

Forensic Classification of Information Sources by the Mode of Representation

Beibit Kairatovich, Birzhanov

Karaganda Academy of MIA Republic of Kazakhstan Behalf Barimbek Beisenov
Kazakhstan, 100008, Karaganda, Ermekov Street, 124
Email: birzhanov.beibit@yandex.ru

Doi:10.5901/mjss.2015.v6n3p478

Abstract

The examination of the criminalistic information sources is of great theoretical and practical importance for execution of the crime control tasks. The aim of the present study is examination of the criminalistic information sources and their classification by the method of representation. The author of the article classifies the significant forensic information, basing on the analysis of research sources and the practice of detection and investigation of criminal cases. On the grounds of the survey, the author suggests practical guidelines on the most efficient usage of significant forensic information for the fight against crime.

Keywords: forensic information, information sources, vestiges of a crime, track formation mechanism, investigation of crimes.

1. Introduction

The widespread adoption of scientific advances, improvement of scientific and technical methods to combat crime caused a significant expansion of the forensic information sources range and methods of their study. The volume of such information sources as photographs, molds, mechanical copies, records, drawings has increased. A number of new technical means of information reproduction, transformation and transmission is successfully used in the fight against crime. Through the new means of reproduction technology there is carried out the transfer and the exact fixation of sounds and images; revealing object properties, directly inaccessible to the eyesight, due to its limited sensitivity, the study of transient processes, solution of a number of statistics, classification and logic problems.

The successful development of the methods of forensic investigation is only possible on the ground of a broad, active use of the modern achievements of natural, engineering and humanities sciences, creatively processed in expertise.

The science and technology reveal the new possibilities of detection, fixation and study of forensic information.

However, it should be taken into account that the modern scientific and technical devices are fully used as a means to commit and conceal the crime, which significantly complicates the task of forensic investigation and proof.

The task of forensics is to comprehend these possibilities and determine the conditions of their implementation in the process of forensic activities on detection and investigation of crimes.

In this context, the development of sources classifications, contributing to elucidation of the possible use and development of the study methods of forensic information sources is of primary importance.

One of such classifications is the information sources classification through the method of information reflection.

Individual questions about using forensically relevant information in combating crime have been previously considered by individual scientists, among them are the works of R.P. Fisher and R.E. Geiselman (1992), A. Aubakirova (2000), V. A. Volynskiy (1994), C.E. O'Hara and G.L. O'Hara (1988), W.B. Sanders (1977), M. A. Tolegen et al. (2013), M. Nakayama (2002), E.J. Bernard (2007) and others authors.

Meanwhile, separately, the issues devoted to the information sources classification by the reflection method were not considered previously.

2. Research Methodology

The methodological basis of the research comprises the dialectical theory of cognition, formal logic, forensic methodology and academic forensic conceptions. The author applied academic methods of cognition (analysis, synthesis, statistical technique) in the research. Also, in the research there have been utilized the mathematical, cybernetic, and ad hoc approach of forensic and other studies, in particular, systemic structural analysis and information security theory bases.

Furthermore, in the study there was used an analysis of criminal cases, with the purpose of exploration of the forensic information application experience, as well as for deficiency exposure of the investigation subjects activity.

3. Results and Discussion

Among the objects of research by the specified grounds, there are distinguished two main groups:

- the objects, peculiar properties of which have probative value (direct sources of information);
- the objects, containing evidentiary information on the properties of other objects (indirect sources of information).

The notion of mediated sources can be compared with the notion of a trace. Under the traces in a broad sense, we understand, as noted above, all the changes of material conditions related to the events under investigation. This applies to both individuals and items, for instance, traces of the hands, feet, transport, animals, etc., as well as any changes that show the circumstances of the event under investigation. In this case, the objects themselves can be termed as tracks, also material particles and the changes in their state. For example, clothing of a criminal, cigarette butts, food debris is called traces of the offender; changes in the position of furniture at the murder scene – the traces of fighting; insects detected on the body, and smells – traces of a corpse's rotting, etc.

A presentation is often referred to the traces-prints of events – images of this event, memorized in the minds of living persons. In this broad sense, any sources of forensic information about the events under investigation, any sources of evidence should be understood as traces (Volynskiy V. A., 1994). As of the evidence, the "evidence is called every fact, having a purpose to cause belief in the existence or non-existence of any circumstances constituting the object of the study" (Aubakirova A., 2000).

The notion of mediated information source has a more specialized meaning. The indirect sources are only part of the sources of forensic information, although the most significant. A peculiarity of the mediated information source is that the intrinsic properties of the sourced o not have the probative value, but the properties of the other object reflected in it.

