

THE CONTRIBUTION AND ROLE OF THE USE OF POLYGRAPH TECHNIQUES IN THE FORENSIC INVESTIGATION OF CRIMES THAT ENDANGER THE LIFE AND HEALTH OF MANKIND

Laura-Maria GIANĂ¹⁵

Abstract. *Crimes against the life and health of a person constitute one of the most serious and complex categories of criminal acts, having a profound impact both on the direct victims and on society as a whole. These acts include acts such as murder, attempted murder, serious bodily harm, but also other actions that affect the physical and mental integrity of individuals. They are not limited only to the immediate consequences on the health of the person, but also generate secondary effects of a social, moral and economic nature, influencing the sense of security and cohesion of the community. The scientific analysis and investigation of these crimes represent an essential tool for law enforcement agencies, providing methodological and technical support in the prevention, identification and sanctioning of criminal acts. In this context, the use of modern methods, such as the polygraph, contributes to the efficiency of investigations and to the clarification of the circumstances in which these acts are committed, thus supporting the entire process of protecting the life and health of individuals.*

Keywords: *solution, victim, offender, benefits, behavior.*

Introduction. Forensic investigation of crimes against life and health of the person is a complex process, which aims to restore the criminal event produced, based on the evidence discovered by the criminal investigation officer. This involves the identification, analysis and detailed interpretation of all the factual elements and circumstances associated with the crime, in order to accurately reconstruct the events, as well as to determine how the crime was committed. A basic element for effectively applying the polygraph is a very good and in-depth knowledge of the victim and the perpetrator. This knowledge refers to forensic as well as criminological aspects.

Within the framework of forensic investigation of crimes against life and health of the person, the criminological analysis of the victim's profile was substantiated by the contributions of authors such as Benjamin Mendelsohn, Marvin Wolfgang, Stephen Schafer, Emilio Viano, Jan van Dijk, Andrew Karmen and Ezzat Fattah. The works of the aforementioned authors have highlighted the role of victim traits, provocative or passive behaviors, and social context in the victimization process, providing valuable conceptual tools for investigating violent crimes.

Core content. *Forensic analysis of victim profile*

- Minors: Children are often victims due to their vulnerability and inability to defend themselves. Crimes against minors include physical, emotional abuse and neglect.

- Pregnant women: Pregnant women become victims due to their delicate condition and increased physical vulnerability. Crimes can include domestic violence and specific aggressions that affect pregnancy.

¹⁵ Senior Researcher, University of Naples „Federico II”, Italy, Email: geanalauramaria@gmail.com

- Elderly people: This category of people is often victims due to their fragility and reduced ability to defend themselves. Crimes include physical violence, financial abuse and neglect.

- People with disabilities: These people are vulnerable to various forms of physical, emotional and financial abuse due to their physical or mental limitations.

- Victims of personal conflicts: Often, crimes are committed by people known to the victim, including family members or close friends, for reasons of jealousy, revenge or domestic conflicts.

- Ordinary people: anyone can become a victim of crimes against life and health, regardless of age, gender or social status. These victims can be attacked in the context of personal conflicts, robberies or other violent situations.

The analysis of the criminal profile was founded on the classical and modern studies of authors such as Cesare Lombroso, Enrico Ferri, Raffaele Garofalo, Sigmund Freud, Edwin Sutherland, Donald Cressey, Hans Eysenck and David Canter. The contributions of these criminologists have shaped the understanding of the behavioral, motivational and social traits of criminals, providing valuable theoretical references for the investigation and prevention of crime.

Forensic analysis of the criminal profile

- Recidivists: criminals with a criminal record, who have committed similar crimes in the past and have an established modus operandi.

- Members of criminal groups: these individuals may be part of criminal organizations that commit violent crimes for profit or territorial control.

- Domestic offenders: individuals who commit crimes against family members or life partners, often in the context of domestic violence.

- Opportunistic offenders: individuals who commit impulsive crimes, often without prior planning, in situations of conflict or anger.

- Regular people: criminals without a significant criminal record, who may commit violent acts in times of crisis or intense conflict, often under the influence of alcohol or drugs.

