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Article

PSYCHOLOGICAL AND LEGAL PRINCIPLES OF FORENSIC EXPERT ACTIVITY

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Abstract. Based on the analysis of the history of formation and development of forensic examinations, the author concludes that changes in the procedure for appointing and conducting examinations in criminal proceedings at certain periods of time had a significant impact on the organizational and tactical foundations of this procedure and determined its place in the system of evidence collection. The methodological basis of the study is the general dialectical method of scientific cognition of reality, on the basis of which the examination is considered as a multi-stage, complex and contradictory process of studying certain objects to establish the circumstances to be proved. It is noted that the assessment of an expert opinion is aimed at identifying and eliminating possible errors of an expert (procedural, epistemological, operational) and is a determination of the possibility of using the results of an expert study as evidence and includes the following procedures: formal (logical and procedural) assessment; substantive assessment; questioning of an expert aimed at establishing the circumstances of the expert study, and explanation of the conclusion. In conclusion, the verification of the expert's opinion is carried out after its evaluation and only if there are doubts about its reliability, aimed at obtaining new information regarding the data that was established in the course of the expert study.

Keywords: expertise, expert, source of evidence, opinion, expert error, impropriety of expert opinion.

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Introduction

In criminal proceedings, issues often arise that require specialized knowledge to resolve. Therefore, in virtually every case, some kind of expertise is conducted, and this indicates a constant increase in the scientific basis of the evidence procedure. Expertise has become a relevant (and in certain situations, mandatory) means of obtaining evidence for both the prosecution and the defense.

However, in recent years, Ukraine has seen a permanent change in the procedure for appointing and conducting examinations, which has left an imprint on the organizational and tactical foundations of this procedure and led to a slowdown in pre-trial investigation and court proceedings. In this regard, it seems relevant to study the historical aspect of this issue, which will make it possible to more clearly understand how it arose, what stages it went through in its development and what it has become today. Only after that it will become clearer what role the procedure for appointing and conducting an expert examination plays now and what function it should perform in modern conditions.

The Criminal Procedure Code (hereinafter referred to as the CPC) of Ukraine of 2012 with subsequent amendments to it significantly transformed the procedure for conducting examinations and the interaction of participants in criminal proceedings with experts. The adversarial nature of the parties and equal rights to collect and submit evidence to the court were proclaimed (Article 22 of the CPC). This right also applies to the use of specialized knowledge in the form of forensic examination, the results of which play a significant role in proving.

According to Article 243(1) of the CPC of Ukraine, the defense has the right to independently engage experts on contractual terms to conduct an examination. However, the provisions of Art. 93(2) and (3) of the CPC of Ukraine, which define the list of means of collecting evidence for each party, do not provide for such a right of the defense. There is a contradiction that impedes the realization of the principle of adversarial proceedings and gives rise to theoretical discussions on this issue. In this regard, the issues of determining the legal, organizational and tactical basis for conducting examinations in the context of modern legal regulation of criminal proceedings are of particular relevance.

Literature review

The new concept of development of the theory and practice of forensic examination was fully accepted in Ukraine, which contributed to the efficiency of expert activity and was manifested, in particular, in the accreditation of laboratories of research institutions according to the international standard ISO 17025 and the introduction of the accreditation procedure according to ISO 17020.

In accordance with this new paradigm of forensic examination in Ukraine, two areas of forensic development can be distinguished today: improvement of methods of conducting traditional examinations and formation of new types of examinations.

Improving the methods of conducting traditional examinations and improving their quality through the introduction of innovative developments in expert activity is a logical direction for the development of this field of knowledge and the practice of their application in combating crime. First of all, this applies to forensic examinations, some of which deserve consideration from this point of view.

Trace evidence examination of the whole by parts (Foote et. al., 2020). The purpose of this expert study is to establish the identity of any divided object by its parts, when parts (fragments) of this object are material evidence seized during criminal proceedings. The objects of such research may be completely different objects that were divided in any way in the course of a criminal offens and are directly related to it. These can be tools, means and objects of the offens, as well as objects of the environment of the criminal offens (for example, pieces of furniture, the offender's clothing, etc.). In particular, such studies are traditionally relevant in the investigation of road accidents that have signs of a criminal offens (broken headlight diffusers, pieces of varnish and paintwork, etc.). But this applies not only to such objects, but also to narcotic drugs and psychotropic substances.

