса, анализируя ее роль как катализатора инноваций, защиты от неопределенности и динамического драйвера стратегического роста. Путем изучения реальных примеров и передового опыта в статье рассматриваются стратегические аспекты диверсификации, демонстрируя, как она формирует траекторию бизнеса в глобализированной и постоянно развивающейся экономике.

Ключевые слова: *стратегическая эволюция, диверсификация, стратегия, конкурентное преимущество, управление рисками.*



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THE FIRST MANIFESTATIONS OF NATIONAL AWAKENING IDEAS IN AZERBAIJAN (BASED ON MATERIALS FROM THE INSTITUTE OF MANUSCRIPTS)

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The 19th century, can be considered the most controversial period in the political and socio-cultural history of Azerbaijan. In Azerbaijan, which was once considered one of the centers of science, literature and art of the East, in order to make the people forget its history, material and cultural historical monuments were destroyed, the opening of native language schools and the press were prevented. With this, the history of statehood has ended, and a contrasting period was experienced in the science and culture of Azerbaijan. In the social and literary-cultural environment, where the former feudal ideology still prevailed, modern tendencies began to emerge, democratic ideas and the influence of Russian and European culture began to grow. After the occupation the Azerbaijani society was at the transition stage of its historical development.

From the beginning of the Russian invasion, the resistance movement against the colonial regime began in the regions. The main goal and purpose in the initial stage of the resistance movement in Azerbaijan was national-cultural orientation. The most important aspect of the history of the national movement of the Turkish people living in Russia is that the main driving force of this movement is often the intellectuals. This article partially covers some points from the personal archive materials during the period from the second half of the 19th century to the 20th century, throughout only a brief period of enlightenment and national awakening ideas.

Keywords: *personal archives, enlightenment, “Akinchi”, school project, national identity, political independence, “Gulistan-i Iram”.*

INTRODUCTION

Throughout its history, the lands of Azerbaijan were being occupied by foreign forces from time to time and as a result the state independence has been terminated. The greatest difficulty the Azerbaijani people had to face- was to fight the threat of losing their history, language, and culture. There were undisclosed topics due to the fact that research was prohibited in the history science of Azerbaijan, that was occupied twice by the same state within two centuries. These were topics such as the ethnic origin problem of the Azerbaijani people, the political-historical geography of Azerbaijan, the history of statehood, the investigation of historical traces in ancient epic works, the history of the national independence movement. These matters were not considered as research objects within the scientific research process.

After the state independence of Azerbaijan was restored in 1991, the organization of national awakening ideas and the history of the national liberation movement are taking the main place among the problems in scientific research process. While investigating this problem special attention should be paid to the history of the initial formation of national awakening ideas, and also the participation of our intellectuals in the national movement and their role in it.

The questions considered under the research have been developed by researchers starting from the year of 1991, especially from the literary and philosophical aspect. It is already an accepted fact that representatives of the humanitarian disciplines (writers, philosophers) refer to historical materials during research. Since we are in direct contact with personal archival materials, we face



this situation all the time. However, the practice of studying political historical processes, history of political and social opinion based on literary heritage, personal documents, memoir literature and epistolary heritage is still fresh. This once again proves the importance of literary heritage, especially personal archival materials, from historical and source studies point of view. As the literary heritage includes the published works of our prominent intellectuals, who are already familiar to the scientific and social environment, meanwhile the personal archive materials mean collection of original manuscripts of these works in various versions, documents, letters and memories reflecting personal and social activities. From this point of view, the personal archive materials of a number of famous thinkers from the second half of the 19th century to the beginning of the 20th century preserved in the Institute of Manuscripts named after M. Fuzuli ANAS are of particular interest.

MAIN PART

Protected personal archives in the Institute of Manuscripts

Manuscripts are considered primary sources in any field of science. It is of exceptional importance in the study of the history of its socio-cultural and political thought. Ancient and medieval manuscripts in Azerbaijan have always been collected individually. The systematic collection of manuscripts began at the beginning of the 20th century, and this process was continued during the first years of Soviet rule. In 1924, after the 1st the First All-Azerbaijan Congress of Ethnographers and the first Turkological congresses held in 1926, a scientific library was organized from the collected manuscripts. The Republic Manuscripts Fund, an independent enterprise since 1950, has started operating as the Institute of Manuscripts within the recent decades. The basis of the Institute's manuscript treasury is the personal archives of prominent cultural and scientific figures and historical figures of Azerbaijan who lived in the 19th-20th centuries, along with ancient and medieval manuscripts. The basis of private archives was formed by the archives of Abbasgulu Agha Bakikhanov, the first representative of Azerbaijani enlightenment. Starting a new era of historical and cultural development in the 19th century, Northern Azerbaijan had the opportunity to get acquainted with the modern democratic social and political environment, culture, scientific and technical achievements of Europe and benefit from them. The treasury of the State Museum contains part of the personal collections of Abbasgulu Agha Bakikhanov, Mirza Fatali Akhundov and Hassan bey Zardabi - students of the century. These figures played a great role in further enriching the scientific, philosophical, social-political, literary-artistic thought of Azerbaijani culture, and in reaching a new era of meaning. A. Bakikhanov's work "Gulistan-i Iram", which laid the foundation of Azerbaijani historiography, and the new school project, the comedies written by M.F. Akhundov to eliminate ignorance and carelessness, H. Zardabi's struggle for the national press can be considered as the first cultural calls to the national awakening and freedom movement.

