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Theoretical overview of the experience of the countries of the world on the use of the polygraph in psychophysiological research

Abstract. *The article considers the experience of the countries of the world in the use of the polygraph. In particular, a brief history and current experience of using the polygraph are analyzed and summarized, indicating the areas of use and best practices of countries in the use of this tool for psychophysiological research.*

The methodology of the article is based on the concentration of information obtained as a result of the selection, analysis, systematization, and logical generalization of scientific literature; analytical and synthetic understanding of theoretical materials and information that comprehensively characterize the existing level of the state of the problem, its analysis, and evaluation, as well as identifying the main trends, directions, and prospects for the development of psychophysiological research using a polygraph.

As a result, the possibilities of the polygraph in the diagnosis and early prevention of destructive tendencies of youth behavior are considered, it is proved that the international experience of using the polygraph mainly consists in the fight against crime. It is concluded that the legislation of most countries is very cautious about using the results of psychophysiological studies conducted with the help of a polygraph, since the use of the device is probabilistic, and the results of the study are based on the subjective assessment of a polygraph specialist.

Keywords: *psychophysiological phenomenon, polygraph, «lie detector», polygraph testing, psychophysiological research, a survey using a polygraph.*

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Introduction

To date, psychophysiological studies with the use of a polygraph, based on the identification of the relationship between the functions of the body and the human psyche, have become very common and effective. These studies are based on a conversation conducted according to special methods with the fixation of the psychophysiological reactions of the subject to the questions asked.

The function of the polygraph is to register parallel physiological processes: respiration, blood pressure, brain and heart bio-currents, skin-galvanic resistance, pulse rate, etc. In this case, the change in the values of the parameters occurs in the presence of certain stimuli (stimuli). Such incentives, according to proponents of the use of a polygraph, are significant information for the verifiable person [1; 2]. The corresponding physiological reaction will be developed on it. The method of «lie detection» is based on this

hypothesis: a change in the reaction is taken into account, this change is perceived as a lie or concealment of this or that information by the subject.

However, the polygraph is not able to detect both lies and truth, because lies are a phenomenon of human communication and a conscious distortion of the truth. Often, after several such distortions, a person develops the habit of doing this constantly and consciously, while sometimes he believes in this lie because the unreliability of the information can contribute to this. The conclusion about the sincerity or insincerity of the subject is made by a polygraph examiner, who compares the indicators of the physiological reactions of the subject obtained with the help of a polygraph during a specially organized survey. Various subjective factors can be triggered here.

So, the polygraph is not a «lie detector», but is a device designed to study the subjective significance of the presented stimuli.

Participating in a study using a polygraph, a person performs a certain activity, which consists in following the instructions of a polygraph examiner. The subject sits motionless in a chair, looks straight ahead, does not close his eyes, listens to questions, answers them with monosyllabic answers («yes» or «no»). Often, the subject understands the semantic content of the test program questions, assigns significance to a particular stimulus, and responds physiologically to them [3].

For the correct application of the method, it is necessary that the subject (during the entire process of polygraph testing) consistently manifests a psychophysiological phenomenon: the phenomenon when physiological reactions to a significant stimulus would be more pronounced than reactions to neutral (insignificant) stimuli. In this case, he effectively performs the current activity-passes a polygraph test.

The psychophysiological phenomenon consists in the fact that an external stimulus (a question, a word, an object, a photograph, etc.), which carries to a person significant information in a particular situation about an event imprinted in his memory, steadily causes a physiological reaction that exceeds the reactions to related (homogeneous) stimuli presented under the

same conditions, but not related to the mentioned event and not carrying situationally significant information to a person [4].

If at the initial stages of conducting a psychophysiological study using a polygraph, the specialist will monitor the impact of all (probably existing) negative factors on the possibility of the psychophysiological phenomenon in the person under study, then he will be able to judge the suitability of the current psychophysiological state of the subject for conducting a psychophysiological study.