Handwriting examination (Rao et. al., 2020). Forensic document examination has come a long way in its development. Handwriting examination, as a type of forensic examination of documents, is one of the most complex and involves solving various tasks in criminal proceedings. In particular, today, the issue of examining signatures made with imitation of the signature of the person on whose behalf it is made is quite problematic. It is a question of establishing the fact of signature forgery, as well as establishing (identifying) the person who reproduced the signature of another person, having its sample (forgery "by eye", "by memory", "by sight").

It is emphasized that the study should be conducted in a certain methodological sequence, in two stages: resolving the issue of the authenticity of the signature (its validity) and identifying the executor of a non-authentic signature. Particular attention should be paid to identifying signs of imitation (Iancu, 2019). The identification of such signs is based on the fact that the usual writing process of an adult is automated and excludes conscious control over the execution of each letter or its individual elements. When imitating, however, there is a need to control the writing process when performing letters as a whole and their elements, and therefore de-automation of writing is carried out. This causes slower movements, stopping of writing, which is reflected in the signature made with imitation. Thus, each imitation signature is the result of a change in a person's usual handwriting and an attempt to reproduce the features of someone else's skill.

Ballistic examination (examination of weapons and traces and circumstances of their use) (Fovet et. al., 2020). This type of expertise is perhaps the most dynamic in the development of research methods, due to the emergence of new types of weapons (traumatic, gas, sports, pneumatic, etc.) and the number of their modifications. Their emergence and rapid proliferation in the civilian market has also led to a significant increase in the use of various types of weapons and

their modified copies in the commission of various criminal offenses, which has significantly increased the need for specific expert forensic (ballistic) research. The variety of research objects (weapon samples), in turn, required the development of appropriate expert research methods that would meet the needs of investigative and judicial practice. Therefore, ballistic examination methods are currently being developed and improved depending on the type of weapon, ammunition used and other aspects that determine the specifics of the tasks of expert ballistic research.

Portrait examination (Maloku et. al., 2021). A portrait examination is appointed in situations where the investigating authorities or the court are unable to otherwise reliably identify a person during the search for missing persons or criminals, examination and investigation of an unidentified corpse, to determine whether identity documents belong to their owner and other circumstances that are essential to criminal proceedings.

Portrait examination is one of the traditional types of forensic examinations. The methodological foundations for its performance have been sufficiently developed, and considerable experience in conducting such examinations has been accumulated. A methodological study was carried out to solve a number of complex expert situations: the study of multi-angle portraits; photographic portraits of persons photographed with a significant time gap; retouched photographs.

In recent years, new carriers of portrait information have emerged: photographs taken with the help of digital technologies, printing frames of video recordings from CCTV cameras (Goldenson et. al., 2022). Visual products based on photographs of specific individuals began to be submitted for forensic portrait research. In this regard, experts solving the task of identifying persons based on the appearance depicted on such portrait information media increasingly began to experience methodological difficulties. Obviously, such objects of forensic portrait examination require new approaches to their research and certain adjustments to the methodological support of this type of examination.

In recent years, Ukrainian scholars have paid some attention to the preparation and conduct of examinations in the context of the updated criminal procedure legislation. However, some of the formulated provisions on the legal, organizational and tactical grounds for conducting examinations are very incomplete, and some need to be clarified. In particular, the issues of using forensic examinations in adversarial criminal proceedings, independent engagement of an expert by the defense during the pre-trial investigation, preparation of forensic examination, its stages and evaluation of the expert's opinion seem to be problematic. All of this necessitates a rethinking of many provisions and recommendations regarding the moral and legal grounds and organizational and tactical foundations for conducting examinations.

Methods

The methodological basis of the study is the general dialectical method of scientific knowledge of reality, on the basis of which the examination is considered as a multi-stage, complex and contradictory process of studying certain objects to establish the circumstances to be proved. It is also used as a scientific research tool:

• Methods of logic (analysis, synthesis, induction, deduction, analogy, etc.) - when studying regulations, materials of criminal proceedings, concepts, authors' points of view on certain issues that were part of the subject matter of the study;

• Systemic and structural method - when considering the components of the preparation of the examination, its stages, evaluation of its results and place in the system of evidence;

• Historical and legal method - when analyzing the history of the formation and development of forensic examinations as a means of obtaining evidence in criminal proceedings;

• Comparative legal method - when analyzing the norms of criminal procedure legislation of Ukraine and other countries;

• Sociological methods (surveys, expert opinions) - to collect additional information on the specifics of the decision to conduct an expert evaluation.