The personal archival materials of other intellectuals preserved in the Institute of Manuscripts, as they lived and worked at the turn of the 19th and 20th centuries are of special interest. The personal archival materials (e.g., manuscripts of the authors' work in different versions, personal documents, materials reflecting their social activities, letters written by them and written to them, memories, pictures, notes, etc.) allow to clarify the environment in which our intellectuals lived, their attitude to the factors of the religion, language and ethnic origin that shape the national-political ideology and their service inculcating national ideas to the people.

In general, the treasury of private foundations in the Institute of Manuscripts contains the personal archives of 32 outstanding thinkers of the 19th-20th centuries: A. Bakikhanov, M. F. Akhundov, H. Zardabi, N. Vazirov, S. A. Shirvani, J. Mamedguluzade, M. T. Sidki, A. Buzovnali, M.A. Sidgi, R. Efendizadeh, A. Hagverdiev, S.S. Akhundov, A. Nazmi, M.R. Fana, H. Sarabsky, M.S. Ordubadi, S. Vurgun, Ch. Jabbarli, U. Hajibekov, N. Narimanov, F. Kocharli, Yu.V. A. Azimzade, A. Muznib, S. Mumtaz, M. Magomayev, O. F. Nemanzade, G. Sheyda, Z. Hajibekov, Sadikhzade



Seyid Huseyn, G. Mammadli and A. Huseynzade – the intellectuals who play a special role in cultural and public life history of Azerbaijan. Unfortunately, not all the materials included in the collections of these eminent personalities were included in the Institute of Manuscripts treasury. Most of the mentioned intellectuals were subjected to political persecution from the first days of Soviet rule, were arrested, and some of them were killed. Therefore, part of the archival materials was kept confidential in the State archives during the USSR, some were destroyed, and some were hidden by their families. Nevertheless, even the materials we have allow us to create a complete picture of the socio-political landscape of the time they lived in. Based on these materials it is also possible to observe the influence of both regional and international political events on the national way of thinking of our intelligentsia and the changes that occurred in a certain period of time..

National ideas (language, religion and education issues) in the personal archives of 19th century intellectuals.

As a result of recent studies, the last quarter of the 19th century [3] was accepted as the initial period of the formation of the national liberation movement and national ideology of Azerbaijan. In our opinion, the formation of Azerbaijani national awakening ideas history can be attributed to earlier times. Because after the termination of Azerbaijani statehood in 1828 with the Treaty of Turkmenchay, the processes founded by A. Bakikhanov and M.F. Akhundov were developed by H. Zardabi, S. A. Shirvani, N. Vazirov and others in the second half of the 19th century and the beginning of the 20th century. He showed importance to the creation of a new social and cultural environment, national revival, and the formation of the national liberation thought in Azerbaijan. From this point of view, some of the materials of the mentioned thinkers preserved in the treasury of the Institute of Manuscripts are of special interest. A. Bakikhanov, who laid the foundation of Azerbaijani history with the first scientific work dedicated to the national history of our people, "Gulustani-Iram", served to awaken the national consciousness of the nation by conveying all the features of the national history to the people shortly after the occupation of the northern lands of Azerbaijan by Russia. That is why the work "Gulustani-Iram" was first published in 1926, despite the fact that it was written in 1841. Even before writing this work, the national issue took an important place in A. Bakikhanov's activities. In this regard, we consider it important to provide brief information about the new school project among the writer's personal archive materials. Because this project has not been involved in research as an indicator of A. Bakikhanov's educator activity.

H. Ahmadov [2], I. Vazirova [8] were the researchers, who by noting the role of mother-tongue schools in educational activities, also mainly talked about their services in compiling textbooks in the Azerbaijani language and the importance of the work "Grammar of the Persian Language". Probably, because Bakikhanov's school project was not accepted and implemented, it was left out of the research. However, on August 3, 1845, Safonov, the head of office of Vorontsov, the viceroy of the Caucasus, sent the project No. 1160 dated July 31, "Establishment of the first school for Muslim children from the Shia sect in Tbilisi" which stated "because he has experience and extensive knowledge of this field." and where he was asked to "examine the project in detail and express his opinion" [13]. Yenikolopov notes that the original of the project is stored in the Central State Historical Archive of Georgia under the font F.30, №596.

