



Selected problems of the methodology of scientific cognition in the field of the light of R. S. Belkin's ideas

Vybrané problémy metodológie vedeckého poznania vo svetle myšlienok R. Belkina

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Abstract:

The methodology of scientific cognition is a system of general and special principles, laws, categories as well as methods used in solving complex theoretical and practical problems of the police theory and practice and at the same time, it is a teaching about methods. The methodology of scientific cognition is a complete system that comprises philosophy, so-called medium-extent sciences (logic, cybernetics, informatics, semiotics, etc.) and general as well as special sciences. A necessary condition for a science to become part of the system of methodology is the active employment of all its principles, categories, laws and methods in the process of getting to know a specific object.

Keywords: *function; structure; methodology; police cognition; principles; police theory; methods*

Abstrakt:

Metodika vedeckého poznania je systém všeobecných a špeciálnych princípov, zákonov, kategórií a metód, používaných pri riešení komplexných teoretických a praktických problémov polície a teórie a súčasne je to aj výučba o samotných metódach. Metodológia vedeckého poznania je kompletný systém, ktorý zahŕňa filozofiu, takzvané stredne rozsiahle vedy (logika, kybernetika, informatika, sémiotika atď.) a všeobecné, ako aj špeciálne vedy. Nevyhnutnou podmienkou pre to, aby sa veda stala súčasťou systému metodológie, je aktívne využívanie všetkých jej zásad, kategórií, zákonov a metód v procese spoznávania konkrétneho predmetu.

Kľúčové slová: *funkcia; štruktúra; metodika; policajné poznanie; princípy; teória polície; metódy*

Introduction

95 years ago, Professor Rafael Samuejlovich Bělkin, a doctor of legal sciences, an excellent scientist, educator and journalist, was born, who based his scientific work on the theory and methodology of criminalistics, forensic science and criminal



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procedural law based on his ideas of a modern concept of forensic science and expertise and has influenced generations of scientists in the field of criminal, forensic and forensic science evidence not only in Russia, but also in other countries where it has been teaching.

On 22-23 November this year in Moscow at the Moscow State Law School O.E Kutafina, Institute of Forensic Expertise, in cooperation with the Law Faculty of the Moscow State University M.B. Lomonosova, was held in his honor an international scientific and practical conference on the topic: The current development of forensic and forensic expertise, as a realization of ideas R.S. White, to the 95th anniversary of the birth of a scientist, educator and journalist ", which focused on the following problematic areas:

1. The scientific heritage of Professor R.S. Blemish and modern criminalistics problems,
2. Criminological and evidence of criminal activity,
3. R.S. Bělkin and contemporary problems of theory and practice in the field of judicial expertise.



Fig. 1 Prof. Rafael Samuejlovic Bělkin, DrSc., a deserving scientist of the USSR in a friendly "criminalistics" interview with the author of a communication (prof. JUDr. Ing. Viktor Porada, DrSc.) at the meeting of the Department of Criminalistics at the ZNB University in Bratislava in 1983.

When examining these problems, it is not possible to briefly state the most important scientific knowledge created by the Russian School of Criminalistics, headed by perhaps the greatest forensic theorist of all time prof. R. Bělkin. This is evidenced by a number of publication outputs, as well as lectures and lectures at conferences, law schools, and security schools. Prof. By enriching the theoretical and methodological fundamentals of criminalistics, RS Bělkin enriched not only the Russian Criminalistics

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School, which he considered to be the best in the world but enriched the theory and methodology of forensic sciences of each state he visited and also created the foundations for another important stage of integration of national criminalistics programs for the training of specialists in the field of forensic science and the investigation and proving of criminal activities including police and security sciences [5, p. 82].

The comprehensive character, consistency, coherence but above all the objective trueness of the theoretical sources of the police scientific cognition is an inevitable yet insufficient condition of achieving fully fledged results. In other words, the chosen goals inevitably require the application of not only objectively true sources but also adequate procedures and the use of adequate instruments. These and many other problems constitute the decisive area of scientific police cognition—their methodology. [1, pp. 210 - 217]

1. Function and structure of the methodology of scientific cognition

Although methodology is one of the most frequently encountered problems of science (being the obligatory component part of each and every science and comprehensive cognition and action), there is no agreement as to its contents.