The main methodological principle on which psychophysiological methods of revealing information hidden by a person are based on the relationship of hidden processes occurring in the human psyche with rapid changes in certain physiological processes. Their indicators are recorded with the help of auxiliary technical means, and the subject is in a situation of specially organized observation of him.

As we have already noted above, the markers of changes in the course of mental processes in the body of the subject during research with the help of a polygraph are physiological indicators of the activity of the respiratory, cardiovascular system, electrical activity of the skin, and others. These physiological indicators are translated by a polygraph into electrical signals. The signals, in turn, are converted into physical quantities, displayed as graphs. When studying graphs (to identify information that may be hidden by a person), changes in the rhythm, volume, amplitude, and curves that reflect the respiratory, cardiovascular, and other activities of the body are taken into account.

The purpose of the article: to conduct a theoretical review of the experience of countries around the world on the use of the polygraph, to isolate the positive experience of using the polygraph for further use of this tool in the diagnosis and early prevention of destructive manifestations among young people.

Research methodology and methods

The methodology of the article is based on the concentration of information obtained as a result of the selection, analysis, systematization,

and logical generalization of scientific literature; analytical and synthetic understanding of theoretical materials and information that comprehensively characterize the existing level of the actual state of the problem, its analysis, and evaluation, as well as identifying the main trends, directions and prospects for the development of psychophysiological research using a polygraph.

A brief history of the development of instrumental lie detection

If we turn to history, we can say that the research conducted in Western Europe at the beginning of the XX century (at the same time, it was mainly laboratory experiments) marked the beginning of a scientific period in the history of studying the possibilities of psychophysiology in exposing lies. At the same time, the impetus for the development of the method of lie detection was the work of the Italian physiologist Angelo Mosso, published in 1875. In his research, Mosso proved that several physiological indicators change depending on the amount of emotional stress. In particular, he found that the blood pressure in the blood vessels of a person and the pulse rate change depending on the fluctuations of the emotional state of the subject.

In 1879, a French specialist in electrotherapy, Dr. Marie Gabriel Romain Vigourou, discovered the phenomenon of involuntary (reflex) changes in the electrical resistance of the skin due to the influence of various stimuli (stimuli) or under the influence of mental experiences. Later, this phenomenon was called the skin-galvanic reflex.

The birth of the method of revealing hidden information using devices that record changes in physiological processes are associated with the experiment of Cesare Lombroso, conducted in 1895. He used the first-ever lie-detection device, the hydrosphigmograph. This device recorded changes in the blood pressure and pulse rate of the person being examined after questions relevant to the crime were put to him [5].

Among the pioneers who conducted experiments in the field of revealing hidden information were M. Wertheimer and Yu. Klein. In 1904, they conducted a study using a classical

associative experiment to identify information hidden by a person, according to its results, the article of the same name «Psychological diagnosis of the corpus delicti» was published.

Professor of psychology at Harvard University, USA, Hugo Munsterberg, in his book «On Witness Testimony», written in 1908, draws attention to the influence of «emotional changes on blood pressure, breathing, skin-galvanic reflex...», he further points to the possibility of using such reactions in lie detection [6].

An important role in the field of research of the skin-galvanic reflex was played by the famous American psychopathologist and psychiatrist of the early twentieth century-Dr. Boris Sidis. In 1908, he conducted a study of galvanic deviations due to psychophysiological phenomena. Later, in 1914, the Italian researcher Vittorio Benussi used the analysis of the dynamics of the breathing process, namely, taking into account changes in its frequency and depth, when conducting interrogations of suspects in committing crimes. As informative indicators, they used the frequency and amplitude of respiration recorded using a pneumograph device. Benussi determined falsehood and truthfulness by using the ratio of the duration of the inhalation and exhalation.

The appearance of electrical potentials of the skin was first studied in the world by the Russian physiologist Ivan Tarkhanov, a student of I. M. Sechenov. In the world practice of the study of physiological processes, this method is called the Tarkhanov phenomenon and consists in strengthening the galvanic phenomena in the human skin in various forms of mental activity.

