

UDC: 351:355.02(477)

DOI: 10.5281/zenodo.3490475

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Development of formalistic mechanisms of public administration in the sphere of expert and criminalist activity

The interest of criminalists in identification of the private regularities of the mechanism and a way of criminal activity having practical value in activities for disclosure and investigation of crimes is proved in article. The following groups of components of the system of regularities as a criminalist subject are allocated: criminal technologies; formation of traces; establishments of traces; uses of traces in proof. The analysis of statistical information concerning quantity and structure of murders in Ukraine during 2013-2017 is carried out. The efficiency of mechanisms of public administration in the sphere of expert and criminalist activity is analyzed.

Keywords: mechanisms of public administration, formalistic approaches, expert and criminalist activity, system.

The expert and criminalist subject domain can be presented in the form of a formal system – a set of abstract objects in which the rules of the symbols' manipulation are defined and formulated without sense. The following components are set in the formal system the alphabet (a final set of symbols); procedure of formulas'

formation; a set of formulas called axioms; a final set of transformation rules allowing receiving of new formulas [1; 2].

The mechanism and signs of crime and also certain traces are interpreted by means of symbols. The rules of the alphabet transformation allow receiving of unknown elements proceeding from known ones. The results of difficult transformation can also be presented at the alphabet.

The mathematical definition of a formal system is rather strict, but some specification is presented even in its framework.

It is obvious that it can have only an applicability character of a formal system in the solution of criminalist tasks.

The formal system has to have such choice of means of description which would allow characterizing strictly not only the general, but also private signs of a research object, both qualitative, and its quantitative features. Secondly, such system has to allow solving problems at least of one class. Thirdly, the formal system of description of objects and processes has to be under construction on the basis of their substantial description [3; 5].

Fourthly, the system should contain the instructions on the dependences which are an assessment subject by results of modeling. The system also has to contain those factors which need to be considered at creation of the process model. Such description joins numerical values of the known characteristics and parameters of the process and also the data characterizing values of entry conditions.

Proceeding from the analysis of essence of a formal system and the given opinion on its possible adaptation for the solution of criminalist tasks, it is necessary to allocate the main problems interfaced to the offered investigation formalization option. The first one consists in creation of the form of representation allowing reflecting the process and investigation information structure in the formalized look. The second one consists in development of the formal procedures of operating with the purpose of solution of investigation problems within the formalized description.

Probably, it would be optimum and very attractive if to bring investigation process closer to completely formalized one, having subordinated it to regularities, postulates and rules of formalization. But it would be wrong to operate only with such representation. It is obvious that the formal system in its full-fledged value will not manage to be created for crime investigation: too severe conditions are given and the area of investigation is too informal [2].

Of course, the subject of investigation acts as quite formalized person, operating with the signs of properties, the phenomena, processes which are already described earlier repeating personal and others' experiment during earning a crime event. At the same time, investigation cannot be limited only with repetition of earlier recorded and analyzed situations. Besides, such important and specific elements of investigation as fixing of proofs, attraction, perpetrators, presentation of proofs, etc. stay outside the traditionally developed approaches which are guided by analysis of information processes. It is obvious that formalization has to extend also to these less informative actions, however in the real work this direction will not reveal.

The given analysis allowed the author to allocate a number of aspects having a significant effect on investigation process, each of which was considered in more detail with reduction of algorithms of their definition at investigation. It is represented that the given option of formalization of activities for investigation of crimes causes a number of objections though it is right essentially one (it contains structuring process of investigation, allocation of elements and ways of their definition).

Passing to consideration of dependences between elements, it should be noted that they cannot be formulated only in functionally or in a form of arithmetic or logical rules applicable to all alphabet of the formal system describing investigation. The rules should be appropriate only to a certain set or a certain element of all alphabet. The regularities of the subject domain have to be the cornerstone of these rules. It is necessary to assume that they can't be only of functional character, but also can be formulated in the form of the system of rules or conditions, etc [1–4].

It becomes clear from here that the description of features of the material objects united in a uniform system on the basis of the regularities which are objectively reflecting external and internal properties of elements and communications between them, is basis of formalization. And this knowledge has to be presented by the data which are saved up by science. The criminalist has a sufficient experience and own unique approaches to formalization of results of scientific research in disclosure and investigation of crimes, and it is despite popular belief in almost purely substantial nature of investigation [2; 3].

