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**PARTICULARITIES OF THE APPLICATION OF POLYGRAPH  
TECHNIQUES IN CRIMINALISTICS**

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## CONCEPTUAL LANDMARKS OF RESEARCH

**The topicality and importance of the problem addressed.** Forensic science is a dynamic scientific discipline, which plays a central role in the research of crimes by capitalizing on technical-scientific, tactical and methodological methods. As society evolves, crime takes on increasingly diverse and complex forms, which requires forensic science to continuously adapt. The integration of new technologies and investigation procedures thus becomes a necessity to face contemporary challenges, including new forms of criminal activity, such as cybercrime, economic crime, drug trafficking, human trafficking, money laundering and cross-border crimes.

Developments in the field of forensics reflect the ongoing need to effectively combat modern forms of crime. Law enforcement agencies face major challenges in investigating crimes, which require the use of advanced forensic research methods. Adapting technical and scientific tools and continuing training of specialists are priorities in ensuring rigorous investigation and efficient justice. Collaboration with international institutions, such as Interpol and Europol, supports these efforts and facilitates the exchange of good practices in the field of investigating serious crimes.

The topic addressed falls within the current concerns of modernizing the law enforcement system, both at the national and international levels, in the context of strengthening the rule of law and aligning with European standards.

In the context of the commitments undertaken by the Republic of Moldova in the process of accession to the European Union, the modernization of law enforcement institutions constitutes a strategic direction, actively supported by European structures such as Europol and CEPOL. Through professional training programs, the exchange of good practices and the strengthening of international cooperation, these organizations contribute to the construction of a professional police system, adapted to European standards and interoperable with similar institutions in the Member States.

A priority pillar of this process is the improvement of crime investigation mechanisms, through staff training, digitalization of procedures and the establishment of specialized structures. The aforementioned transformations are fully consistent with the objectives of the Justice Sector Reform Strategy for 2022-2025, in particular with Specific Objective 4.3 – “Increasing the efficiency of the criminal justice system by strengthening the capacities of institutions involved in the prevention, investigation and sanctioning of crimes”. The Strategy emphasizes the need to strengthen the operational capacities of the police through an approach consistent with the reform of the prosecutor's office and the courts.

The polygraph technique, also known as the "lie detector", has captured the interest of researchers and forensic practitioners internationally for several decades. On a global scale, the

polygraph test is used in various types of investigations, from economic crimes and corruption to cases of organized crime and terrorism. The polygraph is also frequently applied in the field of national security, for personnel evaluation and for the application of integrity filters, in order to identify the risks associated with insincerity or involvement in illicit activities.

The United States is the world leader in the use of polygraph testing, both in criminal investigations and in public and private sector recruitment processes. In almost half of the American states, the polygraph test even has probative value in courts. In second place is Canada, where the polygraph is widely used both in forensic investigations and in the selection of personnel for sensitive positions. Japan ranks third, applying the polygraph test in the investigation of serious crimes, as well as in the evaluation of personnel in the security field.

In Europe, the polygraph test is used in a variety of contexts, including countries such as the United Kingdom, Poland, Romania, Belgium, Germany and Bulgaria. In the United Kingdom, the test is frequently used for the investigation of serious crimes and for the supervision of offenders released on parole, and in Belgium, the polygraph is applied as an interviewing method, although it has no evidentiary value in court. In Germany, although there are legal restrictions on its use in criminal trials, the polygraph is used in police investigations. At the same time, Bulgaria has introduced the polygraph test for the investigation of complex cases, framing it as part of strategies to combat organized crime and corruption. This diversification of the use of the polygraph test demonstrates its importance in combating crime and in strengthening the selection processes of personnel in sensitive positions.

In the Republic of Moldova, despite the fact that several institutions have specialists in polygraph testing, this method is used to a limited extent and with reservations. Its application is found mainly in the investigation of crimes and in the verification of integrity in the selection processes for positions of increased responsibility. However, the lack of a clear and unified regulatory framework hinders the development and effective use of the polygraph as a forensic tool. Existing legislative deficiencies limit the coherent integration of this method into institutional activities, thus affecting its potential for systemic application in investigative practice.

The research topic is part of the international, national and institutional concerns regarding the modernization of forensic investigation methods and the use of the polygraph technique in the analysis of simulated behavior. The subject addressed is also found in the research directions of the scientific team, being analyzed from the perspective of the fundamental compartments of forensics in an inter- and transdisciplinary approach. Previous contributions from national and international doctrine, as well as the author's own research previously conducted, formed the basis for the current investigation.

In the Republic of Moldova, there is no extensive research dedicated to the investigation of simulated behavior with the application of technical means, including the polygraph. This topic remains relatively unexplored at the national level, both within the criminalistic and legal systems, which is why the polygraph technique is extremely rarely applied in the process of investigating crimes. For this reason, the author considered it necessary to conduct an in-depth analysis of international doctrine, focusing on research and practices developed in other states, where the polygraph test is regularly integrated into the investigation of crimes.

Through the lens of forensics and the existing doctrine at a global level, this paper aims to address the applicability of polygraph testing in the Republic of Moldova. The goal is to understand not only the potential of this method in the local context, but also how it can be adapted and integrated into the national framework, taking into account the experiences and results obtained internationally. The analysis of international doctrine and research in the field of forensics and psycho-criminalistics provides a solid theoretical framework for the evaluation and development of this method in forensic investigations in the Republic of Moldova.

Moreover, the analysis of the specialized literature highlights that, at the international level, research directly focused on the use of physiological reactions in a forensic context is relatively scarce. Although the field of applied psychology includes numerous studies on psychophysiological tests, these mainly involve non-investigative applications. Approaches that comprehensively address the applicability of the polygraph technique in the investigation of crimes are rare, and works that propose a specialized tactic or a well-defined forensic methodology are limited, which indicates the need to develop additional research in this regard.

This disjunction between the two fields of knowledge – forensics and psychology – explains why there is a small number of scientific works in this field. While forensic specialists are not sufficiently familiar with concepts such as psychophysiological reactions, affective stimuli and other complex processes, psychologists, in turn, have limited knowledge of essential aspects of forensics, such as the *modus operandi* of criminals, typologies of criminal activity and specific investigation methods. This lack of intersection of knowledge hinders the development of an integrated methodology and limits the emergence of in-depth studies addressing the applicability of the polygraph in the investigation of crimes.

Even though there are scientific articles in this field, most of them present a segmented nature of the research, without addressing in a complex way the applicability of the polygraph in the investigation of crimes.

In this context, we admit that the present research could also be of interest internationally, having the potential to contribute to expanding the perspective on the use of the polygraph in the

investigation of crimes and to the development of a more comprehensive methodology, applicable in a global context.

The research approach from a forensic perspective provides a complex and well-structured framework for evaluating the applicability of the polygraph test in the investigation of simulated behavior. Forensic science, by its nature, integrates a variety of technical and scientific methods used in the investigation of criminal activity, and in this context, the polygraph test asserts itself as a valuable support tool in the analysis of simulated behavior. This research is characterized by an interdisciplinary approach, combining forensic techniques with the principles of applied psychology and psychocriminalistics, in order to create a unified methodology, capable of responding to the complex challenges of investigating crimes. By applying this model, not only is methodological rigor ensured, but it also offers the possibility of interpreting the psychophysiological reactions of the subjects in a more nuanced way, outlining a detailed picture of the simulated behavior and thus contributing to the improvement of forensic investigation procedures.

The topicality of the topic is determined by the growing interest in the Republic of Moldova and at the European level in the modernization of forensic means used in the investigation of crimes, including by introducing and expanding the use of the polygraph test. Against the background of reforms in the law enforcement system and the professionalization requirements imposed by the process of accession to the European Union, there is an objective need for scientific analysis of the applicability of the polygraph technique in the national context. The paper responds to this approach by proposing an integrated approach, based on modern forensic methods, adapted to the current requirements of judicial investigation.

The application of forensic techniques to the investigation of crimes is an area of ongoing interest in forensics, being analyzed in specialized works from various academic and judicial spaces.

In the Republic of Moldova, significant contributions belong to the authors B. Glavan, V. Mîrzac, Gh. Gandrabur, Gh. Golubenco, M. Gheorghită, I. Odagiu, C. Rusnac, whose works reflect concerns regarding the integration of modern technologies in criminal investigation activities, in correlation with procedural requirements and forensic tactics.

In Romania, the issue of applying technical means in the field of biodetection was extensively addressed by I. Buş, I. Ciofu, T. Butoi, C. Negru, Kiss Csaba, S. Alamoreanu, R. Budai, B.A. Georgescu, R. Gavriş, D. David, V. Cioclei, L. Dilnailil and M. Golu, who analyzed the applicability of the test in investigating simulated behavior, as well as its evidentiary and normative implications.

Internationally, reference works belong to researchers L.G. Alexeev, T.F. Trofimov, V.A. Varlamov, G.V. Varlamov, A.A. Trufanov, A.F. Volinsky, but also to American specialists John A. Larson, Leonarde Keeler, John E. Reid, Gordon H. Barland, David C. Raskin, Charles R. Honts, Donald Krapohl, Raymond Nelson and William Yankee. In Japan, authors Izumi Matsuda, Tetsushi Ogawa and Hiroshi Tsuneoka consolidated the use of the technique by developing the hidden information test, which has become standard practice in the investigation of serious crimes.

Despite conceptual and technical developments, the application of the polygraph test in the investigation of simulated behavior faces a series of dysfunctions related to the forensic sphere. The existing methodology has gaps, being insufficiently adapted to the complexity of investigating crimes, and the professional training of polygraph examiners does not fully meet the specific requirements of forensic research. There are difficulties in standardizing testing procedures, persistent legislative deficiencies, as well as errors in applying the instruments, often generated by a lack of knowledge of the principles of forensic methodology that underpin the construction of test batteries. These aspects justify the need for an integrative approach and a critical review of current practices.

**The purpose** of this thesis is to examine the role of the polygraph technique in the forensic investigation of simulated behavior, by highlighting how it can support the orientation of forensic versions, clarify the circumstances of the commission of the crime, as well as establish the factual framework of the act.

The paper aims to highlight the potential of the technique in the context of applied forensic activity, identifying the conceptual and practical limits of its use, as well as directions for optimizing its use in the investigation of crimes.

Thus, in order to achieve the proposed purpose, the research aims to achieve the following **objectives**:

- examining the theoretical and conceptual foundations of the use of the polygraph test in the investigation of simulated behavior, with an emphasis on the feasibility of the technical and scientific tools in the context of forensics departments;
- comparative analysis of international and national practices regarding the use of polygraph technique in the investigation of crimes, in order to identify trends and difficulties in application;
- investigating the forensic dimension of the application of the polygraph technique in detecting simulated behavior, by analyzing the conditions of use, the professional profile of the specialist, the operational algorithm specific to testing and the role of the method within the forensic investigation;



- conducting a critical analysis of the application of the polygraph test, adapted to different categories of participants in criminal activity, and developing recommendations regarding the integration of appropriate forensic tactics and methods.