For example, an arm trace or a footprint of a criminal as a mediated source of information has value only insofar as it reflects the properties of the human who left them, it allows to find and expose the culprit. The conception preserved in the mind of the witness, is also important not as the intrinsic properties of the witness, but as a display of persons, objects, and events related to the crime.

The methodological value of dividing sources of forensic information in the direct and indirect lies in the fact that this division allows to correctly identify the subject (problem) *ц*а the research, the methods and techniques of research, as well as the conditions of use of the evidence resulting from the research.

In the direct source of information the properties of the source itself are of the probative value. The research problem is to detect and fix these properties. It can be solved by direct perception and the information source research.

Thus, during examination of the instruments of crime (knife, firearms, etc.) there are clarified the properties of these objects, which allow using them as an instrument of attack or defense, and determine their attribution to the category of "cold weapon", "firearms". These properties include: the length of the blade, the handle construction, the possibility of a shot etc.

During the inspection of inferior goods the task is to detect those properties that characterize its inconsistency with standards and specifications and, in any event, limit the possibilities of its use.

The subject and objectives of the study significantly change in the presence of indirect sources of information. Direct examination of the evidence here is impossible, since the probative value is inherent not in the properties of the source but in the properties of an object reflected in it and extraneous to it.

Data on the properties of the inferior goods can be obtained from photographs of the product, and data on the crime weapon – from the testimony of a victim or a witness. It is clear that in these cases, not the properties of the photographs or the witness are of importance but the properties of the represented objects.

The conditions and opportunities of the study vary along with the subject. The representation reproduces only some particular aspect of the original, any separate part of its properties in specified conditions. Therefore, representation research is much more limited in features and more complicated technologically. Exploring the subject on the photograph or description, the investigator does not always have the opportunity to fully explore the subject to perform the necessary measurements, carry out experiments with it, take it apart, and so on, not to mention the fact that he in principle cannot establish the properties of the object that are not displayed (for instance, composition, taste, smell of the subject) (Azarenko S. N. and Brushkovsky K. B., 2006).

The specificity of the mediated information source study lies in the need to study the mechanism of reflection of the evidentiary information. Reflection of one object in another is always associated with the transformation of the displayed

properties. The properties of the represented object are displayed in a modified form, in the form of a natural code. Establishing them requires special research, "deciphering" the data contained in the reflection. Such study is carried out only through studying the mechanism of the reflection formation. After establishing the mechanism of the reflection formation, we acquire the key to "deciphering" the actual data containing there.

Investigation of the mechanism of reflection is all the more difficult than the signal is stronger converted into displayed information.

"Reading" the pressure traces is easier than the traces of sliding and friction; "deciphering" the usual reproduction picture is easier than the picture of the scene in the invisible rays, containing bright, colour and perspective transformations; even more difficult it is to estimate the testimony of a minor witness, susceptible to influence and inclined to fill the gaps in perception by active imagination.

In addition to transformations, the information signal in reflection is interfered by noise, which may lead to signal distortion, loss or weakening. Thus, the adverse conditions of the photographic process can lead to "fogging" or defects in the emulsion layer; disease of the witness and his interest in the case can cause distortion of the true picture of events observed by him.

In cases of multilayer reflection the mechanism of reflection formation of all degrees is investigated. Thus, establishment of the object properties by the trail at the scene requires studying the mechanism of formation of this track. Solution of the same issues through the photo of the trace, found at the crime scene, is additionally connected to the assessment of conditions of the photographic process. The testimony at the fourth hand, for their correct evaluation, requires determining the perception conditions and reproduction of the fact in each of the four degrees of representation.

The problem of the mechanism of reflection formation is, thus, a central issue of the studies of any mediated information sources.

In the trace evidence, for example, the central place is occupied by the classification of traces depending on the conditions of their formation (static, dynamic, three-dimensional, surface, layers, exfoliation, etc.) and experimental study of the very conditions of trace formation.

When using the testimony of witnesses, victims, suspects, the central issue is the mechanism of mental reflection of the fact. This problem, in view of its importance, is the subject of a special branch of forensic psychology – psychology of testimony of witnesses and suspects, given during investigation and in court. The processes of perception, formation of representations, the mechanism of memory and playback of the perceived are developed in detail.

The assignment of the source of information to the direct or mediated is directly related to the definition of methods and techniques of his research. In this regard, the considered division has direct practical application in the field of forensic investigation of sources of information.