But still, the prototype of the modern professional polygraph was designed for the first time only in 1921 by a US police officer - John Larson. This device simultaneously recorded changes in the dynamics of relative blood pressure, pulse, and respiration. Along with the polygraph, Larson used a test (a scientific procedure) developed in 1915 by Dr. William Marston at the Harvard Psychological Laboratory. The interviewing method of J. R. R. Tolkien Larson's procedure, known as the relevant/irrelevant procedure, consists of asking

questions related to and not related to the crime under investigation.

At the same time, only in 1933, a student of D. Larson - Lanard Keeler established a serial production of devices specifically designed for «lie detection». By the beginning of the 2nd World War, the US police widely used the possibilities of polygraph tests in the investigation of crimes. In 1948, Keeler founded the Polygraph Institute in Chicago, the world's first educational institution for the training of polygraph examiners.

As you can see, history says that the leader and founder of conducting psychophysiological research using a polygraph are the United States. At the same time, this method of psychophysiological research is widely used not only for criminal and judicial proceedings but also in civil use. In this regard, in the United States in 1988, the law «On the protection of employees from Polygraph» was adopted. This law very clearly and rigidly defined the procedure for conducting such research in many areas of life [7, p. 55].

Canada ranks 2nd after the United States in terms of the number of polygraph tests conducted. In Canada, psychophysiological research conducted with the help of a polygraph is actively used in the investigation of crimes [8], but unlike in the United States, these results are not used in courts to prove the guilt of the defendant, the polygraph is used only to establish the direct fact of the commission of a crime or narrow the circle of suspects. In this case, the polygraph is applied not only to the accused, but also to the victim, witnesses, and plaintiffs.

Japan is the third-largest country in the world in terms of the number of polygraph tests. In the early 30s of the twentieth century, a galvanometer was used for lie detection in this country, with the help of which the electrical conductivity of the skin was recorded. The polygraph has been used in Japan since 1956, with the police playing a leading role in its use [9]. Since 1959, in this country, the results of polygraph tests are accepted as evidence in lower courts, and since the 1970s, they have been accepted at the discretion of judges and the Supreme Court.

The Japanese police have expanded rights in comparison with the police of other countries of the world, in particular the United States. She began to actively use tests that do not have control questions in the practice of polygraph tests. The test results were used by the courts as evidence. Special requirements are imposed on their professional training.

In the UK, the attempt to introduce and use the method of psychophysiological research was not successful. The use of the polygraph in the UK during the period when Margaret Thatcher led the government caused a large wave of protest, and the project for its use, including in law enforcement, did not receive further development [10, p.31].

In Germany, research with the use of a polygraph also did not receive proper development. Back in 1954, one of the courts of this state adopted a court decision concerning the Constitution of the Federal Republic of Germany, prohibiting the use of a polygraph in criminal proceedings. This was justified by the fact that the test on the «lie detector» humiliates the dignity of a person, his inviolability [9]. Later, in 1981, the Constitutional Court of Germany confirmed the ban on the use of a polygraph on the territory of the entire state.

The Austrian criminal procedure law also prohibits the use of a polygraph in the investigation of crimes, even if the accused himself requests it [9].

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Poland has been using the polygraph since 1964. It was one of the first countries under the strict control of the USSR. The Polish gendarmerie bought one polygraph in the United States and trained several people to work on it. In Poland, there are isolated cases of recognition by the court of the results of research with the use of a polygraph as evidence in a criminal case, but this is rather an exception to the general rule. To date, in Poland, the polygraph is used only in the operational activities of law enforcement agencies

(for example, when building investigative versions, as orienting information).

In Israel, the polygraph has been used since 1959. More than 60 specialists were trained based on American schools. In Hungary, the use of polygraph tests to solve crimes began in 1978. The use of the polygraph is regulated by the instructions of the Ministry of Internal Affairs. The main provisions of the instruction are taken from a similar document of the United States. This document is based on the voluntary nature of the subject during such checks. Refusal to pass inspections is not prosecuted by law.