**Research methodology.** In order to carry out a complex and multilateral research on the applicability of the polygraph technique in investigating simulated behavior, several research methods were used in this paper, including: the logical method (based on conceptual analysis and inductive and deductive reasoning), the systemic method (used to correlate the national regulatory framework with forensic aspects), the comparative method (applied to the analysis of international experience, especially from the USA, Japan, Poland and Romania), the documentary method (focused on examining legislation and specialized literature), the qualitative method (through the analysis of interviews with specialists and case studies), the quantitative method (through the interpretation of statistical data on the use of the polygraph) and the empirical method (through the analysis of the practice of criminal prosecution bodies in the Republic of Moldova).

**The research hypothesis** lies in the premise that the polygraph test, integrated into a well-structured forensic methodological framework and adapted to the realities of investigations conducted in the Republic of Moldova, can constitute an effective means of identifying simulated behavior, contributing to the formulation and verification of working versions, as well as to increasing the efficiency of crime investigation activities.

The application of this technique, based on forensic knowledge, can support the rigorous analysis of memorial traces fixed in the consciousness of participants in the criminal event, as well as the identification of non-materialized criminal intentions, thus contributing to strengthening the preventive and anticipatory dimension of investigative activities.

**The novelty and scientific originality** of this research lies in the systematic approach to the use of the polygraph test in the forensic investigation of simulated behavior, highlighting the tactical and application peculiarities adapted to the context of the Republic of Moldova. The paper proposes a critical analysis of the normative, practical and doctrinal framework, highlighting the methodological gaps and difficulties encountered in the standardization of testing procedures.

The originality of the research derives from:

- differentiated analysis of the application of the polygraph technique depending on the typologies of crimes investigated;
- identifying objective limits in the use of psychophysiological reactions as memorial traces in the investigation of simulated behavior;
- formulating recommendations to harmonize national practices with international trends in the use of the polygraph test, from a forensic perspective.

The research contributes to the improvement of investigative activities by correlating the polygraph technique with the concrete needs of the process of formulating and verifying working versions, providing theoretical and applied support for the further development of this direction in forensics.

**The theoretical importance** lies in the construction of a complex conceptual framework, which rigorously integrates the polygraph test in the context of investigating simulated behavior. The paper makes a relevant contribution to the field of forensics, by combining the technical-tactical aspects of crime investigation with the physiological peculiarities of simulated behavior. An interdisciplinary synthesis is thus highlighted that not only expands, but also reconfigures the understanding of the use of the polygraph in forensic investigations.

Through a critical assessment of international practices and an in-depth analysis of the national regulatory framework, the paper provides a solid theoretical foundation, applicable to the context of the Republic of Moldova. This research contributes to the specialized literature by exploring the directions of application of the polygraph test in the investigation of various categories of crimes, a topic still little addressed in previous research.

**The applied value** of the work derives from providing practical directions for the use of the polygraph test in the forensic investigation of simulated behavior. Based on the analysis of case studies and institutional practices, the work proposes solutions applicable to the activities carried out by law enforcement agencies, contributing to the development of tactical approaches adapted to the specific criminal context of the Republic of Moldova. Operational benchmarks are presented for the integration of the polygraph in the investigation of complex categories of crimes, such as murders, corruption crimes, theft of property and sexual crimes.

The application of these solutions can support the investigation process by increasing the accuracy in detecting simulated behavior, guiding working versions and strengthening evidence, reducing the risk of judicial errors and contributing to the efficiency of forensic efforts.

**The main scientific results submitted for support** consist of: substantiating a conceptual model regarding the use of the polygraph in the investigation of simulated behavior; highlighting the limits of the national regulatory framework and formulating proposals for harmonization with international good practices; systematizing the tactical-criminalistic conditions for the efficient application of the polygraph test; defining the professional skills necessary for the polygraph specialist; developing methodological recommendations for standardizing the stages and procedures of testing; capitalizing on the results of empirical research regarding the applicability of the polygraph to different categories of crimes; formulating practical solutions for integrating the polygraph technique into the activity of criminal prosecution bodies.

**Implementation of scientific results.** The results obtained find their applicability in the activity of criminal prosecution bodies by integrating the polygraph technique in the process of investigating simulated behavior and in verifying working versions. The conclusions and recommendations formulated can be used in the training of students in higher education institutions with a legal profile, as well as in the continuous professional training of specialists in the field of law enforcement. Methodological and *de lege ferenda* recommendations can contribute to the improvement of the national regulatory framework and the consolidation of practice standards in the field of forensics. The research results were disseminated through scientific publications and presentations at national and international academic events, which gives them applicative value and recognition in the scientific and professional environment.

**Approval of the research results.** The research results were disseminated and validated within a series of national and international scientific conferences, organized by higher education institutions and research centers in the Republic of Moldova and abroad. A considerable part of the conclusions formulated during the research was capitalized by publishing them in scientific and practical journals in the Republic of Moldova and abroad, with academic recognition.

**Publications on the topic of the thesis.** On the topic of the doctoral thesis, 16 scientific articles were published in specialized journals and 22 papers were presented at national and international conferences.

**Keywords:** simulated behavior, behavioral analysis, polygraph, forensic technique, lie detection, psychophysiological testing, hidden information.

## CHAPTER SYNTHESIS

The work is structured according to academic rigor and aims to systematically achieve the proposed purpose and objectives, being composed of an introduction, three main chapters, general conclusions and recommendations, bibliography and annexes. Each chapter is organized in such a way as to contribute effectively to the theoretical and practical development of the application of the polygraph in forensic investigations.

**Chapter 1**, entitled **Analysis of the situation in the field of detecting simulated behavior using the polygraph**, represents a theoretical approach regarding the field of detecting simulated behavior using the polygraph.

**Subchapter 1.1** presents an in-depth analysis of the theoretical and normative foundations that support the use of the polygraph in forensic activity in the Republic of Moldova, constituting the scientific basis of the research and the starting point for the formulation of the proposed methodology. Starting from the interaction between psychological processes and physiological manifestations, the research highlights that the attempt to hide information determines complex autonomous reactions, impossible to control voluntarily, which makes it possible to objectify the simulated behavior through polygraph testing. In the specialized literature, phenomena such as changes in heart rate, respiratory variations, increased electrical conductivity of the skin, muscle tension and other physiological parameters are presented as relevant indicators of psychological stress associated with the act of lying, and the analysis of these responses constitutes a valuable tool for forensic investigation. The paper integrates multiple theoretical approaches, demonstrating that the use of the polygraph is not limited to a simple technical instrument, but requires a thorough understanding of the psychophysiological mechanisms and the context in which they occur.

Conceptually, polygraph testing is placed at the intersection of several disciplines – forensics, applied psychology, psychophysiology and criminal law – which gives it a significant interdisciplinary dimension. This characteristic is confirmed by the national and international scientific literature, which analyzes the phenomenon of simulated behavior from the perspective of both psychological and physiological factors, highlighting that physiological reactions to relevant stimuli are the result of a complex cognitive and emotional process. In this context, the training of polygraph examiners requires multidimensional skills, and the application of the method requires compliance with strict technical -scientific and ethical rigors, an aspect emphasized by modern forensic doctrines.

On the regulatory level, the Republic of Moldova stands out by adopting a distinct legislative framework, regulated by *Law No. 269/2008 on the application of simulated behavior detector (polygraph) testing*, a normative act that established the principles, conditions and general procedures for the use of this technique. The law created the premises for the professionalization

of the field, establishing clear regulations on the conduct of the examination, the status of polygraph examiners, the rights and obligations of the tested persons, as well as the conditions for the use of the results. Through this approach, the Republic of Moldova aligned itself with international trends, adopting legislation that provides coherence to the use of the polygraph in professional selection processes, in crime prevention and investigation activities and in strengthening institutional integrity.

The subsequent methodological norms developed by the State Commission for Polygraph Testing complement the legislative framework with a set of professional, methodological and ethical standards. These documents establish the unitary procedure for conducting testing, detail the technical requirements for equipment and professional training of examiners, as well as guarantees for the protection of the rights of persons subject to examination. The regulations on the certification of polygraph examiners and their disciplinary liability constitute an important component of the mechanism for ensuring professional quality, and the code of ethics enshrines the ethical principles applicable throughout the activity. This normative set demonstrates an advanced degree of institutionalization of the field and creates premises for the development of standardized practices, adapted to the needs of law enforcement institutions <sup>1</sup>.

The subchapter also analyzes the impact of the Constitutional Court's jurisprudence on the legislative framework. By examining the exceptions of unconstitutionality, the Court contributed to adjusting the legal provisions in order to make them compatible with the principles of the rule of law and with the international treaties to which the Republic of Moldova is a party. Thus, the guarantees regarding respect for privacy, protection of personal data and the right to defense, essential aspects for the responsible use of the polygraph technique in official investigations, were strengthened.

The paper highlights the fact that, despite the normative progress, the application of the polygraph in the Republic of Moldova remains limited to a small number of institutions, and local scientific research is still insufficient to provide a solid doctrinal basis comparable to international models. In this regard, the need for a consolidation of the field is highlighted by intensifying interdisciplinary research, improving existing methodologies and implementing continuing education programs for specialists. It also emphasizes the importance of harmonizing the national framework with international standards, so that the use of the polygraph is fully integrated into the activity of criminal prosecution bodies, contributing to increasing the efficiency of investigations and reducing the risk of miscarriages of justice.

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<sup>1</sup>ODAGIU, I., LUNGU, A. *The truth about lying*. In: Law and Life, edition special session of the International Conference "Scientific Issues in the Field of Judicial Expertise" psychiatric-psychological methods and their use in the judicial process", Chişinău, April 14, 2022. ISSN 2587-4365, E-ISSN 2587-4373.

Through this complex analysis, subchapter 1.1 provides a clear picture of the scientific and legal context in which polygraph testing is carried out in the Republic of Moldova. The integration of the instrument into the architecture of national forensics is presented as a necessary step in the process of modernizing the law enforcement system and professionalizing human resources.

The second subchapter contains a comparative analysis of international experience in the field of polygraph testing, with the objective of identifying functional models and applicable standards for their adaptation in the Republic of Moldova. Historical developments and development trends in different states are presented, emphasizing the diversity of legislative approaches, work methodologies and professional status of polygraph examiners. This analysis demonstrates that the application of polygraph testing is closely linked to legal traditions, the level of professionalization of law enforcement institutions and the organizational culture of each country.

A notable example is the United States, where the polygraph is widely used in criminal investigations, national security trials, and personnel selection for sensitive positions. In many American jurisdictions, polygraph tests are recognized as an evidentiary tool in judicial proceedings, although with limitations and strict validation standards. Institutions such as the FBI, CIA, and the Department of Defense have developed their own training and certification programs for polygraph examiners, and standardization of the process is ensured by professional bodies such as the American Polygraph Association, which imposes uniform methodological and ethical rules.

