

THE POLYGRAPH AS AN INVESTIGATIVE TOOL IN CRIMINAL INVESTIGATIONS

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Abstract

The development of technology in the modern era has helped the criminalists practice to have new tools in the fight against crime and criminals. One of the modern forensic tools is polygraph, otherwise known as a lie detector. The polygraph is presented as an auxiliary tool in case investigation, especially in the operative phase enabling the collection of indications. A polygraph test can be a great way to evaluate the truthfulness of a person's statement about relevant information. The use of polygraphs, despite the fact that, due to the lack of legal regulations, it is not intended as evidence in investigative and criminal proceedings, has found a significant place in detecting and clarifying crimes, directing investigations, selecting suspects and discovering new evidence. Polygraph it is a tactical-criminalistics tool used in pre-trial proceedings as a means of elimination or as a guideline for the discovery and gathering of other evidence that may serve as a basis for a court decision. The current code does not mention polygraph testing. It is neither permitted nor prohibited for its use in criminal proceedings. In the Republic of North Macedonia, polygraph is significantly neglected, numbers of examinations are symbolic.

Keywords: polygraph, crime, evidence, police, investigation

1. Introduction

Humanity in its development in all its stages has tried to find ways to discover the truth, that is, to discover the lie. Polygraph can provide a valuable opportunity to trace a person's past where a conventional interrogation action may not be as effective. Polygraphists believe that when people are asked questions that they answer by lying, there will be physiological reaction that will appear in the polygraph. This makes polygraph a potentially valuable forensic tool. This instrument is known as a "lie detector" but this notion does not directly correspond to the function of this instrument as it does not tell the lie but the physiological response at the time the question is asked. Therefore, this notion is not a scientific notion but a notion that conveys the purpose of polygraph testing in a concise way that is easily understood by people and unprofessional.

The purpose of polygraph is not simply to detect deception, but also to reveal the truth about a specific issue. Detecting deception is only part of the procedure. Tests are considered completely successful when the end result is the full disclosure of the truth. In short, polygraph tests record a number of different bodily reactions which are then used to determine whether one is telling the truth or not. Usually is measured blood pressure, changes in breathing and sweating of the skin. Polygraph, like any other lie detection technique, measures an indirect effect of lying. Lying can increase stress and lying detection techniques can measure the behavioral and physiological changes that occur when you feel stressed. So the polygraph does not tell the lie directly, but shows signs of deception.

Since the existence of the human being there have been lies, so since the beginning of civilization, humanity has been looking for ways to distinguish truth from deception. Over the centuries various techniques have been devised for verifying the truth and detecting deception, many of which are ridiculous and barbaric. Despite their primitiveness, each technique was based on the assumption of some form of physiological reaction that occurs within a person when faced with giving certain responses to an event under investigation, and that this physiological reaction would manifest itself in some external known symptoms that are indications of honesty or deceit.

Polygraph - the science of verifying the truth based on the psycho physiological aspect is approximately 100 years old. The word polygraph is derived from the Greek word "poly" - "many", and "graph" - "to write" and means "multiple writer" who can record several physiological reactions simultaneously and record these reactions in a smoked paper who then have been used for analysis and evaluation. It was the first instrument to record three bodily reactions pulse, blood pressure and breathing simultaneously during interrogation.

2. Legal and ethical aspects of polygraph use

Polygraph is a very important tool in the investigation of criminal offenses and is used if other forensic investigative techniques have not clarified the criminal case. Polygraph tests results are generally used to assist in the investigation of known crimes or suspected crimes. The legal basis derives from the Law on Criminal Procedure and other Acts (Law on Police, Regulation on the Manner of Performing Police Duties and Instruction on Conducting Polygraph Testing and Content of Written Consent to Apply Polygraph Technique).

In case we have a reasonable suspicion that a criminal offense has done, the police authorities are obliged to take all measures to find the perpetrator to not hide or flee, to be discovered and secure traces and items of the criminal offense that can be used to find the truth as well as all data that may be in the interest of criminal proceedings (Article 276 of the LCP). The Law of criminal procedure does not contain provisions that regulate the legal issue of polygraph, but at the same time we cannot conclude from the law whether or not the use of this instrument is permissible. The use of polygraph is foreseen by the Law on Police at in the foreseen police authorizations. Polygraph testing foresees as a means of detecting the perpetrator of criminal act. It stipulates an obligation for the polygraphist to inform the citizen about the function of the polygraph and to obtain written consent to perform the testing. It also stipulates the right of person to terminate the test at any time. But this law does not further regulate the work of polygraph testing except for the categories of people who cannot undergo polygraph testing.