Of the many issues that alienate the proponents of different opinions, let us chose only two stumbling blocks that may be really significant from the viewpoint of our thesis:

- 1) What purpose does methodology serve to and what are its functions in police scientific cognition?
- 2) What scientific form is the methodology of police scientific cognition? The first question is most often answered by saying that [4, p. 15]:
 - a) Methodology is a “teaching about methods”. This is an inadmissible reduction of methodology to merely one of its components that ignores the instrumental function of methodology and its use as an instrument of scientific cognition;
 - b) Methodology is the sum of all methods used in scientific cognition. This approach reduces methodology to a “sum of methods” and is virtually worthless as it can easily be replaced by the (actually more valuable) term: “a system of methods”;
 - c) Methodology is a system of general and universal principles that govern the process of scientific cognition. In spite of its high value this approach is one-sided and vastly incomplete in that again reduces methodology to a single component (failing to recognize the value of the very method of cognition).

Methodology is thus reduced to one of the component parts (“a” or “b”) of its planes (“c”) which undermines its comprehensiveness and above all its systematic nature.

A methodology thus conceived would cease to fulfil its basic functions (basic mission), it would not give direction to scientific police cognition, fail to provide conceptual instruments and indeed also a wholesome doctrine on corresponding methods and techniques.

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The methodology of scientific cognition is a system of general and special principles, laws, categories as well as methods used in solving complex theoretical and practical problems of the police theory and practice and at the same time it is a teaching about methods.

The most frequent answers to the second question are that:

- a) Methodology is a philosophy, period. This reduces methodology to its universal plane and fails to appreciate the lesser-degree planes (general and special). A philosophical background (whether explicitly presented or suppressed), which is the component part of every methodology, gets hypertrophied and is presented as methodology in full;
- b) Methodology encompasses all general sciences regardless of philosophy and the object and focus of cognition. The notion of methodology becomes muddy and loses its special features that come into the research of natural, liberal, social, spiritual and miscellaneous other objects.

An approach is on offer that:

- a) Appreciates the methodological significance of philosophy (philosophical background) but does not reduce methodology to a philosophy,
- b) Appreciates the methodological significance of sciences (notably general sciences) but fails to identify methodology with their system.

The methodology of scientific cognition is a complete system that comprises philosophy, so-called medium-extent sciences (logic, cybernetics, informatics, semiotics, etc.) and general as well as special sciences. A necessary condition for a science to become part of the system of methodology is the active employment of all its principles, categories, laws and methods in the process of getting to know a specific object [6, pp. 204-210].

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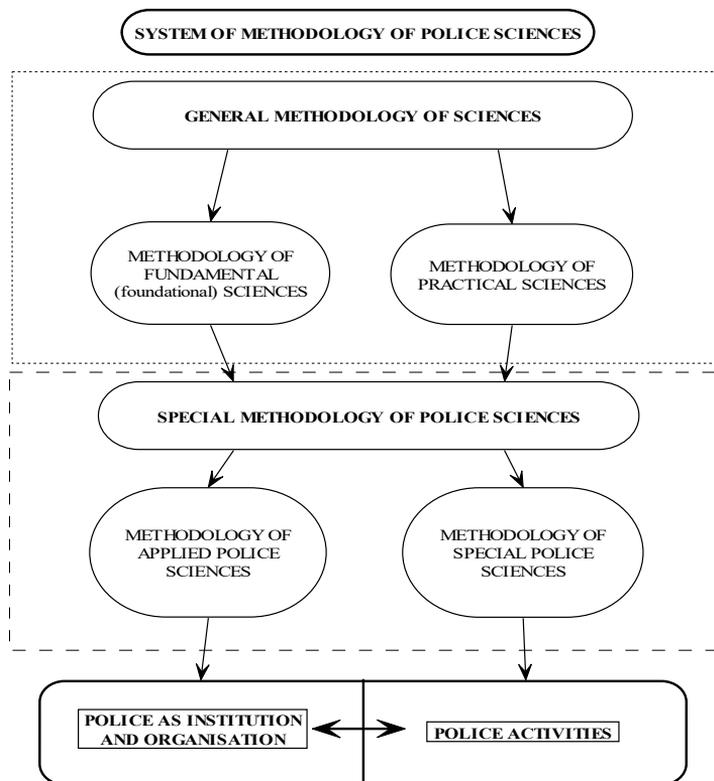