The principle of division of objects and representations operates not only in the actual forensic, but also in other legal identification studies.

Various methods and techniques of research of direct and indirect sources of information are easy to follow on any objects and tasks of forensic investigation.

Let us compare the direct examination of the corpse at the scene and its inspection through the protocol; the direct examination of the break-in tools and their study on the photograph; direct inspection of the stolen things and their study through the victims' testimony. It is easy to verify that the methods and techniques of information sources research in the given and similar cases are significantly different.

The methodical value of the considered classification is significant in those cases where the same physical object can be studied both as a direct and mediated information source, as well as in those cases where the difference between the object and the representation is not clearly expressed, as usual. Therein, the assignment of the object to the number of direct or indirect sources of information is directly linked with the definition of objectives and methods.

Let us consider some of these cases. An object, damaged in the result of the crime, such as a building or a household item, can be studied both as a direct and mediated source of information. If such object is regarded to determine the damage caused by a crime, it acts as a direct source. At the same time, the intrinsic properties of the object that define its purpose are essential.

If such an object is investigated in order to establish the perpetrators of break-in and the used technical means, it acts as a representation. At the same time, not the intrinsic properties of the damaged item have the probative value, but the properties of the extraneous objects or persons displayed in the traces. From the properties of the same damaged subject of importance are only those properties that form the representation and determine the quality of the track (density, hardness, smoothness, grain structure, stratification, etc.).

It is clear that the methods and techniques of research, as well as the nature and extent of the necessary knowledge will be quite different. In the first case a merchandiser should be involved in inspection as an expert, while in

the second – a specialist in forensic technology (trace expert).

A photo can also be a direct or indirect source of information. In the first case, the intrinsic properties of the photographic image are of importance, i.e. its content, form, performance technique, making it an art object, a house ware item, a pornographic product, etc. In the second case, a picture serves as a reflection of objects and persons, which allows establishing and identifying these objects and persons.

The representation may take the form of an object while at the same time be a mediated information source. So, sculptural portraits or death masks made using varying technical methods with the deceased persons are a presentation of a real human head and outwardly look like objects, though are essentially reflections. The method of their study fully corresponds with the research methodology of the mediated sources of information. This fact should be borne in mind in the classification of some complex objects of study.

The items of mass standard production can be studied both as a direct source of information, and as mediated sources – presentation. When we study the properties of the product, its quality, completeness, standardization, and so on, it acts as a direct source of information. A similar situation occurs in the study of materials and substances. Thus, a toxic agent (poison), found in a person accused of murder may also be explored both as an object and as a reflection, although, in this case, their difference is displayed not as clearly as in the previous examples.

In the first case, the features of a substance, found in a charged offender are considered important that indicate its purpose and characterize its toxic effect (the composition, concentration, lethal dose, nature of the action, etc.). Any kind of random harmless impurities are considered here as irrelevant.

In the second case, when comparing this substance with a substance added to the food of the victim, the relative value of the features may differ. Actually the pharmacological properties of the poison will have meaning only as generic properties of the substance under examination. Particularly important will be the features that characterize the specificity, the origin of the matter from a particular source.

As can be seen, in this case as well, the research method will be different. In the first case, recognition – pharmacological or forensic chemical study of the substance to determine its nature, origin and purpose. In the second – a comparative identification study of the substance in order to establish the source of origin of the objects being compared.

As can be seen from the above, the distinction between direct and indirect sources of information is of essential methodological value. It allows to correctly identify the subject and objectives of the study, and to choose the most appropriate methods and techniques of research.

In cases when the same object acts both as a direct and mediated source of information, the considered division indicates the difference in tasks and methods of research of the same object, provides a comprehensive identification of all evidence essential for the case.

The use of mediated sources of information in the process of forensic work has become the subject of direct legal regulation. It obligates forensic scientists to conduct further intensive development of the issue of mediated sources of forensic information.

The division of the sources of information into direct and indirect should not be confused with the division into the original sources and derivatives. The latter are based not on the method of facts representation by the information source but on the method of the source formation and its distance from the primary source of information about the fact.

As noted above, the considered dividing is often identified in terminology, and in the essence. Meanwhile, there are two independent divisions, conducted on different logical grounds. The original sources of information are not always direct.

The witnesses of the crime, the traces of the offender, traces of transport, traces of weapons, traces of animals of all kinds etc. found at the crime scene – are some of the examples of mediated information sources, which are, at the same time, the original sources of information about the facts (Nurgaliyev B. M. and Elenyuk G. A., 2006).

