

Ministry of Justice of Ukraine

National Scientific Center
«Hon. Prof. M. S. Bokarius Forensic Science Institute»

Yaroslav Mudryi National Law University

[DOI: 10.32353/khrife.4.2025](https://doi.org/10.32353/khrife.4.2025)

Theory and Practice of Forensic Science and Criminalistics

Research Paper Collection

Published Quarterly

Bilingual Edition

Founded in 2001

Issue 4 (41)

Kharkiv
NSC «Hon. Prof. M. S. Bokarius FSI»
2025

DOI: 10.32353/khrife.4.2025
UDC 343.98
T44

ISSN 1993-0917 (Print)
e-ISSN 2708-5171 (Online)

Included in the list of scientific editions of Ukraine where results of PhD and Doctoral dissertations can be published (Order No 886 of the Ministry of Education and Science of Ukraine dated on 02.07.2020).

Media ID R30-02416 (Decision of National Council of Television and Radio Broadcasting of Ukraine No. 1835 dated on 12.21.2023).

Founders:

National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» of Ministry of Justice of Ukraine & Yaroslav Mudryi National Law University.

Recommended for publication by Academic Council of NSC «Hon. Prof. M. S. Bokarius FSI» (Minutes No. 13 dated on 24.09.2025).

Theory and Practice of Forensic Science and Criminalistics :

T44 Research Paper Collection. — Kharkiv : NSC «Hon. Prof. M. S. Bokarius FSI», 2025. — Issue 4 (41). — 255, [1] p.

The thirty-ninth collection issue presents content on criminalistics, theory and methodology of forensic science, as well as information about scientific-practical conferences and educational projects and participation of the NSC staff in them.

Our authors are representatives of forensic science institutions, higher education institutions, law enforcement agencies from Ukraine and foreign countries.

The collection can be used by students and employees of higher education institutions, law enforcement agencies, legal experts, and researchers.

UDC 343.98

The editorial board uses double anonymized peer review.

Authors are responsible for the accuracy of the provided terms, facts, quotations, figures and surnames.

The authors declare that their opinions and views expressed in these articles are free of any impact of organizations where they work.

Distributed to scientific libraries and state forensic science institutes in Ukraine and internationally.

Full text electronic version is publicly available on the edition website at the following link:

<https://khrife-journal.org/index.php/journal>.



Research paper collection is indexed by Google Scholar, international online abstract and citation databases:

Academic Scientific Journals Indexing, Bielefeld Academic Search Engine (BASE), ERIH PLUS, Europub, Index Copernicus International (ICV 2021: 100), RefSeek, ResearchBib, WorldCat, DOI® System.

Full-text online versions of the collection are available on Internet on the platforms of the V. I. Vernadskyi National Library of Ukraine, libraries of forensic science institutions of Ministry of Justice of Ukraine, higher education institutions of Ministry of Internal Affairs of Ukraine, etc.

Contents

EDITOR-IN-CHIEF'S NOTE

Ella Simakova-Yefremian. Integrating Scientific and Technical Achievements into Forensic Expert Activity: Procedural Aspect.	5
---	---

RESEARCH PAPERS

Yurii Chechil, Victoriia Bila, Stanislav Sheptukhovskiy. Expectations in Law and Criminalistics: Issue Formulation	13
Nataliia Tkachenko. Recent Advancements in Forensic Expert Activity in the Context of Global Societal Digital Transformation	35
Karen Mamikonyan, Armen Safaryan. Principle of Tax Rate Equilibrium and its Application in the Tax System of the Republic of Armenia	52
Yuliia Brailko, Tetiana Yehorova, Nataliia Kysla, Patvakan Voskanian. Methodological Aspects of Complex Forensic Psychological and Linguistic Examination Realities of Armed Aggression of Russian Federation Against Ukraine	69
Igor Lurin, Oleksiy Larin, Eduard Khoroshun, Volodymyr Nehoduyko, Oleksandr Kolomütsev, Serhii Larkov, Oleh Kokorin, Dmytro Klymchuk, Vitalii Tyshchenko, Vitalii Shcherbak, Viktor Sapielkin. Experimental Researches on Specifics of Terminal and External Ballistics of Damaging Elements of Cylindrical Shape with Diameter of 5.0 Mm	81

CASE NOTES

Yevhen Sup. Using Specific Expertise During the Investigation of Criminal Offences Committed by Professional Participants in Court Proceedings	120
Vitalii Usatii. Specific Economic Expertise in Investigation of Economic Criminal Offenses	135
Oleksandr Tarkan. Counteraction to Investigation and Abuse of Procedural Rights: Forensic Correlation and Limits of Conceptual Delimitation	155
Iryna Korostashova. Legal Support for Customs and Forensic Examinations (Expert Studies) in Foreign Economic Activities and Customs Formalities under EU and Ukraine's Customs Legislation	169
Yurii Kovalov, Andrii Fedotenko. Involvement of Specialists in Smuggling Investigation	191
Oleksandr Yevsiukov. Current State and Prospects for Incorporating Specific Psychology Expertise into Multidisciplinary Forensic Examinations	205

SCIENTIFIC NEWS

Congratulations to the Celebrant!	231
NSC FSI is a Co-organizer of the International Scientific Conference: <i>The Forensic Expert as a Key Element in Ensuring Trust in Justice</i>	237
NSC FSI Presented Contemporary Areas of Forensic Expert Activity at the 22nd International Multidisciplinary Scientific and Practical Conference	239
NSC FSI is a Participant in the Scientific and Practical Conference of Polygraph Examiners	241
The All-Ukrainian Scientific and Practical Conference: <i>Forensic Linguistic Examination under Martial Law</i>	242
The NSC FSI Took Part in the Intergovernmental Conference on Missing Persons, which was held in Warsaw	245
International Training Course: <i>Advanced Training of Forensic Experts in the Field of Anti-Corruption</i> held in Tokyo	247
All-Ukrainian Scientific and Practical Conference: <i>Current Issues in Conducting Scientific-Technical and Forensic Examinations on the Detection and Examination of Modern Methods and Means of Committing Criminal Offenses in Conditions of War</i>	249
Confirmation of the High Professional Qualification of an NSC FSI Expert: Vitalii Nikitiuk Obtained Permanent Membership in AFTE	251
VII Annual International Scientific and Practical Conference: <i>Current Issues of Forensic Expertology, Criminalistics, and Criminal Procedure</i>	252

Theory and Practice of Forensic Science and Criminalistics

Editor-in-Chief

Prof. Ella Simakova-Yefremian, Doctor of Law,
National Scientific Center «Hon. Prof.
M. S. Bokarius Forensic Science Institute»
(Ukraine).

Co Editor-in-Chief

Prof. Valerii Shepitko, Doctor of Science of Law,
Yaroslav Mudryi National Law University
(Ukraine).

Executive Secretary

Prof. Oleh Uhrovetskyi, Doctor of Science of Law,
National Scientific Center «Hon. Prof.
M. S. Bokarius Forensic Science Institute»
(Ukraine).

Editorial Board

Prof. Vlada Husieva, Doctor of Science of Law,
Kharkiv National University of Internal Affairs
(Ukraine).

Inga Kudeikina, Doctor of Law, Associate
Professor, Riga Stradiņš University (Latvia).

Prof. Vidmantas Egidijus Kurapka, Doctor of Law,
Mykolas Romeris University (Lithuania).

Prof. Hendryk Malevski, Doctor of Law,
Mykolas Romeris University (Lithuania).

Prof. Borys Mykhailychenko, Doctor of Medical
Sciences, Bogomolets National Medical
University (Ukraine).

Gabrielė Juodkaitė-Granskienė, Doctor of Law,
Member of the Supreme Court of Lithuania
(Lithuania).

Advisory Council

Prof. Oleksandr Dunaev, Doctor of Medical
Sciences, Kharkiv National Medical University
(Ukraine).

Prof. Volodymyr Zhuravel, Doctor of Science
of Law, National Academy of Legal Sciences
of Ukraine (Ukraine).

Prof. Oksana Kaplina, Doctor of Science of Law,
Yaroslav Mudryi National Law University
(Ukraine).

Anastasiia Kupriianova, Candidate
of Legal Sciences, National Scientific Center
«Hon. Prof. M. S. Bokarius Forensic
Science Institute»
(Ukraine).

Prof. Iryna Petrova, Doctor of Science of Law,
National Scientific Center «Hon. Prof.
M. S. Bokarius Forensic Science Institute»
(Ukraine).

Prof. Volodymyr Semynozhenko, Doctor
of Physical and Mathematical Sciences,
North-Eastern Scientific Center
of National Academy of Sciences
of Ukraine and Ministry of Education
and Science of Ukraine
(Ukraine).

Prof. Hanna Spitsyna, Doctor of Science
of Law, National Scientific Center
«Hon. Prof. M. S. Bokarius Forensic
Science Institute» (Ukraine).

Prof. Viktor Shevchuk, Doctor of Science
of Law, Yaroslav Mudryi National Law
University (Ukraine).

Prof. Mykhailo Shcherbakovskyi, Doctor
of Science of Law, Kharkiv National
University of Internal Affairs
(Ukraine).

Managing Editors

Anatoliy Tiapkin
Tetiana Kipusheva
Inna Kopytina

Translators

Andriy Bublikov
Daryna Dukhnenko
Артем Пізник

Integrating Scientific and Technical Achievements into Forensic Expert Activity: Procedural Aspect

Ella Simakova-Yefremian *

* Doctor of Science of Law, Professor, NSC «Hon. Prof. M. S. Bokarius FSI», Kharkiv, Ukraine, ORCID: <https://orcid.org/0000-0002-8246-7688>, e-mail: simakova@hniise.gov.ua

DOI: 10.32353/khrife.4.2025.01 UDC 343.98

Received: 22.12.2025 / Accepted for print: 23.12.2025 / Available online: 31.12.2025



The Article Purpose is a comprehensive analysis of the current “Theory and Practice of Forensic Science and Criminalistics” Research Paper Collection considering the issue of integrating specific expertise into court proceedings. The importance of the role of specific expertise in ensuring the efficiency, lawfulness, and objectivity of forensic expert activity is undeniable. That is why the editor-in-chief highlighted procedural forms in which integration processes occur. In the scholarly contributions to this issue, both international and Ukrainian authors address numerous pressing issues within the forensic domain—encompassing theoretical aspects (notably, the concept of expectations in law and criminalistics, as well as challenges arising from the global digital transformation of society) and practical dimensions (such as specifics of terminal and external ballistics of damaging elements, conduct of multidisciplinary forensic psychological and linguistic examinations, significance of specific expertise in investigating criminal offenses perpetrated by professional participants in court proceedings)—while proposing ways for their resolution.

Keywords: specific expertise; forensic examination; criminalistics; criminal proceedings; integration processes; digital transformation; evidentiary basis; objective truth; pre-trial investigation; procedural status of forensic expert; multidisciplinary forensic examination; customs legislation.

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

The structural evolution of Ukraine into a constitutional state and the reform within the justice system have set higher standards for the quality of evidence collection and research. In the era of rapid scientific and technical progress, which significantly impacts the investigation of criminal and other offenses, achieving a proper level of justice is practically impossible without specific expertise. Conducting forensic examinations constitutes the fundamental basis that guarantees not only the effectiveness but also the lawfulness and impartiality of criminal proceedings. It serves as a procedural instrument that facilitates the conversion of information (previously unknown to law enforcement agencies and a court) regarding objects and phenomena obtained from forensic experts, into an evidentiary basis, thereby integrating specific expertise into the judicial domain. From a forensic perspective, this is a guarantee that procedural decisions of investigative and judicial authorities will be based on

scientifically substantiated facts, and not on subjective assumptions.

The development of forensic science and criminalistics, as well as forensic expert and criminalistics practice, is inextricably linked to social, political, and scientific transformations of society, encouraging researchers to resolve problems of integrating specific expertise into court proceedings. Accordingly, scientific papers by foreign (A. Müller-Armak, J. Viner, P. J. D. Wiles, et al.)¹ and Ukrainian scholars (V. Bakhin, O. Bondarenko, Yu. Hroshevyi, V. Honcharenko, V. Zhuravel, N. Klymenko, V. Konovalova, M. Sehai, V. Shepitko, M. Shepitko, M. Shcherbakovskiy², and others) address diverse issues concerning the application of scientific and technological advancements across various proceedings, the enhancement of procedural legislation, and the revision and development of the existing and new provisions related to integration processes in criminalistics and forensic examination. Overall, trends in

- 1 Див., напр.: Müller-Armack A. Wirtschaftsordnung und Wirtschaftspolitik. Studien Integration. Bern ; Stuttgart, 1976. Pp. 231–242 ; Viner J. The Customs Union Issue. NY, 1950. 221 p. ; Wiles P. J. D. Communist International Economics. Oxford, 1968. 580 p.
- 2 Див., напр.: Бахин В. П. Криминалістика. Проблеми і мнения (1962–2002). Київ, 2002. 268 с. URL: <https://studfile.net/preview/5287600/> (date accessed: 20.12.2025) ; Бондаренко О. О. Об'єкт і предмет судової експертизи у кримінальному судочинстві. *Вісник Харківського національного університету імені В. Н. Каразіна. Серія «Право»*. 2013. № 1082. Вип. 16. С. 216–218. URL: http://nbuv.gov.ua/UJRN/VKhIPR_2013_1082_16_56 (date accessed: 20.12.2025) ; Грошевий Ю. М., Стахівський С. М. Докази і доказування у кримінальному процесі : наук.-практ. посіб. Київ, 2006. 272 с. ; Бойченко С. Б., Бояров В. І., Будко Т. В., Варфоломеева Т. В. та ін. Експертизи у судочинстві України : наук.-практ. посіб. / за заг. ред. В. Г. Гончаренка, І. В. Гори. Київ, 2015. 504 с. ; Клименко Н. І. Інтеграційна функція експертології. *Теорія та практика судової експертизи і криміналістики*. 2006. Вип. 6. С. 117–124 ; Коновалова В. Е. О значении и функциях экспертных версий. *Криминалистика и судебная экспертиза*. 1977. Вып. 14. С. 53–58 ; Сегай М. Я. Методология судебной идентификации : монография. Киев, 1970. 256 с. ; Сегай М. Я., Стринжа В. К. Судебная экспертиза материальных следов-отображений (проблемы методологии) : монография. Киев, 1997. 174 с. ; Шепитько В. Ю. О пределах использования специальных знаний в уголовном процессе. *Актуальні проблеми кримінального права, процесу та криміналістики* : мат-ли IV Міжнар. наук.-практ. конф., присвяч. 95-річ. з дня народж. проф. М. В. Салтевського (Одеса, 02.11.2012). Одеса, 2012. С. 499–502 ; Шепитько В. Ю. Проблеми використання спеціальних знань крізь призму сучасного кримінального судочинства в Україні. *Судова експертиза*. 2014. № 1. С. 11–18 та ін.

the advancement of forensic examination predominantly depend on the extent of scientific and technological knowledge incorporated within the discipline. Therefore, the essence of forensic expert activity is intrinsically connected to the integration of specific expertise within the proceedings and constitutes its primary form.

