

THE APPLICATION OF THE “ROMAN FORMULA” METHOD IN CRIMINAL OFFENCE INVESTIGATIONS: PAST AND PRESENT

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Abstract: This paper explores the “Roman formula” method as an effective cognitive tool for detecting, disclosing, and investigating criminal offenses. The method serves two primary functions: first, to elucidate the circumstances surrounding a specific event during the detection, disclosure, and investigation of a criminal offense; and second, to act as an educational tool that aids investigators in self-education and professional development. The “Roman formula” method comprises a system of rules or recommendations that investigators can employ to develop intuitive procedures for solving tactical problems while analyzing past events. The key advantage of this method is that, at the initial stage of a criminal investigation, tactical tasks may not have a definitive answer and may present multiple solutions. This expands the investigator’s “ignorance” and facilitates the formulation of various investigative hypotheses. The method underscores the importance of impartiality, advocating against a solely accusatory approach in investigations. The main functions of the “Roman formula” method include: 1) guiding investigators to the correct resolution of tactical tasks, 2) reducing options when selecting solutions for tactical problems, and 3) addressing “open questions.” The use of the “Roman formula” method allows investigators to transition from reproductive knowledge (theoretical and practical) to productive knowledge (constructing forensic models of past events). Its versatility is evident as it can be applied individually in “internal dialogue” or collaboratively within a group (e.g., investigative-operational groups or investigative teams), enhancing its effectiveness.

Keywords: criminal offense investigation methods, Roman formula method, seven-term Roman formula, crime investigation methods, crime investigation tactics, cognitive methods in criminology.

1 Introduction

The use of forensic algorithms and programs to detect, disclose, and investigate criminal offenses can somewhat confine the investigator to specific cognitive frameworks. At the initial stage of a criminal investigation, particularly during the examination of the crime scene, an investigator may require a more comprehensive approach to gathering information within a particular subject area. To address this need, criminology advocates the application of cognitive methods developed within the general methodology of science, especially heuristic methods. V. V. Tishchenko and A. A. Bartsytska assert that “the heuristic method is a distinct form of cognition and is not confined to a traditionally defined set of logical methods. In forensics, the heuristic method addresses atypical investigative tasks, engaging the full spectrum of mental and intuitive potential. Its application fosters the emergence of intuitive insights and beliefs, significantly facilitating the search and cognitive process” [10]. Other researchers highlight that heuristic techniques, which activate creativity and non-standard thinking, are employed when conventional methods, based on experience and current conditions, fail to achieve the desired outcome. Heuristic methods are categorized as methods of undirected search, including techniques such as “brainstorming,” expert evaluations, “collective notebooks,” “control questions,” “associations and analogies,” business games and simulations, “cybernetic meetings,” and others [9]. Therefore, the dual purpose of heuristic methods is to serve as educational tools and to facilitate the acquisition of new knowledge while exploring specific research subjects.

The term “heuristics” refers to the branch of knowledge concerning creative activity and the search for methods to discover new insights in judgments, ideas, and approaches. The

concept of “heuristics” originated in ancient Greece as a method of effective learning employed by Socrates. Over time, this branch of knowledge, which studies creative activity, came to be known as heuristics. Its primary purpose is to develop models for discovering new solutions to problems. Today, heuristics is a multifaceted field that encompasses aspects of philosophy, psychology, cybernetics, linguistics, information theory, and the organization of scientific work. The central focus is on the psychology of creative thinking, which explores the mechanisms behind solving various problem situations. Heuristic techniques become relevant when existing conditions do not provide a clear solution and when experience lacks a ready-made scheme applicable to the situation. These techniques generate new strategies for overcoming problem situations. The importance of heuristics has grown with the rapid advancement of science and technology, which has broadened the range of complex problems needing resolution [8].

In philosophy, the development and adoption of heuristic methods are attributed to Socrates and Quintilian. For example, “Socratic conversations” are viewed as a dialogic method for discussing the relevant “object of knowledge” and the “search for truth”. Socratic dialogues are considered “dialectics in action,” a philosophical “art of reflection,” resulting in knowledge generated during the conversation as “fruits” by the participants. Notably, the cognitive value of the “Socratic conversation” is aimed at uncovering the mental essence of the studied phenomena rather than merely describing their sensory images and external connections.