Fig. 2 The system of methodology of scientific police cognition

This inevitably invites the question about the methodological status of the sciences whose principles, categories and methods are used only partially. These thus do not enter into the system of methodology but do possess a degree of methodological significance and fulfil a degree of methodological function (see Fig. 3).

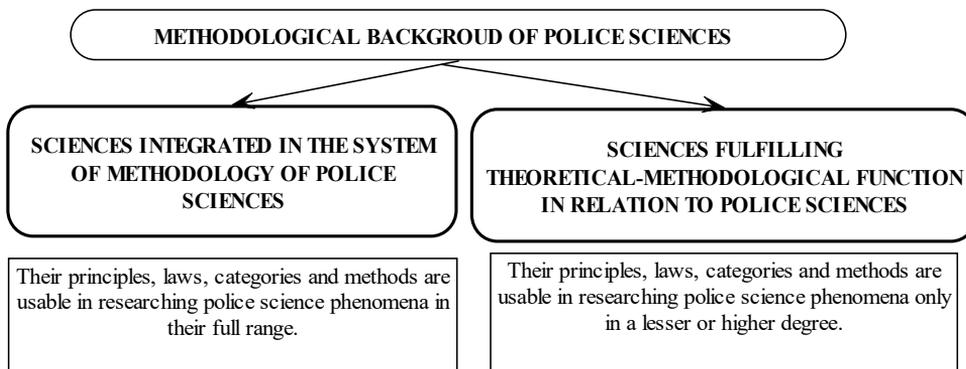


Fig. 3 The methodological background of police sciences

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It is therefore necessary to distinguish between the sciences that come into the system of methodology and the sciences that “merely” fulfil a methodological function.

Where only certain principles, categories, laws and methods of science are used the science supplies a greater or smaller methodological function to the concrete subject matter of cognition without entering the system of methodology.

2. Methods of scientific cognition

2.1. *Structure and function of the methods of scientific cognition*

The term: method is derived from the Greek word “methodos”, meaning “way to something”. In connection with cognition this term is used as a special process of achieving scientific findings [1, s. 214].

The correct understanding of the method of scientific cognition requires one to beware of two extremes represented by their “subjectivist” and “objectivist” renditions.

A scientific method can be incorrectly informed by a subjectivist rendition where it seemingly appears to be independent from the object of cognition. A method (which only seemingly stands out as the sum of procedures freely created by man independently of the object of cognition) is considered as a free intellectual construction. The notion that e.g. synthesis, induction, deduction, analogies and other methods are purely intellectual constructions fashioned by people is erroneous.

The objective foundations of, say, an analysis as a scientific method are known processes in nature and society of articulation of the whole into its parts (spontaneous disintegration of rocks or plants, separation of parts from the whole entity in the working process, the falling apart of social groups, etc.). Similarly, the objective foundations of synthesis as a scientific method relies on the opposite processes of cognition in which parts are assembled together to form an entity.

Likewise, induction as a scientific method has its objective foundations in the transformation of generalities to individualities (thus drugs-related crime as a type of crime has shaped gradually, progressing from individual criminal acts towards a mass phenomenon). It will almost certainly cease to exist through a reversed process, i.e. it will regress from a mass phenomenon through a “residual group occurrence to individual crime. Here the similarity to deduction as a method of scientific cognition is quite obvious.

Not even analogy as a method of scientific cognition is a purely subjective artefact of human thought. Its contents are actually derived from the world as it is. Its objective foundations consist of the shared and individual attributes and facets of the world as it is.