Further on, polygraph testing is regulated by the Instruction on Conducting Polygraph Testing and Content of Written Consent for the Examination of the Polygraph Technique. This instruction regulates the way how polygraph testing should be performed, and represents a step forward in regulating polygraph usage. According to this instruction the testing is carried out upon the request of the organizational unit of the Ministry of Interior to the Organizational unit for forensic-technical research in the same Ministry. Testing can also be done by order of Public Prosecution and Courts of RNM. The request and the order for testing shall be accompanied by all official material concerning the offense committed.¹ According to this Instruction, testing is performed only for a specific criminal offense, and not for many criminal offenses. If there is a need for testing a person for more criminal offenses then the testing will be performing for the criminal offense that is provided more punishment by Criminal Code. The Instruction

¹ The materials attached to the request or order are: criminal record minutes, criminal report reports, criminal report filed against unknown perpetrator, record of traces and items found, photo albums, sketches, video recordings and other official related materials with the offense.

prescribes that it should be carried out in isolated spaces, and that only the polygraphist and the person conducting the testing can be present during the testing. If the person does not understand the language of the tests prepared then the interpreter may also be present. In some states the test may be used in court, but the results are not intended for this purpose.² Polygraph results have been successfully challenged in many different situations because of their scientific uncertainty. The results of a polygraph test can mean many things but are uncertain about lying, they do not go to the level of credibility required as scientific evidence in court proceedings and the results of the polygraph test are usually inadmissible as evidence.³ According to Instruction the test Report performed by the polygraphist cannot be used as evidence in court proceedings. This report can only be used as a guiding-eliminating tool for finding evidence and the perpetrator.

3. Elements of the polygraph

Polygraph is a scientific diagnostic instrument that graphically records physiological changes, which can occur in a person at a given time. Polygraph consists of three main parts: Blood Pressure Cuff, Galvan graph and pneumograph. Blood Pressure Cuff as a basic element of every polygraph records increase and decrease in blood pressure, heart rate. Galvanometer records changes in the galvanic-reflex activity of human skin (skin conductance). Pneumograph records changes in respiratory volume and frequency of human respiration.

4. Who can be tested?

The test may only be performed on persons who are in good health and mental health. Age is not limited about children or older people; it is sufficient for the person making the test to be psychophysically healthy and not to be influenced by external factors. Testing is not for people who are psychophysically unwell, people who are under the influence of alcohol, various drugs, those who are in a serious emotional condition. Persons who use medications according to studies have shown that they have an impact on test results. During the first contact phase it is advisable to ask the person if he or she needed to go to a psychologist, when was the last time visited to the doctor, did the doctor give him or what medication and how he or she used them, etc.

The Law on Police (Article 65-v) also sets out the categories of people who cannot be tested: persons who are under the influence of alcohol, narcotics or psychotropic substances, a person who has serious heart disease, people in stress, a person who uses sedation medications, a person who manifests clear signs of spiritual illness, impaired development or severe spiritual disabilities, and a woman who is pregnant and immediately after pregnancy.

5. Tests used during polygraph examinations

One of the important aspects of polygraph is the formulation of test questions. In polygraph testing, there are basically four types of questions that are used. Only one or two question types are used in a test, depending on the type of question technique. The different types of questions used in polygraph testing are:

² In O. J. Simpson's civil judgment, the results of the polygraph have been accepted as the evidence. This set a statewide precedent allowing polygraph testing in civil trials such as divorce cases.

³ The results of polygraph tests are acceptable as evidence in some US States and Japan. In Europe, India, Israel, Canada Australia test results are not accepted as evidence in criminal proceedings.

1. Relevant questions - pertaining to the purpose under investigation,
2. Control questions - are the opposite of relevant questions and are asked for the purpose of making comparisons.
3. Irrelevant questions are questions that create no impact and no relevance to the case being investigated.
4. Questions for reveal secret information are - aiming to extract information and details about a crime that would only be known by a guilty person.

