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BIOLOGICAL SCIENCES

MANIFESTATION OF QUANTITATIVE TRAITS IN F1 AND F2, COMBINATIONAL VALUE OF PARENTAL FORMS AND FORECAST OF THE PROSPECTS OF HYBRID COMBINATIONS

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Abstract

Allelic gene interactions constantly disappear during the process of homozygosity of hybrid populations of self-pollinating plants, and the effects of non-allelic gene interactions can become fixed in individual individuals. In the phenotype of hybrids, there are also effects of gene interactions, as well as many other types, since the number of interactions between polymorphic loci is virtually infinite. However, researchers believe that to some extent it is possible to determine the significance of the effects of gene interactions that disappear during the process of homozygosity of hybrid populations through self-pollination and separate their effects from those that persist. The obtained data on the nature of inheritance of the studied quantitative traits and the combining ability of the parental forms formed the basis for further research on the comparative study of older generations of these hybrids and the determination of the best combinations.

Keywords: homozygosity hybrids, hybrid populations, gens combinations, gens interaction.

According to modern ideas about genes, they are divided into two types: allelic and non-allelic. Allelic gene interactions constantly disappear during the process of homozygosity of hybrid populations of self-pollinating plants, and the effects of non-allelic gene interactions can become fixed in individual individuals. In the phenotype of hybrids, there are also effects of gene interactions, as well as many other types, since the number of interactions between polymorphic loci is virtually infinite. However, researchers believe that to some extent it is possible to determine the significance of the effects of gene interactions that disappear during the process of homozygosity of hybrid populations through self-pollination and separate their effects from those that persist [2].

The method of systematic analysis of the study of quantitative traits by self-pollinating plants is based on the use of the difference in the average values of traits of the first and second generations, which is determined by the effects of gene interaction that disappear during the process of population reproduction and, first of all, allelic ("All."). The effects of other gene interactions that arise as a result of hybridization and are fixed during the transition of hybrid plants to a homozygous state are defined as non-allelic ("non-all.").

Formulas are proposed for determining the effects of non-allelic interactions of genes and, on their basis, the combining ability of the original genotypes and predicting the breeding value of hybrid populations.

As far as we know from the literature, this method was used in the study of quantitative traits of bread wheat; there are practically no such data for the tetraploid group of wheat [1].

Let us trace the nature of inheritance of quantitative traits of ear and plant productivity elements in the first and second generations of 10 hybrid combinations of intra- and interspecific hybrids ($2n=28$).

Productive bushiness. This trait was inherited mainly by the type of incomplete dominance of the trait of one of the parents or intermediate. True heterosis

was noted only in one combination (turgidum x Sevinj with a level of 4.4%). Our data are consistent with the results of a number of researchers that overdominance is rarely observed for this trait.

The average indicators of this trait in F2 populations were 83.3-106.2% relative to F1. In combinations 2-4, productive tillering was on average 1.6-6.2% higher than F1. Higher average values of this trait in subsequent generations, according to Table 2, were expected in hybrids of the 3rd-5th combinations (FK=106, 1-106.2%). The relative values of non-allelic gene interactions in these combinations are also the largest (9.0-10.3%), which indicates the possibility of positive transgressions. In the combination Kyzyl Bugda x Kharkovskaya 7, overdominance in F2 is due to non-allelic interaction of genes, since in F1 there was intermediate inheritance. For this combination, the non-allelic interaction of genes in relative values is the largest (10.3%). Individual selection involves the selection of hybrid forms with higher productive bushiness than the original genotypes.

Number of spikelets and spike length. In F1, the average ear length for combinations was 6.5-8.9 cm, F2 – 6.7-8.8 cm. Higher indicators of this trait in older generations were expected in the 2nd and 9th combinations (FC = 112.9-117.0%). The relative indicators of non-allelic gene interactions were greatest in the 2nd and 8th combinations. The Kharkovskaya 7 variety was characterized by high SCS and OCS for this trait.

In terms of the number of spikelets of the main ear, the combinations Novinka 3 x Kharkovskaya 7 and Kharkovskaya 7 x turgidum should be more promising; in terms of relative indicators of "non-allelic gene interactions" - Novinka 3 x Kyzyl Bugda, Novinka 3 x Kharkovskaya 7 and Novinka 3 x Sevinj.

The Kyzyl Bugda variety was characterized by the highest SCS value of this trait, and the Kharkovskaya 7 variety was characterized by the highest SCS value [2].

The number of grains of the main ear. Inheritance of this trait was carried out according to the type

of overdominance and complete and incomplete dominance of the indicator of the best parent. The level of heterosis was 2.2-13.6%. The most grainy ears were the ears of the Turgidum x Sevinj combination. This indicator in the second generation hybrids was on average 1-5 more or less than in F1 (the average number of grains of the main ear of F1 is 45-52, F2 is 43-55). The Kharkovskaya 7 variety and the turgidum form (108 m 122%) were characterized by a high SCS for this trait; Kyzyl Bugda was characterized by a low SCS (94.1%), and the Sevinj variety stood out with a high SCS (16.7%).

The average values of the trait are expected to be high in the older generations of the combinations turgidum x Sevinj, Kharkovskaya 7 x Sevinj and Novinka 3 x Sevinj (FK=133.3; 113.4 and 115.6%). The relative values of non-allelic gene interactions for these combinations are the highest (30, 16.0 and 21%). It was in these combinations that productive lines with a large number of grains per ear were subsequently isolated.

The mass of grains of the main ear. Heterosis for this trait manifested itself in 6 combinations with a level of 4.2-7.2%, complete and incomplete dominance of the trait of the best parent and intermediate inheritance were noted in 4 combinations. Overdominance was observed in F2 of the five combinations. The average of this trait should be higher in the older generations of the combinations Novinka 3 x turgidum, Kyzyl Bugda x Kharkovskaya 7, Kharkovskaya 7 x turgidum and turgidum x Sevinj. More valuable in terms of selection of positive transgressions should be the combinations Novinka 3 x Kyzyl Bugda, Novinka 3 x Kharkovskaya 7, Kyzyl Bugda x Kharkovskaya 7 and Kyzyl Bugda x Turgidum ("non-all." - 12.4-20.5%).

The varieties Kharkovskaya 7 and the form turgidum (121.4 and 122.8) showed high TCS in terms of the weight of grains of the main ear, and high SCS – Kyzyl Bugda. It is interesting that the varieties Kyzyl Bugda and Sevinj are almost equal in terms of SCS, but in terms of SCS they differ greatly: high SCS in the village of Kyzyl Bugda and low in the village of Sevinj.

Weight of grains per plant. Overdominance on this basis in F1 was manifested in 4 combinations. True heterosis was 0.8-18.6% (turgidum x Sevinj and Novinka 3 x Kyzyl Bugda). In 7 combinations, the average values of this trait in F2 were slightly higher (by 1.7-15.3%) than in F1 [3].

Protein content in grain. The protein content in the grain of F1 hybrids was 13.9-16%, F2 – 13.8-17.2% (in parents 13.7-16.1%). In F1, this trait was inherited intermediately or with a bias towards one of the parents (a slight increase in relation to the parents by 0.5% was noted in the combination Novinka 3 x Sevinj and by 0.2% in Kyzyl Bugda x Sevinj). In F2, in most combinations, the average protein content in grain was slightly higher (0.2-1.2%) than in F1. In three combinations it was on average less (0.2-1.5%).

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JURISPRUDENCE

ISSUES OF APPLICATION OF INSTITUTIONS OF JUSTICE OF THE PEACE AND JURY TRIALS IN AZERBAIJAN (HISTORICAL AND LEGAL ASPECTS)

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Abstract

Against the background of increasing trends in the formation and strengthening of the foundations of the rule of law state and civil society, the role and importance of judicial and legal institutions, among which justice of the peace and jury trials occupy a certain place, are becoming increasingly clear. The introduction of these institutions in the post-Soviet space was first carried out in the second half of the XIX century on the basis of the judicial charters of 1864. But in contrast to the institute of justice of the peace, which was applied throughout the territory of the former Russian Empire (although for the outskirts of the empire were provided some deviations from the principles enunciated in the judicial statutes), the institution of a jury was introduced only in the central part of the state. The article makes an effort to expose the historical and legal analysis of issues related to the use of the institutes of justice of the peace and jury in Azerbaijan in the specified period, and also reveals the legal nature and characteristic features of these judicial and legal institutions. For this purpose, archival, legislative and publicistic sources were used. On the basis of the conducted analysis through the use of various legal methods, primarily the systemic, comparative and historical-legal methods, the estimation is given to process of realization of the relevant judicial legal institutions in the In the Russian Federation and the Republic of Azerbaijan.

Keywords: justice of the peace, jury trial, historical and legal aspect, judicial reform, magistrate court, mediation.

INTRODUCTION

In recent years, in the post-Soviet space, discussions have been intensified on improving the national judicial system, carrying out reforms in this area and introducing new judicial institutions. Against the background of these discussions, many assumptions have been put forward regarding the formation (or restoration in an improved form) of the institutions of peace justice, jury trials, mediation, etc. Along with the fact that these institutions contribute to increasing the efficiency of the expected results from legal proceedings, they also provide for active participation of the public in the administration of justice, which makes this process more democratic.

After the gaining of independence of the post-Soviet states, their parliaments discussed and adopted laws providing for the introduction of many democratic institutions, which the dominant ideology under the previous government "branded" as "bourgeois" and denied them. Most of these democratic institutions are reflected in the constitutions of the respective states. At the same time, it should be emphasized that the legislative consolidation of democratic institutions and principles in the process of lawmaking in post-Soviet countries, among which progressive judicial and legal institutions occupy a special place, were not unified. For example, in Russia, the jury was restored in 1993. In Azerbaijan, the Law "On the Judicial System of the Republic of Azerbaijan" dated June 26, 1990 provided for the formation of a special court with an expanded collegium of assessors to consider serious criminal cases. On February 5, 1991, the legal force of this provision was temporarily suspended. With the Law "On Courts and Judges in the Republic of Azerbaijan" of June 10, 1997 (Chapter XXI, Articles 115-123) and the Criminal

Procedure Code of the Republic of Azerbaijan of July 14, 2000 (Chapter XLVI, Articles 359-380) the institution of the jury was reintroduced in the republic.

As for the institute of peace justice, in Russia the magistrates' courts were reorganized in 1998. But, in the opinion of many researchers, the current process of the formation of the magistrates' justice in the Russian Federation was incomplete due to the establishment of the dependence of the magistrate on the district court. And in Azerbaijan, despite the rich historical experience and the advancement of doctrinal proposals regarding the need to restore magistrates' courts, this issue has not yet found its legislative embodiment in the lawmaking activities of the legislative body - the Milli Mejlis of the Republic of Azerbaijan.

Research objective and analytical data

The processes taking place at the present stage dictate the need for continuation of the judicial and legal reform and the beginning of a new stage in the development of the judicial and legal system in Azerbaijan and Russia. In this regard, the relevant normative acts are adopted, as well as amendments and additions to the existing legislative acts are made. On the basis of the Decree of the President of the Republic of Azerbaijan "On deepening reforms in the judicial and legal system" dated April 3, 2019, recommendations were made to the Supreme Court, the Judicial-Legal Council, the Ministry of Justice and other structures to improve legislation in this area, increase the authority of the judiciary and strengthen in a society of trust in the courts, the study of international best practices related to alternative mechanisms for the execution of decisions of courts and other bodies and the expansion of means of out-of-court settlement of disputes related to entrepre-

neurial activity, the creation of a specialized commercial court, the use of the Electronic Court information system to increase accessibility and transparency justice, an increase in the total number of judges for the purpose of effective activities of courts and reduce the time for consideration of cases in courts, etc.

Despite the strengthening of the material and technical resources of the judiciary, the computerization of the work of judges, the creation of favorable conditions for the performance of their duties, quality of the work of the courts cannot be called high. There are opinions that the quality of the work of the courts is mainly expressed in the number of appealed decisions. Almost 100% of decisions of the courts of first instance are appealed to the courts of appeal. About 90% of decisions of the courts of appeal are appealed to the Supreme Court. Low confidence in the courts on the part of citizens is explained by the fact that they often do not satisfy well-founded claims. If the decisions of the courts were legally justified, then even in the event of a loss, citizens would understand that the ruling is fair. It is officially recognized that the number of acquittals in relation to convictions is approximately 1%, and this is a very low figure. But at the same time, it should be noted that acquittals serve as a barometer of the independence of the judiciary. The foregoing once again confirms the need to introduce such judicial and legal institutions as the jury and peace justice in Azerbaijan (and in Russia to improve their structure and activities) in order to ensure the participation of citizens themselves in the administration of justice by means of jurors and the expansion of the conciliation process with the help of justices of the peace. ... The establishment of a jury will ultimately lead to an increase in the number of acquittals, strengthening the independence of judges.

The main advantages of a jury trial, in comparison with other forms of trial, are recognized as its independence from pressure from powerful individuals or representatives of the authorities and knowledge of life. Seeking the fairest possible solution to each case, the jury softens the severity of the law, reconciling its demands with the demands of human justice. With the existence of outdated and cruel laws, the jury, acquitting the defendants, despite the fact of the crime, reveals disagreement between the law and the people's legal consciousness, and this often leads to a change in criminal legislation.

As one of the important institutions not only of justice, but also of civil society, the jury allows the development of such principles in legal proceedings as discretion, adversariality, objectivity, equality of parties, and the presumption of innocence. It contributes to the eradication of various kinds of stereotypes, and the growth of professionalism of the participants in the process.

The resumptive positive aspects of the institution of the jury trial is that it acts as the most important constitutional guarantee of human rights, first of all, access to fair justice; the guarantor of the independence of the judiciary, the independence of the court and the fairness of the judicial procedure; means of judicial reform, assessment of the fairness of laws and education of the

legal consciousness of the broad masses of the population. A democratic tendency prevails here, that is, representatives of the people are directly involved in the exercise of judicial power. There is a high degree of independence of the jury from the state and state prosecution. As a result, the conditions for the contest of the parties are more ensured (collegiality, the absence of a psychological accusatory bias, the lack of knowledge of the jury about the case materials, their independence from professional judges, the introduction of everyday common sense into justice).

At the same time, as a result of a critical analysis of this institution, we have to talk about some of the shortcomings of a jury trial. These shortcomings mainly boil down to the fact that the jury's legal incompetence leads to unpredictability of their decisions, which are based not on the law, but on personal impression. As a result, not the right wins, but the eloquent; juries are heavily influenced by the media; jury trials are expensive, cumbersome and slow [21]. Opponents of using the institution of jurors (who are judges of fact) most often refer to the low level of legal consciousness of citizens who, as jurors, will sometimes justify those who clearly deserve punishment. In practice, they argue, jury verdicts also depend on random factors. The jury has the right to recognize a person as innocent, despite the proof of the crime. So, in the case of Krasnina, accused of premeditated murder of her partner (Ivanovo region), the jury decided: "Not guilty, although she did." Obviously, their verdict was influenced by data on the victim's personality, on his abuse of the defendant, etc. And in the Moscow region, in the case of P., who received a bribe in the amount of \$ 1,500, the jury, having recognized this as proven, found the defendant innocent, since he has a sick wife [22].

In some post-Soviet countries, there are other forms of an expanded jury when considering court cases. For example, in Uzbekistan and Kyrgyzstan, *aksakal courts* have been functioning for several years (according to experts, quite well), which is also a jury trial in its own way. They are given the right to resolve family and everyday disputes [22]. Despite the effectiveness of such "*people's courts*", nevertheless, these courts cannot completely replace the classical or continental forms of jury trials, which are mainly organized to consider serious criminal cases and provide for broad participation in the administration of justice of various segments of the population.

The institution of justices of the peace is also important for achieving the goals set by society for the judiciary. The primary task of these courts, which are closest to the population, is to reconcile the litigants. Thus, they contribute to the quick resolution of disputes, reducing the excessive workload of general courts. The revival of the institute of magistrates' courts in Azerbaijan and Russia has objective reasons. Among them, one can name the correspondence of the status of a magistrate to the tendencies of deepening specialization, professionalization of judges and the division of competence between courts of various levels; the desirability of resolving conflict situations through the active use of conciliation procedures; bringing justice

closer to the population with the introduction of elements of public control over the judicial system; the need to exempt courts of general jurisdiction from considering insignificant cases due to the increase in the number of appeals to the courts.

After the revival of magistrates' courts in Russia, there has been an increase in the number of appeals to these courts. On the one hand, this is due to the growth of confidence in them by the population, on the other hand, it gives rise to the problem of the insufficient number of justices of the peace. So, if in 2006 justices of the peace accepted 5 million 533 thousand civil claims for proceedings, and the number of cases considered by them to 486.7 thousand [17, p.142], now these figures have increased significantly. This is the case in the proceedings of administrative offenses considered by justices of the peace.

It should be noted that, at present, justices of the peace operate in many European states and the consideration of cases in these courts is carried out in the manner of simplified legal proceedings (summary offence). And in some countries, for example in England, these courts function under the name "magistrate's court". The Magistrates' Courts, which are the most massive judicial bodies in the judicial system in England, are considered the most democratic. Official judicial statistics show that 95-98% of all court cases registered in the country are considered in magistrates' courts every year [8, p.1-2].

It should be noted that even in the second half of the 19th century, during the period of the implementation of judicial reform, in contrast to the jury, the introduction of world justice did not cause a serious socio-political reaction in the Russian Empire as a whole, including in the Azerbaijani provinces. With the reorganization of world justice in today's Russia, such a reaction was not observed either. Naturally, various points of view have been and are being expressed regarding this institution, but this has happened and is happening now only within the framework of a narrow professional discourse.

After the amendments were made to the 1997 Law on Courts and Judges, which provided for the abolition of the jury in Azerbaijan, as well as the exclusion of provisions on the functioning and powers of jurors from the Criminal Procedure Code of the Republic of Azerbaijan, discussions about the usefulness or the uselessness of this institution do not subside. Some people say that "the institution of the jury is more suitable for Western countries than for Azerbaijan" [20], or "incapable people suddenly become arbiters of destinies. Citizens inhabiting the country must mature for a jury trial. To mature morally. To mature spiritually. "They will choose!" Let me ask you, who will choose? Find an incorruptible person to be selective. If you find him, you can appoint him as a judge. The jury will no longer be needed. The main problem of a corrupt society is not to find an honest person, but to find someone who will find an honest person"[19]. Others argue that "while the country is undergoing judicial reforms, the provision of jury trials cannot be excluded from legislation. If in the process of the ongoing reforms the uselessness of the jury trial became obvious, then in this case this

institution could be abolished. A jury trial would prevent corruption from spreading. Indeed, in ordinary courts, justice is in the hands of only a judge, a prosecutor and a lawyer. From this point of view, the participation of representatives of the general public in court proceedings would contribute to the observance of justice"[20].

These discussions once again show that there is no single opinion among theorists and practitioners about the institution of jurors. It should be noted that in some post-Soviet countries, including Azerbaijan, the modern problems of the establishment and functioning of the jury, its criticism to a large extent coincides with the opinions of opponents of the introduction of this institution in the 19th - early 20th centuries. Therefore, it is necessary to turn our attention to the problems of the formation of the legislative base and the application of this institution in Azerbaijan during the indicated historical periods. At the same time, examining the historical and legal aspects of the introduction of the institute of peace justice in Azerbaijan, we will try to substantiate the revival of magistrates' courts at the present stage of development of the judicial system, taking into account the historical experience.

Justice of the peace and jury trial during the period of Russian rule in Transcaucasia

The institute justice of the peace, introduced on the territory of the Transcaucasia, in particular Azerbaijan during the period of Russian rule on the basis of the judicial statutes of 1864, had its own distinctive features. So, as a result of promulgation of the Judicial Charters to the Azerbaijani provinces in two years after the adoption, in February 1868 district courts and magistrates' offices (the so-called magistrates' courts) were formed on the basis of the "Regulations on the Application of Judicial Charters on November 20, 1864 in the Transcaucasian Territory" of November 22, 1866 [13, 43880]. The purpose of introducing the institute of world justice was the successful experience of Western countries in using justices of the peace as the lowest level of the judicial system to resolve minor cases; the difficult socio-economic situation in the Russian Empire, namely, the formation of capitalist relations and changes in the social structure of society; political changes aimed at democratizing Russian society; congestion of district courts; lack of professional judges and people with higher legal education; changes in public consciousness due to the capitalization of economic relations; distrust of the people to the old tsarist judicial system. The introduction of the magistrate's court as the lowest level of the judicial system for solving certain problems was previously used in the world practice of reforming the judicial system. Thus, the institution of the "world court" appeared in England and successfully administered justice until the 1980s. France adopted the principles of building of justice of peace only in the 18th century, but without receiving the expected results, the French legislator made some changes and henceforth the magistrate's court became the lowest level of the judicial system. It was in this form that Germany and the Russian Empire familiarize with the magistrate court. Unlike the central provinces of Russia,

where the magistrate's court was isolated from the general judicial system, in Azerbaijan the magistrate's court was included in the unified judicial system. In other words, the separateness of the two judicial systems: world justice and common court places, has not been embodied in Azerbaijan. Congresses of justices of the peace representing a second court of law for their departments in the inner provinces of Russia were not established. Therefore, in the Azerbaijani provinces, the district court acted as an appellate instance in cases considered by justices of the peace. District and honorary justices of the peace were not subject to election, but to appointment as governor in the Caucasus. The term for the appointment of district justices of the peace was not set, and honorary justices of the peace were appointed for three years. The jurisdiction of the justices of the peace of Azerbaijan in comparison with the jurisdiction of the justices of the peace of the central provinces of Russia has been expanded. So, if in the internal provinces of Russia civil disputes could be resolved by the magistrates' courts only for an amount of up to 500 rubles, and criminal cases for which, according to the law, reprimands, fines up to 300 rubles, arrest up to 3 months were provided, then the jurisdiction of the magistrates' courts of Azerbaijani provinces included all civil cases on movable and immovable property worth not more than 2,000 rubles, cases of seizure and personal grievances and, finally, criminal cases in respect of which the law did not provide for punishment related to the deprivation or restriction of the rights of the state. In addition, the justices of the peace were entrusted with the production of the preliminary investigation, as well as the management of guardianship and the performance of notarial acts in those areas where there were no notaries [9, p.89-90].

District courts exercised direct supervision over justices of the peace, liable for the adoption of measures to restore the broken order in the world institutions and to bring the perpetrators to justice on the basis of Article 250 of the Charter of judicial institutions.

Regardless of the submission of a systematic annual report, the magistrates' courts were obliged to submit to the district courts for every third (quarterly) list of reports on the number of cases remaining from the previous third, on the number of cases received and resolved during the reporting period, both in criminal and civil cases, and on investigations and writs of execution with an exact designation of the number of cases pending and completed by each official separately, so that these reports are considered each time in the general meeting of the court with the participation of the prosecutor [1, op.5, d.20, ll. 23-23v.].

The appointment of justices of the peace as governor, and after some time as the minister of justice with the consent of the *chief civilian unit* in the Caucasus, imposing the duties of judicial investigators on justices of the peace and their assistants, non-establishment of congresses of justices of the peace, consideration of cases in district courts without the participation of jurors, etc. not only proceed from the basic principles of the judicial statutes of 1864, as some authors mistakenly believed [5, p.62], but were significant deviations from these principles.

On June 15, 1912, the Russian Empire adopted a law on the reform of the local court, which also related to the institute of justice of peace [16, p.967]. This law, which came into force on January 1, 1913, along with other issues, provided for the status of the magistrate's court as an elective, general civil social stratum with the involvement of "local people", allowing the use of customary law and local languages; to organize congress of justices of the peace, as a link between the local court and national judicial institutions. But, unfortunately, this reform covered only the central and western parts of the empire, and its outskirts, including the Azerbaijani provinces, were again remained out of sight.

For the first time, information about the jury trial in the history of the judicial system of Azerbaijan can be marked out during the implementation of the judicial reform of 1864. When applying the judicial statutes of November 20, 1864 in the Transcaucasian region, in particular in the Azerbaijani provinces, on the basis of "Regulations on the application of judicial charters on November 20, 1864 in the Transcaucasian region" dated November 22, 1866 [13, 43880] and "Decree on the introduction of judicial statutes to the Transcaucasian region from January 1, 1868" [13, 46374], under the guise of the peculiarities of this region and, mainly, the "underdevelopment" of the local population, a number of significant deviations from the general order of the judicial system and legal proceedings were envisaged.

Although the Establishment of Judicial Regulations and the Charter of Criminal Procedure provided for the formation of a public element in court across the Russian Empire in the second half of the 19th century, the introduction of such democratic elements as the institution of jury trials and the selectivity of world institutions did not find their legislative embodiment in Azerbaijan.

This was also facilitated by the arguments of the local bureaucracy regarding the introduction of a jury trial in Transcaucasia. Some of them categorically opposed this institution, believing that our people are not sufficiently developed to enter into considerations that require both subtle analysis and logical conclusions, others believed that it is of a "political nature", and therefore its introduction could cause undesirable consequences. But all of them agreed that the population of Transcaucasia allegedly "is too little aware of the crime of those incidents that horrify an educated society, and that this population, sitting in the courts, would completely justify all hardened criminals" [14, p.78] ...

The statements of the tsarist officials that the concepts of the local population about the crime of blood revenge, robberies, and the abduction of women do not correspond to the basic concepts of public safety, that these and other grave crimes almost belong to the very life of the inhabitants of the Caucasus, were gross slander and expressed the chauvinistic policy of the tsarist authorities in relation to "non-Russians". In addition, these statements were in contradiction with the data even of official statistics, which testified to the fact that the prevalence of crimes in the Transcaucasian provinces was about the same, and sometimes even less than

in the inner provinces of Russia. According to the results of the same statistics for 1879, it can be seen that one major crime within the jurisdiction of the district court in the Ganja (Elisabethpol governorate) accounted for 315 people, in the Tiflis province - for 322 people, in the Iravan province - for 484 people, whereas in the Odessa district - by 416 people, in the district of the St. Petersburg district chamber - by 344 people. [14, p.81-82]. On the other hand, these official data also did not reflect the actual state of affairs, because, along with criminal offenses, they also reflected manifestations of the struggle of the working peasantry in the form of the movement of the *kachags* (fugitives) against the tsarist officials, officers and local oppressors, who were characterized by Russian noble jurists as "robbery and plundering".