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Hence scientific methods do not arise in a haphazard way and independently from the existing object. Rather, they are derived from existing objects.

The objectivist approach to a scientific method rests in the rendering absolute of the object of cognition and existing findings about this object. Abilities, knowledge, and historical and other limitations of humans as the subjects of cognition are underrated.

Both extremes ultimately lead to problems in the cognitive process. Subjectivism breeds arbitrary action while objectivism fails to distinguish between theory and method.

A scientific method inevitably has both an objective aspect (given by its content as the sum of objectively true findings) and a subjective aspect (given by its form and the sum of procedures used in the course of the cognitive process). Thus the objective trueness of the content of a method gets changed and transformed into the correctness of its form and cognitive processes.

Hence the degree of scientific nature of a method shall be determined by:

- a) The completeness of the theoretical findings that form its content,
- b) The degree of transformation of theoretical findings into a guidebook for the further cognitive efforts.

It follows from the above that the methods of scientific cognition must not be chosen arbitrarily and independently from the object of cognition (the findings about which form the content of the method) but must always be selected with a view to the object of cognition.

Hence the difference between theory and method is relative. In the process of scientific cognition one observes their overlapping and mutual conditionality. Scientific findings cannot be obtained without the use of adequate scientific methods and, conversely, the obtained findings begin to shore up as methods in the further process of cognition. The richer the scientific findings the more advanced the methods—and conversely the more advanced the methods the more effective the acquisition of further findings. The relationships between the object of cognition, theory and method are shown in Fig.4.

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RELATIONSHIPS BETWEEN THE OBJECT, THEORY AND METHODS OF POLICE SCIENCES

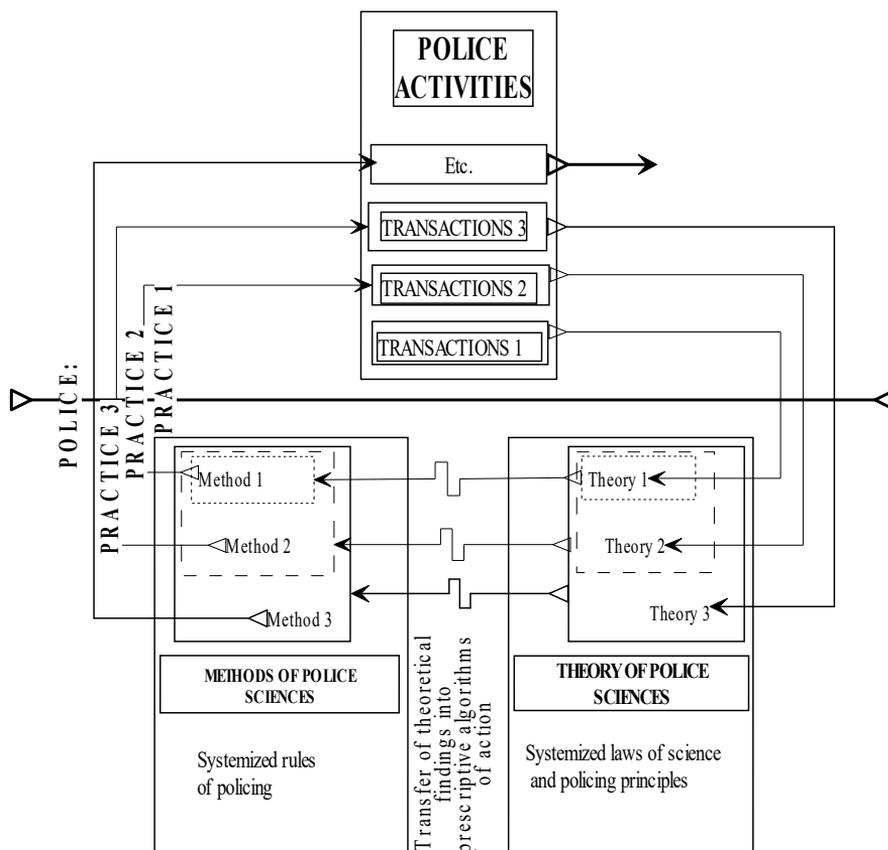


Fig. 4 The relationships between the object of cognition, theory and method

The structure of a scientific method could thus be described as a progression of operations from the source to the set goal [3, p. 18].