Another type of integration process occurring within forensic examination warrants consideration. It pertains to the systematic organization and execution of multidisciplinary forensic examinations. In this regard, we have previously proposed the introduction of a new article to the Criminal Procedure Code of Ukraine, aimed at regulating the procedure for conducting a multidisciplinary forensic examination. The content of the proposed rule is as follows: *“When the resolution of an issue necessitates specific expertise from various disciplines such as science, technology, art, or from different domains within the same field of expertise, a multidisciplinary expert examination shall be ordered, which may be assigned either to a commission of experts or to a single expert possessing the requisite interdisciplinary knowledge essential for addressing the integrative task. The commission of experts undertakes research grounded in the specific expertise of each member, as documented in the opinion, and subsequently formulates an overall conclusion. This conclusion bears the signatures of all experts.*

If experts fail to reach an agreement on a joint expert opinion, the commission shall draw up a unified multidisciplinary expert opinion. The Synthesis of Findings Section of the opinion shall present research findings of each expert and clarify the grounds for any discrepancies within the commission members’ final evaluations, with the aim of formulating a joint conclusion; each expert is

*required to substantiate the grounds for their disagreement with the opinions of other commission members. In the conclusion on an issue requiring a joint decision, the commission members shall inform of the impossibility of resolving thereof. Furthermore, experts shall formulate separate interim conclusions based on the results of their research”*³. In light of these considerations, we deem it possible to resolve challenging issues encountered in the field of multidisciplinary forensic examinations in Ukraine.

In this edition of the *Theory and Practice of Forensic Science and Criminalistics* Research Paper Collection, authors explore diverse areas of forensic activity, highlighting the analysis of mechanisms for incorporating specific expertise as a principal factor in ensuring objective truth. Particular emphasis is placed on the incorporation of scientific methods into forensic expert practice, which facilitates adherence to the principles of the rule of law and guarantees increased effectiveness in crime prevention. The authors underscore the importance of the role of a forensic expert as an independent participant in the process, the use of novel methods as a means of eliminating errors, the significance of specific expertise for the protection of human rights and the prevention of groundless accusations, the need to reform Ukrainian legislation governing forensic expert activity, etc.

The 41st issue of the *Theory and Practice of Forensic Science and Criminalistics* Research Paper Collection outlines state-of-the-art methodological approaches to conducting expert examinations in various fields: from economic studies in customs matters to multidisciplinary psychological and linguistic examinations amidst the ongoing armed aggression. Of particular interest

3 Сімакова-Єфремян Е. Б. Комплексні судово-експертні дослідження: теорія та практика : монографія. Харків, 2016. С. 248.

are the issues of countering investigation and applying specific expertise in cases involving economic crimes and crimes committed by professional members in court proceedings. The edition comprises research by distinguished Ukrainian and international scholars, thereby demonstrating the interdisciplinary character of contemporary forensic examination and its significance for the protection of human rights and reinforcement of the rule of law.

The *Theory and Practice of Forensic Science and Criminalistics* Research Paper Collection is indexed in Google Scholar and international online databases: *Academic Scientific Journals Indexing*, *Bielefeld Academic Search Engine (BASE)*, *ERIH PLUS*, *Europub*, *Index Copernicus International (ICV 2021: 100)*, *RefSeek*, *ResearchBib*, *WorldCat*, as well as in the Register of Scientific Publications of Ukraine and DOI Foundation. The Research Paper Collection's electronic versions are posted on the Internet on sites such as the V. I. Vernadsky National Library of Ukraine, libraries of forensic institutions under the Ministry of Justice of Ukraine, institutions of higher education under the Ministry of Internal Affairs of Ukraine, etc.

The research papers in this edition are traditionally divided into two groups: *Research Papers and Case Notes*.

The *Research Papers* Section is introduced by the *Expectations in Law and Criminalistics: Issue Formulation* research paper by **Yurii Chechil**, Doctor of Philosophy in Law, **Victoriia Bila**, Doctor of Legal Sciences, Docent, and **Stanislav Sheptukhovskiy**, Candidate of Legal Sciences, all from Ukraine, which analyses the phenomenon of social expectations as a component of the legal norm and a factor determining the real status and behaviour of a forensic expert. In the given context, forensic science appears not only as a procedural in-

stitution, but as a socio-cultural phenomenon. The article opens up the prospect of further research into the role of culture in formation of legal norms and the need for public communication to reduce the gap between expectations and the real possibilities of forensic expert activity.

The section continues with *The Evolution of Forensic Expert Activity in the Context of Global Societal Digital Transformation* scientific paper by **Nataliia Tkachenko** (Ukraine), Candidate of Legal Sciences, Honoured Lawyer of Ukraine. The researcher elucidates transformations in the content, forms, and methodologies of conducting forensic expert activities amid rapid scientific and technological advancements. Artificial intelligence, digital footprints, large datasets, cloud technology, novel communication modalities, and tools for information manipulation have established a new technological framework wherein traditional approaches to conducting expert examinations have become inadequate in terms of reliability and effectiveness. Under these conditions, forensic activities encounter qualitatively new challenges that necessitate the revision of methods, enhancement of technical support, development of contemporary methodologies, and adoption of innovative technologies.

The section proceeds to analyse the *Principle of Tax Rate Equilibrium and its Application in the Tax System of the Republic of Armenia* research paper by **Karen Mamikonyan** and **Armen Safaryan** (Armenia). The article presents a methodological approach to assessing tax efficiency by analysing comparative data on the burden of a unified tax rate and applying the principle of tax rate equilibrium. The application of the "50% Balance" principle is considered a key aspect of this research, which is fundamentally based on Arthur Lafer's concept of the relationship

between progressive taxation and government tax revenue, commonly known as the “Lafer Curve”.

The *Methodological Aspects of Complex Forensic Psychological and Linguistic Examination Realities of Armed Aggression of Russian Federation Against Ukraine* article by **Yuliia Brailko**, Candidate of Philological Sciences, Docent, **Tetiana Yehorova**, **Nataliia Kysla** (Ukraine), Candidate of Philological Sciences, and **Patvakan Voskanian** (Armenia), PhD in Chemistry, highlights an approach covered in Methodological Recommendations developed by the NSC «Hon. Prof. M. S. Bokarius FSI» that defines the principles and general procedure for conducting multidisciplinary psychological and linguistic examinations/expert studies and will significantly increase effectiveness of the work of experts and degree of evidence of their conclusions while pre-trial investigation and judicial consideration of criminal offenses to harm the information security of the State.

In the *Experimental Researches on Specifics of Terminal and External Ballistics of Damaging Elements of Cylindrical Shape with Diameter of 5.0 Mm* research paper, **Igor Lurin**, Doctor of Medical Sciences, Professor, Vice President NAMS of Ukraine, Academician NAMS of Ukraine, **Oleksiy Larin**, Doctor of Technical Sciences, Professor, Corresponding Member of NASU, **Eduard Khoroshun**, Hero of Ukraine, Candidate of Medical Sciences, **Volodymyr Nehoduyko**, Doctor of Medical Sciences, Docent, **Oleksandr Kolomiitsev** and **Serhii Larkov**, Candidate of Technical Sciences, **Oleh Kokorin**, **Dmytro Klymchuk**, **Vitalii Tyshchenko**, **Vitalii Shcherbak**, Candidate of Medical Sciences, Docent, and **Viktor Sapielkin**, Candidate of Medical Sciences, Docent, Physician Emeritus of Ukraine, all from Ukraine, investigate specifics of damage formation mechanism in a vis-

coelastic medium that arose as a result of high-speed impact-contact interaction with ready-made cylindrical striking elements. It made it possible to conduct full-scale experiments in a fairly wide range of contact velocities, and it was determined that after hitting the specified ready-made striking elements in the thickness of the biological tissue simulator behave stably and form conical cavities. They cause the greatest damage in the area of the first quarter (third) of the damage channel. The results of performed researches make possible to predict the severity of shrapnel wounds inflicted on a person and to solve a number of situational tasks related to the investigation of criminal crimes and terrorist acts, while which commission of fragmentation munitions or improvised explosive devices were used.

The *Case Notes* Section begins with the scientific paper: *Using Specific Expertise During the Investigation of Criminal Offences Committed by Professional Participants in Court Proceedings* by **Yevhen Sup** (Ukraine), Candidate of Legal Sciences, which emphasizes that an effective investigation of criminal offenses committed by professional participants in court proceedings is impossible without extensive and well-founded use of specific expertise, thereby acting as a structural component of efficient, legal and objective criminal proceedings.

The *Specific Economic Expertise in Investigation of Economic Criminal Offenses* research by **Vitalii Usatii** (Ukraine), Candidate of Legal Sciences, highlights that special economic knowledge is a system-forming component of evidence in criminal proceedings of an economic nature. Their rational and scientifically substantiated application ensures the effectiveness of criminal prosecution, improves the quality of judicial control, and

contributes to the restoration of violated rights of the state and economic entities.

The *Counteraction to Investigation and Abuse of Procedural Rights: Forensic Correlation and Limits of Conceptual Delimitation* article by **Oleksandr Tarkan** (Ukraine), Candidate of Legal Sciences, demonstrates that forensic science has grounds for including the category of “abuse of procedural rights” in the system of forensic science doctrine of counteraction to the investigation, since this phenomenon has its own mechanism, regularities of detection and is subject to tactical overcoming. Its study creates conditions for the formation of effective procedural and forensic measures to neutralize the manipulative activities of the participants in the proceedings. It is concluded that the integration of theoretical and applied aspects of the analysis of abuses within the framework of the forensic concept of counteraction makes it possible to create a holistic model of counteractive behaviour, clarify the boundaries of procedural integrity, identify typical mechanisms of destructive influence on evidentiary information, and develop substantiated tactical recommendations for investigators, prosecutors and the court.

The *Legal Support for Customs and Forensic Examinations (Expert Studies) in Foreign Economic Activities and Customs Formalities under EU and Ukraine's Customs Legislation* article by **Iryna Korostashova** (Ukraine), Candidate of Legal Sciences, Docent, evaluates the adequacy of legal support for customs and forensic examinations (expert studies) under EU and Ukraine's Customs Legislation, and analyses legal relations in the context of foreign economic activities. The study defines the *customs examination* concept and the range of subjects authorized to conduct this study, as well as the scope within which expert activity subjects operate un-

der EU and Ukraine's Customs Legislation. A comparative analysis was carried out to examine the status of experts affiliated with the State Customs Service and the Ministry of Justice of Ukraine. Legal safeguards for the independence and accuracy of expert opinions were considered. The author highlights the importance of international standards that forensic and customs experts follow during their work.

The section continues with the *Involvement of Specialists in Smuggling Investigation* scientific paper by **Yurii Kovalov** and **Andrii Fedotenko**, Candidates of Legal Sciences, both from Ukraine. The research has demonstrated that the efficiency of a pre-trial investigation of criminal offenses involving smuggling is directly linked to the systematic and professionally organized involvement of specialists from diverse fields. It was demonstrated that only with the help of expert opinions could proper identification of objects be ensured, including the detection of concealment methods, formulation of investigative versions, and initiation of subsequent expert research. Prospects for improving the involvement of specialists in the investigation of smuggling are due to the development of unified methodological guidelines, strengthening of interagency cooperation, modernization of material and technical resources and systematic skill-upgrading of specialists, which will jointly promote the completeness, accuracy and evidentiary strength of collected information in this category of criminal offenses.

The *Case Notes* Section ends with the *Current Trends and Prospects for Integrating Specific Psychology Expertise into Multidisciplinary Forensic Examinations* article by **Oleksandr Yevsiukov** (Ukraine), Candidate of Pedagogical Sciences, Docent, which presents an analysis of scientific literature, legal regulations, and expert practic-

es, and also delves into current trends and future prospects for the integration of specific expertise in forensic psychology into multidisciplinary forensic examinations.

The final pages of the 41st issue are dedicated to the *Scientific News* Traditional Section, which informs readers about scientific developments in forensic practice during the preceding three months. The Editorial Board offers its warmest congratulations to **Valeriy Shepitko**, co-chief editor of the Collection, Doctor of Law, Professor, on the occasion of his 65th birthday and the 40th anniversary of his scientific, pedagogical, and public service activities.

The Editorial Board extends its warmest gratitude to all authors for insightful manuscripts submitted to be published in the *Theory and Practice of Forensic Science and Criminalistics* Research Paper Collection. Owing to your diligent efforts and excellent content preparation, our edition continues to serve as a hub for exchanging knowledge and professional experience. Your commitment to science is commendable!

We welcome new collaborations and invite colleagues to contribute to the development of forthcoming issues. If you believe that your research or analytical reviews are highly engaging, please submit them to the Editorial Board for further consideration. Only through collaborative efforts can we enhance the efficiency of research in Ukraine on the global stage.

Together to the victory!

Glory to Ukraine!

**Інтеграція
науково-технічних досягнень
у судово-експертну діяльність:
процесуальний аспект**

Елла Сімакова-Єфремян

Мета статті — за розглядом питання інтеграції спеціальних знань у судочин-

ство зробити огляд поточного збірника наукових праць «Теорія та практика судової експертизи і криміналістики». Актуальність питання щодо ролі спеціальних знань як фундаментального складника ефективності, законності й об'єктивності судово-експертної діяльності є безумовною, саме тому головна редакторка акцентувала увагу на тих процесуальних формах, у яких відбуваються інтеграційні процеси. У наукових працях цього випуску іноземні й українські автори порушують багато нагальних проблем судово-експертної галузі — як теоретичних (зокрема, концепцію експектацій у праві та криміналістиці, і виклики, зумовлені глобальною цифровою трансформацією суспільства, тощо), так і практичних (наприклад, особливості термінальної та зовнішньої балістики уражаючих елементів і проведення комплексних судових психолого-лінгвістичних експертиз, значення спеціальних знань для розслідування кримінальних правопорушень, учинених професійними учасниками судочинства, і господарських кримінальних правопорушень та ін.) — і пропонують способи їх розв'язання.

Ключові слова: спеціальні знання; судово-експертиза; криміналістика; кримінальне провадження; інтеграційні процеси; цифрова трансформація; доказова база; об'єктивна істина; досудове розслідування; процесуальний статус експерта; комплексна експертиза; митне законодавство.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

The author has contributed solely to intellectual discussion underlying

this document, case law research, writing and editing, and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

The author declares no conflict of interest.

