

Theoretical and methodological model of criminalistics and its new directions

Valerii Shepitko *

* Doctor of Law, Professor, Yaroslav Mudryi National Law University, Kharkiv, Ukraine, ORCID: <https://orcid.org/0000-0002-0719-2151>, e-mail: Shepitko.valery@gmail.com

DOI: 10.32353/khrife.3.2021.02 UDC 343.98

Submitted: 28 Nov 2021 / Reviewed: 30 Nov 2021 / Approved for Print: 1 Dec 2021 /
Available online: 30 Dec 2021



This research paper purpose is to find out tendencies of development of criminalistics in globalized world, define its borders, forecast emergence of new directions and to characterize them.

Theoretical and methodological model of criminalistics is studied, tendencies and specifics of formation of criminalistics in modern conditions are traced.

Formation of internal structure of criminalistics (its system) is considered, connection with other sciences (natural sciences, humanities, social, formal) is determined, relationship with forensic sciences (forensic medicine, forensic toxicology, forensic psychology, forensic chemistry, etc.) and forensic expertology is established. Attention is drawn to the orientation of the forensic vector of Ukraine to a single forensic European space. Necessity of creating a new section in the structure of criminology, namely: forensic strategy is substantiated.

Origin specifics, formation and development of new branches (directions) of criminology are considered: competitive, judicial, medical, genotypic, aerospace, computer (digital) and nuclear ones. Necessity of using forensic knowledge by different parties in criminal proceedings both in while of pre-trial investigation and in legal proceedings is argued. The subjects of specific expertise application of

This article is translation of the original Ukrainian content, which source is available at the link: <https://khrife-journal.org/index.php/journal> (translation by Andriy Bublikov). The author acknowledges translation as corresponding to the original.

© 2021 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» and Yaroslav Mudryi National Law University.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC_BY_4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

forensic knowledge should be not only the investigator, but prosecutor, investigating judge, interrogator, detective, judge, lawyer.

Emergence of new branches of criminology is associated with scientific and technological progress, the emergence of new technologies, the need to work with specific traces and complexity of collecting and examining evidence. Special attention is paid to development and formation of medical, digital and nuclear forensics.

Keywords: criminalistics; model of criminalistics; forensic sciences, branches of criminalistics; medical forensics; digital forensics; nuclear forensics.

Research Problem Formulation

At the end of the XIX century, Hans Gross, the founder of criminalistics considered criminalistics as accessory for criminal law and defined it as a doctrine about the realities of criminal law. However, Gross noted that criminal law and criminalistics are correlated in the same way as pathological anatomy and surgery. If pathological anatomy studies human body diseases and systematizes them in a certain way, then surgery tries to eliminate these diseases... Similarly, forensics should go its own way¹ caused by counteraction to criminal offenses and/or their neutralization.

In modern realities, it is possible to ascertain the state, trends and prospects of the development of criminalistics. In this sense, formation of the internal structure of criminalistics (its system), communication with other sciences (natural, humanities, social, formal), correlation with forensic sciences (forensic medicine, forensic toxicology, forensic psychology, forensic chemistry, etc.) and forensic expertology

can be traced. In particular, criminalistics and forensic sciences are a reflection of various developments of science that was formed in different scientific schools (and accordingly in scientific directions) using those legal, technical, tactical and methodical capabilities that its best representatives had in the arsenal².

Analysis of Essential Researches and Publications

Scientific basis of this research is the work of well-known domestic and foreign forensic scientists in the field of fundamental problems of forensics, forensic sciences and forensics: R. Akermann, Ha Gross, V. Zhuravel, O. Kliuiev, V. Kurapka, E. Locard, H. Malievski, Zh. Metenko, O. Samoylenko, P. Saukko, E. Simakova-Yefremian, B. Holist, D. Tsekhan, M. Shepitko, V. Yusupov and others. Forensic knowledge reflects certain trends of the modern globalized world. Recently, attempts have been made to investigate the development of forensics in European countries and systematize the change in

1 Гросс Г. Руководство для судебных следователей как система криминалистики. Новое изд., перепеч. с изд. 1908 г. Москва, 2002. С. VIII, IX.

2 Шепітько М. В. Концептуальні засади розвитку криміналістики та судових наук. *Архів кримінології та судових наук* : наук. журн. 2020. № 1. С. 89.

its paradigm³. There is a change in the vector of forensic research in Ukraine, bringing it closer to the single European space⁴. Confirmation of progressive trends in the development of criminology is its consideration in the system of legal sciences⁵ and the formation of the doctrine of criminology and forensic science⁶. It is these circumstances that determined the relevance and timeliness of the chosen issues and the need for this research.

Article Purpose

This article purpose is due to the need to determine theoretical and methodological model of criminalistics, find out the trends of its development in the globalized world, outline its boundaries and predict the emergence of new directions. It is intended to determine the causes of new areas of criminalistics and characterize them.