The legal framework for this study is based on the Constitution of Ukraine, judgments of the European Court of Human Rights, criminal procedure legislation of Ukraine and other countries, resolutions of the Plenum of the Supreme Court of Ukraine, and departmental regulations.

Results

Article 92 of the Constitution of Ukraine stipulates that the principles of forensic examination are determined exclusively by the laws of Ukraine.

The main legal acts regulating the participation of an expert or specialist in criminal proceedings, as well as the procedure for conducting an expert examination, are:

◦ The Criminal Procedure Code of Ukraine (hereinafter - the CPC of Ukraine);

◦ The Law of Ukraine of February 25, 1994 "On Forensic Examination";

◦ The Law of Ukraine of February 22, 2000 "On Psychiatric Care";

◦ Order of the Ministry of Justice of Ukraine No. 53/5 of 08.10.1998 approving the "Instruction on the appointment and conduct of forensic examinations and expert studies and Scientific and Methodological Recommendations on the preparation and appointment of forensic examinations and expert studies";

◦ Order of the Ministry of Health of 08.05.2018 No. 865 "On Approval of the Procedure for Conducting Forensic Psychiatric Examination";

◦ And other departmental Rules, Instructions and applicable regulations.

An expert opinion is only one of the sources of evidence in criminal proceedings and does not have a predetermined force or any advantage over other evidence. It is not binding on the initiator of the examination and the court, but disagreement with the expert's opinion must be motivated in the relevant decision, ruling, or verdict (Article 101(10) of the CPC of Ukraine).

However, as the case law shows, the courts treat expert opinions with great confidence as a result of the use of scientific and technological progress. Therefore, during the trial, the debate between the parties to the criminal proceedings often focuses on the expert's opinion. This is especially true for the defense, which tries to find mistakes or omissions of the investigator when appointing the examination, as well as the expert when conducting it.

Expert errors. It is believed that an expert, like any other person, may make mistakes in the process of conducting an examination and preparing a conclusion based on its results, which may render this evidence void.

Of course, expert mistakes should be distinguished from deliberately false expert opinions, which are subject to criminal liability under Article 384 of the CPC of Ukraine. An expert's opinion is false if it contains a deliberate misrepresentation of facts, incorrect assessment, or conclusions not based on the materials. But there may also be an honest mistake on the part of the expert. It is this feature that distinguishes an expert error from a crime against justice committed by an expert - the deliberate presentation of false information in the opinion.

There are three classes of expert errors that can lead to the rejection of an expert opinion as a source of evidence: procedural expert errors; epistemological expert errors; operational (actionable) expert errors.

Expert errors of a procedural nature. These are errors that consist in the expert's violation of the procedural regime and the procedure for conducting the examination:

1) expert's going beyond his/her competence (resolving legal issues);

2) manifestation of expert initiative in forms not provided for by law (for example, unreasonable going beyond the scope of the research subject and questions posed;

3) substantiation of conclusions not by the results of the study, but by the materials of the criminal proceedings (the expert has the right to familiarize himself with the case file, but this right is limited to the subject of the examination);

4) independent collection of objects and materials of the examination (for example, obtaining handwriting samples of the person;

5) making unauthorized contacts with interested parties, accepting an order for an expert examination and materials from unauthorized persons;

6) non-compliance due to ignorance of procedural requirements for an expert's opinion (for example, the absence of information about the expert in the introductory part of the opinion or the absence of such statutory details as a detailed description of the objects submitted for examination).

It should be noted that procedural expert errors are often the result of investigative and judicial errors related to the preparation and appointment of forensic examinations (for example, when questions to the expert are incorrectly formulated).

Epistemological expert errors. This class of errors includes those caused by the complexity of the process of expert knowledge. They can be made in determining the essence, properties, characteristics of the objects of expertise, the relationship between them, as well as in assessing the results of cognition, the results of expert research, and their interpretation. In the literature, they are divided into logical and substantive.