In India, the polygraph began to be used in 1973. According to the laws of India, the results of polygraph tests can be used in court as evidence only if the test was carried out by a civilian, and not by a police officer or a court employee. Because the American Polygraph Association took an active part in the development of laws and guidelines on polygraph tests, in India, the general requirements for polygraph tests repeat the experience of the United States.

In China, the polygraph appeared at the end of 1940, when the United States provided the polygraph and its technologies to increase the effectiveness of military operations. After the defeat of the government forces, the polygraph was transported to Taiwan. In China itself, in connection with the commitment to the socialist camp, led by the USSR, the tendency to ignore the polygraph developed.

In France, Spain, Italy, Slovenia, and some other European countries, psychophysiological research conducted with the help of a polygraph also did not receive proper development.

The development of psychophysiological methods of revealing hidden information in the early 20s of the twentieth century caused a leap in experimental psychophysiology. Experiments in the field of instrumental «lie detection» conducted by A. R. Luria in 1927-1932 in the laboratory of experimental psychology at the Moscow Provincial Prosecutor's Office are widely known [10].

Unfortunately, due to the policy of unilateral isolationism declared in the Soviet Union since the second half of the 1930s, the work on the study

of psychophysiological methods of exposing lies was curtailed. Research resumed in 1975 with the creation of a specialized unit in the structure of the KGB of the USSR for conducting polygraph tests and training employees of the special services of the USSR in methods of countering the procedure of instrumental «lie detection» [11]. For the first time, the polygraph was used on the territory of the USSR to evaluate human-reported information in state security agencies in 1975 [10].

In the Ministry of Internal Affairs of Russia, the polygraph appeared in 1993 [12]. In 1994, the order of the Ministry of Internal Affairs of Russia «On approval of the instructions on the procedure for using the polygraph in the survey of citizens was signed, after which this technique was used more and more actively. In the Ministry of Defense of the Russian Federation in 1998 [12], and 2009, the method of psychophysiological research was adopted in the arsenal of tools for combating crime by the Investigative Committee under the Prosecutor's Office of the Russian Federation.

As we mentioned above, the first of the Soviet psychologists formulated the general principle of psychophysiological methods of lie detection A. R. Luria: «The only way to study the mechanics of internal «hidden» processes is to connect these hidden processes with some simultaneously occurring series of processes available for direct observation... in which internal laws and relations would be reflected» [13, p. 198].

Leading computer polygraph systems in different periods: «Barrier», «Diagnosis», «Diane», «Concord», «Chris», «PIK», «Polarg», «RIF», «Epic», «Energy», «Delta-Optima» and others.

In the Republic of Kazakhstan, the first polygraph appeared only in the early 90s of the twentieth century. This was an American «Lafayette», which was designed to work in KRAMDS Bank, but due to the lack of specialists did not find proper use. Later, Russian devices began to be used - «Delta», at the beginning of the XXI century - «Diagnosis -01», «Barrier -14», «RIF», «Chris», «Polarg», «Diane» [14].

The modern experience of using a polygraph

Currently, there is a tendency to increase the practice of using polygraph surveys in the leading countries of the world: The United States, France, Italy, and Germany. Along with military intelligence, the police, the Department of Defense, the Federal Bureau of Investigation, and the Central Intelligence Agency, this instrumental method is actively used by industrial companies, banks, and trading firms.

In Turkey, the polygraph was used in the investigation of crimes relatively recently - since 1984. Now Turkey is one of the leading countries in the world in terms of the number of polygraphs per capita. Training of specialists is conducted in America. The legal framework repeats similar documents used in the United States.

In terms of the number of highly trained polygraph examiners, Japan ranks fourth in the world. Today, in this country, conducting polygraph tests has restrictions related to the peculiarities of the state of the human body. In Japan, it is prohibited to be subject to lie detector tests: elderly people; drug addicts; minors; patients in a serious condition; people who are anxious and suspicious; mentally ill; persons in a state of alcoholic intoxication.

