



**Kulgavin M.E.♦**

DOI: 10.25108/2304-1730-1749.iolr.2017.51.186-217

### **Issues of analysis and assessment of criminalistical information**

**Abstract:** These are analytical unitization, analytical actualization, and analyses: adaptation, analogous, version, discrete, inversion, gaming, creative, modular, matrix, metaphorical, linguistic, search, targeted-programme, static, evidential, empathic, and risky and many others.

Criminalistical information on a mechanism of crime commission is reflected in changing of an object's disposition, its moving, appearing of materially fixed traces as a result of interaction of the object and reflecting environment, appearance new items in this place and in certain period etc. Learning the mechanism of such alterations, one may judge the both on separate fragments of criminal action and on criminal event in whole.

**Keywords:** criminalistical information; analysis and assessment; source of information; traces; mechanism o crime; object; mapping.

Sources of criminalistical information are always material, even this data on happened event are saved in human's memory. This case there is the mapping in material object – brain of human. Material essence of information's source is clearer manifested in those cases, when the subjects of non-alive nature are the reflecting objects, and the way of fixation is materially fixed reflection, but not image.

---

♦ **Kulgavin Marat Eduardovich** – PhD in Law, an expert of Moscow Department for Independent Expert Center “Kompleksnaya bezopasnost' otechestva” [‘Complex security of homeland’]. E-mail: info@iolr.org



Material sources of criminalistical information might be any items that able to have information about actual circumstances, which are significant for disclosure and investigation of crime: on external features of an object that left a trace; on its inner features and structures; on functional and dynamic complexes of a person; on a mechanism of trace-formation, on a way of criminal's act and other circumstances of happened event.

Criminalistical information on a mechanism of crime commission is reflected in changing of an object's disposition, its moving, appearing of materially fixed traces as a result of interaction of the object and reflecting environment, appearance new items in this place and in certain period etc. Learning the mechanism of such alterations, one may judge the both on separate fragments of criminal action and on criminal event in whole.

Material sources of information about investigated event fixed in form of "natural code" in kind of alterations of material features of the sources and reflected in their features. By this, material sources are distinguished from personal, in which coding of information carried out through signs [4, p. 101-103].

Material sources of criminalistical information cannot be identified with notion of material evidence as they appear before institution of criminal case and are there as such until they will be attached to case file as material evidences. But, at this stage they might be used to extract information, particular, those that necessary for institution of criminal case.

Some material sources of criminalistical information might not be material evidences, despite information that kept in them will be used in operational tactical purposes, for example, for a choice of correct tactical decision in current investigative situation [6, p. 76-78].

Traces-the sources of criminalistical information, under which might be understood any changes of environment that caused by committed crime, are an important in cognition of crime's mechanism.



In different stages of development there suggested various interpretations of the notion “trace”. It distinguished the traces like ideal prints of an event in mind of people and material footprints on items and in changing of environment. There distinguished “traces in wide sense”, under which is understood any consequences of crime, including coming of criminal result; “traces in narrow sense”, under which is understood only reflection of external construction of an object [8, p. 11].

Certain time the interpretation of trace as reflection of the object was preponderance, but in forthcoming stages of criminalistics’ development this definition was undergone significant changes. Trace became to be not only as reflection of an object, but also as reflection of conditions and mechanism their formation, even if the object has no sustainable form [17, p. 26-27].

Together with traces-reflections of internal construction, have determined availability of the traces- remained phenomena, implying under them a wide circle of the objects: the rests of materials and substances [18] before moving the objects in space [20, p. 66].

Material source of criminalistical information are the copies of traces, which were suggested to consider as derivative material evidences [22]. Transmission of some volume of information from one material object (trace) to other material object is quite admissible, if it is not occurred a distortion of information and losing an opportunity to extract and examine it. With considering of this criminalistics pays proper attention to development of technical techniques and method of receiving such informative significant copies of the traces like the casts, imprints, photographs.