Since the educational system in Russian schools which opened in various cities of Azerbaijan in the 1930s did not meet the national interests of the population, so the people refused to send their children to these types of schools. Therefore, A. Bakikhanov prepared the new school project and submitted it to the necessary institutions for approval. Stating that this project is important for the local population education, the writer specially emphasized that "the powerful Russian government, which protects the South Caucasus, should probably think about conquering the spiritual world of the people first, as forced obedience cannot last long. With the first opportunity, previous feelings will return. It is impossible to attract people with some compliments and rewards. The important



points that bind people to the new law are very important" [14]. A. Bakikhanov saw progress and enlightenment as one of these important points. He considered it important to raise a new intellectual class from among the people as the main way to do this. He wrote that "as the people become enlightened, progressive people who will serve the government will increase among them. They, in turn, will preach for the common good of the state works. Later, he noted that "... as enlightenment among Muslims increases, riots will decrease... it will bring this nation closer to the Russians... which is to the benefit of both nations." In the end, he specifically emphasized that "the first step on the path to enlightenment is a school establishment [14].

It should be noted that this project was translated by M.F. Akhundov, who had just started his service at that time. M.F. Akhundov takes an important place in the Eastern culture history as one of the prominent representatives of the history of national and public idea of Azerbaijan, the founder of the national dramaturgy, the author of the new alphabet project and the philosophical work "Letters to Kemalluddov". M.F. Akhundov himself noted the special importance of the works written in the "Tatar" language as follows: "Despite the fact that the number of Tatars in the South Caucasian region is more than the rest of the population, it is very difficult to come across original books written in the language spoken by the people, since they do not have literature of their own language until now" [10]. In his letter to academician Dorn regarding New Alphabet project it is stated "If I am not wrong in my assumptions, time will determine the success of my project. My alphabet will take its rightful place in Eastern literature in 100 years, and new works will be written with it." Then, with foresight, he emphasized that "...old books will also be copied with his letters [1]. But unfortunately, the new alphabet project made it easier for the colonial regime to isolate the Turkic peoples from each other. The Russian colonial regime took advantage of M.F. Akhundov's idea to change and simplify the alphabet, and later replaced it with a completely different new alphabet. Thus, the modern Azerbaijani people were isolated from their literary, cultural heritage and historical past, that was created in this alphabet. We can state that M.F. Akhundov was the first among Azerbaijani intellectuals to think about girls' education. In this regard a writer's letter among the archival materials deserves special attention. In this letter, Akhundov noted that "according to the conclusions I drew from the works of civilized peoples, I came to the opinion that women's European education is of great importance for the well-being of all mankind" [5]. In the same letter, M.F. Akhundov was requesting a 9-year-old Nisa to be admitted to the Tbilisi Girls' Institute. At the same time, he applied for the opening of girls' schools in the districts.

A new stage in the development of national awakening ideas (national press, national identity issues)

Thus, the initial signs of the enlightenment and national awakening movement, that began manifesting in the middle of the 19th century, deepened from the 70s and 80s of the centuries and began to be expressed in positive trends such as a new approach, the acceleration of the development of native literature and the literary language. In the second half of the 19th century, the main philosophical, socio-political directions in the formation of national consciousness were innovation, secularism, national self-awareness, democracy, European way of life, science, education, etc. there have been trends.

The creation of the national press in the form of the "Akinchi" newspaper began a new stage of the process of enlightenment and national self-awareness towards the end of the 19th century. The publication of "Akinchi" should be considered as the result of the national awakening that has already started. During this period, the emergence of the embryos of national ideas, the mass education of the people, the awakening of the Turkish nation, the spread of the idea of national and religious unity, and the press of "Akinchi" and the national period that arose after it were of exceptional importance. Hasan Bey Zardabi, the first representative of the Azerbaijani peasantry to study in Russia, was able to get permission from official circles to publish a newspaper in his native language.



ge after a three-year struggle. During the reviewed period, more precisely, in 1867-1874, despite the publication of a 1-2 periodical press in Russian language, 3-4 in Armenian, 3-5 in Georgian, there was not even a press in Azerbaijan [12]. By publishing a newspaper in Azerbaijani language, H. Zardabi hoped to accelerate the education of the people and to unite the society speaking the same language with the same purpose. This could create an opportunity to revive the unique characteristics of the moral history and the people, the picture of the historical conditions that brought them up. Thus, "...the considered time period of the XIX-XX centuries is a period of collapse and transition of literary-artistic and cultural development. Towards the end of the 19th century, the main reason for the emergence of a new style artistic thinking in the history of the world culture was the frustration and doubt prevailing in society [11, p. 3-4]. According to Zardabi, "...the country's newspaper should be its mirror. It should reflect the sufferings and hardships of the people as they are, so that each of the readers can see the state of the people like a reflection in a mirror [4, p. 91].

H. Zardabi rightly believed that language and religion were one of the most important factors for achieving the unity of the people: "...each tribe should keep two things firmly, which are considered the pillars of each tribe and their tribe are the cause of being. One of these things is language and another is religion. If one of them is lost, it is like breaking the back of the tribe. When both of them are lost, the tribe mixes with non-tribes and disappears" [4, p. 94]. In his article "Language Unity", Hasan bey noted that the ethnic origin of the Muslims in the Russian state is Turkish, their language is Turkish, but it is divided into different dialects, and he also wrote about the importance of achieving linguistic unity: it is important for us to strive for language unity and build a common language before time passes, to write and read in this common language... [3, p. 201]. According to him, this is the only case possible for the Turks living in different parts of the Russian territory to get closer to each other, culturally unify, strengthen and further develop. Mammadbey Sultanov wrote, "What is your Akinchi?" Is it just a newspaper? No, it's not a newspaper; It is the key to the enlightenment of the poor mountain people" [7].