The especially formalistic approaches (algorithms, formal systems) stated and analyzed above possess an essential shortcoming – they are based on exclusively substantial (heuristic) conclusions about a way of investigation of crime; though offer any options of actions. Therefore creation of the mechanism of construction of the formal bases for promotion of versions about a crime event in general or its any circumstances is quite expedient: concerning properties of identity of the criminal and other necessary elements. Such bases are in a trace picture of crime, its signs and in way or the crime mechanism of in general.

Such interpretation was reflected in researches within the concept of criminalist characteristic of crimes. The criminalist characteristic of crimes, perhaps, most closer corresponds to approach of the description of investigation as a formal system among all criminalist categories which found the greatest development. However criminalists did not manage to connect all bases of the choice of the investigative decision in the uniform concept yet. Most likely, it was caused by difficulties of typification of traces and signs of crime, their connection and comparison of the crime with an event and identity of the criminal. Such reason as unexplored interrelations between elements of criminalist characteristic of crimes is noted in researches on this subject also.

Implementation of formalization procedures within the considered approach demands bigger systematization and specification of the provisions drafted by criminalist and criminalist idealization. The shortcomings of criminalist characteristic

of crimes belong also to a way of crime commission. In particular, the principles of formalization demand the development of the accurate list of element structure of a way of crime commission and also of unambiguous definition of these components - the factors affecting their "importance" for each type of crime. In this aspect three shortcomings which also are important can be allocated:

- The allocated elements and signs in criminalist characteristic of a certain type of crime are not always essential, and those which are necessary are absent;
- The frequency of occurrence and coefficient of correlation of communications between elements and signs are not established;
- The profiles of individual criminal manifestations do not remain and are summarized owing to what factorial dependences collapse without a possibility of restoration [1; 5].

Despite the seeming development of the specified problems, the question of establishment of accurate communications between elements is represented very difficult, if solvable at all. As it was shown earlier, the crime making an object of a criminalist research is a result of the human activity which is not investigated within formal deductive schemes.

It is necessary to point out basic restrictions which consist in the basis of some specific series of observations. That's why it is impossible to output authentically the general statement because each of them is already beyond the observed situations, extending as well to those ones which are connected with data obtained yet. In other words, it is necessary to see some kind of figurative hypotheses (extrapolations) which are based on the basis of significantly incomplete series of observations in universal generalizations of science. Moreover, similar universal statements cannot be proved even by means of the most extensive and detailed series of the confirmed predictions subsequently. There are no guarantees that the following check will not lead to such divergence between predictions and results of observations which will force to refuse universality of an initial statement.

The major studying of regularities will be at continuation of researches in the given direction. If they are traced and described at least by probabilistic laws then they can be allocated. But nowadays the regularities of the most general character are most often noted in criminalist science.

Therefore the interest of criminalists in identification of the private regularities of the mechanism and a way of criminal activity having practical value in activities for disclosure and investigation of crimes is quite reasonable.

The system of regularities is a criminalist subject, being defined rather strictly consisting of the following four groups:

- Criminal technologies;
- Formation of traces;
- Establishments of traces;
- Uses of traces in proof [2; 4].

But there are certain dependences behind these groups (we will call them private regularities), which define realities of concrete criminal action or investigation.

The statistical analysis of information on crimes with calculation of frequency of occurrence of these or those elements, data on which receive in the course of studying of criminal cases was the most fruitful in this direction was. The numerical value reflecting dependence between the analyzed elements is calculated as the relation of number of affairs in which these elements were observed, in relation to the total number of the studied affairs. So, the dynamics of murders in Ukraine for 2013-2017 is presented on fig. 1 [6].

It is possible to see from fig. 1 that the number of murders in Ukraine was 75.8% in 2014 that is a very negative indicator. Further, during 2015-2017 the gradual steady decreasing of number of murders in Ukraine is observed that is a positive trend. As a result, in 2017 their quantity decreased by 25% in comparison with 2013 [6].