Main Content Presentation

In current form, the system of criminalistics covers four sections:

1) general theory of criminalistics; 2) forensic equipment; 3) forensic tactics; 4) forensic methods. At the same time, recently in the structure of forensics it is proposed to distinguish another section: *Forensic Strategy*. The need for such a section was justified by the German school of forensics at the end of the XX century⁷. The forensic strategy is defined as a field of knowledge on combating crime by forensic means for the long term⁸. Forensic strategy is a separate section of *criminalistics*, a system of forensic means for organizing and planning crime prevention in general. In the Eastern European school it is a separate category, direction and the highest level of application of *criminalistic tactics*⁹. In this context, Lithuanian criminalists rightly note that the state of public security and threats of recent decades have shown the need not only to strengthen international cooperation but a qualitatively new level of international forensic policy that is impossible without conceptual research, scientific forecasts and recommendations¹⁰.

- 3 E.g.: Ackermann R., Kurapka V. E., Malewski H., Shepitko V. Schaffung eines einheitlichen europäischen Kriminalistischen Raumes: Die Tätigkeit öffentlicher Organisationen zur Stärkung der internationalen Beziehungen. *Kriminalistik*. 2020. Is. 6. P. 355—363.
- 4 E.g.: Журавель В. А., Шепітько В. Ю. Розвиток криміналістики та судової експертизи в Україні: наближення до єдиного європейського простору / Правова наука України: сучасний стан, виклики та перспективи розвитку : монографія. Харків, 2021. С. 651—669.
- 5 E.g.: Правова доктрина України. У 5 т. Т. 5: Кримінально-правові науки в Україні: стан, проблеми та шляхи розвитку ; за заг. ред. В. Я. Тація, В. І. Борисова. Харків, 2013. С. 865—1064 ; Ukrainian Legal Doctrine in Five Volumes. V (2): Judicial Law, Penal Law, and Forensic Legal Sciences. Ed. by V. Ia. Tatsyi and V. I. Borysov. London, 2018. P. 163—319.
- 6 E.g.: Шепітько В., Шепітько М. Доктрина криміналістики та судової експертизи: формування, сучасний стан і розвиток в Україні. *Право України*. 2021. № 8. С. 12—27 ; Ключев О., Сімакова-Єфремян Е. Доктринальні підходи до судової експертизи в Україні. *Ibid.* С. 28—43 ; Юсупов В. Історія формування доктрини криміналістики в Україні. *Ibid.* С. 44—64 та ін.
- 7 Шепітько В. Ю., Журавель В. А., Коновалова В. О. та ін. Криміналістика : підручник. У 2 т. Т. 1 ; за ред. В. Ю. Шепітька. Харків, 2019. С. 252—254.
- 8 *Ibid.* С. 252.
- 9 Шепітько В., Шепітько М. Кримінальне право, криміналістика та судові науки : енциклопедія. Харків, 2021. С. 113, 114.
- 10 Курапка В. Э., Малевски Г. Научная концепция криминалистической политики

Criminalistics and evidence law, formation issues of competitive criminalistics

Criminalistics is the science of criminal activity laws and its reflection in sources of information¹¹. The subject of criminalistics traditionally includes patterns associated with evidence procedure (collection, research, evaluation and use of evidence).

Forensics is the science of forming evidence. There is an axiom, once proposed by Dr. E. Locard (Locard's principle), that "every contact leaves a mark"¹². It can be stated that any criminal offense always leaves traces (materially fixed, ideal, virtual or electronic). Therefore, the investigation and trial should take place by knowing the event by means of forensics in the manner prescribed by law. In this sense, changes in criminal procedure legislation, reform of criminal justice and law enforcement agencies have a significant impact on the development of criminalistics.

Use forensic knowledge occurs while event cognition, determination of culprits and facts, proof. Proof as a cognitive process involves setting a goal, using means and achieving results. From of logic position, proof is a process of thinking, one in nature (regardless mental activity subject). Institute of proof should contain answers to the following questions: 1) what is the essence of evidence and proof; 2) that is the purpose and subject of proof; 3) which are psychological proof foundations; 4) that sources, methods and means of proof exist.

Some scholars believe that goal in the current criminal procedure can only be addressed to prosecution and trial. In this concept, defenders are often given a negative role related to impeding the achievement of justice goals. This approach is wrong. In our opinion, in current conditions it is advisable to ask questions about the need to *form and introduce competitive criminalistics*. Best practices of criminalistics should be in demand not only by the prosecution, but also by the defense.

Literary sources abound with suggestions about the need for forensic support of prosecutors, judges and lawyers¹³. In current conditions, the application subject of forensic knowledge should be not only the investigator, but also prosecutor, investigating judge, coroner, detective, judge, lawyer.