It is necessary to include in a circle of material sources of criminalistical information the auxiliary technical means as samples assigned for comparative examination. Absence of similar samples or their insufficient informative nature is able to make impossible examination of the material source. The samples assigned



for comparative examination meet its assignment, when they are the carriers of criminalistical information on a complex of features of inspected object that necessary for identification [11, p. 11-16].

Summarizing stated, the following should be related to material sources of criminalistical information: any objects, reflecting information that necessary for disclosure and investigation of crime, in form alteration of material features and signs of a source; samples that necessary for comparative examination [7, p. 66-67].

Method of analysis and evaluation of the sources of criminalistical information is determined the fact what circle of features are subjected to examination in an object: own features of an item or the features of other object, event, phenomenon that reflected in it.

Examination of own features of the object from standpoint of its origin, assignment, attribution to classification groups etc is carried out mostly with methods of natural and technical sciences. Examination of reflections with purpose of identification of mapped objects and establishing of crime's circumstances is a specific criminalistical issue.

Significance of an issue of the mappings' examination, i.e. the traces in wide sense of a word, determined for criminalistics not only that any crime is investigated on the traces, but also that examination of the mappings requires a special methodic and technical approach and development of special criminalistical means and methods [5, p. 7-8]. Consequently, the general method of criminalistical research of the mapping is its analysis from standpoint of mechanism of formation and similarity to original.

Resolutions of indicated tasks determine necessity of classification of mapping's features that define the research direction of their separate groups. In forensic investigative and expert practice is used the following interlinked and



supplementing each other methods of the mappings research: method of reconstruction; method of control means; comparison method [6, p. 17-19].

The method of reconstruction based on the fact that establishing process of the features of original on mapping is an inverse relatively the process of transformation and mapping. In first case the process comes from the feature of mapping to the feature of original. In the second one comes from the feature of original to the feature of mapping. An essence of this method is first to establish the mechanisms of transformation and then on this base to establish inverse transformations or introduce appropriate correctness in the features of mapping [9, p. 66-69].

The means of establishing of the features' transformation mechanism are: a) examination of mapping; b) examination of data on conditions of mapping formation; c) experiment [16, p. 27-30].

Research of mapping allows establishing the specific conditions its formation that impact on mapping of the features, which are significant for a case. At criminalistical research of mapping

At criminalistical examination of the mappings it is reasonable to apply data those sciences, which research regularities of formation and transformation appropriate mappings.

First of all it is necessary to make clear those elements of transformation mechanism, which difficult or impossible to establish through direct studying of the mapping. These are: a) data on features of mapped and mapping objects; b) conditions of mapping formation that entails to its transformation relatively common perception of an original.

Symmetrical transformations are subjected to full reverse transformation, which carried out during examination of material mappings, as rule, with mechanical, optic-mechanical, photo-mechanical or other way. Nowadays it has been developed and used a number of appropriate methods. They are: the method



of elimination of reflectivity of image in process of filming, inspection or projection photographic printing; the method of treating the relief by applying plastic masses; the method of “optic casts”; the method of removing of image activity; the profiling method and number of others [12, p. 11].

Using of reconstruction method is aggravated in cases of the analysis of asymmetric mappings. To reconstruct the mapping, here might be used the following auxiliary methods: 1) method of partial reverse mechanical transformation; 2) calculation method; 3) evaluation method [20, p. 66].

The method of partial reverse mechanical transformation is carried out through various correcting instruments and devices. In practice, they might be the following: photographic projection devices, correcting lens filters, packed lenses, stereoscopic devices, film-projection, stereophonic and other devices. Necessary effect of reconstruction might be received if a conformity principle and level of transformation are complied. It means that power of correcting device and level of mapping transformation must be harmonized among themselves. So, level of increase in course of projection printing should be complied with the level of decrease when filming and speed of the film-projector should be complied with a speed of the camera working etc. [21, p. 111].