Even today, certain Socratic “methodical principles” form the basis of specific forensic recommendations and remain effective during the detection, disclosure, and investigation of criminal offenses. These principles include: 1) a dialogic form for discussing the “subject of research” and “search for truth” (utilized during the development of forensic hypotheses, interrogation tactics, and meetings of investigative and operational groups); 2) leading questions that help determine the boundaries of “knowledge” and “ignorance” of dialogue participants (standard in interviewing witnesses); 3) the inductive method of “ascent to the general” (forming the basis for profiling the criminal and understanding the criminal activity mechanism); 4) dialogic discussion of the strengths and shortcomings of investigative practices (common in meetings, when analyzing investigative mistakes, and reviewing best practices in investigative work).

In the 1990s, nearly 400 years after Socrates, Marcus Fabius Quintilian (Quintilian, 1834)—who is renowned not only as a Roman educator and rhetorician but also as a theoretician and author of a well-known textbook on oratory—offered his interpretation of heuristic methods. Quintilian formulated and defined a sequence of seven questions designed to provide the most complete information possible about a particular event, phenomenon, process, or task. This set of questions is known as the “Roman formula,” which, according to him, should be answered in the following sequence: 1) Quis? - Who? (subject); 2) Quid? - What? (object); 3) Ubi? - Where? (place); 4) Quibus auxiliis? - With what? (means); 5) Cur? - Why? (purpose); 6) Quomodo? - How? (method); 7) Quando? - When? (time). Quintilian extensively utilized the heuristic questions of the “Roman formula” in his scholarly and practical work, advising his students to gather as much information as possible about a specific event and to address these questions logically.

Quintilian believed that productive knowledge could be acquired through the “question-and-answer method.” To this end, he proposed an original approach involving the use of the “Roman formula” questions for the audience. Quintilian was convinced of the benefits of this learning method and highlighted its distinct advantage for self-education, where students, through “internal

dialogue,” could ask questions to themselves and thereby gain new insights into specific events.

Elucidating the circumstances of past events is a fundamental task in the detection, disclosure, and investigation of criminal offenses. The methods that enable success in solving this tactical problem remain a critical issue in the field of criminology.

2 Literature Review

The development of jurisprudence as a science dates back to the time of ancient Roman statehood. It is widely accepted that Roman law, formulated by the lawyers and jurists of that era, laid the foundation for the legal systems of European states. Many direct Latin borrowings have been preserved in European languages and are used even without alterations to their orthographic structure.

In the realm of criminal process investigation, Roman jurists of the classical period (1st-3rd centuries) developed a scheme consisting of seven key elements to be clarified during an investigation of an offense or event: “Quis, quid, ubi, quando, cur, quomodo, quibus auxiliis”. These are translated as follows: “who committed”, “what exactly” (the offense), “where” (the place of commission), “when” (the time of commission), “for what purpose”, “how” (the method), and “with whose help”. These “schemes” were sometimes referred to as “formulas,” which served as guidelines for judges in resolving specific cases.

For instance, in the mid-2nd century, the Roman lawyer Claudius Saturninus proposed a method to determine the degree of danger of a specific crime and the appropriate type and amount of punishment. His scheme included seven points: “causa, persona, locus, tempus, qualitas, quantitas, eventus”, which translate to “cause” (the crime), “person” (the criminal and victim), “place” (sacred or secular), “time” (day or night), “quality” (open or covert crime), “quantity” (amount stolen), and “consequence” (completed crime or attempt). By the 6th century, Claudius Saturninus’s recommendations were incorporated into the extensive and systematized collection of excerpts from the works of authoritative Roman jurists known as the Digests of Justinian (Digesti Justinian, 2005), which held the force of law.

At the beginning of the 20th century, Austrian criminologist Hans Gross recommended that future forensic investigators utilize the guidelines now commonly known as the “Roman formula” to uncover the circumstances of a crime. In his “Manual for Forensic Investigators as a System of Criminology,” published in translation in 1908, Gross advised future forensic investigators on the questioning of individuals, stating: “In the initial interrogations, experience is crucial—the ability to strike a balance, avoiding the waste of time on trivial matters while maintaining focus on the important aspects. For those without such experience, it is beneficial to remember the old, valuable advice of lawyers: ‘Quis (who), quid (what), ubi (where), quibus auxiliis (by what means or with which tools), cur (for what purpose), quo modo (how, under what circumstances), quando (when).’ On my desk, where many young lawyers prepared to become forensic investigators, there was always a board displaying this simple, all-encompassing wisdom. I frequently heard from these young professionals, who later embarked on independent practice, that they avoided significant errors by keeping this board in view” [3].