Japan is another example of advanced integration of polygraph testing into police and prosecutorial activities. The use of polygraph testing is focused on the investigation of serious crimes and is carried out in specialized centers, equipped with high-performance equipment and staff with multidisciplinary training. In Japan, the emphasis is on correlating polygraph results with other means of evidence and on conducting complex examinations based on culturally adapted techniques <sup>2</sup>.

Canada has developed an extensive practice, similar to the American one, but with a more rigorous approach to confidentiality standards and the rights of the tested individuals. Canada has implemented an advanced system of professional training and certification, based on collaboration between law enforcement institutions and professional organizations, which guarantees the uniformity and quality of the services provided.

In European states, the diversity of regulations reflects the differences between the continental and *common law* systems. In the UK, the polygraph is used both in the investigation of serious crimes and in the supervision of persons released on parole, based on strict regulations

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<sup>2</sup>ODAGIU, I., LUNGU, A. *Methodological particularities of polygraph application. The Japanese Model*. In: Law and Life, September-October 2021. P. 28-32. ISSN 1810-309X.

adopted since 2007. The British experience is remarkable for introducing mandatory polygraph testing for sex offenders under supervision, a method integrated into a complex risk management system.

Romania has developed its own tradition in the field, by creating a specific regulatory framework and national centers for training specialists. The activity of Romanian polygraph examiners is coordinated by the National Institute of Forensic Science, which has developed manuals of good practices and detailed methodological norms. Romania is considered a regional model, having significant experience both in the use of the polygraph in criminal investigation and in the field of human resources.

In Poland, the polygraph is integrated into the work of criminal prosecution bodies, being recognized by national legislation as an investigative tool. Other states, such as Germany or Belgium, have a more restrictive approach: in Germany, the use of the polygraph is limited in judicial proceedings, but is accepted in police investigations; in Belgium, polygraph testing is used as a method of investigative interviewing, without probative value.

Bulgaria is an example of a country that has introduced polygraph testing to investigate complex cases of organized crime and corruption. Although its use is relatively recent, the regulatory framework and training programs are rapidly adapting to international standards, reflecting the interest in strengthening investigative capabilities.

The comparative analysis of these practices highlights the fact that most developed countries treat the polygraph as an integrated tool in a complex investigative process, in which its results are corroborated with other evidentiary means <sup>3</sup>. At the same time, international trends demonstrate the need for uniform standards for the training of examiners, clear methodological procedures and a flexible but rigorous legislative framework.

This subchapter emphasizes the relevance of international collaboration and the exchange of good practices for strengthening the national system. The experiences analyzed provide models of institutional organization, standardization and evaluation of the effectiveness of the method, which can be adapted in the Republic of Moldova to ensure the development of a professional polygraph testing infrastructure. It is highlighted that the integration of this technique into the investigation of crimes is not only a matter of technical equipment, but also requires a complex approach, based on multidisciplinary training, inter-institutional cooperation and alignment with the principles of fundamental rights.

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<sup>3</sup>VASILÎȚA, V., LUNGU, A. *Comparative analysis of the regulatory framework regarding the procedure for applying the polygraph in international criminal proceedings*. In: Scientific Annals of "Stefan cel Mare" Academy of the Ministry of Internal Affairs of the Republic of Moldova. Sciences legal, 2022, no. 15. P. 320-333. ISBN 978-9975-135-60-3.

Thus, **subchapter 1.2** offers a broad comparative perspective, outlining the positioning of the Republic of Moldova in a global context and emphasizing the importance of adopting common standards and the continuous development of the field.

**Chapter 2 – Forensic Aspects of the Use of the Polygraph in Investigating Simulated Behavior** – analyzes the tactical-forensic and operational dimensions of the use of the polygraph technique in investigating simulated behavior, in the context of activities carried out by law enforcement institutions.

**Subchapter 2.1** represents the foundation of the tactical-criminalistic analysis dedicated to establishing the framework for applying the polygraph technique in the process of investigating simulated behavior. The importance of the topic derives from the complexity of contemporary criminal investigations, which require innovative and scientifically validated methods to support the activity of criminal prosecution bodies. In the current context, characterized by the diversification of criminal phenomena, polygraph testing is emerging as a complementary method for verifying the veracity of statements, contributing to the formulation and verification of working versions. The paper emphasizes the integration of this technique into a coherent forensic strategy, which respects scientific standards, ethical norms and legal principles applicable in the Republic of Moldova.

In order to provide a solid theoretical framework, the analysis starts from defining the notion of “use criteria” in a forensic context, explaining that these represent the set of rules, conditions and limits that establish the opportunity to apply the method in a specific case<sup>4</sup>. In the specialized literature, these criteria are associated with the level of professional training of the examiner, with compliance with methodological standards and with the adaptation of procedures to the psychological peculiarities of the person tested. The study emphasizes that the polygraph cannot be used arbitrarily, but only under conditions that guarantee the objectivity of the results and the protection of fundamental rights.

The subchapter analyzes in detail the structure of the polygraph testing process, highlighting the preparatory stages, the planning of the investigation, the selection of relevant questions and the manner of conducting the testing sessions. The professional standards established by international bodies and progressively implemented in the Republic of Moldova are

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<sup>4</sup>ODAGIU, I., LUNGU, A. *The particularities of applying special knowledge in psychocriminalistics at the stage of preparation for polygraph testing*. In: International Scientific Conference "Emilian Stancu. Current problems and directions of scientific research in forensics", 2nd Edition, Cluj-Napoca, May 25-26, 2023. University of Bucharest; "Babeş-Bolyai" University; University of Wrocław.



presented, which ensure the uniformity of methodologies and the comparability of results<sup>5</sup>. At the same time, the paper demonstrates that the development of a clear set of criteria contributes to increasing the credibility of the method, preventing abuses and optimizing the collaboration between the polygraph examiner, investigator and prosecutor.

A central element of this subchapter is the correlation of the criteria for use with the principles of forensics. The analysis reveals that the tactics of investigating simulated behavior involve integrating the polygraph into a complex system of scientific methods, in which testing is not treated in isolation, but in connection with other investigative techniques<sup>6</sup>. This approach allows for the verification of forensic versions through evidentiary triangulation, ensuring a better substantiation of the conclusions. In addition, confidentiality and data protection requirements are discussed, given that the information obtained through testing is particularly sensitive and requires a strict storage and use regime.

The paper examines the psychological and physiological factors relevant to establishing test criteria. It is shown that the autonomic reactions of the body cannot be fully controlled voluntarily, and this characteristic is the scientific basis of the method. At the same time, the analysis emphasizes that the results can be influenced by the emotional state of the tested person, previous experiences and the situational context, which justifies the need for multidisciplinary training for the examiner. In this regard, the criteria for use include preliminary assessment of the person, identification of factors that may affect the interpretation of the data and careful selection of the interrogation technique.

On an institutional level, the subchapter provides an overview of the national practice of using the polygraph. Statistics and data analyzed from criminal files and procedural materials show a constant increase in the number of tests conducted by structures such as the Prosecutor General's Office, the Anti-Corruption Prosecutor's Office, the Prosecutor's Office for Combating Organized Crime and Special Cases and other authorized institutions. This fact reflects the progressive integration of the polygraph into investigative mechanisms and the need to develop clear procedural guidelines, adapted to the realities of the justice system in the Republic of Moldova.

The research also highlights the need for additional regulation of aspects such as access to results, appeal procedures, examiners' responsibility and the evidentiary regime of polygraph

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<sup>5</sup>LUNGU, A. *Aspects of the application of the polygraph in the investigation of crimes. The peculiarities of the pre-test stage*. In: Forensic Science – The Main Pillar of Judicial Probation in Criminal and Civil Process, International Conference on Forensic Sciences, 11th Edition, Association Forensics in Romania, October 20-21, 2023.

<sup>6</sup>ODAGIU, I., LUNGU, A. *Psychological strategies and the application of the polygraph in the detection of false statements*. Scientific conference with international participation, Protection of rights and fundamental human freedoms in the process of ensuring public order and security", edition of III, Chisinau, December 7, 2023, Stefan cel Mare Academy of the Ministry of Interior [cited 12.04.2025]. Available: [https://ibn.idsi.md/sites/default/files/imag\\_file/15-20\\_43.pdf](https://ibn.idsi.md/sites/default/files/imag_file/15-20_43.pdf).

conclusions. In the absence of a unified approach, current practice is marked by institutional differences, which limits the potential for uniform application of the method. The subchapter proposes a standardization strategy that integrates international recommendations and reflects national specificities.

In terms of methodology, comparative models taken from other states are presented, highlighting how the criteria for use are established by legislation, professional standards and ethical codes. These experiences show that the application of the polygraph must be accompanied by a complex network of procedural guarantees, which should protect both the person tested and the integrity of the investigation. The comparative analysis thus becomes a useful tool for formulating proposals adapted to the Republic of Moldova, with the aim of transforming polygraph testing into a tool with high practical value.

**Subchapter 2.2** addresses the issue of the professional training of the polygraph examiner, placing this topic at the center of the debate on the quality, credibility and relevance of testing in forensic practice. The analysis starts from the observation that the polygraph, as a technical - scientific instrument, has no autonomous value, but fundamentally depends on the skills, training and integrity of the examiner. In the absence of solid training and a set of interdisciplinary skills, the results obtained through this method lose their investigative value.

The paper emphasizes that the professional training of the polygraph examiner must go beyond simple familiarization with technical equipment, aiming at the development of a complex set of theoretical knowledge and practical skills<sup>7</sup>. The polygraph examiner must know in detail national and international legislation, the principles of criminal procedure, the rights of the tested persons and the legal limits of the use of the results.

From a practical skills perspective, polygraph examination requires exceptional observation and analysis skills, the ability to formulate relevant questions and assess nonverbal behaviors, as well as impeccable mastery of interrogation technique. The examiner must be able to create an open communication climate, reduce the anxiety of the tested person and obtain a high degree of cooperation, without artificially influencing psychophysiological reactions<sup>8</sup>.

The paper highlights the role of professional training and certification institutions, which have a decisive contribution to the standardization of examiners' activity. In the Republic of

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<sup>7</sup>ODAGIU, I., LUNGU, A. *Professional skills and abilities of the specialist polygraphist*. In: National Interuniversity Scientific Conference of Doctoral Students, "Prevention and Combating Crime – Problems, Solutions and Perspectives," 4th edition, January 27, 2022, "Stefan cel Mare" Academy of the Ministry of Interior, Chisinau.