Despite the existence of different opinions regarding the essence and content of the concept of a polygraph test battery, the development of effective psychophysiological assessment tools requires the integration of a forensic and psychocriminalistic approach. According to some reference authors, such as John A. Larson, who perfected the Marston test for detecting simulated behavior (LARSON, 1932: 303), Frank Horvat, who analyzed the main methodological changes that occurred in the evolution of the polygraph (Horvat, 2021: 20), Tudorel Butoi, Alexandru Butoi and Ioana-Theodora Butoi, who systematized the psychobehavioral aspects of judicial investigations (Criminal case no. 2022: 2022), the detailed analysis of the circumstances of the crime constitutes a central element in the construction of an effective polygraph test battery.

This analysis must include elements such as the place and time of the crime, the relationship between the victim and the perpetrator, the subjective motivations, the triggering factors, as well as the means used. In this context, it is relevant to capitalize on the knowledge of crime investigation methodology (Nistoreanu, 2015: 121), an aspect highlighted in the scientific literature in the field, in order to ensure the formulation of

relevant questions and the obtaining of precise results. The integration of these factors into a rigorous methodological framework, which combines forensic investigation techniques and the principles of forensic psychology, allows the development of polygraph tests adapted to the complexity of real situations, contributing to the correct identification of indicators of truthfulness or disinformation and to the elucidation of the circumstances of the investigated act.

Even if the position of the previously mentioned specialists is fully understood, we agree with the findings formulated by John E. Reid and Fred E. Inbau, who classify the relevant circumstances for the investigation of crimes according to the following structure (Reid și Inbau, 1962: 85):

Common context and circumstances

Location

- Home of the victims: most crimes against life and health occur in the home environment. Domestic violence, in particular, occurs in private spaces, where perpetrators can exercise control over victims without attracting the immediate attention of the authorities.
- Public spaces: crimes can occur in public places, such as streets, parks or squares. They are often the result of spontaneous conflicts, robberies or planned attacks.
- Institutions: some crimes occur in institutions such as schools, hospitals, care homes or other institutions where vulnerable victims are located (children, the elderly, people with disabilities).

Time circumstances

- Vulnerable periods: many crimes occur at night or in the early hours of the morning, when victims are often vulnerable due to sleep or darkness.
- Specific events: Crimes are common during holidays or special events, when alcohol consumption and intense social interactions can lead to violent conflicts.

Relationship between victim and offender

- Personal acquaintances: In many cases, offenders are people known to the victims, such as family members, partners, friends or co-workers. This is common in domestic violence and murders of passion.
- Strangers: In cases of robberies or assaults in public places, offenders may be strangers to the victims.

Motives and triggers

- Personal conflicts: Many crimes are motivated by personal conflicts, including jealousy, revenge, financial disputes or other interpersonal tensions.
- Economic factors: Some crimes are committed for economic reasons, such as theft, extortion or murder for profit.
- Intense emotional states: Situations of extreme stress, anger or intense emotions can trigger violent behavior, leading to serious crimes.

Means used

- Bladed weapons and firearms: Frequently, criminals use bladed weapons (knives, axes) or firearms to commit crimes, due to their lethality and intimidation capacity.

- Physical force: in many cases, criminals use physical force to attack their victims, including hitting, strangling or other methods of physical coercion.

Behavioral analysis of criminals

Economic motive

- Theft and robbery: Offenders commit crimes to obtain quick financial benefits. These include robbery, extortion, and violent theft.
- Material interest: Sometimes, murders are committed to inherit money or property or to eliminate financial debts.

Personal motive

- Revenge: Some offenders are motivated by the desire to get revenge on the victim for a perceived injustice or insult. This type of motive is often found in domestic conflicts.
- Jealousy: In cases of intimate relationships, jealousy can be a powerful motive that leads to violent acts, including homicide.

Psychological motive

- Sadism: Offenders who commit violent acts for the pleasure of causing suffering are often motivated by sadism. They exhibit extremely violent behaviors and a lack of empathy.
- Psychopathy: People with psychopathic traits may commit serious crimes out of a lack of remorse and empathy, seeking stimulation through violent acts.

Sociopolitical motive

- Ideology: In some cases, crimes are committed for ideological reasons, such as racial, religious, or political hatred. These may include terrorist attacks or bias-motivated crimes.