The victim or the suspect, as the objects of examination, are direct sources of information. In case of interrogation of these people and analysis of their testimonies, they become mediated sources of information. However, both in the first and in the second case, they perform as the original information sources. The trace, found at the crime scene, and its photographs – are mediated sources of information. At the same time, the first is original and the second – derivative.

As shown above, the content of the derived source of information is always the same fact as the fact contained in the original source of information; the only difference is the completeness and accuracy of the reproduction.

The mediated source can comprise an essentially new fact in comparison with the actual content of a direct source of information.

Obviously, the considered divisions have different logical foundations. At the same time, the purpose and the role of these classifications varies as well.

As shown above, the purpose of distinguishing the sources of information into the original and derivatives is to implement the principle of research directness. The role of this division is to facilitate the resolution of the question of comparative information value of the existing or potential sources of information, for the investigator and the court.

The division of the sources of information into direct and indirect has a different meaning. Its significance lies in determining its research method, based on the analysis of the fact representation method through the source of information. In this case, there is resolved not the issue of the information source choice, but the choice of the method of forensic investigation.

The mediate information sources are used not instead, but equally with direct sources, being the means of fixation and examination of the factual data contained in them. The use of mediated sources in that capacity allows selecting any technique of transmission and representation of information, which is the most convenient for resolution of the specific research problems.

Thus, in studying the representations there are widely used the techniques of reflections transformation by shape, colour, brightness, relief, contrast, etc. For instance, during a fingerprint identification the fingerprints seized from the crime scene, are not compared directly with the fingerprints of the detainee, but with fabricated dactylograms; in the identification of a weapon by a bullet seized from the corpse, the latter is not directly compared with the weapon, but with the traces of the weapon bore on experimental bullets, etc.

This fact, not completely explainable from the position of dividing the sources of information into the original and derivatives, is quite understandable and natural, if it is considered in terms of dividing the sources of information into direct and indirect.

The principles of application of mediated information sources should be the basis for the active intervention of the investigator and the judge in the process of transmission, reproduction and examination of the evidentiary information. These principles justify the use of all legally acceptable techniques and methods of evidence research.

4. Conclusion

Thereby, it must be concluded that development of the classifications of forensically important information sources that contribute to elucidation of the possible use and development of the examination methods of these sources is essential to the quality of a criminal investigation and combating crime.

The sources of significant forensic information by the mode of representation are distinguished into:

- immediate information sources;
- mediated information sources.

The meaning of separation of the forensic information sources into immediate and mediated is that such division allows to correctly define the object of the research, methodology and techniques of the study, as well as the conditions of utilization of the actual data obtained in the research result.

Attribution of the information source to the immediate or mediated is directly related to determination of the methods and techniques of its examination. In this connection, the separation under consideration acquires a direct practical appliance in the field of forensic information sources research.

In addition, it must be pointed that division of forensic information sources allows correct identification of the subject (problem) of research, the methods and techniques of research, as well as the conditions of application of the evidence resulting from the research.

References

- Aubakirova, A. (2000) Fixing the evidence in forensic and legal proceedings. Almaty.
- Azarenko, S. N., Brushkovsky, K. B. (2006) Forensic Photograph: Educational and practical guide. Almaty. Yurist.
- Bernard, E. J., Azad, Y., Vandamme, A. M., Weait, M., and Geretti, A. M. (2007). HIV forensics: pitfalls and acceptable standards in the use of phylogenetic analysis as evidence in criminal investigations of HIV transmission. *HIV medicine*. 8(6), 382-387.
- Fisher, R. P., Geiselman, R. E. (1992). Memory-enhancing techniques for investigative interviewing: The cognitive interview. Charles C Thomas, Publisher.
- Nakayama, M. (2002). Practical use of the concealed information test for criminal investigation in Japan. *Handbook of polygraph testing*, 49-86.
- Nurgaliyev, B. M., Elenyuk, A. G. (2006) The organization of the investigation of crimes, committed by military officials. Karaganda: KJI MIA RK publishing house.
- O'Hara, C. E., O'Hara, G. L. (1988). Fundamentals of criminal investigation.
- Sanders, W.B. (1977). Detective work: A study of criminal investigations. New York: Free Press.

- Tolegen, M. A., Boretsky, A. V., and Balashov, T. T. (2013) Interaction of mass media, government bodies of the power and public opinion in crime prevention questions: urgent criminological, political and legal aspects. *Life Science Journal*. 10(4): 84-92.
- Volynskiy, V. A. (1994) Technical and forensic assistance in detection and investigation of crimes. Moscow. Publishing house VNII MVD of Russia.