<sup>8</sup>ODAGIU, I., LUNGU, A. *Application of the polygraph in police activity. Skills professional skills of the polygraph specialist*. In: Public order in Europe, between tradition and contemporary, Materials of the International Scientific-Practical Conference, 11th edition, 15-17 May 2022, Cluj-Napoca: "Septimiu Mureșan" Police Officers School, in collaboration with Romanian Academy, Cluj-Napoca Branch – "George Barițiu" Institute of History.

Moldova, this activity is coordinated by the State Commission for Polygraph Testing, an institution responsible for establishing minimum training requirements, organizing certification programs and developing methodological norms.

In addition to technical and theoretical training, the profile of the polygraph examiner is also defined by a rigorous code of ethics. His activity requires compliance with the principles of confidentiality, impartiality and professional responsibility. The code of ethics of the polygraph examiner and his assistant is a fundamental benchmark for protecting the rights of the person tested and for guaranteeing the integrity of the investigative process. The examiner must demonstrate absolute neutrality, avoid any form of pressure on the subject and refrain from speculative interpretations, relying exclusively on objective data.

Comparative analysis of international experiences shows that the training of polygraph examiners involves a complex process, carried out in accredited training centers, with programs that can last from several months to two years, followed by mandatory practical internships. In the USA, Canada or Japan, certification involves theoretical assessments, practical tests and periods of professional supervision, which contributes to consolidating the status of the polygraph examiner as a high-level specialist. Romania, through the National Institute of Forensic Science, has developed a similar system, which integrates theoretical elements, practical exercises and periodic examinations, guaranteeing the uniformity of procedures and the quality of the professional act.

The subchapter emphasizes that the development of the polygraph examiner's profile is not limited to the accumulation of knowledge, but involves the cultivation of personal qualities: moral integrity, emotional balance, self-control and discernment. In practical work, the examiner is faced with tense situations, with subjects who may manifest hostility, anxiety or psychological resistance, which requires solid psychological preparation and a high capacity for adaptation. In addition, working with classified information and sensitive data implies increased responsibility and impeccable professional conduct.

The paper emphasizes the importance of international cooperation and the participation of examiners in global professional networks, such as international associations of polygraph examiners. These provide access to advanced training programs, scientific conferences and methodological resources, facilitating the exchange of experience and adaptation to the latest standards. By integrating into international professional communities, polygraph examiners from the Republic of Moldova can contribute to the consolidation of domestic practice and increasing the recognition of the profession at the global level.

**Subchapter 2.3** focuses on the extensive and detailed analysis of the methodological stages of polygraph testing, presenting this process as a complex procedure, combining knowledge of

forensics, applied psychology, physiology and modern technology. In the specialized literature, polygraph testing is considered an investigative tool with a high degree of sophistication, which requires a carefully planned methodological approach, strict standardization and adaptation to the specific context of each case. The paper reveals that the success of this method depends not only on the technological performance of the equipment, but especially on the professionalism of the examiner, the way the questions are formulated and the observance of scientifically validated procedures.

The polygraph testing process begins with an extensive documentation and planning phase, in which the examiner thoroughly analyzes the case file, the available evidence, the statements of the people involved, and the hypotheses formulated. This preliminary activity aims to provide a complete picture of the criminal context and to establish clear objectives of the testing, whether it is to verify the involvement of a suspect, clarify the statements of a witness, or exclude certain working versions. In this framework, the examiner establishes the work strategy, identifies potential risk factors, and selects the appropriate testing technique, taking care to adapt the procedure to the psychological and cultural particularities of the person to be tested. Planning includes the careful selection of questions and their formulation in a clear, unambiguous manner, to ensure the accuracy of the answers and to reduce the possibility of physiological reactions generated by confusion or situational stress.

An important component of the preparation is the pre-test stage, considered by many specialists as the foundation of the entire process. In this phase, the examiner establishes the communication relationship with the tested person, explains in detail the purpose of the examination, the functioning of the polygraph and the rights of the subject, obtaining his informed consent. A preliminary psychological assessment is carried out to identify any emotional disorders or health conditions that could affect the accuracy of the data. This stage aims to create a climate of cooperation, reduce anxiety and familiarize the person with the equipment used, by presenting the procedures and the testing environment. Establishing a relationship of trust between the examiner and the tested person contributes to obtaining stable physiological reactions and reducing the stress effect induced by the examination situation.

Installing the equipment and calibrating the devices is the next step, being a meticulous technical operation, through which the sensitivity of the sensors is adapted to the individual characteristics of the person being examined.

After the calibration and preparatory stages are completed, the actual testing session is carried out according to a strict protocol, adapted to the purpose of the examination. The specialized literature describes various techniques used in this stage, including tests with relevant and irrelevant questions, control tests or knowledge of facts. The choice of technique depends on

the type of case, the complexity of the information to be verified and the experience of the examiner. Strict standards are also observed regarding the duration of the sessions, the number of questions and the necessary breaks, to prevent fatigue and other disruptive factors.

The analysis of the collected data is a particularly complex stage, as it involves the detailed interpretation of the diagrams obtained during the testing. The examiner correlates the physiological reactions with the questions asked, applying scientific evaluation and scoring criteria, and in international practice this analysis combines manual methods with software-assisted interpretation. Computerized systems contribute to the uniformity of the results and the reduction of errors, but the final interpretation remains the responsibility of the specialist, who must take into account the context of the case, the behavior of the person tested and all the elements obtained in the pre-test phase. The examination report, drawn up at the end of the analysis, describes in detail the procedure followed, the reactions observed and the conclusions of the examiner, and this document plays an important role in the activity of criminal prosecution bodies.

The importance of methodological standardization is emphasized throughout the subchapter. The testing procedure must follow unitary protocols, developed on the basis of scientific research and validated by international practice. The lack of rigorous standardization could lead to significant differences in the interpretation of the results, to a decrease in the credibility of the method and to its challenge before the courts. Standardization does not mean rigidity, but the implementation of a set of fundamental rules that ensure the repeatability and comparability of the results, while maintaining the flexibility necessary to adapt to the particularities of each case. The normative documents adopted in the Republic of Moldova reflect these requirements, establishing clear rules for the training of examiners, the use of equipment, the drafting of reports and the archiving of data.

The paper highlights that the methodological stages of polygraph testing should be viewed not just as a sequence of technical actions, but as an integral part of a complex investigative strategy. Each stage is closely related to the objectives of the research and contributes to the formulation of forensic versions.

International practice confirms the need to adhere to methodological steps, regardless of the legislative framework or legal tradition of the states. In countries such as the USA, Japan or Canada, the polygraph is commonly used in complex investigations, and the testing procedure follows strictly defined protocols, developed by international professional organizations. These protocols cover all aspects of the process, from the selection of tested persons to the archiving of data and the auditing of reports, ensuring a high degree of transparency and accountability. In Europe, although there are differences between legal systems, most states that use the polygraph have adopted standardized procedures, recognizing the importance of a unified methodological

framework. The Republic of Moldova has made important steps in this direction, by developing methodological norms and certification regulations, but the paper emphasizes that a continuous development of the normative and institutional infrastructure is needed to ensure a uniform and professional application of the method.

The subchapter also highlights the role of technological advances in improving methodological stages. Modern equipment offers the possibility of simultaneously recording multiple physiological parameters, analyzing reactions in real time, and using automatic scoring algorithms. This development does not replace the examiner's expertise, but provides him with additional tools for an objective assessment. International trends show that the integration of artificial intelligence and advanced data analysis technologies can contribute to increasing accuracy and eliminating human errors, but the implementation of these solutions must be accompanied by clear regulations and continuous training programs.

The analysis of the methodological stages of polygraph testing demonstrates that the method is a multidimensional process, combining science with judicial practice, technology with psychology, and forensics with professional ethics. Each step of the examination is interdependent, and their rigorous observance guarantees not only the quality of the results, but also the credibility of the method as a whole. Thus, the standardization of procedures, the continuous training of examiners, the use of modern technologies and the harmonization of legislation with international recommendations constitute the fundamental elements of an efficient polygraph testing system, capable of meeting the contemporary requirements of forensic investigations and contributing to the increase in professionalism in the work of criminal prosecution bodies.

**Subchapter 2.4** deals in detail with the application of the polygraph technique in the tactical-forensic analysis of simulated behavior, providing an integrated view of the role that this method plays in the investigation process. The paper emphasizes that the polygraph should not be viewed only as a device capable of recording physiological reactions, but as a complex instrument, inserted into an elaborate forensic strategy, which combines technology, behavioral science, applied psychology and judicial experience. In this framework, the polygraph becomes a support element for the investigator, providing objective information that contributes to the validation of working versions and the orientation of the decision-making process, thus completing the evidentiary picture in a professional and structured manner.

The analysis of simulated behavior involves examining a set of clues and manifestations that betray the person's attempt to hide the truth or provide false information, and the polygraph technique supports this approach by capturing psychophysiological reactions associated with intense emotional responses. In forensic research, this type of behavior is frequently encountered in the criminal investigation phase, when suspects, witnesses or even victims may show reluctance,

fear or the deliberate intention to misinform investigators. The polygraph becomes an additional tool for verifying the veracity of statements, and its efficiency derives from the ability to record involuntary reactions that cannot be fully consciously controlled. This characteristic differentiates it from other investigative methods, offering a complementary perspective in the analysis of complex cases.

Integrating the polygraph into tactical forensic analysis requires a systemic approach, in which each stage of testing is tailored to the specifics of the case. The examiner is responsible for building a strategy that includes selecting the appropriate testing technique, clearly and precisely formulating questions, ensuring a controlled environment for conducting the examination, and interpreting the data in a broad context that encompasses all available evidentiary elements. This method requires close collaboration between the examiner and the investigative team, and the final report should not be perceived as a verdict, but as a guidance tool, intended to support subsequent decisions and facilitate the identification of priority investigative directions.

The specialized literature emphasizes that the application of the polygraph technique cannot be separated from a well-defined regulatory framework, which would ensure both the protection of the tested person and the legitimacy of the procedure. In the Republic of Moldova, the existing regulations establish clear procedures for the certification of examiners, standards for the use of equipment, methodological requirements and ethical principles. Thus, the method is implemented within a rigorous legal and institutional framework, which contributes to strengthening its credibility before law enforcement agencies and courts. In addition, comparative research highlights the fact that in many countries, including the USA, Japan, Canada and Romania, testing procedures have been standardized through detailed regulations, which has led to an increase in the acceptance of the polygraph in forensic activity.

The paper highlights that the tactical-criminalistic application of the polygraph is not reduced to the simple administration of a set of questions and the interpretation of the obtained diagrams, but involves the integration of the results into a broader analytical framework. In this context, the polygraph can be used to identify unknown details in the statements of the tested person, to verify the degree of involvement in a criminal act, to exclude certain investigative scenarios or to consolidate some working versions. The usefulness of the method is demonstrated especially in complex files, in which there are several sources of contradictory information or in which direct evidence is missing. Thus, the examiner's report becomes a guiding document for the investigator, allowing a faster and more precise approach to the evidence.