H. Zardabi valued the unity of Caucasian Turks, as well as all Russian Turks around religious unity, and believed that religion is the main core of the spirituality in every nation, and it is the duty of every nation to protect its spiritual heritage and its holy book from spiritual invasion and destruction - protect it and pass it on to future generations in a non-politicized way, away from ignorance and superstition. In this regard, one of the letters in H. Zardabi's archive is of particular interest. A person named Misha noted in his letter that "Your attitude towards us gave us the most joy in the gymnasium. But sometimes dark clouds passed through these relations. This happened because of your special attitude towards Muhammad" [6]. The author of the letter continued his complaint and wrote: "In my opinion, it is more useful if you give advice to any person who needs you and guide him correctly, rather than the Hashimbeyovs and Hajiyevs. Or does the Caucasus only need progressive Muslim elements?!" [6]. H. Zardabi spoke with concrete ideas about language unity and cultural Turkism. He stated that "For the existence of our Russian-Tatar city schools, they are obliged to teach Tatar language and Sharia lessons" [9]. H. Zardabi actively participated in the meetings of the City Duma, and was repeatedly warned due to his sharp speeches. He was defended by his compatriots Hajinski and Topchubashov in Duma meetings. Hasan Bey noted that there is a slight difference between Azerbaijani Turkish language and the official language of the Ottoman state, but "...between them... there is no need to translate from one to another..." [3, p. 201].

The main goal of Hasan Bey Zardabi was to serve the national awakening and progress, and the preservation of the national identity. Therefore, despite all the bans of "Akinchi" from the Caucasian Censorship Committee, he persistently fought for national revival and conveyed the enlightened ideas of Azerbaijani intellectuals to the people. Despite being active for a short period of time, "Akinchi" had an exceptional service in all-Turkish unity formation. On the newspaper pages, special information was placed in the news headlines about the continuous Russian-Turkish wars and



Christian-Muslim conflicts in Europe in the 19th century. Of course, Hasan Bey Zardabi, as a subject of the Russian Empire, could not openly express his attitude to this news. However, by spreading news about Christian solidarity in the newspaper, he called Muslims to unity as well. For example, in the newspaper's 7th issue dated April 14, 1876: "Students of the Irkutsk gymnasium did not drink tea for 2 days in order to send their money to the people of Bosnia and Gerdsegovin [3, p. 156]. He was trying to wake up Muslim Turks by posting small notes like "The community called "Slavic Nation" in Petersburg has so far collected 243 thousand manats for the people of Bosnia and Gerdsegovina and has sent it to them" [3; p. 166] or in issue number 15 dated August 9th 1876 "They write from Petersburg starting from July 20th that today there is no way to pass through the main streets of Petersburg, where the private parts of respectable people are collecting money for the crusaders fighting the Ottomans, and there are so many donors that the streets are full." And following this news "Ottoman newspapers write that supposedly our Caucasian Muslims are collecting money for the Ottoman state" [3, p. 222].

CONCLUSION

The idea of national ideology and statehood is the struggle and clash of ideas in society. These differences of opinion also existed in the heritage of Azerbaijani intellectuals who lived in almost the same period, who laid the foundation of cultural enlightenment in Azerbaijan above. These disagreements also existed in the heritage of Azerbaijani intellectuals who laid the foundation of cultural enlightenment in Azerbaijan and lived almost at the same time. For example, A. Bakikhanov repeatedly emphasized the importance of teaching Persian and Arabic languages in Muslim schools, and prepared the textbook "Persian grammar" for use in schools. In contrast to him, M.F. Akhundzade fought not only for the teaching of Persian and Arabic languages, but also for changing and reforming the old alphabet, and laid the foundation of drama in his native language. Despite the main line of M.F. Akhundzade's work being the struggle against the Islamic religion, Hasan Bey Zardabi, the first representative of the Azerbaijani peasantry educated in Russia, stated that religion is one of the three factors that create the nation and noted that it is important for our future prosperity to be taught Sharia lessons in schools. Azerbaijani enlightenment, which arose as a field of activity at the level of these different ideas, has turned into a trend of ideas over time. The main goal of the Azerbaijani educators' activities was to eliminate the problems faced by the Azerbaijani people. It was the cultural struggle led by Abbasgulu Agha Bakikhanov, Mirza Fatali Akhundov, and Hasan Bey Zardabi in the second half of the 19th century that brought up the first principles of the ideas of national awakening, and the process of national self-awareness began and national ideas emerged due to their creativity and activity. Therefore, the second half of the 19th century can be considered as the period when Azerbaijani intellectuals introduced and accepted the national existence to the people.