Currently, the parties to criminal proceedings have different opportunities in the application of forensic knowledge. Article 93 of the Criminal Procedural Code of Ukraine¹⁴ contains disparities in the legal remedies provided by the legislator to the parties to criminal proceedings for the collection of evidence. By giving the defense the right to collect evidence, the legislator significantly limited it in the means of exercising this right. It should be noted that by initiating investigative and covert investigative actions (petitions), the defense actually collects evidence.

в стратегиях органов правопорядка как инновационный прорыв в обеспечении создания общего европейского криминалистического пространства. *Інноваційні методи та цифрові технології в криміналістиці, судовій експертизі та юридичній практиці* : мат-ли міжнар. «круглого столу» (Харків, 12.12.2019). Харків, 2019. С. 85.

- 11 Велика українська юридична енциклопедія. У 20 т. Т. 20: Криміналістика, судова експертиза, юридична психологія; редкол.: В. Ю. Шепітько (голова) та ін. Харків, 2018. С. 428, 429.
- 12 Шепітько В., Шепітько М. Кримінальне право С. 271, 272.
- 13 Шепітько В., Шепітько М. Доктрина криміналістики С. 16.
- 14 Кримінальний процесуальний кодекс України : Закон України від 13.04.2012 р. № 4651-VI (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/4651-17#Text> (date accessed: 26.11.2021).

In addition, in Part 8 of Art. 95 of the Criminal Procedural Code of Ukraine states that the parties to the criminal proceedings, the victim, a representative of the legal entity in respect of which the proceedings are conducted, have the right to receive from participants in criminal proceedings and other persons with their consent explanations that are not evidence sources.

Competitive criminal proceedings are caused by the classic rule that the actual data acquire its evidence value only in court. Therefore, it is advisable to talk *about the need to form criminalistics* as a separate field of forensic science, offer forensic recommendations for participants in the trial, develop tactical methods of conducting trial actions (in particular, cross-examination), as well as forensic methods for considering various categories of criminal cases.

According to European standards, only data obtained (verified) by trial in presence of the parties, who have the opportunity to participate in the research on objects and/or documents, in interrogations, etc.¹⁵ can be recognized as evidence. While the pre-trial proceedings, each party should gather information about the facts that it intends to use in trial to persuade the court to accept as evidence¹⁶.

Evidence in its procedural and cognitive meaning appears only in court after their direct research¹⁷. There is a question about the formation process of evidentiary information, the cognitive value of factual data obtained during the pre-trial investigation and procedural

regulation of evidence at different stages of criminal proceedings.

In Art. 23 of Criminal Procedural Code of Ukraine of Ukraine at the level of the basis of the criminal process established a requirement for the spontaneity of the study of testimonies, things and documents by the court, and Part 2 of this Article states that “*information contained in the testimonies, things and documents that were not the subject of direct research of the court, except in cases stipulated by this Code*” is established. In Part 4 of Art. 95 of the Criminal Procedural Code of Ukraine stipulates that “*court may substantiate its conclusions only on the indications that it directly perceived during the trial*”.

At the same time, currently the procedural law is already at the stage of pre-trial investigation using the *evidence* term. In Part 1 of Art. 94: *Evidence Evaluation* of the Criminal Procedural Code of Ukraine of Ukraine states that the investigator, public prosecutor in his internal opinion, which is based on a comprehensive, complete and impartial investigation of all the circumstances of criminal proceedings, guided by law, evaluates each evidence in terms of belonging, admissibility, reliability, and a set of collected evidence in terms of sufficiency and interrelation to make an appropriate procedural decision.

Use of the *evidence* term can be traced in the rest of the articles of the Criminal Procedural Code of Ukraine of Ukraine regulating the procedure for pre-trial investigation. Thus, in Art. 276 to cases of notification of suspicion, among others, includes “*availability of sufficient evidence*”

15 Карабунт Л. В. Щодо формування доказів під час досудової кримінальної процесуальної діяльності за новим КПК. *Часопис Національного університету «Острозька академія». Серія «Право»*. 2012. № 1(5). С. 10.

16 Ibid.

17 Лукашевич В. Г. Докази та доказування в кримінально-процесуальному та криміналістичному вимірі. *Держава та регіони. Серія: Право*. 2016. № 1 (51). С. 76. URL: http://nbuv.gov.ua/UJRN/drp_2016_1_16 (date accessed: 28.11.2021).

to suspect a person of committing a criminal offense". In p. 3 part 1 of Art. 284 of the Criminal Procedural Code of Ukraine of Ukraine states that criminal proceedings, among other cases, are closed if sufficient evidence is not established to prove the guilt of a person in court and the possibility of obtaining them has been exhausted. In Art. 287 of the Criminal Procedural Code of Ukraine of Ukraine, obligatory details of the prosecutor's request for release from criminal liability are evidence that confirms the fact that a person has committed a criminal offense (paragraph 6, part 1). During the opening by the parties to the criminal proceedings of the materials of the pre-trial investigation, the legislator again in Part 1 of Art. 290 of the Criminal Procedural Code of Ukraine of Ukraine uses this term, recognizing the evidence collected while pre-trial investigation sufficient for indictment drafting.