Israel has its school for the initial training of forensic psychologists to work on a polygraph. Allowing the police to engage in private practice has led to almost 30% of police polygraph specialists having their private system of checks. A few years ago, the first contact polygraph was created. Work is underway on the contactless polygraph and the development of an appropriate legal framework for it.

At the present stage, the American Association of Polygraph Examiners (AAPE) believes that scientific evidence supports the validity of polygraph tests, which are conducted and interpreted by a documented and confirmed procedure. Such examinations are therefore of great evidentiary value and are useful for a variety of purposes, including criminal investigations, the management of offenders, and the selection of candidates for positions requiring public trust. At the same time, the Academies of

Sciences of most countries, including the United States and China, despite the widespread use of the polygraph, indicate that the same study conducted simultaneously on two or more polygraphs gives different results due to the individual technical means of each device, as well as the competence of polygraph specialists.

As we mentioned above, the psychophysiological method using a polygraph (mistakenly called the «lie detection» method) in the system of the Investigative Committee of the Russian Federation began to be used in 2009. At the same time, several names of this method are mentioned in Russia:

- a survey using a polygraph-used mainly in the bodies of inquiry carrying out operational search activities,
- psychophysiological examination (examination) using a polygraph-used in the system of the Investigative Committee of the Russian Federation, by specialists of various institutions, non-governmental organizations,
- forensic research using a polygraph-used in the Institute of Criminalistics of the Federal Security Service of Russia.

Opportunities for the use of the polygraph over the past few decades have become widespread, not only in the fight against crime but also in everyday life. Also in Russia, there is already a new direction of forensic examination-psychophysiological examination using a polygraph. Thus, according to the General Prosecutor's Office of the Russian Federation, in several regions (for example, Moscow, Astrakhan, Tambov, and Saratov regions), the results of a polygraph examination are used in court as evidence [12].

Also in recent years, events of polygraph examiners of different specializations have become more frequent. So in January 2015 in Moscow (Russia) A round table «Problems of using a polygraph in the investigation and prevention of corruption crimes» was held with the participation of foreign representatives of Polygraph Examiners ' Associations. Such an event was organized by the Departments of Criminalistics of the Faculty of Law of the Lomonosov Moscow State University, Criminal

Procedure and Criminalistics of St. Petersburg State University, Criminalistics of the Kutafin University with the assistance of the non-profit enterprise « National Board of Polygraph Examiners».

In Kazakhstan, polygraphology is a relatively young branch of research. The formation of the polygraph in Kazakhstan took place at the beginning of the XXI century, and today private business and law enforcement agencies are more often using the polygraph to work with personnel - the selection of candidates, certification, and internal investigations.

Since 2008, the Eurasian Association of Polygraph Examiners has been registered here - the first in Kazakhstan and one of the leading public organizations in the CIS, which carries out comprehensive educational, scientific, and practical activities in the field of applied psychophysiology, organization security, and personnel verification. Members of this association have launched a program of initial training of polygraph examiners. Also in 2008, Kazakhstani professionals in the field of polygraphology united in the Almaty Association of Polygraph Examiners. We can say that before this period, system research in this area was not conducted, although the devices themselves appeared in the 90s of the twentieth century. According to the Candidate of Legal Sciences, head of the Public Association «Almaty Association of Polygraph Examiners» S. Aleskovsky, the appointment and production of forensic psychophysiological examinations using a polygraph does not contradict the Constitution in force in Kazakhstan, although the legislation of the Republic of Kazakhstan does not yet regulate the use of a polygraph [14]. The polygraph is also considered today as a means of combating corruption in state bodies. The Republic of Kazakhstan also has experience in using the polygraph method in courts - as evidence in criminal and civil cases.

Today, as noted by practitioners in the field of legal proceedings and criminalistics (G. Sagynbekova [15], etc.), in Kazakhstan, the polygraph can be widely used in the following areas: operational search activities (OSA);

professional selection, and personnel checks in various government departments and private organizations; forensic examinations in the framework of criminal, civil and arbitration and administrative proceedings.

