

Psychophysiological Research and its Place in the Lithuanian Scientific Discourse

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This article gives a brief overview of the development of psychophysiological research using the polygraph. The main focus is on the legal regulation of these methods and the evaluation of the scientific discourse of Lithuanian specialists on the problems of psychophysiological research and the application of its methods in comparison with analogous processes in Poland. Already in the inter-war period, so-called lie detection attracted considerable interest, not only from the academic world, but also from law enforcement authorities. In interwar Lithuania, considerable attention was paid to the psychology of testimony and the problems of lie detection, including the application of instrumental methods of psychodiagnostics. V. Lazerson, J. Vabalas-Gudaitis, B. Kalvaitis and others have written about it. It should be noted that at that time there were quite heated debates about the permissibility and effectiveness of psychophysiological tests. During the Soviet era, the issue of psychophysiological (polygraph) examinations was not the subject of an official broad scientific discourse in the jurisdictional process, even though medical and psychological professionals cooperating with special services were interested in this issue. After the restoration of independence in 1990, the Lithuanian media interest in this issue prompted the law enforcement authorities and their specialists and scientists to look deeper into the possibility, reliability, permissibility and effectiveness of the use of these technical diagnostic tools in foreign countries, as well as into their compatibility with the Lithuanian law in the investigation of crimes. In this article, some aspects of psychophysiological tests

using the polygraph in Poland have been analysed for comparison purposes, which in the neighbouring country have attracted considerably more attention, both in the academic world as well as among lawyers and representatives of law enforcement agencies.

Keywords: *psychophysiological research; polygraph; lie detector; variograph; polygraph examination; history of polygraph.*

Research Problem Formulation

The problem of uncovering lies has always been a concern for people. People have sought to find out whether the person with whom they are communicating is telling the truth or lying. Without going back to a time when cruel methods of interrogation and torture could still be used to establish the truth in legal proceedings, we must note that from ancient times, ideas have emerged for the use of certain methodologies, techniques, tools and, later on, devices that could objectify the establishment of the truth in the investigation of criminal offenses. Every person, when lying, experiences certain emotions that can be noticed externally, such as a flushed face, increased breathing, etc. ¹ By observing a person's emotions, gesticulations, changes in facial expressions and physiological reactions, an attempt was made to identify certain signs that might give away a person

who is lying. Later, scientists from various fields (philosophers, physicians, psychologists, psychiatrists) and representatives of law enforcement agencies became interested in this problem and experimented and tried to develop certain devices that would make it easier to determine whether a person was telling the truth or lying. V. Lazerson, J. Vabalas-Gudaitis, B. Kalvaitis and others wrote about interviewing tactics and lie detection in interwar Lithuania ². The problem of lie detection has been and still is an issue of interest to lawyers, criminologists ³ and psychologists, including in contemporary Lithuania ⁴. Establishing the truth in criminal investigations has always been one of the most important objectives of criminal proceedings. H. Gross and E. Locard, the pioneers of scientific forensic science, emphasised the need to observe the interviewee's emotions when dealing with interrogation tactics, as this allowed assumptions to be made about the

- 1 Widacki J. Historia badań poligraficznych. Kraków, 2017. 197 p. URL: <https://repozytorium.ka.edu.pl/server/api/core/bitstreams/6a3d6335-9ad1-49d7-a577-52cd6a99f1e4/content> (date accessed: 24.07.2023) ; Reid J. E., Inbau F. E. Truth and Deception: The Polygraph (Lie-Detector Technique). Baltimore, 1977. 2nd ed. 447 p. ; Krapohl D., Shaw P. K. Fundamentals of Polygraph Practice. Academic Press; 2015. 1st ed. 348 p. ; Galianos J. Brief history of the polygraph. URL: http://home.total.net/~galcar/html/brief_history_of_the_polygraph.html (date accessed: 24.07.2023).
- 2 Palskys E. Overview of the History of Lithuanian Criminalistics. Monographical study. Vilnius, 1995. Pp. 234—249.
- 3 Асатрян Х. А., Христюк А. А. Психологические особенности подозреваемого и обвиняемого и их влияние на проведение психофизиологической экспертизы с использованием полиграфа. *Эксперт-криминалист*. 2011. № 1. С. 16—19.
- 4 Justickis V., Valickas G. Procedural Justice in the Lithuanian Criminal Justice. Vilnius, 2006 ; Valickas G. Mėlą atpažinti galima ir iš akies vyzdžio pokyčių / Vilniaus universitetas. 23 Dec, 2019. URL: <https://naujienos.vu.lt/gintautas-valickas-mela-atpazinti-galima-ir-is-akies-vyzdzio-pokyciu/> (date accessed: 24.07.2023).

reliability of testimony ⁵. Another pioneer of forensic science, F. Galton, contributed to the study of this problem by describing the Word Association Test. R. Heindl and E. Seelig conducted their own research in the field of lie detection ⁶. At the beginning of the 20th century, the scientific revolution in medicine (physiology), psychology and various fields of engineering gave rise to new methodological, methodological and instrumental possibilities to observe and measure the manifestation of human emotions through certain physiological changes in the body (symptoms). The study of this issue has had several dimensions: scientific academic (as one of the important areas of human cognition), forensic legal (as a tool to help evaluate the testimony of the interviewee), and domestic applied (with the aim of determining whether a person is lying or telling the truth). Since the beginning of the „polygraph era“ ⁷, the use of this tool has had both credible supporters and fierce opponents.

Article Purpose

To compare the main mechanisms of legal regulation regarding the application of

various methods of psychophysiological research using the polygraph and to evaluate the scientific discourse of Lithuanian specialists on this issue in relation to similar processes in Poland.

Research Methods

At the theoretical level, the convergence from abstract to concrete, axiomatic, system-structural and other methods of scientific research were used.