After the establishment of crown courts for criminal cases in Azerbaijan, as well as throughout the entire territory of Transcaucasia, since February 19, 1868, the central and local authorities became convinced of the unsuitability of these courts and the need to reform them by involving a public element. At the same time, they did not address a court of jury, but began to look for another form of court, significantly limiting the representation of the population by the most "reliable persons". This was the result of various projects, such as the project on the need to introduce "local knowledgeable people" into the Caucasian courts, drawn up by the chief in the Caucasus; the draft of the Prosecutor of the Tiflis Court of Justice "On the introduction of honorary members from local residents into the composition of the district courts of the Caucasian district"; the draft "On the formation of a mixed collegium of three members of the district court and three jurors of a special composition", developed by the commission for the revision of legal provisions on the judicial part, etc.

Some public and state leaders of that time had their own views on the application of the jury trial in the Transcaucasia. G.M. Tumanov, M.O. Gruzenberg and others advocated the introduction in areas where only crown courts operate, in particular in the Caucasus, not a jury of a special composition with an increase in educational and property qualifications and merging them into one collegium with by crown judges, as suggested by the Highly approved commission, and by jury of the general composition, that is, with the provision of representatives of all categories of the population.

In wide public circles of the Caucasus and in the periodicals, the idea was affirmed that the need for a jury trial is nowhere greater than in the Caucasus. The court here was too distant from the life of the population, from its legal and ethical views, from its everyday characteristics. In contrast to professional judges, whose a special legal education and professional activity placed in such living conditions that they did not have access to the necessary acquaintance with the various life conditions, the various circumstances in which crimes were committed, necessary for the correct resolution of cases, jurors who belonged to different representatives of society, knew the life of this latter in all its strata, with all the local characteristics and shades of each of the diverse groups that make up the society. Therefore, the introduction of the jury in Azerbaijan in

the native language of its inhabitants due to the insufficient prevalence of the Russian language (otherwise the jurors during the meeting on the question of the guilt and innocence of the defendant would often resort to the help of translators), would bring more benefit to society than the crown courts for criminal business.

The need to introduce a jury trial in Transcaucasia, in particular, in Azerbaijan, was determined by the extraordinary impressionability of the jury and their sensitivity to all the individual characteristics of each particular case. But the restrictions envisaged in the law when applying the judicial reform in Azerbaijan completely eliminated the local population from participating in the court. The authorities recognized that it was undesirable to create such a court in the Azerbaijani provinces in which judges, jurymen elected by the local population would be represented - who could, to a certain extent, limit or hinder the arbitrariness of judges appointed by the administration.

The conviction that only one possible reform of the criminal court operating in the region is the establishment of jury trial had been increasingly introduced in some official resolutions of various public organizations and in the periodicals. At that time, the attorney at the Tiflis Court of Justice M.O. Gruzenberg prepared a draft law "On the introduction of a jury in Transcaucasia", which proposed conducting legal proceedings in the native language of the local population with the participation of jurors [9, p.177-178]. The bill provided for such issues as the procedure for electing jurors, drawing up general and regular lists for their election; structure, rights and obligations of the Commission on compiling a list; the right of persons to file complaints about the incorrect inclusion or non-inclusion of someone in the general lists; the number of regular and reserve assessors included in the lists for each province; the procedure for calling jurors to participate in the consideration and resolution of criminal cases and many other issues.

However, the legal norms of the judicial charters that determined the procedure for the formation and operation of a jury trial (that the consideration of crimes entailing punishment combined with deprivation of all rights and benefits should take place in district courts with the participation of 12 elected jurors, who, by a majority vote, must to decide the question of the guilt or innocence of the defendant), had no legal force on the territory of Azerbaijan until the formation of the Azerbaijan Democratic Republic in 1918.

The legal basis for the functioning of the institutes of justice of the peace and the jury during the period of the Azerbaijan Democratic Republic (1918-1920)

During the functioning of the first democratic republic in Azerbaijan in 1918-1920 in all spheres of public, political and legal life of the country, major transformations took place, among which the reforms in the judicial system of the republic stood out. It was at this time that legal acts containing universal democratic values were adopted, in particular, a legal basis was created for the effective functioning of the judicial and investigative bodies. From the first days of its activity,

the Government of the Republic of Azerbaijan was engaged in the restoration of district, magistrates' courts and investigation departments that were inactive (in Ganja province) or liquidated (in Baku province) during the functioning of the previous authorities.

By a government decree of September 14, 1918, funds were allocated for the restoration of magistrates' courts within Azerbaijan [6, No. 9]. Due to the lack of trained specialists, the educational qualification was reduced and the minimum requirements for the replacement of judicial positions were established.

The Law "On Expanding the Jurisdiction of Magistrates' Courts in Criminal Cases and Changing Punishments for Certain Criminal Offenses Against Another's Property" of August 18, 1919 the jurisdiction of justices of the peace to consider and resolve criminal acts such as embezzlement, fraud and other theft of other people's property worth up to 10,000 manats (before that, stolen, embezzled or wasted property worth over 300 manats was under the jurisdiction of the district courts) was expanded. Along with this, the consideration of some criminal acts that belonged to the jurisdiction of the district courts and did not pose any particular public danger was transferred to the magistrates' courts [10, p.354-355].

Ad hoc subcommittee established on February 11, 1919 under the Ministry of Justice for the preparation of legal provisions "On local courts" with the aim of improving the local court in the Republic of Azerbaijan developed a draft law "On the Magistrates' Courts and People's Courts" [11, p.209-210]. In accordance with this draft law, the creation of courts of two types was envisaged: in cities, as well as in urban-type settlements - individual magistrates' courts; in other places - people's courts, built on the basis of the principle of collegiality (composed of three judges). Identity of the terms of reference was determined for both of these courts. As an appellate instance for these courts, the establishment of a general congress of justices of the peace and people's courts was envisaged, which included a special permanent chairman, one justice of the peace and one chairman of the people's court. The main criterion for the formation of these courts was the principle of eligibility, as well as educational qualifications. The latter was established for people's judges with an education of at least the fourth grade of city schools. And for the justices of the peace and the chairman of the people's court, the level of education should be higher.

Along with numerous laws, a draft law "On the establishment of a jury court in Azerbaijan" was prepared and adopted. Prepared by the subcommittee "On public involvement in the administration of justice", functioning under the Ministry of Justice of the Republic of Azerbaijan since February 1919, the law (adopted by the Parliament of Azerbaijan at the beginning of 1920) provided for the establishment of a jury court in Azerbaijan, "on grounds significantly different from the foundations of jury trials in the former Russian Empire, and corresponding to local conditions and the latest advances in legal thought in Western Europe on this issue" [4, p.64]. According to this legal provision, the participation of the jury in solving all issues was envisaged,

both in making a verdict regarding the guilt or innocence of the defendant, and in deciding the issue of determining the punishment [11, p.292]. But the jurors, functioning under the previous regime, participated only in solving the issue of the guilt of the defendant and did not have the opportunity to influence the court in determining the punishment. Unfortunately, due to the conquest of Azerbaijan by the Bolsheviks, along with other democratic transformations, this institution could not be fully implemented.

Conclusion

In 1920, the Soviet power established in Azerbaijan abolished all democratically organized judicial bodies of the previous regime. Under the Soviets, justice was administered by a judge and two people's assessors. Formally, legally, all three of them had equal rights, but in practice, both in criminal and civil proceedings, the decision on the case was actually taken by a professional judge alone. As a disadvantage of the people's assessors, one can point to their inactivity, in which the collegiality of the decision was very conditional. As a rule, they uncomplainingly joined the verdict, unwittingly yielding to the authority of the judge.

During the last years of perestroika, in order to free the dependence of judges from local authorities, the idea of creating a jury was enshrined in Article 11 of the Fundamentals of Legislation of the USSR and the Union Republics on Judicial Proceedings of November 13, 1989. It is interesting that Azerbaijan was the pioneer of these processes. As part of the former USSR, Azerbaijan became the first union republic to establish a jury trial. Corresponding changes in the Criminal Procedure Code of the country were introduced by the Law of June 26, 1990 "On the judicial system of the Azerbaijan SSR". A 6-month period was provided for the organizational preparation of the creation of a jury, however, the action of the relevant articles of the Criminal Procedure Code was suspended by the Resolution of the Supreme Council of Azerbaijan "On the suspension of the entry into force of some articles of the Criminal Procedure Code of the Republic of Azerbaijan" dated February 9, 1991 and unfortunately, the jury did not commence their activity.

Subsequently, the adopted normative legal acts, in particular the "Law on Courts and Judges of the Republic of Azerbaijan" of 1997 and the "Criminal Procedure Code of the Republic of Azerbaijan" of 2000, provided for the relevant provisions regarding the organization and functioning of the jury, which, unfortunately, remained without effect and some time later they were excluded from the composition of these acts.

Nevertheless, in the post-Soviet countries, where jury courts function, their effectiveness has been proven in practice. For example, in Russia, juries have shown that they are more likely to pass acquittals than they do in the usual way. In 2017, out of 318 thousand defendants whose cases were considered by the court in a general manner, 67% (212 thousand) were convicted, 0.9% (2.9 thousand) were acquitted, in relation to 1.2% (3.9 thousand) on rehabilitating grounds and in relation to 28% (90 thousand) - on non-rehabilitating grounds the cases were terminated. 11% (23 thousand) courts

softened the charge. Taking into account the cases examined in a special order, in 2017, 0.3% of the defendants were acquitted. After jury verdicts in 2017, 446 people were convicted, 52 (10%) were acquitted. Over the past 10 years (2008–2017), jury trials have considered 4139 criminal cases. According to their verdicts, 7680 people (83%) were convicted, 1544 (16%) were acquitted [23]. Therefore, the authorities considered it necessary to expand the jurisdiction of the jury. After the restoration of the institution of jurors, there was a gradual narrowing of the competence of these courts (for example, in 2008–2013, articles such as "Terrorism", "Hostage-taking", "Riots", "Espionage", "Organization of a criminal community", "Murder", "Production and sale of drugs on a large scale", "Rape and sexual crimes against children", "Attempts on the life of public figures, law enforcement officers, judicial authorities", etc. Therefore, until June 1, a small number of crimes were attributed to the jurisdiction of the jury), but recently, at the initiative of representatives of civil society, in particular the Ombudsman and members of the Human Rights Council, who relying on practical achievements of effective results in the administration of justice with the participation of an expanded jury assessors, as well as with the initiation of this issue by the President of the Russian Federation regarding the need to expand the role of the institution of the jury, amendments were made to the Criminal Procedure Code of the Russian Federation and came into force on June 1, 2018. These amendments provide not only for the return of previously withdrawn criminal cases to the jurisdiction of the jury, but also for the extension of the jury to district and garrison courts. In addition to the jurisdiction of the jury, criminal cases under Part 1 of Art. 105 (murder without aggravating circumstances) and part 4 of Art. 111 of the Criminal Code of the Russian Federation (deliberate infliction of grievous bodily harm, resulting in the death of the victim) are included. Thus, according to experts, the number of cases considered with the participation of juries in Russia may increase 70 times - up to 15 thousand per year [24].

Due to the fact that in Russia (on the basis of the federal law of July 27, 2010, which entered into force on January 1, 2011) and Azerbaijan (on the basis of the law of March 29, 2019, which entered into force on April 4, 2019) laws on mediation have been adopted to regulate alternative dispute settlement procedures with the participation of a moderator (mediator), and the need to improve (or restore in Azerbaijan) the activities of world justice has increased even more. Because, along with other professional moderators, justices of the peace are also actively involved in reconciliation procedures, i.e. practical application of the mediation procedure. Using conciliation procedures and achieving reconciliation of the parties in the process, the judge achieves the main goal - a fair resolution of the dispute. It would not be superfluous to recall the fact that during the period of the initial application of peace justice in Russia and Azerbaijan in the magistrates' court of that time, alternative dispute resolution, which had features similar to modern mediation, should have become widespread. So, the magistrate's court from the moment

of its initial functioning should first of all try to reconcile the litigants.

Considering that judicial and legal reforms are continuing in Azerbaijan and various models and judicial and legal institutions are being actively discussed, we consider it necessary to consider at the legislative level the issue of the feasibility of restoring the institutions of peace justice and the jury in Azerbaijan (and in Russia, improvement of these institutions), taking into account historical experience of our countries. At the same time, when solving the problem of integration of the magistrate and jury into the proceedings, it is necessary to take into account modern restorative approaches to resolving legal conflicts. The revival and development of the magistrate court and the jury in this direction would help to improve the quality of their level in the administration of justice accessible to the people.

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MATHEMATICAL SCIENCES

FROM THE PHYSICAL REALITY OF IMAGINARY NUMBERS IT FOLLOWS THAT THE INVISIBLE AFTERLIFE WORLD, MENTIONED IN ALL RELIGIONS, IS IN FACT PHYSICALLY REAL¹

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Abstract

The article proves that the generally accepted version of STR, which states that imaginary numbers are physically unreal, is incorrect. Experimental evidence is given of the general scientific principle of the physical reality of imaginary numbers, with the use of which a corrected version of the SRT was created. She argues that in addition to our visible universe, there are many other mutually invisible uni-verses in nature. And they form the actually physically existing after-life invisible world, predicted by all religions.

Keywords: imaginary numbers, special theory of relativity, invisible universes, afterlife invisible world

1. Introduction

Imaginary numbers, discovered about 500 years ago by Scipione Del Ferro, Niccolò Fontana Tartaglia, Gerolamo Cardano, Lodovico Ferrari and Raphael Bombelli [1], are known to everyone and are currently used in all exact sciences. They are even studied in school mathematics courses. But unlike other numbers that are understandable to everyone - integers and fractions, positive and negative, scalar and vector, etc. - their physical essence has not yet been explained. Indeed, what 2 kg., 3 m., 4 sec. is clear to everyone, but

what is $2i$ kg., $3i$ m., $4i$ sec., where $i = \sqrt{-1}$, no one can explain. Nevertheless, no one cared about this, just as, for example, now no one can explain. Nevertheless, no one cared about this, just as, for example, now no one cares that the phenomenon of ball lightning is not explained.

But at the beginning of the 20th century Joseph Larmor [2], Nobel Prize winner Hendrik Anton Lorenz [3], Jules Henri Poincaré [4], Nobel Prize winner Albert Einstein [5] and other outstanding scientists created the special theory of relativity, which rightly accepted to be considered an outstanding scientific achievement of physics of the 20th century, because it proposed the principle of relativity. And which is therefore now studied in all physics textbooks used in the educational process even at the most prestigious universities. However, in this theory, calculations using relativistic formulas, which were the final result of all reasoning, in some cases led to a result measured by imaginary numbers.

And this result already needed to be explained. After all, no one would need a theory that even its creators could not explain. But the authors of SRT did not know how to do this. And the fate of the service station hung in the balance. But it was saved by the fact that an additional postulate was introduced into the SRT, called the principle of not exceeding the speed of light, from which it followed that quantities measured by imaginary numbers do not exist in nature. And therefore, there is no need to explain them.

This is the form in which SRT is still taught.

2. The physical reality of imaginary numbers.

But besides SRT there are other sciences. Including the theory of electrical circuits, which is used in radio engineering, electrical engineering and computer science. Fundamental to this theory is Ohm's law [6], [7], discovered in 1826 for DC electrical circuits, which is now studied even in school physics textbooks. And in 1893, Charles Proteus Steinmetz proposed its interpretation of Ohm's law for alternating current electrical circuits [8], which is now used daily by millions of engineers around the world in their work. In this theory of electrical circuits, the imaginary resistances of capacitors and inductors, which can be measured by instruments, were recognized as actually physically existing. And if these imaginary resistances were recognized as physically unreal, as follows from SRT, then neither radio engineering, nor electrical engineering, nor computers, nor radio measuring instruments should exist.

¹ This is reprint of the article "Antonov A. A. From the physical reality of imaginary numbers it follows that the invisible afterlife world predicted by all religions actually exists. Norwegian Journal of development of the International Science. 130. 36-41. <https://doi.org/10.5281/zenodo.10975059>".

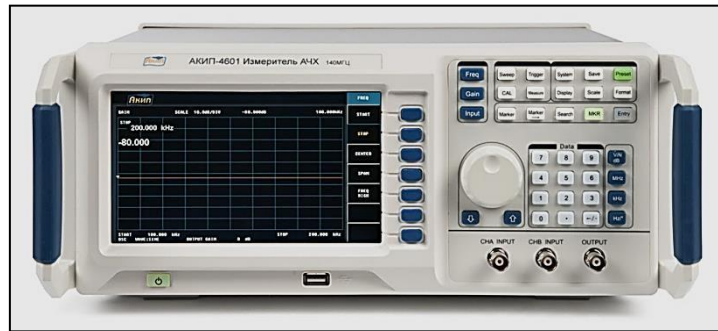


Fig. 1. In any radio-technical laboratory there are devices called frequency response meters, which prove the physical reality of imaginary and complex numbers by their mere existence

But they do exist. And thereby they prove the physical reality of imaginary numbers [9]-[28]. Consequently, by the existence of radio- and electrical engineering, the generally accepted version of SRT was re-

futed even before its creation. Other proofs of the physical reality of imaginary numbers have been published in [29]-[43]. Therefore, the logical conclusion is that the version of SRT currently presented in all physics textbooks is incorrect [44]-[64].

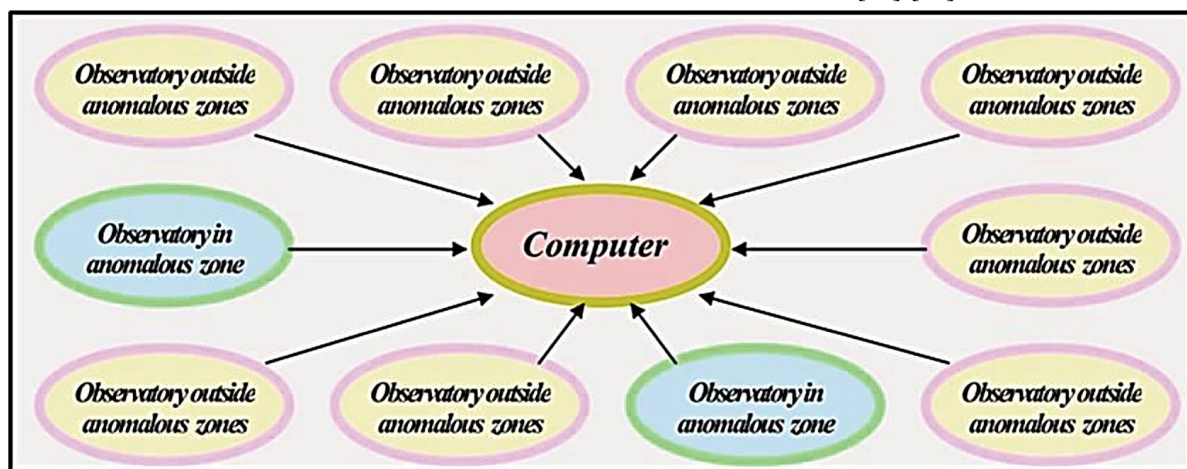


Fig. 2. Scheme of an astronomical experiment to detect invisible universe

3. Physical reality of invisible parallel universes

In the existing generally recognized version of SRT from its relativistic formulas and the principle of non-exceeding the speed of light also follows that in nature there is only our visible universe in which everything is measured only by real numbers.

However, in the corrected version of SRT [65]-[74], from its relativistic formulas it follows that in our Multiverse [75]-[85], in addition to our visible universe, there are also about twenty other mutually invisible parallel universes

And one can be convinced of their existence [86]-[91]. as a result of astro-nomical observations of the starry sky in portals [92]-[94], since the constellations in them will differ - and the further into the portal one penetrates, the greater the differences will be - from the constellations observed at the same time in the same region outside the portals. And since there are a lot of anomalous zones [95]-[98] on Earth, presumably being entrances to portals, some observatories have already are located in such anomalous zones. Like, for example, the main astronomical observatory of the National Academy of Sciences of Ukraine, located in Golo-seyevsky forest 12 km from the center of Kiev. Therefore, in order to verify the existence of neighboring invisible universes adjacent to our visible universe, it is

enough to compare on a computer the observations of this observatory with the observations of neighboring observatories located outside the anomalous zones.

4. Why, despite all the refutations of the generally accepted version of SRT, set out in all physics textbooks, it continues to be taught.

But this simple and low-cost experiment, which in the most indisputable way will allow us to answer the question of whether there are invisible universes neighboring our visible universe, no one has done or is going to do. Obviously, because physicists do not need such an answer, since it will refute the version of SRT studied in textbooks.

The corrected version of SRT states that imaginary numbers are physically real and invisible universes exist. Therefore, having become convinced of the existence of invisible universes, we will have to admit that the corrected version of SRT is correct and once again be convinced that imaginary numbers actually physically exist. And then it will inevitably be necessary to explain their physical meaning of imaginary numbers. And it is obvious - in addition to our visible world, there is an invisible world.

5. The existence of a physically real invisible world

However, the usefulness for science of the above experimental evidence of the physical reality of imaginary numbers goes beyond problems of correcting the version of SRT given in physics textbooks. From experimentally proven principle of the physical reality of imaginary numbers, one will inevitably have to conclude that the results of all studies described by imaginary numbers in all other exact sciences also are physically real.

Then many difficult questions will arise. For example, what exists in the looking glass when we see ourselves in the mirror? And therefore, in the end, we will have to admit that in addition to our visible world, there is also a huge (most likely even much larger than our visible world) invisible world [99]-[106]. Indeed, in addition to the room in which we are now and which we see, there are a large number of other invisible to us rooms in other apartments, houses, cities and countries. The same situation is in space – in addition to our visible universe, in other dimensions there are about twenty other parallel universes of the hidden Multiverse that are invisible to us. And outside of our hidden Multiverse in the Hyperverses, there are many other Multiverses.

And the existence of such a world invisible to us, in which Gods and the souls of the dead live, was long predicted by all world religions. Consequently, what these religions say about the world order, about the afterlife, is true. And therefore, all of us, the inhabitants of planet Earth, will now have to believe in this.

6. Conclusion

The author hopes that the information presented in the article will be an incentive to unite the efforts of science and religions in their activities for the benefit of people.

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MEDICAL SCIENCES

DEVELOPMENT OF ANTHROPOMETRY IN THE HISTORICAL ASPECT

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Abstract

The development of anthropometry is touched on from a historical perspective. It has been noted that anthropometry has a deep connection with the exact sciences and arts. The contributions of various scientists, artists, and sculptors to the development of anthropometry were discussed.

Keywords: anthropometry, body height, canons.

Anthropometry gives us the factual basis for studying a person's appearance, teaching us how to measure the human body and determine the relationships between its parts. Thus, anthropometry represents only the technical part of somatic anthropology, which studies the human body, not only in its appearance but also in all its physiological functions [1, 2]. A study of the literature showed that interest in the morphometry of the skull, pelvis, and limbs has been renewed. This is due primarily to the spread of new research methods in anthropological work and the formation of a new scientific view of human physical capabilities. Indicators of the level of physical development are one of the objects of anthropology research. Their study is mainly possible using indexes. Anthropometry as a field of science has indeed expanded, moving beyond its classical framework and adopting a causal direction. In other words, now anthropometric measurements carried out among a certain segment of the population—individual ethnic groups, conscripts, teenage girls, and other groups—are aimed at explaining one or another of the obtained indicators and not at a purely “mechanical” process. It should be noted that the physical characteristics of a person, the degree of his development, and the types of body structure have been of interest since ancient times. This is natural because it was at this time, which was a period of early development in science and art, that the definition of standards of beauty and health came to the fore. It is clear that beauty as a subjective category was assessed in different ways at different times and according to different indicators. However, scientists, sculptors, and artists of antiquity had to make some, at least primitive, calculations; that is, these indicators, of course, could not “fall out of thin air”; the empirical factor even then played a role.

Hippocrates (460–370 BC) and Aristotle (384–322 BC) touched upon the connection between the structure and shape of the body and various physiological and mental problems. Hippocrates noted that obese people live shorter lives and women become infertile.

Archimedes determined the physical properties of objects by immersing them in liquid. The hydrostatic densitometry method, which is used to study the composition of the human body, is actually based on Archimedes' law.

But knowledge or canons that reflect reality (canon means reed, which is a sign that reed is used for measurements during construction work) are based on observations and calculations made on a living person. The study of these canons shows that they are based on two basic principles.

The first principle is based on the size of any part of the body not separated from other parts; another principle is based on the selection and segmentation of a particular part of the body (especially a joint), which is considered a unit of calculation. Of course, if we approach this issue from the anthropological position that interests us, we must reveal the following historical facts: The oldest of these laws is the so-called Egyptian grid system. Here, the distance from the foot to the ankle was taken as the basic module, $21 \frac{1}{4}$ times of which fell on the entire body. It is believed that the Egyptian grid system was considered and used by ancient sculptors for a long period of time. In a relatively late period in Egypt, the length of the middle finger of the hand was already accepted; it has been calculated that its length is $\frac{1}{19}$ that of the body.

The second principle is based on the classical canons, where the unit of measurement (in the literature, it is also called a module) was the naturally dissected parts of the body. This principle was formed in ancient Greece, starting in the 5th century BC. Probably the earliest and most widespread of the classical canons was put forward by Polycleus. As a module, I took the width of the palm at the level of the base of the fingers. Doryphoros and Diadumen are his famous works. The point is that during the time of Polycleus, wealthy customers wanted to see in their homes statues of figures that resembled their own and not divine beings accord-

ing to their beliefs. This created the need to study anatomy; the body dimensions of a real person and the ratio of these dimensions to each other were important. In the works of Polycletus, the face is 1/10 of the body, the head is 1/8, and the head and neck are 1/6.

Later, some changes were made to this law by Lysippos. Lysippos reflected these changes in the statue of Apoxyomene. In the Middle Ages, Byzantine laws were used more in the description of the physical structure of the human body; they were based on the natural expression of the body. According to them, the height of the face is 1/9 of the height of the body.

During the Renaissance, Leonardo da Vinci brought many innovations to the knowledge of the relationship of body parts to each other [3]. First of all, it is a question of the ratio of the height to the length of the arms when they are open to the sides. Long before him, Vitruvius (1st century BC) believed that these two dimensions were equal to each other. In the literature, this is called the "square of the ancients".

Da Vinci placed this figure in a circle, raised the arms slightly, and moved the legs apart. The center of the circle coincides with the umbilical ring. If we place a hexagon in a circle and pass two diameters, one vertical and the other horizontal, then in the middle of the latter is the umbilical ring, and the vertical diameter divides the body into two symmetrical parts. The distal parts of the arms and legs are located at the two upper and two lower angles of the hexagon. An interesting fact is that da Vinci personally never wanted to exhibit this picture. This picture was accidentally found in his pocketbook; apparently, the author drew the sketch as a kind of "draft" for himself. As the basic "unit of measurement" or module, da Vinci adopted the height of the head. According to him, this height is 1/8 of the body height.