The questions asked in the test must be adapted to a complicated polygraph test: the relevant question must be relevant, it must be formulated so that both for the polygraphist and the suspect are understood, the questions must not contain obscene, racial, derogatory, degrading or offensive words, no more facts than necessary in the questioning, the facts in question should be understood as correct by the respondent as well, the question should not ask for opinion, emotional questions should be ignored and, irrelevant questions must be formulated so that we usually get the answer "yes" etc. (Ansley, 2009, pg. 50).

Two basic methods are used: the direct method or the method of control questions (CQT-control question test) and the indirect method (POT - peak of tension test). The first of these methods is used when the facts that are the subject of the test are known to a larger number of people, and the second when the facts are known only to the perpetrator. Each test no matter which method is used contains 8 to 10 questions (Aleksič and Milovanović, 1991).

1. Direct method or method of control questions is one of the most used methods in polygraph testing. In this test two types of questions are predicted. The polygraphist will ask relevant questions, and instead of asking irrelevant questions - he will ask controlling questions that will be indirectly related to the offense or crime.

2. The indirect method (POT) according to some polygraphists gives the highest results and is applied in two basic forms: according to the circumstances of the criminal case and according to the versions of the facts and circumstances of the criminal case that are not known to all of actors. The characteristic of this method is that it gives the answers to the nine golden Criminality's questions. These tests are used when the suspect states that no details of the criminal case are known to him (Krstič, 1989).

According to the Instruction on how to perform polygraph testing besides the above-mentioned tests, can be used also visual, associative, cognitive, test of reliability and assumptions tests. Test questions under this Instruction should be brief, clear, and understandable to the person conducting the test. The polygraphist decides on the number and content of the questions on the test, where appropriate he may consult with the person who asked or ordered the test (Instruction, 2019, article 10).

According to the analysis of the submitted material the polygraphist prepares the tests for testing. If needed the polygraphist can consult with the requester (police organizational unit) or the institution that ordered (prosecutor or judge), and he may also go to the crime scene. The Instruction stipulates that a conversation should be conducted before testing begins to see if the person has knowledge of the criminal offense that will be tested, what knowledge he or she is familiar with, and verification the alibi (Instruction, Art. 9 and 10). According to this instruction, the questions are read before the test begins in order to see if they understand the questions. Because of the greater objectivity, each test is repeated twice, and after each test a short pause is made. The duration of testing is not limited and depends on the tests to be carried out as well as the behavior of the person being tested (Article 13).

6. The polygraph examination

Polygraph testing is a method that takes a very long time and goes through several phases: preparing phase, contact interviews, in-test phase and post-test phase.

Preparing for testing. For polygraph testing to be successful, a large number of conditions must be met because it is a very delicate type of testing. Therefore, all actions taken should be well prepared and implemented according to the rules provided. Before starting the test we should have as much information as possible about the offense and its perpetrator. This will enable the polygraphist to develop a plan according to which he will act. Very important is obtaining information for everything that has happened, seen at the time of arrest, about the scene (minutes), gathering information about the person being tested (suspect), living environment, alibi, house search and other places (place of work), the means used to commit the crime, the manner of commit the crime, the time when the crime is done and other characteristics of the offense.

Contact interview phase. The polygraph test begins with the first contact between the polygraphist and the person performing the test. After a proper presentation the polygraphist will discuss the purpose of the test. Before testing begins, must be signed consent for the test. The polygraphist will explain the course of the procedure. It is explained that testing poses no danger to the human body and health. It should explain the function of each part of the polygraph. To advise that after testing begins that he should not move. To be honest, to tell the truth about the questions the polygraphist will ask. He should be advised that if there is any question that does not understand, he can ask the polygraphist to clarify the question.

Persons who do not sign the consent cannot be tested, and the person may terminate the test whenever he or she wishes, at all stages of testing. In most cases, persons who did not make polygraph examination after some time were found guilty. One of the reasons why people refuse to do testing (especially females) is the grief that they do not trust their say. Other reasons include fear of bodily and spiritual consequences, doubts about the accuracy of the polygraph, and fear of interpreting test results. Before commencing testing, the person is required to plead guilty if he or she has committed the crime. If the person admits to have committed the crime, the statement is taken and then no testing is carried out.