In the forensic sense, lexical phrases "actual data (circumstances)", "information contained in testimonies, information obtained while research on objects, documents, material crime traces", etc., used in the procedural law, do not solve the issue of forming evidence (evidence). We believe that "information", "factual circumstances" or "data" should be checked during the trial, as well as at this stage of criminal proceedings to confirm their status as evidence. Certainly, such activity involves the use of forensic knowledge, use of techniques, methods, means and technologies of criminalistics.

Trends in criminalistics are associated with the emergence and formation of its individual industries or directions and are due to the need to study specific data (facts, traces, information): for example, medical, genotype, computer (digital), aerospace or nuclear criminalistics.

In particular, medical criminalistics reflects a certain connection between knowledge of forensic medicine and the theory of forensic evidence. In current conditions, the *medical criminalistics* term is used in scientific sources and regulations, but it is not common¹⁸. Medical criminalistics is a complex field of knowledge that is used in implementation of legal activities; namely: detection and investigation of crimes or the trial of a criminal case. The use of medical forensic data is associated with the research on specific physical evidence, different in origin of traces (mechanical, chemical, biological, electrical, ballistic, one etc.). Medical criminalistics is a certain system of scientific knowledge based on identification (or diagnostic or situational) research of certain objects: living persons, corpses (their parts), physical evidence¹⁹.

Digital Evidence and Issue of Digital Forensics

Digital Forensics is a promising area in the development of forensic knowledge and forensic science. Therefore, digital forensics can be considered as a strategic direction in the development of forensic science²⁰. This area of criminalistics is

18 Shepitko V. Yu., Olkhovsky V. O., Shepitko M. V. The Process of Scientific Knowledge Integration in Crime Prevention and Trends of Medical Criminalistics Development in Ukraine in XIX – early XX century. *Wiadomości lekarskie*. 2020. T. LXXIII. Nr 1. P. 176–179. DOI: 10/36740/WLek202001133 (date accessed: 28.11.2021).

19 Ibid.

20 Шепітько В., Шепітько М. Формування цифрової криміналістики як стратегічний напрямок розвитку науки. *Kriminalistika a Forenzné Vedy: Veda, Vzdelávanie, Prax. Zborník príspevkov 17 Medzinárodný kongres* (Bratislava, Slovenská republika, 16–17.09.2021). Bratislava, 2021. C. 190.

sometimes called *Computer Forensics*. Some scholars even see computer forensics as “*applied science of investigating computer-related crimes (incidents) in the study of digital evidence, methods of finding, obtaining, and capturing such evidence*”²¹.

Development of digital forensics takes place in three main areas: 1) formation of a separate scientific field in criminalistics; 2) specific expertise application while working with digital evidence; 3) forensic examinations (in particular, computer and technical one)²².

Specialized sources focus on the need to study so-called “digital evidence” (digital information) information created using high information technology. In foreign countries, the *digital evidence* term has become widely used, meaning any stored data or data transmitted using computer or other technology. Digital evidence is factual data presented in digital form and recorded on any type of media²³. Along with the *digital evidence* term, others are also used, for example: *e-evidence*, *e-traces*, *digital information sources*, *e-documents*, etc.²⁴

Paragraph 1 part 2 of Art. 99 of the Criminal Procedural Code of Ukraine of Ukraine stipulates that documents, in particular, can include content of photography, sound recording, video recording and other media (in particular, electronic ones). Part 4 of this Article regulates that “*duplicate of the document, as*

well as copies of information <...>contained in information (automated) systems, telecommunication systems, information and telecommunication systems, their integral parts, manufactured</...>by the investigator, prosecutor with professional involvement are recognized by the court as original document”.

Digital evidence requires the latest approaches to their collection, storage, use and research in evidence in criminal proceedings. Pilot projects of Ukrainian scientists on the methods of crime investigation committed in cyberspace, construction of their forensic characteristics, determination of their investigation algorithm, as well as the singularity of specific expertise use forensic examinations while investigation of this category of criminal offenses deserve attention²⁵.