A little different from Da Vinci, Michelangelo took the physiognomic height of the face, not the head, as a module and divided it into three parts. These parts correspond to the forehead, nose, and mouth-chin. In

the 18th and 19th centuries, the formation of anthropology as a biological field and the strengthening of the position of statistics in scientific research made it possible to explain the relationships of human body parts to each other on a scientific basis.

One of the first such explanations belongs to Kolman. The principle of dividing his body into parts is called the decimal system (translated as ten). According to this system, the height of the head is 13% of the body height; the trunk is 52–53% of the body height; the legs are 47%; and the arms are 44% of the body height. That is, the system is based on the percentage expression of the ratio of the body parts to the height of the neck.

Adolph Zeising was a German philosopher, poet, and mathematician who lived in the 19th century. He formulated the principles of mathematical aesthetics for the first time and claimed that beauty is not a subjective value but a precise form. According to the concept of *Der Goldene Schnitt*, Zeising divided the whole into two unequal parts; in this case, the ratio of the large part to the dimensions of the whole was like the ratio of the small part to the large part. This principle quickly took root in both sculpture and painting [4].

Thus, since its inception, anthropometry has had an important impact on the development of the sciences and arts by seriously integrating with them.

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PHILOLOGICAL SCIENCES

ON THE INFLUENCE OF CLASSICAL PERSIAN POETRY ON LATER WESTERN WRITERS: FROM ATTAR, RŪDAKĪ, HĀFĪZ, AND RŪMĪ TO MILTON, GOETHE, AND PLATH

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Abstract

Characteristics of Persian poetry are evident throughout Western literature. This study examines the extent and manner of the concepts, significant pieces, history, and literary influence of ancient Persian poetry that inspired the work of later Western authors. We identify those earlier works and those who created them. We discovered elegant and thoughtful expressions of themes older than civilization itself. Our premise is that readers may understand better how Persian literary traditions affected and continue to affect Western literary works and how an investigation of the concepts, stories, and poetic forms that travel from East to West may add depth and breadth to our appreciation of global literature and the generally unfamiliar cultures that created them.

Keywords: Attar, Ferdowsi, Hāfīz, Omar Khayyām, Persian poetry, *Rubāiyāt*, Rūdakī, Rūmī

Introduction

European and American secondary school and first-year university history classes will typically study the foundations of Western civilization from a Greek perspective. Philosophy implies Socrates, Plato, and Aristotle. Literature suggests Sophocles, Euripides, and Aristophanes. Graduates may receive their diplomas never having heard of Sufi mysticism, Rūdakī, Hāfīz, Rūmī, or other traces of the Classical Persian era to which many Western writers may be indebted.

This study aims to reach back into the cultural and literary backdrop of the poetry of the Classical Persian era, exploring its significance, with a particular reference to its influence on those in the West who wrote centuries after that unique period of literary history. Why Persian poetry? What is it about Persian literature that enthralls, delights, and inspires writers even after a millennium, especially Persian poetry? (LOC, 2023). “Poetry is the most significant artistic achievement of Persia,” according to Yarshater (1962, p. 610). The impact of classical Persian poetry on Western writers has been a recurring but understudied aspect of literary history (Browne, 2019; Javadi, 1983; Yohannan, 1984).

Persian poetry has permeated Western culture as no other has ever done (Yohannan, (1952). This study investigated the profound influence of Persian poetry on Western literature. In the domain of cross-cultural literary studies, comprehending the impact of Persian

poetry on Western literary traditions is of immense importance. We aim to contribute to a broader understanding of the interconnections between literary traditions by exploring this theme.

The scope of this research primarily focuses on delving into the thematic resonance, adoption of stylistic elements, and specific examples of Persian influence within the works of Western authors. Through this meticulous examination, our objective is to unveil the multifaceted ways in which Persian poetry has shaped and deepened Western literary traditions.

First, we must admit to one significant limitation of our research. That limitation is simply that one author does not read Farsi, the language of Iran, or Arabic, the language in which much of the literature of the Persian Classical era was written. It is, therefore, a practical necessity that we rely on the best available translations. We are, however, confident that the translations we use, having been subjected to centuries of review and critical comment, are sufficiently credible to allow our study to rest on valid and reliable representations of the originals. At the same time, we can understand any negative commentary owing to that limitation.

While a detailed analysis and application of the adage that “translation is interpretation” (Reynolds, 2011) is beyond the scope of this study, the reader may pursue the matter further by comparing and contrasting translations of Persian poetry by A. J. Arberry, Peter

Avery, John Heath-Stubbs, and R. A. Nicholson (2007/1918) (Windfuhr & Workman, 1973), and others. Such studies will likely find differences in connotation, as well as variations based on the nuances inherent in the source literature, all consonant with the post-structuralist perspective, as described below in the Methods section of this paper.

The Persian literary tradition, which has had a significant impact on the evolution of Western literature in many ways, is based on the cultural legacy of Persia (modern-day Iran) (Hanaway, 1993). From story translations to the adoption of Persian literary forms and themes, this article seeks to shed light on the profound and long-lasting influences of Persian poetry on the canon of Western literature (Panah, 2023). Our working hypothesis is that a significant amount of what we call “Western Literature” is related to, or even directly derived from, Persian writers, whose works shaped the thoughts of later writers, especially those in Europe and America, and which continued to have an impact well into the twenty-first century, albeit one that was frequently quiet and unnoticed.

Methods

A founding theoretical perspective of this research is that, when we translate between languages, it is imperative to engage a text in the milieu of the writer’s life and times when translating in order to avoid the trap of word-for-word translation, which misses the subtleties and nuances peculiar to the author’s culture. We respect the opinions of those who believe a work should be read apart from the events of the day, detached from the life and times of the author, that the work should stand on its own, i.e., “the author is dead” (Barthes, 1977). We disagree. Consciousness of the writer’s environment can improve the reader’s understanding and appreciation of the work, bridging the gap between implication and inference. In this case, it involves knowledge and understanding of the often violent past of Persian social, political, and economic events and the literature born of those events in the Classical period. This research, therefore, encompasses both the texts themselves and current events related to ancient Persian life, including but not limited to its internal and foreign conflicts.

Poststructuralism is the literary theory that serves as the underpinning of this study. A poststructuralist perspective of ancient Persian literature can aid our analysis, comprehension, and evaluation of these historical writings. It offers a philosophical approach that recognizes language’s inherent volatility and the ways in which social, historical, and cultural settings alter it. Poststructuralism challenges scholars to examine more closely the conventional interpretations and meanings associated with the literature that may be obscured by cultural biases, including those arising from racial and religious prejudice. In the present study, such prejudice is manifested in the term “Orientalism” (Said, 1995). This method allows for a greater understanding of the historical context in which knowledge, power, and identity were created and disputed during the creation of ancient Persian literature. A wide range of perspectives and a thorough examination of these works are made possible by poststructuralism’s emphasis on the

changing nature of meaning and the reader’s participation in the process of interpretation (Caplan, 1989).

The scope of this research focuses primarily on delving into the thematic resonance, adoption (or adaptation) of stylistic elements, and specific examples of the influence of selected Persian poets of the Classical era as seen in the works of later Western authors, mainly British and American. Through this detailed examination, and based on the theoretical foundation of poststructuralism, our objective is to unveil the multifaceted ways Persian poetry has shaped and enriched Western, i.e., English literary traditions.

What we may not always do, and what we recognize as a limitation of the study, is a close reading and reliable inference of all of the original Persian or Arabic texts. Instead, this study relies on the fidelity of the most prominent translators and, where it is appropriate, on their creativity in rendering those texts in English verse. One cannot, with integrity, use a mechanical translation system to provide an accurate, nuanced version of the source texts. That does not, however, mean that the translations are immune from dispute, and we expect to find evidence of such disputes in the critical literature by other expert linguists.

Results

Definitions

annihilation. A core concept in Sufi mysticism in which the self is lost to the unity of all.

divan. A collection of the shorter poems of one author.

Avesta. The sacred text of Zoroastrianism written in the Avestan language of ancient Persia.

Farsi. The Persian word for the Persian language.

gathas. Hymns in the *Avesta*, believed by tradition to have been composed by Zoroaster.

ghazal. A lyric poem with a fixed number of verses and a repeated rhyme, typically on the theme of love and generally set to music.

Persian. The English translation of *Farsi* [فارسی]

qasida. Laudatory, elegiac, or satiric poems in Arabic, Persian, or other genres of literature.

rubáiyát. A Four-line stanza of verse, usually written in a strict rhyme scheme.

spirituality. The quality of being concerned with religion or the human spirit. Assumes the duality of body and soul.

Sufi. A mystic “path” of Muslim spirituality, embracing a oneness with the deity.

transcendence. Existence or experience beyond normal or physical limits.

transliteration. Changing one script to another, as from Persian or Arabic to Roman letters.

Zoroastrianism. A pre-Islamic religion of Iran and India following the teachings of Zoroaster.

This study focused on the period between the tenth and fifteenth centuries, referred to as the time of Classical poetry of Persia (Yarshater, 1962, p. 62). This period would include the times of poets such as Ferdowsi (940-1020) and his epic poem *Shâhnâmeh* (Davidson, 1998); Omar Khayyám (1048-1131) and his quatrains (*Rubáiyát*); Sanai (1080-1131), a mystical poet; Attar (1145-1221), renowned for works such as *The Conference of the Birds* (Attar, 1984/1188); Rûmî (1207-

1233) (Baeten, 2020), one of the most well-known Sufi poets, and his *Mathnawi*; Hāfez (1315-1390), for his ghazals collected in the *Divan-e Hāfez*; Sa'di (1210-1291), for works such as the *Gulistan* (Sa'di, c 1258 CE) and *Bustan*; Jami (1414-1422), with his mystical and romantic poetry (IranicaOnline.org).

Acknowledging with enormous gratitude the contributions of translators schooled in Persian and Arabic studies, careful consideration of these writers and their work may contribute to a more thorough knowledge of a historically significant legacy than most scholars in the West have offered and tended to diminish or completely ignore. Scholars and even casual readers are therefore made more accessible a greater and more nuanced awareness of the complex nature of ancient Persian culture and its textual representations that reveal themselves in the work of writers separated by centuries of time and thousands of miles of space. (See also Ansarian, 2003; Hanaway, 1993; and Spofford, 1885).

Historical Context

Before we can fully appreciate the influence of ancient Persian poetry on Western poets, we must look into the historical context of this contact. During the Achaemenid era (c. 550-330 BCE), the Persian Empire was massive, extending from Greece in the west to India in the east, promoting the transfer of ideas through trade. Persian literature influenced writers in Greece and Rome (Ballentine, 2019; Dabashi, 2015; Djinis, 2022).

Persian literature and culture were disseminated to ancient Greek and Roman writers through a variety of channels, as the Persian Empire during the Achaemenid era (c. 550-330 BCE) allowed for this (Ballentine, 2019). Through their conquests, Persian kings like Darius I and Cyrus the Great brought Greek and Roman territories closer to Pasargadae, the capital of the Persian Empire. The elements of Persian culture infused the nations near and far. Trade networks, the presence of Persian ambassadors in Greek and Roman towns, and diplomatic interactions all contributed to the cross-cultural exchange of information. Herodotus, widely referred to as the "Father of History," is one well-known example of a Greek writer who documented Persian history and culture in his works, spreading knowledge of and appreciation for the Empire in the West (Djinis, 2022).

Significant Works of Classical Persian Poetry

To understand and appreciate the impact of ancient works on the literature of the West, readers must confront those earlier works. We find especially important contributions to later prose and poetry in the literature of the Classical Persian Age. In the process of identifying, analyzing, and evaluating the most significant of those earlier works, readers may discover the complex connections between concepts, themes, motifs, and styles in the two traditions (Chopra, 2014).

On first encountering Classical Persian poetry, we find extraordinary beauty and, even in translation, such a wide variety of meanings that must have inspired later writers. Such discoveries offer a greater understanding of the concept of John Donne, that "No man is an island." At the same time, these discoveries lead to the

finding that more work may lead to improvements in relations among cultures.

Rūdakī's Qasida

Among the most well-known figures in classical Persian literature was the highly esteemed poet Abu 'Abd-Allāh Ja'far ibn Muḥammad al-Rūdakī, commonly called just Rūdakī. He was born in what is now Tajikistan, in the city of Panjikent in the year 858 CE. In Persian literary history, Rūdakī, a royal poet under the Samanid Empire, is frequently referred to as the "Adam of Poets." He made significant contributions to poetry throughout this period of his life. His lyrical poetry in the Persian language had a considerable impact on the growth of Persian literature. Rūdakī's poetry celebrated love, the natural world, and the human experience. Over the years, poets like Rūmī and Hāfez who followed him were influenced by him (Tabatabai, 2010).

The common form of the qasida is a series of verses dedicated to a ruler, a patron, or one's beloved. Rūdakī was well known for the complex rhyme schemes in his qasidas, with motifs of love and respect. *Qasida*, Rūdakī's masterpiece, is a remarkable demonstration of his poetic skill and consists of odes dedicated to the palace and those who support it. Many poets have been inspired by his literary contributions to Persian, which have significantly impacted on the genre's development over the ages. The fact that he established New Persian poetry bears witness to his continued stature in the literary community (Tabatabai, 2010). The last sentence is as follows:

The Moon's the Prince, Bukhārā is the sky;
O Sky, the Moon shall light thee by and by!
Bukhārā is the mead, the Cypress he;
Receive at last, O Mead, thy Cypress-tree!

As to prosody, the patterns of rhythm and sound used in poetry, Hanaway (1993, p. 897) observes that enjambment, the continuation of a sentence or phrase from one line of poetry to the following line, is rare. In the quatrain above, there is no enjambment. Some scholars believe that there was no Persian prosody before the introduction of Arabic and Islam. Elwell-Sutton (1975) disagrees and asserts that, by the time of the Islamic invasions of the seventh century C.E., the Persians, "famous now for more than a thousand years for the wealth and profundity of their poetic expression" (p. 75), had their own style, and it may be assumed that much of what might be called Arabic prosody had already been in place before Islamization. Persian poetry is "as old as the history of the people themselves" (p. 75). Elwell-Sutton (1975) disagrees with the contention that Persian poetry of the Classic period is derivative from the Arabic tradition.

Shāhnāmeḥ (The Book of Kings) (Ferdowsi, 2016):

Persian poet Ferdowsi spent 35 years writing the epic poem *Shāhnāmeḥ*, *The Book of Kings*, in the late tenth and early eleventh centuries (UNESCO, 2006, p. 3; LOC, 2023). Composed of almost 50,000 rhyming couplets, it is considered the ultimate work of Persian poetry and the finest epic poem ever composed. Iranian mythology and history are chronicled in *Shāhnāmeḥ*, a repository of Persian cultural and national identity that

spans the country's mythical origins to the Arab-Islamic conquests of the seventh century. In an effort to preserve and honor Persian heritage and identity, Ferdowsi deliberately selected the Persian language over Arabic, which was gaining popularity at the time, to compile the tales of Persian monarchs, heroes, and legends. This epic makes this pledge very evident. The final words in the poem are,

I've reached the end of this great history
And all the land will talk of me:
I shall not die, these seeds I've sown will save
My name and reputation from the grave,
And men of sense and wisdom will proclaim
When I have gone, my praises and my fame
Ferdowsi, 2016, p. xii

The poem is valuable not just in terms of literature and language but also in terms of Iran's extensive cultural heritage, disputes over sovereignty, and persistent yearning for independence. Historians, readers, and fans have been enthralled with this timeless masterpiece for decades because it highlights Ferdowsi's enduring contribution to Persian poetry and his unwavering commitment to preserving the memories of a nation's past (Davidson, 1998).

Shāhnāme has influenced writers not only in Persia but in the wider world, as well. In Classical Persian poetry, Ferdowsi illustrates the richness of Persia's mythology, history, and culture. Heroic tales from both the pre-Islamic and Islamic eras, as well as historical Persian myths, have been a constant source of inspiration. The poem's influence is exemplified by well-known Persian poets such as Rūmī and Ḥāfiz, who drew inspiration from their storytelling and lyrical forms (Meisami, 1985). The epic poem has influenced literary traditions across time and space.

Some critics have advanced the notion that *Shāhnāme*, drawn from oral traditional poetry, is by extension somehow "by nature unsophisticated and 'primitive'" (Davidson, 1998, p.63). Davidson contests that position and asserts the legitimacy of oral poetic heritage, having tested the thesis that the epic poem shows "formulaic language" of the kind one finds in Homer's *Iliad* and *Odyssey* and Virgil's *Aeneid*. Given the absence of much ancient literature and the formidable task of the translator, we agree with Davidson's paraphrase of Giorgio Pasquali's maxim, "what is *lectio difficilior* for one period in the history of a text may be *lectio facilior* for another" (p. 64).

Goethe (2010/1819) recognized Ferdowsi's poetic achievement (Mani, 2017). *Shāhnāme* will continue to have a lasting impact on future generations of writers owing to its universal themes and masterful writing. It also acts as a memorial to the storytelling's enduring power and capacity to cross cultural boundaries.

he Omar Khayyám Rubáiyát

If one knows nothing else of Classic Persian poetry, one surely must know some lines of the *Rubáiyát* of Omar Khayyám:

A Book of Verses underneath the Bough,
A Jug of Wine, a Loaf of Bread - and Thou
Beside me singing in the Wilderness -
Oh, Wilderness were Paradise enow!
(Quatrain 12)

Note especially the example of the quatrain's rhyme scheme: aaba, which again reveals itself in another of his famous quatrains:

The Moving Finger writes; and, having writ,
Moves on: nor all thy Piety nor Wit
Shall lure it back to cancel half a Line,
Nor all thy Tears wash out a Word of it.
(Quatrain 71).

The quatrains of Omar Khayyám's *Rubáiyát* (Khayyám, 1995) address topics of life, love, a search for meaning, and the fleeting nature of human existence (Decker, 1997). Edward FitzGerald translated Omar Khayyám's *Rubáiyát* into English in the nineteenth century (FitzGerald, 1997; Jackson, 1916). It became well-known in the West and impacted writers like Matthew Arnold (AIS, 2023; Javadi, 1971), Robert Frost (Bloom, 2004; Rosenthal, 2021; Untermeyer, 1958), T. S. Eliot (Muhammed & Muhammad, 2020; Naseri & Ghasemi, 2022; Watts, 1946). It had a profound effect on subsequent Western authors. The opening quatrain of Khayyám's *Rubáiyát* is a clarion call:

Awake! For the Sun, which dispersed to take flight
The stars in the night sky in front of him,
Drives Night from Heaven with them, and hits
The Light Shaft in the Sultan's Turret.

(Ferguson, Salter, & Stallworthy, 1997, p. 527; FitzGerald translation)

Readers in the West were first introduced to Persian poetry through Omar Khayyám's writings (Dabashi, 2015). Love, mortality, and the pursuit of pleasure resonated with the mindfulness and the searching for meaning of the era, influencing authors like Walt Whitman (Lemaster & Jahan, 2009); Ralph Waldo Emerson (Bloom & Kane, 1994; Noie, 2019; Widger, 2023; Gougeon, 1989; Kane, 1989; Yohannan, 1943), along with Lord Alfred Tennyson (Paden, 1943; Yohannan, 1942); and Robert Frost and John Steinbeck (Babayev, 2009).

Philosophers and literary thinkers like Friedrich Nietzsche (Ashouri, 2010; Salami, 2008) and Albert Camus (Dabashi, 1985; Farsian & Ghaderi, 2020) have been impacted by the existential insights and philosophical depth found in Omar Khayyám's poetry. Through its role as a bridge between East and West, Omar Khayyám's *Rubáiyát* contributed philosophical insights and exquisite poetry to Western philosophy and literature.

Addressing the limitations noted above, we may inquire about the quality of the translations of Classical Persian poetry that have been published and on which this study is based (Bubb, 2023). Fortunately, there is an authoritative paper that addresses that concern. Since much of what English language speakers might read of Classical Persian poetry has been translated by Edward FitzGerald, Taher-Kermani's conclusion of FitzGerald's translation of *Rubáiyát* is most valuable: "...Edward FitzGerald succeeded in transmitting what we may properly call an authentic Persian spirit in his *Rubáiyát*" (Taher-Kermani, 2014, p. 321). On the other hand, Taher-Kermani questions "FitzGerald's attunement to idiomatic nuance in the original quatrains attributed to Omar Khayyám." Translation is, after all, interpretation. (See Biria & Abadi, 2016.) Indeed,

Graves (1969) noted that FitzGerald's "adaptation" of the *Rubáiyát* omitted an important quatrain, one in which woman is metaphorically represented by the moon, connoting the inconstancy traditionally attributed to the Greek Titaness, Goddess of the Moon, Selene (Hesiod, c. 730-700 BCE, lines 15 and 371; Theoi, 2024), or Luna to the Romans, or, more likely, Mah or Mahi to the Persians (Pontia, 2018).

The Moon by her own nature prone to change
Varies from animal form to vegetable.

Destroy her form, you have destroyed nothing;

For what she seems survives her not yet being.

(Translation by R. Graves)

The Conference of the Birds

Birds, as we discuss elsewhere, seem to attract the interest of poets in every time and place, perhaps reflecting the universality of identifying with the freedom of the birds, unconstrained by the chains of gravity. This mystical allegory, written in Persian by the twelfth-century Sufi poet Farid ud-Din Attar, also called Attar of Nishapur, tackles themes of spiritual journeying and self-discovery (Attar, 1984/1188). Attar's writings influenced Western writers and intellectuals, such as the German philosopher and writer, Goethe (2010/1819), as well as psychiatrist Carl Jung (Ghaffarinejad & Estilai, 2011). To begin with:

Greetings, Hoopoe! You'll serve as our leader:

King Solomon relied on you.

To convey covert communications between

His court includes the attractive but distant queen of Sheba.

You knew his heart, and he understood your language.

The Hoopoe is a prominent figure in the poem, serving as both the leader and "spiritual guide" (much like the Sufi master) for the pilgrim-birds (Attar, 1984). The nightingale is a metaphor for the poet in Persian literature, and it appears in Romantic poetry from the nineteenth century (Ode to a Nightingale by John Keats in 1819, for instance) (Nilchian, 2016, p. 229). Research comparing Attar's *Conference of the Birds*, written in the twelfth century, and Geoffrey Chaucer's *Parliament of Fowls*, written in the fourteenth century, is likewise not surprising (Baeten, 2020; Marshall, 2023). While Attar's birds are on a quest for the Divine, and Chaucer's fowls meet to select mates, both reflect themes of longing, one for a heavenly state and the other for a better life in the here and now.

The Conference of the Birds (*Mantiq al-Tair* in Persian; Attar, 1984/1188), has had a significant impact on Western writers and scholars. This twelfth-century masterful example of allegorical poetry depicts the spiritual journey of the soul toward union with the Divine. Yarshater asserts that the Persian poet is primarily interested in the individual's understanding of reality rather than its outward expression (p. 62). Meisami (1985) also finds that the garden can be used as a symbol of the beautiful, the worthwhile, and the good. The *Conference of the Birds*, which revolves around a group of birds looking for their king, Simorgh, is filled with symbolism and mystery, including descriptions of the birds and their common journey, which some will complete, while others will fail. A thousand birds start, but

only thirty arrive. When they arrive, they discover that the answer to their quest is in themselves. The difficult voyage, with its constant – and winnowing – challenges, is unmistakably in the Sufi tradition an allegory of a Sufi sheikh leading his followers to union and spiritual enlightenment attained only by annihilation of the self.

Motifs and Themes

Themes and motifs—repeated aspects that allude to the themes—that are relevant in Western literature were developed in ancient Persian poetry. Themes are abstractions that convey points less explicitly. These encompass, among other things, elegy and panegyric, love themes, mysticism, history and mythology, ethics, and wisdom (Panah, 2023).

The Search for Meaning

In our research, we found many references to "the search for meaning" in the works of the Persian poets of the Classical Era. The phrase, both in the Persian poetry and in the later Western corpus, is connected to "transcendence." What follows is but a small sample.

Attar's allegorical poem, *The Conference of the Birds* (Persian: *Mantiq al-Tayr*) is quite literally a journey of the search for meaning and self-discovery, one that begins with what may appear to be a lack of understanding of the purpose of the adventure and ends with annihilation. A thousand birds commence the journey to find the answer, manifested in the mythical Simorgh, a symbol of the divine, but only thirty manage to survive the dangers. It is the thirty who succeed, and the Simorgh is seen in the mirror. The journey, like others that follow, e.g., John Bunyan's *Pilgrim's Progress* (Bunyan, 2020/1678), is a representation of the spiritual path and the difficulties one faces in the search for fulfillment.

Sufi mystic Rumi searches for meaning in *Masnawi*. His line, "What you seek is seeking you," illustrates the universal search for meaning, a quest seen universally in literature. For Rumi, the success of the quest is union with the divine, elsewhere, as in Attar, described as annihilation. As is true with much, if not most, poetry, Rumi's verses are best appreciated when they are not just read but sung and heard. In the case of Rumi, the reader may not only learn Rumi's plaintive love text but also be moved by the music, as tenderly sung by Homayoun Shajarian to the accompaniment of the traditional two-stringed tanbur played by Sohrab Pournazeri (Rumi Offerings, 2019). Evidence suggests that such music had an impact on the music of Baroque and later periods in Europe as it traveled the Silk Road (During, & Mirabdolbaghi, 1991; Levin, 2024).

Hāfez expressed the quest in his allusions to beauty, spirituality, love, and the fleeting nature of life on earth before the annihilation of the self as it merges with unity (Robinson, 2012/1883; Salami, 2008). He wrote about the universal hunger for acceptance, "Ever since happiness heard your name, it has been running through the streets trying to find you." In terms of the search for knowledge, he wrote, "The bird of the morning only knoweth the worth of the book of the rose; for not every one who readeth the page understandeth the meaning" (Robinson, 2012/1883, p. 384).

In the 13th century, Sa'di wrote of his spirituality, philosophy, and mysticism in a didactic manner in both prose and poetry (Khan, 1993; Robinson, 2012/1883, pp. 246-366). In Sa'di, we see meditations on the search for meaning, for an identification and appreciation of wisdom as he is able to recognize it. In that search, he also discovers himself. He emphasizes personal discovery and introspection. In *Gulistan*, he wrote, "...a traveler without knowledge is a bird without wings..." (Sa'di, 1258, Chapter 8, Maxim 50).

Love and Wine

Persian lyrical poetry often deals with the themes of love and wine, which, respectively, represent heavenly and earthly happiness. As has the 'loaf of bread' couplet from Rubáiyát. Persian love poetry has impacted European poets like Petrarch and the troubadours (Kay, 2014).