Between 1910 and 1918, the “Roman formula” was established as the foundation of the “modus operandi system” by L. Etcherley, Chief of the Yorkshire Police (England, 1910), and A. Vollmer, Chief of the California Police (USA, 1918). This system focused on criminal activities aimed at theft.

The Latin term “modus operandi,” which literally translates to “conditions (mode) of action,” later became widely used in criminology to describe “the way a person commits crimes.” The “modus operandi system” is a specialized method for recording, accumulating, storing, and processing information about the modus operandi of both known and unknown criminals. Each criminal’s modus operandi in resolved or unresolved cases is

recorded on a specific card, which is then added to an array of cards, creating a comprehensive information and search system. In Western European criminology, this system became widely known as the “modus operandi system,” while in post-Soviet countries, it is referred to as “accounting according to the method of committing crimes.” This system was later endorsed by prominent Western European criminologists V. Shtiber and R. Reis [7]. In this system, modes were categorized and numbered from 1 to 10 as follows: 1) the object targeted; 2) method of entry; 3) tools used; 4) nature of the stolen property; 5) time of the crime; 6) methods (tricks) used to gain access; 7) the story (legend) used by the criminal to explain their presence at the crime scene; 8) information about accomplices; 9) vehicles employed by the criminal; 10) characteristics of the criminal’s actions indicating specific professional skills.

In the 1950s, M. Fitzgerald, in his book *Manual of Criminal Investigation*, recommended entering information, modified in a specific way and based on the analyzed “Roman formula,” into the robbery record card. This information includes: 1) the crime scene; 2) a description of the entry point to the premises; 3) the method of entry; 4) the time of day; 5) a description of the stolen items; 6) accomplices; 7) the type of transport used; 8) unusual or peculiar facts; 9) the criminal’s surname or nickname; 10) the victim [1].

Today, forensic accounting based on the “Roman formula” continues to serve practical purposes, including the investigation of specific criminal offenses, the search for perpetrators, the prevention of crimes, and the development of tactical techniques, forensic tools, and investigative recommendations.

In the 1940s, the “Roman formula” was still recommended for clarifying the circumstances of a crime. According to Soviet criminologist S. M. Potapov, a crime is proven when the relevant facts are collected and analyzed, clarifying the essence of the event (what happened), its location (where), time (when), and method (how). The identity of the perpetrator is proven when facts are gathered that accurately identify the individual (who), with or without accomplices (with whose help), and the motive for their actions or inactions (for what purpose). Therefore, S. M. Potapov believed that one of the main tenets of forensic science is that all these issues should be addressed both during the investigation and when evaluating the collected evidence for completeness [12].

In the 1948 textbook *Criminal Procedure*, the renowned proceduralist M. O. Cheltsov links the “Roman formula” to the investigation plan. Cheltsov writes, “It can be considered that the general plan—a scheme that establishes the main milestones of the investigation—has not lost its significance. This scheme was even recommended by ancient Roman lawyers.” V. Hromov, a Soviet proceduralist with extensive investigative experience, cites this formula in his book *Investigation and Preliminary Investigation as a practical guide for investigators*: “Quis, quid, ubi, quando, cur, quomodo, quibus auxiliis?” (That is: “Who (committed the crime)? What exactly (was done)? Where (did it occur)? When (did it happen)? For what purpose? In what way? And by what means?”) However, Hromov correctly emphasizes that the order of actions according to this scheme is determined by the specifics of each case. In his work, the creative element plays a crucial role for the investigator.

In the graphical representation of the scheme (with questions from the “Roman formula”) presented in Cheltsov’s textbook, an attempt is made to illustrate the content of each element (question) and its possible connection to the identified subject of the crime (or a wanted criminal). The investigator is advised to address the questions of the Roman formula as follows: What? (the composition of the crime, its object); Where? (issues of alibi, jurisdiction); When? (issues of alibi, timing); Why? (purpose, motive, composition of the crime, aggravating or mitigating circumstances); How? (method of action and circumstances aggravating the crime); By what means? (instrument of the crime, questions of complicity); Who? (the subject of the crime).