Analysis of Essential Researches and Publications

After the restoration of independence in Lithuania in 1990, the public interest in the polygraph and its application was quite high, but the first major scientific work on the problems of polygraph use was the master's thesis of L. Kraujalis ⁸, whose supervisor was the co-author of this article. Later on, there were those who wanted to study the problem more or less in a complex way. Among the Lithuanian authors, A. Kovalenko and V. Saldžiūnas have a special place, having published several articles between 2007 and 2015 ⁹, most of

- 5 Locard E. *Dochodzenie przestępstw według metod naukowych*. Łódź, 1937. P. 84 ; Gross H. *Podręcznik dla sędziego śledczego jako system kryminalistyki*. Opracowanie i przekład J. Kasprzak, Warszawa, 2021. Pp. 144–154.
- 6 Heindl R. Ein Apparat, Lügen beim Verhör aufzudecken. *Archiv für Kriminologie*. 1927. Nr. 114 ; Seelig E. Die Registrierung unwillkürlicher Ausdrucksbewegungen als forensich-psychodiagnostische Methode. *Zeitschrift für angewandte Psychologie*. 1927. No 28. S. 45–84 ; Seelig E. *Schuld, Lüge, Sexualität*. Stuttgart, 1955.
- 7 Kratka istorija poligrafa / Poligraf Centar. URL: <https://www.poligrafcentar.rs/poligraf/> (date accessed: 24.07.2023).
- 8 Kraujalis L. *Lie Detection Method: Theory and Practice*. Master Thesis. Vilnius, 1997.
- 9 Saldžiūnas V., Kovalenko A. The Event Knowledge Test. *European Polygraph*. 2008. Nr. 1 (3). Pp. 21–29. URL: https://www.academia.edu/107561272/The_Event_Knowledge_Test_EKT (date accessed: 24.07.2023) ; Ibidem. The Event Knowledge Test (EKT) in Polygraph Examination (in case murder). *Ibid.* Nr. 2 (4). Pp. 137–142. URL: https://www.academia.edu/104814924/The_event_knowledge_test_EKT_in_polygraph_examination_in_case_murder_Vitas_Sald%C5%BEi%C5%ABnas_Aleksandras_Kovalenko (date accessed: 24.07.2023) ; Ibidem. The Event Knowledge Test (EKT) in Polygraph Examination (common notice of tactics). *Ibid.* Nr. 3–4 (5–6). Pp. 209–220 ; Saldžiūnas V., Kovalenko A. Problems of Questions in Event

them in the journal *European Polygraph*, published by Andrzej Frycz Modrzewski Krakow University, whose founder and editor-in-chief was prof. J. Widacki. This also demonstrates not only the cooperation between Lithuanian and Polish scholars and specialists in this field, but also the conceptual proximity of the two countries in dealing with these issues.

In the forensic textbook published in 2013, we have a separate chapter „Psychophysiological investigation“¹⁰, and in the methodological tool published in 2014, we have a separate chapter „The use of a polygraph in the investigation of criminal offenses“¹¹. In 2022, G. Uchockytė prepared a master's thesis „Psychophysiological research using polygraph: theory, practice and legal regulation in Lithuania and abroad“ (thesis supervisor H. Malevski)¹², in which, among other

questions, she analysed the opinion of 200 respondents (including 100 representatives of various legal professions) about polygraph examinations. It is also worth mentioning that E. Palskys¹³ wrote about the historical application of psychophysiological methods in his scientific study. Even before the restoration of independence in Lithuania, the Department of Special Disciplines (Vilnius faculty of the Minsk Higher School of Militia) was discussing the acquisition of a polygraph and a complex (psychological, criminological and forensic aspects) research project for analysing and evaluating the meaningfulness and effectiveness of polygraph examinations.

In Lithuania's neighbouring countries, the issue of polygraphs has received considerably more attention. In Poland, for example, hundreds of scientific articles have

Knowledge Test. *Ibid.* 2009. Vol. 3. Nr. 2 (8). Pp. 145–152. URL: https://www.academia.edu/107561280/Problems_of_questions_in_event_knowledge_tests_Vitas_Sald%C5%BEi%C5%ABnas_Aleksandras_Kovalenko (date accessed: 24.07.2023) ; *Ibidem.* Field and Laboratory Polygraph Examinations. *Ibid.* 2010. Vol. 4. Nr. 4 (14). Pp. 213–228. URL: <https://repozytorium.ka.edu.pl/server/api/core/bitstreams/ab17de20-9cea-46de-be1e-4bd36abb85ab/content> (date accessed: 24.07.2023) ; *Ibidem.* a Little About Memory Traces. *Ibid.* 2011. Vol. 5. Nr. 1 (15). Pp. 11–25. URL: <https://repozytorium.ka.edu.pl/server/api/core/bitstreams/280f9f8f-6dce-4f23-b7bf-3e329fea3f3c/content> (date accessed: 24.07.2023) ; *Ibidem.* Alibi Check by Polygraph Examination. *Ibid.* 2012. Vol. 6. Nr. 2 (20). Pp. 117–127. URL: <https://repozytorium.ka.edu.pl/server/api/core/bitstreams/85cb8eca-9a73-4e62-b2aa-ce3f90858aac/content> (date accessed: 24.07.2023) ; *Ibidem.* Search for New Tests. *Ibid.* Nr. 4 (22). Pp. 241–247 ; *Ibidem.* Examination of Sexual Abuse Crimes. *Ibid.* 2013. Vol. 7. Nr. 3 (25). Pp. 127–136. URL: https://www.academia.edu/104814949/Examination_of_Sexual_Abuse_Crimes (date accessed: 24.07.2023) ; *Ibidem.* Field Examination: Certain Phenomena Related to Electrodermal Activity. *Ibid.* 2014. Vol. 8. Nr. 2 (28). Pp. 79–89 ; *Ibidem.* Selecting the Most Optimal Conditions for the Polygraph Examination. *Ibid.* 2015. Vol. 9. Nr. 2 (32). Pp. 69–84. URL: <https://repozytorium.ka.edu.pl/server/api/core/bitstreams/bba25ec4-f380-4b54-8b94-fee9b26b9bb/content> (date accessed: 24.07.2023).