In the context of polygraph application, the analysis and understanding of the motive of the offender are of major importance, constituting a central element in forensic investigation. This idea is also supported by Aldert Vrij, who emphasizes that the identification of motivations can significantly influence the accuracy of the assessment of simulated behavior (Vrij, 2008: 112). From the researcher's perspective, the criminal motive is a decisive factor in the interpretation of the verbal and nonverbal behavior of the subject during the examination.

Determining the motive contributes to the formulation of specific questions for the polygraph test and to the assessment of the veracity of the answers. In the framework of creating the battery of tests, knowing the motive allows the development of more precise and targeted questions, which can reveal information about the intentions and behavior of the offender. Thus, the motive acquires a fundamental role not only in forensic profiling, but also in increasing the efficiency and accuracy of the polygraph examination, directly contributing to the elucidation of cases and the administration of justice. Approaching the analysis of the criminal motive and the behavior of the offender through the prism of the forensic methodology of crime investigation, we observe a common component with the researched topic, since the identification and interpretation of the behavioral patterns of criminals represents a fundamental direction in the construction of investigative versions and in the orientation of forensic research (Mircea, 1998: 267).

Modus operandi

- Premeditated planning: Premeditated offenders carefully plan their actions, choosing the time, place, and manner of committing the crime to avoid capture.
- Impulsive acts: Impulsive offenders commit crimes without prior planning, usually following a rapid escalation of a conflict or under the influence of substances.

Level of violence

- Extreme violence: Some offenders use extreme violence, causing serious injury or death to the victim. They may use lethal weapons or methods of torture.
- Moderate violence: Other offenders may use moderate violence, sufficient to control or immobilize the victim without causing fatal injury.

Relationship to the victim

- Personal knowledge: Offenders who know their victims often have a complex relationship with them, including histories of abuse, conflict, or other personal ties.
- Strangers: Crimes committed against strangers are often opportunistic and less personal, although they can be just as violent.

Psychological Patterns

- Manipulative Behavior: Offenders with manipulative traits may control and dominate their victims through intimidation, lies, and other forms of psychological manipulation.
- Compulsive Behavior: Some offenders exhibit compulsive behaviors, repeating offenses in a manner that suggests an addiction to violent acts.

Unfortunately, the specialized literature reveals that the analysis and understanding of the offender's modus operandi are frequently neglected in the practice of polygraph examination, an aspect highlighted by authors such as John E. Reid, Fred E. Inbau and David Canter (Reid și Inbau, 1962: 85). In the opinion of these specialists, the systematic investigation of the modus operandi is an indispensable element in the formulation of specific questions and in the interpretation of answers within the polygraph test. We agree with these points of view and emphasize that the modus operandi provides essential information about the behavioral patterns and methods used, having a direct impact on the clarity and accuracy of the examination results. Failure to integrate this data into the testing process can lead to incomplete assessments and to a decrease in the efficiency of forensic investigations.

Furthermore, we encourage polygraph examiners to search police-run criminal databases, such as VICLASS in Romania. Using these resources can provide a more detailed perspective on the behavior of criminals and their modus operandi, contributing to the creation of more accurate and tailored test batteries for each individual case. This integrated approach can significantly improve the efficiency and reliability of polygraph examinations, ensuring more conclusive results and supporting the justice process.

If we were to use the VICLASS database in the work of polygraph examiners, we could achieve a better quality of forensic investigations from the preparation stages of the examination. The rapid and accurate identification of common patterns between different crimes would facilitate the formulation of more targeted and relevant questions

for the polygraph test. The detailed description of how the crime was committed, the victim's profile, the behaviour and context in which she was attacked, and the behaviour of the offender at the crime scene would be integrated into a centralised database and analysed to identify similarities and patterns. This would allow polygraph examiners to prepare test batteries tailored to the specifics of each case, considerably improving the efficiency and accuracy of polygraph examinations and thus contributing to catching repeat offenders and ensuring a more efficient administration of justice.

In addition, the use of other similar databases at European level, such as the Europol Information System (EIS) or the Schengen Information System (SIS II), could provide additional information and international context for the investigation of cross-border crimes. These databases allow for the rapid exchange of information on criminals and crimes, increasing collaboration between different law enforcement agencies and contributing to an integrated and efficient approach to forensic investigations. The integration of these resources in the preparation and execution of the polygraph examination would significantly increase the quality and reliability of the results, thus supporting the justice process at national and European level.