The results obtained through polygraph testing should be analyzed in correlation with other evidence and statements, and conclusions should be formulated with caution, respecting the principle that the polygraph is an auxiliary means of investigation, not an absolute instrument for

establishing guilt. This cautious approach is supported by international standards and the experience accumulated in countries with a tradition in using the method.

The paper also reveals that the application of the polygraph in the analysis of simulated behavior represents a bridge between forensics and psychology, since the physiological reactions observed are closely related to the emotional states and cognitive mechanisms involved in the process of lying or dissimulation. This interdisciplinary perspective has led to the development of standardized testing protocols and contributed to the refinement of data analysis algorithms, which has increased the accuracy of interpretations.

The application of the polygraph technique in tactical -forensic analysis also requires continuous professional training of examiners, who are obliged to constantly adapt to the evolution of technologies and changes in the field of forensic investigation. In the Republic of Moldova, the regulatory framework establishes clear requirements for the certification, improvement and periodic assessment of professional skills, which contributes to maintaining a high standard of quality of the activity.

**Chapter 3, entitled The Application of the Polygraph in the Forensic Investigation of Certain Categories of Crimes**, addresses the use of the polygraph technique in the analysis of distinct types of crimes, highlighting how the psychological, behavioral, and contextual particularities of each case influence the structure and interpretation of the tests.

**Subchapter 3.1**, entitled "Methodological Particularities of the Application of the Polygraph in Forensic Investigation" presents the conceptual and operational framework in which the polygraph technique is integrated as a complementary means of guidance and verification in the investigation process. Forensic science is constantly evolving by assimilating knowledge from related fields; in this dynamic, the polygraph has established itself as a technical-scientific instrument capable of correlating data obtained from various sources with measurable psychophysiological reactions, without substituting evidence.

The starting point is provided by the definition of forensics as an autonomous and unitary judicial science <sup>9</sup>, which brings together methods, technical means and tactical procedures for the discovery and investigation of crimes, the identification of the persons involved and the prevention of antisocial acts. From the perspective of the organization and psychology of procedural activity, Mihai Gheorghiță emphasizes the role of the accumulation and systematic correlation of facts, circumstances and data, in order to reconstruct the past event, the relationships between the participants and the profile of the perpetrator. This cognitive effort combines algorithmic

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<sup>9</sup>STANCU, E. *Treatise on Forensic Science*. Fifth Edition. Bucharest: Universul Juridic, 2010.



operations with heuristic solutions, adapted to the problematic situations encountered in judicial practice<sup>10</sup>.

Forensic psychology complements forensics with models and applied tools for understanding behavior, motivations, and emotions. The development of psychoforensic science — with themes such as the personality of the offender, behavioral analysis, and the psychology of crime — is based on the contributions of Hans Gross, August Vollmer, David C. Raskin, Pierre Margot, Bernard Knight, Eugen Dobrogeanu, Igor M. Lupriianov, Boris V. Voljenkin, among others, strengthening the convergence between behavioral sciences and forensic investigation.

Methodologically, naturalistic observation, in the tradition of Albert Bandura, case studies, surveys, and experiments offer distinct frameworks for exploring behavior. Solomon Asch's classic work explains social influences on statements; Loftus and Palmer's and Wells and Olson's research highlights how memory and language shape the reconstruction of events; Masuda and Nisbett's studies draw attention to cultural differences in perception and context.

At its core, the polygraph does not "detect lies", but records physiological reactions to relevant stimuli, interpreted in the context of the case by the specialist. Specialized literature (David C. Raskin, John C. Kircher, Donald J. Krapohl, Stanley M. Slowik, James Allan Matte, Charles R. Honts, Raymond Nelson, William G. Iacono; Igor M. Lupriianov, Valentin V. Korovin, Boris E. Fiodorov; Tudorel Butoi, Adrian Zăbavă, Ioan Dascălu; Pierre Louette, Helmut Kächele, Masahiro Satō) converge on the fact that the result has indicative value and is interpreted by reference to the evidentiary body. Reactions are frequently influenced by fear (the prospect of discovery and legal consequences), but other emotions may also intervene; hence the need for protocols that control disruptive factors and maintain the relevance of the stimuli.

The theory of "memory-fixed" traces remains central. International doctrine pays increasing attention to memory traces, including in their interaction with polygraph testing, and the integration of relevant visual stimuli into question batteries can increase sensitivity to significant details of the event.

The application of the polygraph in a coherent framework requires methodological and ethical conditions: respect for legality and the rights of the person; scientific validation of the means and procedures; ensuring data integrity; carrying out the examination only by authorized specialists; complete and verifiable documentation of the conditions, steps and results. In practice, the relevant information is not limited to the evidence strictly speaking sensu: alongside these there is orienting information (useful for formulating and ranking versions) and auxiliary information (necessary for organizing, evaluating and forecasting the approach). The contributions of

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<sup>10</sup>GHEORGHIȚĂ, M. *Treatise on forensic methodology*. Chișinău: CEP USM, 2015. 531 p. ISBN 978-9975-71-606-2.

Gheorghiță Mateuț, Ioan Mircea and Igor M. Lupriianov clarify the place of personal evidence and justify the need for corroboration with other data; in this framework, the polygraph has a function of verification and orientation, not of substituting evidence.

Operationally, the standard stages include prior documentation of the cause and definition of objectives; explanatory interview for calibration and reduction of disruptive factors; design of question batteries (neutrality, clarity, relevance); administration under controlled conditions and monitoring of physiological parameters; integrated analysis of recordings and context; formulation of conclusions in correlation with other data. The integration of visual stimuli specific to the investigated situation can enhance the emotional connection of the subject with the concrete elements of the fact and, implicitly, the sensitivity of the examination.

Overall, subchapter 3.1 shows how the polygraph technique naturally integrates into the forensic architecture: as a means of support for the formulation and verification of working versions, for the delimitation of the circle of persons involved and for increasing the coherence of the investigative approach. Its value depends on the methodological rigor, the competence of the specialist and the corroboration with the entire evidentiary body, in the logic of an interdisciplinary and standardized approach.

**Subchapter 3.2** is dedicated to the analysis of the application of the polygraph technique in the investigation of crimes against the person, a complex field of forensics that requires a rigorous professional approach, based on technical and scientific tools adapted to each context. Crimes committed against life and bodily integrity, such as murder, serious injuries, rape or kidnapping, are characterized by a high social impact and an investigative complexity that requires the use of complementary methods for verifying information and establishing responsibilities.

The paper highlights that in the investigation of these categories of crimes, the polygraph technique is not limited to analyzing the behavior of suspects, but is also used to verify the testimonies of witnesses or other relevant persons. In many situations, witnesses may be subject to psychological pressure, external influences or fear, which may lead to the provision of incomplete or contradictory information. Polygraph testing, carried out in a professional setting, allows the identification of these inconsistencies and provides investigators with an additional tool for assessing the veracity of statements <sup>11</sup>. The data obtained correlate with other evidence, such as material traces, forensic examinations or forensic analyses, forming a solid basis for advancing the investigation.

A major aspect analyzed is the emotional impact on people involved in violent cases. Victims, especially in cases of sexual assault or kidnapping, may exhibit severe psychological

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<sup>11</sup>NESTOR, S., LUNGU, A. *Forensic aspects of the application of the PEACE technique to hearing of persons*. In: Law and Life, January-February 2022. P. 110-115. ISSN 1810-309X.

trauma and intense reactions to relevant stimuli, and these reactions cannot be mechanically interpreted as indications of insincerity. The psychological preparation of the examiner is therefore essential, and collaboration with psychologists and medical specialists supports the correct interpretation of the results. International specialized literature shows that polygraph testing can have a dual role: it contributes to obtaining useful information for the criminal process and can provide the victim with a controlled setting in which to relate the events, reducing the effects of stress.

The use of polygraphs in homicide investigations is considered a particularly useful practice, as these cases typically involve multiple scenarios and require rapid verification of hypotheses. Testing can help identify possible contradictions in statements, verify alibis, and prioritize lines of investigation.

The paper also highlights the fact that the polygraph is part of an integrated system of forensic methods. In complex cases, the results obtained through testing are complemented by data from genetic expertise, analysis of material traces, reconstructions and other specific procedures. This methodological integration demonstrates that the value of the polygraph technique lies in its contribution to an overall vision, not in its isolation as a single investigative tool. The results do not represent a verdict, but a support for the investigator, guiding subsequent work and reducing the risk of judicial errors.

An important example of the utility of the polygraph is observed in cases of domestic violence or murders of passion, where the analysis of psychophysiological reactions can reveal details about the aggressor's motivations, his emotional state or the planning of the act. This information is valuable not only for establishing criminal liability, but also for assessing the social danger and adopting preventive measures.

Another aspect addressed is the personalization of testing procedures. Although the general methodology of the polygraph is standardized, the type of crime requires adaptations of the questions and scenarios to obtain the most accurate results. In cases of kidnapping or murder, the emphasis is on identifying factual details, and in cases of sexual assault, special attention is paid to the way the questions are formulated, in order to protect vulnerable persons. Collaboration between the examiner, prosecutor and other specialists ensures that the procedures are carried out in accordance with ethical and professional standards.

**Subchapter 3.3** analyzes the role of the polygraph as a tool to support the forensic investigation of sexual crimes. Sexual crimes constitute a particularly serious category of criminal acts, deeply affecting the victims and having a significant impact on society. These crimes are extremely serious in their consequences on the physical and psychological integrity of individuals, leaving deep traumas that affect the mental health and general well-being of the victims.

The scientific literature in the field notes that sexual crimes are characterized by a high level of latent criminis, a phenomenon fueled by the fear of social stigmatization, the pressures exerted on victims and the lack of trust in judicial authorities. Thus, V. Dobrinoiu emphasizes that official statistics only partially capture the real dimension of this phenomenon, as a significant number of crimes remain unreported or unrecognized during investigations<sup>12</sup>.

The application of the polygraph in this field is subsumed into a multidisciplinary approach, in which the examiner collaborates with the criminologist, psychologist, forensic doctor and other specialists. The technique does not replace classical evidence, but complements it by recording and interpreting psychophysiological reactions to relevant stimuli, in relation to the overall data of the case. Its relevance increases in situations with a lack of direct evidence, contradictory statements or omissions, or when the intensity of emotional experiences influences the coherence of the accounts. The use of specific visual and auditory stimuli (images of the place, objects, ambience) can increase the sensitivity of the testing, because the concrete details of the event have the potential to activate more meaningful responses than general formulations.

Tactically, including the polygraph examiner in the early stages of the on-site investigation is advisable when the use of the technique is anticipated. Direct observations of the space, access routes, objects, positioning and context can be converted into relevant stimuli in the question batteries, increasing the chance of capturing authentic emotional connections with the event. In parallel, the pre-test interview with the victim – conducted with care regarding his psychological state and needs – provides indispensable details about the sequence of the act, the resistance offered, the clothing particularities or any element that made the act difficult (tight skirt, belt, zipper, shoes difficult to remove). These micro-details, although they may seem minor, are often what differentiate the real knowledge of the perpetrator from superficial assumptions and, therefore, can generate items with discriminative power in the test.