10 Kurapka V. E. Criminalistics. Tactics and methodology. Tutorial / S. Matulienė (Editor in Chief). Vilnius, 2013. Pp. 1022–1046.

11 Criminalistics: Methodical handbook / J. Juškevičiūtė (Editor in Chief). Vilnius, 2014. Pp. 245–259.

12 Uchockytė G. Psychophysiological Examinations Using Polygraph: Theory, Practice and Legal Framework in Lithuania and Abroad : Master Paper. Vilnius, 2022. Pp. 53–59.

13 Palskys E. Op. cit.

been published over several decades¹⁴, at least seven monographs have been published¹⁵, many forensic textbooks have separate chapters or at least information on psychophysiological research and the use of the polygraph (wariograph), we have at least several hundred scientific articles in journals, the only scientific journal in Europe published in English is European Polygraph, whose editorial board included a representative of Lithuania, prof. G. Žukauskas. Psychophysiological research is carried out not only by Polish police departments and the Scientific Institute of the Polish Society of Forensic Scientists, as well as by some university forensic departments, but also by private experts. Other countries have very differ-

ent practices regarding the use of psychophysiological tests. Among the leaders in the use of psychophysiological testing is the USA, and active work in this area has been carried out in the Russian Federation in recent decades¹⁶. For example, in Ukraine, since the Soviet era, there has been a negative attitude towards the use of polygraphs, and it is only at the beginning of the 21st century that the situation started to change and researchers started to look into the issue of psychophysiological research¹⁷. Since 2016, a scientific journal «Судово-психологічна експертиза. Застосування поліграфа і спеціальних знань в юридичній практиці», and since 2018, the scientific journal of the Ukrainian College of Polygraphologists «Оцінка

- 14 Polska bibliografia kryminalistyczna. Warszawa, 2008. T. III (lata 1980–1989) / praca zbiorowa pod redakcją: B. Hołysta, T. Tomaszewskiego, E. Gruzy, M. Goca. Pp. 236–240. T. IV (lata 1990–2000) / praca zbiorowa pod redakcją: B. Hołysta, T. Tomaszewskiego, H. Kolečkiego, M. Goca. Pp. 294–298.
- 15 Jaworski R. Opinia z ekspertyzy poligraficznej jako dowód odciążający. Wrocław, 1999. 297 p. ; Idem. Situational Sequencing Tests in Polygraph Examination. Wrocław, 2006. 86 p. ; Idem. Multi-subject polygraph examination. Wrocław, 2008. 136 p. ; Konieczny J. Badania poligraficzne. Podręcznik dla zawodowców. Warszawa, 2009. 222 p. ; Gołaszewski M., Ibek A., Widacki M. Współczesne standardy badań poligraficznych / red. M. Gołaszewski. Warszawa, 2013. 132 p. ; Badania poligraficzne w Polsce / red. J. Widacki. Kraków, 2014. 310 p. URL: <https://core.ac.uk/download/pdf/214927459.pdf> (date accessed: 24.07.2023) ; Widacki J. Polygraph or Variograph? *Issues of Forensic Science*. 2016. No 1. Vol. 294. Pp. 88–92. DOI: 10.34836/pk.2016.294.5 (date accessed: 24.07.2023).
- 16 Варламов В. А. Детектор лжи. 2-е изд. Москва, 2004. 352 с. ; Комиссарова Я. В., Мягих Н. И., Пеленицын А. Б. Полиграф в России и США: проблемы применения. Москва, 2012. 222 с. ; Азарова Н. Ю. Полиграф: обзор современных методик США. Часть 1. Алгоритмы формирования стандартизированных тестов / под ред. В. В. Коровина. Москва, 2016. 198 с. ; Алексеев Л. Г., Потемкин Ф. В. Проблемы прикладной психофизиологии. Москва, 2017. 302 с. ; Комиссарова Я. В. Основы полиграфологии : учеб. для магистратуры. 2-е изд., перераб. и доп. Москва, 2022. 256 с.
- 17 Когутич І. Поліграф у Польщі та Україні: історія, сучасний стан і перспективи. Вроцлавсько-Львівський юридичний збірник / Wrocławsko-Lwowskie zeszyty prawnicze. 2011. № 2. Pp. 92–116. URL: http://repozytorium.uni.wroc.pl/Content/122657/PDF/07-Kogutic_I_Wariograf_w_Polsce_i_na_Ukrainie_historia_stan_obecny_i_perspektywy.pdf (date accessed: 24.07.2023) ; Морозов А. М., Морозова Т. Р. Некоторые аспекты современного состояния полиграфологии в Украине. *Эксперт-криминалист*. 2011. № 1. Pp. 14–16 ; Мотлях О. І. Поліграф: наукова природа походження, нормативно-правове регулювання та межі застосування : монографія. Київ, 2012. 394 с. ; Актуальні питання теорії та практики використання поліграфа : зб. ст. / за заг. ред. В. О. Шаповалова. Київ, 2016. 170 с.

достовірності: наукові дослідження та практика»¹⁸.

Main Content Presentation

The impact and significance of discoveries in the natural and technical sciences on the development of psychophysiological research

People have been interested in lie detection for a very long time (the first documented evidence of lie detection dating back more than 4,000 years in China)¹⁹, but in ancient and medieval times it was mostly confined to observing behaviour and facial expressions. A fundamental change occurs in the 19th century, when medicine (physiology), psychology and psychiatry start to develop rapidly²⁰. The rapid development of science, the application of new experimental methods, including in such sciences as medicine and psychology, allowed for a better understanding of the functioning of the human body, mindset, as well as the search for links between human emotions and the body's physiological reactions to certain stimuli. A wide range of diagnostic equipment is being developed, mostly for medical purposes. Law enforcement has seen here the possibility of addressing issues that are important to them through the use of certain devices that allow them to capture certain human emotions. It makes sense to use a rhetorical question

from J. Widacki's introduction to his book on the history of polygraph examinations, in which he writes: Why is a history of the instrumental development of lie detection necessary, and where does history end and the present begin? He attempts to answer these questions by showing in a coherent way the stages in the development of psychophysiological research and with a particularly strong emphasis on the significance of the achievements of various sciences for this issue²¹. One of the first major scientific articles on the development of lie detection was written by P. V. Trovillo and published in 1939²².