It is necessary to mention that in the forensic investigation of crimes against the life and health of the person, it is necessary to take into account the *modus operandi* specific to these types of crimes. *Modus operandi* represents the patterns and methods used by criminals in committing crimes and provides valuable clues for investigators. This concept is extensively treated in the specialized literature, being analyzed by authors such as Emilian Stancu, who defines it as a distinctive element of criminal activity (American Polygraph Association, 2017), V.A. Obraztov, who emphasizes its evidentiary value in the investigation of recidivism (Obraztsov, 2012: 178), and Fred E. Inbau, who places it at the center of the analysis of the criminal profile (Inbau, 2001: 36-38).

Identifying a specific *modus operandi* is essential not only for linking similar cases, but also for formulating relevant questions in polygraph tests, thus contributing to the creation of an efficient and accurate battery of tests.

The *modus operandi* of crimes against life and health of a person can vary significantly depending on the circumstances, but scientific sources in the field indicate the existence of recurring elements. Mihail Chirilă emphasizes that the methodology of investigating acts causing violent death involves the analysis of the stages of the criminal action, from the preparation and means used to attempts to avoid criminal liability (Chirilă, 2014: 204). In this context, we can highlight the following characteristic aspects:

Planning and preparation:

- Premeditation. Offenders often plan their actions in advance, choosing the time and place of the crime to reduce the risk of capture. This may include procuring specific weapons or tools and studying the victim's routine.

- Creating an alibi. To avoid detection, offenders may create solid alibis, either through arrangements with other people or by manipulating information about their presence at the crime scene.

Execution of the crime

- Use of weapons. Depending on accessibility and preference, offenders may use edged weapons (knives, axes) or firearms to commit the crime.

- Methods of coercion. Offenders may use various methods to immobilize their victims, including strangulation, tying up, or the use of chemicals.

- Avoidance of detection

- Cleaning up the crime scene. After committing the crime, offenders may attempt to cover up their tracks, such as removing physical evidence and cleaning up blood.

- Evidence manipulation. Offenders may plant false evidence or alter the crime scene to mislead law enforcement officers.

- Post-crime behavior

- Behavioral changes. After committing a crime, offenders may exhibit significant changes in behavior, such as selling off assets quickly or fleeing the area.

- Social interactions. Offenders may avoid contact with people they know or may attempt to project an image of innocence by engaging in public activities.

Depending on the situation, relevant questions based on *modus operandi* will be included in the test battery that will refer to: planning the crime, executing the crime, post-crime behavior, etc.

The application of polygraph testing in the investigation of crimes and the analysis of the mode of operation are supported by numerous specialized authors. Thus, Stanley M. Slowik states that the integration of questions focused on *modus operandi* within the polygraph examination amplifies the probative value of physiological responses in relation to the hypotheses of the investigation. In a similar vein, Donald J. Krapohl emphasizes that adapting polygraph questions according to the behavioral pattern of the offender can increase the accuracy of the assessment (Krapohl și Shaw, 2015). On the other hand, Jan Widacki expresses a reservation, arguing that although the polygraph can support the understanding of criminal behavior, the risk of misinterpretation of physiological reactions is greater when the questions are too complex or contextual (Widacki, 2007: 35-42).

Analyzing the famous case, often called the „Laci Peterson Murder”, in reference to the crime committed by Scott Peterson (CNN, November 12, 2004), where the conviction took place based only on circumstantial evidence, we believe that the application of the polygraph would have allowed the corroboration of the evidence and would have given additional validation to the statements of the accused person. The analysis of this case reveals how the polygraph can bring clarity and coherence to the forensic investigation, having an important role in strengthening the arguments and in elucidating the circumstances in which the crime was committed.

If we were to break this case down into detail, we can segment the criminal activities into the following stages:

- Planning and preparation of the crime

- Premeditation. The evidence suggested that Scott Peterson planned his actions on the day of his wife’s disappearance in advance. This included preparing an alibi and details regarding when and where he could hide the victim’s body.

- Creating an alibi. Scott Peterson claimed to have been fishing on the morning of the disappearance, thus attempting to provide an alibi. The alibi was later questioned due to inconsistencies and a lack of concrete evidence.