In the textbook mentioned above, M. O. Cheltsov graphically demonstrated the interrelationship of issues in crime investigation, explaining it as follows: while the object of the crime (i.e., the victim) often provides clues about the motive and sometimes about the perpetrator, there are cases where the investigator must deduce the composition of the crime from the motive, method of action, and identity of the criminal.

Cheltsov also notes that accurately determining the place and time of the crime often provides a "key" to establishing the criminal's identity and can sometimes reveal the falseness of an alibi. The significance of these factors also affects the determination of jurisdiction and the statute of limitations. A collaborative examination of the motive and method of action can occasionally assist in addressing questions about the mental state of the accused (M. A. Cheltsov, 1948).

During this period, the questions of the "Roman formula" were adapted to investigate specific types of crimes. For instance, in the methodology for investigating motor vehicle accidents, the following questions were proposed: a) What are the causes of the motor vehicle accident? b) Does the incident constitute an "accident" or a "crash"? c) What is the time of the motor vehicle incident? d) Where did the accident occur, and what positions did the vehicles and the victim occupy relative to each other? e) From where could the incident have been seen or heard? f) What objects remained at the scene, and what traces were left as a result of the accident? g) Who is the perpetrator of the accident and who is the victim? h) What was the direction of the vehicle's movement if it disappeared? [4].

At the beginning of the 2000s, opinions among scholars regarding the use of the "Roman formula" in crime investigations became polarized. For instance, M. V. Saltevsikii, when developing a murder investigation plan and evaluating the sufficiency of collected evidence for proving each element, recommended employing the "Roman formula" questions, specifically: "Who was killed? By whom? When? By what means and in what way? With what purpose?" [5]. On the other hand, I. A. Vozgrin argued that the "Roman formula" could not be considered universal due to its brevity and lack of specificity, which do not account for the nuances involved in investigating different types of crimes. Efforts to expand the range of investigative questions to twelve did not fully address these limitations. In light of this, most contemporary forensic frameworks for analyzing crimes include systematic lists of circumstances to be established, categorized according to the core elements of the crime: a) the object of the crime (the target of the crime, the reason for the damage, the extent of the damage, etc.); b) the objective aspect of the crime (where, when, how, whether committed by one or multiple individuals, each person's role, the circumstances, the consequences, the damage inflicted, the causal relationship between the act and the consequence, contributing factors, etc.); c) the subject of the crime (the perpetrator, details characterizing the perpetrator, and if applicable, the identities of accomplices); d) the subjective aspect of the crime (the nature of the perpetrator's guilt, its form, motive, and intent). This approach effectively conveys the specifics of all relevant circumstances in various types of crime investigations while maintaining the practical simplicity of applying scientific data. However, it is important to note that excessive detail in outlining the circumstances to be clarified during crime investigations is inadvisable, as it may lead to a criminal-legal analysis of the crime's composition, potentially undermining the forensic character of methodological recommendations (I. A. Vozgrin, 2001).

Finally, the issue of employing the "Roman formula" method in the investigation of criminal offenses was addressed approximately twenty years ago. The purpose of this article is to conduct a scientific analysis of the "Roman formula" method, focusing on: 1) its role in the development of cognitive methods in criminology, and 2) the potential for adapting this method to contemporary conditions for the detection, disclosure, and investigation of criminal offenses.

3 Materials and Methods

To achieve this goal, the methods of scientific inquiry are employed, including observation, comparison, abstraction, analysis, synthesis, and modeling.

4 Results and Discussion

In the context of the modern application of the "Roman formula" as a heuristic method for understanding events, the following provisions are particularly significant: 1) new knowledge about an event can be effectively gained using the "Roman formula" questions in conjunction with the contemporary informational framework of criminology; 2) the question-and-answer approach of the "Roman formula" relies on a system of key (heuristic) questions; 3) employing the "Roman formula" questions during the "internal dialogue" that an investigator conducts with themselves is advisable, as it can foster self-education and professional development.