In 1846, the German physician and physiologist C. F. W. Ludwig invented what he called the „kymograph“, a device capable of simultaneously recording changes in arterial blood pressure and respiration in order to draw conclusions about the correlation between the external respiratory and circulatory systems²³.

The first scientific experiments to use technical means to determine whether a person is answering questions honestly or lying date back to the late 19th century. In 1878, the Italian physiologist A. Mosso begins to carry out studies using an instrument called the plethysmograph, which also examines the effects of these variables on cardiovascular and respiratory performance by investigating the emotions and fears of the subjects during the questioning. Experiments have shown that the

18 Оцінка достовірності: наукові дослідження та практика / Судово-психологічна експертиза. Застосування поліграфа і спеціальних знань в юридичній практиці. URL: <https://expertize-journal.org.ua/partneri-vidannya/1010-naukovij-zhurnal-go-kolegiya-poligrafologiv-ukrajini-otsinka-dostovirnosti-naukovi-doslidzhennya-ta-praktika> (date accessed: 24.07.2023).

19 Strong J. W. McCormich on Evidence. 4th ed. West Group, 1992. Pp. 97.

20 Widacki J. Historia ... URL: <https://repozytorium.ka.edu.pl/server/api/core/bitstreams/6a3d6335-9ad1-49d7-a577-52cd6a99f1e4/content> (date accessed: 24.07.2023).

21 Ibid.

22 Trovillo P. V. History of lie detection. *Journal of Criminal Law and Criminology*. 1939. Vol. 29 (6). Pp. 848–881 and Vol. 30 (1). Pp. 104–119. DOI: 10.2307/1136392 (date accessed: 24.07.2023).

23 Carl F. W. Ludwig / Britannica. URL: <https://www.britannica.com/biography/Carl-F-W-Ludwig> (date accessed: 05.11.2023).

human breathing pattern changes with exposure to certain stimuli and that this change in turn leads to changes in blood pressure and pulse. a significant invention was a diagnostic medical device developed in 1892, that was used in medical examinations because it had the ability to simultaneously capture the wavy traces of vascular impulses (radial, venous and arterial) with a metal pen on a rotating drum. Its inventor was the English surgeon J. Mackenzie.

In 1892, H. Münsterberg published the results of his research that some physiological changes in humans may be an expression of emotions related to lying²⁴. The first experiments were usually limited to recording one of the physiological changes listed above (respiration, blood pressure, skin electrical conductivity or muscle tension). Later, attempts were made to increase the responses of the analysed physiological mechanisms (parameters) to external stimuli, but these usually added very little „value“. It should be noted that a diagnostic instrument for measuring physiological reactions was used for this purpose in 1895, when the psychiatrist and criminologist Cesare Lombroso modified an existing device known as the „hydrosphygmograph“.

Although since J. A. „The Keeler Polygraph“, „The Truth Verifier“, „Stoelting Deceptograph“, etc. It was not until the turn of the 1990s that instrumental polygraphs were replaced by computerised polygraphs, which are still in use today. While the first polygraphs had one respiratory sensor, one skin electrical conductivity sensor and one blood flow sensor, the current latest modifications have two respiratory sensors, two skin electrical conductivity sensors, two blood flow sensors and one to four mus-

cle change sensors. According to a 2014 study, „A modern computerised polygraph not only records physiological responses in respiration, skin electrical conductivity and blood flow (4 to 8—9 channels), but also has effective interference detection technologies (motion sensors, computer algorithms). a modern polygraph has the ability to record the text of the questions asked and the answers given in a specialised program in the computer’s memory. They can make audio and video recordings along with the tests, record an audio version of the questions asked, and then provide an audio recording of the questions instead of the specialist’s voice. Modern polygraph software has the ability to record not only manually, but also automatically the starting and ending moments of the question and the moment of the subject’s answer“²⁵. L. Belevičius, one of the specialists in criminal procedure, described the polygraph as follows: „A modern polygraph is a complex of precise medical devices that record certain physiological processes in the body of the person under investigation (arterial blood pressure, sweat production, pulse rate, body temperature, breathing rate and depth, unconscious muscle contractions, head bio-currents etc.) that occur in the human body within seconds of answering the questions. Physiological processes are regulated by the autonomic nervous system, which governs physiological processes that are independent of human will. It has been established that there is a causal link between telling lies and physiological processes that are not under conscious control“²⁶.

To summarise, a polygraph is a compendium of diagnostic technical instruments that record and measure the

24 Hanausek T. *Zarys taktyki kriminalistycznej*. Warszawa, 1994. Pp. 168.

25 *Criminalistics: Methodical handbook ...*

26 Belevičius L. *Techninių priemonių naudojimo baudžiamajame procese teoriniai pagrindai ir reglamentavimas*. Daktaro disertacija. Vilnius, 2005. Pp. 59. URL: <https://vb.mruni.eu/object/elaba:1830246/MAIN> (date accessed: 28.05.2023).

psychophysiological changes (reactions) of the human body to certain verbal, visual or other stimuli.