Logical fallacies are associated with violations of the laws and rules of logic in the act of thinking, incorrect application of logical techniques and operations.

For example, an example of such a mistake is the confusion of causation with a simple sequence in time or the justification of a thesis with arguments from which this thesis does not logically follow. Such errors are usually associated with different logical operations and types of inferences. Thus, there are errors in the distribution of concepts, in the definition of concepts, errors in inductive inference, errors in deductive inference, errors in proof (in relation to a thesis, argument, demonstration).

Other formal and logical errors found in expert opinions are also cited in the professional literature, for example (Slack, 2020):

◦ the conclusion is not a logical consequence of the expert's research;

◦ there is no logical reasoning behind the sequence of stages of expert research;

◦ conflicting expert opinions on the same subject;

◦ the conclusion is internally contradictory;

◦ the expert's conclusions are not sufficiently motivated.

Subjective errors in expert opinions differ from logical errors in that they are caused not by a violation of the rules of logic, but by ignorance of the subject matter. Subject matter errors arise from the expert's distorted view of the relationship between objects of objective reality. Expert errors of this kind in the content of an expert opinion can be noticed only by a specialist - someone who is well versed in the subject matter of the study. In practice, there are cases of using to substantiate an expert opinion the features identified during the study of one carrier object by experts of different specialties (or by one expert with special knowledge of different specialties), which cannot form an aggregate, but must be analyzed separately for each type (genus) of expertise.

Operational expert errors. Errors of this class are related to operations performed by the expert (procedures) and may include the following:

1) in violation of a certain sequence of expert procedures;

2) in the improper use of technical means of research or the use of unsuitable means (for example, the use of equipment that has not been tested for a long;

3) in obtaining and using low-quality comparative material, etc.

In many cases, operational expert errors are accompanied by substantive errors and vice versa. Since both of these types of expert errors are related to professional competence, they can usually be detected only by persons with relevant specialized knowledge.

These provisions on the concept of expert errors and their classification are extremely important for assessing an expert's opinion, its relevance and admissibility as a source of evidence both during the pre-trial investigation and in court proceedings.

The elimination of these contradictions in the legal regulation of equality of the parties is seen in bringing the wording of Article 243 of the CPC of Ukraine regarding the right of the defense to conduct an expert examination in line with the provisions of Article 93 of the CPC of Ukraine. The defense party should be granted the right not only to initiate an expert examination, but also the right to exercise legal control over the conduct of expert examinations by the prosecution.

To eliminate the existing contradictions, the following is proposed:

1) To restate part 1 of Article 242 of the CPC of Ukraine in the following wording "The examination shall be conducted by an expert or experts engaged by the investigator, prosecutor or investigating judge at the request of the defense..." and hereinafter.

2) To restate Article 243 of the CPC of Ukraine in the following wording: "An expert shall be engaged if there are grounds for conducting an examination upon a reasoned decision of the investigator, prosecutor or upon a ruling of the investigating judge at the request of the defense. When an expert is engaged by an investigator or prosecutor, they are obliged to notify the defense and familiarize the suspect in the presence of his or her defense counsel with the decision and explain his or her rights: to challenge the expert; to file a motion to appoint an expert from among the persons specified by him or her; to file a motion to raise additional questions before the examination; to give explanations to the expert and submit additional documents; to familiarize themselves with the examination materials and the expert's opinion after the examination; to file a motion for a new examination. The investigator or prosecutor shall draw up relevant protocols on the familiarization of the suspect in the presence of his/her defense counsel with the decision to engage an expert for the examination, as well as on his/her familiarization with the expert's opinion after the examination, in compliance with the requirements of Article 104 of this Code."

3) To restate part 1 of Article 244 of the CPC of Ukraine in the following wording: "The defense has the right to apply to the investigating judge with a request for an expert examination if: an expert is required to resolve issues that are essential to the criminal proceedings, but the prosecution has not engaged an expert; the expert engaged by the prosecution has been asked questions that do not allow for a complete and proper conclusion on the issues for which an expert examination is required; there are sufficient grounds to believe that the expert engaged by the prosecution, due to lack of knowledge, bias or other reasons, will provide or has provided an incomplete or incorrect.