Calculation method of reconstruction is applied, when evidential significance has an absolute clarity of an original’s features, for instance, absolute sizes and distance between items, depicted on photos or a plan of scene. This method based on using of strict dependence existing between the features of images and separate elements of the mapping mechanism. So, using the dependence of an image scale from object’s remoteness from lens and being defined with calculation way the focusing distance it might be established the sizes of separate items that mapped on the photo and distance between them [10, p. 351].

Calculation method is concluded in mental reconstruction of the features of sign in the base of data concerning direction and levels its transformation.



Calculation method is applied when evidential significance has relatively expressiveness of features, but not absolute, and when the sign of mapping is similar of the feature of an original, and the latter is easily reconstructed on the sign.

Main condition of application of the calculation method is a clear imagination concerning the character and degree of mapping's transformation. Application of this method might be impossible if an investigator has no information concerning the character and level of transformations. So, if there is no information on filming conditions in the records of inspection or reports of expertise and the photos have no accustomed items for common perception or especially used zooms to determine a character and degree of transformation, then the photos might be undecipherable.

Controlling devices method based on usage of the principle of unambiguous interdependence of transformation, an essence of which is the fact that homogeneous features of an original are being in same conditions, are transformed in mapping clearly. So, all items are at the same distance of a camera lens, being decrease or increase when filming in the same number of times; items that have the same brightness and spectral characteristics will be indicated in a photo the same blackening; sound vibrations of the same frequency and amplitude will reproduced in phonogram by the tones of similar power and pitch etc. [10, p. 351-365].

As etalons can be used such features of mapping object, which homogeneous with the features that have an evidential significance, and can be easily established on the mappings. The etalons are served as own features of an original (accidental etalons) so and the features of extraneous objects (special etalons) that specially introduced in mapping.

Wide dissemination has had special instruments of the quality image control (method of special etalons) during criminalistical and other forensic examinations of material sources of the criminalistical information. Principles and ways of the



control of reproduction are distinguished in dependence on the tasks of reproduction and nature of mapping transformation, i.e. from a kind of reproduction. During the common reproduction the principle of control is to establish an exact conformity of the etalon and its reproduction. Deviation indicates the bounds, nature and origination of distortions. When reproductions are linked with transformation of the form then in mapping for control should be introduced the elements that indicate in transformation conducted.

When reproduction is conducted with purpose of discovering new features, the principle of exact conformity of the etalon and reproduction is non-usable and there acts other criterion - objectiveness of reproduction, and notably, establishing of that fact that new features, which are available in mapping, are the mapping of objective features of reproduced object, but not action of any accidental reasons. At the same time, as means of the control is applied an etalon that in certain conditions of reproduction gives prior known effect of feature's mapping. Appropriate features of examined object are judged on reproduction of an etalon's features.

Together with special items, which are artificially introduced in mapping, sometimes as the etalons might be also used the own features of mapped object (accidental etalons). Usage of accidental etalons based on the same principle of unambiguous interdependence of transformation and, actually, is not differed from using of special etalons [13, p. 11-16].

Method of comparison is concluded in examination of various manifestations of an original's features. The features of an original, which subjected to establishing, can be determined through research their various manifestations – the signs of mapping and an original. This provision is contained in the basis of the method of comparison. Independence on the material of comparison it is necessary to distinguish: a) comparison of mapping with an original; b) comparison with





homogeneous object; c) comparison with other mappings of the same object [19, p. 76].

Comparing of the features of mapping with the features of mapped object is possible only if there is an original, i.e. the mapped object, the feature of which is subject to examination. This method is limited with the cases of research of experimental mappings. Main objective of it is to research the conditions (mechanism) of mappings' formation [14, p. 72-73].

Correctness of mapping of generic features of an original might be checked the both as through comparison of the mapping with the original so through its comparison to any object of the same origination [15, p. 111-112].

In recent years criminalistics has been enriched with a system of new methods of analysis and evaluation of criminalistical information, which might be used also at search of its sources.