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AZƏRBAYCANDA MİLLİ OYANIŞ İDEYALARININ İLKİN TƏZAHÜRLƏRİ (ƏLYAZMALAR İNSTİTUTUNUN MATERIALLARI ƏSASINDA)

A.M. İmanova

XIX əsr Azərbaycanın həm siyasi, həm də ictimai-mədəni tarixinin ən ziddiyyətli dövrü kimi qiymətləndirmək olar. Bir zamanlar Şərqi elm, ədəbiyyat və sənət ocaqlarından biri hesab edilən Azərbaycanda xalq tarixinin unudurulması üçün maddi-mədəni tarixi abidələri məhv edilir, anadilli məktəblərin açılmasının və mətbuatın qarşısı alınır. Bununla da dövlətçilik tarixinə son qoyulan, Azərbaycanın elm və mədəniyyətində də təzadlı dönmə yaşanır. Keçmiş feodal məfkurəsinin hələ də üstünlük təşkil etdiyi ictimai və ədəbi-mədəni mühitdə müasirlik meyilləri yaranmağa başlayır, getdikcə demokratik fikirlər, rus və Avropa mədəniyyətinin təsiri artmağa başlayır. Azərbaycan cəmiyyəti işğaldan sonra tarixi inkişafının növbəti keçid mərhələsini yaşayırdı.

Rus istilasının elə ilk günlərindən bölgələrdə müstəmləkə rejiminə qarşı müqavimət hərəkatı başlanan Azərbaycanda müqavimət hərəkatının ilkin mərhələsinin əsas hədəf və məqsədini milli-mədəni istiqmətin təşkil etmişdir. Rusiyada yaşayan türk xalqlarının milli hərəkat tarixinin mühüm cəhətlərindən ən önəmlisi bu hərəkatın əsas aparıcı qüvvəsinin çox zaman ziyalıların olmasıdır. Bu məqalədə maarifçiliyin və milli oyanış ideyalarının yalnız qısa bir dövrü ərzində, XIX əsrin II yarısından XX əsrə qədər olan dövrünün şəxsi arxiv materiallarında əks olunmuş bəzi məqamlarına toxunulmuşdur.

Açar sözlər: *Şəxsi arxivlər, maarifçilik, “Əkinçi”, məktəb layihəsi, milli özünüdərk, siyasi müstəqillik, “Gülüstanı-İrəm”.*



РАННИЕ ПРОЯВЛЕНИЯ ИДЕЙ НАЦИОНАЛЬНОГО ВОЗРОЖДЕНИЯ В АЗЕРБАЙДЖАНЕ (ПО МАТЕРИАЛАМ ИНСТИТУТА РУКОПИСЕЙ)

А.М. Иманова

Период после оккупации Российской империей, то есть XIX век, можно характеризовать как самый противоречивый период в политической и социокультурной истории Азербайджана. С российской оккупацией уровень культурной жизни и мировоззрения Азербайджана, который когда-то считался одним из центров науки, литературы и искусства Востока, пришел в упадок. Правительство Российской империи путем уничтожения материальных и культурно-исторических памятников пытался отдалить азербайджанский народ от своей истории. Запрещались открытие школ на родном языке и издание тюркоязычной печати. Тем самым, наука и культура Азербайджана, лишившегося государственной независимости, переживал переломный период. В общественной и литературно-культурной среде, где до сих пор господствовала прежняя феодальная идеология, начали проявляться современные тенденции, демократические идеи, стало расти влияние русской и европейской культуры. Таким образом, после оккупации общество Азербайджана переживало очередной переходный период истории своего развития. Как неизбежное последствие произошедших событий, возникали новые тенденции в формировании идей национального пробуждения. А также зародились своеобразные направления в мировоззрении переходного времени.

С первых же дней российского вторжения в регионах началось движение сопротивления колониальному режиму. Главная цель и задача начального этапа движения сопротивления в Азербайджане были сформированы на основе национально-культурных идей. Важнейшим аспектом истории национального движения тюркских народов, проживающих в Российской империи, является то, что главной движущей силой этого движения зачастую являлись представители интеллигенции. В данной статье затронуты некоторые моменты идей просветительства и национального пробуждения, отраженные в личных архивных материалах представителей интеллигенции периода со второй половины XIX века до XX века.

Ключевые слова: *Личные архивы, просветительство, «Акинчи», проект школы, национальное самосознание, политическая независимость, «Гюлистан-Ирэм».*



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THE CONCEPT OF DATA-DRIVEN JOURNALISM IN FOOTBALL: A CASE STUDY OF THE CHAMPIONS LEAGUE TOURNAMENT

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The rapid development of information and communication technologies has led to significant changes in the media field, as in every other area, and has brought about new opportunities. Traditional media forms - radio, television, and print journalism - have entered a new qualitative stage, while media specific to the virtual environment has also emerged. Visualization, considered as a component of Data-Driven Journalism, stands out as the most crucial point. In other words, the researcher must visualize the result obtained from the data being analyzed in an understandable way so that everyone can comprehend it easily. In this article, the data of clubs competing in the UEFA Champions League, considered the most prestigious club tournament in the European continent according to Kaggle, has been analyzed (from the 2011-12 season to the group stage of the 2021-22 season). The infographics produced with the obtained results have been prepared in a comprehensible manner for everyone. In the 21st century, articles written using data published by various platforms, both paid and free, help fill gaps in the literature and inform those interested in Data-Driven Journalism in a short period.