Phase of testing. It starts with asking questions. The questions asked should be clear and precise, always only one question should be asked, questions should be clear to the polygraphist himself, no alternative questions should be asked, no more than one question should be asked, the questions should be conform language rules, questions should not be long and vague, in the questions should be used words that the suspect uses in daily life, to be appropriate to the educational and intellectual level of the person being tested, questions must be formulated in that way to answer yes or no, etc. The time interval from one question to the next one is 10 to 20-25 seconds. When asking questions, they should be asked in the same tone, and should not place particular emphasis on any question that the person does not understand which question is key. During the test all body movements are recorded: hands, feet, coughs, etc.

According to the Instructions if a person during the test shows reaction to a question, the polygraphist may after the test have a conversation about those questions. This conversation is conducted with the aim of clarifying the reactions expressed in relation to the questions asked, respectively to obtain information on the criminal offense which is the subject of criminal processing (Article 17).

Final testing phase. If the diagrams in Polygram do not show on the real suspect then a brief interview is held to prove his innocence. Talking to the suspect after testing often reveals new details that were not known before testing. The final interview is intended to ultimately validate, balance, and evaluate the conclusions drawn. It is a mistake to think that testing ends with gaining a Polygram and analyzing it. In the final stage the polygraphist makes the final

"judgment" based on the impressions of all stages of testing. The outcome of the final interview depends largely on the preliminary stages of testing.

Multiple results indicate that approximately 75% of accuracy is based on objective analysis while 25% is based on subjective analysis. The degree of accuracy in interpreting test results largely depends on the experience of the polygraphist, his ability, as well as the emotional, mental and physical abilities of the person being tested (Krstič, 1989).

The opinion of the polygraphist can be positive and negative. The positive opinion indicates the direct and indirect connection with the criminal offense for which the test was conducted. In the negative opinion eliminates any possibility of the person being linked to the criminal offense for which he or she has performed the test. On the basis of this opinion, the polygraphist compiles a Report on the test performed. The report contains the data about the authority that requested or the ordered of the test, the place and time of the test, the data on the person being tested, a brief description of the offense committed, the method of compiling the test and the instrumental technique that is used and findings and thinking about the relevance of the person being tested (Instruction). This report shall be sent to the authority that requested or the ordered of the test.

7. Accuracy of polygraph

The accuracy of the test results is a topic of discussion among scientists since the discovery of this instrument. Such questions still remain unclear; we still have no scientific confirmation of its accuracy. One of the reasons is that the polygraphist gives his findings not only on the basis of the test results but also on the basis of all other factors that appear before, during and after the test. On the basis of both experimental and practical case studies, a large number of authors undoubtedly presents the thesis that polygraph must find its place in the context of revealing criminal offenses. Various studies have concluded that the accuracy of polygraph varies between 70% and 98%. From this data we can conclude that polygraph is not 100 % accurate and therefore its value is not accepted as evidence. To be acceptable it must be 100% accurate. The rejection of the polygraph result is due to the interpretation of the test results. It is not in vain to say that the tool is as safe as the master can use it (Aleksič, 1991).

8. Where polygraph is used

Polygraph has had different purposes since its use. In the early stages of polygraph development its parts were for medicinal purposes. Today polygraph, in addition to revealing offenses,⁴ is also used to prove the credibility of people in security institutions, in the private sector (for employment, to prove whether they use drugs, theft in the workplace, criminal activities, physical force and activities) and in other situations.

The use of polygraph has proved successful in eliminating suspects, detecting new complaints, testing informants to determine the authenticity of the information provided, providing a new "key" to an investigation when all other investigative techniques standards have not given results, gathering additional information and evidence, helping to focus the investigation on specific suspects. (Aperen, 2015). Most agencies believe that the polygraph can reveal certain

⁴ In the Republic of North Macedonia in 2018, polygraph was used to detect 31 offenses by performing 61 polygraph tests. While in 2017 the polygraph was used for revealing of 49 criminal offenses, while 92 polygraph tests were conducted, 18 for criminal offenses of murder, 15 for robbery and 40 criminal offenses. Annual Report for 2017, 2018, MOI, Department of Criminal Intelligence and Analysis.

information that cannot be obtained in any other way during the selection process. In addition, it is also one of the fastest processes to determine if the information provided is actually true.