At the core of heuristic methods in general, and the "Roman formula" method in particular, is the question. A question is a statement that identifies the unknown elements of a specific problematic situation that need to be clarified or a problem that requires resolution. In natural language, questions are expressed through interrogative sentences or phrases. Each question contains two components: what is known (assertoric side) and what requires clarification (problematic side). The assertoric side characterizes the subject of the question, highlights the presence of what is assumed by the question but not yet fully understood, and defines the range of possible meanings for the unknown [12].

Questions formulated by investigators during the detection, disclosure, and investigation of criminal offences, based on the components of the "Roman formula," represent inquiries that address gaps in forensically significant information about a specific object. These questions have a unique structure and require a response or explanation. They function as prompts that encourage the investigator to provide additional information to reduce or eliminate cognitive uncertainty about a past event. The forensically significant information available to the investigator, which may be explicitly or implicitly contained in the constructed question and expressed as a judgment or a system of judgments, is referred to as the question's premise. These premises enable the questions to convey essential information.

A question formulated by the investigator using the "Roman formula" components represents an unknown element that must be resolved. This question expresses the absence of forensically significant information about a specific object, is structured with a particular form and intonation, and requires an answer or explanation. Verbally, such a question is presented as an interrogative sentence.

The formulation of questions by investigators based on the components of the "Roman formula" is integral to detecting, disclosing, and investigating criminal offences, as this process is both purposeful and substantive. A question arises when an investigator's knowledge about a particular subject is insufficient to achieve the set goal, thereby highlighting the need for additional information. Consequently, studying the context in which the investigator has a question allows for an assessment of the existing knowledge's relevance and identifies specific gaps. Only after recognizing these gaps can investigators formulate an adequate question. In this context, a question formulated using the components of the "Roman formula" aims to clarify the situation by addressing and filling the identified knowledge gap. This function of the "Roman formula" questions is to determine the goal of acquiring knowledge. Similarly, the investigator mentally anticipates the outcome of this knowledge acquisition. The question effectively reflects the situation when the anticipated result of the inquiry helps bridge the knowledge gap specific to that situation.

The investigator's question, formulated based on the components of the "Roman formula" and appropriate to the situation, reflects the dialectical contradiction between "knowledge" and "ignorance." As such, it serves as a critical tool for developing knowledge about the past event under investigation. Typically, the investigator's question identifies a knowledge gap and requests its resolution. Therefore, the question simultaneously expresses a lack of knowledge and a demand to resolve this deficiency. Each question the investigator poses is rooted in what is already known but points toward the unknown, signaling the need to search for the unknown based on its relationship to the known. This process precedes the investigator's search, which can be described as the journey from the "known" to the "unknown" and as the transition from "imperfect" to "perfect" knowledge.

The directions embedded within the questions formulated based on the components of the "Roman formula" indicate the investigative area in which the investigator will gather information about the past event. These questions function as guides, providing focus for the investigator's inquiry, much like landmarks. The questions are always linked to a potential answer, which forms the subject of the inquiry. The scope of a question represents the range of possible answers concerning a known subject. The investigator's progression from established judgments to new, more precise, and content-rich insights follows a sequence of steps: posing a question, searching for new forensically significant information, constructing an answer, and then formulating the next question based on the new information revealed in the previous answer. The questions formulated based on the "Roman formula" gradually disappear as the contradictions in the investigator's knowledge are resolved through the learning process. A correct understanding of these questions, their specifics, and their role in gaining knowledge about the past event can be achieved by recognizing the contradictions that emerge and are resolved through the investigator's interaction with the object of inquiry.

As a means of expression and syntactic structure, the question primarily functions as an interrogative sentence in the detection, disclosure, and investigation of criminal offenses. It can be expressed as a word or phrase and may take either an expanded or a highly abbreviated form. However, a question is not a judgment, as a judgment involves asserting or denying something, whereas a question does neither. As a result, questions are not subject to the concepts of truth or falsity. Instead, questions can be meaningful or nonsensical, correct or incorrect, appropriate or inappropriate.

When a question arises based on some initial knowledge, it indicates a gap or uncertainty that must be resolved. This incompleteness or uncertainty is highlighted by the interrogative words of the "Roman formula," such as: "Who?", "What?", "When?", "Why?", etc.