Keywords: Data-Driven Journalism, Champions League tournament, Football

INTRODUCTION

The advancement of technology in the modern age is influencing society and its lifestyle. Open changes and rapid flow of information are leading to the development of Data-Driven Journalism, which is updated day by day [1]. Thus, there is now a need to evaluate and research these innovations. Different questions arise: how can I acquire information in this field of science, namely Data-Driven Journalism? Are openly available data positive in terms of understanding information?

Open data refers to data that is freely accessible, usable, modifiable, and shareable by anyone for any purpose. Easy access to data by everyone is made possible at the expense of various institutions, ministries, and especially governments. For the development of Data-Driven Journalism, the disclosure of data on various topics is particularly important [2-4]. This branch of journalism has emerged with technological equipment and distinctive programs. Data journalism refers to practicing journalism with data. In other words, it involves perceiving what people need from an infinite amount of data. This actually requires serious research skills and abilities.

The British Guardian newspaper, through its Guardian Data Blog section, aims to reach certain conclusions using numbers in its news articles. It is known to cover data mining-related courses in many communication schools. While Data Journalism aims to merge journalism with computer skills, it also facilitates the use of visualization practices to enhance the understanding of numbers in news articles as a byproduct. Such applications can be easily produced using various free tools [5, 6]. For example, in a news article on the Guardian Data Blog about the first-round voting distribution in the Brazilian presidential elections, an interactive map of Brazil was added to speculate on the possible outcome of the next round. Consequently, Data Journalism seems to serve the purpose



of making visualization and numbers more understandable in countries where data is not readily available. To create such an interactive map, all you need is a file containing voting distributions in all cities. When you upload the file to the Silk application, the interactive map is automatically generated within a few minutes.

MAIN PART

Subject of the Research

Football has become more widespread and popular compared to other sports. In addition to leagues and cup competitions in different countries around the world, there are also world championships and continental tournaments.

Football teams representing both developed and developing countries in Europe compete for championships in various tournaments on the continent. One such competition is the UEFA Champions League. The main topic of the article is the use of data in football and the preparation of various infographics based on them.

The Purpose of the Research

The advancements in science and technology that gained momentum in the 20th century have continued into the 21st century, and with the impact of globalization, these developments have become pervasive across all countries. Significant developments have occurred in the field of technology, driven by military, economic, and political reasons. Factors such as the decreasing cost of computers and the increasing prevalence of communication networks have led to the dominance of digitization in all processes from the economy to everyday life.

The increase in data production and the widespread adoption and cost reduction of technological developments required for data processing have also facilitated the transformation of this data into information. Particularly in this study, the purpose of examining the Champions League tournament is due to the abundance of accessible data.

Sample of the Research

The sample of the research consists of data from the 2011-12 season to the group stage of the 2021-22 season.

Methodology of the Research

In the theoretical part of the study, a literature review was conducted. In the practical part, the data of clubs competing in the UEFA Champions League, considered the most prestigious club tournament in the European continent according to Kaggle, (from the 2011-12 season to the group stage of the 2021-22 season) were filtered through the OpenRefine 2018 program, and the obtained results were visualized using Canva and Adobe Photoshop 2021 tools.

Infographics and Assessment

After filtering the data of clubs competing in the UEFA Champions League, considered the most prestigious club tournament in the European continent according to Kaggle, (from the 2011-12 season to the group stage of the 2021-22 season), infographics were prepared regarding the teams competing in the football leagues of five countries (Germany, France, England, Spain, Italy)¹ Figure 1.

After analyzing the data, it was determined that Germany has been represented by 29 clubs in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season. Only 2 teams have managed to win the tournament (Bayern Munich 6 times, Borussia Dortmund 1 time).

¹ **Important NOTE:** The names of the countries are written in alphabetical order.



Fig. 1. Infographic on Bundesliga (Germany) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season

Bayern Munich, having participated in the tournament 38 times, has played 372 matches and achieved 221 victories. Borussia Dortmund has participated in the competition 20 times and won 78 out of 162 matches.

Bayer 04 Leverkusen has achieved 42 victories, 24 draws, and 45 defeats in the Champions League tournament. FC Schalke 04, which is currently competing in Bundesliga 2, also has a history in Europe's number one club tournament. They have had the opportunity to participate in the Champions League 10 times, obtaining 31 victories, 18 draws, and 28 defeats.

The reason for including information about only 4 clubs in the prepared infographic is that they have demonstrated more successful performance in the tournament. The primary goal of Data-Driven Journalism is to highlight the most important information. Therefore, focusing on the clubs that have achieved significant success in the tournament helps to emphasize key insights and trends.



Fig. 2. Infographic on Ligue 1 (France) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season.