**Subchapter 3.4.** Application of the polygraph in the forensic investigation of crimes against property addresses the use of the polygraph technique as a complementary investigative tool in cases involving thefts, robberies, fraud, destruction of property or other crimes targeting the property of individuals and legal entities.

Crimes against property represent one of the most frequent categories of criminal acts, affecting not only the material security of individuals, but also social stability, trust in law enforcement institutions and the general safety of the community. This category includes simple and aggravated theft, robbery, fraud, breach of trust, destruction of property, embezzlement and other acts by which the property of a natural or legal person is harmed. The diverse nature of these

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<sup>12</sup>DOBRINOIU, V. *Criminal law. Special part*. Bucharest: Universul Juridic, 2008. 512 pp. ISBN 978-973-127-232-6.

crimes, ranging from opportunistic acts to complex, organized schemes, requires adapted investigative methods and a multidimensional forensic arsenal.

The use of polygraph in the investigation of property crimes requires a customized approach for each type of crime. In the case of simple or aggravated theft, the application of polygraph testing focuses on analyzing the knowledge of details about the place of commission of the crime, the means of entry, the objects targeted and the circumstances in which the goods were stolen.

In the case of robberies and assaults, where the interaction between the victim and the offender is direct and violent, the application of the polygraph can provide useful clues regarding the identification of the aggressor, the sequence of events and possible details regarding complicity. Such crimes, characterized by high emotional impact, pose additional challenges for examiners, since the post-traumatic stress of the victim can influence physiological responses. However, careful phasing of testing and adaptation of the pre-test interview can provide conclusive results, especially in situations with multiple people involved or with witnesses presenting contradictory versions.

Fraud and scams, being crimes against property with a high degree of sophistication, require a different use of the polygraph, focused on verifying complex versions, statements regarding financial transactions, contracts and commercial relationships. In such cases, polygraph testing can be directed towards clarifying the level of involvement of individuals, identifying key moments of the criminal scheme and confirming or denying logistical details. Due to its complementary nature, the polygraph does not replace financial-accounting expertise or other forensic methods, but supports the prioritization of investigative hypotheses.

A particularly relevant element in property crimes is the existence of organized criminal groups. Investigating them requires adapted tools from the forensic arsenal, and the polygraph can play an important role in separating members who possess relevant operational information from peripheral ones, as well as in confirming complicity relationships.

Another important aspect in the investigation of crimes against property is the high frequency of contradictory versions. In the case of embezzlement or abuse of trust, the suspect may invoke complex justifications for the deficiencies found, and the documentary evidence is sometimes incomplete or altered. The polygraph, used in these circumstances, can help establish priority directions of investigation, supporting the identification of elements that require additional verification through expertise or parallel investigations.

From a tactical -forensic perspective, polygraph testing in property crime cases also has a psychological effect on the persons examined. The existence of an objective assessment of the veracity of the statements can cause a change in the suspect's attitude, sometimes accelerating the

admission of guilt or the provision of additional information. This aspect has also been emphasized by practitioners in the field, who consider the polygraph not only a verification tool, but also a strategic means of managing investigative behavior.

From a methodological point of view, polygraph examination in property cases involves adapting the questions to the specifics of each fact. For example, in investigations into thefts from commercial premises, questions may target precise details about the location of the goods, security mechanisms, the time of the commission or the characteristics of the stolen objects. In fraud, questions are aimed at confirming information that can be corroborated with financial documents. These personalized approaches contribute to the creation of a solid evidentiary framework, in which the polygraph acts as a preliminary verification filter.

Investigations in the field of crimes against property can also benefit from correlating polygraph results with other forensic techniques: fingerprint analysis, graphoscopic expertise, access trace analysis or security systems. By integrating these results, forensic research acquires a systemic dimension, in which each tool contributes to the formation of a complete picture of the *modus operandi*.

International case studies confirm the value of the polygraph technique in clarifying complex cases, with multiple people involved and contradictory versions. In the forensic literature, numerous examples describe how polygraph testing has allowed narrowing the circle of suspects, directing investigative resources and obtaining confessions.

The application of the polygraph in patrimonial cases also involves challenges related to the emotional nature of the act. In crimes with significant financial damages or with media impact, the psychological pressure felt by the people involved can influence physiological responses. For this reason, the examination should be carried out by specialists with advanced training in interpreting reactions and with experience in assessing the emotional context of each case.

In cases with an economic component, such as complex fraud or money laundering, the polygraph can also be used in the preliminary stages, in order to verify the veracity of information provided by collaborators, protected witnesses or persons involved in recognition agreements. In these situations, the goal is not only to confirm guilt, but also to validate information used to dismantle criminal networks.

Another relevant area for the use of polygraph is the investigation of thefts committed within organizations or institutions. Cases of internal thefts, committed by employees with access to goods or resources, pose special challenges from the perspective of evidence collection. Polygraph testing can be an effective way to verify employee statements, helping to identify those involved and reducing unfounded suspicions about others.

From a statistical point of view, crimes against property constitute a majority segment of crime, and their rapid resolution has direct implications for the population's sense of security. Therefore, the use of the polygraph technique in this area is not only a technical approach, but also a measure to strengthen trust in the judicial system.

**Subchapter 3.5.** Application of the polygraph in the forensic investigation of corruption crimes analyzes the role of the polygraph technique as an additional tactical tool in clarifying the circumstances of these crimes, recognized for the complexity of their proof.

Corruption crimes represent one of the most complex forms of crime, directly affecting the proper functioning of public and private institutions and eroding citizens' trust in the authorities. From a forensic perspective, the investigation of these facts involves overcoming specific difficulties: the conspiratorial nature of criminal activities, the lack of direct material traces and the prevalence of indirect evidence. These characteristics determine the need to use advanced investigative methods and a diversified technical and scientific arsenal, of which polygraph testing constitutes a valuable tool, with a supporting role in establishing the judicial truth.

Unlike other categories of crimes, corruption acts usually involve individuals with a high level of professional training and access to sophisticated mechanisms for dissimulating criminal behavior. In this context, psychophysiological examination through polygraph becomes a means of differentiating between truthful and strategically formulated statements, using involuntary physiological reactions as indicators of insincere behavior.

A particularity of corruption cases is the close connection between the subjects and their professional positions, which implies a high degree of psychological preparation of the people involved. Suspects and witnesses may demonstrate superior control over language and verbal behavior, but physiological reactions measured by polygraph – such as variations in heart rate, skin conductance or respiration – are more difficult to control. Studies conducted in the USA and Japan demonstrate the effectiveness of using Concealed Information Test (CIT) tests in corruption cases, which are focused on presenting details known only to the perpetrator and the investigator, thus reducing the risk of simulated responses.

In the Republic of Moldova, the use of polygraph in corruption cases is part of the general strategy of strengthening institutional integrity and applying European standards in justice. *Law No. 269/2008 on the application of simulated behavior detector (polygraph) testing*, subsequent normative acts and the Code of Ethics of the Polygraph Examiner have established the necessary framework for conducting psychophysiological examination, including in corruption cases. Recent practice shows that polygraph tests can be applied not only to suspects, but also to persons who

are to be promoted to positions with increased responsibilities, thus preventing the infiltration of corrupt elements into public structures<sup>13</sup>.

From a tactical point of view, corruption investigations involve a rigorous phasing of procedures: preliminary verification of information, risk assessment, correlation of indirect evidence and conducting interviews. The polygraph can be introduced after a sufficient volume of data has been accumulated to allow for the formulation of precise and relevant questions. During the pre-test interviews, the examiner collects detailed information about the professional activity of the person examined, about his/her interactions with other subjects involved and about the circumstances that may be associated with acts of corruption, such as offering or receiving undue benefits, influence peddling or embezzlement.

Formulated tests are based on factual details, avoiding generalities and leading questions. For example, in a case of embezzlement of public funds, questions can be structured to aim at knowing exactly when and how the amounts were transferred, the people involved, and the locations where the accounting documents were signed<sup>14</sup>. This approach maximizes the likelihood of obtaining differentiated physiological reactions, useful for guiding the investigation.

A defining characteristic of corruption crimes is the existence of a complex network of relationships. Suspects can be public officials, private sector representatives or intermediaries, and the path of financial flows is often complicated by the use of multiple legal structures. In these circumstances, the use of the polygraph requires careful preparation of each examination session, in order to isolate the details with evidentiary value and reduce the impact of general information that any employee might possess. Therefore, the questions must be specific enough to capture real knowledge of the circumstances of the investigation.

However, the application of the polygraph in corruption cases requires an interdisciplinary approach, combining forensic skills with financial analysis and the investigation of corporate structures. The polygraph examination must be preceded by an analysis of accounting documents, financial flows and relationships between the people involved, so that the questions asked reflect the specific circumstances of the case. This strategy is supported by the specialized literature, which emphasizes that the effectiveness of the polygraph depends on the quality of the preparatory information and the experience of the examiner.

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<sup>13</sup>LUNGU, A., CARABEȚCHI, I. *Application of the polygraph in the investigation of crimes of corruption*. In: Law and Life, 2022, March-April, p. 58-61. ISSN 1810-309X.

<sup>14</sup>VASILIUȚA, V., LUNGU, A. *Application of the polygraph to the investigation of tax crimes*. In: International Scientific Conference "Prevention and Combating Crime: Problems, Solutions and perspectives", 5th edition, "Ștefan cel Mare" Academy of the Ministry of Interior, Doctoral School "Criminal Sciences and public law", May 18, 2023.



In investigative activities, polygraph testing contributes not only to the identification of suspects, but also to the strengthening of preventive measures. Examinations carried out when selecting and promoting personnel to key positions are an effective practice to reduce the risk of institutionalized corruption. This preventive control mechanism is adopted in many countries, including the Baltic States and Scandinavia, where polygraph testing is integrated into risk management strategies.

Another relevant aspect is the psychological impact of polygraph testing on the subjects examined. Persons involved in corrupt activities may be prepared to provide coherent statements, but involuntary physiological reactions may reveal significant inconsistencies. This feature is particularly exploited in investigations where there is no obvious material evidence and contradictory statements constitute the main source of information.

Corruption cases with transnational implications pose an additional challenge, given the complexity of financial circuits and the diversity of applicable legislation. In such situations, international cooperation is essential, and the polygraph is used to verify witnesses and collaborators in joint investigations. In the European Union, specialized agencies such as Europol support the integration of technical and scientific tools, including the polygraph, into standard procedures for investigating organized crime and cross-border corruption.