9. The criminalities and ethical value of using polygraph

Opponents of polygraph believe that polygraph is a modern inquisitive tool that puts pressure on the suspect to plead guilty and enables it to be incorporated into psychology where other data are discovered that the person does not want to give or represent. Also, with this test we gain something which is privacy that violates constitutionally guaranteed rights, the ethical concept of human rights and freedoms, especially those relating to the position of the suspect and the accused respectively.

One of the main conditions for conducting testing is voluntary testing. He gives his consent after being well acquainted with the polygraph; he does not hide anything, and has the right to ask questions about testing. It cannot be said that he agrees to conduct the testing as he wishes to dispel the suspicion that he is the perpetrator. Acceptance of the test is given for two possible reasons: the innocent suspect wants to prove his innocence as soon as possible and be released from such a situation as soon as possible. The perpetrator wants his behavior to convince the investigators that he is not the perpetrator and just as the suspect accepts the test. It should be noted that the person has the right at any time to terminate the test and withdraw the test consent.

It is alleged that testing limits the right to professional assistance by the defense counsel. The argument that testing leads to injury to human dignity does not hold. In testing there is nothing derogatory about it, there is no danger to life or any bad physical feeling. According to these characteristics polygraph is not contrary to the legal and ethical aspect of the guilty plea. It does not threaten the suspect's right. The results of the polygraph should be taken as a diagnosis of responsibility, respectively indicative orientation that guides us to other evidence and should not be taken as a substitute for classical testimony. Due to the complete inaccuracy of the polygraph, no judgment will be based on polygraph testing.

Of particular importance is the question of the legitimacy and legality of polygraph testing in terms of legal regulation, in particular the ethics of criminal law and criminal procedural law? Law enforcement agencies and intelligence agencies in the United States are the largest users of polygraph technology. In 1978, Richard Helms, the eighth director of Central Intelligence, stated: "We found that some Eastern Europeans can beat polygraph at any time. Americans are not very good at it because we are grown to tell the truth and when we lie, it's easy to realize we're lying in. But we have a lot of Europeans and Asians who can pass polygraph without a problem, and you know they've lied because you have proof that they're lying".

In 2018, Wired magazine reported that about 2.5 million polygraph tests are performed each year in the United States. The average cost to perform the test is more than \$ 700 and is part of a \$ 2 billion industry.

10. Can we beat the lie detector?

There is a consensus among scientists that polygraph testing has no scientific basis because it is not 100% safe. Spies Ignatz Theodor Griebel, Karel Frantisek Koecher, Jiri Pasovsky, Larry Wu-tai Chin, Aldrich Hazen Ames, Nicholas Sirgado, Ana Belen Montes and Leandro Aragoncillo have successfully passed polygraph testing. One of the most famous serial killers in US history has passed the polygraph and killed again. All of these cases show that we can cheat the polygraph, in fact it is, but the question is how much it can be beaten and by whom. Cases of deceive are very rare. Most polygraphists are of the opinion that polygraph can be

deceived but this is almost impossible. According to polygraphists, to deceive the test you must either fail the test or tell the truth, and that there is no third option.

11. Conclusion

Polygraph testing is just a ring of information gathering for the criminal offense and the perpetrator, which can reinforce link and aggregate evidence according to the indication method of gathering evidence at both the pre criminal and criminal stages.

Polygraph tests or psycho physiological reliability assessments are used in more than 50 countries around the world by government institutions, law enforcement agencies, the legal community, the corporate sector, and citizens. For more than a century its extensive research, research, development and use remains the most effective means of verifying the truth and detecting fraud.

The results of the polygraph test are not foolproof, but they are far more reliable than our subjective intuition. Because of the polygraph, we can better investigate the criminal acts. Polygraph will continue to greatly advance the investigation process as another weapon in the arsenal of investigative and scientific tools available to investigators.

The use of polygraph in the criminal practice of the RNM can be broadly said that is too early, very little is used; freely we can say it is symbolic. It is also necessary for the legislation to regulate the use of this tool to be more explicit, regulating in detail many issues such as: the right of the presence of the defender during testing, duration of test, testing minors, etc. Ministry of Interior should take actions that will lead to greater use of this tool to enable if not revealing criminal act, at least to have indications that will enable easier revealing criminal acts or perpetrators.

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