After filtering, it was determined that 17 clubs have represented France in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season Figure 2. Among these 17 teams, only Olympique de Marseille had once been regarded as one of the strongest clubs in Europe. Despite PSG's lavish spending on transfers, they have not been able to win the Champions League gold medal. FC Girondins de Bordeaux, which is included in the infographic, is currently competing in Ligue 2.



Fig. 3. Infographic on Premier League (England) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season.

After analyzing the data, it was determined that 17 clubs have represented England in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season Figure 3. Among the clubs mentioned in the infographic, Liverpool has won the most Champions League titles among English representatives.

Manchester United has continued its inconsistent performance in the Champions League after the end of Sir Alex Ferguson's managerial career. However, the Red Devils are still the second most successful English club in the tournament. Chelsea is known as the most successful club in the Champions League among London clubs. They have won the tournament's gold medals twice. Although Arsenal has qualified for the tournament 21 times, they have not been able to achieve championship glory.

Following the appointment of Spanish expert Pep Guardiola, who is currently considered one of the world's best managers, as the manager of Manchester City, significant developments were observed in the team. The team won consecutive championships in the Premier League. After winning the English Premier League and the FA Cup in the 2022-23 season, Manchester City also won the UEFA Champions League, completing the season with a "treble." Continuing their momentum in the new season under the leadership of Pep Guardiola, the team also won the UEFA Super Cup and the FIFA Club World Cup, cementing their place in football history. It should be noted that the infographic states that Manchester City has not won the UEFA Champions League gold medal. This is because the data analyzed covers the period from the 2011-12 season to the group stage of the 2021-22 season. From the 2011-12 season to the group stage of the 2021-22 season, 14 clubs have represented Spain in the UEFA Champions League Figure 4. Real Madrid holds the title of the club with the most championships in tournament history (14 times). The team, which also included Turkish footballer Arda Güler, continues its campaign in the Champions League in the 2023-24 season. After Argentine footballer Lionel Messi's departure from Barcelona, the team began to perform poorly. It is true that strong players were eventually transferred to the team, and trophies were won. Barcelona is known as the club with the most Champions League victories in Spain, following Real Madrid. Turkish-German national footballer İlkay Gündoğan plays for the Barcelona team.

Although Atletico de Madrid has not won the gold medal in the Champions League, it has achieved success in the Europa League. However, since the focus of the article is on the Champions League, these details have not been included. The team representing the capital city of Spain, Madrid, reached the finals of the Champions League in 2014 and 2016 but was defeated by Real Madrid. Arda Turan, one of the talented footballers produced by Turkish football, was once an important figure for Atletico Madrid. Çağlar Söyüncü is currently playing for the team representing the capital city but is struggling to find playing time due to failing to meet expectations.



Fig. 4. Infographic on La Liga (Spain) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season.



Fig. 5. Infographic on Serie A (Italy) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season.

After filtering the data used in the implementation part of the study, it was determined that 16 clubs have represented Italy in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season Figure 5.

Among the Italian clubs, AC Milan is the team that has won the Champions League the most. Although Juventus has had more opportunities to participate in the tournament, they have only won the cup twice. Another representative from the city of Milan, FC Internazionale, has been awarded the gold medal three times in the UEFA Champions League tournament, in which they participated 23 times. They had the chance to become the strongest in Europe for the 4th time in the 2022/23 season. However, Manchester City denied them this opportunity in the final match held in Turkey. AS Roma, the capital club, has never won the Champions League.

CONCLUSION

From past to present, data has become one of the most crucial elements of our daily lives. Whether we are aware of it or not, we encounter data in many aspects of our daily lives. The fact that many things are expressed in numbers nowadays has increased the interest in the digital world. Therefore, data journalism has emerged, which highlights the importance of data and revolves around processing data with a journalistic approach.



Data journalism points to the investigative journalism activity that has gained importance with the emergence of new tools and applications in communication technologies. This form of journalism has gained prominence with the publication of leakage documents such as Wikileaks, Panama Leaks, Swiss Leaks, and Luxemburg Leaks, and the presentation of the data in these documents within the framework of journalism. Moreover, data journalism represents a transparent and accountable journalism approach. This researcher journalism activity, which combines scientific and artistic methods, is important in terms of adding news sources to news files, revealing hidden information among data sets, and addressing issues such as wars, migration, health, education, and government expenditures that are important for societies.

Data journalism operates on the principle of presenting information that is critical for societies and awaiting exposure in a manner that everyone can understand and benefit from. In line with this principle, it is crucial for data journalism processes to be carried out successfully. Especially after collecting and analyzing data, it is important to visualize and present the information in a form that everyone can understand and benefit from.

There are many data visualization methods and news presentation formats that can be used to convey the information obtained through data journalism. One of the news presentation forms that can be used in storytelling processes is infographic news design. Infographic design is highly important for effectively and easily presenting information obtained through journalistic processes using data visualizations. In this context, the study focuses on infographic news design and aims to outline the principles of infographic news design for effective and easily understandable news presentation.