Ancient Persian poetry, with its traditions, often addressed and wove themes of love and alcohol into its rhymes. Omar Khayyám (c. 1048-1131) and Hāfez (c. 1315-1390) frequently examined the ecstatic and passionate parts of love, which they associated with wine (Washington, 2000). Hāfez embraced the thrill of both divine and worldly love in his ghazals, sometimes using the metaphor of wine to convey the intensity of these emotions. In his quatrains, Omar Khayyám expressed a hedonistic perspective by contrasting love and wine drinking with the transient nature of life. Poets have stood the test of time by using wine and love as vehicles to explore the complexities of human existence and the pursuit of joy.

Mysticism

Western artists in large numbers have adapted Sufi mystic thought to their own work. Western writers may have found Sufi poetry attractive because of its universal emotional and intellectual appeal. The works of Rainer Maria Rilke (2001/1923), Ralph Waldo Emerson (Carpenter, 1939; Noie, 2019; Saurat, 1930), and Johann Wolfgang von Goethe (2010/1819), for example, connected to the themes of Sufi mysticism. Rūmī, a Persian poet and mystic, influenced Western writers, including American poet Coleman Barks, who translated several of Rūmī's works (Barks, 2004). Rūmī's delightful "Song of the Reeds" is a superb exemplar of the kind of work that influenced later Western writers (AIMS, 2001).

Heroic Epics

Shāhnāme's stories have made an enduring impression on Western literature. Chaucer, Shakespeare, and Milton may have drawn inspiration from Persian tales of valor and chivalry. The Knight's Tale in Chaucer's *Canterbury Tales* shows the kind of courtly love and chivalric ideals seen earlier in *Shāhnāme*. Themes and motifs in Shakespeare's *Othello* and *Hamlet*, like love and jealousy, betrayal, hubris, moral ambiguity, and the inevitability of death, can be seen in Persian literature, as well. Milton's accounts in *Paradise Lost* of epic battles, such as Lucifer's rebellion against God, and moral dilemmas, such as Adam's choice to either disobey God's commandment or live without Eve, mirror, to a noticeable extent, similar themes in *Shāhnāme*. Milton asks, as does Ferdowsi's *Shāhnāme*: Who is the hero?

Literary Styles and Poesy

We start with the ghazal, a literary form that originated in Arabic literature and became popular in Persian poetry (Hanaway, 1993, p. 897). It is lyrical and emotive, with rhyming couplets, or "sher." Ghazals employ themes of love, grief, and beauty. They express strong emotions. Each couplet in a ghazal is independent and readable, so one can express a range of emotions in a single poem.

Because of its extensive literary tradition in the works of renowned poets like Rūmī, Hāfez, Mirza Ghalib, and numerous others, the ghazal is a well-known and cherished form in the world of poetry. American poet Robert Bly skillfully blended Eastern and Western poetry traditions with the ghazal's form and themes in his anthology of poems, *The Night Abraham Called to the Stars* (Bly, 2002). As seen by his collection *The Beloved Witness: Selected Ghazals and Other Poems* (Sabitha, 2002), renowned Indian American poet Agha Shahid Ali has garnered recognition for his exceptional contributions to the English ghazal. These and other poets have demonstrated the ghazal's adaptability and versatility in Western poetry, along with its ability to convey complex emotions and cross-culturally relevant universal truths.

American and British writers' use of metaphors, symbolism, and allegory in their works is closely associated with the great literary traditions of Persia. Persian poetry has greatly influenced the development of Western literary techniques, which has led to the flourishing of these creative inventions. According to Nilchian (2016), Shelley was influenced by Persian literature (p. 222). Renowned Persian poets with a flair for metaphor, like Rūmī (Barks, 2004) and Hāfez (TAP, 2023), are commended for their ability to convey complex emotions and ideas with vivid imagery.

Later Western Writers

When our research revealed instances in which there appeared to be close connections between Classical Persian poetry and the writings of Western writers in later centuries, we were obliged to address a further, perhaps even more difficult, question: Are these similarities connected causally or coincidentally? Were the later writers conscious of the works of the Persians, and did they seek in some way to emulate them, or did they simply use their own creativity to develop themes, motifs, and characterizations that happened to be present centuries past in the Near East? In some cases, as with Emerson (Noie, 2019) and others, the answer is clear: Those later writers explicitly acknowledge the influence of the Classical Persians. In other cases, while the similarities may be striking, we are not able to say with conviction that the influence is causal. A third assessment derives from those biological and social imperatives that are both timeless and universal, as artists of all genres strive to understand more deeply the human condition and the universal search for truth and meaning and give expression to their perspective.

From before the dawn of recorded history, humankind has struggled to understand and communicate matters of mortality, suffering, desire, and the search for truth and meaning. Indeed, man's search for meaning has caused considerable angst for millennia and can

be traced in Western literature to Aristotle (Kauppinen, 2013) and in the Nazi concentration camps of World War II (Frankl, 1949). It should not surprise the researcher, then, to find some degree of commonality from age to age, from place to place. This study finds such commonality between the ages of the Classical Persian poets, including Rūdakī (c. 858-941), Ferdowsi (c. 940-1020), Omar Khayyam (1048-1131), and Attar (c. 1145-1221), and of the later Western writers, from Milton (1608-1674) in the seventeenth century to Kurt Vonnegut (1922-2007) (Vonnegut, 1963, 1969, 1999) and Sylvia Plath (1932-1963) some thousand years later, in the twentieth century.

For the sake of clarity and further research, we created two categories of relationships between Classical Persian poetry and the work of later Western Writers. (See Talattof, 2023, for other methods of categorizing.) Category A is assigned to those Western materials that can be connected directly to the Persians. To Category B, we assign those materials that may not be directly connected to the earlier Persian poets but nevertheless bear unmistakable similarities with Classical Persian poetry, e.g., as a spiritual journey and other themes, motifs, and literary devices.

In order for a Western writer to move from Category B to Category A, we would need clear and convincing evidence, preferably in the writer's own words, that a specific work or body of work is directly connected to one or more examples of Classic Persian poetry. We have included translators on the basis that each translation is, in a sense, a new work, given that different translators make different choices, and that direct word-for-word translations may fail to capture the intended connotations and nuances of the original work; this argument is even more persuasive in the case of poetry. Here is but a sample of our findings:

Category A: Western Writers Directly Connected to Classical Persian Poetry

It is, we find, a necessary but insufficient condition for a poet to use constructions that were used by Classical Persian poets in order to qualify for our Category A. The poet, and sometimes, literary critic, must explicitly acknowledge the link to Persian poetry.

William Collins (1721-1759). In his 1742 book, *Persian Eclogues*, the highly regarded Collins attempted to write in the style of Sa'di, especially *Gulistan*. While the book was not as popular as his other works, it remains one of the earliest examples of the influence of Persian poetry on the consciousness of Western writers (Ross, 1895). Collins may not have been the first English writer to engage with the themes of *Gulistan*, including, but not exclusively, morality, love, and the search for meaning in a transient existence, but the title of his collection is itself a recognition of the novelty of Classical Persian poetry. Unfortunately, his life was cut short after "high living and dissipation" (Ross, 1895, p. 40).

Sir William Jones (1746-1794). Jones wrote *On the Mystical Poetry of the Persians and Hindus* (Jones, 2014/1792), comparing the mystical traditions of Persian and Hindu poetry. Jones highlighted the contemporary relevance to later works of the tradition of using allegory in Persian literature. He promoted to Western

readers an appreciation for Persian poetic traditions, nurturing cross-cultural dialogue in the study of world literature (Cannon, 1958). Edgerton (1946) wrote of the "versatile and fascinating personality" of Jones (p. 230) and "his phenomenal gift for languages as a schoolboy at Harrow." While at Oxford, "he threw himself with special enthusiasm into the study of Arabic and Persian" (Sitter, 2008).

Johann Wolfgang von Goethe (1749-1832). Goethe was inspired by the mysticism of the ghazals of Hafez and their delightful articulation. In his collection, *West-östlicher Divan* (Goethe, 2010/1819), he demonstrates the Persian influence with its mystical references, its philosophy, and its treatment of themes like love and emotional attachment. Close readings of the poems in his collection, as well as his *Hermann und Dorothea* (based on the story of Layla and Majnun, a classic Persian story of love), reveal similarities with Sa'di's *Gulistan* (Sa'di, c. 1258 CE), adding further evidence of Goethe's respect for Persian literary traditions, which enhances his own creative work.

Thomas Moore (1779-1852). Moore was an Irish poet of the Romantic Era, the time of Wordsworth, Keats, Byron, and Shelley. Moore was best known in the West for "The Last Rose of Summer." He also authored a poem of beauty, love, and a quest for a deeper meaning of life, *Lalla Rookh*, the title of which is a Persian name often used by Persian poets. In *Lalla Rookh*, Moore blended his own Romantic style and Irish passion with themes of classic Persian poetry, viz., closely woven narratives and lyrical sentiments (Taher-Kermani, 2019).

James Justinian Morier (1782-1849). Morier created novels in the *Hajji Baba* series, starting with *The Adventures of Hajji Baba of Ispahan* (Morier, 2007/1824). Garza (2023) notes the immediate and continuing popularity of the series among the public, as it was first published in 1824 and remained popular well into the twentieth century. That first book was followed by others with the same or similar Persian characters. The success of the *Adventures* encouraged Morier to write a sequel, *Hajji Baba of Ispahan in England* (1828), and fictional accounts about other characters within a similar Persian setting, namely *Zohrab, the Hostage* in 1832 and *Ayesha, the Maid of Kars* in 1834 (Garza, 2023).

Julius von Mohl (1803-1878). A German academic, Mohl deserves at least some credit for introducing Classical Persian poetry to the West outside of England. He is particularly recognized for his translation and analysis of Ferdowsi's epic poem, *Shāhnāmeḥ*. Western readers and authors can still benefit from his insightful criticism and sophisticated translation. He also published the works of Sa'di, author of the *Gulistan* and *Bustan* [*Rose Garden* and *Orchard Garden*], and Hāfiz, the master of mystical lyricism (Soucek, 2003). The Western comprehension of Persian literary forms, topics, and stylistic subtleties was further enhanced by these editions, his scholarly publications, and his reports on Oriental studies. Mohl's impact extended beyond the academic domain. His translation and commentary on *Shāhnāmeḥ*, for example, directly influenced Matthew Arnold's notable poem *Sohrab*

and *Rustum*, demonstrating the continuing influence of Persian literature on later Western writers (Pionke, et al., 2016).

Ralph Waldo Emerson (1803-1882): Emerson's essays, such as "The Over-Soul" (1841), show the influence of Persian mystical ideas, particularly the concept of Wahdat al-Wujud (Oneness of Being) (Essays: First Series, 1841; Poems, 1847): Poems like *Brahma* and *The Sphinx* reflect the influence of Persian themes and imagery (McMichael, et al., 2004, pp. 819-930; VanSpanckeren, 1994, pp. 26-29). Emerson connects his own commitment to transcendentalism to Sufi mysticism with themes of a search for ultimate reality unencumbered by intermediaries such as priests (Christy, 1932). Emerson, influenced by Persian poetry, admired the power of expressing thoughts. In his essay, he notes, "The difference is not so much in the quality of men's thoughts as in the power of uttering them" (Emerson, 1875, p. 222). This echoes the Persian sentiment that the expression of thoughts is what holds significance. The Persian poet Hāfiz, praised by Emerson, is noted for his frankness and aversion to hypocrisy. Emerson says of Hāfiz, "Hypocrisy is the perpetual butt of his arrows" (p. 222). Hāfiz's candidness aligns with Emerson's appreciation for authentic expression (Jahanpour, 2020; Noie, 2019).

Charles Augustin Sainte-Beuve (1804-1869). A French literary critic and essayist of the 19th century, Sainte-Beuve studied and reflected on the poetry of Rūmī (e.g., *Masnavi*). Holm (2023) asserts that Rūmī ("The Roman") was the most famous Sufi poet in the world. It is, therefore, entirely appropriate that Sainte-Beuve and other Orientalist scholars engaged Rūmī's work in translation and commentary. Sainte-Beuve also translated the ghazals of Hafez. He brought Sufi mysticism and Persian poetic imagery to his own writing (Haghshenas, 2022; Marks, 1974). Sainte-Beuve wrote about the historical development of Classical Persian poetry, including *Le livre des rois: Traduit et commenté par Jules Mohl. Tome 3* [The Book of Kings: Translated by Jules Mohl. Volume 3], a review of Julius von Mohl's work on Ferdowsi's epic poem *Shāhnāme*.

Henry Wadsworth Longfellow (1807-1882). Longfellow's 1863 collection of poems, *Tales of a Wayside Inn*, includes his poem, "The Bird and the Ship." It retells what may be one of the greatest stories in Persian poetry, Attar's strikingly beautiful, longer, and more elegant Persian Sufi allegorical poem, *Mantiq al-Tayr* [The Conference of the Birds] (Longfellow, 2018/1871). In both poems, the soul in its journey through mortal life is symbolized by birds on the wing. *The Divine Tragedy* (Longfellow, 2018/1871) has elements of Sufi mystical poetry. Longfellow was influenced by Persian poet Ferdowsi, who wrote the epic poem *Shāhnāme*. He also drew inspiration from Ferdowsi's tales and incorporated elements of Persian literature in his own poetry (Bradley, et al., 1974, pp. 1469-1506; McMichael, et al., 2004, pp. 1539-1548).

Edward FitzGerald (1809-1883). No treatment of the impact of Persian poetry on later Western writers would be complete without the acknowledgment of Edward FitzGerald. His translation of the *Rubāiyāt* of Omar Khayyam (FitzGerald, 1997/1859) popularized

Persian poetry in the West and influenced numerous poets and writers. FitzGerald's body of work in respect to Persian poetry is not limited to translation. One can see in his own poetry the Persian influence in his treatment of mysticism, love, and the impermanence of life. The romantic and philosophical elements found in Hafez's "Divan-e-Hafez" and Attar's "Conference of the Birds" ring in FitzGerald's quatrains, highlighting a harmonious amalgamation of two distinct poetic traditions. Notwithstanding some recent criticism (e.g., see Taher-Kermani, 2014), FitzGerald's translation of the *Rubaiyat* is a vivid reminder of the enduring power of Persian poetry.

Robert Browning (1812-1889). Evidence of the influence of Persian poetry may be found in Robert Browning's 1884 long poem, or what critics call a four-part collection of verses, *Ferishtah's Fancies* (Browning, 2015/1884; Kennedy, 2017). In *Ferishtah's Fancies*, Browning employs ideas of Sufi mysticism to create stories inspired by the poetic traditions of Persia. Gal Manor (2013) examines at length the clues to Persian influence on the works of Browning in the context of the Western perception of Orientalism and how he mixed Eastern and Western elements in his poetry.

Edward Backhouse Eastwick (1814-1883). Eastwick is one of the premier translators of Sa'adi's masterpiece, *The Gulistan*, or *The Rose Garden of Sa'adi*, a collection of poems and stories drawn from ancient Persian folklore. Eastwick's translation, full to overflowing of insightful Persian wisdom, made *Gulistan* accessible to Western audiences. Eastwick also translated Sa'di's poem *Bustan* [The Orchard] (Katouzian, 2012). In *Bustan*, Sa'di used both poetry and prose to tell moral and ethical stories, reflecting his extensive travels and thoughts.

Henry David Thoreau (1817-1862). In *Walden* (2023/1854), Thoreau emphasized simplicity and the joys of communing closely with nature, themes evident in Rūmī and the ghazals of Hafez (Bradley, et al., 1974, pp. 1213-1468; McMichael, et al., 2004, pp. 1340-1540). Scott (2007) suggests, "The Persian dimension in Thoreau is often rather overlooked and yet one that is quite substantive" (p. 21). How substantive? A rough measure of the claim is that in Scott's paper of twenty-six pages (excluding references), there are twenty-seven mentions of the words "Persia" or "Persian." Thoreau saw value in the themes expressed by the Classical Persian poets and the power of those expressions. Themes of love and the search for meaning that Scott found in Persian poetry resonated with Thoreau and can be reflected in *Walden*, *Civil Disobedience*, and other works (Scott, 2007; Thoreau, 2023/1849 and 1854).

Matthew Arnold (1822-1888). In the context of the influence of Persian poets, Arnold is perhaps best known for his poignant and ironic poem *Sohrab and Rustam*. Drawing inspiration from Ferdowsi's epic *Shāhnāme*, Arnold pits the tempestuous Tartar youth Sohrab against the leader of the Persian army, the older Rustam. Rustam kills Sohrab in the battle. As Sohrab lies dying, they discover they are father and son. Arnold echoes themes from *Shāhnāme* and its themes of tragic conflict, heroism, and the clash of empires.

Themes in Persian literature reveal themselves in Arnold's probe of human nature as he shows with tragic results the consequences of personal and societal conflicts. "The Study of Poetry" (Arnold, 1880) expresses admiration of Sa'di, who gives prominence to the values of moral behavior and humanism, values with which Arnold identified.

Charles Eliot Norton (1827-1908). Norton's translation of *The Divan of Hafez* demonstrates his appreciation for the mystical and lyrical aspects of Persian poetry. In addition to his translations, in his own writing, he identified with the Classical Persian themes of mysticism, love, and the search for meaning. Norton expressed sympathy for the connections between Oriental and Occidental literary traditions, as evidenced in such works as *Political Writings of John Milton* (Norton, 1905) and *Studies in Dante* (Norton, 1899).

Edward Henry Bickersteth (1825-1906). "A Lament for Persia" by Edward Henry Bickersteth grieves the decline of a once-great power, an empire that was, at the time, the largest the world had ever seen, with half the planet's population (Briant, 2002):

Mourn, Persia, mourn! thy charms decay;
Proud Ispahan, the seat of power,
Is shorn by time's relentless sway
Of her rich zones and golden dower,
Which shone around her stately domes,—
That ancient gem of empire, and her sovereigns' homes.

(Bickersteth, 1848/2022)

Edward Granville Browne (1862-1926). Browne brought the brilliance of Persian poetry to the English-speaking public in his translations, especially of Rūmī and Hafez. His book, *A Literary History of Persia*, consists of four parts and 521 pages. As the subtitle indicates, the period covered is "From the earliest time to Ferdowsi," that is, from 226 CE to 1000 CE. The thirteenth-century Sufi poet Jalal al-Din Rūmī appears to have had a significant impact on Browne. As with other Western writers with an affinity to spiritualism, Browne was attracted to Rūmī's mystical poetry. The *Divan-e-Hafez* also helped to form Browne's writing, reflecting his understanding of the intricacies of Persian poetry. Through Browne's translations and interpretations of Persian poetic masterpieces, such as Rūmī's "Mathnawi" and Hafez's ghazals, he not only introduced Western audiences to the beauty of Persian literature but also demonstrated the profound impact it had on his own scholarly endeavors, fostering cross-cultural understanding and appreciation.

Arthur Symons (1865-1945). Symons translated the ghazals of Hāfiz and wrote his own poetry. *The Fool of the World* (Symons, 2010/1906) demonstrated insights into and appreciation of the form and style of Classical Persian poetry (Soucek, 2003; Symons, 2010).

James Elroy Flecker (1884-1915). *Hassan: The Story of Hassan of Bagdad and How He Came to Make the Golden Journey to Samarkand* (Flecker, 2021/1922), Flecker's romantic adventure play, was heavily influenced by Persian themes, including the hero's search for meaning, the brief nature of life, fatalism, and elements of mysticism and spirituality.

Ezra Pound (1885-1972). His poems, such as "The River-Merchant's Wife: A Letter" and "Fan-Piece for Her Imperial Majesty," are inspired by Classical Persian poetry. See also Pound (1915), a collection of translations and adaptations of poems from the Chinese Tang dynasty, which were themselves influenced by Persian poetry.

Robert Graves (1895-1985). Graves, with Omar Ali-Shah, provided an alternative to FitzGerald, a new translation of Omar Khayyām's *Rubāiyāt* as well as other Persian works (Graves, 1969; Graves & Ali-Shah, 1967).

Arthur John Arberry (1909-1999). A scholar and translator of Persian poetry, Arberry's works, including translations of Rūmī, the *Rubāiyāt* of Omar Khayyām (1952), and *Fifty Poems of Hāfiz* (Arberry, 2008/1947s), remain influential works in the scholarship of Persian poetry.

Coleman Barks (born 1937). Barks's translations of Rūmī's poetry, such as *The Essential Rūmī* (1995), have brought Rūmī's work to a wide audience in the West.

Alan Williams (born 1944). His translations of Sa'di's *Gulistan* (2000) and *The Shāhnāme: The Epic of Kings* (2011) are faithful to the original and made accessible to many.

Dick Davis (born 1945). A prominent translator, his *Blossoms of the Garden: Classical Persian Poetry* (2010) and *Faraway Music: New Translations of Classical Persian Poetry* (2019) offer discerning modern interpretations.

Category B: Western Writers Indirectly Connected to Classical Persian Poetry

In the history of literary theory and criticism, one finds themes, motifs, and conventions that are universal and, therefore, impossible to attribute to one era, including the period under investigation in this study. Nevertheless, we note for further research some of these cases.

John Milton (1608-1674). While we can find no evidence of a direct connection between Milton and the Persian poets, we find similarities in the themes, motifs, and content of both (Saleem, 2015). Any consideration of similarities would, of course, start with Milton's epic poem, *Paradise Lost*. One common theme of *Paradise Lost* and Persian poetry is the contest between good and evil, between the forces that harm vs. the forces that help. Rūmī and Attar take the reader on a spiritual journey, hoping for union with the divine. Also, in much, if not most of Milton's body of work, we see clearly what we might call an obsession with freedom, exemplified most clearly in his *Areopagitica* (Milton, 2016/1644). That theme, free will in the face of fate, or the will of the divinities, is present in much of the work of the Persian poets, which is especially clear in the *Shāhnāme* (Ferdowsi, 2016).

Harriet Beecher Stowe (1811-1896). In her historic novel, *Uncle Tom's Cabin* (Stowe, 1986/1852), Harriet Beecher Stowe joins Hāfiz in giving voice to spirituality and its expression in action in the community. Although the tie to Hāfiz may be coincidental, the theme is unmistakable.

Walt Whitman (1819-1892). *Leaves of Grass* presents Whitman's perspectives on the human condition, much as we see in Rūmī and Hafez. What we call transcendentalism in Whitman, especially in *Song of Myself*, we see clearly in the spiritual journey of the avian travelers in *The Convention of the Birds* by Attar (Bradley, et al., 1974, pp. 1705-1803; McMichael, et al., 2004, pp. 1787-1926; Khaleghi, 2019; Farzan, 1976; VanSpanckeren, 1994, pp. 30-32).

Emily Dickinson (1830-1886). In Emily Dickinson's verses, we see themes, motifs, and structures that resemble the works of Rūmī (1207-1273), Hafez (1325-1390), and Sa'di (c. 1210-1291) (Browne, 2019). Her meditations are consistent with Sufi mysticism and its themes of mortality. Her exploration of themes such as death, nature, and the metaphysical remind us of the mystical and philosophical underpinnings of Classical Persian poetry. As with Dickinson, Persian poets are remembered for their insights and expression of spiritual and existential themes. We see the connection clearly in Dickinson's metaphorical and highly anthologized "Because I could not stop for Death" (Bloom, 2004, p. 584; McMichael, et al., 2004, pp. 1926-1955; VanSpanckeren, 1994, pp. 34-35).

William Butler Yeats (1865-1939). While there may not be explicit evidence linking the work of Yeats to the Persian poets, his poems definitely take the kind of transcendental and mystical approach of the Sufi poets (Christy, 1932; Muhammed, 2020, p. 111).

Rainer Maria Rilke (1875-1926). The influence of *The Conference of the Birds* by Sufi poet Farid ud-Din Attar can be found in Rainer Maria Rilke's *Duino Elegies* (Rilke, 2001/1923). Both seek self-identity and divine wisdom as a metaphorical spiritual journey. Steps in Rilke's journey are eerily similar to the seven symbolic valleys through which Attar's birds must pass.

James Elroy Flecker (1884-1915). We see the influences of Persian poetry themes, motifs, and perspectives in Flecker's five-act play, *The Story of Hassan of Bagdad and How He Came to Make the Golden Journey to Samarkand* (2021/1922).

T. S. Eliot (1888-1965). *The Wasteland* may be seen to embrace the mystic approach to the human condition, much as the Sufi poets. (VanSpanckeren, 1994, pp. 63-65). Muhammed & Muhammed (2020) write, "Eliot's words and expressions of his early poetry do not merely sound religious but [are] quite close to the expressions of the Sufis" (p. 112). Watts (1946) makes a clear connection between Eliot and his Persian predecessors: "What is the peculiarity of the present moment? This: that, unlike past and future moments, it is not wholly contained in time. To convey this perception, Eliot uses language one must cheerfully grant that resembles the declarations of the great mystics when they treat similar topics" (Watts, 1946, p. 56).

Allen Ginsberg (1926-1997). Icon of the Beat Generation, Ginsberg shared with the poets of Classical Persia a combination of the quest for spiritual fulfillment with new styles of expression. Ginsberg was attracted to the philosophies of the East and reflected that attraction in his poems, most notably, "Howl" and "The

Fall of America," in which, like the Sufi poets, conventional norms were attacked as contradicting the laws of nature (Ginsberg, 1996; VanSpanckeren, 1994, pp. 87-88).

Sylvia Plath (1932-1963). In Plath's poem, *Lady Lazarus*, published two years after her death by suicide, we can see themes and motifs that resemble those of the modern Iranian poet, Forough Farrokhzad. Both were female, and both were influential in their time. From common experiences, then, come a style that may be seen as personal and filled with emotion, but perhaps more relevant, the themes of love, death, and rebirth (VanSpanckeren, 1994, pp. 82-84; The Gospel according to John 11:1-45). Both lived in different countries with different religions, and both attempted suicide three times. Both died at about the same age: Farrokhzad at 32, Plath at 30 (Jamali, 2008). (See also Bausani, 1960, for Europe and Iran in contemporary Persian literature.)

Discussion

This study takes up George Goodspeed's challenge when he wrote, "[T]here is much to be brought out respecting this exceedingly interesting topic" (1893, p. 153). Actually, the more we learned about the topic of classical Persian literature, the more questions we felt compelled to address and the more we were curious to find out. The literary world is still being shaped by the intricate and ongoing phenomena of ancient Persian literature's influence on subsequent Western writers. The cultural legacies of both the East and the West have been greatly influenced and informed by the flow of ideas, subjects, and literary styles between the two cultures, the two areas, and the two times. We learn more about the interdependence of world literature and the lasting influence of Persian literary traditions in Western works as we investigate this cross-cultural interchange. The influence of Persian literature on Western authors demonstrates how literature can encourage creativity across national borders as well as generational and cultural gaps.