Formation of Nuclear Forensics as a New Scientific Direction

In modern conditions, *Nuclear Forensics* is considered as a new branch of comprehensive scientific research, a type of forensic examination or a separate area of forensics. Nuclear forensics is a fairly new direction of scientific research, the emergence of which is due to the surge of nuclear smuggling and which is designed to provide answers to a number of questions related to the identification, purpose, degree of danger, origin and ways of transportation of detained nuclear,

21 Гриців О. І. Криміналістика в комп'ютерних системах: процеси, готові рішення. *Вісник Національного університету «Львівська політехніка». Автоматика, вимірювання та керування*. 2013. № 774. С. 120–126. URL: http://nbuv.gov.ua/UJRN/VNULP_2013_774_22 (date accessed: 28.11.2021).

22 Шепітько В., Шепітько М. Доктрина криміналістики С. 21.

23 Цехан Д. М. Цифрові докази: поняття, особливості та місце у системі доказування. *Науковий вісник Міжнародного гуманітарного університету. Серія: Юриспруденція*. 2013. № 5. С. 256–260. URL: http://nbuv.gov.ua/UJRN/Nvmgu_jur_2013_5_58 (date accessed: 28.11.2021).

24 Е.г.: Журавель В. А., Шепітько В. Ю. Розвиток криміналістики С. 657.

25 Самойленко О. А. Основи методики розслідування злочинів, вчинених у кіберпросторі : монографія / за заг. ред. А. Ф. Волобуєва. Одеса, 2020. 372 с. URI: <https://hdl.handle.net/11300/13264> (date accessed: 28.11.2021).

radioactive materials and radiation sources, which today is one of the most important issues of international security²⁶.

In the reference literature, nuclear forensics is defined as a type of forensic science consisting in research on nuclear and other radioactive materials, finding evidence of their origin, place and ways of their illicit trafficking and enrichment, as well as weaknesses in such materials²⁷. Nuclear forensics is the analysis of nuclear materials in order to obtain information about their origin, as well as methods of production and use. Due to the fact that methods of analysis used in nuclear forensics are mostly destructive, the choice of the correct set and sequence of methods for research on samples is one of the most important factors that allows professionals to solve their tasks²⁸.

Literary sources suggest that nuclear forensics has a special place among nuclear security measures. At the same time, nuclear forensics is a systematic analysis of isotopic signatures, chemical properties and physical characteristics of nuclear or other radioactive material²⁹. Nuclear forensics are believed to date back to the mid-1990s. Currently, nuclear forensics is recognized as an effective tool for strengthening regulatory control and physical protection of nuclear and other radioactive materials (NRM). Nuclear

forensic research is aimed not only at determining the characteristics found outside the regulatory control of NRM, but most often at determining the source of the seized NRM³⁰.

Paragraph 10 of the Seoul Nuclear Security Summit Communiqué dated on 27 March 2012 states that “nuclear forensics can be an effective tool for determining the origin of detected nuclear and other radioactive materials and gathering evidence to prosecute illicit trafficking and misuse. In this regard, we call on states to work with each other, as well as with the IAEA, to develop and strengthen the capacity of nuclear forensics. In this regard, they may, as appropriate, combine skills relevant to both conventional and nuclear forensics”³¹.

Conclusions

Theoretical and cognitive model of forensics is considered in relation to the development of forensic sciences and forensics, as well as within its formation in legal doctrine. In modern conditions, the development of forensics is associated with the formation of both its internal structure (system) and the emergence of new industries (directions). In the structure of forensics, it is proposed to take into account its important section *Forensic Strategy* as a certain system of

26 Большаков В. Б., Косач Н. И. Региональные лаборатории с ядерной криминалистики —инструмент МАГАТЕ и ЕС у борьбы с международным терроризмом. *Метрология*. 2014. С. 68.

27 Шепітько В., Шепітько М. Кримінальне право С. 302.

28 Долматов Д. О. Методы определения элементного состава в ядерной криминалистике. *Современные техника и технологии. Секция 8: Физические методы в науке и технике : XX Междунар. науч.-практ. конф.* 2014. С. 9.

29 Біленчук П. Д., Обіход Т. В. Правове і криміналістичне забезпечення протидії ядерному тероризму. *Часопис Київського університету права*. 2017. № 1. С. 294.

30 Щодо заходів у сфері ядерної криміналістики / Державна інспекція ядерного регулювання України : офіц. вебпортал. URL: <https://snriu.gov.ua/news/shchodo-zakhodiv-u-sferi-yadernoi-kriminalistiki> (date accessed: 27.11.2021).

31 Сеульское коммюнике : принято на Сеульском саммите по ядерной безопасности 2012 г. (26—27.03.2012) : IAEA INFCIRC/838 (31.05.2012). URL: https://www.iaea.org/sites/default/files/publications/documents/infcircs/2012/infcirc838_rus.pdf (date accessed: 27.11.2021).

forensic means in combating crime for the long term (in particular, international cooperation in various forms).