As mentioned earlier, questions play a crucial role in understanding past events investigated by the investigator. It is through questions that the problems and tasks are framed, and by solving these, the investigator gains new knowledge. The role of questions formulated based on the components of the "Roman formula" is equally important in the training of investigators. In uncovering past events, the investigator seeks answers to questions that are not yet known within the context of the criminal investigation. Investigators in training must engage with such questions, the answers to which may have already been found but are still unknown to them. The process of searching for answers, obtaining missing information, mirrors the cognitive process of scientific research and investigative inquiry. This approach fosters the development of logical thinking, enhances intelligence, and encourages flexibility in mental processes, including creative thinking, observation, prediction, intuition, and focused attention.

To effectively apply the "Roman formula" method, the investigator must learn how to ask and answer questions correctly, particularly when conducting an "internal dialogue"

mentally. The following specific rules should be followed when formulating such questions:

- 1) The question must be meaningful and accurate (to verify the accuracy of the question, it is necessary to ensure the premises are valid).
- 2) The question should be formulated as briefly and clearly as possible (long, complex, or unclear questions make it difficult to understand and answer them).
- 3) It is advisable to break down complex questions into simpler components (for example, the question "Could Mr. Petrov and Mr. Sidorov have committed theft from the apartment because surveillance cameras recorded their car entering the building?" should be divided into two simpler questions since the answers will differ: Petrov could have committed theft because he was a repeat offender previously prosecuted for similar offenses, while Sidorov, a driver providing private taxi services, had no criminal record, was positively regarded in his community, and had been officially hired by Petrov to provide transportation).
- 4) In complex multiple-choice questions, all possible alternatives should be presented (for example, "Did the criminal enter the apartment on the fifth floor through the door or the window?").

Only a correctly formulated question, using the components of the "Roman formula," can fulfill its functions in the detection, disclosure, and investigation of a criminal offense, as well as in the training and professional development of investigators.

When formulating questions with the components of the "Roman formula," the investigator must differentiate between "logically correct" and "logically incorrect" questions. A question is considered "logically correct" if the investigator can provide a "true" answer that reduces cognitive uncertainty during the investigation of the event. Such an answer cannot be given to "logically incorrect" questions. For instance, questions are deemed incorrect when their wording contains expressions or terms whose meanings are unclear; when all expressions in the question have specific meanings, but there is no agreement between them; when the basis for the question is a false assumption (these questions cannot yield a "true" answer and are therefore called provocative); or when the question does not reduce cognitive uncertainty because it is based on a non-existent issue (such questions are referred to as tautological).

Based on the degree of uncertainty the investigator must address, questions are categorized as "difficult" or "easy." Difficult questions occur when there is no fixed number of answers. "Open" and "closed" questions require a specific number of responses. Among the "real" answers, there is a distinction between "correct" and "incorrect." "Correct" answers entirely or partially resolve the investigator's cognitive uncertainty.

The answer that eliminates the investigator's cognitive uncertainty is called "strong," as opposed to entirely "weak." Out of two "weak" responses, one may be "stronger" than the other.

The following peculiarities can be identified regarding the answer to a question formulated by the investigator using the components of the "Roman formula": asking the question is inseparable from the search for its answer; the correct formulation of the question is essential for finding the appropriate answer; and the proper formulation of the question is the result of the investigator's complex mental activity, derived from analyzing the forensically significant information available to them.

From a psychological perspective, human activity involves both external and internal components: external actions are mediated by internal processes, while internal processes manifest through external actions. A person's external and internal activities are interconnected and similarly structured. One can engage in internal thought (an inner plan), working with images, concepts, schemes, and auditory representations. At the same time, words

(concepts) that reflect the essential properties of objects and phenomena are crucial. The use of concepts and symbols regulates human activity and behavior, grounded in experience and social practice, enabling the transmission and retention of such knowledge.

Internal activity realizes a theoretical approach to the world, reproducing it as an image, concept, model, or scheme. It is carried out through cognitive processes—such as sensation, perception, memory, thinking, and imagination—and its results are summarized through language.

In a specific performance situation, internal activity prepares external activity, optimizes human effort, creates opportunities to choose the necessary action, and helps avoid errors in both activity and behavior [6].