Without acknowledging Edward FitzGerald's exposition of Omar Khayyām's *Rubáiyát*, it would be hard to discuss the influence of Classical Persian literature on subsequent Western writers (Biegestraaten, 2008; Elwell-Sutton, 1971). Readers first come across what would become the permanent legacy of the ancient Persian writers in a few passages of Khayyām's *Rubáiyát*, more so than in any other work from the same time period and location that makes up Classical Persian literature. When everything is said and done, Omar Khayyām's *Rubáiyát* has had a profound influence on Western literature, inspiring poets, philosophers, and writers to explore novel ideas and literary genres. Without a doubt, Omar Khayyām's writings introduced Western readers to the depths of Persian poetry and had a significant impact on the development of Western literature in the late nineteenth and early twentieth centuries.

Having noted above the limitations of translation, especially the nuances of the original, we cannot leave the *Rubáiyát* without asking how much of what comes to Western readers is the voice of Omar Khayyām and

how much is that of Edward FitzGerald. For the purpose of this analysis, we are left to recommend further research into that question.

Perhaps the simplest way to sum up Persian literature is to quote Goodspeed (1893): 'No cultivated person should be without some knowledge of it...A discussion of the influence of Persian literature on the life and thought of other nations is something that Goodspeed (p. 153) strongly advocates. Our exact thought!

This study concludes that the writers of Classic Persian literature founded a route from which later writers in prose and poetry benefitted. In light of this discovery, a university would be well advised to incorporate Persian literature into its bachelor's or master's degree programs or, at the very least, a unit within the curriculum. The institution should provide a Ph.D. program in English Language and Literature, and one or two of the best courses would be on Persian literature and its influence on Western writers.

Further research into the translation and interpretation of traditional Persian literature into the English language is not only a worthwhile scholarly endeavor in and of itself, but it may also contribute to healing the existing gulf in ties between modern Iran and the rest of the world. Persian literature has a fine history spanning centuries and is a treasure trove of information, culture, and artistic expression. While fluency in Persian and Arabic languages may be a limitation for most Anglophones, we found an abundance of Classical Persian poetry available in translation. Themes of love, unity, and the human condition are common in both Persian poetry and the writings of Western poetry. In the process of identifying and further exploring these and other themes, we are assured of finding commonalities that enlighten the reader and the writer of the current age.

By providing English-speaking audiences with greater access to this lush literary heritage, we can foster a deeper understanding of Iranian history, culture, and the universal themes that underlie these literary masterpieces. Expanded cross-cultural connections possess the capacity to cultivate compassion, bridge gaps in understanding, and facilitate more intricate and harmonic exchanges between Iran and the global community of scholars.

Because of literature's capacity to transcend boundaries and promote respect for one another and for other cultures, further study and translation in this area will be both academically beneficial and rewarding and productive as a significant step toward the development of more solid, peaceful international relations.

We should note that while the focus of this research is on classical Persian poetry, much can be learned from the study of the broader topic of the prose of the period. The 2023 piece by J. T. P. de Bruijn (2023) offers an attractive, if brief, introduction to that matter. More detailed treatments of prose work in the Classical Persian corpus may be found in Arberry (1958), Levy (1969), and Morrison (1981).

Finally, if we had encountered the marvelous work of Javadi (1983) prior to starting this study, we might have thought we were gilding the lily. However, we now believe that our work, along with that of Javadi

and other scholars, can serve to stimulate further research into the extent and manner of the connection between and among the cultural traditions that characterize the common search by pilgrims of East and West in a quest for truth and beauty in literature.

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Appendix

A Brief Chronology of Persian Poetry

c. 522 BCE
Behistun Inscription of Darius I; considered the first example of Persian literature.
522-486 BCE
Reign of Darius I The Great
490 BCE
Battle of Marathon during the first Persian invasion of Greece
480 BCE
Battle of Thermopylae between the Achaemenid Persian Empire under Xerxes I and an alliance of Greek city-states led by Sparta.
330 BCE
Literature of the Achaemenid Empire is lost in the conquest by Alexander the Great and the burning of the library of Persepolis.
224 CE-651 CE
Middle Persian dialect in use during the period of the Sassanian Empire; written literature develops in response to religious texts.
633-656 CE
The Muslim Arabs under the Rashidun Caliphate conquer the Persian Sasanian Empire, leading to the decline of Zoroastrianism and the Persian language in favor of Arabic.
651 CE
Sassanian Empire falls to invading Muslim Arabs; Zoroastrian texts and Sassanian literary works are destroyed.
750 CE-1258 CE
Persian literature and culture revive under the Abbasid Dynasty.
819 CE-999 CE
Persian literature flourishes under the Samanid Dynasty, which produces some of its greatest poets.
859 CE-c. 940 CE
Life of the Persian poet **Rūdakī**, born Abu Abd Allah Ja'far ibn Muhammad ibn Hakim ibn Abd al-Rahman ibn Adam al-Rudhaki al-Sha'ir al-Samarqandi, called 'the father of Persian Literature.'
c. 900-1600
Generally considered the Classic Era of Persian poetry

c. 935-977

Life of the Persian poet **Daqiqi**, born Abu Manşūr Muḥammad ibn Ahmad Daqīqī, who makes the first attempt at writing the *Shāhnāmeḥ*, *The Persian Book of Kings*.

c. 940-1020

Life of the Persian poet **Ferdowsi (or Ferdusi)**, born Abolghassem Mansour-ibn-Hassan Ferdowsi Tousi, author of the literary masterpiece *Shāhnāmeḥ*, *The Persian Book of Kings*.

1048-1131

Life of the Persian mathematician, scientist, scholar, and poet **Omar Khayyām**, born Ghiyāth al-Dīn Abū al-Faṭḥ 'Umar ibn Ibrāhīm Nīsābūrī.

1080-c. 1131

Life of the Sufi Persian poet **Sanai**, born Hakim Abul-Majd Majdūd ibn Ādam Sanā'ī Ghaznavi author of *The Walled Garden of Truth*.

c. 1141-1209

Life of the Persian poet **Nezāmi**, born Jamal ad-Dīn Abū Muḥammad Ilyās ibn-Yūsuf ibn-Zakkī.

c. 1145-c. 1220

Life of the Persian Sufi mystic poet **Attar** of Nishapur, born Abū Ḥāmid bin Abū Bakr Ibrāhīm.

1207-1273

Life of the Persian poet **Rūmī**, born Jalāl al-Dīn Muḥammad Rūmī.

1210-c. 1291

Life of the Persian poet and prose writer **Sa'di**, born Sa'di Shīrāzī.

1315-1390

Life of the Persian poet **Ḥāfiẓ** Shiraz, born Khwāje Shams-od-Dīn Moḥammad Ḥāfiẓ -e Shīrāzī.

1771

Sir William Jones translates poems of **Ḥāfiẓ**.

1853

Matthew Arnold publishes the first English translation of *Sohrab and Rustum*.

1858

Emerson publishes "Persian Poetry" in *The Atlantic*.

1859

Edward FitzGerald publishes *The Rubāiyāt of Omar Khayyām*.

AS PART OF A SPEECH STATEMENT OF VERB- TIME CONCEPT

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*Ph.D. in philology, associate professor**Azerbaijan, Ganja State University*<https://doi.org/10.5281/zenodo.11097770>**Abstract**

The topic of the article presented by the author is one of the most important topics in modern German linguistics. Linguistic facts confirm that time forms do not only have a grammatical function. Although the category of time is a broad topic in German and Azerbaijani linguistics, the author briefly reviewed the grammatical-lexical field of temporalism and systematized the main means of expression, commented on the elements of expression from different language levels to achieve this meaning. category is one of the most important and defining grammatical categories of the verb. Due to the existence of these grammatical features, characteristic system connections, the verb, due to its paradigmatic volume, forms a wide and comprehensive grammatical forms incomparable to any other part of speech. According to the author, the verb is considered the most important and richest part of speech from the grammatical point of view. One of the highlights of the article is the comparison of the concept of grammatical tense with the Azerbaijani and English languages and the description of time-functional-semantic areas. The study of the distribution of the given means of expression in those functional-semantic areas, the intensity of their distribution seems to be very important in terms of studying the expression points of each of these means, as well as the transposition effect of time forms as a whole.

With the examples given, the author proves that the relations between objective and grammatical tenses are extremely complex and colorful, and are closely interconnected and interconnected.

Keywords: Verb, grammar, linguistics, predicate, the present, forms of Verbs, the effective Verbs, conjunction, Future.

Məlum olduğu kimi, zaman kateqoriyası felin ən mühüm və təyinedici qrammatik kateqoriyalarından biridir. Bu qrammatik kateqoriya fel sistemi üçün o qədər əhəmiyyətli və xarakterikdir ki, alman dilçiliyində fel (das Verb) termini ilə yanaşı, das Zeitwort (zaman bildirən söz) termini də işlənir. Beləliklə, fel ilk növbədə və başlıca olaraq zaman, zaman anlayışı bildirən bir nitq hissəsi kimi anlaşılar. Bu da məlumdur ki, şəxs, kəmiyyət, zaman, şəkil və növ kateqoriyaları felin bütöv və əhatəli qrammatik xarakteristikasını verir. Məhz bu qrammatik əlamətlərin, xarakterik sistem əlaqələrinin mövcud olması sayəsində fel öz paradiqmatik həcminə görə digər nitq hissələrinin heç biri ilə müqayisə edilməyəcək dərəcədə geniş və əhatəli qrammatik formalar əmələ gətirir. Dilçilik ədəbiyyatında qeyd edilir ki, təsirli fel (transitives Verb) 177, təsirsiz fel (intransitives Verb) isə 91 söz forması nümayiş etdirir.[2]

Beləliklə, fel üç şəxsə, iki kəmiyyət kateqorial formasına, altı zaman formasına, üç şəkil müxtəlifliyinə, iki (bəzi mənbələrə görə isə üç) növ mənsubiyyətinə görə dəyişik formalar alır, Partizip I və Partizip II, Infinitiv I və Infinitiv II qrammatik formalarına görə şaxələnir. Təsədüfi deyildir ki, fel qrammatik baxımdan ən mühüm, ən zəngin nitq hissəsi hesab edilir. Əgər isim semantik baxımdan birinci yerdə dayanırsa fel qrammatik dəyişiklik və dinamika görə ön mövqeyə keçir.

Qrammatik zaman kateqoriyasının izahı üçün zamanın məntiqi- fəlsəfi və sırf qrammatik anlamlarını fərqləndirmək zəruridir. Burada adətən “obyektiv zaman” və “qrammatik zaman” terminləri işlənir. Obyektiv zaman insan şüurundan asılı olmayaraq mövcuddur və üç zamanı – keçmiş, indiki və

gələcək zamanları əhatə edir. Məşhur Azərbaycan dilçisi A. Axundov qrammatik zaman anlayışını aşağıdakı kimi izah və şərh edir: “Qrammatik zaman bizdən asılı olmayaraq obyektiv ələmdə mövcud olan zamanın insan təfəkküründəki təzahürünün dildəki ifadəsidir. Qrammatika özündən zaman yaratmır, o yalnız insan şüurunda əks olunan obyektiv zamanı dildə öz xüsusi formal əlamətləri ilə qeyd edir və bununla yanaşı onu xeyli konkretləşdirir” [1]

Məntiqi-fəlsəfi anlamda zamanın, başqa sözlə obyektiv zamanın bu əlamətləri qeyd edilir: zaman dönməzdir – o yalnız bir istiqamətdə davam edir və heç bir zaman qayıtmalara, geri dönmələrə məruz qalmır, daim axır və hərəkət edir; zaman sonsuzdur- onun nə başlanğıcı, nə qurtaracaq nöqtəsi yoxdur. Beləliklə, obyektiv zaman üç zaman pilləsini əhatə edir: keçmiş zaman- indiki zaman- gələcək zaman (Vergangenheit, Gegenwart, Zukunft). Göründüyü kimi, bu zaman ölçüləri kifayət qədər ümumi və yaygındır və onları nisbətən dəqiq sərhədlərdə götürmək xeyli çətinliklər yaradır. Qrammatik zaman formaları məhz bu çətinlikləri dəf etmək, zaman- vaxt ölçülərini dəqiqləşdirmək, konkretləşdirmək, müəyyən və konkret zaman kəsiyini sərhədləndirmək funksiyasını yerinə yetirir. Təsədüfi deyildir ki, müxtəlif dünya dillərində həmin zaman pillələrinin ifadəsi üçün müxtəlif say və funksiyada müxtəlif zaman formaları əmələ gəlir. Əgər müasir alman dilində xəbər şəklinin altı zaman forması varsa, müasir ingilis dilində felin 13 zaman forması qeyd olunur (4 keçmiş, 4 indiki, 5 gələcək zaman formaları) (A. Axundov, 5). A. N. Кононов “Грамматика современного турецкого литературного языка” adlı əsərində (A. N. Кононов, 128) müasir türk dilində 15 zaman formasının mövcud olmasına diqqətli cəlb edir. [4]

Zaman dərəcələrinin dəyişməzliyi və müxtəlif sistemli dillərdə qrammatik zaman formalarının dəyişkənliyi dil şüurunda müxtəlif xalqlarda zaman anlayışının dəyişik formalarda ifadəsini, bununla da qrammatik zamanın özünəməxsusluğunu, milli-subyektiv xarakterini bir daha təsdiq edir. Bu onu göstərir ki, ayrı-ayrı dillərdə hər üç zaman kəsiyində zamana görə dəqiqləşdirmə və konkretləşdirmə hər dilin daxili qayda qanunlarını, dil şüurunun, obyektiv zamanın insan təfəkküründəki inikasının fərqli, daha doğrusu, özümlü şəkildə təzahür etdiyini bir daha təsdiq etməkdədir.

Saysız- hesabsız hərəkət, vəziyyət, iş, hal, vəziyyətin dəyişməsi intervalları və s. zamana görə necə fərqləndirilir, zaman pillələri necə sərhədləndirilir, müxtəlif keçid və dəyişmə halları bir-biri ilə nə şəkildə silsilələnir və burada çıxış nöqtəsi, zamanı adlandırma, təyinetmə meyarı kimi nə əsas götürülür? Bu suallar zaman- zaman alimləri çox düşündürmüşdür.[6]

Linqvistik ədəbiyyatda danışq vaxtı (Sprechzeit) zamanların müəyyənləşdirilməsinin çıxış nöqtəsi kimi götürülür. Əgər iş, hal, hərəkət danışq vaxtından (Sprechzeit, Sprechmoment) əvvələ düşərsə, keçmiş zaman; iş, hal, hərəkət danışq vaxtı ilə eyni vaxta və ya nisbətən eyni vaxta düşərsə indiki zaman; iş, hal, hərəkət danışq vaxtından sonraya aid olarsa, gələcək zaman ifadə olunur. Hər bir zaman mərhələsi daxilində fərqlənmə, differensasiya təkcə zaman formalarının, qrammatik səciyyəli zaman əlamətlərinin müxtəlifliyi ilə deyil, həm də zaman ifadə edən digər dil vasitələri, xüsusilə zaman anlayışının leksik ifadə vasitələrinin köməyi ilə mümkün olur. Müxtəlif zaman vahidlərinin ifadəsi üçün yalnız qrammatik zaman formalarından istifadə edilsəydi, başqa sözlə hər bir obyektiv zaman fərqi reallaşdırmaq üçün ayrıca zaman forması olsaydı, dil öz ümumiləşdirmə funksiyasını yerinə yetirə bilməz, ünsiyyət mövcud ola bilməzdi. Beləliklə, xüsusilə geniş, nəhayətsiz zaman mərhələlərini əhatə edən keçmiş və gələcək zamanı, eləcə də nisbətən konkret və görümlü olan (başqa sözlə, danışq vaxtı anlayışına daha yaxın olan) indiki zaman faktlarını dəqiqləşdirmək, konkretləşdirmək və sərhədləndirmək üçün zaman anlayışının qeyri qrammatik vasitələri kommunikasiya prosesində əhəmiyyətli rol oynayır. Müqasisə et:

1). Vor Millionen Jahren sah die Welt ganz anders aus.

2). Gestern fühlte er sich unwohl.

3). Heute sah er sehr traurig aus.

4). Morgen fahre ich nach München.

5). Er ist immer gesund und munter. [3]

Keçmiş zaman, indiki zaman, gələcək zaman global zaman mərhələlərini bəzən ümumi və sadələşdirilmiş şəkildə gestern- heute- morgen koordinatları ilə ifadə edirlər. Lakin bu global zaman xarakteristikası da rəngarəng və çoxpilləli zaman qavrayışlarını, təbii ki, tam və dürüst ifadə etmir və yalnız etalon, müqayisə meyarı işini görür. Heute sözünün semantik həcmi heç də danışq vaxtı, danışq anı anlayışı ilə bərabərəsmir və tam əhatə oluna bilmir. Burada ən azı yaxın indiki zaman, nisbətən yaxın indiki zaman, “keçmiş” indiki zaman, mütləq indiki zaman,

davamlı, sürəkli, perspektiv indiki zaman semantik fərqlənmələrini ayırmaq lazım gəlir. Belə halda heç də həmişə Präsens zaman formasını işlətmək mümkün olmur. Gegenwart- Präsens tarazlığı pozulur. Məsələn, əgər bu gün baş verən bir iş, hal, hərəkətin zaman xarakteristikası, bunun konkret zaman intensivliyi dəqiqləşdirilir və konkretləşdirilsə, zaman zərfi ilə yanaşı digər dəqiqləşdirici, konkretləşdirici vasitələr dəreal məzmun və əhəmiyyət kəsb edir. Heute sözünün daxilinə müəyyən zaman məsafəsi (24 saat) çərçivəsində ən müxtəlif, həm kəmiyyət, həm də keyfiyyət etibarilə zaman- vaxt intervalları və burada baş verən iş, hal, hərəkət faktları yerləşdirmək mümkündür. Heute früh, heute am Morgen, kurz vor dem Frühstück, nach dem Abendbrot, während der Mittagspause, nach dem Mittagessen, am Nachmittag, heute um zehn Uhr, heute abend və s. Xüsusilə keçmiş və gələcək zaman mərhələlərinə aid belə zaman fərqlənmələrini sonsuza qədər uzatmaq olar. Lakin dil ümumiləşmə yolunu tutur və qeyri- aktual, əhəmiyyətsiz, kommunikasiya üçün gərəksiz faktlardan, eləcə də ifrat və lüzumsuz zaman xarakteristikasından sərf- nəzər edir.[5]

Misalları nəzərdən keçirək:

1). In Südamerika leben noch heutzutage giftige Schlangen.

2). Das Baby schläft.

3). Die Erde ist rund.

4). Monika lebt in Berlin.

5). Es blitzt.

6). Er ruft sie immer vor dem Abendessen an.

7). Solche Menschen sind in der Regel freundlich.

8). Nach dem Tod seines Vaters sieht er sehr traurig und besorgt aus.

9). Sein Vater arbeitet als Lehrer, und seine Mutter ist eine vorbildliche Hausfrau.

(1)- ci misalda Cənubi Amerikada keçmişdə də indiki zamanda da və ən azı yaxın gələcəkdə də zəhərli ilanların yaşadığı və yaşayacağı fikri gizlənir. Aktual informaiya, heç şübhəsiz ki, bu gün də, indiki zamanda da bu mövcudluğun davam etməsi və bunun insanların həyatı üçün təhlükəli olması və ya ola biləcəyidir. Beləliklə, gerçək fakt mahiyyət etibarilə həm keçmiş, həm indiki, həm də gələcək zaman mərhələlərini əhatə edir və ümumi, təkrarlı bir xarakter alır. Söhbət Cənubi Amerikada yaşayan zəhərli ilanların ümumi zaman xarakteristikasından gedir. Beləliklə, həmin formada aşağıdakı məna komponentləri qovuşuq şəkildə ifadə edilmiş olur:

- danışq vaxtında aktuallıq;

- keçmiş və gələcək zamanlara da aidolma;

- hərəkət xarakteristikasının ümumiliyi;

- davamlılıq, təkrarlıq məna elementi;

- müəyyən gerçəklik faktının təsbiti; [4]

(2) ci cümlədə söhbət global zamana aid ümumilikdən deyil, konkret, yaxın zaman kəsiyinə aid “detallaşmadan”, fərqlənmə və davamlılıqdan gedir. Uşağın yatmaq vaxtının nə zaman başladığı, nə qədər davam edəcəyi konkret danışq vaxtında bioloji qanunlarla müəyyən oluna biləcək bir zaman məsafəsində, görümlü konturlarla qavranılır. İş yalnız danışq vaxtı üçün aktual deyil, bütün bir günün, və ya bir günün müəyyən bir dövrünün zaman məsafələrində

göstərilir. Belə ifadə tərzində də müxtəlif mənə komponentlərinin ifadə olunduğunu söyləmək olar:

- indiki zamanda danışığ vaxtına da aid olma;
- danışığ vaxtı ilə işin qismən bir-birinə uyğunluğu;
- keçmiş və gələcək zamanlara (konkret indiki zaman çərçivəsində) da aid olma;

- işin davam etməsi, nisbi fasiləsizliyi, [8]

(3)- cü cümlədə söhbət gerçək, sübut olunmuş, isbata yetirilmiş bir faktın qeyd olunmasından gedir. Yer kürəsinin keçmişdə də, indiki dövrdə də, yaqın ki gələcəkdə də kürə şəklində olması göstərilir. Yer kürəsinin kürə şəklində olması zamansızlığa aid olan bir fakt kimi təqdim olunur. Beləliklə, həmin cümlədə bu mənəkomponentləri ifadə olunmuş olur:

- danışığ vaxtında aktualıq, nitq anına da aid olma,
- ümumilik, konkret bir fakt və ya hadisə kimi qeyd olunma,
- keçmiş və gələcək zaman mərhələlərinə aid olma,
- müəyyən əlamətin davamlılığı və təkrarlılığı, fasiləsizlik halında verilməsi,

(4)- cü cümlədə Monika adlı bir qızın harada yaşaması ilə əlaqədar müxtəlif fakt və ehtimalların dəyərləndirilməsi anlayışı ifadə olunur. Monika əvvəl də, indi də, güman ki, yaxın gələcəkdə də Berlində yaşamış, yaşayır və yaşayacaqdır. Beləliklə, bu mənə elementlərini özündə birləşdirir:

- indiki zamana aid olma, konkret aktualıq,
- keçmiş və gələcək zamanlar üzərinə yayılma, həmin zaman mərhələlərinə də aid olma,
- feli əlamətin,verbal xarakteristikasının davamlılığı,
- təkrarlıq və potensial davam etmə imkanının reallığı [7]

Nümunələrdən göründüyü kimi, (5)- ci misalda klassik indiki zaman mənəsi ifadə olunur. Ildırımın çaxdığı andaca bu haqda danışılır. Zamandan yayınma faktı isə yalnız ildırımın çaxmasının yerə çatmasının doğurduğu qısa zaman məsafəsidir.

(6)- cı cümlədə danışığ vaxtı ilə eyni zamanda baş vermə, keçmiş və gələcək zaman üzərinə yayılma, hərəkətin keyfiyyət xarakteristikasının dəyişməzliyi, sabitliyi, (7)- danışığ anı ilə eyni vaxta düşmə, keçmiş və gələcək zamanlara da aid olma, imkan mənəsinin reallaşması; (8)- işin, vəziyyətin danışığ vaxtı ilə eyni vaxta düşməsi, aktualıq daha uzun bir zaman kəsiyini əhatə etməsi, feli əlamətin davamlılığı; (9)- işin, hal vəziyyətin danışığ vaxtı ilə eyni zamana düşməsi, işin xeyli dərəcədə keçmiş zamandan başlaması və güman ki, gələcək zaman mərhələsində də xeyli davam edəcəyi fasiləsizlik və ardıcılıq.

Gətirilən misallar onu sübut edir ki, obyektiv və qrammatik zamanlar arasındakı münasibətlər son dərəcə mürəkkəb və rəngarəng olub, sıx qarşılıqlı əlaqə və keçid halları ilə bir- birinə bağlanır. Onlar çox vaxt bir- birinə uyğun gəlmir, invariant semantik mənələr və onların dil ifadəsinin müxtəlifliyi şəklində özünü göstərir.

Zaman formaları, yəni morfoloji qarşılaşdırmalar sistemi funksional (qrammatik- leksik) zaman sahəsinin mərkəzini, dominant ifadə vasitələrini təşkil

edir. Qrammatik zaman formaları zaman mənəsini birmənalı şəkildə ifadə edir, həmin mənənin ən çox xüsusiləşmiş, qrammatikləşmiş ifadə tipini təşkil edir və müntəzəm olaraq işlənir. Həmin zaman formaları keçmiş, indiki və gələcək zamanlarda baş verən, yəni danışığ vaxtından əvvəl və sonra, icra olunan və ya danışığ vaxtından sonra baş verən iş, hal və hərəkətləri müvafiq zaman mərhələlərinə aid edir, həmin zaman perspektivlərinə aid differensial- semantik mənələrin əsas ifadə formaları kimi çıxış edir. Zaman formaları keçmiş, indiki və gələcək zamana aid eyni zamanlılıq və müxtəlif zamanlılıq perspektivlərini də ifadə edir. Dilçilik ədəbiyyatında zaman formaları mütləq və nisbi zaman formalarına ayrılmaqla iki yerə bölünür. Präsens, Imperfekt və gələcək zamanın birinci forması (Futurum I) mütləq, Perfekt, Plusquamperfekt və gələcək zamanın ikinci forması isə (Futurum II) nisbi zaman formaları adlanır. Perfekt zaman formasının həm mütləq, həm də nisbi zaman forması kimi işlənməsi ayrıca olaraq qeyd edilir. Tanınmış dilçi E.İ.Şendelsin məşhur zaman formaları üçbucağı bunu əyani şəkildə ifadə edir [7]

Beləliklə, zaman formalarının təsnifi təkcə onların mənə quruluşuna deyil, həm də işləmə məqamlarına, funksionallığına da tam uyğun gəlir.