References

- Bahin, V. P. (2002). *Kriminalistika. Problemy i mneniya* (1962—2002) [Forensics. Challenges and opinions (1962—2002)]. Kiev. URL: <https://studfile.net/preview/5287600/> [in Russian].
- Boichenko, S. B., Boiarov, V. I., Budko, T. V., Varfolomeieva, T. V. ta in. (2015). *Ekspertyzy u sudochynstvi Ukrainy* [Expert Examinations in the Judiciary of Ukraine] : nauk.-prakt. posib. / za zah. red. V. H. Honcharenka ta I. V. Hory. Kyiv [in Ukrainian].
- Bondarenko, O. O. (2013). Ob'iekt i predmet sudovoi ekspertyzy u kryminalnomu sudochynstvi [Object and subject matter of forensic examination in criminal proceedings]. *Visnyk Kharkivskoho natsionalnoho universytetu imeni V. N. Karazina. Seriiia «Pravo»*. № 1082. Vyp. 16. URL: http://nbuv.gov.ua/UJRN/VKhIPR_2013_1082_16_56 [in Ukrainian].
- Hroshevyi, Yu. M., Stakhivskyi, S. M. (2006). *Dokazy i dokazuvannia u kryminalnomu protsesi* [Evidence and proof in criminal procedure] : nauk.-prakt. posib. Kyiv [in Ukrainian].
- Klymenko, N. I. (2006). Intehratsiina funktsiia ekspertolohii [Integrative function of expertology]. *Teoriia ta praktyka sudovoi ekspertyzy i kryminalistyky*. Vyp. 6 [in Ukrainian].
- Konovalova, V. E. (1977). O znachenii i funktsiyah ekspertnykh versij [On the meaning and functions of forensic expert versions]. *Kriminalistika i sudebnaya ekspertiza*. Vyp. 14 [in Russian].
- Müller-Armack, A. (1976). *Wirtschaftsordnung und Wirtschaftspolitik. Studien Integration* [Economic system and economic policy. Studies in integration]. Bern ; Stuttgart [in German].
- Segaj, M. Ya. (1970). *Metodologiya sudebnoy identifikatsii* [Forensic identification methodology] : monografiya. Kiev [in Russian].
- Segaj, M. Ya., Strinzha, V. K. (1997). *Sudebnaya ekspertiza materialnykh sledov-otobrazhenij (problemy metodologii)* [Forensic analysis of physical trace-impressions (methodology challenges)] : monografiya. Kiev [in Russian].
- Shepitko, V. Yu. (2012). O predelakh ispolzovaniya spetsialnykh znaniy v ugovnom protsesse [The scope and limits of specific expertise in criminal procedure]. *Aktualni problemi kriminalnogo prava, procesu ta kriminalistiki* : mat-ly IV Mizhnar. nauk.-prak. konf., prysviach. 95-rich. Z dnia narodzh. prof. M. V. Saltevs'koho (Odesa, 02.11.2012). Odesa [in Russian].
- Shepitko, V. Yu. (2014). Problemy vykorystannia spetsialnykh znan kriz pryzmu suchasnoho kryminalnoho sudochynstva v Ukraini [Challenges in the use of specific expertise within modern Ukrainian criminal justice]. *Sudova ekspertiza*. № 1 [in Ukrainian].
- Simakova-Iefremian, E. B. (2016). *Kompleksni sudovo-ekspertni doslidzhennia: teoriia ta praktyka* [Multidisciplinary forensic examinations: theory and practice] : monohrafiia. Kharkiv [in Ukrainian].
- Viner, J. (1950). *The Customs Union Issue*. NY.
- Wiles, P. J. D. (1968). *Communist International Economics*. Oxford.
- Simakova-Yefremian, E. (2025). Integrating Scientific and Technical Achievements into Forensic Expert Activity: Procedural Aspect. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 5—12. DOI: [10.32353/khrife.4.2025.01](https://doi.org/10.32353/khrife.4.2025.01).

Expectations in Law and Criminalistics: Issue Formulation

Yurii Chechil *^a, Victoriia Bila **^b, Stanislav Sheptukhovskiy *^c**

* Doctor of Philosophy in Law, Ukrainian Research Institute of Special Equipment and Forensic Science of the Security Service of Ukraine, Kyiv, Ukraine, ORCID: <https://orcid.org/0000-0002-4117-6737>, e-mail: nauka_ict@ssu.gov.ua

** Doctor of Legal Sciences, Docent, Ukrainian Research Institute of Special Equipment and Forensic Science of the Security Service of Ukraine, Kyiv, Ukraine, ORCID: <https://orcid.org/0000-0002-8201-219X>, e-mail: nauka_ict@ssu.gov.ua

** Candidate of Legal Sciences, Ukrainian Research Institute of Special Equipment and Forensic Science of the Security Service of Ukraine, Kyiv, Ukraine, ORCID: <https://orcid.org/0009-0007-0087-1868>, e-mail: nauka_ict@ssu.gov.ua

^a Writing – original draft, validation.

^b Writing – original draft, project administration, supervision.

^c Writing – original draft, methodology.

DOI: 10.32353/khrife.4.2025.02 UDC 343.98

Received: 28.10.2025 / Reviewed: 31.10.2025 / Accepted for printing: 25.12.2025 /

Available online: 31.12.2025



Phenomenon of social expectations as a component of the legal norm and a factor determining the real status and behavior of a forensic expert is considered. The starting point is the concept of the rule of law, according to which law is not limited by law, but is formed by a wide range of social regulators: morality, traditions, cultural ideas, practices. They form a metanorm that is imposed on the law and often has a stronger influence on behavior than formal regulations. Existence substantiation of above-mentioned discrepancy determines the purpose of the article. Its achievement required the use of a number of general scientific and special methods. In the given context, forensic science appears not only as a procedural institution, but as a socio-cultural phenomenon. Its role is to transform specific expertise into evidence, but society expects much more from the expert than the law provides. These expectations are formed not only by legal norms, but also by cultural narratives, mass culture

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

and ideas about science as a source of infallible truth. They are implicit in nature, but act as norms: non-compliance with them causes social sanctions regardless of the real capabilities of science or procedure. It is shown that the mechanism of formation of expectations is based on the trinity of status, expectation, and sanction. Forensic scientist as a bearer of special knowledge acquires a status partially determined by cultural images, and not only by law. It creates a gap between real and perceived status, which becomes a source of pressure, errors, and stigmatization. At the same time, science providing forensics with methods, is itself a system of norms and can produce misconceptions that later turn out to be unsuitable for clarifying legal truth. Scientific novelty of the article lies in the introduction into the legal discourse of the category of "expectations" as a legitimate requirement of a participant in legal relations that follows not only from the law, but from social regulators in general that form the law. This makes it possible to explain why forensic science is under constant social pressure and why its cultural profile is much broader than the procedural one. The article opens up the prospect of further research into the role of culture in formation of legal norms and the need for public communication to reduce the gap between expectations and the real possibilities of forensic expert activity.

Keywords: *rule of law; metanorm; expectations; forensic science; criminalistics; implicit norms; legal intuition; normative dissonance.*

Research Problem Formulation

All types of legal proceedings are characterized by norms, if not about the equality of sources of evidence, then about the lack of predominant, in advance decisive importance of any of them. Such a negative declaration is not fully consistent with real practice. Thus, the growing burden on the forensic system is not an arithmetical synonym for an increase in the number of trials or an increase in their complexity. It shows that forensic examination has become a component of the standard of proof. The compound is integral and irreplaceable. Its exclusive role is to transform special, primarily scientific knowledge into a means of establishing significant facts.

Participants in procedural relations, when turning to the judicial expert system, expect to receive from its capabilities that are either equivalent to the current level of scientific knowledge or even ahead of it. Experts are under social pressure: as the sole intermediary between science and law, they must provide the disputing parties with the evidence they need, because it is with this evidence that the parties win their cases. The reason for the pressure is not only evidentiary, but also investigative and forensic capabilities: their lack is perceived, not only by procedural subjects, but by the public, as the helplessness of the entire law enforcement system, its lag behind the general development of technology and science,

etc. The clash between expectations that are inflated for various reasons (and therefore excessive demands) and the real capabilities of forensic examination causes disappointment and lays the groundwork for conflict.

The law defines the limits of an expert's rights, the procedure for their work, guarantees, and prohibitions. At the same time, it does little to protect forensic experts from expectations induced by a broader regulatory framework. The law is only one of many sources of cumulative, albeit sometimes contradictory, metanorms. Within the concept of the rule of law, the above requirements acquire a fully recognized legal basis. The dominance of law over legislation is currently the prevailing approach to overcoming competition and discrepancies between it and the rest of the law. It would seem that the coordination and harmonization of the provisions of various sources that determine the behavior of the addressee of the aggregate, "supreme legal" metanorm is a matter of time and practice. Instead, attempts by forensic experts to exceed their own capabilities in order to satisfy the demands of society have led to a series of high-profile mistakes since the very beginning of its independent existence as a narrow field of research practice. Such attempts, as a generally stable and recurring phenomenon, are obviously caused by a certain pattern. Presumably, it consists in the participants in procedural relations, primarily the expert, following a social requirement that is not limited by law but complies with legal norms.

Relevance of the chosen topic is determined by a number of trends that mark the further development of the rule of law in Ukraine: integration into the European political and legal space and the significance of Ukraine's contribution to

the concept of the rule of law, which is dominant in this space; the strengthening of the humanitarian principle with increased requirements for proving the grounds for state intervention in the private sphere; deepening specialization and scientific intensity of production, business, and information processes to a level that necessitates professional mediation in the interdisciplinary application of specialized knowledge (in particular, in legal relations); the growing role of forensic expertise and closely related criminology during the global security crisis, which involves inter- and supranational judicial and law enforcement institutions, and the urgent need to ensure law and order at the international and national levels; the replication of the principles of forensic expertise in the pre-trial and extra-judicial fields, in particular in arbitration courts and administrative proceedings; clearer articulation of the positions of non-state actors in social norm-setting with the development of civil society institutions; development of expert deontology in the context of the objective complication of social processes and the social positioning of the individual.

Analysis of Essential Researches and Publications

Previous research in the field of expert studies has mostly focused on the technical aspects of an expert opinion as evidence, its admissibility, relevance, and reliability. In works on the philosophy and sociology of law, the issue of the plurality of sources of standardization has been raised by many researchers. Divergence idea of formal and substantive principles in law is a classic problem, clearly indicated by *Jeremy Bentham* as the ratio of the

“spirit” of the law to its “letter”¹. The concept of “living law” was developed by *Eugen Ehrlich*². The modern political and legal trend of the rule of law is the subject of scientific understanding by a wide range of scholars (including Oksana Kryzhova (2017)³, Yulia Koroleva (2019)⁴, Tetyana Tsuvina (2019)⁵, Olena Zolotareva (2023)⁶) and the content of the legal positions of the judiciary. The achievements of Ukrainian sociology (Galyna Dvoretzka (2001)⁷, Natalia Chernysh (2004)⁸, Yevhen Perehuda and co-authors (2012)⁹, Maksym Yenin and Myroslava Kukhta (2022)¹⁰, et al.) are massive and directly implemented into the professional educational process, which

made it possible to consider social and legal control of a person’s behavior as general and separate in a single mechanism. Despite the existing lively interest in the above areas, a narrower (but at the same time interdisciplinary) aspect of considering forensic expertise and its representatives (as carriers of not only a procedural, but also a social, civilizational mission) is absent as such. Just as there is a noticeable discrepancy between the “legal” and “cultural” expectations of performers of the corresponding behavioral role. The study of the effect of media expectations on forensics, stated by foreign authors (*Kimberlianne Podlas* (2005)¹¹, *Gianni Ribeiro*

- 1 Bentham J. An Introduction to the Principles of Morals and Legislation. 1781. Batoche Books : Kitchener, 2000. 248 p. URL: <https://historyofeconomicthought.mcmaster.ca/bentham/morals.pdf> (date accessed: 18.10.2025).
- 2 Ehrlich E. Grundlegung der Soziologie des Rechts. München und Leipzig : Duncker & Humblot, 1913. 410 p. URL: <https://ia803401.us.archive.org/11/items/grundlegungderso00ehrl/grundlegungderso00ehrl.pdf> (date accessed: 18.10.2025).
- 3 Крижова О. Принцип верховенства права у практиці Європейського суду з прав людини. *Вісник Національного університету «Львівська політехніка»*. Серія: Юридичні науки. 2017. № 865. С. 544—549. DOI: 10.23939/law2017.865.544 (date accessed: 18.10.2025).
- 4 Корольова Ю. Кореляція принципів верховенства права та верховенства закону в системі джерел права. *Підприємництво, господарство і право*. 2019. № 4. С. 183—186. URL: <http://pgp-journal.kiev.ua/archive/2019/4/35.pdf> (date accessed: 18.10.2025).
- 5 Цувіна Т. Принцип верховенства права у практиці Європейського суду з прав людини. *Часопис Київського університету права*. 2019. № 4. С. 373—379. DOI: 10.36695/2219-5521.4.2019.66 (date accessed: 18.10.2025).
- 6 Золотарьова О. А. Співвідношення принципів верховенства права та законності в українському праві. *Юридичний науковий електронний журнал*. 2023. № 6. С. 654—658. DOI: 10.32782/2524-0374/2023-6/152 (date accessed: 18.10.2025).
- 7 Дворецька Г. В. Соціологія : навч. посіб. Київ, 2001. 340 с. URL: <https://studfile.net/preview/9700642/> (date accessed: 18.10.2025).
- 8 Черниш Н. Соціологія. Курс лекцій. Вид. 4-ге, перероб. і допов. Львів, 2004. 462 с. URL: https://duikt.edu.ua/uploads/L_715_63219046.pdf (date accessed: 18.10.2025).
- 9 Перегуда Є. В., Авдеєнко О. Д., Дьомкін П. О. та ін. Соціологія : навч. посіб. Київ, 2012. 140 с. URL: <https://www.knuba.edu.ua/wp-content/uploads/2023/10/socziologiya-navchalnyj-posibnyk.pdf> (date accessed: 18.10.2025).
- 10 Єнін М. Н., Кухта М. П. Соціальний статус / Велика українська енциклопедія : вебсайт. 12.10.2022. URL: https://vue.gov.ua/Соціальний_статус (date accessed: 18.10.2025).
- 11 Podlas K. “The CSI Effect”: Exposing the Media Myth. *Fordham Intellectual Property, Media and Entertainment Law Journal*. 2005. Vol. 16. No. 2. Book 2. Art. 2. 38 p. URL: <https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1343&context=iplj> (date accessed: 18.10.2025).

et al. (2019)¹²; Naomi Kaplan-Damary et al. (2025)¹³, etc.), made it possible to state that the above culturally conditioned legal expectations are a relevant problem for forensics outside of Ukraine.

Article Purpose

In order to state the discrepancies between the prescription of the law and the metanorm formed by the cumulative action of social regulators. Such a discrepancy determines the context of social (in particular, professional) activities (for example, a forensic expert). Indicate the presence, in addition to written requirements, also informal, caused not always by correct ideas and expectations of social (normative) pressure on him.

Achieving this goal requires a number of tasks to be completed: a brief overview of the concept of the rule of law, which recognizes the effectiveness, reality, and legal acceptability of the influence of a wide range of social regulators on individual (in particular, procedural and research) behavior (for example, that of a forensic expert); determining the relevance of such areas of social actualization as culture and science to these regulators; searching for a plausible reason for the formation of incorrect (in particular, premature) ideas about the epistemological and evidential capabilities of forensic examination; consideration of normative inconsistencies, dissonance that could explain the cause

of typical violations during the conduct of forensic examination by compliance with the informal part of the aforementioned metanorm, which is denied by law but is more powerful than it; search for the source of objective inaccuracy of social demand for the forensic system.

Research Methods

For achieving research goal, general philosophical methods (analysis, synthesis, induction, abstraction) and special legal approaches (in particular, dogmatic and method of system interpretation) were used.

Main Content Presentation

Therefore, as mentioned above, one of the first steps in establishing the discrepancy between the requirements of the law and the actual behavior of participants in relations regarding the conduct of forensic examination and explaining such behavior is to accept the idea of the functioning of a broader metanorm, formed by combined action of social regulators. The recognition of the latter's participation in the development of legally significant behavioral norms is carried out within the framework of the concept of the rule of law [Here and below, *italics* and **bold italics** are ours—Authors]. In Europe, and in Ukraine in particular, this concept is a normative ideal¹⁴, an imperative to which all aspects of the

12 Ribeiro G., Tangen J. M., McKimmie B. M. Beliefs about error rates and human judgment in forensic science. *Forensic Science International*. 2019. Vol. 297. Pp. 138–147. DOI: 10.1016/j.forsciint.2019.01.034 (date accessed: 18.10.2025).