Legal regulation of psychophysiological research and scientific discourse on the use of polygraph in Lithuania

After the restoration of independence in 1990, Lithuania witnessed major changes in all spheres of life, which had a clear vector of Western civilisation, and these processes could not but affect such an important area as public security and the fight against criminality. In the process of reforming law enforcement and justice institutions, the state had to look for new methods, ways and means of combating crime. One of these tools was the polygraph, often referred to in the media as 'lie detectors', which were to become (at least according to the prevailing public opinion) very effective tools for investigating crime. The issue of psychophysiological testing has been the subject of a very wide, including scientific, debate around the world. The possibility of using psychophysiological research to investigate criminal offenses has been, and continues to be, hotly debated. The interest in this issue generated by the Lithuanian media has prompted law enforcement authorities and researchers to look deeper into the possibility of using these technical tools, their reliability, permissibility and effectiveness in foreign countries, but also their compatibility with Lithuanian law in the investigation of crimes.

After some more behind-the-scenes discussions (as there were practically no scientific publications in Lithuania before the adoption of the law), the Law on the Use of the Polygraph of the Republic of Lithuania was adopted in 2000. In our opinion, the legislator did not sufficiently look into the essence of psychophysiological tests and their ability to verify certain information about a criminal event, its circumstances,

etc. For this reason, the law only regulated issues related to the verification of the loyalty of certain categories of persons, and it did not provide for the possibility of the use of the polygraph in criminal proceedings. This position of the legislator may have been linked to a desire to minimise potential criticism of the restriction and violation of human rights and freedoms, although in all countries where the polygraph is used there is a very important safeguard, namely the person's voluntary consent to take part in the investigation.

The Law on the Use of Polygraphs establishes the basic guidelines that must be followed when using this technical diagnostic device. Article 5 of the Law establishes the purpose of the polygraph and the cases in which it may be used. The purpose of the polygraph examination is therefore to verify the reliability of the persons covered by the law and of the information provided by them or collected by the relevant public authorities concerning those persons and their environment. a particularly important aspect is the cases in which the use of a polygraph is foreseen: when deciding on the issue or revocation of a permit to work or to have access to classified information, where there are grounds to believe that a person has concealed or misrepresented facts about his or her background or biography; in the course of counter-intelligence; and in the course of assessing the reliability of the covert participants of the criminal intelligence service and/or of the information they provided; assessing the credibility of officials carrying out the functions of ensuring the protection of protected persons, as well as assessing whether there are any reasons that could endanger the security of protected persons; investigating and preventing criminal offenses and other violations of the law, if such offenses and other violations are related to a breach of the established procedures for work, access

to classified information, or the use and storage of such information; when there are grounds to believe that a person is being subjected to unlawful influence having a bearing on the established procedure for access to, working with, or use and storage of classified information; when a person submits a request for a re-investigation ²⁷.

The Law on the Use of Polygraph of the Republic of Lithuania and its relationship with the provisions of the Criminal Procedure Code of the Republic of Lithuania ²⁸ have already been discussed on several occasions, but in this article, we would like to present our insights into the descriptions of the main concepts of the Law in Article 2, which, in our opinion, need to be adjusted. The law contains the following description of the device and polygraph examination: „1. **Polygraph** — a device with a certificate of the form prescribed by the Government of the Republic of Lithuania, that records respiratory, circulatory and other physiological changes occurring in a person's body during a polygraph examination, which are used as a basis for the assessment of the truthfulness of the statements of the person being examined by this device. 2. „**Polygraph examination**“ (hereinafter referred to as „the examination“) means a complex psychophysiological examination designed to assess the truthfulness of a person's claims by means of a polygraph“. In our opinion, the wording ‘assessment of the truthfulness of a person's statements’ is not correct, as this diagnostic tool only records changes in certain psychophysiological parameters (symptoms) of the human body, which

are triggered by certain external (verbal, visual or other) stimuli. From the point of view of forensic science, forensic expertise and legal doctrines, a specialist or expert using his or her special knowledge in the course of an investigation is obliged to establish certain objectively existing facts, and the „assessment of the correctness“ of these facts is the function of the procedural body (in the Lithuanian Criminal Procedural Code, which has been in operation since 2003, the assessment of evidence is the prerogative of the court, and in the vast majority of other countries, the function is also exercised by the public prosecutor and the investigating officers in the course of the investigation of criminal offenses). On 12 July 2002, a resolution on the approval of the rules for polygraph examinations was adopted ²⁹ (Resolution No. 1131 of the Government of the Republic of Lithuania). It should also be mentioned that the following terms are used in the literature: a psychophysiological examination is referred to as a ‘polygraph examination’. Article 2(2) of the Law on the Use of Polygraphs states that a polygraph examination is a complex psychophysiological examination designed to assess the truthfulness of a person's statements by means of a polygraph. We agree with the opinion of A. Kovalenko and L. Maslauskaitė that this provision in the law is misleading because the polygraph as a technical tool is only a component of the psychophysiological examination as a process, or one of the elements of the process, the significance of which in the process is that it captures the subject's physiological reactions.

27 Lietuvos Respublikos Poligrafo naudojimo įstatymas. 2000 m. rugpjūčio 29 d. Nr. VIII-1906. URL: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.107745/asr> (date accessed: 24.07.2023).

28 Lietuvos Respublikos Baudžiamojo proceso kodekso. 2002 m. kovo 14 d. Nr. IX-785. URL: <https://e-seimas.lrs.lt/rs/legalact/TAD/b3b97b11f31a11edb649a2a873fdbdfd> (date accessed: 24.07.2023).

29 Dėl tyrimo poligrafu taisyklių ir leidimo atlikti tyrimus poligrafu formos patvirtinimo : Lietuvos Respublikos Vyriausybės. 2002 m. liepos 12 d. Nr. 1131. URL: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.171266/asr> (date accessed: 24.07.2023).

The polygraph does not assess the truthfulness of the subject's statements but is carried out by a specialist who meets special requirements and who has a permit in the form prescribed by the Government of the Republic of Lithuania authorizing him/her to carry out polygraph examinations³⁰.