Kateqorial zaman mənəsinin ifadəsi yalnız zaman formaları ilə bitmir. Belə olsaydı, söhbət ancaq qrammatik zaman kateqoriyasından gedərdi. Biz temporalıq məfhumunu geniş funksional- semantik sahə kimi araşdırsaq, aşağıda qeyd olunan ifadə vasitələrinin də invariant- semantik zaman mənəsi ətrafında qruplaşdığının şahidi olarıq. Beləliklə, zaman- funksional- semantik sahəsinə aşağıdakı kimi təəvvür etmək olar:

1). morfoloji qarşılaşdırmalar sistemi- felin məlum altı zaman forması (Präsens, Präteritum, Perfekt, Plusquamperfekt, Futurum I, Futurum II);

2). felin ad formalarının (Nominativformen des Verbs) zaman perspektivləri (das weinende Kind, der geschriebene Roman); Er ging an mir vorbei, ohne mich begrüsst zu haben;

3). zaman mənəsi ifadə edib cümlədə zaman zərfliyi kimi çıxış edən heute, vorgestern, morgen, übermorgen tipli zərflər;

4). prepozisionlu və prepozisionsuz işlənen temporal mənəli isimlər (die Woche, vor dem Abendessen, das Jahrhundert);

5). tabeli mürəkkəb cümlələr daxilində zaman münasibəti ifadə edən bağlayıcılar (nachdem, als, wenn, sobald və s.);

6). Zaman mənəsi ifadə edən, isimlərin müxtəlif zaman xarakteristikasını verən, onları zaman görə təyin edən sifətlər (gegenwärtig, vergangen, gestig, heutig və s.);

7). Zaman mənəli sözlər (bis, während, seit);

8) müxtəlif temporal münasibət ifadə edən, zamana görə informasiya almaq və ya onu dəqiqləşdirmək məqsədilə işlənen sual sözləri (wann, seit wann, bis wann, wie oft, wie lange);

9). nie, niemals, nimmer, nie und nimmer\ nie und nimmermehr tipli expressiv zaman anladan emotiv sözlər;

10). bald-bald koordinativ (tabesizlik) bağlayicisi;

11). implisit (gizli, qeyri aşkar) zaman ifadə edən konjektiv formaları (Wenn ich es gewusst hätte, so hätte ich ihn geholfen);

12). iş, hal, hərəkət və vəziyyəti zamana görə xarakterizə edən fellər: dauern, anhalten, tagen, vergehen, pausieren və s.[6]

Göründüyü kimi, zaman mənası yalnız qrammatikləşmiş ifadə formaları – zaman ölçüləri ilə deyil (morfoloji səviyyə vahidi) həm də ən müxtəlif dil səviyyələrini təmsil edən leksik, semantik, leksik-semantik, leksik- frazeoloji vasitələrlə ifadə olunur. Zaman formaları bir- biri ilə əlaqəli mətn daxilində rəngarəng semantik-sintaktik münasibətlərə girir, qonşu sahələrə nüfuz edərək çoxtərəfli sinonim və çoxmənalılıq əlaqələrinə daxil olur, müəyyən üslubi imkanlar kəsb edir.

Funksional-semantik temporalıq sahəsinin üfiqi quruluşuna gəldikdə bunu bu mikrosahələr kimi xarakterizə etmək lazım gəlir:

- 1). Indiki zaman mikrosahəsi
- 2). Keçmiş zaman mikrosahəsi
- 3). Gələcək zaman mikrosahəsi

Göstərilən ifadə vasitələrinin həmin funksional-semantik sahələr üzrə bölgüsünü, yayılma intensivliyini araşdırmaq istər həmin vasitələrin hər birinin ifadə məqamlarını, istərsə də bütövlükdə zaman formalarının transpozisiya effektini araşdırmaq baxımından olduqca əhəmiyyətli görünür.[5]

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POLITICAL SCIENCES

PROBLEMS AND DEVELOPMENT TENDENCIES OF THE EU MEDITERRANEAN PARTNERSHIP

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Abstract

In the history of mankind the Mediterranean region has played a significant role. Civilizations, peoples and cultures were evolving here, the first states and legal systems were forming, ideas about the universe and man's place in it were basing. Maritime communication were adding additional depth to these processes and new opportunities in spiritual-cultural, political-legal and economic development.

Today this factor largely determines the main principles of the foreign policy of the countries of the region and the directions of interstate cooperation including maritime issues.

The article analyzes the problems and trends in the development of the Mediterranean partnership of the European Union. Within the framework of the study the issue of the development of integration processes and the formation of the Mediterranean policy of the EU have been considered; the main stages of its development have been analyzed and the peculiarities of the functioning of the Euro-Mediterranean partnership have been clarified.

Keywords: Mediterranean region, Barcelona process, Euro-Mediterranean partnership, European Neighborhood Policy, Union for the Mediterranean.

Formulation of the problem.

For the EU, the Mediterranean region is of great importance due to geographical, historical, economic, resource and political factors. In the region seven countries of the European Union are located (Greece, Italy, Spain, Malta, Slovenia and France), the combined population of which is 36.3 % of the EU population, and the GDP is 38.8 % from the volume of the EU. Arab countries such as Algeria, Libya, Syria, etc., which were previously part of the former Ottoman Empire or were under the protectorate of France and Great Britain, are located here and are rich in resources. In addition, economic statistics convincingly show that the well-being of the countries of modern Europe is inextricably linked with the Mediterranean region. Shipbuilding and shipping, fishing and fish processing, port activities, energy resources extraction in the shelf zone, coastal and maritime tourism remain key areas of activity for the population of the countries of the region.

The maritime theme of economic development allows Europe to receive great benefits from international trade, cargo transit and increase its weight in the growth of the world economy. The new realities also reflected the new requirements – namely, the potential of the marine water area and the national coast have required large investments and constant coordination of the parties' efforts. Deviation from these norms of conducting business could lead to the fact that the implementation of narrow-sector or purely national projects, for example, in the fields of transport, fishing, energy, tourism

could lead to conflicts of interests, inefficiency or the final failure of the latter. An example of such "force majeure" can be the project between Israel and Saudi Arabia regarding the transit of oil to the Mediterranean coast. The start of work was postponed indefinitely due to the start of Israel's war against the Palestinian movement Hamas on October 7, 2023. In the future it may lose any relevance at all due to the fact that its perspective will be decided in the context of the issue of the creation of Palestinian statehood.

The modern concept of the European Commission – "Integrated maritime policy for the European Union" of 2007 consists in the formation of a consolidated maritime policy that covers all aspects of the interests of states and the preservation of marine water areas. The main goal of the concept is to resolve the contradiction in the system "society – nature" which was brought by the era of industrialism, and then picked up by the philosophy of life of the modern "economic man". It is about the fact that, on the one hand, modern technologies make it possible to receive an increasingly large amount of profit from coastal areas and marine water areas which attracts investments and human resources and on the other hand, this line of behavior leads to the progressive destruction of the natural environment. The urgency of responding to such a challenge was also caused by the rapid course of globalization and climate changes.

Aware of new risks, the European Commission at the beginning of the 21st century started a process of

multilateral consultations between the public and business stakeholders in order to develop a framework document for defining a new maritime strategy. The result of the countries involved in these efforts was that starting from 2008, this problem was moved into the format of the “European Neighborhood Policy” as an alternative of the European integration.

The purpose of the article is to study the problems and prospects for the development of the Mediterranean Partnership of the European Union and estimation of the risks within the framework of this direction of the EU foreign policy.

Analysis of recent research and publications. The issues of the EU’s Mediterranean Partnership and its role in international relations are highlighted in numerous works by researchers from different countries. However, most of the works are works of a general political and political–legal nature. They are mainly devoted to the problems of the European integration, the formation and activity of European institutions, and the evolution of European identity. The problem of the Euro-Mediterranean Partnership (EUROMED) is less open. The issues of the effectiveness and evolution of the EUROMED are investigated in their works by Fonten P., Hassuna B., Dalskyi V., Mokhova I., Nikulina I., Pavlov Y., Serafimova V. A new understanding of the problem is reflected in the publications of Koval I. and Muravyov V. Ground researches of certain aspects of the problem are the scientific works of Ukrainian scientists E. Magda. Pak N. and Shamrayeva V. Scientific interest in certain elements of the problem is the dissertation research of Adnan A.

Presenting main material. From the point of view of geopolitics, the Mediterranean occupies a very favorable position on the map of the world front stage. This is due to the fact that naval communications from the Atlantic to the Indian Ocean pass through it, the routes to the Middle East, the Persian Gulf and the Black Sea are controlled. They are the hidden factor that makes the Mediterranean region both a contact and a conflict zone of European, African and Asian states.

The roots of the European Union’s foreign policy strategies in the Mediterranean region go back to the 1950s of the 20th century. However, the intensification of EU cooperation and partnership with the Mediterranean countries took place only at the beginning of the 21st century. Such a radical step was conditioned by socio–political, energy, economic and security challenges of global and regional dimensions. Here we should recall the historic NATO Washington Summit in 1999, when the new Alliance Strategy was adopted and new global threats were “fixed” to which the Alliance countries must give a consolidated response.

Until now, the peace and war processes in the European region were regulated within the framework of the “Global Mediterranean Policy” which was approved in the early 1970s. The materialization of her approaches was the conclusion of a number of international agreements with Morocco, Algeria, Tunisia, Egypt, Jordan, Lebanon and Syria which provided for economic and financial cooperation and laid the foundations of the policy for the integration of the southern Mediterranean region with the EU.

In the 1980s there was an increase in the number of coastal countries those became members of the European Union (Greece, Spain, and Portugal), which was one of the factors in the declaration of the EU’s “New Mediterranean Policy” in the 1990s. So, the first stage of the Mediterranean partnership process was characterized by the creation of trade relations, relations in the financial and investment-innovation sphere, relations in the cultural and social sphere as well as the formation of migration policy.

Until 1995 interstate dialogue in the region was not institutionalized, but was based on bilateral agreements between EU member states and the countries of the Middle East region. The Barcelona Conference of 1995 was supposed to change the picture of cooperation. In Barcelona a large-scale interstate Euro-Mediterranean dialogue and Euro–Mediterranean partnership (EUROMED – Barcelona Process, which was joined by all the countries of the then EU) was launched.

The signing of the Barcelona Declaration provided for the implementation of mutually beneficial cooperation in the economic, political and socio-cultural spheres. The main tasks of cooperation are recognized as: political and security dialogue, economic, financial, social, cultural and humanitarian partnership [1].

However, in practice, the procedure for realizing these goals faced significant difficulties. It was about political instability in the Mediterranean countries, their reluctance to participate in projects proposed by the EU, the imbalance of trade relations between the parties, etc.

Subsequently, disputes and weak activity of the participants, differences in political views and financial and economic “distortions” of the expected benefit led to gradual decline of the EUROMED [2, p. 163].

During 1995–2004 significant transformations of the essence were carried out in economic and energy dimensions of partnership policy and composition of participants. Since 2004 a new stage of the EU cooperation with the Mediterranean countries has begun, which was connected with the declaration of the EU’s intentions to implement the European Neighborhood Policy (ENP). In this regard, it is worth noting that the strategic tasks of cooperation between the EU and the Mediterranean countries were defined, the New Policy offered prospects for closer cooperation in certain sectors and new mechanisms for the development of relations regarding the construction of economic and energy common markets. The cooperation focused on the combination of old formats of interactions and the creation of new policies and cooperation, the need to adapt old directions of cooperation to new conditions, challenges and priorities.

In 2007, during his pre-election campaign the candidate for the presidency of France, N. Sarkozy advocated for a close cooperation within the Mediterranean – the creation, by analogy with the EU, of the Union for the Mediterranean [3]. It should be noted here that the Arab Maghreb has always been an area of interest for France and naturally it was France that proposed to unite in the new Union only those states that have direct access to the Mediterranean Sea. However, the position

of the German leadership on this issue was the opposite. Berlin insisted that the new structure should include all EU states those were financing Euro-Mediterranean projects within the framework of the good neighbor policy, should have the right to vote in the new structure [4].

The latter showed Germany's considerable concern about possible removal from the proposed organization, its future policies and economic projects for its "non-Mediterranean" geographic status. And only after making changes to the original plan, Germany agreed to its creation. In addition, the proposals of the European Commission to strengthen institutional cooperation between European and Arab partners with an emphasis on specific regional projects contributed to the transfer of the initial French idea to the EU level and its transformation into the Union for the Mediterranean within the framework of the Barcelona process which at that time practically entered dead end [5].

The new Union for the Mediterranean was launched at a summit in Paris in July 2008 which was attended by the heads of state and government of 43 European and Arab states as well as representatives of the League of Arab States. The transformation of the Mediterranean region into a zone of peace, democracy, cooperation and prosperity became the main, although not new, goal of the Union for the Mediterranean. In the new organization the composition of participants and representation of non-European countries has significantly expanded. The Paris Declaration, adopted at the summit, outlined four dimensions of cooperation in the spirit of the Barcelona Process: political dialogue, economic relations with the prospect of establishing free trade zones, socio-cultural dialogue, issues of social integration, including migration and security [2].

So, at this stage of the development of the EU's Mediterranean partnership a new international organization was created – the Union for the Mediterranean, strategic tasks of cooperation between the EU and the Mediterranean countries were defined, prospects for closer cooperation in certain sectors were formed, new mechanisms for the development of relations regarding the formation of economic and energy common markets were formed. The transformation of cooperation focused on the combination of old formats of interactions and the creation of a new policy of partnership and cooperation; the need to adapt old formats of cooperation to new conditions, challenges and priorities.

However, the "Arab Spring" of 2010–2011 which covered many states of North Africa and the Middle East made significant adjustments to the 2008 plans. At the beginning of October 2013 the first full-fledged summit of 43 members of the Union took place in Vilnius after the "Arab Spring". In response to the "Arab Spring" two regional projects were approved: the Generation of Entrepreneurs Initiative under the Mediterranean Job Creation Initiative and the Lake Bizerte Decontamination Program in Tunisia. Big business also received a signal about the presence of its interests. It is about the fact that the summit determined the agenda for the next meetings of the ministers of transport (in mid November 2013) and ministers of energy (in mid

December 2013). For business representatives the results of their meetings promised good news.

Currently, multilateral interaction within the Union for the Mediterranean is increasingly limited to functional cooperation and common Mediterranean social and economic projects.

Expecting the europeanization of the Mediterranean to be as effective as the democratization of the Central and Eastern European states in the 1990s is justified for at least two reasons. First, the letters asked for a "return to Europe" based on their European identity; secondly, they had the prospect of full accession to the EU. At the same time, the EU's policy towards the Mediterranean countries consisted of abstracting it from the political culture and local way of life, customs and conditions [6, p. 99–116.].

Such a dichotomy of the EU's Mediterranean policy testifies about one very important "thing in itself" – the entire history of relations between the countries of "old Europe" and the countries of the "third world" is a story about the priorities of one's own security in its living standards. Everything beyond this goal is the field of political rhetoric [2].

The dynamics of the process of cooperation between the countries of the Mediterranean allow us to distinguish four stages of the development of such cooperation:

1st stage (1960 – 1995) – "Global Mediterranean policy";

2nd stage (1995 – 2005) – European neighborhood policy, Euro-Mediterranean partnership;

3rd stage (2004–2008) – the Euro-Mediterranean partnership adopts new dimensions;

The 4th stage (2008 to the present) is the creation of the Union for the Mediterranean and its further development.

Today, the integrated maritime policy of the EU is based on a clear understanding of the interconnectedness of problems and the need for their joint, coordinated solution. The most important projects are creation of a European transport space without barriers, promotion of the European Research Strategy, development of national integrated policies, creation of the European Maritime Surveillance Network, development of a "road map" of maritime spatial planning of the EU member states, strategies for mitigating the impact of climate change in coastal zones, reducing pollution of the natural environment, including emissions from shipping, exclusion of pirate fishing and destructive bottom trawling in the high seas, formation of the European network of maritime clusters, revision of the EU labor law in the fields of shipping and fishing [7].

Within the Mediterranean region, there is a program "Towards an Integrated Maritime Policy for better governance in the Mediterranean" (2009) (Communication from the Commission to the Council and the European Parliament) which defines the main problems facing the Mediterranean states:

1) in most countries of this region, each spectral policy is carried out by its own administration, just as any international agreement is implemented within its own rules, therefore it is difficult to achieve the goal of coordination and coherence;

2) the greater part of the maritime space, consisting of the open sea, complicates the planning, organization and regulation of the activities of the coastal states which directly affect their territorial seas and coasts.

The combination of these two elements creates a situation where policies and activities develop separately from each other and without proper coordination between all its spheres affecting the sea, as well as all local, national, regional and international actors.

The program envisages opportunities to improve governance in the region: the creation of a working group dedicated to integrated maritime policy with the aim of initiating a dialogue and sharing best practices with Mediterranean coastal states that are not the EU members; the provision of technical assistance under the European Neighborhood Policy and the Partnership Instrument for Mediterranean partners express interest in an integrated approach to maritime affairs, thereby raising awareness and contributing to setting goals and mechanism of implementation; support of structural and informal dialogue among the coastal states of the Mediterranean with the help of high-level meetings, academic and other international organizations with the aim of improving the management of the maritime space including subregional level, etc [2].

The most problematic problem today is the sphere of illegal sea migration from the countries of the North Africa and the Middle East. It is the use of a maritime way for illegal entry into the territory of another state that remains dangerous for migrants for a long time and leads to numerous victims [8, p. 90].

According to UN information, since the beginning of 2017 more than 50,000 migrants have arrived onto the shores of Italy, and more than 1,400 people have drowned or gone missing. The migration route from Libya to Italy through the Mediterranean Sea is considered the most dangerous in the world. For example, in 2016, out of 181,000 migrants who entered the territory of Italy, about 90 % arrived from Libya by sea (more than 30 migrants drowned off the coast of Libya, 2017).

In order to solve this problem, special agencies dealing with maritime safety (EMSA), border control (FRONTEX) and fishing control have been created in the EU [9]. The adoption of relevant legislation in the specified areas contributes to the fact that the member states carry out joint control.

Within the framework of the FRONTEX project the countries of the region are trying to coordinate measures against the illegal circulation of narcotic drugs and falsified medicines. In September 2007 the Maritime Anti-Narcotics Operational Analytical Center was established in Lisbon, the main task of which is to improve the information provision and coordination of the work of the maritime police in order to check ships which are moored and on board which are believed to contain drugs. A similar center was also established in the Mediterranean in 2008 [10].

Within the framework of the Union for the Mediterranean significant maritime logistics projects are also being implemented. It is about such of them:

– OPTIMED (Mediterranean Corridor Southeast – North event) representing the modernization and reorganization of the ports of Beirut (Lebanon) and Porto Torres (Italy), as well as the introduction of new transportation management systems in some ports of Spain, France, Egypt, Cyprus. The cost of the project is EUR 37.35 million. The initiator is the Italian government;

– Motorway of the sea (“Highway of the Sea” on the line Turkey – Italy – Tunisia – Maghreb. This project involves the development of a cargo transportation route from Turkey (Izmir and Mersin ports) to Morocco via Tunisia (ports of Tunis and Cfax) and Italy (ports of Bari, Brindisi and Taranto).

The development of the route is the modernization of the specified ports and the improvement of the interaction of sea transport with road and railway carriers including through the introduction of Italian technologies and management methods in the ports of Tunisia and Turkey, as well as partial replacement freight transportation by road and rail transport in these directions of sea transportation which is caused by the load of the corresponding ground infrastructure. The cost of the project is estimated at 478 million euros, and the duration is from 2017 to 2037. The project was initiated by the Turkish government.

In addition, the policy of preserving the marine environment and. Since 1976 the preventing its pollution is being implemented in the Mediterranean region cooperation of the Mediterranean states has been formalized in the Barcelona Agreement – the Convention on the Protection of the Mediterranean Sea from Pollution contains joint obligations of the states, which are specified in additional protocols to the Convention.

Thus, the Regional Emergency Response Center for Marine Pollution in the Mediterranean Sea was established in accordance with the resolution adopted by the Conference of Plenipotentiary Representatives of the Coastal States of the Mediterranean Region on the protection of the Mediterranean Sea in Barcelona February 1976, convened by the International Maritime Organization and the United Nations Environment Program (UNEP) [2].

In the context of this Convention the Center for Regional Action on Specially Protected Areas carries out a project to support the establishment of these marine areas of Mediterranean importance in areas of the high seas including deep-sea areas. Based on the biogeographical approach a list of 12 priority protected areas located in the open sea has been prepared in which there may be areas that can be included in their list.

The maritime policy of the states bordering the Mediterranean Sea today is geographically divided into two directions: in the North African states, it is aimed at combating illegal migration to the EU and conducting naval exercises, and in the Middle East, it is focused on the search and redistribution of hydrocarbon deposits to ensure stability.

Added to the Lebanese-Israeli disputes and issues related to Cyprus are the traditional tensions between Turkey and Greece. Ankara and Athens take different positions on how the maritime border between the countries in the Aegean Sea should run. Of particular importance are the so-called gray zones – uninhabited

islands, the ownership of which is contested by both the Turks and the Greeks.

In connection with the above mentioned that back in 2014 in a special report on the Mediterranean, it was stated that this region is the site of many regional conflicts related to maritime border disputes. That is why the EU strongly urges you to make commitments avoid further escalation that would exacerbate existing threats. The report also examines the dangers that may arise from the discovery of hydrocarbons in the Eastern Mediterranean region: "recent discoveries of natural gas in the eastern Mediterranean have led Turkey, Russia and Israel to increase their naval power in the Mediterranean. This is directly related to EU members – Greece and Cyprus" [11].

Today the priorities of the Euro-Mediterranean partnership, consisting of a whole set of strategic goals, are formulated as follows.

1. Electoral immigration policy.
2. Ecology and environmental protection, fight against pollution of the Mediterranean Sea.
3. The policy of general long-term development and strengthening of cooperation and mutual assistance within the Mediterranean region in the field of economy (free trade area, investments, development of transport infrastructure, energy security, creation and transfer of the latest technologies).
4. Fight against corruption, organized crime and terrorism.
5. Development of culture, education system, health care, fight against inequality and injustice.

There are certain problems in the process of forming the organizational structures of the Euro-Mediterranean partnership. They are related to political and economic differences in the vision of mutual perspectives cooperation of members of the initiative, the international situation and the ambitious aspirations of individual countries of both the Arab and European regions of the Mediterranean.

These problems have their own roots [12]. and were discussed at the stage of preliminary elaboration of the EUROMED project. It is about the following:

1. The initial attitude of a number of European countries, in particular Germany and European institutions, to the Mediterranean Union initiative was quite wary. Statements by French President N. Sarkozy did not contain answers to questions about the structure, format of relations between the participants of the association, and sources of funding for the future organization. Although political the nature of the statements did not include technical details of the project, N. Sarkozy's speeches clearly demonstrated France's claims to leadership not only in the Mediterranean region, but also in the European Union. Such a production the question could not satisfy the main political competitor of France EU – Germany.
2. To the difficulties that arose during the registration of the initiative of the Union for Mediterranean at the European level added ambiguous (and even negative) attitude towards this project of some countries of the Southern Mediterranean.
3. The uncompromising position of the Libyan leadership became a certain caveat to the creation of the

Union. Libya which has had observer status in the Barcelona process since 1999 despite active rapprochement with the West in recent years, categorically rejected the idea of participating in the Union for the Mediterranean.

4. Certain questions have arisen regarding the inclusion of Turkey in the new format of relations. Even at the beginning of his presidential campaign N. Sarkozy repeatedly opposed the inclusion of the Republic of Turkey in the European Union. According to him, "Turkey has no place in the European Union because it is not a European country".

5. The final declaration of the Paris summit which was approved on July 13 2008 by all participants was drawn up in full accordance with the principles previously expressed by the European Commission. The declaration emphasized the need to work together to achieve peace in the Middle East, stability and security in the region.

6. The problems that arose after the establishment of the Barcelona Process in 1995 continue to haunt the Union for the Mediterranean at the present time. Among them are the requirements of the European Union: democratic reforms should take place in the countries of the Southern Mediterranean as well as problems arising from the Palestinian-Israeli conflict.

The EU leadership proposes to mitigate the basis of existing disputes through joint actions of the Union countries:

- with the pollution of the Mediterranean Sea;
- in the establishment of sea and land transport between the two shores of the Mediterranean Sea, the construction of coastal highways and the modernization of railway connections connecting the countries of the Maghreb;
- in ensuring public safety and preventing natural and humanitarian disasters;
- in the development of alternative energy sources (primarily solar energy of the Mediterranean);
- in the development of higher education and scientific research;
- in the development of small and medium enterprises.
- in the development of civil society and a climate of mutual trust, etc.

However, these intentions and plans face the problem of lack of money and the search for sources of funding for Mediterranean projects. It should be noted that financing of Union projects is not carried out exclusively at the expense of European Union funds. The European Commission primarily expects to receive additional funding from private investors. The participation of the latter in joint projects is to act not only as donors, but also as investors, which should increase their interest in achieving specific results [13, p. 100–101].

At the same time, European financial mechanisms such as the Facility for Euro-Mediterranean Investment and Partnership (FEMIP), as well as financial instruments of the European Neighborhood Investment Facility, can also be used to achieve the goals of the Mediterranean Partnership.

Such problems of a systemic nature encourage the national governments of the member countries to act according to the “menu” principle that is the selective participation of the countries of the region in the implementation of projects developed within the framework of the Union. This means that the participating countries will have the opportunity to propose and choose only those projects in which they are really interested.

Conclusions.

The Mediterranean region is the most important factor in the global geopolitical foreground. It is in the center of gravity not only of the countries that are located there geographically but also of those who claim to dominate the region in order to control the state of security of world trade routes.

The integrative nature of the EU policy in the region faces a certain list of problems of a systemic nature which have an economic, historical and spiritual-cultural context, which affects the behavior of local elites regarding the speed and depth of integration with Europe.

Participating countries are trying to overcome the existing state of problems between the parties of the project due to the “menu” principle within which there is freedom of choice of programs and projects of financial and economic, environmental, educational, security other character.

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PSYCHOLOGICAL SCIENCES

MENTORING IN ORGANIZATIONS

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МЕНТОРИНГ В ОРГАНИЗАЦИЯХ

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Abstract

The article describes the characteristics of mentoring, tasks and steps of mentoring, importance of the mentor-mentee process. Mentoring steps are considered: establishing trusting relationships, clarification of objectives, interaction and training, closing of project.

Аннотация

В статье описывается характеристика менторинга, задачи и этапы менторинга, важность процесса взаимодействия ментора и менти. Более детально рассматриваются этапы менторинга: установление доверительных отношений, уточнение целей и направления движения, взаимодействие и обучение, завершение менторинга.

Keywords: mentoring, mentee, mentor, organization.

Ключевые слова: менторинг, менти, ментор, организация.

«Если ты не видишь, куда ты идешь, спроси кого-нибудь, кто там уже был раньше», - Лорен Норрис.

Спросить и получить ценную информацию и направление пути можно у человека с опытом, знаниями, навыками, имеющего их передавать и вдохновлять на желаемые результаты и достижения. Такого человека в современном мире называют ментором.