The latest research with the help of a polygraph

Modern polygraphs can record up to 32 parameters of psychophysiological stress of the human body [16]. The sensors record indicators of respiration, cardiovascular system, skin resistance, and tremor. In addition, additional channels for receiving psychophysiological changes can be used: sensors for monitoring facial expressions, taking speech signals, and others [17].

At the present stage, within the framework of psychophysiological research, problems in the field of business and labor relations are solved:

- selection of reliable personnel;
- identification of risk factors that prevent employment;
- detection of violations in business processes;
- prevention of violations in business processes;
- assessment of the reliability of the employee's explanations;
- establishing the reliability of the submitted personal data;
- identification of the person involved in the theft;
- identification of other participants in the theft;
- diagnostics of a party to a civil transaction.

Polygraph testing performed in the interests of studying and selecting personnel differs significantly from tests conducted in the course of official investigations in terms of complexity, the methodological tools used, the degree of accuracy and reliability of the results obtained.

In the field of legal proceedings, a psychophysiological study based on a polygraph can be directed to:

- clarification of the crime plot;
- narrowing the circle of suspects;

- identifying the role of each member of a criminal group;
- identification of the location of the stolen property or the instrument of the crime;
- determining the location of the body;
- Search for missing persons;
- detection of perjury (on the part of a witness or victim);
- assessment of the reliability of the testimony of the suspect, the accused, the defendant.

In criminal proceedings, psychophysiological research using a polygraph makes it possible to solve more complex problems:

- assess the validity of the explanations of the person involved in the administrative liability;
- assess the reliability of the explanations of the applicant, the plaintiff, the defendant in civil and arbitration proceedings;
- Identify self-reservations;
- Identify accomplices of the offender;
- prove non-involvement in the absence of an alibi.

In recent years, in the framework of psychophysiological research, the polygraph has also helped in the private sphere:

- recruit domestic personnel (security, governesses, nannies, etc.);
- Conduct tests for marital treason;
- check family members for various addictions (drugs, gambling, etc.);
- help in solving family conflicts, in particular, collect the necessary information, for example, about embezzlement of money from parents, «dubious acquaintances,» etc.

Research using a polygraph of Russian researchers is very interesting: on the diagnosis of hidden information based on the analysis of cognitive induced potentials of the human brain (E.S. Isaichev, S.A. Isaichev, A.V. Nasonov, A.M. Chernorizov [16]); to study the oculomotor behavior of a person in a situation of concealing significant information (G. G. Yatsyk [17]); on the detection of hidden motivation (L.N. Zakharova, S.B. Parin, S.A. Polevaya [18]), on the problems of countering a polygraph (V.A. Varlamov, G.V. Varlamov [19]) and others.

Foreign studies are also of great interest: on the use of the polygraph to detect passengers carrying illegal items (Rounxing Yu, Xi Jia Wu, Audrey Tingwei Huang, Nathan Gold, Huasyong Huang, Genyue Fu, Kang Li [20]); analysis of cognitive and emotional aspects of polygraph diagnostic procedures (Eitan Elaad [21]); extracting important information from the partial knowledge of the group members using a hidden information search test (Eitan Elaad [22]); analysis of the impact of preliminary expectations on polygraph evaluation (Avital Ginton [23]); identification of polygraphic modeled behavior in the investigation of suspected child rape (Aline Les, Adrian Wajda [24]) and others

In our opinion, the most relevant is medical and psychological study is especially to identify the effect of autonomic nervous system disorders on the distortion of information obtained on a polygraph (Glen Cook, Charles Michow [25]). The authors argue that polygraphs and other state-of-the-art technologies are used to help interrogate and screen employees, but examiners and physicians need to be aware that the results may be inaccurate in subjects with vegetative disorders and may be distorted by taking multiple medications.

Foreign overview works in this area are also interesting. Thus, an article revealing the use of the polygraph to detect deception (Euut H. Meyer, Bruno Vershuere [26]) states that over the past decade in Europe there has been a noticeable increase in the use of the polygraph to detect deception, it is said that currently Belgium and Finland regularly use polygraph tests in criminal investigations, and the UK and the Netherlands have adopted it for the treatment and surveillance of sexual offenders.