Government Resolution No. 1131 of July 12, 2002 „On Approval of the Rules for Polygraph Examination“ (08.07.2015)³¹ describes the requirements for the examination, the polygraph and the examination procedure, and lists the examination methodologies to be used. The aforementioned decree stipulates what the final conclusions of the examination may be and what information must be reflected in the examination report. It should be noted that the provisions of this decree are also applicable when the specialist carries out investigations not only in accordance with the Law on the Use of the Polygraph of the Republic of Lithuania, but also in accordance with the Code of Criminal Procedure of the Republic of Lithuania.

It should be noted that in addition to these two pieces of legislation governing polygraph examinations, it is likely that all polygraph examiners have relevant legislation. One of them is Order No. 1-55 of the Director of the State Security Department of the Republic of Lithuania of September 31, 2015 „On the Approval of the Description of the Procedure for Polygraph Examination by the State Security Department of the Republic of Lithuania“³².

Polygraph examinations in the police system are regulated by two orders — Order No 5-V-1116 of the Commissioner General of the Lithuanian Police of 7 December 2015 „On Approval of the Order of the Commissioner General of the Lithuanian Police of 4 September 2009 No 5-V-635 „On Approval of the Instruction on the Application of the Psychophysiological Examination to the Police Activities““ and Order No 5-V-635 of the Lithuanian Police Criminalistic Research Centre of 10 December 2015 No. 140-V-126 „On the approval of the description of the procedure for conducting a polygraph examination in order to find traces of a criminal offence and other objects of significance for pre-trial investigation, to determine the situation of the event and other circumstances relevant to the case“. It should be noted that the instruction approved by the Commissioner General of the Lithuanian Police essentially repeats the provisions of the Law on the Use of the Polygraph of the Republic of Lithuania and the Resolution of the Government of the Republic of Lithuania on the Approval of the Rules for Polygraph Examination. The description of the procedure of the Lithuanian Police Forensic Investigation Centre is more detailed and contains not only the regulation of the investigation procedure but also brief recommendations to the client of the investigation on how to properly prepare for the investigation.

Immediately after the adoption of the Law on the Use of the Polygraph of the Republic of Lithuania, several scientific

30 Kovalenko A., Maslauskaitė L. Psichofiziologinio tyrimo (tyrimo poligrafu) teisinis reglamentavimas Lietuvos Respublikoje: problemos ir sprendimai. *Kriminalistika ir teismo ekspertizė: mokslas, studijos, praktika*. Vilnius, 2007. Pp. 66–76.

31 Dėl tyrimo poligrafu URL: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.171266/asr> (date accessed: 24.07.2023).

32 Įsakymas Dėl Lietuvos Respublikos valstybės saugumo departamento tyrimo poligrafu tvarkos aprašo patvirtinimo : Lietuvos Respublikos valstybės saugumo departamento. 2015 m. liepos 31 d. Nr. 1-55. URL: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/bee6b5c03bad11e59cf1cfda-14b526c5?jfwid=9dzqnu8hm> (date accessed: 24.07.2023).

articles appeared³³, which analyzed the theoretical aspects of the polygraph examination according to the Law on the Use of the Polygraph of the Republic of Lithuania.

Most publications by Lithuanian authors on polygraph issues appeared in 2007–2015, including abroad. A. Kovalenko and V. Saldžiūnas and their co-authors have been the most active. Only in the journal *European Polygraph*³⁴ a dozen of articles have been printed. The articles by these authors in this journal were mainly focused on certain applied and methodological issues.

In the abstract, most law enforcement officials are positive about the possibility of using psychophysiological testing with the polygraph in criminal investigations, as it enhances their ability to determine the truth in cases. But when it comes to their direct use in the evidentiary process, opinions are strongly polarized. Representatives of criminal procedure science are critical of this method and not only argue their position on the basis of the provisions of the Law on the Use of Polygraphs of the Republic of Lithuania, but often emphasize the admissibility, reliability, ethicality and other aspects of the method. The article by

Gintaras Goda is often mentioned in such discussions. He stated that „In view of the purpose of special knowledge as an evidentiary tool in criminal proceedings, the results of a polygraph examination (interpretation of the data recorded by the device) cannot be considered a specialist's report (as well as an expert's report), as the nature and procedure of this examination are quite different from those of the usual specialist examinations in criminal proceedings. By drawing up a report, the specialist or expert answers the questions put to him or her and thus contributes to the establishment of the facts that form the subject matter of the evidence in a criminal case. Some important questions in a criminal case could not be answered at all without the use of specialized knowledge. For example, it is often difficult to identify the identity of the person behind blood or other human biological traces found at the scene of a crime without specialized knowledge. In contrast, polygraph examinations do not directly establish any new facts, and no further information is gained in the process“³⁵. In conclusion, the author says: „At present, polygraph examination is not possible in Lithuanian criminal proceedings

33 Kraujalis L. Tyrimas poligrafu. *Justitia*. 1999. Nr. 4. Pp. 26–27 ; Belevičius L. Techninių priemonių panaudojimo tiriant nusikaltimus teisinis reglamentavimas. *Jurisprudencija*. 2002. T. 29 (21).

34 Kovalenko A., Maslauskaitė L. Psichofiziologinio tyrimo ... ; Saldžiūnas V. EKT lub test wiedzy o zdarzeniu / Wykorzystanie wariografu (poligrafu) w badaniach kryminalistycznych oraz kadrowych. *Szczytno*, 2009. Pp. 21–23 ; Saldžiūnas V., Kovalenko A., Soshnikov A. Probability assessment of the value of psychophysiological stimuli. *European Polygraph*. 2009. Nr. 1 (7). Pp. 25–31. URL: https://www.academia.edu/104814942/Probability_assessment_of_the_value_of_psychophysiological_stimuli_Vitas_Sald%C5%BEi%C5%ABnas_Aleksandras_Kovalenko_Aleksandr_Soshnikov (date accessed: 24.07.2023) ; Saldžiūnas V., Kovalenko A., Gaidarov K. The Problems of Truth Perception During Psychophysiological Examination. *European Polygraph*. 2009. Vol. 3. Nr. 3–4 (9–10). Pp. 145–152. URL: https://www.academia.edu/107561274/The_problems_of_truth_perception_during_psychophysiological_examination_Vitas_Sald%C5%BEi%C5%ABnas_Aleksandras_Kovalenko_Kalin_Gaidarov (date accessed: 24.07.2023) ; Saldžiūnas V., Kovalenko A., Knyazev V. Tests with Numbers. *European Polygraph*. 2012. Vol. 6. Nr. 1 (19). Pp. 45–54. URL: https://www.academia.edu/104814945/Tests_with_numbers (date accessed: 24.07.2023).