Процесс взаимодействия, обучения, получения навыков с ментором называется менторингом или наставничеством. Это процесс взаимных обогащающих отношений, при которых ментор передает личный опыт и знания своему подопечному (менти), развивая его лидерский потенциал. [1]. Применение менторинга является одной из важных составляющих в развитии и обучении персонала в организациях. Согласно канадскому ученому Р. Каррому, целью и предназначением менторинга служит взаимный обмен жизненным опытом, поддержка и руководство для личного, карьерного или духовного роста и развития. [2]. Менторинг, применяемый в организациях «направлен на усиление соответствия целей сотрудников задачам предприятия. Из истории мы можем выделить такие знаменитые успешные тандемы менторов и учеников, как Сократ и Платон, Аристотель и Александр Великий, Шостакович и Рахманинов.» [3].

Существует идея, что менторами являются и работают лучшие из лучших специалистов в своей отрасли знаний. Но согласно Клаттербаку «каждый может стать ментором, если ему есть что передать, а также, если у него есть необходимые для этого

умения, время и полномочия». Предлагаю ознакомиться с менторингом и его этапами на практике.

Менторинг в основном применяется в организациях и на предприятиях для достижения глобальных и стратегических целей. Одной из основных целей менторинга в организациях является развитие кадров и кадрового резерва, являющихся важными движущими силами в процессе производства.

Менторинг помогает решать в организациях важнейшие задачи, такие как:

передача навыков и умений от высококвалифицированных работников вновь принятым сотрудникам;

передача новичкам корпоративных ценностей; мотивация менторов в собственном развитии и обучении новых работников, укрепление авторитета ментора в коллективе.

В организациях может встречаться формальное и неформальное менторство. Когда эти два типа менторинга сочетаются, достигаются наилучшие результаты от процессов менторинга.

В формальном менторинге участниками процесса заранее составляются и обсуждаются цели и задачи совместной работы. Могут издаваться распорядительные документы, приказы и другие регламентирующие документы, характеризующие этапы работы ментора. Выбор и назначение менторов обычно происходит в соответствии с определенными критериями.

Неформальный менторинг представляет собой систему взаимодействия между членами коллектива, исходя из общих целей и ценностей организа-

ции, процессов взаимной помощи и поддержки. Неформальный менторинг также чаще всего носит ситуативный и неофициальный характер. [4].

Этапы менторинга. Взаимоотношения между ментором и его подопечным, менти, происходят всегда в виде определенного процесса, имеющего свои этапы и характеристики. Этапы взаимодействия между ментором и менти могут не всегда явно прослеживаться. Тем не менее для понимания процессов и структуры взаимодействия между людьми в менторинге можно выделить следующие этапы:

начало, или установление доверительных отношений;

уточнение целей и направления движения;

усиленное обоюдное взаимодействие и обучение;

завершение и дальнейшие движения.

Предлагаю более подробно изучить и ознакомиться с этапами менторинга.

Этап установления доверительных отношений является первичным во взаимоотношениях между ментором и менти и имеет решающее значение в дальнейшем общении и построении взаимодействия. Вначале общения важно, чтобы и менти и ментор выражали свою открытость, искренне были вовлечены во взаимодействие, рассказывали о своих ценностях, обменивались мнениями о своих ценностях, взглядами и видениями на жизнь, интересами и хобби, не связанными с работой и личной жизнью.

Ментору и менти важно обговорить взаимные ожидания от процесса совместного взаимодействия, приемлемую и комфортную для обоих форму общения, формат проведения самих встреч, готовность встречаться и получать обратную связь. Также заранее важно согласовать логику и тайминг совместных встреч. В процессе взаимодействия необходимо на регулярной основе пересматривать сам темп обучения, формат и качество взаимоотношений.

На первой встрече необходимо прояснить и расписать, на что нацелены совместные отношения, проговорить обязанности по отношению друг к другу, установить границы отношений, обговорить как фиксировать записи встреч и измерять параметры продвижения и прогресса.

При взаимодействии как ментору, так и менти не желательно:

углубляться в беседу, не исследуя ожиданий от совместного взаимодействия;

делать предположения о самом человеке и его желаниях, не связанных с процессом обучения и передачи навыков и знаний;

давать домашние задания без согласия менти, иначе процесс выполнения этих заданий будет не эффективным и может повлиять в целом на состояние менти и его желание к дальнейшему совместному взаимному сотрудничеству;

завершать встречу, не обговорив и не достигнув договоренности о месте и времени для проведения следующего мероприятия;

направлять процесс общения в сторону формальностей и бюрократии.

Этап уточнения целей и направления движения. Различные исследования в области менторинга и наставничества показывают, что в ходе взаимодействия ментора и менти первично установленные цели могут видоизменяться и модифицироваться, разворачиваться в иное русло и направление, расти по мере того, как менти будет больше понимать и осознавать себя, а также знакомится и видеть новые разворачивающиеся перед ним возможности.

Выбирая цели для менторинга можно их рассматривать по специальным моделям, позволяющим наилучшим образом сформулировать действительно нужную и важную для работы цель.

Например, работать с целью можно по известной модели SMART. Модель SMART расшифровывается следующим образом: Specific – конкретный, Measurable – измеримый, Agreed – согласованный, Realistic – реалистичный, Timely – определенный во времени. Подобная модель помогает исследовать и корректировать цели и делать их действительно реализуемыми и выполнимыми.

В менторинге обычно в работу берут цели, связанные с ростом и развитием в карьере, личностным ростом, возможностью нахождения и выбора различных ресурсов и возможностей, а также внутренние состояния, связанные с эмоциональными и личными переживаниями.

Наличие конкретной цели в менторинге обеспечивает длительное и перспективное взаимодействие ментора и менти, в процессе которого можно выявлять и достигать дополнительные и вспомогательные цели и подцели.

Обоюдное обучение, этот этап менторинга является основным во взаимоотношениях между ментором и менти, когда люди уже познакомились друг с другом, определили совместные цели и задачи и приступили к реализации основных процессов обучения и сотрудничества, происходящих в форме бесед.

Беседы в менторинге направлены и нацелены на профессиональное обучение, прояснение контекста возникающих в ходе сотрудничества ситуаций, также для резюмирования и подведения итогов со стороны ментора, повышения и развития уверенности у менти, помощи и поддержке для менти в поиске решений и выполнении задач.

Эффективные менторы помогают менти формулировать вопросы и задачи для обучения, подводить итоги совместной работы, когда имеется достаточное понимание и изучение вопроса.

Ментор в ходе обучения:

дает возможность менти свободно высказываться,

не прерывает и не осуждает менти,

помогает менти изучить возможные решения самостоятельно и проверить каждое из них на возможность реализации,

поощряют менти подводить итоги менторинга.

Этап завершения. Большинство обучающихся программ имеет свой тайминг для организации и

проведения менторинга. Тем не менее, важной задачей является правильное завершение проведения менторинга, анализ приобретенных во время обучения навыков и возможность заглянуть и спрогнозировать ближайшее будущее.

Важно знать и учитывать в работе тот факт, что взаимоотношения ментора и менти, угасшие сами по себе, без завершающей стадии, чаще всего негативно воспринимаются участниками с обеих сторон. В то же время отношения, завершившиеся взаимным признанием вклада друг друга в процесс обучения и совместной работы практически всегда завершаются положительно.

Для планомерного завершения менторинга желательнее регулярно пересматривать формат взаимного общения, концентрировать внимание на процессах взаимного обучения, готовиться к завершающему этапу отношений заблаговременно. При этом в беседах важно быть открытыми и искренними, праздновать промежуточные успехи, даже самые минимальные. Ментору важно подготовить менти к самостоятельному процессу обучения и принятию решений в будущем, вдохновить менти самому в дальнейшем стать на тропу менторства. Также важным условием этого этапа является обговаривание формата дальнейших возможных взаимоотношений после завершения менторинга.

Очень важно на завершающей стадии общения обращать внимание и не допускать само угасания взаимодействия между ментором и менти, не обрывать резко взаимоотношения. Ментору важно отпустить, направить, вдохновить менти в самостоятельное путешествие по жизни, а менти при этом не чувствовать вину за свою самостоятельность. Важным и ценным навыком является возможность и способность сохранять взаимные отношения после завершения менторства, безусловно при наличии желания.

Заключение. «Если я видел дальше других, то потому, что стоял на плечах гигантов», - Исаак Ньютон. [5].

Менторинг позволяет сохранять целостность корпоративной культуры в организации, которую можно передать только от человека к человеку. Менторинг является проводником таких корпоративных ценностей, как развитие и доверие. [6]. С помощью менторинга осуществляется значимая трансформация в желаемой сфере и направлении, в знаниях, мышлении, трудовой деятельности.

Благодаря менторингу сотрудники достигают большей уверенности в своем потенциале и способностях, увереннее продвигаются в карьере, развиваются в профессии, преуспевают в личностном росте и развитии. Этапы менторинга помогают эффективно выстраивать взаимоотношения между ментором и менти и достигать желаемых целей и результатов.

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SOCIAL SCIENCES

WHY THE LAW AGAINST FOOD WASTE IS A MAJOR INNOVATION TO TACKLE CLIMATE CHANGE

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deputy mayor in Courbevoie City (France). He is at the origin of the law against food waste passed on 3rd February 2016 in France. In Sweden in 2019, he received the « WIN WIN Gothenburg Sustainability Award ».² affiliated with YEREVAN STATE UNIVERSITY (ARMENIA) for seeking Ph.D in 12.00.01 specialization (Theory and History of State and Law, history of state and legal teachings)
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Abstract

Based on FAO data, it is estimated that approximately 30% of global annual food production is wasted. This alarming statistic highlights the significant scale of food insecurity and the detrimental effects of food waste. Arash Derambarsh demonstrates that these losses are a result of various factors, including inefficiencies in the supply chain and consumption practices. Despite the ongoing calls for increased food production to meet the ever-growing demand, the wastage of food resources is impeding progress towards the FAO's ambitious target of a 70% increase by 2050. There have been notable initiatives, such as those implemented in Courbevoie City (France), that serve as effective solutions by establishing a legal framework requiring supermarkets to redistribute unsold food to charitable organizations. However, there are still several challenges that need to be addressed in order to significantly reduce food waste and ensure sustainable access to food for all. From the commitment of individual citizens to the mobilization of the international community, it is imperative to establish a globally coordinated approach. The Food and Agriculture Organization of the United Nations (FAO) has reported that approximately 30% of the world's food is wasted annually, equating to the loss of one in three food supplies worldwide. However, despite these significant levels of waste, it is disheartening to note that 783 million people suffered from hunger in 2022, and 3.1 billion people lacked access to nutritious food in 2021, as reported by the same UN institution. In light of these statistics, it is evident that urgent action is required to address the issue of food waste and ensure equitable and sustainable access to food for all individuals across the globe.

Keywords: Food waste, food insecurity, food production, 2050 target, sustainable access to food, food loss, FAO, sustainable development, food chain, agri-food system.

Overview:

According to the organization's statistics, globally, « 13% of food is lost in the distribution chain, from post-harvest to pre-retail and that an additional 17% of food is wasted at the household, food service and retail levels »³

In recent years, the demand for food products has grown steadily, due to demographic trends and changing eating habits. The restrictions that agriculture faces—such as yield limits, technological integration, natural disasters, climate change, urbanization-related loss of agricultural lands, and scarcity of water resources—are placing growing pressure on agricultural productivity. To fulfill the food supply, reducing losses and waste might be a key lever in addition to raising agricultural productivity. It is impossible to distinguish clearly between the two concepts of « losses » and « waste » due to the wide variety of circumstances under which they arise across nations.

According to FAO sources, 30% of the world's is wasted⁴. Not only does it represent a significant loss of food resources, this staggering quantity is also at the root of many other problems, such as environmental degradation, food insecurity and real economic difficulties. Addressing food waste is therefore a necessary and essential part of promoting sustainability, reducing hunger and building more resilient and efficient food systems.

Every year, from the farmer to the final consumer, 1.3 billion tons of food are lost or wasted. The high proportion of food loss and waste is more than worrying. Every year, an estimated 1.3 billion tons of food - equivalent to almost half the world's grain supply - are unfortunately wasted or lost, from agricultural production to the final consumer. To alleviate this problem, concerted efforts are needed from everyone along the food supply chain.

The phenomenon of food waste affects developing and developed countries alike. A major problem, 630

² « Nobel Prize for sustainable development : lawyer Arash Derambarsh rewarded » : <https://clever-energies.com/en/nobel-prize-for-sustainable-development-lawyer-arash-derambarsh-rewarded/>

³ United Nations. (s. d.). Food Loss and Waste Reduction | United Nations. <https://www.un.org/en/observances/end-food-waste-day#:~:text=Did%20you%20know%3F%201%20Globally%2C%20around%2013%20percent,total%20energy%20usage%20in%20the%20global%20food%20system.>

⁴ Seeking end to loss and waste of food along production chain. (s. d.). Food And Agriculture Organization Of The United Nations. <https://www.fao.org/in-action/seeking-end-to-loss-and-waste-of-food-along-production-chain/en/>

million and 670 million tons of agricultural food respectively are lost throughout the production chain, right up to the final consumer⁵.

By 2050, the current world population will have increased by 2.3 billion, according to FAO estimates. According to the same UN statistics, the world's population will reach 11 billion by 2100, and 9 billion by 2050⁶. To meet current food needs, food production will have to increase considerably. It will therefore be essential to increase, if not intensify, food production in order to meet all the food needs of this population.

It is for this reason that the FAO envisages a 70% increase in current production to meet the population's food needs by 2050⁷.

However, with so much food being wasted every year, it won't be enough to simply increase production. By keeping a close eye on consumer habits and demands, we'll need to implement bold strategies at every link in the food system. The chances of successful corrective action are possible at these levels. It is more than obvious that to both "feed more" and "feed better", a synergy of actions between the various stakeholders is more than essential⁸. Food waste and food insecurity are intrinsically linked and interdependent. With both environmental and social consequences, food waste is a major issue facing the world's population. It results in the loss of precious resources, and has a negative impact on people with intermediate resources, who can find themselves in a situation of food insecurity.

This is the fundamental reason why the concept of food insecurity is most often reduced to the question of accessibility to food, not only in sufficient quantity but also in quality. However, to take into account the socio-cultural and political aspects associated with food, a broader approach is required. Taken through the prism of social and political issues, food insecurity must lead us to re-examine the legal questions that arise from it, as the history of the right to food testifies.

As highlighted by Nicolas Bricas, Damien Conaré and Marie Walser⁹, the political and relational dimension of food transcends many domains and exerts a profound influence on the world. Instead of considering it as an isolated domain, an ecological approach to food proposes using it as a lever to rethink our society in crisis. That said, the consumer-citizen, as a specific player, must be convinced of the importance of combating food waste and take ownership of this approach, hence the importance of lifelong education, training and communication. From this perspective, the

causes of food insecurity are multiple and complex. They may be linked to economic, social, political or individual factors.

In other words, food insecurity stems from various causes, including food waste, illustrated by the fact that 30% of food products sold in supermarkets are thrown away, hence the emergence of « waste-eaters », a phenomenon that is gaining momentum, by ideology for some (fights against the consumer society), by necessity for the majority.¹⁰ Similarly, an irresponsible diet, characterized by excessive meat consumption, has harmful consequences for health and the environment. That being said, according to a survey conducted by the Brussels Observatory of Sustainable Consumption, in 2001 « food waste amounted to 7.6% by weight of household waste, of which 3.1% of expired products and 4.5% of opened products ».

The 2004 campaigns show a decrease in weight of the fraction « freshly wasted » (from 30.4 kg per household per year to 23.1 kg per household per year) and an increase in percentage by weight of the fraction of opened products (from 4.5% to 5.6%) in household waste¹¹. The opened products are mainly (more than 80% of the flow) : cooked dishes (33%), bread (28%), fruits and vegetables (22%).

The main expired foods are fresh fruits and vegetables (more than 60% on average).

Also, some 265 million tons of meat are produced annually for only 0.1% of privileged eaters who consume annually the trifle of 100 kg of meat per person. And if such consumption is well beyond what our body requires and even proves to

be harmful to health, it also comes with other deleterious effects.

Because this livestock consumes 60% of the world's cereal production, or the trifle of 670 million tons, which therefore escape human consumption, occupies 78% of the world's agricultural land, or so many hectares that cannot therefore be devoted to the production of foodstuffs¹².

And what about when we learn that it takes 25,000 liters of water to produce 100 g of beef, while many populations do not have drinking water, which is essential for their survival? Or even that it takes 17 cal of vegetable food to produce 1 cal of beef?

Then, food waste and food insecurity are two phenomena that must be fought in a concerted manner. In fact, food waste, with its multiple ramifications, generates deleterious impacts on the environment, the economy and society, while posing an ethical challenge in

⁵ Robinson, D. (2024, 4 mars). 25 Shocking Facts about food waste. Earth.Org. <https://earth.org/facts-about-food-waste/>

⁶ United Nations. (s. d.-c). World population projected to reach 9.8 billion in 2050, and 11.2 billion in 2100 | United Nations. <https://www.un.org/en/desa/world-population-projected-reach-98-billion-2050-and-112-billion-2100>

⁷ World Food and Agriculture – Statistical Yearbook 2022. (2022). Dans FAO eBooks. <https://doi.org/10.4060/cc2211en>

⁸ Farming leaders give insights into scaling up sustainable agriculture. (2024, 16 janvier). World Economic Forum. <https://www.weforum.org/agenda/2024/01/farming-leaders-scale-up-adoption-sustainable-agriculture/>

⁹ "An ecology of Food" - Quæ Editions - 2021 (Vauban university library) : https://bibliotheque.univ-catholille.fr/Default/doc/SYRACUSE/442130/une-ecologie-de-l-alimentation-sous-la-direction-de-nicolas-bricas-damien-conare-marie-walser?_lg=fr-FR

¹⁰ V. ROCHER C., The dumpster divers hunt waste by recovering what is consumable, Midi Libre, 6th April 2009

¹¹ The fight against food waste is a solution to the fight against. (s. d.). Resource.co. <https://resource.co/article/fight-against-food-waste-solution-fight-against-global-warming>

¹² Crop, livestock and food. (s. d.). Food And Agriculture Organization Of The United Nations. <https://www.fao.org/food-agriculture-statistics/statistical-domains/crop-livestock-and-food/en/>

the face of the persistence of hunger in the world. Simply put, food waste also has an impact in the long term.

This compromises food security and climate stability on the planet. Indeed, food waste accounts for 8% of global greenhouse gas emissions, more than the emissions of civil aviation¹³. It also contributes to soil degradation, overexploitation of water resources and loss of biodiversity.

It finally represents an enormous economic cost, estimated at 1,000 billion dollars per year. Therefore, the fight against food insecurity becomes a complex challenge that requires a global approach. It must involve all actors of society, from public authorities to charitable associations, through businesses and citizens. A rights-based approach will therefore be essential to fight against food insecurity. It will consist of recognizing the right of everyone to adequate and quality food.

This will ensure that people in food insecurity have access to the food they need.

In the face of food waste, forms of citizen organization have emerged to fight hunger, by recovering, redistributing or transforming food destined to be thrown away.

These initiatives have taken various forms, depending on the actors involved, the modalities of operation, the objectives pursued, and the beneficiaries targeted. For example, food banks, created in the 1960s in the United States, collect the surplus from producers, distributors and consumers, and distribute them to charitable associations.

Disco-soups, which appeared in the 2010s in Germany, organize festive events where participants cook and eat together fruits and vegetables that are unsold or damaged. Finally, anti-waste applications, developed in the 2010s, connect merchants and consumers, to offer them products at a reduced price before their expiration date. This paper aims to bring a contribution to the historical roots and legal debates surrounding food waste, from antiquity to the present day, highlighting the various citizen initiatives to counter this scourge.

Thus, in pharaonic Egypt, food was considered sacred and waste as a sin, according to the book « *Aux origines du gaspillage alimentaire* ». In ancient Rome, on the contrary, waste was a sign of wealth and power, and sumptuous banquets were frequent, as reported by the article « *Food waste : what consequences for the planet* ». In the Middle Ages, the Church condemned waste as a vice, and advocated charity towards the poor, according to the book « *History of food, from prehistory to the present day* ». In modern times, waste was denounced as a waste of resources, and laws were enacted to limit it, especially during periods of war or famine.

In contemporary times, waste was recognized as a major problem, and initiatives were taken to reduce it, both at the national and international level, as highlighted by the 2021 *UNEP Report on the Food Waste Index*. This has led us to underline the need for an integrated and participatory approach involving the whole of society, from producers to consumers, through public authorities, businesses and associations. In addition, there is a need to broaden the concept of food insecurity by integrating social and political dimensions, thus revealing the legal issues in a new light.

In this respect, the importance of education from an early age is emphasized, as well as the involvement of the citizen-consumer in the fight against food waste. Thus, beyond the concrete efforts presented, it is important to call for a paradigm shift in the fight against food insecurity, recognizing the identity, social and cultural dimensions of this issue, and redefining the contours of adequate legal protection for all.

This leads to rethinking the food system as a whole, by promoting a more environmentally friendly production, a more equitable distribution and a more responsible consumption¹⁴. It is also essential to strengthen cooperation between the different actors, from the local to the global level, and to raise public awareness of the importance of reducing food waste.

Finally, it is possible to draw inspiration from existing good practices, which show that it is possible to valorize unsold or damaged food, by transforming it into useful products or energy. In the end, it is essential to distinguish between simply guaranteeing access to food and guaranteeing dignified and sustainable access for all. Overall, this distinction reveals the complex issues related to the « gastronomy of hunger » and underlines the need for adequate legal protection to fight against inequalities and social exclusions around food.

Indeed, all the scientists, data and international reports confirm that there is a climate emergency to react and take concrete action for change. Reducing food waste is one of the three main solutions to combat global warming. We have a powerful lever to preserve Humanity. This was implemented in the City of Courbevoie (France).

So, Since 11th February 2016¹⁵, the date of adoption of the law requiring supermarkets of more than 400m² to donate their unsold consumables to charitable associations, its beneficial effects are undeniable.

This law quickly proved its beneficial effects : more than 10 million meals are distributed each year in France¹⁶. This represents a 22% increase in food donations for charities.¹⁷

If the law against food waste was seen as innovative and revolutionary, a French city like Courbevoie City served as a pioneer in its application.

¹³ Idem

¹⁴ Byaruhanga, R., & Isgren, E. (2023). Rethinking the Alternatives : Food Sovereignty as a Prerequisite for Sustainable Food Security. *Food Ethics*, 8(2). <https://doi.org/10.1007/s41055-023-00126-6>

¹⁵ Law No. 2016-138 of 11th February 2016 relating to the fight against food waste

¹⁶ "In Courbevoie, the UN supports the recent law against food waste" (Le Figaro) : [https://www.lefigaro.fr/actualite-](https://www.lefigaro.fr/actualite-france/2018/01/26/01016-20180126ARTFIG00177--courbevoie-l-onu-soutient-la-recente-loi-contre-le-gaspillage-alimentaire.php)

[france/2018/01/26/01016-20180126ARTFIG00177--courbevoie-l-onu-soutient-la-recente-loi-contre-le-gaspillage-alimentaire.php](https://www.lefigaro.fr/actualite-france/2018/01/26/01016-20180126ARTFIG00177--courbevoie-l-onu-soutient-la-recente-loi-contre-le-gaspillage-alimentaire.php)

¹⁷ Food Bank : <https://www.ba-81.org/actualites/blog-des-b%C3%A9n%C3%A9voles/323-la-france-pionni%C3%A8re-de-la-lutte-contre-le-gaspillage-alimentaire.html>

The City of Courbevoie received agents from the Food and Agriculture Organization of the United Nations (FAO) on 2nd Friday February 2024¹⁸. They came from Rome to see for themselves the officialization of a figure record : 400,000 meals were saved and redistributed for charitable associations so that the poor can eat their fill.¹⁹

Even in a city that appears to be a rich city, the poor has multiple faces : middle class, single mother or father raising their children, civil servant, retired, student or unemployed person. Poverty is increasing.

Thus, Secours Catholique estimates that nearly 10% of French people used food aid in 2020.²⁰ Indeed, « between 5 and 7 million people » used food aid in 2020 alerts Secours Catholique in its annual report on the state of poverty in France published Thursday, based on data from the General Directorate of Social Cohesion (DGCS).²¹ The City of Courbevoie has shown to be inventive and resourceful in its efforts to combat food waste.²²

Since 2020 and for six years, the city of Courbevoie has provided concrete responses to this economic crisis by extending the French law against food waste.²³

Because in fact, since 11th February 2016, the rule prohibiting food waste has been limited to stores of more than 400 square meters. Since the law is responsible for the distribution of more than 10 million meals per year, its positive effects were immediately felt.

Widespread implementation of this legislation has resulted in tangible improvements in food accessibility, nutritional standards and social well-being. By ensuring efficient and equitable distribution of meals, particularly to vulnerable populations, the law quickly reduced hunger and food insecurity in communities across the country. Additionally, its proactive measures to reduce food waste and promote sustainable consumption practices have produced environmental benefits, further amplifying its positive effects.

Additionally, the law's emphasis on nutritional quality and value underscores its commitment to promoting public health and welfare, fostering a culture of healthier eating habits and better food choices. As a result, the transformative impact of this legislation has reverberated throughout society, creating ripple effects that extend beyond the simple provision of food to encompass broader societal benefits and positive outcomes.

A 22% increase in food donations intended for associations²⁴.

And everyone applauded this law. But at the local level, we had to go much further. In fact, two thirds of the thirty-one supermarkets located in Courbevoie are exempt from the legal obligation since their sales area is less than 400 m².

It was therefore decided that with the help of several start-ups and social and economic actors, a charter against food waste would be voted on each year in all spheres of activity in the city:

- 2020 with all supermarkets located in the city without zone delimitation
- 2021 with hospital catering
- 2022 with school catering
- 2023 with food businesses (restaurants, bakeries, markets)

- 2024 with retirement homes

These commitment charters, a first in France, have multiple objectives:

- Create synergies so that everyone can take part in this fight and adapt their practices
- Participate in raising awareness among the general public about the fight against food waste
- Contribute to reducing the economic impact of this waste
- Establish food donation partnerships in favor of associations in accordance with the law
- Promote partnerships with municipal associations
- Organize “anti-waste” promotions, particularly for products close to the DLC
- Offer wholesale or unit sales in order to adapt the quantities purchased, and reduce packaging
- Promote the development of fresh products, and develop awareness-raising marketing operations (for example: “Ugly Fruits and Vegetables” operation, etc.)
- Lead a discussion with suppliers in order to define a control strategy against food waste (product quality charters, etc.)
- Act to recover waste.