13 Kaplan-Damary N., Jonathan-Zamir T., Perry G., Itskovich E. Public views of forensic science: An intersection of science and policing? *Forensic Science International. Synergy*. 2025. Art. 25:11:100640. DOI: 10.1016/j.fsisyn.2025.100640 (date accessed: 18.10.2025).

14 Cf.: paragraphs 3, 4, and 6 of section 4 of the explanatory part of the Decision of the Constitutional Court of Ukraine in the case of the constitutional submission of 62 People's Deputies of Ukraine regarding the constitutionality (constitutionality) of the Decree of the President of Ukraine "On the early termination of the powers of the Verkhovna Rada of Ukraine

functioning of the state and society must be subordinate. The principle of legality belongs to this imperative, but only as a derivative and secondary one. Legislation (as the substantive basis of the latter) tends toward deeper regulation of the expanding range of social, economic, and other relations. Despite its growing volume and complexity, legislation still has a specific character and is inherently written. “Rule of law” and “supremacy of law” are considered in legal literature¹⁵ as related but by no means synonymous categories.

The comprehensive meaning of the rule of law, despite its mention, in particular, in the Constitution of Ukraine (cf.: Part 1 of Article 8: “*The principle of the rule of law shall be recognized and applied in Ukraine*”)¹⁶ and in the preamble to the European Convention on Human Rights, has not been defined in detail even in theory¹⁷. The report of the Venice Commission for Democracy through Law is considered¹⁸ to be the main guideline regarding its components. Legality is only one of six elements identified by the authors of this report as a consensus of different opinions on this issue: 1) legality, including a transparent, accountable, and democratic law-making process; 2) legal certainty; 3) prohibition of arbitrariness; 4) access to justice in independent and im-

partial courts, including judicial review of administrative acts; 5) respect for human rights; 6) non-discrimination and equality before the law (para. 41)¹⁹. Such legality (in the sense of “accessibility of the law”) means that laws are understandable, predictable, and consistent with certain legal principles. At the same time, this does not exhaust the meaning of the rule of law, otherwise the requirement for such consistency could be considered as one of the characteristics of the rule of law. The difference between the two supremacies of law and of the law lies in the fact that the aforementioned elements of the former are external to the latter: they do not belong to the law and are not defined by.

Consequently, it is not only the law that constitutes the content of the law. Regarding this, it is worth citing the text of one of the legal positions of the Constitutional Court of Ukraine:

“One of the **manifestations** of the rule of law is that law is not limited to legislation as one of its forms, but includes **other social regulators, including moral norms, traditions, customs, etc.** that are legitimized by society and determined by the historically achieved cultural level of society. <...>

This understanding of the right does not give grounds for its identification with the law, which can sometimes be unfair, includ-

and the appointment of early elections” dated on 20 June 2019 № 6-p/2019, case № 1-152/2019(3426/19). URL: <https://zakon.rada.gov.ua/laws/show/v006p710-19#Text> (date accessed: 18.10.2025).

15 Корольова Ю. Зазнач. твір. URL: <http://pgp-journal.kiev.ua/archive/2019/4/35.pdf> (date accessed: 18.10.2025) ; Золотарьова О. А. Зазнач. твір. DOI: 10.32782/2524-0374/2023-6/152 (date accessed: 18.10.2025).

16 Конституція України : Закон України від 28.06.1996 р. № 254к/96-ВР (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/254_%D0%BA/96-%D0%B2%D1%80#Text (date accessed: 18.10.2025).

17 Крижова О. Зазнач. твір. С. 545. DOI: 10.23939/law2017.865.544 (date accessed: 18.10.2025).

18 Цувіна Т. Зазнач. твір. С. 373. DOI: 10.36695/2219-5521.4.2019.66 (date accessed: 18.10.2025).

19 Report on the Rule of Law. Adopted by the Venice Commission at its 86th plenary session (Venice, 25–26 March 2011). 16 p. URL: [https://www.venice.coe.int/webforms/documents/default.aspx?pdfid=CDL-AD\(2011\)003rev-e](https://www.venice.coe.int/webforms/documents/default.aspx?pdfid=CDL-AD(2011)003rev-e) (date accessed: 18.10.2025).

ing restricting the freedom and equality of the individual. <...>"²⁰.

It follows from the above that legislation, the law, is only one form of existence of law, and not the only one. The list of these forms, i.e., social regulators that define "law," is debatable and, in the presented legal position, inexhaustible (as evidenced by the word "etc."). According to some views, the rule of law presupposes unity of written and unwritten law²¹: with such unity, law enforcement could be limited to the formalized part only. However, the latter does not ensure either comprehensive normalization or guaranteed justice. The law may lag behind the will of society, interpreting it inaccurately, incompletely, or unclearly, which has led to the need for the principle of the rule of law.

Own secondary character does not prevent the law from recognizing and taking under its protection different social regulators and considering them as a source of law, for example: the already mentioned morality or custom (1) or tradition (2), as well as administrative (3) and judicial practice (4) and even common sense (5), etc. Let's back up our statement with quotes from the legislative and regulatory framework:

- 1) morality or custom (see Part 1 of Article 438 "War Crimes" of the Crimi-

nal Code of Ukraine: "Cruel treatment of prisoners of war or civilians <...> other violations of the laws and customs of war provided for by international treaties, the binding nature of which has been approved by the Verkhovna Rada of Ukraine <...>"²² and the Civil Code of Ukraine (para. 2 of Part 1 of Article 7 "Custom," Part 4 of Article 213 "Interpretation of the Content of a Transaction," Article 333 "Appropriation of Publicly Available Natural Resources," respectively): "Custom is a rule of conduct which is not established by civil legislation, but is established in a certain sphere of civil relations," "If <...> it is not possible to determine the true will of the person who committed the transaction, the purpose of the transaction, the content of previous negotiations, established practice of relations between the parties, **customs of business turnover**, further behavior of the parties, the text of a standard contract, and **other circumstances of significant importance**," "A person who has gathered berries, medicinal plants, caught fish, or obtained other items in a forest, body of water, etc., is their owner if they acted in accordance with the law, **local custom**, or general permission of the owner of the relevant land plot"²³);

20 Cf.: paragraphs 2 and 3 of subparagraph 4.1 of paragraph 4 of the reasoning part of the Decision of the Constitutional Court of Ukraine in the case on the constitutional petition of the Supreme Court of Ukraine on the compliance with the Constitution of Ukraine (constitutionality) of the provisions of Article 69 of the Criminal Code of Ukraine (case on the appointment of a milder punishment by the court) dated on November 2, 2004 № 15-пн/2004, case № 1-33/2004. URL: <https://zakon.rada.gov.ua/laws/show/v015p710-04#Text> (date accessed: 18.10.2025).

21 Темченко В. І. Верховенство права у практиці Євросуду та Конституційного Суду України. *Наукові записки НаУКМА. Юридичні науки*. 2007. Т. 64. С. 16. URL: <https://ekmair.ukma.edu.ua/server/api/core/bitstreams/9f486e50-ff7c-4178-88ee-e5a1a8ca0509/content> (date accessed: 18.10.2025).

22 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2341-14#Text> (date accessed: 18.10.2025).

23 Цивільний кодекс України від 16.01.2003 р. № 435-IV (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/435-15#Text> (date accessed: 18.10.2025).

- 2) traditions (see paragraphs 1 and 8 of Art. 11 of the Statute of the Internal Service of the Armed Forces of Ukraine:

"11. The need to fulfill Ukraine's defense tasks <...> imposes the following duties on military personnel:

<...>

*respect combat and military **traditions** <...>"²⁴);*

- 3) administrative practice (see paragraph 4 of Part 3 of Article 6 of the Law of Ukraine "On Administrative Procedure" (hereinafter referred to as the Law on Administrative Procedure):

"3. Exercise of discretionary powers by an administrative body shall be considered lawful if the following conditions are met:

<...>

4) choice of decision of administrative body is made without derogation from previous decisions made by the same administrative body in the same or similar cases, except in justified cases"²⁵);

- 4) judicial practice (Cf.: Part 4 of Article 6 of the Law on Administrative Procedure: *"Conclusions on the application of legal norms set forth in Supreme Court rulings are binding on all administrative bodies that apply in their activities a regulatory legal act*

*containing the relevant legal norm"*²⁶); Part 5 of Article 13 of the Law of Ukraine "On the Judicial System and Status of Judges": *"Conclusions on the application of legal norms set forth in the resolutions of the Supreme Court are binding on all subjects of authority that apply in their activities a normative legal act containing the relevant legal norm"*²⁷; Part 1 of Article 17, Part 5 of Article 19 of the Law of Ukraine "On the Enforcement of Decisions and Application of the Practice of the European Court of Human Rights": *"Courts shall apply the Convention and the practice of the Court as a source of law when considering cases", "Ministries and other central executive bodies shall ensure systematic control over compliance with administrative practice that complies with the Convention and the practice of the Court within the framework of departmental subordination"*²⁸);

- 5) common sense (cf. Part 2 of Article 10 of the Law on Administrative Procedure: *"The administrative authority in the implementation of administrative proceedings must act in accordance with **common sense**, logic and generally accepted norms of morality, in compliance with the requirements of the law"*²⁹).

24 Статут Внутрішньої служби Збройних сил України : затв. Закон. України від 24.03.1999 р. № 548-XIV (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/548-14#Text> (date accessed: 18.10.2025).

25 Про адміністративну процедуру : Закон України від 17.02.2022 р. № 2073-IX (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2073-20#Text> (date accessed: 18.10.2025).

26 Там само.

27 Про судоустрій і статус суддів : Закон України від 02.06.2016 р. № 1402-VIII (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/1402-19#Text> (date accessed: 18.10.2025).

28 Про виконання рішень та застосування практики Європейського суду з прав людини : Закон України від 23.02.2006 р. № 3477-IV (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/3477-15#Text> (date accessed: 18.10.2025).

29 Про адміністративну процедуру URL: <https://zakon.rada.gov.ua/laws/show/2073-20#Text> (date accessed: 18.10.2025).

The sources and method of forming a requirement for a participant in relations, the procedure, the method of applying incentives and sanctions to them, the intensity of influence, the mechanism and subjects of control, etc. differ, which is the difference between such regulators. There is also a completely common: the social context of their action and the relative overall coherence (which still does not exclude the competition of requirements), the cumulative and relatively high level of influence on the behavior of a person, the internalization of these norms by the latter in the process of socialization (in particular, during the formation of individual legal consciousness).

The idea of the dominant role of law gives grounds to determine the circle of regulators, that is, the factors of law, very broadly.

The social regulator, which belongs to the sources of law, exists thanks to the social norm and at the same time forms it. The latter is superimposed on the legal norm, but is broader than it – just like the legal norm, which is also broader than the norm of the law. The scale of both the social norm and its part, the legal norm, is determined (as in the case of written law) by the corresponding sphere of public application, the actual social context: corporate, local, industrial, etc. No one speaks of local or sectoral supremacy. On the other hand, in contrast to the hierarchy of legislative acts, the size of the community in which the social norm is developed is inversely proportional to the degree of influence on the individual: group norms have a noticeable advantage over corporate ones, and the latter over general social ones. It seems

that the growth of the power of influence as the community narrows with the simultaneous strengthening of social ties in it is also characteristic of the legal norm, since it is a component of the social norm and is provided by its own regulators. That is why, in the event of competition between two prescriptions – defined by law or derived from other sources of law – the latter can and must have an advantage for the subject when choosing a behavioral option. This explains why the commission of actions permitted or even desired by law, which are not tolerated by society, sometimes causes a negative reaction from the latter. The fear of such a reaction – even if it is only about condemnation from a negligible part of society influences the behavior of a person to a greater extent than the law. For example, the relatively new institution of whistleblowers for Ukraine, despite material incentives (Cf.: Part 1 of Article 130-1 of the Criminal Procedure Code of Ukraine ³⁰) and legal protection (in particular, Section VIII: *Protection of Whistleblowers* of the Law of Ukraine: *On Prevention of Corruption* ³¹) of a person who reports a violation of the law, has not worked to its full potential precisely because of the unresolved problem of the whistleblower's ethical positioning at the micro-social level (for example, current version of the State Anti-Corruption Program for 2023-2025 states, in particular, the following:

“Problem 1.6.1. Lack of respect for whistleblowers of corruption in society <...>

<...>

<...> The main reasons for the reluctance of a person to report the facts of corruption known to him/her are fears of being condemned by his/her environment (colleagues,

30 Кримінальний процесуальний кодекс 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: 18.10.2025).

31 Про запобігання корупції: Закон України від 14.10.2014 р. № 1700-VII (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/1700-18#Text> (date accessed: 18.10.2025).

friends, acquaintances) and suffering consequences in the form of negative measures of influence by the management”³²⁾.

A similar problem befell the introduction of the institution of whistleblowers in the EU: according to a study conducted in 2017 (a total of 5,707 respondents, of which 97% (5,516) were individuals, 3% (191) answered on behalf of organizations), the main reasons not to report violations are fears of: legal consequences (80% of persons and 70% of organizations); financial consequences (78% of persons and 63% of organizations); bad reputation (45% of persons and 38% of organizations)³³. Another, more general example is the functioning of the shadow economy.

Without delving into a full-fledged excursion into norm creation from a sociological perspective, and recognizing the differences in such perspectives depending on the specific school of thought, let us turn to some³⁴ of most general ideas. Thus, in the legal context of social normalization, it is important to emphasize the connection between social norm creation and culture. Culture shapes a system of values, social norms, patterns of behavior, and ideas about what is appropriate in society. Values are a factor in the formation of social communities (groups). The latter become direct subjects of norm-setting.

Loyalty to values and the development of appropriate norms aimed at protecting them are subject to both group and social control. The instruments of this control are the introduction of models, roles, social statuses, and the encouragement of the person to whom such a status is attributed to adhere to role behavior and meet role expectations. The simultaneous collision of the rules of behavior of several roles for one individual turns into a role conflict; the performance of one role, during which there is internal conflict or discomfort due to conflicting expectations, requirements, or restrictions within that role, is role tension. The norm may not be specific or clearly formulated, but may be implicit in nature. Compliance with this apparent, amorphous norm, however, is the duty of its addressee, since negative consequences in case of its violation still occur, as in the case of an explicit, formalized norm.

Thus, the requirements for behavior of the subject are determined, in particular, by the role status (which, given the name, indicates the function, role in the group's activities to achieve common values), as well as the expectations of such status. Both culture in general and the group in particular offer models of behavior, i.e., certain standards, requirements for the bearer of such a role. This is how the content of role behavior and expectations are

32 Державна антикорупційна програма на 2023–2025 роки : затв. постанов. КМУ від 04.03.2023 р. № 220 (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/220-2023-%D0%BF#Text> (date accessed: 18.10.2025).

33 Summary results of the public consultation on whistleblower protection / European Commission : web. 2017. 28 p. URL: https://ec.europa.eu/newsroom/just/document.cfm?doc_id=47885 (date accessed: 18.10.2025).