Criminalistics is the science of forming evidence-based information. The subject of forensics traditionally includes patterns related to the processes of proof (collection, research, evaluation and use of evidence). The essence of the evidence and their formation at different stages of criminal proceedings are determined. Arguments on the formation of *competitive forensics and forensic criminalistics* are given. The need to use forensic knowledge by different parties to criminal proceedings both during pre-trial investigation and trial is argued. The subject of criminal knowledge should be not only the investigator, but prosecutor, investigating judge, inquirer, the detective, judge, the lawyer.

Trends in criminalistics related to formation of its separate industries (directions): medical, genotype, computer (digital), aerospace and nuclear forensics are determined. Formation of new areas of criminalistics is due to scientific and technological progress, the introduction of new technologies, the need to identify specific traces and collect evidence (genomic, digital, nuclear ones, etc.). Definition of concepts of digital and nuclear forensics has been formulated.

Теоретико-методологічна модель криміналістики та її нові напрями
Валерій Шепітько

За мету поставлено з'ясувати тенденції розвитку криміналістики в глобалізованому світі, окреслити її межі, спрогнозувати появу нових напрямів і схарактеризувати їх.

Досліджено теоретико-методологічну модель криміналістики, простежено тенденції й особливості формування криміналістики в сучасних умовах. Розглянуто формування внутрішньої структури криміналістики (її системи), визначено

зв'язок з іншими науками (природничими, гуманітарними, соціальними, формальними), встановлено співвідношення із судовими науками (судовою медициною, судовою токсикологією, судовою психологією, судовою хімією та ін.), а також судовою експертологією. Звернено увагу на спрямованість вектора криміналістики України до єдиного криміналістичного європейського простору. Обґрунтовано необхідність започаткування у структурі криміналістики нового розділу — криміналістичної стратегії.

Розглянуто особливості виникнення, формування й розвитку нових галузей (напрямів) криміналістики: змагальної, судової, медичної, генотипоскопічної, аерокосмічної, комп'ютерної (цифрової) і ядерної. Аргументовано необхідність застосування криміналістичних знань різними сторонами кримінального судочинства як під час досудового розслідування, так і в процесі судового розгляду. Суб'єктами застосування криміналістичних знань має бути не тільки слідчий, а й прокурор, слідчий суддя, дізнавач, детектив, суддя, адвокат.

Виникнення нових галузей криміналістики пов'язане з науково-технічним прогресом, появою новітніх технологій, необхідністю роботи зі специфічними слідами та складнощами збирання й дослідження доказів. Особливу увагу приділено розвитку та становленню медичної, цифрової та ядерної криміналістики.

Ключові слова: криміналістика; модель криміналістики; судові науки; галузі криміналістики; медична криміналістика; цифрова криміналістика; ядерна криміналістика.

Теоретико-методологическая модель криминалистики и её новые направления
Валерий Шепітько

Цель работы — выяснить тенденции развития криминалистики в глобализованном

мире, определить её границы, спрогнозировать появление новых направлений и охарактеризовать их.

Рассмотрено формирование внутренней структуры криминалистики (её системы), определена связь с другими науками (естественными, гуманитарными, социальными, формальными), установлено соотношение с судебными науками (судебной медициной, судебной токсикологией, судебной психологией, судебной химией и пр.), а также судебной экспертологией. Обращено внимание на направленность вектора криминалистики Украины к единому криминалистическому европейскому пространству. Обоснована необходимость создания в структуре криминалистики нового раздела — криминалистической стратегии.

Рассмотрены особенности возникновения, формирования и развития новых отраслей (направлений) криминалистики: состязательной, судебной, медицинской, генотипоскопической, аэрокосмической, компьютерной (цифровой) и ядерной. Аргументирована необходимость использования криминалистических знаний разными сторонами уголовного судопроизводства как в ходе досудебного расследования, так и в процессе судебного разбирательства. Субъектами применения криминалистических знаний должен быть не только следователь, но и прокурор, следственный судья, дознаватель, детектив, судья, адвокат.

Возникновение новых отраслей криминалистики связано с научно-техническим прогрессом, появлением новейших технологий, необходимостью работы со специфическими следами и сложностями сбора и исследования доказательств. Особое внимание уделено развитию и становлению медицинской, цифровой и ядерной криминалистики.

Ключевые слова: криминалистика; модель криминалистики; судебные науки,

отрасли криминалистики; медицинская криминалистика; цифровая криминалистика; ядерная криминалистика.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Disclaimer

The funders had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Contributors

The author contributed solely to the intellectual discussion underlying this paper, case-law exploration, writing and editing, and accept responsibility for the content and interpretation.

Declaration of Competing Interest

Although the author is a Journal's Co Editor-in-Chief (this can lead to potential conflicts of interest or prejudice), the final decision regarding this article publication was made by other editors, following the reviewers' recommendations.