In domestic practice, numerous corruption cases investigated by criminal prosecution bodies demonstrate that polygraph testing plays a significant role in confirming forensic versions. For example, in investigations into public tender rigging, targeted questions aimed to identify the time and place where illicit agreements were established, the people involved and the exact amounts transacted. In these cases, polygraph results provided clues that facilitated corroboration with electronic evidence (messages, phone calls) and bank records, creating a complete evidentiary picture.

The role of the polygraph, however, is not to substitute classical evidence, but to guide the investigation, to verify the veracity of statements and to accelerate the process of selecting investigative versions. In this sense, the polygraph examination is considered an auxiliary tool with strategic value, capable of optimizing the human and material resources involved in the investigation of corruption crimes.

## GENERAL CONCLUSIONS AND RECOMMENDATIONS

In accordance with the stated purpose of this doctoral thesis, the research undertaken addressed the examination of the role of the polygraph technique in the forensic investigation of simulated behavior, by highlighting the way in which it contributes to the orientation of forensic versions, the clarification of the circumstances of the commission of the crime and the establishment of the factual framework of the act. The scientific approach integrated an in-depth analysis of the efficiency and limits of the applicability of the technique, reported to the theoretical and normative foundations, to the best international practices and to the particularities of the national context. The results obtained allowed the outline of relevant conclusions regarding the operational advantages of the method, as well as the formulation of directions for optimizing the conceptual and methodological framework, in order to more effectively align it with the requirements of contemporary forensics.

To strengthen the research perspective, the following findings were formulated:

- The polygraph technique, although contested in some contexts, is a complementary means to forensic investigations, supporting the orientation of versions, the clarification of circumstances and the establishment of facts. It is part of the forensic toolkit, scientifically substantiated and based on the valorization of psychophysiological reactions.
- The analysis of international practices and the regulatory framework in the Republic of Moldova reveals the need to reform the legislation, by introducing the post-test stage, clarifying the status of the data and establishing stricter criteria for the selection and training of examiners.

According to the objectives of the thesis and the judicial practice analyzed, the conclusions are:

- The polygraph test is integrated into contemporary forensics, being scientifically validated and applicable in technical and scientific instruments, while respecting fundamental rights.
- International practices offer solutions adaptable to the national context, supporting the improvement of internal methodology.
- The analysis of the regulatory framework in the Republic of Moldova highlighted dysfunctions and the need to align with modern standards and international practices.
- Nonverbal reactions and behavioral analysis, combined with polygraph data, are valuable analytical resources for profiling and investigative tactics.
- The use of the polygraph technique requires a clear delimitation of the examiner's professional profile and specialized training in forensics and related disciplines, the current standards in the Republic of Moldova being insufficiently harmonized with these requirements.

- Reid interviewing techniques, increases the accuracy of identifying simulated behavior and supports tactical -investigative reasoning.
  - Although artificial intelligence-based technologies can optimize data processing, their interpretation requires human examiner expertise, operational experience, and contextual integration of results, which justifies maintaining specialist control.
  - Adapting examination tactics to the participant profile and simulated behavior is essential, and the research provides recommendations for the coherent integration of forensic methods, increasing the efficiency of the investigation.
  - Integrating crime research methodology into the development of polygraph tests and the organization of the examination increases the efficiency of the assessment of simulated behavior. This allows the tests to be adapted to the specifics of the crime and increases the forensic relevance of the results.
  - The exclusive application of visual stimuli in polygraph testing is not scientifically validated as a standalone method, but the integration of relevant images into traditional tests amplifies psychophysiological reactions and increases the accuracy of conclusions. A mixed approach, with verbal items and visual stimuli, is a viable solution.
  - The use of police databases in preparation for the polygraph examination facilitates the analysis of recurring criminal activities, the discovery of old facts, and the relevance of testing in the investigation of serial criminal behavior.
  - The reorganization of the Police into regional and territorial directorates highlights the need to regionalize polygraph laboratories, for an efficient distribution of resources and a shorter reaction time.
  - The persistence of legislative imperfections and the limits of *Law No. 269/2008 on the application of simulated behavior detector (polygraph) testing* underline the need for revised and coherent regulation, inspired by international experience and recent methodological developments.
- The research identified legislative deficiencies that affect the application of the polygraph technique in criminal proceedings, requiring changes for a clear and efficient regulatory framework:
- Art. 17: The lack of detailed technical requirements for equipment and objective criteria for interpreting behavioral responses generates inconsistent and unreliable results. Standardization of specifications and clarification of methodological norms are required.
  - Art. 19: The language regulations are vague, without clear criteria regarding language competence and responsibility for translation. Explicit wording is proposed to ensure faithful communication.

- Art. 20: The training of polygraph examiners is insufficient; multidisciplinary training (forensic science, criminology, psychoforensic science) is necessary for methodological efficiency.
- Art. 23: There is no mechanism for challenging the results; it is recommended to introduce a clear review procedure, in accordance with international legal standards.
- Art. 30: The current composition of the State Commission does not guarantee independence and competence. It is proposed to include specialists in applied psychology and forensics, as well as an external commission for authorization and evaluation.
- Terminology: The differences between "opinion" and "test report" can lead to confusion; it is recommended to unify the term "test report".
- Post-test stage: Its absence limits the examination process. It is proposed to explicitly introduce this stage, according to modern methodologies.

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1. ODAGIU, Iurie, LUNGU, Andrei. *Amprenta cerebrală-metodă revoluționară aplicată la exonerarea nevinovaților*. Conferința științifică cu participare internațională: „Protecția drepturilor și libertăților fundamentale ale omului în procesul asigurării ordinii și securității publice” (în regim de videoconferință), Academia Ștefan cel Mare a MAI. Chișinău, 2021.

2. ODAGIU, Iurie, LUNGU, Andrei. *Practici internaționale ale aplicării poligrafului la cercetarea infracțiunilor*. International Conference Interdisciplinary and Cooperation in Cross in Cross -Border Research. Galați, Romania, 2021.

3. ODAGIU, Iurie, LUNGU, Andrei. *Adevărul despre minciună*. Conferința Internațională „Probleme științifice în domeniul expertizei judiciare psihiatrice-psihologice și modul de utilizare în procesul judiciar.” CNEJ, Chișinău, 14 aprilie 2022.

4. ODAGIU, Iurie, LUNGU, Andrei. *Aplicarea poligrafului în activitatea polițienească. Abilități profesionale ale specialistului poligraf*. În: „Ordinea publică în Europa, între tradiție și contemporaneitate”. Materialele Conferinței științifico-practice internaționale, ediția a XI-a, 15-17 mai 2022, Școala de Agenți de Poliție „Septimiu Mureșan” Cluj-Napoca, în colaborare cu Academia Română, Filiala Cluj-Napoca - Institutul de Istorie „George Barițiu”.

5. ODAGIU, Iurie, LUNGU, Andrei. *Application of the polygraph to the investigation of environmental crimes*. În: „THE EFFICIENCY OF LEGAL NORMS” – (Human) Rights in the Struggle for the Environment, Materialele Conferinței științifico-practice internaționale, May 19 – 21, 2022, Universitatea Creștină „Dimitrie Cantemir”, Facultatea de Drept, Cluj-Napoca, România.

6. ODAGIU, Iurie, LUNGU, Andrei. *Examinarea poligraf – dileme și oportunități*. Conferința științifică cu participare internațională „Protecția drepturilor și libertăților fundamentale ale omului în procesul asigurării ordinii și securității publice”, ediția a II-a, Chișinău, 8 decembrie 2022, Academia Ștefan cel Mare a MAI.

7. LUNGU, Andrei. *Aspecte ale aplicării poligrafului în activitatea organelor de poliție*. Conferința științifico-practică internațională „Statul, securitatea și drepturile omului în era digitală”, 8-9 decembrie 2022, Universitatea de stat din Moldova, Universitatea din Varșovia.

8. ODAGIU, Iurie, LUNGU, Andrei. *Fundamentarea științifică a detectării comportamentului simulat*. Conferința științifică internațională „OMUL, CRIMINOLOGIA, ȘTIINȚA”, ediția a II-a, dedicată aniversării a 40 de ani de activitate pe făgașul învățământului și științei și 65 de ani de viață a criminologului Valeriu Bujor. 23 martie 2023, Chișinău, Republica Moldova.

9. ODAGIU, Iurie, LUNGU, Andrei. *Specificul și unele particularități de ordin criminalistic ale aplicării tehnicii poligraf la prevenirea și cercetarea infracțiunilor de terorism*. Manifestarea științifică internațională cu genericul: „Convergențe în Dreptul Public Internațional privind activitățile specifice din sectoarele: apărare, afaceri interne, afaceri externe și structuri de inteligență în strategiile viitorului”, găzduită de către Facultatea de Drept și Științe Sociale din cadrul Universității „1 Decembrie 1918” din Alba Iulia.

10. NESTOR, Sergiu, LUNGU, Andrei. *Aspecte criminalistice ale participării poligrafologului la cercetare la fața locului*. Conferința internațională „Cercetarea calitativă a locului săvârșirii faptei – factor important în efectuarea expertizelor judiciare ulterioare”. CNEJ, Chișinău, Republica Moldova, 14 aprilie 2023.

11. VASILÎȚA, Vladimir, LUNGU, Andrei. *Aplicarea poligrafului la cercetarea delictelor fiscale*. Conferința științifică internațională cu genericul „Prevenirea și combaterea criminalității: probleme, soluții și perspective”, ediția a V-a”, organizată de Școala Doctorală „Științe penale și drept public” a Academiei „Ștefan cel Mare” a MAI la 18 mai 2023.

12. ODAGIU, Iurie, LUNGU, Andrei. *Particularitățile aplicării tehnicii poligraf la asigurarea ordinii și siguranței publice*. Conferința științifică cu participare internațională „Provocări și strategii în ordinea și siguranța publică”, ediția a IX-a, București, 24-25 mai 2023, Academia de Poliție „Al. I. Cuza”, România.

13. ODAGIU, Iurie, LUNGU, Andrei. *Particularitățile aplicării cunoștințelor speciale în psihocriminalistică la etapa pregătirii testării poligraf*. Conferința științifică internațională „Emilian Stancu. Probleme și direcții actuale ale cercetării științifice în criminalistică”, ediția a II-a, Cluj Napoca 25-26 Mai 2023, Facultatea de Drept, Universitatea din București, Facultatea de Drept Universitatea „Babeș-Bolyai” Cluj-Napoca, Faculty of Law, Economy & Administration, University of Wroclaw, Poland.

14. VASILÎȚA, Vladimir, LUNGU, Andrei. *Aspecte ale detectării instrumentale a comportamentului simulat la investigarea evaziunii fiscale*. Conferința științifică internațională cu genericul „Perspectivele și problemele integrării în Spațiul European al Cercetării și Educației”, ediția X-a, Cahul 7 iunie, Universitate de Stat „Bogdan Petriceicu Hasdeu” din Cahul.