Furthermore, on 24th October 2022, the city of Courbevoie organized a working meeting at the National Assembly with the aim of proposing an amendment to French legislation against food waste. Deputies Karl Olive and Philippe Juvin were present at the meeting.²⁵

The proposal was straightforward: amend the statute that was enacted on 3rd February 2016, and issued

¹⁸ “How the city of Courbevoie became a world leader in the fight against food waste” :

<https://www.revuepolitique.fr/comment-la-ville-de-courbevoie-est-devenue-un-leader-mondial-dans-la-lutte-contre-le-gaspillage-alimentaire/>

¹⁹ Courbevoie fights against food waste (BFM) :

https://www.bfmtv.com/paris/replay-emissions/bonjour-paris/hautes-de-seine-courbevoie-lutte-contre-le-gaspillage-alimentaire_VN-202402050155.html

²⁰ Poverty in France : 10% of the population needed food aid in 2020 (Paris Saclay University) :

<http://www.ritm.universite-paris-saclay.fr/poverty-in-france-10-of-the-population-needed-food-aid-in-2020/>

²² City of Courbevoie (fight against food waste) :

<https://www.ville-courbevoie.fr/2195/lutte-contre-le-gaspillage-alimentaire.htm>

²³ The law on Food Waste - From Courbevoie to Assembly : <https://resource.co/article/law-food-waste-courbevoie-assembly-10198>

²⁴ The State of Food Security and Nutrition in the World 2022. (2022). Dans FAO eBooks. <https://doi.org/10.4060/cc0639en>

²⁵ « Anti Food Waste : a proposed law to go further » (La Voix du Nord) :

<https://www.lavoixdunord.fr/1252076/article/2022-11-10/antigaspillage-alimentaire-une-proposition-de-loi-pour-aller-plus-loin>

on 11th February 2016.²⁶ The city of Courbevoie specifically suggested the following fixes :

- Reduce the current 400m2 barrier for applying the legislation to food businesses to at least 100m2 to include over 5,000 additional outlets.
- Increase penalties for businesses that reject food from 10,000 euros to 20,000 euros, replacing the current 5th class fine of 10,000 euros.
- If anyone believes that their unsold products are unfit for consumption, they will be fined twice as much.

The example of Courbevoie City is a response to the Draw Down project (2020) and IPCC (April 2022) reports which affirm that reducing food waste is one of the three main solutions to combat global warming.

Which proves that the vote on the law against food waste is a major innovation in the fight against global warming, as we will demonstrate.

INTRODUCTION

Food waste and food insecurity are two significant issues that affect the global food system. According to the Food and Agriculture Organization (FAO), approximately one-third of all food produced for human consumption is lost or wasted globally. This food waste not only represents a significant economic loss but also has severe environmental and social impacts. Among impacts we can underline the increased greenhouse gas emissions, water scarcity, and malnutrition. Meanwhile, food insecurity remains a pressing issue.

Millions of people worldwide lacking access to sufficient, safe, and nutritious food. Qu Dongyu, Director-General of Food and Agriculture Organization (FAO) claims : *"Food waste is a global issue that affects the environment, the economy, and food security. We need to take action to reduce food waste and promote sustainable food systems. By working together, we can create a more resilient and sustainable food system that provides sufficient, safe, and nutritious food for all."*²⁷ Despite the efforts to increase food production, reducing food waste and ensuring sustainable access to food for all is crucial to achieving the FAO's 2050 target of a 70% increase in food production.

This paper aims to explore the factors contributing to food waste, highlight effective solutions, and propose a globally coordinated approach to tackle food waste and food insecurity. Food waste and food insecurity are two pressing issues that significantly impact the global food system. According to the Food and Agriculture Organization (FAO), approximately one-third of all food produced for human consumption is lost or wasted globally, amounting to about 1.3 billion tons per year (FAO, 2019). This food waste not only represents a significant economic loss but also has severe environmental and social impacts. For instance, food waste contributes to increased greenhouse gas emissions, water scarcity, and malnutrition, among other challenges (FAO, 2019). On the other hand, food insecurity remains a pressing issue. Millions of people worldwide lacking access to sufficient, safe, and nutritious food (FAO, 2021). According to the Director-General of the

Food and Agriculture Organization (FAO), Qu Dongyu, food waste is a global issue that affects the environment, the economy, and food security. He argues that reducing food waste and promoting sustainable food systems is critical to achieving the FAO's 2050 target of a 70% increase in food production (FAO, 2021).

Ensuring sustainable access to food for all is crucial to achieving this target. Food waste occurs at various stages of the food supply chain. For instance, food waste can occur during harvesting, processing, transportation, and storage. As well as in retail and consumer settings (FAO, 2019). In developed countries, food waste is often due to consumer behavior, such as buying too much food, not using leftovers, and discarding food that is close to its expiration date (FAO, 2019). In contrast, in developing countries, food waste is more likely to occur due to inadequate infrastructure, such as inadequate storage facilities, poor transportation, and limited access to markets (FAO, 2019). The environmental impacts of food waste are significant. For instance, food waste contributes to increased greenhouse gas emissions, accounting for about 8% of global greenhouse gas emissions (FAO, 2019). Food waste also contributes to water scarcity, as it requires significant amounts of water to produce food that is ultimately wasted (FAO, 2019). In addition, food waste can have negative impacts on biodiversity, as it can lead to the overuse of land and other natural resources (FAO, 2019).

The social impacts of food waste are also significant. For instance, food waste can contribute to malnutrition, particularly in developing countries, where food waste can exacerbate existing food insecurity (FAO, 2019). In addition, food waste can have negative impacts on food systems, particularly in small-scale farming communities, where food waste can undermine the economic viability of food production (FAO, 2019).

To address food waste and food insecurity, there are several effective solutions that can be implemented. For instance, reducing food waste can be achieved through better inventory management, improving transportation and storage infrastructure, and promoting consumer education and awareness (FAO, 2019). Additionally, food waste can be reduced through the use of innovative technologies, such as precision agriculture, which can help to reduce food waste in the production process (FAO, 2019). To tackle food waste and food insecurity, a globally coordinated approach is necessary.

This can involve the implementation of policies and regulations that support sustainable food systems. It includes: food waste reduction targets, incentives for food waste reduction, and the promotion of sustainable agricultural practices (FAO, 2019). Additionally, international cooperation and coordination can help to promote knowledge sharing and best practices. As well as to support the development of sustainable food systems in developing countries (FAO, 2019). In fact, food

²⁶ Proposed law aimed at combating food waste in France (17th January 2023)
<https://acrobat.adobe.com/id/urn:aaid:sc:EU:727392bec20e-4f68-b86d-dcc46fca7193>

²⁷ Opening statement at the 41st Session of the Committee on World Food Security Food and Agriculture Organization of the United Nations, 2019.

waste and food insecurity are two pressing issues that significantly impact the global food system. By reducing food waste and promoting sustainable food systems, it is possible to achieve the FAO's 2050 target of a 70% increase in food production while also addressing environmental and social challenges. A globally coordinated approach is necessary to tackle food waste and food insecurity.

This involves the implementation of policies and regulations that support sustainable food systems. As well as the promotion of knowledge sharing and best practices. By working together, we can create a more resilient and sustainable food system that provides sufficient, safe, and nutritious food for all.

MAIN PART

I- Factors contributing to food waste

Food waste is a complex issue with various contributing factors. These factors include: inefficiencies in the supply chain and consumption practices. According to the FAO, food loss and waste occur throughout the food supply chain, from production to consumption (FAO, 2019). The supply chain inefficiencies, such as poor storage, transportation, and infrastructure, are significant contributors to food waste (FAO, 2019). For instance, in developing countries, inadequate storage facilities and poor transportation infrastructure lead to significant food losses, while in developed countries, the wastage occurs at the retail and consumer levels (FAO, 2019).

Consumption practices also contribute to food waste. Overconsumption, food waste in households, and food expiration dates are significant factors. According to a study by the Natural Resources Defense Council (NRDC), American consumers waste approximately 40% of their food purchases (NRDC, 2012). Additionally, the COVID-19 pandemic has significantly impacted food supply chains, leading to increased food waste due to disruptions in the supply chain, such as labor shortages and reduced demand (FAO, 2020).

II- Effective solutions to reduce food waste

Various initiatives have been implemented to reduce food waste, such as the redistribution of unsold food from supermarkets to charitable organizations. According to a report by the Ellen MacArthur Foundation, redistributing surplus food can reduce food waste by 50% (Ellen MacArthur Foundation, 2019). Innovative technologies, such as food waste tracking apps, can also help reduce food waste by providing real-time information on food waste levels, enabling businesses to make informed decisions (O'Brien, 2019). Education and awareness campaigns can also promote sustainable consumption practices. According to a study by the World Resources Institute, educating consumers about food waste and its impacts can reduce food waste by 15% (WRI, 2019).

Smart refrigeration systems can also help reduce food waste by monitoring food freshness and alerting consumers when food is close to expiration (Liu, 2020).

III- The role of the international community in addressing food waste and food insecurity:

International organizations, such as the FAO and the United Nations, can provide leadership and coordination in addressing food waste and food insecurity. Governments can implement policies and regulations to reduce food waste and promote sustainable food systems. According to a report by the United Nations Environment Program (UNEP), governments can implement policies such as food waste reduction targets, food waste measurement and reporting, and food waste reduction education (UNEP, 2019). The private sector can also invest in sustainable food systems and support innovative solutions to reduce food waste. According to a report by the World Economic Forum, the private sector can invest in sustainable food systems by reducing food waste in their supply chains, investing in innovative technologies, and supporting sustainable agriculture practices (World Economic Forum, 2019) supply chains, investing in innovative technologies, and supporting sustainable agriculture practices (World Economic Forum, 2019).

Furthermore, international cooperation can help create a more sustainable food system by sharing best practices, research, and technology. For instance, the European Union's Farm to Fork strategy aims to reduce food waste by 50% by 2030, promote sustainable food production, and ensure access to healthy food for all (European Commission, 2021). Collaboration between countries and international organizations can help create a more resilient and sustainable food system.

IV- Why the French law against food waste is a major innovation in the fight against global warming

Despite all these initiatives and these citizen and political coalitions necessary to fight against waste, it is undeniable that the law against food waste is a major legislative innovation in the agri-food field.

The very first reason is that the food chain is in an unbalanced situation.

Thus, this chain brings together production, processing, distribution and consumption.

Since large-scale distribution is in a monopoly situation and therefore in a position of economic power vis-à-vis small producers and consumers, it never occurred to anyone to prohibit this powerful lobby from throwing consumable food in the trash.

It was the law of 3rd February 2016 that prohibited this. Better still, the law now imposes a fine of 10,000 euros on supermarkets for tampering with consumable food.

Supermarkets were therefore obliged to change their behavior.

On the other hand, France has been the most courageous country in this matter because no country in the European Union or even in the world has imposed such a coercive legislative system. The reasons are multiple, such as pressure from lobbies in certain States, the desire to form partnerships in others or even the disinterest of the State sometimes.

The French law against food waste is therefore a major innovation in the fight against global warming for several others reasons.

The French law against food waste represents a significant stride in environmental conservation and social responsibility. The law's innovative approach to reducing food waste aligns with global efforts to combat climate change, as the decomposition of wasted food in landfills contributes significantly to greenhouse gas emissions.

Several awareness-raising and lobbying campaigns have played a crucial role in bringing this issue to the fore. By advocating for supermarkets to donate unsold food to charities, the initiator not only addressed the immediate problem of hunger but also promoted a circular economy where resources are used more efficiently and sustainably.

The law has had several positive outcomes :

- **Reduction in Greenhouse Gases:** By diverting food from landfills, the law helps to decrease methane emissions, a potent greenhouse gas.
- **Resource Optimization:** It encourages better inventory management among food retailers, leading to more efficient use of resources.
- **Social Solidarity:** The law fosters a sense of community as supermarkets partner with charities, benefiting those in need.
- **Awareness and Education:** It raises public awareness about the value of food and the importance of reducing waste, influencing consumer behavior.

The initiator's success illustrates the power of individual initiative to effectuate legislative change. And ultimately, the broader impact such changes can have on society and the environment. His efforts have inspired similar actions worldwide. Which is a matter of fact proving that a dedicated activism can lead to meaningful and lasting transformations.

The law, which came into force in 2016, has since inspired similar legislation in other countries, emphasizing the importance of responsible consumption and sustainable practices. Even if, as we explained above, no legislation has gone this far in coercion, which proves that France had the will to protect its unsold food, protect its producers and help the most deprived. The effects of the law have been beneficial like nowhere else.

Beyond the effectiveness of donating to charities, supermarkets, previously reluctant to this idea, have also understood that food donation procedures can be beneficial, by improving their image with the public and reducing the costs of elimination.

Finally, the global success of this law demonstrates the power of civic engagement and the impact that determined individuals can have on society. It serves as a reminder that change is possible when people come together for a common cause, and it sets a precedent for future initiatives aimed at creating a fairer and more sustainable world.

CONCLUSION

The French law against food waste of 3rd February 2016 is therefore a key to use to respond to certain concerns due to global warming.

Food waste and food insecurity are two significant challenges. These challenges require a globally coordinated approach. By addressing the factors contributing

to food waste. By factors we mean inefficiencies in the supply chain and consumption practices. By doing so, we can reduce food waste. And promote sustainable food systems. According to the Food and Agriculture Organization (FAO), food waste in the supply chain can be reduced by implementing better storage and transportation infrastructure. In the meantime, reducing food waste in households can be achieved through education and awareness campaigns. Effective solutions, such as food waste tracking apps and redistribution of unsold food, can also help reduce food waste.

The World Resources Institute (WRI) reports that educating consumers about food waste and its impacts can reduce food waste by 15%. Smart refrigeration systems can also help reduce food waste. It enables monitoring food freshness. It's helping in alerting consumers when food is close to expiration. International organizations, governments, and the private sector have a critical role in creating a more sustainable food system. By sharing best practices, research, and technology, we can create a more resilient and sustainable food system. In this situation can ensure to provide sufficient, safe, and nutritious food for all. For instance, the European Union's Farm to Fork strategy aims to reduce food waste by 50% by 2030. Their strategy aims is to promote sustainable food production. And ensure access to healthy food for all.

NGOs, such as the Natural Resources Defense Council (NRDC), also emphasize the importance of reducing food waste and promoting sustainable food systems. According to the NRDC, reducing food waste can help reduce greenhouse gas emissions, conserve natural resources, and alleviate food insecurity. By working together, we can create a more sustainable food system that benefits everyone.

In conclusion, reducing food waste and promoting sustainable food systems is crucial to achieving food security and creating a more resilient and sustainable food system. By addressing the factors contributing to food waste, implementing effective solutions, and promoting sustainable food systems, we can create a better future for all.

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TECHNICAL SCIENCES

POSSIBLE INTERACTION OF THE SECURITY SYSTEMS DEVELOPMENT BUSINESS MODEL WITH THE ORGANIZATION'S VULNERABILITY MANAGEMENT

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Abstract

The use of the competences of scientific organizations for the development of security systems for various objects, including critical infrastructure, is often associated with the development of a purpose-specific business model. The structuring of such a business model is also related to the assessment of the vulnerability of the objects for which the security systems will be developed. This affects the structure of the elements of the business model, as well as the relationships with the business models of other organizations with which key partnerships need to be established. The presentation of some regularities in the development of a business model of a scientific organization developing security systems and the impact of the vulnerability of the security object on the elements of the business model is the basis of this paper.

Keywords: business model, vulnerability analysis, security systems

Organizational strategy and competitiveness are based on the application of an appropriate business model (BM) and are based on an analysis of the organization's components, taking into account the assets created, the resources used, the plans developed and the competencies established, including the security systems development.

The development of security systems often falls within the scope of activity of scientific organizations, and the pragmatic solution for using their competences is the creation of a method for the development of the BM of the scientific organization, which may include, but not only: analysis of the significance of the product; a visual presentation of the product, including an illustration of its system of operation, and a competitive analysis of the product, including a search for changes and innovations.

At the same time, the use of BM by scientific organizations to develop security systems is closely related to the management of the vulnerability of the organization for which this system will be built, in this case critical infrastructure (CI). The life cycle of vulnerabilities management allows CI to improve the state of security through a more strategic approach aimed at managing vulnerabilities, namely, instead of responding to existing and new vulnerabilities when occurring, gaps are actively sought in organizational systems for the purpose to identify the most critical vulnerabilities and the introduction of defenses before the threat affects. This helps to properly determine the characteristics of the Security System, which is related to the application of a suitable BM of scientific organization.

The present work presents the author's experience in the implementation of tasks of Work package 2 "Intelligent security systems", Project BG05M2OP001-1.002-0006 Competence Center "Quantum Communi-

cation, Intelligent Security and Risk Management Systems (Quasar)", funded by the European Regional Development Fund through the Operational Programme "Science and education for smart growth", co-financed by the European Union through the European Structural and Investment Funds.

Business model for the development of physical security systems

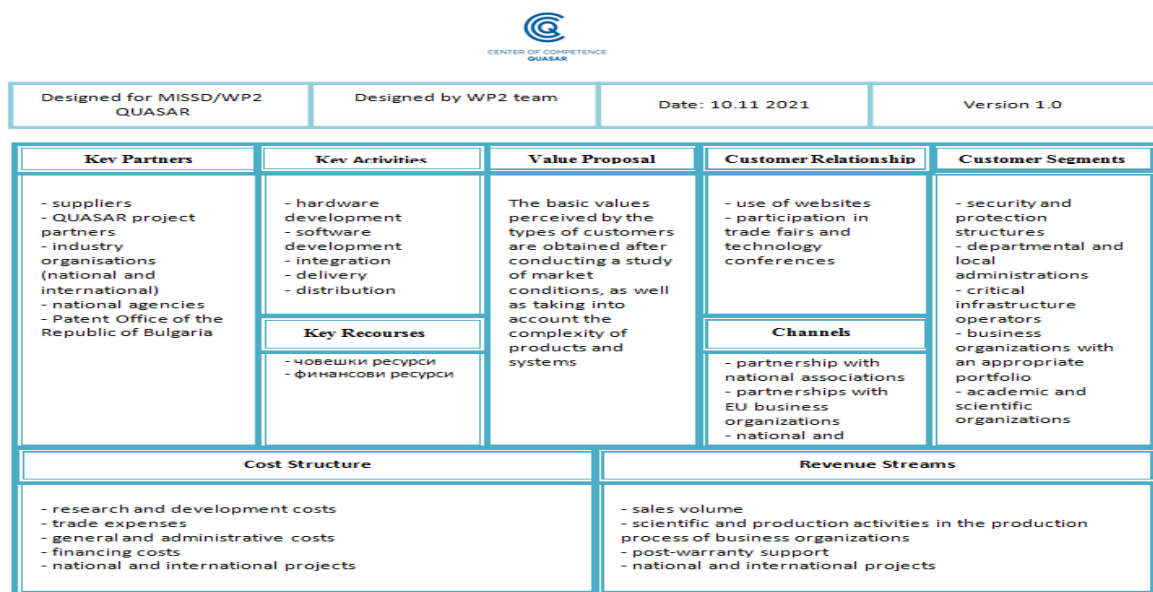
Organizational strategy and competitiveness

There are many opportunities for BM configurations in the field of scientific research by adopting new technologies, discovering new user needs and promoting innovation through BM [1]. It follows from this that BM allows scientific organizations to become more competitive in the following areas, but not only: determination of their resources and activities, with the aim of turning them into a new synergy for the realization of applied scientific activity and market benefits; assisting the management to properly break down the action of the competitors. Comparing BMs competing in the same field of applied science paints a clear picture of the differences in how value is created and delivered; determination of profitable future arrangements and design of activities by applying strategic thinking in BM, incl. of key partnerships. In this sense, alternative BMs can be designed and compared, looking for competitiveness and sustainability. This process can contribute to increase the volume of knowledge, business and market decisions and develop perspective and BM presentation as an innovation, when scientific organizations present a novelty in the way they do business in the interest of the national business and economy. Such understanding and reinvention, in addition to continuous improvement, offers scientific organizations the sustainable competitive advantage needed to remain effective in an environment where the rules of the game are changing rapidly.

Business model

The main motivations underlying the development of the BM framework are related to the creation of a

technology and business platform for an Intelligent Security System (ISS) through which to present the research management (Picture 1) for ISS models developed in conditions of the QUASAR project.



Picture 1: BM framework for ISS development under the QUASAR project

After planning the activity, each component of the BM is designed for the management of research within the scope of the ISS under the QUASAR project:

Customer segment – the following likely interested parties for the development, construction and use of Intelligent Security Systems have been identified: users of security structures; users from departmental and local administrations; critical infrastructure operators; users from business organizations with a portfolio in the field of developing products and systems in the field of security and protection and users from academic and scientific organizations in the development of security and protection products and systems.

This component of BM, as one of the most important, is at the same time one of the most difficult to determine not only for products based on hardware and software, but also for those related to ensuring compatibility, including and interoperability, with strategic management systems established and operating at national level.

Value proposal – the main values of the products and systems (prices) perceived by the types of customers (Customer Segment) are obtained after conducting a study of market conditions, as well as taking into account the complexity of the products and systems.

Customer Relationship - using a website to present ISS models and their elements (sensor types, software, consulting system software, etc.). The ISS website may also offer an online chat for general support and resolution of inquiries and complaints. Another form of relationship building, especially with business clients, is participation in trade shows and technology conferences.

A concrete example is the ability to use the following web pages: <http://www.news-quasar.bg/>; <https://ims.bas.bg/departments/technologies-and-systems-for-protection/5defence-products-and-systems/>; <http://high-tech-ims.com/>.

Channels - it is possible to use different approaches to ensure the market realization of ISS, such as: partnership with national associations that include business organizations whose product list includes security and protection systems and the use of their markets; partnerships with business organizations from the EU; participation in projects of the European Commission (EC), the European Defence Agency (EDA) and the North Atlantic Treaty Organization (NATO), ensuring further development of technical and operational characteristics to the level of modern international requirements.

Key partners - when defining this component, the following opportunities were identified: suppliers of microelectronic elements, cloud services, etc.; partners on the QUASAR project - with proven capabilities in the field of risk assessment, a system for distributing aerial images in real time to users; simulations of risk events on land and water; providing secure communication (two-way), including quantum communication, etc.; business partners, national and international, with a portfolio in the field of security and protection systems; national agencies with responsibilities in the fields of security, defence, education and science, economy, regional development and public works and Patent Office of the Republic of Bulgaria.

Key activities - the scope of the identified key activities includes the following: hardware development: compatible with the security environment, light, secure, through minimal modifications, ensuring operation in different security environments; software development: intelligent software with capabilities for automated diagnostics (self-diagnosis) of sensor devices; Scenario software for the types of risk events (man-made or natural disasters), advisory system software, application support of the developed software; purchase of raw materials and electronic components, assembly, testing and packaging of products and systems; if necessary,

integration of the developed systems or their elements in the conditions of the business partners with whom there are agreements and distribution of the developed systems and products.

Key resources - during the development of this component, the focus was on: identification of the necessary human resources - software and hardware development teams; a team to integrate the elements of the ISS, as well as to the functioning strategic systems; advertising and communication team responsible for the promotion and distribution of the innovative product and identification of financial resources - financial means: determined by the QUASR project, ensuring the development of an ISS model, from the implementation of the tasks of the Plan for the scientific research activities of the Institute of Metal Science Equipment and Technologies with Hydro- and Aerodynamics Centre "Acad. A Balevski" at the Bulgarian Academy of Sciences, compatible with the activities of WP2, etc.

Cost structure - raw material costs, labor costs, cloud service and software provider costs, transportation and distribution costs, taxes and advertising costs. Other possible costs are related to hiring external consultants and specialists, as well as commission for sellers.

Revenue Streams - sources of income can be derived mainly from: the amount of ISS and sensor elements sold on the market (sales volume); participation in the process of development and integration of hardware and software in the working environment of a business organization/organization with which there is a contract; participation in the post-warranty maintenance of an ISS model implemented on the market, based on concluded contracts and participation in joint projects.

Generally, the BM framework can be defined as positive and useful, which also helps to consider approaches to develop new and/or optimize the characteristics of existing security systems as well as their elements. This applies to ISS models developed within WP2, as well as related software and hardware.

But BM, developed on the basis of established contemporary trends and good practices, is just the tip of the iceberg of things. In order to function properly, it is necessary to evaluate the vulnerability of the organization.

Organization's vulnerability

Definition

„vulnerability - weakness of an asset or control that can be exploited by one or more threats“ [2]

Organization's vulnerability

The concept of vulnerability, regarded as a global system property, includes three other concepts: degree of losses and damage; degree of exposure to danger and degree of stability.

In the context of current development, vulnerability is seen as a global technical property and is interpreted as a disadvantage or weakness in the design, development, operation and management of CI or its elements, which makes them susceptible to destruction or disability when exposed to danger or threat, or reduces the ability to recover under new stable conditions [3,4].

The goals of vulnerability analysis can be: identification of the likely events and a series of possible realization of those events that can cause damage and effects of loss to the planned goals; identification of the set of initiating events and an assessment of their cascading impact on a group of elements or on the CI, as a whole; identification of the set of events and/or series of those events that would cause damage and effects of loss in terms of planned goals and determination and development of dependencies and their connection in different sequences.

It is directly related to the assumed set of output events, probable sequences of events and expected observed outcomes.

The defined vulnerabilities of the key assets of the CIs are input information to formulate the requirements for the development of security systems and to determine the BM structure of the scientific organization developing these systems. In this regard, BM (Picture 1) was developed to build an ISS under QUASR project.

Conclusion

CI security has become a national and international priority. To be effective, vulnerability analyzes must be performed based on new, expanded paradigms. The high degree of connectivity (internal and external) that CIs achieve can make them vulnerable to global disruptions when exposed to hazards of various natures, from accidental mechanical/physical/material damage to natural events, software failures, intentional malicious impacts, human and organizational errors. This wider range of hazards and threats requires an all-hazards approach to understanding CI breach behavior to ensure their effective protection.

Considering the complexity of CIs, the determination of the characteristics of dangerous events and the assessment of their consequences and probabilities require an integrated framework capable of incorporating different analysis methods to capture the problem from different characteristic points of view related to their topology and properties - functional, logical and dynamic.

Therefore, a possible way to address this challenge is to conceptualize a control framework for CI vulnerability analysis and the relationship with BM in the development of security systems by scientific organizations, applying the multivariate approach to the occurrence of incidents that are beyond the design and operational safety restrictions of the CI (and its objects).

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