34 Черниш Н. Зазнач. твір. URL: https://duikt.edu.ua/uploads/l_715_63219046.pdf (date accessed: 18.10.2025) ; Дворецька Г. В. Зазнач. твір. URL: <https://studfile.net/preview/9700642/> (date accessed: 18.10.2025) ; Перегуда Є. В., Авдеєнко О. Д., Дьомкін П. О. та ін. Зазнач. твір. С. 39–40. URL: <https://www.knuba.edu.ua/wp-content/uploads/2023/10/socziologiya-navchalnyj-posibnyk.pdf> (date accessed: 18.10.2025) ; Єнін М. Н., Кухта М. П. Зазнач. твір. URL: https://vue.gov.ua/Соціальний_статус (date accessed: 18.10.2025) ; Орбан-Лембрик Л. Б. Соціальна психологія : посібник. Київ, 2003. 446 с.

defined. From the point of view of legal science, important differences between social norms and the instruments for ensuring them may lose their significance, since both elements perform a normative function. What ensures compliance with the norm is precisely the rule of behavior. Status, role, model for example, expectation; all of these can be considered normative elements that perform a function characteristic of a norm. This is evidenced by their ability to determine behavior and their provision of incentives and punishments.

However, a notable discrepancy with the norm of law is the possibility of the existence of a social norm not only in an unwritten but also in an unspoken form. At the same time, the generally recognized and unambiguous affiliation of legislative norms with social norms makes it possible to consider this discrepancy as a relationship between the general and the specific. That is why the specificity characteristic of a particular phenomenon — implicitness — is not always a defining feature of every phenomenon of the class of social norms. Therefore, a norm may or may not be written, may or may not be pretended, and at the same time remain a norm. Obviously, the law also has an implicit component, and this presence is the subject of a rather long-standing philosophical and legal discourse on the relationship between the “letter” and the “spirit” of the law. It is their difference that constitutes the implicit, unspoken part: as is well known, Jeremy Bentham called the “spirit of the law” a dangerous fiction that allows judges to usurp the function of the legislator³⁵. For his part, Eu-

gen Ehrlich, on the contrary, considered real social relations, “living law”³⁶ to be a priority and mandatory for judges. However, there are no grounds for identifying the “spirit” of the law with the law (in the sense of “the rule of law”), in particular because of the subjective discrepancy between the legislator (sovereign, parliament) and the lawmaker (society).

The actions of the bearer, the role performer are determined, in particular, by expectations. In jurisprudence, expectations have acquired a specific and rather narrow meaning within the concept of legitimate, lawful expectations (from the English. legitimate expectations are reasonable, not unreasonable or justified expectations. **Note:** According to the legal position of the Supreme Court, the implementation of the principle of legitimate expectations consists in achieving the desired result by taking lawful actions in connection with previously foreseen probable consequences; the implementation of legitimate expectations is impossible, in particular, when a person cannot achieve the predicted result as a result of a change in the legal basis within unreasonable and unjustified terms. A mandatory condition under which a certain expectation (requirement) of a person acquires the characteristics of a legitimate expectation is that such an expectation (requirement) has a proper legal basis, that is, there is a sufficient source for the corresponding expectation (requirement); legitimate expectations cannot be identified with expectations arising on the basis of personal perception or erroneous assessment of certain circumstances or norms of law (legislation); these expectations cannot arise if there is a real dispute about the correct interpretation and applica-

35 Bentham J. Op. cit. URL: <https://historyofeconomicthought.mcmaster.ca/bentham/morals.pdf> (date accessed: 18.10.2025).

36 Ehrlich E. Op. cit. URL: <https://ia803401.us.archive.org/11/items/grundlegungderso00ehrl/grundlegungderso00ehrl.pdf> (date accessed: 18.10.2025).

tion of national legislation.)³⁷, the right to expect – both in a narrow sense (as part of the right to peaceful property possession³⁸) and in a broad sense (as predictability of the law as such, the predictability of its application³⁹), as well as in temporal aspects (deferred obligation, deferred results of the exercise of rights, deadlines⁴⁰, etc.). Lawyers distinguish between legitimate expectations and ordinary expectations – in the sense of “*hopes, desires, aspirations of a psychological or ethical nature*”⁴¹. The peculiarities of the effect of expectations in law, obviously, constitute an independent interesting problem. Now let us note that in fact, “written law” does not reject this means of influence, often and widely uses expectations as a method of manifesting a requirement, since it is on it that the idea of the correspondence of the rights of some subjects of duty to others is built, who, according to the law, must respect or ensure it. In this case, expectations are an integral part of any duty or right recognized by law.

Returning to the considered correlation between law and law, we note: in addition to legitimate, legal, etc., expectations (that is, based solely on the law, the norms of the law), there should be broader ones, based on methanorms (rule of law). Violations of cultural, moral, etc. regulators, in particular, behavior that does not meet certain expectations, should also have legal consequences.

In legal terms, but almost unthinkable in imperative categories, there is a phenomenon of social trust as a type of expectation. Types of trust, among other things, are called political, institutional (institutional) in terms of the categories of legitimacy of the authorities⁴². In sociology, they talk not only about institutional, but also about general (generalized) trust⁴³. Social trust is considered as a cultural norm: “*The trust of a particular subject (individual, social group, community, society) to an indefinite, impersonal object, which can potentially be both an individual and a social institution; this*

- 37 Мамченко Н. Верховний Суд визначив підходи щодо застосування принципу «легітимних очікувань» (legitimate expectations) / Судово-юридична газета : вебсайт. 24 лютого 2023. URL: <https://sud.ua/uk/news/sudebnaya-praktika/262928-verkhovnyy-sud-opredelil-podkhody-k-primeneniyu-printsipa-legitimnykh-ozhidaniy-legitimate-expectations> (date accessed: 18.10.2025).
- 38 Кисіль В. Право очікування: транскрипції змісту. *Юридична Газета*. 2019. № 7 (661). URL: <https://yur-gazeta.com/publications/practice/neruhomist-ta-budivnictvo/pravo-ochikuvannya-transkripciyi-zmistu.html> (date accessed: 18.10.2025).
- 39 Право очікування: pro et contra. Виступ судді КЦС ВС В. І. Крата. *Право очікування: феномен в площині цивільно-правових відносин* : вебінар Civil Platform (11.09.2020) / Youtube.com : web. URL: <https://www.youtube.com/watch?v=8flGOsbRa2w> (date accessed: 18.10.2025).
- 40 Кіріак О. В. Легітимні очікування та строковість їх реалізації. *Юридичний науковий електронний журнал*. 2021. № 2. С. 71–74. DOI: 10.32782/2524-0374/2021-2/15 (date accessed: 18.10.2025).
- 41 Сліпченко С. О. Поняття законних очікувань як різновиду майна. *Форум права*. 2020. № 3. С. 73. DOI: 10.5281/zenodo.3883845 (date accessed: 18.10.2025).
- 42 Симисенко І. В. Інституційна довіра як чинник впливу на трансформацію політичної участі в сучасній Україні. *Політикус*. 2025. Вип. 2. С. 132–137. DOI: 10.24195/2414-9616.2025-2.20 (date accessed: 18.10.2025).
- 43 Андрущенко Г. І. Інформаційно-змістове наповнення понять «соціальна довіра», «узгальнена довіра» та «інституціональна довіра»: соціологічний аналіз. *Соціальні технології: актуальні проблеми теорії та практики*. 2016. Вип. 69–70. С. 7–14. URL: <http://soctech-journal.kpu.zp.ua/archive/2016/69-70/3.pdf> (date accessed: 18.10.2025).

is, rather, a general tendency to trust anyone and anything, based on ideas about the actions of people or about the activities of organizations, social institutions, etc.”⁴⁴.

Mechanism of formation of social statuses and expectations is holistic. Without denying the shortcomings of such simplification, we note that it is precisely expectations that significantly affect the definition of social status, the limits of acceptability of its implementation. As completely social phenomena, status and expectations arise in the process of social relations between people. Each individual learns to build his own behavior towards other people in accordance with the perceived status of the remaining participants in social interaction, forming certain ideas and expectations. Within the limits of a specific social situation (as the conditions of a role-playing game), a person endows specific relationships with these ideas and expectations, adhering to the requirements in accordance with the awareness of his own status and demanding (expecting) the same conforming behavior from the bearer of another status. The aforementioned perception is not entirely spontaneous: the understanding of social processes encompasses the functioning of the triune mechanism *status* → *expectations* → *sanctions*. The result of the understanding is a certain position – convincing, available for relaying and borrowing by others. Thus, culture is a source of social norm-setting, both on a general social and local (local traditions, subculture) scale. In this light, it is worth noting that a number of ideas about social roles, their models, standards of behavior, etc. are formed with the help of cultural polylogue in some social and legal systems, but belong to the social norm beyond their

borders. Legal globalization, unification of legal norms (in particular, about statuses) does not keep up with the “fashion trendsetters” who operate in the cultural sphere. In addition, strict correspondence between, for example, legal status under the law and the behavior of artistic characters is often not a requirement that determines the artistic value of the product. As a result, the cultural background of a social norm does not always take into account legal circumstances.

General (generalized) trust in science (and, accordingly, in its representatives and institutions, including criminologists) is often formed not through real mechanisms, but through cultural narratives. In popular culture, science is not simply authoritative: it has become a mechanism that provides humanity with what previously belonged to the realm of fantasy. At the same time, in some works, investigative and judicial procedures are depicted in such a way that science and the special knowledge it produces appear to be a reliable tool for uncovering hidden truths. The audience, i.e., society, naturally develops culturally conditioned expectations, but now as part of the rule of law, requirements for capabilities, competencies, accessibility, etc. These virtues are expected from experts, technologies, and judicial procedures. Although such expectations are not binding, they influence the perception of legal reality. Objectively, this state of public trust reflects a social demand for development, while in the mass consciousness, scientific capability (whether mistakenly or not) is already a factual, achieved state, an existing reality, a level of service to strive for. This creates preconditions for disappointment or pressure on institutions.

44 Андрущенко Г. І. Знач. твір. С. 11. URL: <http://soctech-journal.kpu.zp.ua/archive/2016/69-70/3.pdf> (date accessed: 18.10.2025).

Within the framework of research into current problems of forensic science conducted, in particular, in the USA, the so-called *CSI Effect* (named after the popular television series Crime Scene Investigation) has been established. Despite a certain positive contribution to the popularization of forensic science (its positioning as objective and practically infallible; informing about the possibilities and raising the importance of forensic technology and the value of the evidence obtained through it; increasing the prestige of the forensic profession), such an effect is a source of many risks, such as: increasing the requirements for forensic evidence in criminal trials and inflated expectations of their capabilities and accuracy⁴⁵. Because of this, experts and lawyers are forced to restrain such expectations, contrasting the artistic depiction of forensic science (with its emphasis on the speed of investigation and the use of advanced technologies) with the conditions of its real existence, where the validity, reliability and general scientific logic of forensic practice occupy a prominent place⁴⁶. When artistic interpretations of forensic science are presented as a reflection of reality, society

tends to expect much more from science than it can actually deliver. For example, films (without bothering to delve into real-life complexities) feature 100% accurate voice matching; story lines, if necessary, rely on instant search and facial identification even on the basis of low-quality⁴⁷ recordings or images, or vice versa, on the fugitive's ability to skillfully bypass technological traps.

Taking into account the effectiveness of *CSI Effect* to a greater⁴⁸ or lesser⁴⁹ extent, we will formulate separate conclusions on the role of media products in the formation of the norm, the requirements for a forensic scientist or an expert. Representations that function as the background of a social norm often come not from real, but from simulated social relations. The validity of such models is beyond any control. Even a conscious contrast with real circumstances does not deprive us of deliberately fantasy ideas: illusions move freely into the “undeclared”, pretended part of the social norm.

As noted above, the induction of general features to the level of a specific phenomenon forces us to consider social norms belonging to law not only as explic-

45 Strengthening Forensic Science in the United States: A Path Forward. Washington, DC : The Nat. Ac. Press, 2009. Pp. 48–49. DOI: 10.17226/12589 (date accessed: 18.10.2025).

46 Koehler J. J., Mnookin J. L., Saks M. J. The scientific reinvention of forensic science. *Proceedings of the National Academy of Sciences of the United States of America*. 2023. Oct 2. Art. 120(41). DOI: 10.1073/pnas.2301840120 (date accessed: 18.10.2025) ; Ribeiro G., Tangen J. M., McKimmie B. M. Op. cit. DOI: 10.1016/j.forsciint.2019.01.034 (date accessed: 18.10.2025) ; Swofford H. Forensic Science Environmental Scan 2023 / NIST Interagency // Internal Report (NISTIR) : web. March 7 2024. 154 p. DOI: 10.6028/NIST.IR.8515 (date accessed: 18.10.2025).

47 Zjalic J. The CSI Effect — Expectations Vs Limitations / Forensic Focus : web. 2017. 30th Nov. URL: <https://www.forensicrofocus.com/articles/the-csi-effect-expectations-vs-limitations/> (date accessed: 18.10.2025).

48 Kaplan-Damary N., Jonathan-Zamir T., Perry G., Itskovich E. Op. cit. DOI: 10.1016/j.fsisyn.2025.100640 (date accessed: 18.10.2025).

49 Podlas K. The “CSI Effect”. *Oxford Research Encyclopedia of Criminology*. 2017. Aug 22. DOI: 10.1093/acrefore/9780190264079.013.40 (date accessed: 18.10.2025) ; Ibidem. “The CSI Effect”: Exposing URL: <https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1343&context=iplj> (date accessed: 18.10.2025).

it, but also as ephemeral, based on guesses, implicit. Clear, predictable, understandable – in other words, explicit, “written law” (legislation) usually constitutes the content of the “letter of the law”. The “spirit of the law” as its meaning, the purpose of a specific norm, and, ultimately, the “spirit of law” has a more complex nature. The internalization of law in the latter part can no longer be based only on thinking. Other epistemological means are needed that are capable of ensuring the choice of an individual solution in conditions of partial, incomplete (normative) certainty. Intuition belongs to such means. In the legal connotation, it is believed that it *“manifests itself as superconsciousness, imaginative thinking, an unconscious connection with the natural beginning of nature, the **general spirit, common knowledge**, as well as the ability to recognize <...> qualities of surrounding world without differentiated analysis, through oneself” and “determines the stability of a person in the spiritual environment, therefore it can be conditionally called a spirit”*⁵⁰.

Therefore, intuition can be a tool for perceiving implicit norms. That is why it is possible and necessary to talk about unstated, informal parts of legal norms that are not expressed in text or social articulation, implicit components of legal status, expectations, and condemnation. For example, legal restrictions arising from the recognition of an act as criminally unlawful (state condemnation) or from criminal punishment are much narrower than the stigmatization of the convicted person, which he or she may experience as a type of social sanction. The legally defined sets of rights and obligations of educational institutions or parents are much narrower than society’s ideas about the proper organization of the educational or upbringing

process. It is important that the social principle here dominates the legal one, leaving the latter with the role of a repository of only certain (not always the most important) components. The explicit form is also inapplicable to expectations which (despite the presence of signs of a norm) do not have an imperative, coercive means of enforcement. Examples of such normal, socially normative expectations are mutual emotional support within the family, respectful attitude towards elders, religious tolerance, etc.

From the point of view of the individual, social being is a constant process of fulfilling social roles, mental and logical activity (regarding explicit components) and intuition (regarding implicit components) during the assimilation of the content of the social norm, the participant in the application (implementation, application, observance, etc.) of which he is. As part of groups and communities in society, the individual also participates in influencing others, contributing to their internalization of norms that he himself considers mandatory, and within the wider process of social control. Through active or consumer participation in cultural activities, each of us determines ideas about what is appropriate, social values, ethics, etc. Culture as a meta-environment provides the material necessary for the development of legal consciousness and legal intuition.

This is especially noticeable in areas where social expectations about the role have a high normative force, for example, in forensic science.