The article on the review of the polygraph, namely its history, methodology, and current state (John Sinnott, David Dietzel, and Maria Ioannou [27]), focuses on the main methods of testing on the polygraph, namely, the question-comparison test and the test on hidden information. The discussion of these two main methods, their use, and their problems form the basis of the review. Recommendations for future research are made specifically to improve existing polygraph

technologies and to explore the role of polygraphs in conjunction with other methods of deception detection.

The review chapter of Raymond Nelson's book on the polygraph, on the scientific foundations of polygraph testing, compares the issue of polygraphological testing and its results in application to diagnostic and screening contexts. The review summarizes the literature for all aspects of the testing procedure, including pre-interview, test data collection, test data, analysis, and offering physiological and psychological frameworks for polygraph testing [28]). An article on the current state of deception detection and its prospects for the future (Jaume Masip [29]) analyzed research related to the psychophysiological detection of deception and noted research directions that will undoubtedly give interesting discoveries in the future.

Polygraph capabilities in diagnosis and early prevention of destructive trends in youth behavior

The diagnostic aspect of the use of PEUP, in our opinion, is represented by a new direction - psychological examination using a polygraph. It helps to conduct research on the psychological characteristics of a person, research on the psychology of social groups with the goal:

- establishing the presence or absence of an effect and other emotional states of a person at a certain moment;
- Identification of psychological characteristics of the person affecting the awareness and perception of his actions
- Identification of psychological characteristics of a person affecting the awareness and perception of actions taken with him
- установления психологических особенностей контакта родителей и ребенка;
- Establishing the individual role status of members of a criminal group;
- ascertaining whether a person has or does not have psychological characteristics that make it impossible to perform a certain function (for example, professional);
- Study of psychology of social groups

for possible influence on social groups of text, advertising, etc.;

- establishing a predisposition to suicide and others (N.V. Zvezdochkina [30]).

About the prevention of unwanted behavior, it may be mentioned that polygraph screening tests are carried out to select personnel, assess working personnel, and identify their possible disloyalty or tendency to offense promptly. They most closely reflect the preventive potential of psychophysiological research.

The researchers note that screening checks have certain differences depending on which position in the institution the person being interviewed will hold (A. V. Soshnikov, A. B. Pelenitsyn [31]).

In terms of complexity, this type of check is most simple, since the very identification of «risk factors» makes it possible for the customer to refuse a candidate for a position in employment.

The most screened risk factors in screening are:

- reliability of data specified in the questionnaire;
- the authenticity of the documents provided (passport, military ticket, diploma, workbook, etc.);
- true (hidden) reasons for leaving the previous place of work;
- true (hidden) motives for admission to work;
- lack of professionalism, negligence in the performance of official duties at the previous place of work;
- disclosure of confidential information at previous work; drug addiction; alcohol dependence; concealed health problems (including mental plan) that impede the performance of official duties;
- large debt and other financial liabilities;
- passion for gambling; concealing criminal past, links to criminal communities or communities with criminal intentions;
- Participation in extremist organizations, religious and social associations of destructive type;
- evidence of abuse of authority, etc.

As we see here, it is possible to detect various degrees of concealment of unseemly facts of

biography, bad faith, its true attitude to certain phenomena, impeccability, psychological unsuitability for certain types of work, etc. All this ranks this method as successful in the field of detecting unworthy, and sometimes destructive behavior. Often, this method is the only possible way to establish the reliability of the information reported by a person.

The most effective applied psychophysiological method is polygraph testing. It is important to note that with this method it is possible to confidently identify the main types of lies, such as lies in the form of concealment and lies in the form of falsification or distortion of information brought to the attention.

Conclusion

As we see from the analysis and synthesis of information, the polygraph is used not only in special services and other important state institutions. In many countries, there is

a noticeable increase in its use by commercial entities, large and small businesses. But most commercial organizations using polygraphs in hiring are unable or unwilling to invest in a balanced, integrated system of learning workers and job candidates and use the polygraph as a single, unopposed means of assessing the loyalty of current and hired personnel.