References

- Ackermann, R., Kurapka, V. E., Malewski, H., Shepitko, V. (2020). Schaffung eines einheitlichen europäischen Kriminalistischen Raumes: Die Tätigkeit öffentlicher Organisationen zur Stärkung der internationalen Beziehungen. *Kriminalistik*. Is. 6.
- Bilenchuk, P. D., Obikhod, T. V. (2017). Pravove i kryminalistychnе zabezpechennia protydii yadernomu teroryzmu [Legal and Forensic Support for Combating Nuclear Terrorism]. *Chasopys Kyivskoho universytetu prava*. № 1 [in Ukrainian].
- Bolshakov, V. B., Kosach, N. I. (2014). Rehionalni laboratorii z yadernoi kryminalistyky — instrument MAHATE i ES u borotbi z mizhnarodnym teroryzmom [Regional Laboratories on Nuclear Forensics — IAEA and EU Instrument in Combating

- International Terrorism]. *Metrolohiia* [in Ukrainian].
- Dolmatov, D. O. (2014). *Metody opredeleniia ehlementnogo sostava v iadernoi kriminalistike* [Methods for determining elemental composition in nuclear forensics]. *Sovremennye tekhnika i tekhnologii. Sektsiia 8: Fizicheskie metody v nauke i tekhnike : XX Mezhdunar. nauch.-prakt. konf.* [in Russian].
- Gross, G. (1908). *Rukovodstvo dlia sudebnykh sledovatelei kak sistema kriminalistiki* [Handbuch für Untersuchungsrichter als System der Kriminalistik]. Novoe izd., perepech. s izd. 1908 g. Moskva [in Russian].
- Hrytsiv, O. I. (2013). *Kryminalistyka v kompiuternykh systemakh: protsesy, hotovi rishennia* [Criminalistics in Computer Systems: Processes, Ready-Made Solutions]. *Visnyk Natsionalnoho universytetu «Lvivska politekhnika». Avtomatyka, vymiriuvannia ta keruvannia.* № 774. URL: http://nbuv.gov.ua/UJRN/VNULP_2013_774_22 [in Ukrainian].
- Karabut, L. V. (2012). *Shchodo formuvannia dokaziv pid chas dosudovoi kryminalnoi protsesualnoi diialnosti za novym KPK* [Regarding the formation of evidence during pre-trial criminal proceedings under the new Criminal Procedural Code of Ukraine]. *Chasopys Natsionalnoho universytetu «Ostrozka akademiia». Seriiia «Pravo».* № 1 (5) [in Ukrainian].
- Kliuiev, O., Simakova-Yefremian, E. (2021). *Doktrynalni pidkhody do sudovoi ekspertyzy v Ukraini* [Doctrinal Approaches to Forensic Science in Ukraine]. *Pravo Ukrainy.* № 8 [in Ukrainian].
- Kurapka, V. Eh., Malevski, G. (2019). *Nauchnaia kontseptsiiia kriminalisticheskoi politiki v strategiiah organov pravoporiadka kak innovatsionnyi proryv v obespechenii sozdaniia obshchego evropeiskogo kriminalisticheskogo prostranstva* [Scientific Concept of Forensic Policy in the Strategies of law Enforcement Agencies as an Innovative Breakthrough in Ensuring the Creation of a Common European Forensic Space]. *Innovatsiini metody ta tsyfrovi tekhnolohii v kryminalistytsi, sudovii ekspertyzi ta yurydychnii praktysi :* mat-ly mizhnar. «kruhl. stolu» (Kharkiv, 12.12.2019). Kharkiv [in Russian].
- Lukashevych, V. H. (2016). *Dokazy ta dokazuvannia v kryminalno-protsesualnomu ta kryminalistychnomu vymiri* [Evidence and Proof in the Criminal Procedure and Forensic Dimension]. *Derzhava ta rehiony. Seriiia: Pravo.* № 1 (51). URL: http://nbuv.gov.ua/UJRN/drp_2016_1_16 [in Ukrainian].
- Pravova doktryna Ukrainy* (2013). U 5 t. T. 5: *Kryminalno-pravovi nauky v Ukraini: stan, problemy ta shliakhy rozvytku* [Legal Doctrine of Ukraine. In 5 vols. Vol. 5: Criminal Law Sciences in Ukraine: State, Issues and Ways of Development] ; za zah. red. V. Ya. Tatsiia, V. I. Borysova. Kharkiv [in Ukrainian].
- Samoilenko, O. A. (2020). *Osnovy metodyky rozsliduvannia zlochyniv, vchynenykh u kiberprostorii* [Fundamentals of Methods of Investigating Crimes Committed in Cyberspace]: monohrafiia / za zah. red. A. F. Volobuieva. Odesa. URI: <https://hdl.handle.net/11300/13264> [in Ukrainian].
- Seulskoe kommuniike* [Seoul Communiqué]: priniato na Seulskom sammite po iadernoi bezopasnosti 2012 g. (26–27.03.2012) : IAEA INFCIRC/838 (31.05.2012). URL: https://www.iaea.org/sites/default/files/publications/documents/infcircs/2012/infcirc838_rus.pdf [in Russian].
- Shchodo zakhodiv u sferi yadernoi kryminalistyky* [Regarding Measures in the Field of Nuclear Forensics] / Derzhavna inspektsiia yadernoho rehuliuвання Ukrainy : ofits. vebportal. URL: <https://snrii.gov.ua/news/shchodo-zakhodiv-u-sferi-yadernoi-kriminalistiki> [in Ukrainian].
- Shepitko, M. V. (2020). *Kontseptualni zasady rozvytku kryminalistyky ta sudovykh nauk* [Conceptual Bases of Development of Criminalistics and Forensic Sciences]. *Arkhiv kryminolohii ta sudovykh nauk : nauk. zhurn.* № 1 [in Ukrainian].
- Shepitko, V. Yu., Olkhovsky, V. O., Shepitko, M. V. (2020). *The Process of Scientific Knowledge Integration in Crime Prevention and Trends of Medical Criminalistics Development in Ukraine in XIX — early XX century.*