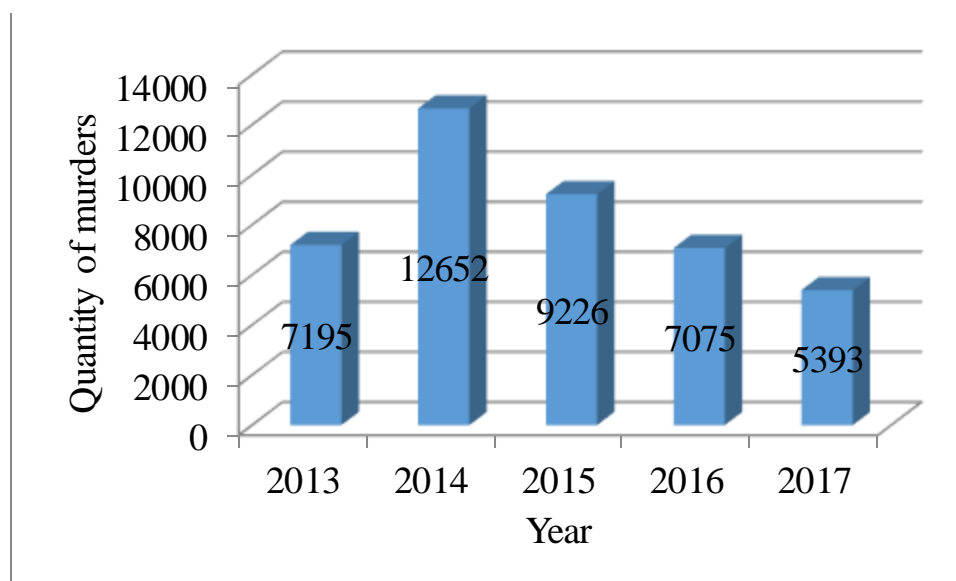


Fig. 1. The dynamics of murders in Ukraine for 2013-2017

The structure of murders in Ukraine during 2013-2017 is shown in table 1 [6].

Table 1 – The structure of murders in Ukraine during 2013-2017

Murders	Year				
	2013	2014	2015	2016	2017
In total	7 195	12 652	9 226	7 072	5 400
Premeditated	5 861	11 466	8 224	5 992	4 789
Contract	7	13	11	13	7
Other	1 327	1 173	991	1 070	604

It is possible to see from tab. 1 that the greatest part in the general structure of murders in Ukraine is occupied by premeditated murders, and the smallest part – by custom ones.

The dynamics of premeditated, contract and other murders in Ukraine for 2013-2017 is shown on figures 2-4 [6].

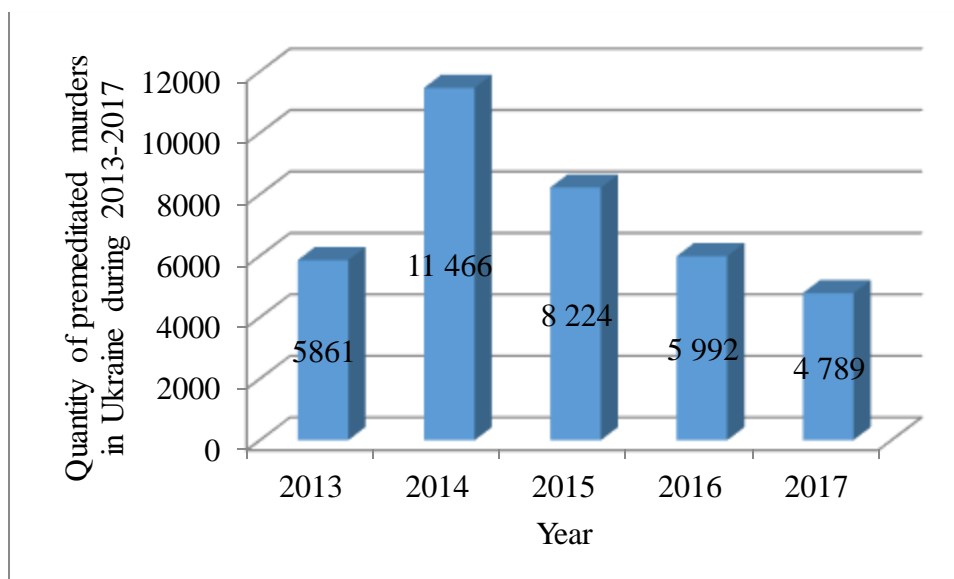


Fig. 2. The dynamics of premeditated murders in Ukraine for 2013-2017

It is possible to see from fig. 2 that the number of premeditated murders significantly increased in Ukraine only in 2014 (in comparison with 2013) - practically twice. During next 2015-2017 steady decrease in this indicator is observed that demonstrates the increase in efficiency of public administration in the sphere of expert and criminalist activity [6].