Conclusion

In criminal proceedings, an important element of ensuring the practical implementation of the adversarial principle is the right to use expertise to prove their vision of the situation related to a criminal offense, both for the prosecution and the defense. This is facilitated by the possibility of conducting an examination in non-governmental institutions by independent experts. Enshrining the equality of the parties in the use of specialized knowledge has led to the emergence and use of the term "competitive (alternative) examination", which is a manifestation of the principle of adversarialism in criminal proceedings.

Adversariality is studied by scholars in various aspects, namely: as a principle (basis) of criminal proceedings; as a procedure for building a process; as a set of principles of justice; as a tool (method) for investigating the circumstances of a case; as a legal method for ensuring the legality of procedural activities.

In this case, adversariality is studied in the context of determining the role of forensic examinations and their legal regulation in adversarial criminal proceedings.

It seems most productive to understand adversariality as a structure of criminal proceedings that creates optimal conditions for establishing the truth and, ultimately, fulfilling the tasks of criminal justice.

Adversariality is an integral part of the cognitive process, a method of finding evidence, examining it, a way for participants in the process to defend their position in the case, and to exercise their rights and obligations to establish the truth. At the same time, under the current legislation, the defense cannot be considered as an equal subject of pre-trial investigation with the prosecution, as it has no right to conduct investigative and search actions on its own (only to initiate them).

Drawing attention to this, Rocchio, 2020 emphasizes that the defense counsel is in an unequal position compared to the prosecution, as he is deprived of the right to perform investigative (search) actions. The author sees the elimination of this drawback in the recognition of explanations of participants in criminal proceedings, which the defense counsel has the right to receive, as sources of evidence, stating that it is too early to talk about proper competition and equality of the parties.

Obviously, it is a question of equalizing the defense with the prosecution in the right to conduct investigative and search actions, which seems to mean nothing more than the emergence of another independent subject of pre-trial investigation. However, two parallel pre-trial investigations with equal rights of the two subjects (including the right to use coercion) will inevitably lead to confusion and destruction of the entire criminal proceedings system.

Competitive (alternative) examinations are expert studies initiated by opposing parties to criminal proceedings (prosecution and defense) and conducted by both state and non-state expert institutions (experts).

In this case, each party aims to obtain, based on the use of specialized knowledge, evidence of its legal assessment of the circumstances of the criminal offense under investigation.

Such examinations are quite common in Europe and America. For example, in the United States (Texas), each of the parties (prosecution and defense) may invite an expert hired by them to court to testify as a witness for a particular party (Neal et. al., 2019). Since the services of such an expert are paid for by the party that hired him or her, the conclusions of such an expert and their objectivity may be questioned, which is the basis for court debate (discussion). In this case, the court makes a decision based on the assessment of competitive examinations and other evidence submitted by the parties.

In this case, the court evaluates expert opinions in terms of the scientific validity of the expert research, its completeness and reliability. The institute of private expertise also exists in Germany, where it competes with state expert institutions in criminal proceedings. Competition in expert activity is also used in the criminal procedure of France (Allan, 2020). However, in this country, only the court has the right to appoint two independent (from the parties) experts who are included in the relevant state register.

In other words, alternative examinations are not initiated by the parties to criminal proceedings, but only by the body conducting the proceedings. This procedure is considered to be a guarantee of obtaining objective and reliable evidence, which is an expert opinion.

Thus, the prosecution and the defense may simultaneously submit to the court two opinions prepared by different experts on the same issues. Of course, if the defense engages an expert on its own or at its request, the investigating judge may also put questions to the expert that differ from those of the prosecution. This circumstance is important for criminal proceedings, since such an opportunity ensures the completeness of the study of all material objects, phenomena and processes that contain information about the circumstances of the criminal offense.

Of course, the experience of using alternative examinations in criminal proceedings deserves to be studied and used in domestic criminal proceedings. In view of this, it is interesting to note the opinion of Otto & Heilbrun, 2019, that examinations appointed by the court can be considered "neutral" examinations, and those conducted by experts involved by the parties to the process - "not quite neutral" examinations.

It seems that this vision of the distribution of expertise reflects the experience of using expertise in the adversarial process of countries and its use in Ukraine. However, this does not mean that the experts engaged by the parties to the criminal proceedings will necessarily be biased and their expert opinions will be unfounded. However, practice shows that Ukrainian courts are more inclined to trust "neutral" experts and are willing to listen to comments on the conclusions of experts engaged by the parties.