These are analytical unitization of, analytical actualization, analyses: adaptation, analogous, version, discrete, inversion, gaming, creative, modular, matrix, metaphorical, linguistic, search, targeted-programme, static, evidential, empathic, and risky and many others.

Analytical generating of the sense of primary data is concluded in analytical creature of maximum of consequences from available facts and their rotation. Every new fact is considered as: a) primary objective information; b) possibility of the consequences' generating; c) causal links that determined with a fact.

Mechanism of analytical generating has the diverse characteristics: localization (choosing of specific place of influence); dimensions (mini, maxi, macro); number (number of the elements); time (duration of action: short-time, long-time, medium-term); intensity of realization (speed of transformations of situation per time unit); quality (effectiveness, productivity); stimulation (situation, identity, law requirements, accident); cyclical nature (periodic repeatability); results of impact on intellectual, emotional, volitional sphere; external



manifestations (motional or speech, intellectual activity, justified passivity); adequacy to situation and person; reflectivity, space-temporal range, sphere of impact, risky-nature, reliability, stability of conditions, width, depth and intensity of integration [3, p. 43-45].

Criminalistical inversion (overturning, rotation) is realized through: searching of issue solution by roundabout way, close to main issue, taking away from direct “attack” in solved issue; transformations of typical way of a solution of criminalistical informational task into contrary, illogic one; transfer of analyzed situation in other space and time; examination of investigative situation or materials of criminal case from the end to the beginning, in reverse order; transformation of functionally harmful elements by the means of admissible tactical impact; division of the elements of investigative situation in minimal on volume in order to solve small problems and further joining the results into coherent whole; weakening of separate negative links between elements of investigative situation or method, strengthening of positive links; duplication of the means of admissible impact of separate elements of the method that targeted to obtaining of fuller and comprehensive criminalistical information [3, p. 54-56].

Analytical recoding of non-visible information in visible images is concluded in imagination of number of the notions in form of pictures with usage of specific criminalistical information, taken from the case-files. It allows seeing a dynamics of the events, sequence of the actions, experienced feelings [3, p. 70].

A gist of translation of analytical information from one “language” into other one is concluded in the fact that common imagination of information should be subjected to transformation that will allow to see the keys in available criminalistical information to resolve the problem, which arisen problem before investigator [3, p. 71].

Analytical transformation of criminalistical information is carried out: on horizontal line classifying on significancy; on horizontal and vertical, when



drawing up a table of alibi checking, where vertical line determines time, and horizontal one – disposition of checked person in period of crime's commission; in interface on few planes, on the bases with multilayer disposition of criminalistical information [3, p. 72-73].

Analytical aggregation consists in the fact that autonomous purposeful systems are experimentally joined and developed: informational blocks, fields, junctions, links, contradictions [3, p. 83-84].

Discursive analysis is based on rational reasoning, analogues and prototypes, angle of criminalistical examination and diagnostics of the situation providing determination of criminalistical information, which is absent, but should be present. Discursive analysis is a search of non-available block (junction, field) of criminalistical information, which naturally should be formed during commission of crime or concealment [3, p. 115].

Genesis analysis, which based on the principle of historical approach, consists on studying of crime in dynamics, in development. It requires an establishment of initial conditions of crime development, main stages, interactions, results and forecasting of possible consequences, the ways of development of criminal actions [2, p. 8].

Matrix analysis is a variety of modeling. This method is a structural natural link of certain elements that based on determined in course of systemic research. With regard to practical activity of investigator under matrix is understood a set of the facts, characteristics, regularities, common requirements, which established in course of investigation, regulating activity of institutions, official, requirement to a product, manufacturing or other process.