- Wiadomości lekarskie*. T. LXXIII. Nr 1. DOI: 10/36740/WLek202001133.
- Shepitko, V. Yu., Zhuravel, V. A., Konovalova, V. O. ta in. (2019). *Kryminalistyka* [Criminalistics]: pidruchnyk. U 2 t. T. 1 ; za red. V. Yu. Shepitka. Kharkiv [in Ukrainian].
- Shepitko, V., Shepitko, M. (2021). Doktryna kryminalistyky ta sudovoi ekspertyzy: formuvannia, suchasnyi stan i rozvytok v Ukraini [Doctrine of Criminalistics and Forensic Science: Formation, Current State and Development in Ukraine]. *Pravo Ukrainy*. № 8 [in Ukrainian].
- Shepitko, V., Shepitko, M. (2021). Formuvannia tsyfrovoy kryminalistyky yak stratehichnyi napriamok rozvytku nauky [Formation of Digital Forensics as a Strategic Direction of Science Development]. *Kriminalistika a Forenzné Vedy: Veda, Vzdelávanie, Prax*. Zborník rrispevkov 17 Medzinárodný kongres (Bratislava, Slovenská republika, 16–17.09.2021). Bratislava [in Ukrainian].
- Shepitko, V., Shepitko, M. (2021). *Kryminalne pravo, kryminalistyka ta sudovi nauky* [Criminal Law, Criminalistics and Forensic Science]: entsyklopediia. Kharkiv [in Ukrainian].
- Tsekhan, D. M. (2013). Tsyfrovi dokazy: poniattia, osoblyvosti ta mistse u systemi dokazuvannia [Digital Evidence: Concepts, Features and Place in Evidence System]. *Naukovyi visnyk Mizhnarodnoho humanitarnoho universytetu. Seriia: Yurysprudentsiia*. № 5. URL: http://nbuv.gov.ua/UJRN/Nvmgu_jur_2013_5_58 [in Ukrainian].
- Ukrainian Legal Doctrine in Five Volumes* (2018). V (2): Judicial Law, Penal Law, and Forensic Legal Sciences. Ed. by V. Ia. Tatsyi and V. I. Borysov. London, 2018.
- Velyka ukrainska yurydychna entsyklopediia* [Great Ukrainian Legal Encyclopedia] (2018). U 20 t. T. 20: Kryminalistyka, sudova ekspertyza, yurydychna psykholohiia; redkol.: V. Yu. Shepitko (holova) ta in. Kharkiv [in Ukrainian].
- Yusupov, V. (2021). Istoriiia formuvannia doktryny kryminalistyky v Ukraini [Formation History of doctrine of Criminalistics in Ukraine]. *Pravo Ukrainy*. № 8 [in Ukrainian].
- Zhuravel, V. A., Shepitko, V. Yu. (2021). Rozvytok kryminalistyky ta sudovoi ekspertyzy v Ukraini: nablyzhennia do yedynoho yevropeiskoho prostoru [Development of Criminalistics and Forensic Science in Ukraine: approaching the single European space] / *Pravova nauka Ukrainy: suchasnyi stan, vyklyky ta perspektyvy rozvytku* : monohrafiia. Kharkiv [in Ukrainian].
- Shepitko, V. (2021). Theoretical and methodological model of criminalistics and its new directions. *Theory and Practice of Forensic Science and Criminalistics*. Issue 3 (25). P. 9–20. DOI: 10.32353/khrife.3.2021.02.