Method = (V, Mo, Poo, C),

Where:

- V = Source
- Mo = Set of operations
- POo = Routing of operations
- C = Target (goal)

The structure of a scientific method is analogical to the structure of the rule.

2.2 Classification of methods of scientific cognition

In the real process of cognition the use of a single method will almost never do. Actually we use a number of methods that complement each other or anticipate

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developments (analysis anticipates synthesis, induction anticipates deduction, etc.). And this calls for a classification of methods.

Methods of scientific cognition are most often classified according to the following criteria [4, p. 121]:

- a) Relations between the subject and object of cognition,
- b) Specific features of the object of cognition,
- c) Degree of generalization (see Fig.5)

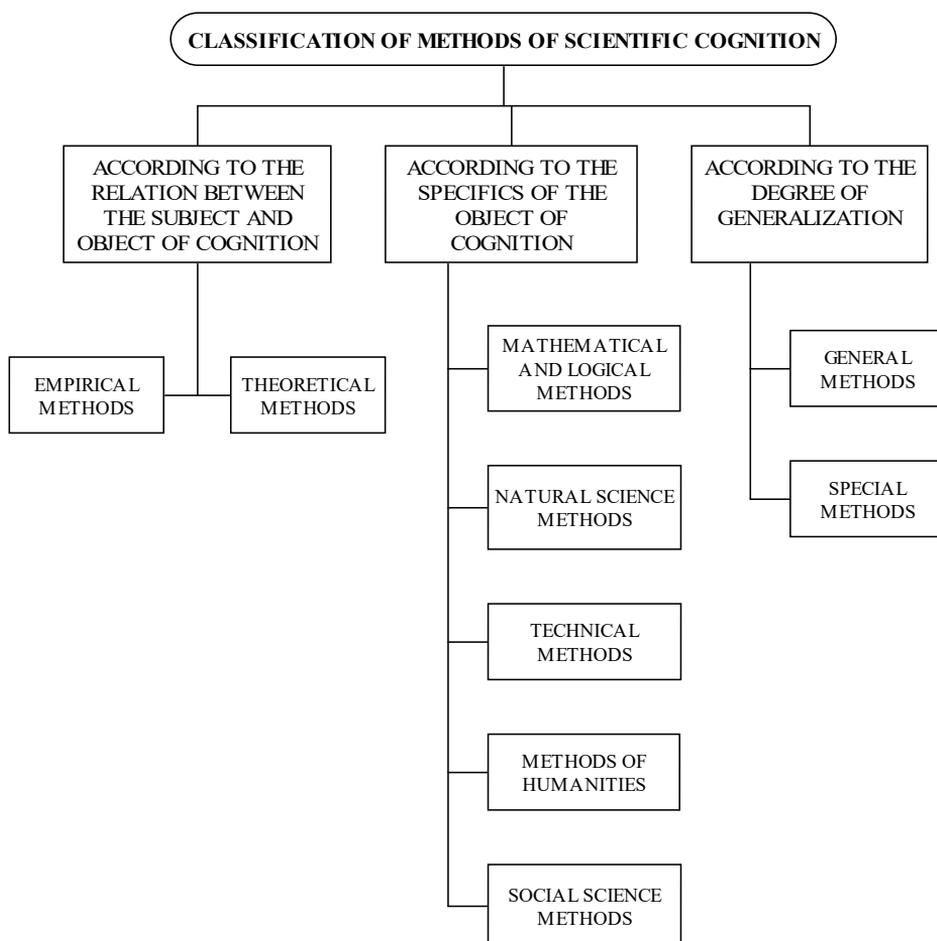


Fig. 5 Classification of methods of scientific cognition

a) Classification of methods by the relationship between the subject and object of cognition

The relationship between the subject and object can be twofold:

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a1) the subject of cognition (that which recognizes) is in direct contact with the object of **empirical method** of cognition (the phenomenon under cognition). In such cases one will act according to Fig.6