15. LUNGU, Andrei. *Practica internațională a interpretării reacțiilor psiho-fiziologice în cadrul expertizelor judiciare*. Conferința internațională „Mijloacele tehnico-științifice în serviciul expertizei judiciare”. CNEJ, Chișinău, Republica Moldova, 6 octombrie 2023.

16. LUNGU, Andrei. *Aspecte ale aplicării poligrafului la cercetarea infracțiunilor. Particularitățile etapei pre-test*. Conferința internațională de științe criminalistice cu tema: „CRIMINALISTICA - PILONUL PRINCIPAL AL PROBAȚIUNII JUDICIARE ÎN PROCESUL PENAL ȘI CIVIL”, ediția a XI-a, București, 20-21 octombrie 2023.

17. ODAGIU, Iurie, LUNGU, Andrei. *Strategii psihologice și aplicarea poligrafului în detectarea declarațiilor false*. Conferința științifică cu participare internațională „Protecția drepturilor și libertăților fundamentale ale omului în procesul asigurării ordinii și securității publice”, ediția a III-a, Chișinău, 7 decembrie 2023, Academia Ștefan cel Mare a MAI.

18. LUNGU, Andrei. *Aplicarea poligrafului la protejarea infrastructurii critice*. Conferință științifică internațională cu genericul: „Apărare, Afaceri Interne, Afaceri Externe și

Structuri de Informații în strategiile viitorului”, ediția a II-a, găzduită de către Facultatea de Drept și Științe Sociale din cadrul Universității „1 Decembrie 1918” din Alba Iulia la 26-27 martie.

19. LUNGU, Andrei, DANILESCU, Victor. Rolul combinat al tehnicilor de intervievare și al poligrafului în transformarea declarațiilor în confesiuni autentice. Conferința Științifică cu participare internațională „Provocări și strategii în ordinea și siguranța publică” – ediția a X-a, organizată de Academia de Poliție „Alexandru Ioan Cuza” în perioada 12-13 decembrie 2024, București, România.

### *National conferences*

1. ODAGIU, Iurie, LUNGU, Andrei. *Obligativitatea aplicării examinării la poligraf-măsură de prevenire sau constrângere?* Conferința științifică interuniversitară, Institutul de Științe Penale și Criminologie Aplicată, Chișinău, 2021.

2. ODAGIU, Iurie, LUNGU, Andrei. *Aplicarea poligrafului la cercetarea infracțiunilor.* Conferința științifică interuniversitară a studenților doctoranzi, Academia Ștefan cel Mare a MAI, Chișinău, 2021.

3. ODAGIU, Iurie, LUNGU, Andrei. *Competențe și abilități profesionale a specialistului poligrafolog.* Conferința științifică națională interuniversitară a studenților-doctoranzi cu genericul „Prevenirea și combaterea criminalității – probleme, soluții și perspective”, ediția a IV-a, 27 ianuarie 2022, Academia Ștefan cel Mare a MAI, Chișinău.

## ANNOTATION

### **LUNGU Andrei. “Particularities of the application of polygraph techniques in criminalistics”. PhD thesis in Law. Chisinau, 2025**

**Thesis structure:** introduction, three chapters, general conclusions and recommendations, 202 pages of main text, bibliography (which includes 386 sources), 7 annexes, statement of responsibility and the author’s CV. The results obtained were published in 16 scientific papers.

**Keywords:** simulated behavior; psychophysiological responses; criminal investigation; technical-scientific instruments; polygraph testing; criminalistic versions.

**Field of research:** Criminalistics, forensic expertise, operational investigation.

**Purpose and objectives.** The aim of the thesis is to examine the role of polygraph techniques in the criminalistic investigation of simulated behavior, highlighting their utility in guiding investigative hypotheses, clarifying the circumstances of the offense, and establishing the factual framework. The objectives include: analyzing the theoretical and conceptual foundations of polygraph use; comparing international and national practices; examining the criminalistic dimension of its application; performing a critical analysis of the application of polygraph testing and formulating recommendations for integrating appropriate tactics and methods into investigative procedures.

**Scientific novelty and originality.** The novelty of the research lies in its systematic approach to the application of polygraph testing in criminalistics, emphasizing practical-tactical features adapted to the Moldovan context. The study identifies conceptual and methodological limitations and proposes harmonization with international standards. The originality stems from combining theoretical analysis with empirical work — case studies, experiments in penitentiary institutions, and a survey among law enforcement professionals — forming the basis for an interdisciplinary applied methodology.

**Theoretical significance.** The thesis proposes an integrated conceptual model for polygraph use in criminal investigations, contributing to the development of national doctrine on psychophysiological traces and modern investigative tactics.

**Practical value.** The paper proposes practical solutions regarding the use of the polygraph in the forensic investigation of corruption crimes, crimes against life and health, crimes against property and crimes related to sexual life.

**Implementation of scientific results.** The research results have been presented in papers presented at national and international scientific conferences and have been published in specialized journals in the country and abroad. The conclusions can be used in the professional training of law enforcement employees and in the improvement of forensic investigation methodologies.

## ADNOTARE

**LUNGU Andrei. „Particularități ale aplicării tehnicii poligraf în criminalistică”.**

**Teză de doctor în drept. Chișinău, 2025**

**Structura tezei:** introducere, trei capitole, concluzii generale și recomandări, 202 pagini de text de bază, bibliografie din 386 de titluri, șapte anexe, declarația privind asumarea răspunderii și CV-ul autorului. Rezultatele obținute au fost publicate în 16 lucrări științifice.

**Cuvinte-cheie:** comportament simulat, reacții psihofiziologice, cercetare criminalistică, instrumental tehnico-științific, testare cu aplicarea poligrafului, versiuni criminalistice.

**Domeniul cercetării:** criminalistică, expertiză judiciară, investigații operative.

**Scopul și obiectivele lucrării.** Scopul tezei constă în examinarea rolului tehnicii poligraf în investigarea criminalistică a comportamentului simulat, prin evidențierea modului în care aceasta poate sprijini orientarea versiunilor criminalistice, clarificarea circumstanțelor comiterii infracțiunii, precum și stabilirea cadrului factologic al faptei. În vederea realizării acestui scop, cercetarea urmărește: examinarea fundamentelor teoretice și conceptuale ale utilizării poligrafului; analiza practicilor internaționale și naționale în domeniu; investigarea dimensiunii criminalistice a aplicării poligrafului; realizarea unei analize critice a aplicării testării la poligraf și elaborarea unor recomandări privind integrarea tacticilor și a metodelor criminalistice corespunzătoare.

**Noutatea și originalitatea științifică.** Noutatea cercetării constă în abordarea sistematică a aplicării tehnicii poligraf în investigarea criminalistică a comportamentului simulat, prin evidențierea particularităților tactico-aplicative adaptate contextului Republicii Moldova. Studiul relevă limitele conceptuale și metodologice ale utilizării testului poligraf și formulează propuneri de armonizare cu standardele internaționale. Originalitatea lucrării derivă din îmbinarea analizei teoretice cu demersuri empirice proprii – studii de caz, experimente în instituții penitenciare și un sondaj aplicat specialiștilor – care fundamentează o metodologie aplicativă de tip interdisciplinar.

**Semnificația teoretică a tezei.** Teza fundamentează un model conceptual integrat de utilizare a tehnicii poligraf în investigarea criminalistică, prin aceasta contribuind la dezvoltarea doctrinei naționale în domeniul urmelor psihofiziologice și al tacticii criminalistice moderne.

**Valoarea aplicativă a tezei.** Lucrarea propune soluții practice privind utilizarea poligrafului în investigarea criminalistică a infracțiunilor de corupție, a infracțiunilor contra vieții și sănătății, a infracțiunilor contra patrimoniului și a infracțiunilor privind viața sexuală.

**Implementarea rezultatelor științifice.** Rezultatele cercetării au fost expuse în comunicările susținute în contextul conferințelor științifice naționale și internaționale și au fost publicate în reviste de specialitate din țară și din străinătate. Concluziile pot fi utilizate în formarea profesională a angajaților instituțiilor de aplicare a legii și în perfecționarea metodologiilor de investigare criminalistică.

## АННОТАЦИЯ

к диссертации Андрея ЛУНГУ на тему: «Особенности применения полиграфической техники в криминалистике», представленной на соискание ученой степени доктора наук. Кишинэу, 2025 год

**Структура диссертации:** введение, три главы, общие выводы и рекомендации, основной текст – 202 страницы, библиография (включающая в себя 386 источника), 7 приложений, декларация об ответственности и автобиография. Полученные результаты опубликованы в 16 научных работах.

**Ключевые слова:** симулированное поведение; психофизиологические реакции; криминалистика; полиграф; следственные версии.

**Область исследования:** криминалистика, судебная экспертиза, оперативно-розыскная деятельность.

**Цель и задачи.** Цель – исследовать возможности использования полиграфа в криминалистическом анализе симулированного поведения, уточнить его роль в формировании версий и установлении фактических обстоятельств. Задачи включают: анализ теоретических основ; изучение международного и национального опыта; исследование криминалистических аспектов применения полиграфа; проведение критического анализа применения полиграфного тестирования и разработка рекомендаций по интеграции соответствующих криминалистических тактик и методов.

**Научная новизна.** Новизна исследования заключается в системном подходе к применению полиграфной техники в судебно-медицинском исследовании смоделированного поведения, путем выделения тактических и прикладных особенностей, адаптированных к контексту Республики Молдова. Исследование раскрывает концептуальные и методологические ограничения использования полиграфного теста и формулирует предложения по гармонизации с международными стандартами. Оригинальность работы вытекает из сочетания теоретического анализа с собственными эмпирическими подходами – исследованиями случаев, экспериментами в пенитенциарных учреждениях и опросом, применяемым к специалистам, – что обосновывает междисциплинарную методологию применения

**Теоретическая значимость.** В диссертации обоснована комплексная концептуальная модель использования полиграфной техники в судебно-экспертной деятельности, что вносит вклад в развитие отечественной доктрины в области психофизиологических следов и современной криминалистической тактики.

**Практическая значимость.** В диссертации предложены практические решения по использованию полиграфа в судебно-медицинском расследовании коррупционных преступлений, преступлений против жизни и здоровья, преступлений против собственности и преступлений в сфере половой жизни.

**Внедрение научных результатов.** Результаты исследований изложены в докладах, представленных на национальных и международных научных конференциях, опубликованы в специализированных журналах и сборниках в стране и за рубежом. Выводы могут быть использованы в профессиональной подготовке сотрудников правоохранительных органов и совершенствовании методик судебно-экспертной деятельности.



**LUNGU Andrei**

**PARTICULARITIES OF THE APPLICATION OF POLYGRAPH  
TECHNIQUES IN CRIMINALISTICS**

**554.04 – Forensic Science, Forensic Expertise, Operative Investigations**

Summary of the doctoral thesis in law

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