35 Goda G. Poligrafas (melo detektorius) kaip įrodinėjimo priemonė baudžiamajame procese. *Teisė*. 2010. Nr. 76. Pp. 35–45. URL: <http://www.zurnalai.vu.lt/teise/article/download/226/176/> (date accessed: 24.07.2023).

because the law does not provide for such a method of proof. Such investigations could only be carried out by amending the Code of Criminal Procedure of the Republic of Lithuania (by expanding the list of acts of verification of testimony)³⁶ and the Law on the Use of Polygraph. However, it does not make sense to make such amendments to the law“. In our opinion, such a categorical scholastic approach to the possibility of using psychophysiological methods in the process of investigation of criminal offenses is the conceptual position of this author, which is not supported by his own empirical research or by a deeper analysis of the scientific doctrine and legislation in various countries. It should be noted that such a position has been taken by a number of advocates of criminal procedure, but among some representatives of Lithuanian criminal procedure science dealing with the use of technical means in criminal proceedings the polygraph is not categorically rejected³⁷. We can also point out that Lithuanian case law does not unequivocally reject the use of polygraphs in criminal proceedings.

Article 20 of the Code of Criminal Procedure of the Republic of Lithuania stipulates what data can be considered evidence in criminal proceedings³⁸. The Supreme Court of Lithuania, while examining criminal cases, clarified that: „Evidence in criminal proceedings is obtained according to the procedure established by law, verified by procedural steps provided for by the Code of Criminal Procedure of the Republic of Lithuania, examined at the trial and recognised by the court, based on

which the court draws conclusions regarding the presence or absence of a criminal act, the person who committed this act, the person's guilt or innocence and other circumstances that are important for the correct resolution of the case (Article 20 of the Code of Criminal Procedure of the Republic of Lithuania). The basic rules for evaluating evidence are determined by Part 5 of this Article, which states that judges evaluate evidence according to their inner conviction, based on a detailed and impartial examination of the circumstances of the case, in accordance with the law. Thus, the law provides for the exclusive competence of the court hearing the case to decide which of the data in the case have evidentiary value and whether they are sufficient to determine the presence of all the elements of a specific criminal act in a person's actions“ (Ruling of the Supreme Court of Lithuania No. 2K-20-697/2017)³⁹. The current Code of Criminal Procedure of Lithuania does not provide for a detailed list of actions that can be used to collect data about the person who committed the criminal act and the circumstances of the criminal act during the pre-trial investigation. According to court practice, there is no set list of evidence for the courts, on the basis of which it is mandatory to assess the question of a person's guilt or innocence. a direct requirement that the data be obtained legally and verified during the judicial examination is established. The court evaluates the data in the case based on its internal conviction and examines the cases based on them.

36 Lietuvos Respublikos Baudžiamojo proceso kodekso. ... URL: <https://e-seimas.lrs.lt/rs/legalact/TAD/b3b97b11f31a11edb649a2a873fdbdfd> (date accessed: 24.07.2023).

37 Belevičius L. Reikalavimai techninių priemonių naudojimui baudžiamajame procese. Sąžiningas baudžiamasis procesas: probleminiai aspektai. Vilnius, 2009. Pp. 327–374.

38 Lietuvos Respublikos Baudžiamojo proceso kodekso ... URL: <https://e-seimas.lrs.lt/rs/legalact/TAD/b3b97b11f31a11edb649a2a873fdbdfd> (date accessed: 24.07.2023).

39 Lietuvos Aukščiausiasis Teismas. BYLA 2K-20-697/2017. URL: <https://eteismai.lt/byla/100804887914048/2K-20-697/2017> (date accessed: 24.07.2023).

The Supreme Court of Lithuania has clarified that: „A polygraph is a device that records the physiological changes of a person that occur in the person's body during the examination with this device and on which the evaluation of the statements of the person being examined with this device is based. The data obtained during the polygraph investigation do not meet the requirements for evidence established in Article 20 of the Code of Criminal Procedure of the Republic of Lithuania. However, the fact that a polygraph was used during the pre-trial investigation at the request of the person under investigation does not in itself provide grounds for claiming that the case involved substantial violations of the Code of Criminal Procedure (for example, cassation rulings in criminal cases No. 2K-31-511/2018, 2K-191-697/2018)“⁴⁰.

It is appropriate to give as an example the opinion of one of the practicing judges, the chairman of the Kaunas district court, A. Purvainis, about the polygraph: „So, it can be said that in judicial practice, in certain cases, the performance of a polygraph examination is determined by the court's duty to investigate all the evidence in detail and to take all measures provided for by law, but to remove any doubts or objections. The court must use all possible means to examine and verify the evidence, and if necessary, use the opportunity to conduct a polygraph examination. Of course, I will mention once again: The data obtained during this investigation do not determine and cannot have a significant influence on the decisions made by the courts“⁴¹.