An investigator's communication with others during the detection, disclosure, and investigation of a criminal offense can never fully satisfy the need for forensically significant information about a past event. The investigator always relies on their own thinking; thus, "internal dialogue" is a crucial component of productive thinking. The role of "internal dialogue" in the investigator's mental process vividly demonstrates its cognitive function. In certain cases, when solving tactical problems collaboratively, the investigator's "internal dialogue" can substitute for "external dialogue."

The investigator's mental actions involve manipulating objects reflected in images, ideas, and concepts, which are processed "in thought" through language. In this process, the investigator does not interact directly with the objects but rather engages with them mentally, without altering their physical structure or position [11].

"Internal dialogue" is a term from general psychology that describes the investigator's continuous internal communication with themselves while investigating a past event. This "internal dialogue" and the cognitive actions performed by the investigator during the investigation are two essential and relatively independent components of the mental process. "Internal dialogue" is a crucial part of the investigator's thinking when solving complex tactical problems, particularly when using the "Roman formula" method.

At the same time, the high productivity of the investigator's mental process, which continues through "internal dialogue," is only possible when there is coherence and coordination between the dialogue and the intellectual actions undertaken by the investigator. A key aspect of this mental process is the investigator's ability to formulate questions and independently search for answers. The investigator's mental actions should not be involuntary or random. They must approach the problem openly, analyze it, understand the connection between the conditions of the problem and what needs to be determined, and grasp the essence of the issue. Insight and the ability to formulate productive questions are often significant outcomes of the investigator's effective "internal dialogue."

Unfortunately, the investigator's "internal" thinking activity is not always highly organized or productive. Often, finding a solution or addressing a problem directly is impossible. The reasons for this may include:

- 1) Inappropriate or inaccurate perception of the situation: The investigator may lack the necessary vision to understand the key prerequisites for achieving the desired result. At first glance, they may seem to comprehend the entire situation, but this perception often turns out to be inappropriate, inaccurate, too general, or excessively focused on details.
- 2) The temptation to quickly and unproductively combine aspects of the problem: Vaguely understood problematic issues can negatively affect the investigator's ability to see the whole picture, imposing a narrow, sometimes erroneous view of the problem and leading to unproductive focus.

- 3) Subjective difficulties and personal problems: Intense emotions, especially negative ones, can severely impair the investigator's ability to think calmly, causing objects and their properties to be perceived in a distorted or biased manner. On the other hand, mild positive emotions can significantly improve cognitive performance.
- 4) Dominance of the investigator's "I" and an uncontrolled desire to always be right (closed cognitive position): Such an investigator is not guided by the current cognitive situation or the laws of logic because their sense of self-importance (the "I") takes precedence [6].

The investigator's mastery of organized and productive mental methods is a prerequisite for effectively solving tactical problems using the "Roman formula" method. The method of obtaining new knowledge based on the "Roman formula" has developed in an interesting way. For instance, H. I. Bush created a "sevenfold search strategy" based on the "Roman formula" [1] and introduced it for use in invention training at Latvian national universities of technical creativity.

This strategy involves the systematic and repeated application of various 7x7 matrices, tables, and other techniques. The strategy assumes that an individual can adequately consider, compare, and study up to seven subjects, elements, concepts, or ideas at one time. Bush originally conceived the number "7" as a technique to facilitate data analysis by enabling the simultaneous consideration of information. It turned out that in many cases, this approach—simultaneously considering ideas, concepts, relationships, and characteristics—promotes the generation of new inventive ideas. Using tables with just two or three columns, either horizontally or vertically, rarely stimulates creative thinking, while bulky tables with excessive information stifle creativity, turning a person into a mechanical operator. The multifaceted nature of the 7x7 tables, on the other hand, helps to activate and engage thinking.

The "sevenfold search strategy" is denoted by the conventional symbol "seven squared." In addition to tables, other graphic tools for visualization can also be used in the strategy, such as graphs, diagrams, and schemes.

The proposed strategy suggests conditionally dividing the creative process into seven stages: 1) analysis of the problem situation; 2) analysis of analogs and prototype functions; 3) formulation of the problem; 4) generation of inventive ideas; 5) concretization of ideas; 6) evaluation of alternatives and selection of rational decision options, choosing the optimal solution; 7) simplification, development, and implementation of the solution [1].