- Execution of the crime

- Methods used. The crime was committed using methods that allowed the body to be temporarily hidden. It was later found in San Francisco Bay, near where Scott stated he had been fishing.

- Immobilization of the victim. There are indications that Laci Peterson was immobilized or attacked in a way that allowed the perpetrator to control her body and transport it.

Measures that would contribute to hiding traces

- Cleaning the crime scene. Scott tried to erase traces and manipulate evidence to mislead investigators.

- Manipulation of evidence. He planted false evidence and created a false trail to divert investigators' attention from himself.

Post-crime behavior

- Changes in behavior. After committing the crime, Scott Peterson exhibited significant changes in behavior, such as attempting to sell the house and vehicle. He was also observed to have an unusually relaxed and detached behavior.

- Social interactions. He avoided contact with certain people and tried to create an image of innocence by engaging in public activities and contacting the media.

This structure for analyzing and segmenting criminal behavior is frequently used by practicing examiners, as reflected in the specialized literature. For example, Raskin and Honts emphasize the importance of assessing behavioral stages in polygraph testing (Raskin și Honts, 2002: 1-49), Jan Widacki highlights *modus operandi* segmentation as a method for optimizing question formulation, and in the framework of applied analysis (Widacki, 2007: 29-40), Laimutis Kraujalis and Vitas Saldžiūnas propose integrating this structure into the design of polygraph tests for serious crime cases (Kraujalis și alții, 2007: 53-65). *European Polygraph* publications also reaffirm the value of this analytical approach in modern forensic investigation (European Polygraph, 2015).

From our point of view, the polygraph examiner must clearly outline these activities, namely these circumstances must be clarified by the set of questions to be compiled.

We believe that the application of the polygraph in this case would have had the following benefits:

- corroboration of evidence – the polygraph would have allowed the verification of Scott Peterson's statements regarding his alibi and activities on the day of the disappearance. Well-worded questions would have helped determine the veracity of these statements;

- validation of statements – the polygraph would have provided additional validation of the accused person's statements, helping to eliminate ambiguities and clarify the circumstances of the crime;

- clarity and coherence – the use of the polygraph would have brought clarity and coherence to the forensic investigation, helping to identify inconsistencies and strengthen legal arguments.

The application of the polygraph in the „Laci Peterson Murder” case would have allowed for a more in-depth investigation and validation of circumstantial evidence. This would have contributed to a better understanding of how the crime was committed and would have supported the justice process by providing additional clues regarding the veracity of the statements and the behavior of the suspect.

To illustrate and better understand the application of polygraph testing in the investigation of complex cases, we propose the following case study. It highlights how the use of the polygraph technique contributed to the elucidation of a family conflict that led to the disappearance of a person and, ultimately, to the confirmation of a crime.

In June 2012, RTC's mother reported his disappearance by calling the single emergency number 112. Following the call, a team of police officers from the „missing persons” department of the Cluj County Police Inspectorate, Criminal Investigation Service, was formed, which began investigations in the area of the missing person's residence. Also, a team of police officers from the Gherla Municipality Police was delegated to check the neighboring communes, given that RTC's brother stated that he had left to carry out pastoral activities in one of the neighboring communes.

Following the investigations, the police identified a person named RT, who carried out pastoral activities in a commune near the place of residence of the person declared missing. Thus, the initial investigation was concluded.

In August 2012, RTC's mother called 112 again, claiming that she suspected that her eldest son had been killed by his brother. Following the complaint, a police team launched a new investigation, and his brother, RTM, was brought in for questioning. RTM stated that their mother suffers from mental illness, having a history of multiple psychiatric hospitalizations, and that there was a possibility that she was faking it. He also stated that RTC had left home one evening in May 2012, mentioning that he had seen a black car that had taken him away. Police checks confirmed that the mother did indeed suffer from mental problems and that RTC used to be away from home for long periods, with pastoral activities as his main occupation. It was also established that there were frequent conflicts between the two brothers, due to alcohol consumption, but that, despite prolonged absences, RTC maintained telephone contact with his mother.

In order to verify the sincerity of RTM's statements and to exclude him from the circle of suspects, the prosecutor ordered his polygraph test.