The study's first section delved into the concept of data, data mining, and big data on a conceptual level. The second section conducted a literature review on data journalism. The third section provided information about the UEFA Champions League tournament. The fourth section constituted the research process. In this process, data was collected, filtered, infographics were prepared, and they were evaluated.

Some of the ideas that emerged from the prepared infographics include²:

- Among German football clubs, only Bayern Munich and Borussia Dortmund have managed to win the tournament.
- FC Schalke 04, currently competing in Bundesliga 2, also has a history in Europe's top club tournament.
- Among the clubs representing France in the tournament, only Olympique de Marseille was once considered Europe's strongest.

Time period covered by the data: From the 2011-12 season to the group stage of the 2021-22 season.

- FC Girondins de Bordeaux, featured in the infographic, currently competes in Ligue 2.
- Manchester United is the second most successful English club in the Champions League.
- Chelsea is recognized as the most successful club in the Champions League among London-based clubs.

² **Tournament name:** UEFA Champions League

- The infographic indicated that Manchester City did not win the Champions League gold medal in the 2022-23 season.
- Real Madrid holds the title of the club with the highest number of championships in tournament history.



- Barcelona is known as the club that has won the UEFA Champions League the most after Real Madrid in Spain.
- Atletico Madrid reached the final of the Champions League in 2014 and 2016 but was defeated by Real Madrid.
- AC Milan is the team with the most Champions League victories among Italian clubs.
- Another Milan-based representative, FC Internazionale, has been awarded the gold medal three times in the UEFA Champions League tournament in its 23 participations.
- Among English representatives, Liverpool has won the most Champions League titles.

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FUTBOLDA VERİLƏNLƏR BAZASINA GÖRƏ JURNALİSTİKA KONSEPSİYASI: ÇEMPİONLAR LIQASI TURNİRİNİN NÜMUNƏSİNDƏ

R.Z. Gülməmmədov

İnformasiya-kommunikasiya texnologiyalarının sürətli inkişafı hər bir sahədə olduğu kimi, media sahəsində də mühüm dəyişikliklərə səbəb olaraq, yeni imkanların açılmasına səbəb olub. Ənənəvi media formaları - radio, televiziya və yazı jurnalistikası yeni keyfiyyət mərhələsinə qədəm qoyub, bununla bərabər virtual mühitə xas media da yaranıb. Məlumat əsaslanan jurnalistikanın tərkib hissəsi hesab edilən vizuallaşdırma ən mühüm məqam kimi önə çıxır. Başqa sözlə desək, tədqiqatçı təhlil edilən məlumatlardan əldə etdiyi nəticəni hər kəsin asanlıqla qavraya bilməsi üçün başa düşülən şəkildə vizuallaşdırmalıdır. Bu yazıda Kaggle-a görə Avropanın ən nüfuzlu klub turniri sayılan UEFA Çempionlar Liqasında mübarizə aparan klubların məlumatları (2011-12 mövsümündən 2021-22 mövsümünün qrup mərhələsinə qədər) təhlil edilib. Əldə edilən nəticələrlə hazırlanan infoqrafika hər kəs üçün anlaşıqlı şəkildə hazırlanıb. 21-ci əsrdə həm ödənişli, həm də pulsuz müxtəlif platformalar tərəfindən dərc edilən məlumatlardan istifadə etməklə yazılan məqalələr ədəbiyyatdakı boşluqları doldurmağa kömək edir və Data-Driven Jurnalizm ilə maraqlananları qısa müddətdə məlumatlandırır.

Açar sözlər: *Data-Driven Jurnalistika, Çempionlar Liqası turniri, Futbol*



КОНЦЕПЦИЯ ДАННОЙ ЖУРНАЛИСТИКИ В ФУТБОЛЕ: ПРИМЕР ТУРНИРА ЛИГИ ЧЕМПИОНОВ

Р.З. Гюльмамедов

Быстрое развитие информационных и коммуникационных технологий привело к значительным изменениям в сфере СМИ, как и в любой другой сфере, и открыло новые возможности. Традиционные формы СМИ – радио, телевидение и печатная журналистика – вышли на новый качественный этап, одновременно появились и СМИ, специфичные для виртуальной среды. Визуализация, рассматриваемая как компонент журналистики, управляемой данными, выделяется как наиболее важный момент. Другими словами, исследователь должен визуализировать результат, полученный из анализируемых данных, в понятной форме, чтобы каждый мог легко его понять. В статье проанализированы данные клубов, выступающих в Лиге чемпионов УЕФА, считающейся самым престижным клубным турниром на европейском континенте по версии Kaggle (с сезона 2011-12 до группового этапа сезона 2021-22). Инфографика, созданная на основе полученных результатов, подготовлена в понятной для всех форме. В XXI веке статьи, написанные с использованием данных, опубликованных на различных платформах, как платных, так и бесплатных, помогают за короткий период заполнить пробелы в литературе и информировать тех, кто интересуется журналистикой, основанной на данных.

Ключевые слова: журналистика, управляемая данными, турнир Лиги чемпионов, футбол.

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