Application of the method gives an opportunity to conclude on compliance either non-compliance of activity of institution, enterprise, official, separate process of the matrix to systematize available facts, to discover the missing elements and determine what else facts or elements, which provided by the matrix,



should be sought for. Thus, method of matrix serves to aims of processes' ordering of the collection of criminalistical information, its analysis and assessment during investigation and provides a comparison of a set of the facts, processes targeted to discovering the differences with available models [1, p. 93].

Heuristic method is a special technique of criminalistical activity that transforms integrated sum of analytical methods, techniques and ways, which is available at a specific investigator during solution of specific task, invention of the methods of crimes' investigation.

With regards to criminalistical work, the main task of heuristic methods is to determine new associations, new blocks of information on different links from primary data of problematic criminal situation, investigation of which reaches in "deadlock", does not entail perspectives in establishment of the truth [3, p. 179-181].

Eliminative hypothetical analysis (probabilistic exception) designed on the processes of links' transformation in mechanism of accident. Its essence consists in the fact that between a cause and effect (criminal result) is a series of the elements of a criminal situation. Each of them has own meaning: influencing in result directly, naturally, necessarily (direct, significant link); influencing in result indirect creating favourable conditions for beginning of criminal result (indirect link mediated the conditions of result); not influencing in development of situation, these are neutral elements of situation [3, p. 154-156].

Phenomenological criminalistical analysis is a set of criminal and criminalistical views and concepts that directed to lateral criminalistical interpretation of the components of strategic and tactical analysis, for substantiated criminalistical diagnosis of unique phenomenon and forecasts of its development and disclosure [3, p. 151-153].

Adaptation analysis and interpretations provide an adaptation of information to procedural aims of an investigator, defender and prosecutor.



Interpretation is not only interpretation of some information, but also adaptation of received information for perceived of it an investigator, prosecutor, and defender. The investigator may perceive, evaluate only that information, to receiving of which he is ready, and that attracts interest. Complex, unclear information is simplified by investigator up to level of understanding. Interpreted complex information is simplified, i.e. it might be laid out into separate blocks, fulfilled in graphic or prototyping form, presented in form of artistic images etc. Receiving of interpretation is designed in permanent re-coding of analyzed information until hidden, latent volumes of information become available for perception [3, p. 85].

### **References**

1. Dulov A.V. Osnovy rassledovaniya prestupleniy, sovershennykh dolzhnistnymi litsami [Bases of crimes' investigation committed by officials]. Minsk, 1985, 168 p.
2. Dulov A.V. K voprosu o kriminalisticheskom analize prestupleniy [To issue on criminalistical analysis of crime]. Sb. Referat. nauch. soobsh. na teoretich. om seminare-kriminalist.chteniyakh [Col. of essays of sci. works in theoretical seminar-criminalistical readings]. Issue 19, Moscow, 1977, pp. 3-10.
3. Zorin G.A., Zorin M.G., Zorin R.G. Vozmozhnosti kriminalisticheskogo analiza v protsessakh predvaritel'nogo rassledovaniya, gosudarstvennogo obvineniya i professional'noyi zashchity po ugolovnym delam [Possibilities of criminalistical analysis in the processes of preliminary investigation, public prosecution and professional defence on criminal ceases]. Uchebno-metodicheskoe posobie [Teaching aid]. Moscow, 2001, 336 p.
4. Kertes I. Osnovy teorii veschestvennykh dokazatel'stv [Bases of theory of material evidences]. Moscow, 1973, 296 p.