In this light, returning to the question of socially conditioned normalization of a specific type of activity, forensic science, we note that the cultural aspect simply cannot be ignored when determining the actual

50 Шевців М. Б. Інтуїція в праві: культурологічний вимір : монографія. Львів, 2013. С. 52.
URL: <https://surl.li/tbmydb> (date accessed: 18.10.2025).

legal status of an expert. The concept of the status, role, competence, forensic scientist image (model), expectations (including institutional trust) is only partially enshrined in legislation. The entire legal norm governing their rights and obligations contains unwritten and implicit elements. Unlike purely legal liability, social liability for deviating from this norm arises even if some of its elements are imaginary, *id est*, derived from ideas that are not based on the actual status or capabilities of the expert or specialist. Social pressure operates regardless of whether the above-mentioned legal metanorm has been internalized, *i.e.*, whether the performer of this role has accepted.

The problem formulation of our research requires considering the danger of excessive social, normative pressure on the performers of practical research, the imposition of demands on them (in particular, by them themselves) that (from a scientific or procedural standpoint) exceed the real investigative and evidentiary abilities. Let us consider the presence of such pressure as a factor in expert errors. An example is the Alfred Dreyfus case (the turn of the 19th and 20th centuries, Europe), in which Alphonse Bertillon's conclusion regarding the identification of the accused's handwriting was refuted. Another example of such pressure, not just regarding ability, but also regarding proving circumstances that, due to social prejudice, seemed beyond doubt is the case of the Chamberlains (1980s, Australia), who were accused of murdering their own child. The forensic examination of traces of the child's blood in the car was of key importance for the guilty verdict. The expert was under massive social and media pressure. the child death and the "sectarian" religiosity of the cou-

ple. In the end, the mother was sentenced to life imprisonment. Six years later, she was rehabilitated thanks to the accidental discovery of elements of the victim's clothing in a wild dog den⁵¹. The traces of blood from the car were re-examined, which turned out to be paint.

The list of examples in which convictions were based on forensic examination results that were later refuted could go on. The mistakes made by those responsible for conducting such discredited examinations have various causes, ranging from negligence to dependence on social opinion. Among these causes, a systemic problem is conformist behavior resulting from loyalty to the social and, in particular, legal metanorm addressed to the expert. Despite the absence of direct mention of science, in particular, in the previously cited Decision of the Constitutional Court of Ukraine on the list of social regulators subject to the rule of law, it is science that has the greatest influence on the conduct of forensic examinations. Obviously, this absence is due to the fact that science is viewed primarily as a sphere for acquiring new knowledge, rather than as a regulatory principle. However, scientific activity is, to a large extent, a system of rules. In addition, science shapes ideas that society subsequently perceives when developing social norms and values. At the same time, analysis of errors in forensic examination shows that the reason for their large number is adherence to scientific ideas and procedures for verifying experimental results, which, as science itself has developed, have proved unsuitable (at least for establishing legal truth). A disciplined expert, adhering to the norms of such science, is responsible for its errors.

51 Берк М. «Мою дитину забрав собака». Як жінку помилково посадили за вбивство дочки / BBC News Україна : вебсайт. 23.10.2023. URL: <https://www.bbc.com/ukrainian/articles/ck-repm412yvo> (date accessed: 18.10.2025).

Consider an example. In 2015, a crisis in the US justice system was caused by the compromise of one of the common methods of forensic identification, microscopic analysis of hair. The official investigation confirmed that in 257 out of 268 cases, the experts provided the FBI investigators with exaggerated or erroneous conclusions about the microscopic analysis of hair, in 33 cases the convicts received the death sentence, 9 were executed until the errors were exposed. The technique, today recognized as scientifically untenable, has been used as a standard for decades. In general, according to the estimates of the American non-governmental initiative *Innocence Project*, misapplied forensic science has caused almost a quarter of false convictions since 1989⁵².

It is worth citing another critical example in which the role of expertise was secondary, while the root cause of judicial errors and inhumane practices was the “achievements” of pseudoscience, which served the needs of politics and ideology. Thus, from the beginning of the 20th century until the 1940s, the court commissioned physiognomists and “eugenicists” to assess “degenerative” traits in order to determine the propensity for crime, mental illness, and sexual minorities. In Germany, this became an instrument of racial policy, and in the United States, it became the basis for forced sterilizations.

Lawyers, sociologists and philosophers are unanimous in their opinion about the secondary nature of law in relation to culture. That is why recognizing the latter as a social regulator would not be entirely correct from a structural point of view. However, within the concept of the rule of law, culture has a significant normative impact. Therefore, it seems ap-

propriate to consider cultural norms, perceptions, values precisely as components of the repeatedly mentioned methanorm, which determines, in particular, the status, behavior, self-perception, and conditions for forensic expert activities.

It should be noted that in the cultural space, images and ideas do not appear out of nowhere, they are organic precisely because they follow from the logic, content, intensity, style, etc. of certain social relations. In particular, works of fiction denote, and elsewhere program, the content of public demand for forensic science services, forensics as an applied activity to meet a specific cognitive need.

The image of a person with extraordinary knowledge, the competent application of which gives an advantage and allows to reveal, at first glance, hopelessly complicated investigative situations, thanks to cinema and literature has taken root in the mass consciousness and acquired the properties of an archetype. His actions are correct not only from a technical but also from an ethical standpoint, he is the personification of objectivity, impartiality; he directly contributes to society in restoring justice through his service to justice. In mass culture, forensic scientist is never mistaken: he sees the hidden, and moreover, hidden intentionally. His knowledge cannot be questioned: it is scientific, and therefore objective, pure, above political or personal interests. This creates the effect of unverifiable truth, where the expert's conclusion becomes the last word, almost like a sentence of fate. Such sacralization, of course, has negative consequences – expert knowledge within the boundaries of judicial ritual is transformed from science into dogma.

Almost immediately after the creation of literary archetypes of investigative sci-

52 Misapplication of Forensic Science / Innocence Project : web. 2025. URL: <https://innocenceproject.org/misapplication-of-forensic-science/> (date accessed: 18.10.2025).

entists, from the very beginning of criminology as an independent discipline, an opposite literary trend (in terms of social vector and definition of the place of special knowledge) has been developing. Adventurers and loners who challenge the social system by resorting to well-thought-out, sophisticated crimes take the stage. Criminalistics, like investigation in general, is not the triumphant force here, yielding to criminals in terms of flexibility, speed, and resource capacity. The image of the criminal mastermind has become a kind of genre cliché. Against the backdrop of the struggle between good and evil, he proves the exhaustiveness of the investigative and evidentiary capabilities of criminalistics. A natural offshoot of this exhaustiveness is the idea of the *perfect crime*, a crime that is perfect because it has been carefully planned and elegantly executed.

This example is interesting in a security context because it demonstrates how the same methods can be applied *against* the law enforcement system. And this becomes an important argument in favor of a comprehensive approach to forensic science as a science that should work not only “after the fact” or “to the fact”, but also in the plane of constant updating of tools and procedures, taking into account the experience and logic of a potential violator.

It turns out that the special knowledge of a forensic scientist (expert or specialist) is just a tool that, depending on the ethical need, can be turned both in favor and against the law enforcement system. However, even in the latter case, the bearer of this knowledge does not automatically belong to the criminal world.

Actually, in the IT sphere, the term “anti-criminalistics” (anti-forensics) is already established, which refers to a set of

methods of protecting information from actions unauthorized by its owner; it is not about means of countering law enforcement, but about information discipline. That is why it seems that “*anti-criminalistics*”, born in a cultural stratification in the field of information technology, should denote a much wider range of practices designed to destroy or mask material and digital traces. At the same time, the denial used in the title only emphasizes the connection with forensic science.

Thus, fiction and cinema have created a diverse pantheon of investigators and antiheroes who embody—sometimes exaggeratedly—the leading methods and challenges of criminalistics. At the same time, beyond the confines of fictional plots, this science appears to be much broader than trace evidence analysis or even its opposite, the commission of the “perfect crime.” Culture presents criminalistics as a multi-functional tool whose potential can and should be applied far beyond criminal proceedings or court trials. Implicit, hidden behind the scenery of authorial fiction or science fiction, but no less powerful for that, the demands placed on forensic scientist determine the content of expectations in real relationships. Failure to meet these expectations triggers sanctions. Society exerts pressure regardless of the objective ability to satisfy expectations, both reasonable and naive, based solely on artistic fiction: because, along with legitimate expectations, these expectations are part of the social norm, which (given the nature of its sources) cannot be taken beyond the limits of the rule of law.

Conclusions

Currently, dominant concept of legal relations in the world (particularly in Ukraine)

is the rule of law, which is based on a wide range of social regulators, including the law. Among all regulators, the law plays a subordinate, less significant role both *de jure* and *de facto*. Social norms are becoming increasingly important in the legal regulatory system. The mechanism of its formation and operation differs significantly from the procedure of law-making and law enforcement. People's behavior is determined by statuses (social roles), social expectations attached to such statuses, and social sanctions that are applied depending on the degree of compliance with such expectations (in particular, those that are not articulated with the formal clarity characteristic of the law).

Taking into account the legal positions of the Constitutional Court of Ukraine, formed within the framework of this concept, the law loses the position of the leading regulator of public relations. The law should correspond to the latter, not define them. Instead, other public regulators within the rule of law take on greater importance. Custom, morality, traditions, principles are the sources of law. Accordingly, the mechanisms of their formation are nothing more than a process of social regulation, that is, rule-making. The social norm provides a person with a status, it forms expectations and provides for a sanction. Means of social norm-setting are, in particular, literary, artistic, audiovisual works. Their perception by society, the transfer of their ideas to the plane of their own functioning completes the process of lawmaking in its broadest sense.

The object of one of the culturally determined statuses was a criminologist. Literature and film not only created several versions of the image of a forensic scientist, they also formed — or articulated the public request for forensic science.

This request is much broader than facilitating the disclosure of crimes. In addition to the use of knowledge-intensive reconstructions, such a request contains areas that may seem opposite to forensic science, methods and techniques of mashing, masking (substitution) of traces, overcoming protection systems, etc. In the mirror of mass culture, forensic science also appears as a mental practice of assessing threats, far from always criminal ones.

At the same time, as emphasized in the description of the concept of the rule of law, law and justice are not entirely consistent. In terms of status and rights, as well as actual epistemological capabilities determined by established methodologies (in particular, forensic investigations), the status of a criminal investigator is much narrower than what follows from their cultural profile. Failure to meet expectations, in line with how social norms work is punished by social sanctions. Expectations as requirements for forensic scientists (specialists, forensic experts, specialized state institutions) stem from their status. At the same time, this status is partly determined by participants in legal relations not so much by the norms of law and real experience as by cultural sources and metanorms. Discrepancy between real and perceived statuses may lead to a negative assessment of their bearers as too slow, bureaucratic, narrow-minded, etc. Special public diplomacy activities aimed at informing the public about actual legal and scientific-technical limits of criminalistics should help to eliminate possible stigmatization. However, it is difficult to determine the entity from which such measures should be expected, since such explanatory work does not directly fall within the tasks of, in particular, state specialized institutions.

Експектації у праві та криміналістиці: постановка проблеми

**Юрій Чечіль, Вікторія Біла,
Станіслав Шептуховський**

Розглянуто феномен соціальних очікувань як складової правової норми та чинника, що зумовлює реальний статус і поведінку судового експерта. Вихідною тезою є положення концепції верховенства права, згідно з яким право не обмежено законом, а формується широким колом соціальних регуляторів — мораллю, традиціями, культурними уявленнями, практиками. Саме вони утворюють метанорму, яка накладається на закон і часто має сильніший вплив на поведінку, аніж формальні приписи. Обґрунтування наявності згаданої вище розбіжності визначає мету статті. Її досягнення потребувало застосування низки загальнонаукових і спеціальних методів. У наведеному контексті судова експертиза постає не лише як процесуальний інститут, а як соціально-культурний феномен. Її роль полягає у трансформуванні спеціального знання в доказ, проте суспільство очікує від експерта значно більшого, аніж передбачає закон. Ці очікування — експектації — формуються не лише правовими нормами, а й культурними наративами, масовою культурою, уявленнями про науку як джерело безпомилкової істини. Вони мають імпліцитний характер, але діють як норми: невідповідність їм спричиняє соціальні санкції незалежно від реальних можливостей науки або процедури. Показано, що механізм формування експектацій ґрунтується на триєдності статусу, очікування та санкції. Криміналіст як носій спеціального знання набуває статусу, частково зумовленого культурними образами, а не лише законом. Це породжує розрив між реальним та удаваним статусом, що стає джерелом тиску, помилок і стигматизації. Водночас наука, яка забезпечує

експертизу методами, сама є системою норм і може продукувати хибні уявлення, що згодом виявляються непридатними для з'ясування юридичної істини. Наукова новизна статті полягає в уведенні до правничого дискурсу категорії «експектації» як правомірної вимоги учасника правовідносин, що впливає не лише із закону, а й загалом із соціальних регуляторів, які формують право. Це дає змогу пояснити, чому криміналістика перебуває під постійним соціальним тиском і чому її культурний профіль значно ширший за процесуальний. Стаття відкриває перспективу подальших досліджень щодо ролі культури у формуванні правових норм і необхідності публічної комунікації для зменшення розриву між очікуваннями й реальними можливостями експертної діяльності.

Ключові слова: верховенство права; метанорма; експектації; судова експертиза; криміналістика; імпліцитні норми; правова інтуїція; нормативний дисонанс.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

Authors contributed solely to the intellectual discussion underlying this document, case law research, writing and editing and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

Authors declare no conflict of interest.