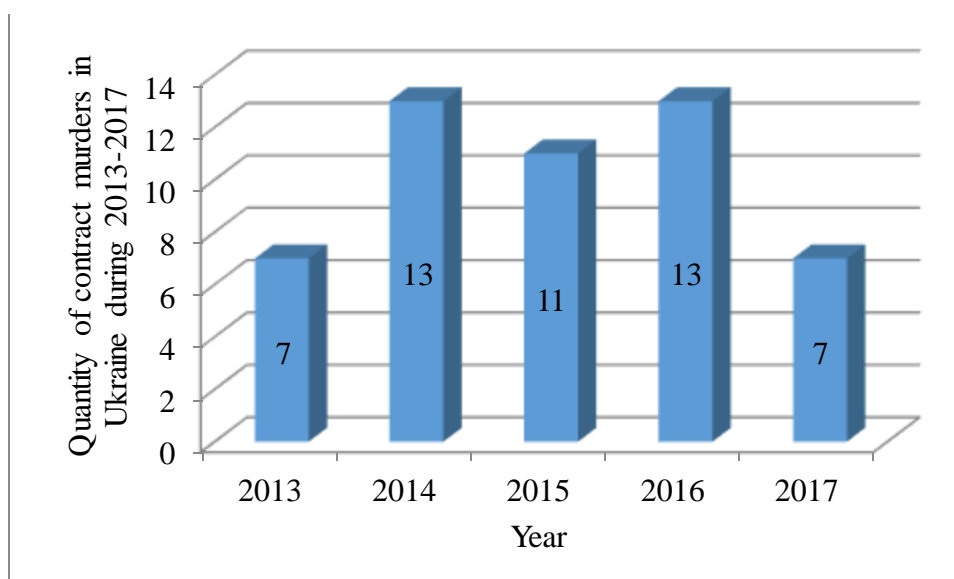


Fig. 3. The dynamics of contract murders in Ukraine for 2013-2017

It is possible to see from fig. 3 that the number of contract murders in Ukraine showed increase only in 2014 and 2016. During other studied periods their quantity was rather stable [6].

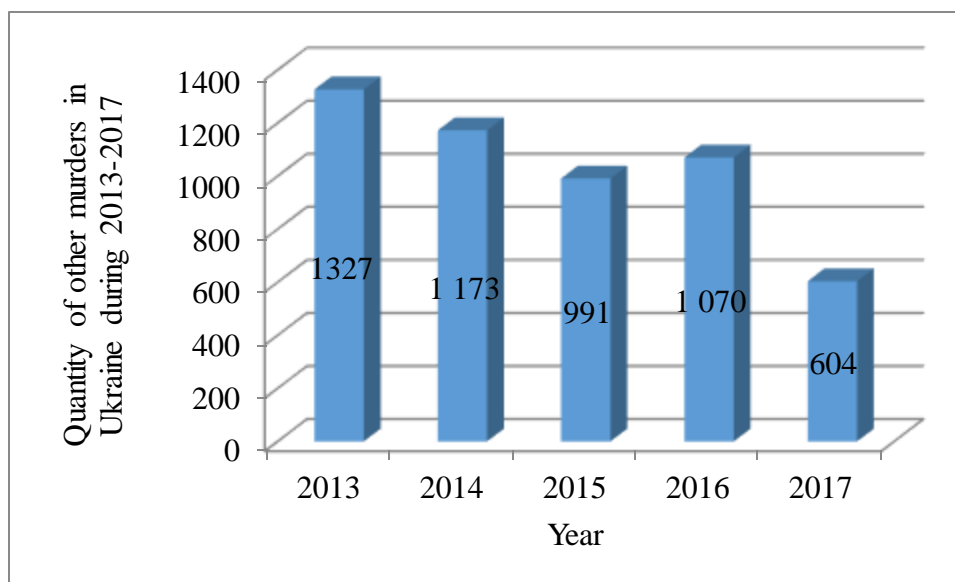


Fig. 4. The dynamics of other murders in Ukraine for 2013-2017

It is possible to see from fig. 4 that the dynamics of other murders in Ukraine in general decreased during 2013-2017 except 2016. This statistics also confirms satisfactory functioning of mechanisms of public administration in the sphere of expert and criminalist activity [6].

In general, the carried-out analysis of statistical information concerning quantity and structure of murders in Ukraine during 2013-2017 demonstrates that mechanisms of public administration in the sphere of expert and criminalist activity are still insufficiently developed, but there is a positive tendency in this context.

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