The polygraph expert from the Simulated Behavior Detection Laboratory in Cluj analyzed the information provided by the police officers of the Criminal Investigation Service and established a set of relevant questions with them.

Relevant questions:

R4: During the time your mother was in the hospital, did you fight with your brother?

R7: Did you assault your brother in such a way that he lost his life?

R9: Did you kill your brother, Traian Claudiu?

To ensure the accuracy of the interpretation, a set of control questions was also formulated, designed to activate responses comparable at a semantic and psychophysiological level to the relevant questions.

Control questions:

C3: Unrelated to this act, have you ever harmed a close person?

C6: Prior to 2012, did you do anything for which you could be punished by the authorities, if they were found out?

C8: Have you ever been so angry that you wanted to take someone's life?

The Air Force type test battery was used for the polygraph examination. This type of test was developed by John E. Reid and Fred E. Inbau, and was subsequently validated through experimental studies and practical applications carried out within the United States Armed Forces and in specialized forensic laboratories (Inbau și Reid, 1953: 7-10). Subsequently, the methodology related to the Air Force type test battery was included as an example of good practice in the *Manual of Good Practices for the Analysis and Interpretation of Polygraph Diagrams in the Romanian Police* (General Inspectorate of the Romanian Police, no. 774.252 of 03.08.2015: 15).

Analysis and interpretation of polygraph charts

Diagram 1: Analysis of the first diagram revealed significant differences between the psychophysiological changes recorded to the relevant questions (R3, R5, R8, R9) compared to the control ones (C6, C10). The changes are particularly visible in the electrodermal response (GSR) and blood pressure traces (R3, R5 > C6 and R8, R9 > C10), but also in the thoracic respiratory trace. The subject presented agitation, trembling of the fingers (where the GSR sensors are attached) and jerky breathing, possible indications of simulated behavior.

Diagram 2: Interpretation of the second diagram confirmed the same patterns of psychophysiological changes. Significant differences between the answers to the relevant and control questions were again observed in the GSR, blood pressure and thoracic respiration traces. These changes, in conjunction with the numerical score obtained (-11) on the 3R score sheet, indicate the presence of simulated behavior.

Based on these analyses, the polygraph expert concluded that the subject was not being truthful during the testing.

After the polygraph test was completed, during the post-test discussion, RTM admitted to killing his brother, providing details about how he committed the crime, the object used, and the place where he hid the body – the toilet in the yard of the house.

Analysis of the offender's behavior from the perspective of the criminal act

A fundamental aspect in the investigation of violent crimes is the analysis of the social and family environment in which the individual developed (Stancu, 2001: 763). In this context, Valerii Korovin, a specialist in forensics and psychodiagnostics applied to the investigation of crimes, believes that in the case of many criminals, there is a clear correlation between poor education, the environment of origin and criminal activity (Orovin, 2005: 88).

The same causal link is also noted by Emilian Stancu in his *Treatise on Criminalistics* (Stancu, 2001: 763), who emphasizes that poor social and family environments frequently contribute to the formation of criminal behaviors.

Most of those involved in serious crimes come from dysfunctional families, where poverty, abuse and parental mental disorders create fertile ground for the formation of deviant behaviors. In the absence of educational and moral support, these individuals do not develop respect for the law and for ethical and social norms, which makes them prone to committing crimes.

People from such environments tend to internalize violence as a way of relating to those around them. Violent acts become a method of personal validation and exercising control over others. From a forensic perspective, such an individual does not perceive

the legal and moral norms of society as relevant. For him, violence is a way to resolve conflicts and demonstrate his superiority over others, including family members.

Criminal context

In the case of the two brothers involved in the described criminal act, they grew up in a violent and dysfunctional environment. Their father was known for physical abuse and excessive alcohol consumption, and their mother suffered from mental illness. In this destructive family climate, the two children frequently witnessed episodes of domestic violence. Over time, these emotional traumas caused the development of inner aggression in both brothers, increasing the risk of violent conflicts between them.

The eldest son, RTC, adopted his father's violent behavior, using physical abuse to dominate his younger brother, RTM. Conflicts between the two became increasingly frequent, especially in contexts where alcohol was consumed. This violent dynamic culminated on an evening in May 2012, when, amid excessive alcohol consumption and a physical altercation, RTM reacted extremely violently. In a fit of rage, he took an axe and repeatedly hit his brother, RTC, in the head, causing his death. RTM subsequently hid the body in the toilet in the garden of the house and tried to wipe away the traces of blood from the home, continuing his activity as if nothing had happened.