Conclusion

Based on the analysis of the history of formation and development of forensic examinations, the author concludes that changes in the procedure for appointing and conducting examinations in criminal proceedings at certain periods of time had a significant impact on the organizational and tactical foundations of this procedure and determined its place in the system of evidence collection.

Ukrainian legislation has made significant changes to the legal regulation of expert examination, granting the defense the right to independently engage experts on contractual terms to conduct an expert examination. At the same time, the defense has the right to apply to the investigating judge with a request to conduct an expert examination at the pre-trial investigation stage.

Forensic examination plays an extremely important role in proving a case as it is perceived as an achievement of scientific and technological progress. Therefore, in the context of adversarial proceedings, all components of forensic examination (its type, stages of conduct, methodology, competence and qualifications of the forensic expert) are subject to careful analysis by the parties.

At present, a qualitatively new model of expertise is being formed in Ukraine, as well as throughout the world, characterized by the introduction of standardized terminology, development of indicators of the reliability of examination results, neutralization of expert subjectivity, improvement of existing and development of new research methods, accreditation of forensic institutes and laboratories, etc. This process is reflected in two directions - improvement of methods of conducting traditional examinations and formation of new types of examinations (molecular genetic; polygraph examination; military examination; examination of intellectual property, etc.).

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References

Allan, A. (2020). Structuring the debate about research ethics in the psychology and law field: An international perspective. Psychiatry, Psychology and Law, 27(3), 397-411. https://doi.org/10.1080/13218719.2020.1742243

Foote, W. E., Goodman-Delahunty, J., & Young, G. (2020). Civil forensic evaluation in psychological injury and law: Legal, professional, and ethical considerations. Psychological Injury and law, 13, 327-353. https://doi.org/10.1007/s12207-020-09398-3

Fovet, T., Thibaut, F., Parsons, A., Salize, H. J., Thomas, P., & Lancelevée, C. (2020). Mental health and the criminal justice system in France: a narrative review. Forensic Science International: Mind and Law, 1, 100028. https://doi.org/10.37899/journal-la-sociale.v5i1.990

Goldenson, J., Brodsky, S. L., & Perlin, M. L. (2022). Trauma-informed forensic mental health assessment: Practical implications, ethical tensions, and alignment with therapeutic jurisprudence principles. Psychology, Public Policy, and Law, 28(2), 226. https://psycnet.apa.org/doi/10.1037/law0000339

Iancu, E. A. (2019). The Contribution of Forensic Science to Establishing the Truth in Criminal Proceedings. Athens JL, 5, 457. https://doi.org/10.30958/ajl.5-4-6

Maloku, E., Jasarevic, O., & Maloku, A. (2021). Assistance of the psychologist expert in the justice bodies to protect minors in Kosovo. EUREKA: Social and Humanities, 2, 52-60. https://doi.org/10.21303/2504-5571.2021.001649

Neal, T. M., Slobogin, C., Saks, M. J., Faigman, D. L., & Geisinger, K. F. (2019). Psychological assessments in legal contexts: Are courts keeping “junk science” out of the courtroom?. Psychological Science in the Public Interest, 20(3), 135-164. https://doi.org/10.22235/cp.v18i1.3652

Otto, R. K., & Heilbrun, K. (2019). The practice of forensic psychology: A look toward the future in light of the past. In Clinical Forensic Psychology and Law, 467-480. https://doi.org/10.1037//0003-066x.57.1.5

Rao, P. K., Tharmavaram, M., & Pandey, G. (2020). Conventional technologies in forensic science. Technology in Forensic Science: Sampling, Analysis, Data and Regulations, 17-34.

Rocchio, L. M. (2020). Ethical and professional considerations in the forensic assessment of complex trauma and dissociation. Psychological injury and law, 13(2), 124-134. https://doi.org/10.1007%2Fs12207-020-09384-9

Slack, D. P. (2020). Trauma and coping mechanisms exhibited by forensic science practitioners: a literature review. Forensic Science International: Synergy, 2, 310-316. https://doi.org/10.1016/j.fsisyn.2020.10.001