References

- Andrushchenko, H. I. (2016). Informatsiino-zmistovne napovnennia poniat «sotsialna

- dovira», «uzahalnena dovira» ta «instytutsionalna dovira»: sotsiologichnyi analiz [Information and Content Filling of the Concepts of «Social Trust», «Generalized Trust» and «Institutional Trust»: a Sociological Analysis]. *Sotsialni tekhnologii: aktualni problemy teorii ta praktyky*. Vyp. 69–70. URL: <http://soctech-journal.kpu.zp.ua/archive/2016/69-70/3.pdf> [in Ukrainian].
- Bentham, J. (2000). *An Introduction to the Principles of Morals and Legislation*. 1781. Batoche Books : Kitchener. URL: <https://historyofeconomicthought.mcmaster.ca/bentham/morals.pdf>.
- Berk, M. (2023). «Moiu dytynu zabrav sobaka». *Yak zhinku pomylkovo posadyly za vbyvstvo dochky* [«My child was taken by a dog.» As a woman, she was mistakenly imprisoned for the murder of her daughter] / BBC News Ukraina : vebsait. 23 zhovtnia. URL: <https://www.bbc.com/ukrainian/articles/ckrep-m412yvo> [in Ukrainian].
- Chernysh, N. (2004). *Sotsiologhiia. Kurs lektsii* [Sociology. Course of lectures]. Vyd. 4-te, pererob. i dopov. Lviv. URL: https://duikt.edu.ua/uploads/l_715_63219046.pdf [in Ukrainian].
- Dvoretzka, H. V. (2001). *Sotsiologhiia* [Sociology] : navch. posib. Kyiv. URL: <https://studfile.net/preview/9700642/> [in Ukrainian].
- Ehrlich, E. (1913). *Grundlegung der Soziologie des Rechts*. München und Leipzig : Duncker & Humblot. URL: <https://ia803401.us.archive.org/11/items/grundlegungderso00ehrl/grundlegungderso00ehrl.pdf>.
- Kaplan-Damary, N., Jonathan-Zamir, T., Perry, G., Itskovich, E. (2025). Public views of forensic science: An intersection of science and policing? *Forensic Science International. Synergy*. Art. 25:11:100640. DOI: 10.1016/j.fsisyn.2025.100640.
- Kiriiaak, O. V. (2021). Lehitymni ochikuvannia ta strokovist yikh realizatsii [The legitimate expectation and the timelines for its implementation]. *Yurydychnyi naukovi elektronnyi zhurnal*. № 2. DOI: 10.32782/2524-0374/2021-2/15 [in Ukrainian].
- Koehler, J. J., Mnookin, J. L., Saks, M. J. (2023). The scientific reinvention of forensic science. *Proceedings of the National Academy of Sciences of the United States of America*. Oct 2. Art. 120(41). DOI: 10.1073/pnas.2301840120.
- Korolova, Yu. (2019). Koreliatsiia pryntsyviv verkhovenstva prava ta verkhovenstva zakonv v systemi dzherel prava [Correlation of the principles of the rule of law and the rule of law in the system of sources of law]. *Pidpriemnytstvo, hospodarstvo i pravo*. № 4. URL: <http://pgp-journal.kiev.ua/archive/2019/4/35.pdf> [in Ukrainian].
- Kryzhova, O. (2017). Pryntsyv verkhovenstva prava u praktytsi Yevropeiskoho sudu z prav liudyny [The rule of law in the practice of the European court of human rights]. *Visnyk Natsionalnoho universytetu «Lvivska politekhnika»*. Seriya: Yurydychni nauky. № 865. DOI: 10.23939/law2017.865.544 [in Ukrainian].
- Kurylenko, T. (2024). Dovira yak sotsialnyi fenomen [Trust as a social phenomenon]. *International Science Journal of Jurisprudence & Philosophy*. Vol. 3. No. 1. DOI: 10.46299/j.isjpp.20240301.03 [in Ukrainian].
- Kysil, V. (2019). Pravo ochikuvannia: transkryptsii zmistu [Right of expectation: transcriptions of content]. *Yurydychna Hazeta*. № 7 (661). URL: <https://yur-gazeta.com/publications/practice/neruhomist-ta-budivnictvo/pravo-ochikuvannia-transkripciyi-zmistu.html> [in Ukrainian].
- Mamchenko, N. (2023). Verkhovnyi Sud vyznachyv pidkhody shchodo zastosuvannia pryntsyvu «lehitymnykh ochikuvan» (legitimate expectations) [Supreme Court determined approaches to the application of the principle of “legitimate expectations”] / *Sudovo-iurydychna hazeta* : vebsait. URL: <https://sud.ua/uk/news/sudebnaya-praktika/262928-verkhovnyy-sud-opredelil-podkhody-k-primeneniyu-printsipa-legitimnykh-ozhidaniy-legitimate-expectations> [in Ukrainian].
- Misapplication of Forensic Science* (2025) / Innocence Project : web. URL: <https://innocenceproject.org/misapplication-of-forensic-science/>.
- Orban-Lembryk, L. B. (2003). *Sotsialna psykholohiia* [Social psychology] : posibnyk. Kyiv [in Ukrainian].
- Perehuda, Ye. V., Avdieienko, O. D., Domkin, P. O. ta in. (2012). *Sotsiologhiia* [Sociology] : navch. posib. Kyiv. URL: <https://www.knuba.edu>.

- [ua/wp-content/uploads/2023/10/socziologiya-navchalnyj-posibnyk.pdf](#) [in Ukrainian].
- Podlas, K. (2005). "The CSI Effect": Exposing the Media Myth. *Fordham Intellectual Property, Media and Entertainment Law Journal*. Vol. 16. No. 2. Book 2. Art. 2. URL: <https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1343&context=iplj>.
- Podlas, K. (2017). The "CSI Effect". *Oxford Research Encyclopedia of Criminology*. Aug 22. DOI: [10.1093/acrefore/9780190264079.013.40](https://doi.org/10.1093/acrefore/9780190264079.013.40).
- Pravo ochikuvannia: pro et contra. Vystup suddi KTSS VS V. I. Krata [Right of expectation: pro et contra. Speech of the judge of the CCC of the Supreme Court V. I. Krata] (2020). *Pravo ochikuvannia: fenomen v ploschyni tsyvilno-pravovykh vidnosyn* : vebinar Civil Platform / Youtube.com : web. URL: <https://www.youtube.com/watch?v=8fG0sbRa2w> [in Ukrainian].
- Report on the Rule of Law* (2011). Adopted by the Venice Commission at its 86th plenary session (Venice, 25–26 March 2011). URL: [https://www.venice.coe.int/web-forms/documents/default.aspx?pdffile=C-DL-AD\(2011\)003rev-e](https://www.venice.coe.int/web-forms/documents/default.aspx?pdffile=C-DL-AD(2011)003rev-e).
- Ribeiro, G., Tangen, J. M., McKimmie, B. M. (2019). Beliefs about error rates and human judgment in forensic science. *Forensic Science International*. Vol. 297. DOI: [10.1016/j.forsciint.2019.01.034](https://doi.org/10.1016/j.forsciint.2019.01.034).
- Shevtsiv, M. B. (2023). *Intuitsiia v pravi: kul'turolohichnyi vymir* [Intuition in law: a cultural dimension] : monohrafiia. Lviv. URL: <https://surl.li/tbmydb> [in Ukrainian].
- Slipchenko, S. O. (2020). Poniattia zakonnykh ochikuvan yak riznovydu maina [The concept of legitimate expectations as a kind of property]. *Forum prava*. № 3. DOI: [10.5281/zenodo.3883845](https://doi.org/10.5281/zenodo.3883845) [in Ukrainian].
- Strengthening Forensic Science in the United States: A Path Forward* (2009). Washington, DC : The Nat. Ac. Press. DOI: [10.17226/12589](https://doi.org/10.17226/12589).
- Summary results of the public consultation on whistleblower protection* (2017) / European Commission : web. URL: https://ec.europa.eu/news-room/just/document.cfm?doc_id=47885.
- Swofford, H. (2024). Forensic Science Environmental Scan 2023 / NIST Interagency // Internal Report (NISTIR) : web. March 7. DOI: [10.6028/NIST.IR.8515](https://doi.org/10.6028/NIST.IR.8515).
- Symysenko, I. V. (2025). Instytutsiina dovira yak chynnyk vplyvu na transformatsiiu politychnoi uchasti v suchasni Ukraini [Institutional trust as a key factor influencing the transformation of political participation in contemporary Ukraine]. *Politykus*. Vyp. 2. DOI: [10.24195/2414-9616.2025-2.20](https://doi.org/10.24195/2414-9616.2025-2.20) [in Ukrainian].
- Temchenko, V. I. (2007). Verkhovenstvo prava u praktytsi Yevrosudu ta Konstytutsiinoho Sudu Ukrainy [The rule of law in practice of European court of human rights and Constitutional Court of Ukraine]. *Naukovi zapysky NaUKMA. Yurydychni nauky*. T. 64. URL: <https://ekmair.ukma.edu.ua/server/api/core/bitstreams/9f486e50-ff7c-4178-88ee-e5a1a8ca0509/content> [in Ukrainian].
- Tsuvina, T. (2019). Pryntsyp verkhovenstva prava u praktytsi Yevropeiskoho sudu z prav liudyny [Principle of the Rule of Law in the Case-law of the European Court of Human Rights]. *Chasopys Kyivskoho universytetu prava*. № 4. DOI: [10.36695/2219-5521.4.2019.66](https://doi.org/10.36695/2219-5521.4.2019.66) [in Ukrainian].
- Yenin, M. N., Kukhta, M. P. (2022). Sotsialnyi status [Social status] / *Velyka ukrainska entsyklopediia* : vebсайт. URL: https://vue.gov.ua/Sotsialnyi_status [in Ukrainian].
- Zjalic, J. (2017). *The CSI Effect – Expectations Vs Limitations* / Forensic Focus : web. 30th Nov. URL: <https://www.forensicfocus.com/articles/the-csi-effect-expectations-vs-limitations/>.
- Zolotarova, O. A. (2023). Spivvidnoshennia pryntsypiv verkhovenstva prava ta zakonnosti v ukrainskomu pravi [The correlation of the principles of the rule of law and legality in Ukrainian law]. *Yurydychnyi naukovi elektronnyi zhurnal*. № 6. DOI: [10.32782/2524-0374/2023-6/152](https://doi.org/10.32782/2524-0374/2023-6/152) [in Ukrainian].
- Chechil, Yu., Bila, V., Sheptukhovskiy, S. (2025). Expectations in Law and Criminalistics: Issue Formulation. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). P. 13–34. DOI: [10.32353/khrife.4.2025.02](https://doi.org/10.32353/khrife.4.2025.02).

Recent Advancements in Forensic Expert Activity in the Context of Global Societal Digital Transformation

Nataliia Tkachenko*

* Candidate of Legal Sciences, Forensic Science Support to Justice Department of the Ministry of Justice of Ukraine, Kyiv, Ukraine,
ORCID: <https://orcid.org/0000-0002-0589-0191>, e-mail: tnm_77@ukr.net

DOI: 10.32353/khrife.4.2025.03 UDC 343.98(477)

Received: 14.11.2025 / Reviewed: 30.11.2025 / Accepted for print: 25.12.2025 /

Available online: 31.12.2025



The rapid digitization of society has fundamentally altered the nature of criminal activity, the sources of evidentiary information, and the operational context of forensic experts. Contemporary traditional approaches to recording, investigating, and assessing data have become inadequate for managing digital traces, extensive datasets, and their recent variations and forms. This requires the identification of traditional trends in the development of forensic expert activity and the re-evaluation of its normative, organizational, and methodological foundations. The Article Purpose is a comprehensive analysis of trends in the development of forensic expert activity within the context of global digitalization, as well as elucidation of the impact of contemporary digital technologies on the organizational, procedural, and methodological foundations of expert support to justice. The author employs the method of system analysis to identify general technological trends, the structural and functional method for assessing the impact of digitalization on the content and tasks of forensic expert activity. It has been proven that digital traces are being prioritized in expert research. Artificial intelligence, 3D technologies and simulation platforms significantly expand expert practice capabilities. A deficiency of methodological support is identified, attributable to the complexity of digital data and the emergence of their novel forms and variations. Essential changes in the training of specialized personnel are delineated, with particular emphasis on the implementation of automated testing and the advancement of digital competencies. The increasing significance of international cooperation within the

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

context of the transnational character of digital challenges is underscored. Digitization constitutes a novel technological paradigm in forensic expert practice, necessitating the revision of methodologies, implementation of innovative technologies, enhancement of experts' digital competencies, and standardization of procedures for handling digital evidence. The sustainable development of forensic expert practice is unattainable without international integration, modernization of education, and enhancement of scientific and methodological support.

Keywords: forensic expert activity; digitization; digital traces; artificial intelligence; 3D technologies; digital evidence; methodological support; international cooperation; training of forensic experts; forensic experts' advanced training.

Research Problem Formulation

The global societal digital transformation has led to transformative changes in all key activity sectors of legal entities and natural persons and necessitated the appropriate response from state institutions to emerging challenges within the digital domain. Such processes are also occurring in the realm of justice, where traditional approaches to the collection, research, and evaluation of evidence are being constantly updated. In this context, expert support to justice in Ukraine is being imbued with a new essence and relevance, which is implemented through the transformation of it into a high-tech tool that plays a pivotal role in establishing objective facts and circumstances in criminal, administrative, civil, and economic proceedings, as well as in the processes of applying specific expertise outside the judiciary.

Emergence of novel categories of criminal offenses, on the one hand, and advancement of artificial intelligence (hereinafter referred to as AI) alongside diverse contemporary technologies, on the other hand, necessitate the refinement of approaches to the structuring of

forensic expert activities. The available methodological support has proven to be inadequate for working with digital traces, complex information systems, thereby requiring the introduction of new competencies, tools and technologies.

Digital environment development significantly outpaces adaptation of expert methodologies, statutory regulation and technical capabilities of conducting expert research. This poses risks to both the effectiveness of proof and the security of the rights and freedoms of participants to the proceedings (case). Therefore, there is a clear necessity to single out current trends in the development of forensic expert activity, in the formation of strategic pathways for modernization, and in the adherence of these processes to international standards and best practices.

The issues of incorporating high technologies into forensic expert practice, developing experts' digital competences, fostering international cooperation and standardizing approaches to work with digital evidence are of paramount importance. It is these aspects that determine the relevance of research and lay the groundwork for a comprehensive scientific analysis of trends in the development of

forensic expert activity amidst the digital transformation.

Analysis of Essential Researches and Publications

Both researchers and practitioners place an emphasis on the problems of expert

support to justice. Recently, the number of scientific papers on the adaptation of modern technologies in forensic expert activity has also increased. P. Giverts et al.¹, Ye. Demydova et al.², O. Zadnichenko et al.³, D. Kishko⁴, A. Kovalenko⁵, K. Latysh⁶, Yu. Nizovtsev et al.⁷, O. Posashkov⁸, O. Samoilenko⁹, R. Stepaniuk et al.¹⁰,

- 1 Гіверц П., Коломійцев О. Машинне навчання і можливість його застосування для криміналістичних досліджень вогнепальної зброї. *Теорія та практика судової експертизи і криміналістики*. 2024. Вип. 2 (35). С. 28–43. DOI: 10.32353/khrife.2.2024.03 (date accessed: 12.11.2025).
- 2 Shepitko V., Shepitko M., Latysh K., Kapustin M., Demidova E. Artificial intelligence in crime counteraction: From legal regulation to implementation. *Social & Legal Studios*. 2024. Vol. 7. No. 1. Pp. 135–144. DOI: 10.32518/sals1.2024.135 (date accessed: 10.11.2025).
- 3 Задніченко О. М., Пашинська І. В. Штучний інтелект в судово-експертній діяльності. *Судова експертиза: перспективи розвитку та окремі вектори змін* : мат-ли V Всеукр. форуму суд. експерт. (Львів, 06.06.2025). Одеса, 2025. С. 183–186. URL: https://ondise.minjust.gov.ua/wp-content/uploads/2025/08/forum_ondise_law__2025.pdf (date accessed: 12.11.2025).
- 4 Кішко Д. Цифровізація судово-експертної діяльності в умовах війни як шлях забезпечення безперервної роботи експертних установ. *Досвід і проблеми судово-експертної діяльності в умовах воєнного стану в Україні* : мат-ли всеукр. наук.-практ. конф. (Львів — Київ — Одеса; 28.09.2023). Львів, 2023. С. 15. URL: <http://ndekc.lviv.ua/pdf/a05122023.pdf> (date accessed: 12.11.2025).
- 5 Коваленко А. В. Перспективи запровадження 3D-технологій у судово-експертну діяльність. *Криміналістика та судова експертиза у XXI столітті* : мат-ли всеукр. наук.-практ. семінару (Київ, 30.05.2024). Київ, 2024. С. 89–91. URL: <http://repository.ukd.edu.ua/bitstream/handle/123456789/1684/3D%20expert.pdf?sequence=1&isAllowed=y> (date accessed: 12.11.2025).
- 6 Латиш К. В. Вплив технологій штучного інтелекту на судово-експертну діяльність: можливості та загрози. *Судово-експертна діяльність: збереження наукового та кадрового потенціалу в умовах воєнного стану* : мат-ли IV Всеукр. форуму суд. експерт. (Львів, 07.06.2024). Одеса, 2024. С. 216. URL: <http://ndekc.lviv.ua/pdf/law.pdf> (date accessed: 12.11.2025).
- 7 Нізовцев Ю., Парфіло О., Плахотнік О. Установлення особи, підозрюваної у скоєнні кіберзлочину з використанням WiFi-технологій. *Теорія та практика судової експертизи і криміналістики*. 2023. Вип. 4 (33). С. 23–38. DOI: 10.32353/khrife.4.2023.03 (date accessed: 12.11.2025).
- 8 Посашков О. О. До питання впровадження штучного інтелекту в судові експертизи під час досудового розслідування кримінальних правопорушень. *Вісник Кримінологічної асоціації України*. 2025. Т. 34. № 1. С. 728–735. DOI: 10.32631/vca.2025.1.58 (date accessed: 12.11.2025).
- 9 Самойленко О. А. Основи методики розслідування злочинів, вчинених у кіберпросторі : монографія / за заг. ред. А. Ф. Волобуєва. Одеса, 2020. 372 с. DOI: 10.32837/11300.13264 (date accessed: 12.11.2025).
- 10 Степанюк Р. Л., Колесник В. Г. Судова комп'ютерно-технічна експертиза: стан і перспективи розвитку. *Вісник Луганського державного університету внутрішніх справ ім. Е. О. Дідоренка*. 2023. Вип. 2 (102). С. 294. DOI: 10.33766/2524-0323.102.289-305 (date accessed: 12.11.2025).