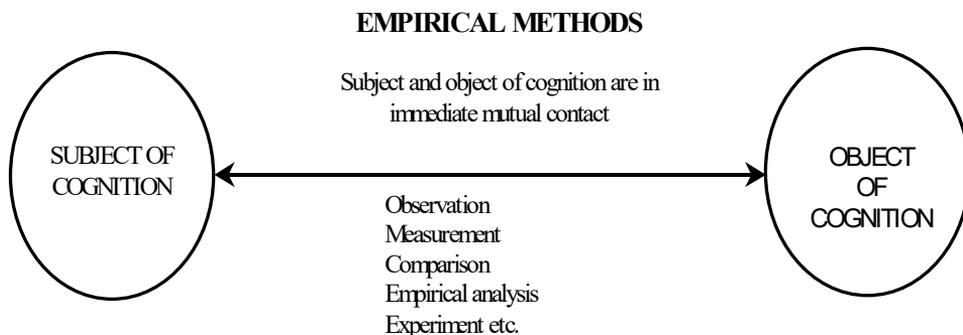


Fig. 6 The Empirical methods

a2) The object of cognition is not readily accessible to the subject (it has ceased or not yet begun to exist, and if existing it is not readily available to the subject for other reasons). The subject must do only with findings about the object. In such cases **theoretical methods** [3, p. 23] will be used (see Fig.7)

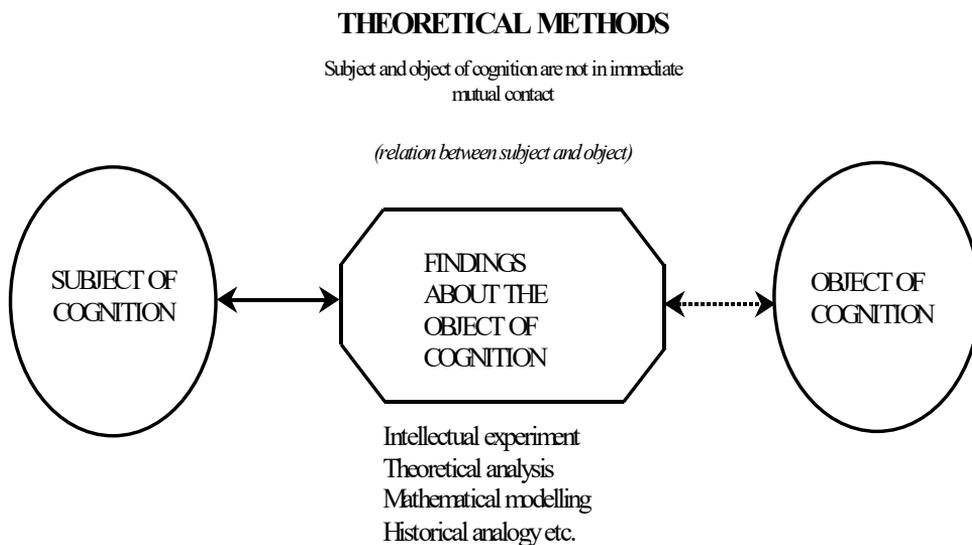


Fig. 7 The Theoretical methods

b) Classification of methods by the specifics of the object of cognition

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According to the specific features of an object of cognition the methods are classed in the following groups [3, pp. 17-32]:

b1) **logical and mathematical methods** whose object of cognition is the formalized relationships or quantitative properties of the objects of cognition,
b2) **natural-scientific and technical methods** whose object of cognition is a set of natural and technical phenomena. They are internally classed as:

B21) physical methods

b22) chemical methods

b23) biological and other methods

b3) **Social-science methods** whose object of cognition is a set of social phenomena. According to the degree of detail they are further classified as:

B31) sociological methods

b32) psychological methods

b33) demographic methods

b34) economic methods

b3n) criminological, crime and other methods

c) Classification of methods by the degree of their generalization

c1) **general methods** of scientific cognition whose contents consist of the principles, laws and categories of general but not universal scope. The general methods of cognition may both empirical and theoretical.

c2) **special methods** of scientific cognition are informed by principles, laws and categories of a relatively narrow scope. Their use is therefore limited by the confines of one science or several associated sciences. Special methods of scientific cognition may be empirical or theoretical.