Currently, a polygraph is the most accessible, simple, reliable, and effective way to assess the reliability of human-reported information.

Overall, it can be summed up that the international experience with polygraphs is mainly in the fight against crime. At the same time, legislatures in these countries are very cautious in using the results of psychophysiological studies conducted with the help of a polygraph in the field of criminal proceedings. It is argued that the results of polygraph diagnostics are probabilistic, and the results of the study are based on a subjective assessment by a specialist polygraphologist.

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Психофизиологиялық зерттеулерде полиграфты қолдану туралы әлем елдерінің тәжірибесіне теориялық шолу

Аңдатпа. Мақалада полиграфты қолдану бойынша әлем елдерінің тәжірибесі қарастырылады. Атап айтқанда, полиграфты қолданудың қысқаша тарихы мен қазіргі заманғы тәжірибесі психофизиологиялық зерттеудің осы құралын қолдану бойынша елдердің қолдану салалары мен озық тәжірибелерін көрсете отырып, талданады және жинақталады.

Мақаланың әдіснамасы ғылыми әдебиеттерді іріктеу, талдау, жүйелеу және логикалық жалпылау нәтижесінде алынған ақпаратты шоғырландыруға; проблеманың нақты жағдайының қазіргі деңгейін жан-жақты сипаттайтын теориялық материалдар мен ақпаратты аналитикалық және синтетикалық түсінуге, оны талдау мен бағалауға, сондай-ақ полиграфты қолдана отырып психофизиологиялық зерттеулердің негізгі тенденцияларын, бағыттары мен даму перспективаларын анықтауға негізделген.

Нәтижесінде жастар мінез-құлқының деструктивті тенденцияларын диагностикалау мен ерте алдын-алудағы полиграфтың мүмкіндіктері қарастырылады, полиграфты қолданудың халықаралық тәжірибесі негізінен қылмысқа қарсы күрес болып табылады. Көптеген елдердің заңнамасы полиграфтың көмегімен жүргізілген психофизиологиялық зерттеулердің нәтижелерін қолдануға өте мұқият келеді, өйткені құрылғыны пайдалану ықтималды, ал зерттеу нәтижелері полиграфологтың субъективті бағалауына негізделген.

Түйін сөздер: психофизиологиялық құбылыс, полиграф, «өтірік детекторы», полиграфты тестілеу, психофизиологиялық зерттеу, полиграфты қолдану арқылы сауалнама.

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Теоретический обзор опыта стран мира по использованию полиграфа в психофизиологических исследованиях

Аннотация. В статье рассматривается опыт стран мира по использованию полиграфа. В частности, анализируются и обобщаются краткая история и современный опыт использования полиграфа с указанием сфер использования и передового опыта стран по применению данного инструмента психофизиологического исследования.

Методология статьи базируется на концентрировании информации, полученной в результате отбора, анализа, систематизации и логического обобщения научной литературы; аналитико-синтетическом осмыслении теоретических материалов и сведений, которые комплексно характеризуют существующий уровень фактического состояния проблемы, ее анализе и оценке, а также выявлении основных тенденций, направлений и перспектив развития психофизиологических исследований с применением полиграфа.

В итоге рассматриваются возможности полиграфа в диагностике и ранней профилактике деструктивных тенденций поведения молодёжи, доказываемая, что международный опыт применения полиграфа в основном заключается в борьбе с преступностью. Делается вывод о том, что законодательство большинства стран очень осторожно подходит к использованию результатов психофизиологических исследований, проведенных при помощи полиграфа, т.к. использование прибора носит вероятностный характер, а результаты исследования основаны на субъективной оценке специалиста-полиграфолога.

Ключевые слова: психофизиологический феномен, полиграф, «детектор лжи», тестирование на полиграфе, психофизиологическое исследование, опрос с использованием полиграфа.

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