At this point, it should be noted that it is appropriate to get to know and evaluate the doctrines of neighbouring Poland's legal and forensic sciences, the problems of psychophysiological research using the polygraph and the practice of their application, as this would allow our scientists and specialists to avoid superficial conclusions. In Polish law, scientific doctrine and practice, we have seen a fairly complex process where there was a gradual transition from the absolute denial of the permissibility of the polygraph (variograph), through the permission to use it at the request of a person, if he could prove his innocence, to the recognition of the conclusions of the polygraph examination as an auxiliary tool in the investigation of criminal cases.

The survey of 200 respondents (among them 100 representatives of legal professions) about the use of the polygraph conducted by Master's student G. Uchockytė showed that their knowledge about psychophysiological tests using the polygraph is minimal and superficial. Respondent lawyers were asked whether polygraph examinations should be recognized as evidence in Lithuanian criminal proceedings. The answers were very evenly distributed⁴².

In conclusion, we can say that the application of psychophysiological tests using the polygraph is as passionate now as it was 50 or 100 years ago and has its supporters and opponents. Often, the choice of one or the other side is not based on rational scientific arguments, but on emotions and a subjective point of view. It follows from this that it is necessary to expand scientific

40 Baudžiamojo proceso kodekso normų, reglamentuojančių specialiųjų žinių panaudojimą, taikymo teismų praktikoje apžvalga. No. AB-50-1. URL: <https://www.lat.lt/data/public/uploads/2019/06/ab-50-1.docx> (date accessed: 24.07.2023).

41 Purvainis A. Siekdamas teisingumo teismas gali pasitelkti net ir melo detektorių / 15min. 04.04.2022. URL: <https://www.15min.lt/naujiena/aktualu/nuomones/arunas-purvainis-siekdamas-teisingumo-teismas-gali-pasitelkti-net-ir-melo-detektoriu-18-1662492?copied> (date accessed: 24.07.2023).

42 Uchockytė G. Op. cit.

research in this field and to raise the competence of lawyers because new technologies and new discoveries are strongly penetrating this field as well. In Lithuania, the time has come to prepare a complex monograph on the reliability, efficiency, ethics, and permissibility of psychophysiological research, which will become the scientific basis for improving the legal regulation of the application of these methods and the methodological basis for improving their application procedures.

Conclusions

The use of polygraphs for psychophysiological testing is a source of passion and has its supporters and opponents, both now and 50 or 100 years ago. In interwar Lithuania, considerable attention was paid to the psychology of testimony and the problems of diagnosing lies, including the use of instrumental methods of psychodiagnostics, as evidenced by the scientific articles written by the scientists and law enforcement representatives of the time.

The use of psychophysiological research in jurisdictional proceedings in Lithuania after the restoration of independence in 1990 has not yet received the due attention of scientists, because apart from several dozen scientific articles and several theses, there has been no broader discussion of this issue, although at this stage the Law on the Use of Polygraphs has been adopted, the positions of polygraphologists in the law enforcement institutions have been created, and we have the explanations of the Supreme Court of Lithuania.

In neighbouring countries, the problem of the application of psychophysiological research has a much longer history, both in academic discourse, legal regulation, and the practical application of these methods, including in the interpretation and investigation of criminal offenses. In this area, we

may be interested in the Polish experience, where there has been a gradual transition from the absolute denial of the admissibility of the use of the polygraph (wariograph), through the authorisation of its use at the request of a person if it could confirm his innocence, to the acceptance of the findings of the wariographic examination as an aid in the investigation of criminal offenses.

Психофізіологічні дослідження та їхнє місце в литовському науковому дискурсі

Гендрік Малевскі, Лаймутіс Крауяліс

Наведено стислий огляд розвитку психофізіологічних досліджень із застосуванням поліграфа. Увагу акцентовано на правовому регулюванні методів його використання та оцінюванні наукового дискурсу литовських спеціалістів із проблем психофізіологічного дослідження порівняно з аналогічними процесами в Польщі. У час між Першою та Другою світовими війнами так звана детекція брехні зацікавила не лише представників наукового світу, а й правоохоронних органів. У цей період у Литві значну увагу приділяли психології свідчень і проблемам виявлення брехні, зокрема застосуванню інструментальних методів психодіагностики, про що писали В. Лазерсон, Й. Вабалас-Гудайтіс, Б. Кальвайтіс та ін. Слід зазначити, що тоді точилися доволі гострі дискусії щодо допустимості й ефективності психофізіологічних тестів. За радянських часів питання психофізіологічних (поліграфних) досліджень не було предметом офіційного широкого наукового дискурсу в юрисдикційному процесі, хоча ними цікавилися медики та психологи, які співпрацювали зі спецслужбами. Після відновлення незалежності 1990 року інтерес литовських засобів масової інформації до цього питання спонукав фахівців правоохоронних органів глибше вивчити можливість, надійність, допустимість

та ефективність використання в інших країнах цих діагностичних технічних засобів, а також їхню відповідність литовському законодавству в розслідуванні злочинів. Проаналізовано також деякі аспекти психофізіологічних тестів із застосуванням поліграфа в Польщі, які там привернули значно більше уваги як науковців, так і юристів і представників правоохоронних органів.

Ключові слова: психофізіологічні дослідження; поліграф; детектор брехні; варіограф; перевірка на поліграфі; історія поліграфа.

Фінансування

Це дослідження не отримало жодного спеціального гранту від фінансових установ у державному, комерційному або некомерційному секторах.

Відмова від відповідальності

Засновники не грали жодної ролі у розробленні дослідження, добиранні й аналізуванні даних, рішенні про публікацію або підготовку рукопису.

Учасники

Автори зробили свій внесок винятково в інтелектуальну дискусію, що є основою цього документа, дослідження судової практики, написання та редагування, і беруть на себе відповідальність за її зміст і тлумачення.

Декларація щодо конфлікту інтересів

Автори заявляють про відсутність у них конфлікту інтересів, що стосуються цієї теми; хоча Гендрік Малевскі є членом редакційної колегії збірника, він не брав участі в ухваленні рішення щодо оприлюднення, і цю статтю піддано повному процесу експертної перевірки та редагування.

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