It surely would be possible to add other criteria to those that enable the classification of methods. Suffice it to mention one criterion that sometimes invites discussion. We talk about the measure of regularity that enables us to discern “factual” methods based on logical argumentation through scientific facts (we have actually discussed these methods) and “intuitive” methods the initial phase of which lacks logical argumentation.

The intuitive methods rely on the theoretical erudition and practical experience of highly qualified experts. Thus intuition shall not be perceived as a “supernatural inner voice”. Rather, intuition is a process of solving a scientific problem in the absence of material argumentation. Suddenly there is a “ready-made” outcome with no paths to reaching it. The associations that occurred in the psychology of the subject remain hidden. The solution has to be sufficiently explained after the fact.

However, this does not belittle the value of intuition in any conceivable way. It is generally known that the intuition of erudite specialists plays an important role in solving complex (criminological, crime-study and other) issues. Yet intuition cannot be counted in where there is the absence of high qualifications

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2.3 System of methods of scientific cognition

The efficiency of scientific cognition is to a significant extent impacted by the value of its methodological apparatus. By this we mean not as much the sum of scientific methods used by the contemporary science as their correct selection and optimal systemization.

The creation of the optimal system of methods of cognition of a specific object (and focus) is determined above all by the following inputs:

- a) The nature of the very object of study that can assume a social, anthropological, natural or technical character whereby each of these can stand out as a natural or ideal phenomenon, etc.
- b) Its objective may be the recognition of its past, present and future state, its relation to other phenomena, the recognition of its structure, functions, etc.

We shall put aside all the other determining factors (crucial in other than methodological associations) of prevalently personal, material, temporal and other character.

The system of applied methods of cognition differs from case to case and to render any of them universal would be a gross methodological error. The systems of applied methods will diverge proportionately to their objects and vice versa.

However, this applies to the system of methods as a whole and not to all its planes. The degree of differentiation of the systems of methods of cognition will increase with the decrease of the degree of generalization of their planes. They will share a single universal (philosophical) level; the general scientific level will be very close while the special-science planes will differ considerably.

2.4 Methodicalness and techniques of scientific police cognition

Methodology and method are terms akin to methodicalness and technique. Their closeness often leads to inaccuracies in the practical application of these terms [6, pp. 203-205].

The methodicalness of scientific cognition is a prescriptive algorithm of cognitive operations, methods and modalities of their use. It is an arranged cognitive effort. While the contents of methodology and method are determined above all by the object of cognition the content of methodicalness is given also by the objectives, requirements and potential of the subject. Methodicalness is therefore looser in its ties with the object. In the actual process of cognition one therefore encounters the use of more than one methodicalness in solving one and the same scientific problem. Even though methodology and methods may be identical, their arrangement and use will be different, i.e. other types of methodicalness will be applied. (Methodology is sometimes described as the strategy of cognition and methodicalness as its tactic.)

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The development of various types of methodicalness of scientific cognition is extremely important as it supports its formalization and in justified cases also an easy embracing of this algorithm by the “non-academic” staff. The trick is in the development of types of methodicalness in solving type problems (e.g. in police practice).

Conclusion

Method is progression from the source to the target involving the use of finite steps (operations). The techniques of scientific cognition are variant ways of integrating operations (steps) within one method.

One and the same method may assume various functions depending on the character of cognition, its goals, the status and conditions of the object of study, etc. One and the same method will fulfil different functions when investigating historical events, investigating their present status, and investigating their future. It will play a different role in recognizing readily accessible object and in the recognition of objects not readily available.

In this context one often encounters the term:”approach to the research” of an object. It is used to describe a “method of a kind” when a general method of cognition acquires a special character through its association with another “supplementary” method. Historically logical, structurally functional, analytically synthetic and other approaches belong to the most frequently used aspects.

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