5. Kirichenko V.V. Teoreticheskie voprosy opisaniya i ob'yasneniya v kriminalistike [Theoretical issues of description and explanation in criminalistics]. Avtoref. dis... kand. jurid. nauk [PhD in Law Dis. Abstract]. Moscow, 1978, 66 p.
6. Koldin V.Ya. Predmet i zadachi fiksatsii veschestvennykh dokazatel'stv [Object and tasks of fixation of material evidences]. Tezisy докладов na mezhvuzovskoyi konferentsii po kriminalistike [Theses of reports in interuniversity conference on criminalistics]. Moscow, 1960, 111 p.
7. Kolkutin V.V., Zosimov S.M. and others. Sudebnye ekspertizy [Forensic expert examinations]. Moscow, 2001, 288 p.
8. Kolmakov V.P. Identifikatsionnye deystviya sledovatelya [Identification actions of investigator]. Moscow, 1977, 114 p.
9. Kolmakov V.P. Sledstvennyi osmotr [Investigatory inspection]. Moscow, 1969, 292 p.
10. Kriminalistika sotsialisticheskikh stran [Criminalistics of socialistic countries]. Pod red. V.Ya. Koldina [Ed. by V.Ya. Koldin]. Moscow, 1986, 540 p.
11. Krylov V.V. Informatsionnye komputernye prestupleniya [Informational computer crimes]. Moscow, 1997, 307 p.
12. Lysov N.N. Kriminalisticheskoe uchenie o fiksatsii dokazatel'stvennoyi informatsii v deyatel'nosti po viyavleniyu i raskrytiyu prestupleniy [Criminalistical doctrine on fixation of evidential information in activity on detection and disclosure of crimes]. Avtoref. dis... dokt. jurid. nauk [Doctor of Law Dis. Abstract]. Moscow, 1995, 86 p.
13. Maksutov I.Kh. Sudebnyi osmotr mesta proisshestviya i osobennosti ego provedeniya [Judicial inspection of crime scene and particularities its conducting]. Leningrad, 1972, 372 p.
14. Metodologicheskie problemy vzaimodyistviya obschestvennykh, estestvennykh i tekhnicheskikh nauk [Methodological issues of interaction of social, natural and technical science]. Kol. avtorov [Authors' team]. Moscow, 1981, 297 p.



15. Minkovskiy G.M. Protsessual'nye voprosy primeneniya novykh nauchno-tekhnicheskikh sredstv fiksatsii resul'tatov sledstvennykh deyistviyi [Procedural issues of application of technical means of results' fixation of investigatory actions]. Praktika primeneniya novogo ugovno-protsessual'nogo zakonodatel'stva [Practice of application of new criminal procedural legislation]. Moscow, 1962, 296 p.

16. Mitrichev V.S. Voprosy teorii sudebnoyi identifikatsii [Issues of theory of judicial identification]. Trudy VNIISE [Works of All-Union Sci. Res. Inst. of Forensic Expertise]. Moscow, 1970, issue no. 2, pp. 27-43.

17. Ovchinskyi A.S. Kompyuternaya razvedka v ORD [Computer reconnaissance in the OIA]. Upravlenie zaschitnoyi informatsieyi [Management of protective information]. 1998, no. 4, vol. 2, pp. 96-111.

18. Osmotr mesta proisshestiya [Inspection of crime scene]. Prakticheskoe posobie [Guide-book, ed. by Dvorkin A.I.]. Moscow, 2000, 336 p.

19. Popova V.V. Osobennosti pervonachal'nogo etapa rassledovaniya prestupleniy, sovershennykh s ispol'zovaniem vzryvchatykh veschestv i vzryvnykh ustroystv [Particularities of initial stage of crime's investigation committed with usage of explosive substances and explosive assembly]. Uchebnoe posobie [Teaching aid]. Samara, 1998, 266 p.

20. Selivanov N.A. Veschestvennye dokazatel'stva [Material evidences]. Moscow, 1971, 216 p.

21. Selivanov N.A. Matematicheskie metody v sobiranii i issledovanii dokazatel'stv [Mathematical methods in collection and examination of evidences]. Moscow, 1974, 217 p.

22. Sorokotyagin I.N. Kriminalisticheskie problemy ispol'zovaniya spetsial'nykh poznaniy v rassledovanii prestupleniy [Criminalistical problems of usage of special knowledge in investigation of crimes]. Avtoref. dis... dokt. yurid. nauk. [Doctor of Law Dis. Abstract]. Yekaterinburg, 1992, 26 p.