The foundation of this method lies in obtaining information about the subject, object, location, means, goal, methods, and time by asking successive questions based on the "Roman formula" in the sequence proposed by Quintilian. According to H. I. Bush, these questions are particularly useful when setting an inventive task, especially under conditions of limited information, as they allow for a multi-faceted consideration of the available data to maximize benefits.

It has been observed that combining questions can yield more information than answering the seven individual questions of the "Roman formula" directly. To facilitate the systematic posing of combined questions, a table illustrating the interaction of key questions is constructed, with each rhombus representing a combination of two questions (for example, rhombus 1-4 contains the question "Who – What?", rhombus 2-3 "What – Where?", rhombus 6-7 "How – When?", etc.) [1].

In the course of detecting, disclosing, and investigating criminal offenses, the use of combinations of "Roman formula" questions allows the investigator to formulate inquiries such as: "Who (specifically) among the members of the criminal group performed what actions?", "Who (specifically) among the participants of the criminal group was in a certain location?", "Who (specifically) among the group members used certain

means to commit the crime?”, “What goal did a (specific) member of the criminal group pursue?”, “What actions did a particular group member perform?”, etc. The investigator can also use these questions to predict future actions of offenders, such as: “Who and what means will be used to commit a criminal offense in the future?”, “What property and where should criminals target in the future?”, “How was this crime committed, and when might a similar crime occur in the future?”, etc. Additionally, the investigator records the answers to these questions on a separate sheet for presentation and discussion at meetings of investigative or investigative-operational groups, when formulating forensic versions, and so on.

In several cases, especially within complex problem situations, asking 21 combined questions in a general form may not be sufficient. For a more precise study of the problem situation, it is recommended to construct a “detailed” table illustrating the interaction of “elements” (i.e., “Roman formula” questions). To enhance clarity, it is advisable to indicate rational combinations of these questions by shading the corresponding diamonds, and to record the answers on a separate sheet.

The investigator can use the answers to these “difficult” questions to address specific local tactical problems and throughout the investigation of a criminal offense. Therefore, it is recommended to maintain and continually update the list of answers to these combinations of questions at least until the main body of additional forensically significant information is obtained.

5 Conclusion

Therefore, the heuristic method of the “Roman formula” can serve two main functions for the investigator: first, to uncover the circumstances surrounding a specific event during the detection, disclosure, and investigation of a criminal offense; and second, as an educational tool that aids investigators in acquiring new knowledge through self-education and professional development. This method provides a system of rules and recommendations that investigators can effectively use to develop intuitive procedures for solving tactical problems and understanding past events.

A significant advantage of using the “Roman formula” method is that, at the initial stage of a criminal investigation, tactical tasks often lack precise, unequivocal answers and involve multiple potential solutions. This approach expands the range of the investigator’s “ignorance” and allows for the development of several investigative hypotheses in a particular direction. By adhering to the principle of impartiality, investigators are encouraged to avoid exclusively accusatory approaches and to explore various investigative paths.

Therefore, the main functions of the investigator’s use of the “Roman formula” method during the detection, disclosure, and investigation of criminal offenses are as follows: 1) guiding the investigator toward the correct solution of a tactical task; 2) reducing options when selecting possible solutions to a tactical problem; and 3) fostering the function of “open questions.” The latter is evident in the way the more uncertain, general, and non-traditional questions posed by the “Roman formula” stimulate diverse and heuristic approaches, thereby enhancing the potential for finding varied solutions.

The general principles outlined for using the “Roman formula” questions to clarify past events can serve as a foundation for refining modern investigative methods. Specific, enduring heuristic procedures embedded in this method are well-suited for acquiring forensically significant information in contemporary contexts of criminal investigation.

By employing the “Roman formula” method, investigators progress from reproductive knowledge (previously acquired theoretical and practical insights) to productive knowledge (constructing a forensic model of past events). This method is highly versatile, as it can be used independently in the process of

“internal dialogue” or collectively within a group (such as an investigative-operational group or investigative team). It can also be effectively applied in both individual and group settings, significantly enhancing its effectiveness.

Furthermore, the “Roman formula” method can be employed both symptomatically—such as during a specific inspection at the crime scene to address a particular tactical issue—and longitudinally—throughout the process of developing a comprehensive model of the past event. It supports continuous clarification and acquisition of new knowledge about the event, facilitating a transition from “ignorance” to “knowledge.”

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