Post-offense behavior

From a forensic perspective, the offender's behavior after committing a crime is extremely relevant to understanding how he perceives his own actions. This perspective is supported in the specialized literature by Emilian Stancu, who shows that post-crime reactions can provide valuable clues about the level of assumption or avoidance of criminal responsibility (Stancu, 2001: 763), as well as by R.S. Belkin, in whose opinion the behavior after the crime often reflects the perpetrator's internal conflict and his attempts to hide the traces of the act (Belkin, 1997: 238). His actions – cleaning the crime scene and hiding the body – indicate an attempt to conceal the violent act, a common aspect among criminals trying to avoid criminal responsibility. However, what stands out is the apparent lack of remorse of the perpetrator. After killing his brother, RTM behaved as if nothing had happened, which suggests a high degree of emotional disconnection from the seriousness of the act committed.

This post-crime attitude, devoid of remorse, indicates a severely affected personality, unable to process the moral and legal norms that society imposes. In forensic research, such behaviors can be interpreted as an indicator of latent psychopathy or a deeply unbalanced personality structure.

Determinants of criminal behavior

The criminal investigation highlighted the fact that the dysfunctional family environment played a major role in the formation of this criminal behavior. The violent and abusive father served as a behavioral model for RTC, who, in turn, became an aggressor in his relationship with his younger brother. From a forensic point of view, these patterns of domestic violence were determining factors in the escalation of the conflict between the two brothers, which resulted in the commission of the crime. We align ourselves with the valuable opinions expressed by the aforementioned authors, as well as the conclusions formulated by the team of examiners from the Cluj County Inspectorate, noting that such behavioral patterns favor the occurrence of acts of extreme violence. At the

same time, alcohol consumption was a catalyst for the criminal act, affecting RTM's judgment and inhibitions, which led to the commission of the act.

The examination of the criminal behavior in this case reflects the harmful influence that a violent and unstable family environment can have on the psychological and moral development of the individual. From a forensic perspective, it is obvious that environmental factors – domestic violence, the absence of emotional and moral support, as well as alcohol consumption – played a decisive role in the development of a dysfunctional personality, prone to deviant behavior.

Forensic Conclusions. This case shows how domestic violence and repeated abuse can shape a person's criminal behavior. In the forensic investigation process, detailed analysis of the family environment and internal dynamics can provide essential clues to understanding the motivations and post-crime behavior of the perpetrator. Hiding the body and trying to cover up the tracks indicate premeditation in RTM's actions, and the lack of remorse underlines a personality with antisocial traits. These factors reveal the need for early intervention in cases of domestic violence, both to prevent the development of deviant behaviors and to protect vulnerable members of disorganized families.

Crimes against the life and health of the person include murder, serious bodily harm and other similar acts that affect the physical and mental integrity of individuals. In this context, the polygraph plays a significant role in the investigation of such crimes, contributing to corroborating evidence and validating the statements of suspects.

Regarding the forensic aspects of post-crime behavior analysis, interpreting the perpetrator's reactions after the crime is a useful and relevant method in the process of reconstructing events and assessing the sincerity of statements.

By formulating precise questions based on the specific *modus operandi*, the offender's behavior, and the details of the crime, the polygraph can identify inconsistencies and verify the veracity of the answers. Thus, the use of the polygraph supports forensic investigation, playing a significant role in elucidating the circumstances of the crime. It improves the clarity and accuracy of the results obtained and supports the justice process, ensuring an efficient and fair administration of the law.

Miscarriages are extremely dangerous in the context of these crimes, as people wrongly convicted of serious crimes against life and health risk spending long periods of time in prison, not just 1-2 years, but often between 10 and 25 years or even life imprisonment. The use of the polygraph can reduce the risk of such errors, providing additional clues about the veracity of statements and the behavior of suspects. This idea is supported by the results of the survey conducted in April-May 2025, according to which over 95% of the criminal investigation officers and officers in the special investigation activity surveyed stated that the results of polygraph testing are useful in assessing the sincerity of the subjects, either in full (46.8%) or in part (48.5%). Also, 58.9% of respondents indicated that the polygraph is particularly valuable in investigating crimes against life and health of the person, a context in which the risk of miscarriage of justice is particularly serious. Thus, polygraph testing contributes, in a real way, to increasing the efficiency of the act of justice and strengthening confidence in the fairness of the criminal process.

BIBLIOGRAPHY

- American Polygraph Association. Model Policy for Law Enforcement Pre-Employment Polygraph Testing. Lafayette. In: APA, 2017
- CHIRILĂ, M. Methodology of forensic investigation. Chisinau: Editorial-Polygraphic Center of USM, 2014. 204 p.
- CNN. Scott Peterson found guilty of murdering wife, unborn son. CNN, November 12, 2004 [cited 2025-07-11]. Available: <https://www.cnn.com/2004/LAW/11/12/peterson.verdict/index.html>
- HORVAT, F. Centennial Celebration of the Polygraph: Major Changes and Related Implications. In: Polygraph, 2021, vol. 50, No. 1. P. 5-20
- INBAU, F.E. Criminal Interrogation and Confessions. 4th ed. Gaithersburg: Aspen Publishers, 2001. P. 36-38
- INBAU, F.E., REID, J.E. Truth and Deception: The Polygraph ("Lie-Detector") Technique. Baltimore: Williams & Wilkins Company, 1953. P. 7-10
- MIRCEA, I. Criminalistica. Bucharest: Lumina Lex, 1998. P. 267-272
- NISTOREANU, Gh. Treatise on Criminalistic Tactics. Bucharest: Universul Juridic Publishing House, 2015, p. 121-140
- KRAPOHL, D.J., SHAW, S.L. Fundamentals of Polygraph Practice. Amsterdam: Elsevier Academic Press, 2015
- KRAUJALIS, L., KOVALENKO, A.I., SALDŽIŪNAS, V. Legal and Practical Aspects of Using the Polygraph in the Republic of Lithuania. In: European Polygraph, 2007, vol. 1, No. 1. P. 53-65
- LARSON, J.A. Improvement of Marston's Test for Lie Detection. In: Journal of Criminal Law and Criminology, 1932, vol. 23, no. 2. P. 303-310
- STANCU, E. Criminology treatise. Bucharest: Universul Juridic, 2001. 736 p.
- SLOWIK, S.M. The Application of the Polygraph in Criminal Investigations. New York: Charles C. Thomas Publisher, 2010. 168 pp. ISBN 978-0-398-07945-6;
- REID, J.E., INBAU, F.E. Criminal Interrogation and Confessions. 4th ed. Baltimore: Williams & Wilkins, 1962. P. 85-100
- RASKIN, D.C., HONTIS, Ch.R. The Comparison Question Test. In: Handbook of Polygraph Testing, ed. Murray Kleiner. London: Academic Press, 2002. P. 1-49. ISBN 978-0124135703
- VRIJ, A. Detecting Lies and Deceit: Pitfalls and Opportunities. Chichester: John Wiley & Sons, 2008, p. 112
- WIDACKI, J. Polygraph Examinations in Poland: History and Legal Status. In: European Polygraph, 2007, vol. 1, No. 1. P. 35-42
- WIDACKI, J. Polygraph Examinations in Poland. In: European Polygraph, 2007, vol. 1, No. 1. P. 29-40
- Criminal case no. 2022, filed on December 5, 2022 by the criminal investigation body of the SUP of the Rîșcani Police Inspectorate, regarding the commission of the offense provided for by art. 190 para. (2) let. c) of the Criminal Code of the Republic of Moldova
- General Inspectorate of the Romanian Police. Manual of good practices for the analysis and interpretation of polygraph diagrams in the Romanian Police. Annex to document no. 774.252 of 03.08.2015, p. 15
- European Polygraph Editorial Board. Best Practices in Polygraphy. Warsaw: European Polygraph, 2015
- BELKIN, R.S. Course in Criminalistics. Moscow: Norma, 1997. 238 p.
- OBRAZTSOV, V.A. Forensic Science. Moscow: Yurist, 2012, pp. 178-180
- OROVIN, V.V. Forensic Characteristics of Crimes and the Personality of the Criminal. Moscow: Yurlitinform, 2005, p. 88