S. Chorny et al.¹¹, V. Shepitko et al.¹², M. Shepitko et al.¹³, M. Shcherbakovskyi¹⁴, and others. Concurrently, notwithstanding the increasing scholarly interest in the technological transformation of forensic expert activity, the majority of studies have addressed only some aspects of this topic. Research typically concentrates either on the analysis of innovations within particular types of forensic science or on the application of specific technical tools or innovations during investigations; however, a comprehensive understanding of the impact resulting from the integration of contemporary digital technologies into forensic practice remains elusive.

Article Purpose

Comprehensively study current trends in the development of forensic expert activities against the backdrop of global digital transformation, elucidate the impact of digital technologies on organisational, methodological and regulatory and legal foundations of the functioning of expert support to justice in Ukraine.

Research Methods

System analysis method was applied to identify general technological trends. Structural-functional method was em-

ployed to assess the impact of digitalization on the content and tasks of forensic expert activity.

Main Content Presentation

Use of modern information and communication technologies, digital devices and tools, cloud services and large-scale databases profoundly reshapes criminal activity and other types of unlawful behaviour. There are new ways of committing illegal actions and, accordingly, traces resulting from such activities appear. The nature of evidentiary information in criminal, civil, economic and administrative proceedings and outside proceedings also undergoes changes.

Recently, forensic experts are increasingly faced with the need to investigate digital objects and traces resulting from their use. Furthermore, active dissemination of digital technologies and AI leads to the emergence of new forms and modifications of information (*deepfake* technologies, automated text generation, audio and video materials). With the development of digitization across all areas of human life, forensic experts are faced with the problems of investigating continuous sequential chain of blocks containing information according to certain rules. Thus, the cryptocurrency market is developing

- 11 Чорний С., Брендель О., Гратіашвілі Д. Автентифікація зображень на основі їх семантичної сегментації у нейронних мережах глибокого навчання з їх попереднім обробленням за методами фільтрації. *Теорія та практика судової експертизи і криміналістики*. 2022. Вип. 1 (26). С. 128. DOI: 10.32353/khrife.1.2022.08 (date accessed: 10.11.2025).
- 12 Шепітько В. Ю., Авдеева Г. К., Коновалова В. О. та ін. Інноваційні методи, засоби та технології в криміналістиці та судовій експертизі : наук.-практ. посіб. / за ред. В. Ю. Шепітька. Харків, 2023. 116 с. URL: <http://surl.li/zhtvre> (date accessed: 12.11.2025).
- 13 Шепітько М., Латиш К. Використання штучного інтелекту в судово-експертній діяльності. *Теорія та практика судової експертизи і криміналістики*. 2024. Вип. 3 (36). С. 24–36. DOI: 10.32353/khrife.3.2024.03 (date accessed: 12.11.2025).
- 14 Щербаківський М. Відкриті джерела кіберпростору як об'єкти судово-експертного дослідження. *Там само*. Вип. 2 (35). С. 10–27. DOI: 10.32353/khrife.2.2024.02 (date accessed: 12.11.2025).

at a rapid pace all over the world. Consequently, we come across concepts such as *blockchain transactions*, *blockchain sites*, *blockchain cryptocurrency*, *blockchain ledger*, *blockchain wallet*, etc. Under such circumstances, forensic examination faces qualitatively new problems associated with the need to perform identification, diagnostic and situational tasks based on the results of modern technology application. The challenges of the war starter by the aggressor country became especially relevant for solving the problematic issues of forensic examination in the field of blockchain. To wage a war against Ukraine, the enemy uses all the advantages that blockchain provides in cyberspace: decentralization and anonymity, speed and convenience. This applies, for example, to the creation of “cold wallets” for collecting money, to phishing sites, crypto pyramids, smart contacts and other fraudulent blockchain projects. To confront the enemy in cyberspace, forensic experts’ specific expertise is required.

Sources of evidentiary and indicative information are digital traces that can be created with the help of personal computers (PC) belonging to natural persons and legal entities, mobile devices, tablets, cameras and video cameras that are seized from participants in criminal proceedings, from servers and other information storage devices in organizations and institutions, from network services that set up voice and video calls between computers via the Internet (*ICQ*, *Skype*, *WhatsApp*, *Viber*, *Telegram*, etc.), from banking systems on corresponding digital media (*CD-disks*, *flash cards*, etc.), from video surveillance cameras of commercial and government institutions and other elec-

tronic computing devices¹⁵. Such traces contributed to the expansion of capabilities for establishing an evidentiary basis, to the transformation of approaches in the investigation of criminal offenses, to the execution of forensic expert activities, and to the adjudication of cases.

Since digital information is complex in nature, highly susceptible to alterations, may contain hidden data that are not available for immediate perception by a person who does not possess specific expertise, and can be easily modified or destroyed, it necessitates further research, specifically, with the use of specialized equipment and software. Therefore, the study of such objects has become an essential constituent of current forensic activities.

Examination of digital media is typical for various types of forensic examinations: computer forensics, electronic communications, video and audio recording, portrait, photographic, etc. However, with the development of information technology, profound shifts are occurring in the subject, object, tasks and methods of these expert examinations. Digital media today are not only physical objects containing files/records, but also complex information systems integrated into cloud platforms, virtual environments, hardware and software complexes. Traditional objects have been supplemented by log files and event logs, metadata, copies in cloud storage, messenger messages from encrypted channels, etc. In addition, even traditional forensic objects (e.g., photo, video, audio files) are being studied in evolving circumstances, as they can be easily altered with the help of modern digital processing tools, in particular AI. Synthesis and enhancement of speech, *deep-*

15 Колеснікова І. А. Цифрові сліди: поняття та їх значення при розслідуванні кримінальних правопорушень. *Юридичний електронний науковий журнал*. 2023. № 10. С. 472. DOI: 10.32782/2524-0374/2023-10/114 (date accessed: 12.11.2025).

fake and other manipulations with digital data complicate the performance of tasks addressed by forensic experts, requiring the development of new expert research methods as well as the acquisition of relevant competencies by a forensic expert.

As scientists and practitioners note, there is an acute shortage of scientific and methodological support during forensic examinations involving the study of electronic communications and digital data¹⁶. Particularly, it concerns problems related to the impossibility of creating specific methodologies for the authentication of digital video and audio recordings. This is due to their diversity and the lack of scientific publications on the characteristics of such video and audio recordings. Therefore, it is only possible to describe directions for detection of certain signs to solve the issue of digital records authentication¹⁷. Accordingly, the lack of methods (methodological guidelines) in the field of digital data examination requires targeted R&D, incorporation of international standards into forensic expert activity and novel approaches into expert practice, taking into account relevant real-world needs.

Scientific literature has consistently highlighted the substantial influence of technology on the advancement of forensic examination, both directly and indirectly, as numerous technological innovations originally developed for other fields subsequently emerged as essential instruments in forensic applications¹⁸. Thus, laser 3D scanning, originally developed for industrial applications, architecture, engineering, and medicine, is currently extensively employed to document and reconstruct crime scenes and other forensic investigation subjects. This is not only about the technical ability to visualize the trajectory of a bullet, the position of bodies and other objects in space, but also about the ability to provide a more convincing and understandable reconstruction of the scene for a court. This is critical when testimony is contradictory or fragmentary¹⁹.

Modern technologies are increasingly integrated into forensic expert activities. Specifically, the use of artificial intelligence by forensic experts at the Kyiv Research Institute of Forensic Expertise (hereinafter referred to as the *KRIFE*) in conducting forensic portrait examina-

- 16 Іванович А., Сімакова-Єфремян Е., Півньов Є. Наукова діяльність у галузі судової експертизи — основа методології судово-експертних досліджень в умовах воєнного стану. *Теорія та практика судової експертизи і криміналістики*. 2023. Вип. 3 (32). С. 25. DOI: 10.32353/khrife.3.2023.02 (date accessed: 10.11.2025); Галушневська К. О. Комп'ютерно-технічна експертиза: перспективи розвитку у сфері кіберзлочинів. *Актуальні проблеми кримінально-правового, кримінального процесуального та криміналістичного забезпечення протидії злочинності в сучасних умовах* : мат-ли Міжнар. наук.-практ. конф. (Дніпро, 20.12.2024). Дніпро, 2024. С. 64. URL: <https://surl.li/ievziq> (date accessed: 12.11.2025).
- 17 Брендель О. Дослідження автентичності цифрових відео- та звукозаписів. *Використання цифрових технологій у криміналістиці та судовій експертизі* : зб. мат-лів міжнар. наук.-практ. «кругл. столу» (Харків, 11.12.2023). Харків, 2024. С. 57—58. URL: <https://surl.li/rllwve> (date accessed: 12.11.2025).
- 18 Arora A. Future of Forensic and Crime Scene Science Technologies. Chapter 18 / *Technology in Forensic Science: Sampling, Analysis, Data and Regulations* ; Ed. D. Rawtani, Ch. M. Hussain. Wiley : Hoboken, NJ, USA, 2020. Pp. 357—370. DOI: 10.1002/9783527827688.ch18 (date accessed: 12.11.2025).
- 19 Гусак А. П. Ефективність використання 3D-моделювання в балістиці для відновлення подій при використанні вогнепальної зброї. *Українська поліцейстика: теорія, законодавство, практика*. 2025. № 2 (14). С. 29. DOI: 10.32782/2709-9261-2025-2-14-6 (date accessed: 08.11.2025).

tions in the investigation of the shooting of a Ukrainian serviceman by Russian military personnel is widely recognised. As a result of this investigation, the identity of Oleksandr Matsievskyi, the deceased Hero of Ukraine, was confirmed. This represents one of the earliest instances of employing artificial intelligence to perform expert research in Ukraine. Forensic experts were faced with the task of identifying the dead Ukrainian soldier based on the images in the video and the photographs provided for comparison. KRIFE specialists obtained a video that was uploaded to the network on 6 March 2023. Experts compared this video with photographs of individuals supplied to investigators, who, according to law enforcement authorities, might have been recorded on the video. Among the challenges that forensic experts were required to address was the low quality of the examined video material and the inadequate (blurry) quality of the photographs provided for comparison, which received particular attention from the experts. Based on the research findings, KRIFE experts identified the Ukrainian serviceman in the video as Oleksandr Matsievskyi, a sniper of the 163rd Battalion of the 119th Territorial Defense Brigade (Chernihiv region). The use of AI in conjunction with other research methods has demonstrated how effective modern technologies are for personal identification²⁰. This case went beyond being just an important precedent in the practice of forensic examinations; it also served as a striking example of how contemporary technologies are transforming

forensic expert activity, thereby creating new opportunities.

Incorporating AI into forensic expert activity is a promising avenue for enhancing the efficiency, accuracy and objectivity of expert research. At the same time, the introduction of such technologies poses significant obstacles—from technical to ethical and legal—that require comprehensive analysis and statutory regulation, professional training and interdisciplinary cooperation. Compilation of clear standards, creation of transparent accountability mechanisms, and implementation of systemic monitoring are necessary conditions for the safe and effective AI use in forensic expert activity, which will ultimately contribute to strengthening justice and trust in the judiciary²¹.

The practice of implementing AI prevails in other countries as well. In forensic examination, AI is predominately deployed to analyse large volumes of data, classify them into certain categories, create databases, and identify objects. As documented in the scholarly literature, various AI models are combined with phototechnical, microscopic methods and spectroscopy during the study of blood samples, fingerprints, petrol samples, soil and micro-objects. Additionally, in all cases, AI is used in tandem with traditional expert methods²². This is because the expert's opinion must be comprehensive, objective, well substantiated, and reliable: qualities that cannot be guaranteed solely through the application of AI algorithms without human oversight. Moreover, notwithstanding the benefits of AI, its imple-

20 Shepitko V., Shepitko M., Latysh K., Kapustin M., & Demidova E. Op. cit. P. 141. DOI: 10.32518/sals1.2024.135 (date accessed: 10.11.2025).

21 Задніченко О. М., Пашинська І. В. Зазнач. твір. С. 185—186. URL: https://ondise.minjust.gov.ua/wp-content/uploads/2025/08/forum_ondise_law__2025.pdf (date accessed: 12.11.2025).

22 Javadova A. N. Using Artificial Intelligence in the Forensic Science for the Analysis of Micro-particles: A Systematic Review. *Futurity: Economics & Law*. 2024. Vol. 4. No. 2. Pp. 229—246. DOI: 10.57125/FEL.2024.06.25.13 (date accessed: 10.11.2025).

mentation is accompanied by challenges related to the opacity of intricate internal mechanisms. The lack of transparency further exacerbates the cybersecurity issue, as delegating critical decision-making to a system incapable of explaining its own logic is an obvious danger²³. Accordingly, it can be concluded that the use of AI in forensic expert activities is gradually shaping a new technological paradigm, while its further implementation is impossible without the development of standards that will ensure the reliability, reproducibility and admissibility of evidence sources in procedural activities.

From the perspective of A. Kovalenko, one of the areas of scientific and technological progress that may substantially enhance the forensic toolkit in the near future is 3D technology, which can be defined as a set of scientific and technical means for creating, editing, and using 3D models of certain objects. The first area of Ukrainian forensic activity where these technologies are deployed quite extensively and successfully is ballistic accounting (through the use of *BalScan* ballistic identification hardware and software systems). At the same time, positive outcomes from the deployment of these systems provide a basis for forecasting how these technologies will function in forensic trace evidence analyses. Direct objects of such research may be scanned digital 3D models of volumetric traces and probable trace-forming objects. *“Moreover, the use of 3D technologies in forensic portrait examinations appears promising. Within the con-*

*text of such an expert examination, a forensic specialist is capable of independently scaling a three-dimensional model of an individual’s face to the specified dimensions, orienting it to the appropriate angle, measuring the dimensional attributes of distinct features, performing comparative analyses, and effectively presenting findings based on the expert examination outcomes. Additional research is also needed into the possibility of using 3D technologies in forensic, engineering, military, and other types of expert examinations”*²⁴. That is, it can be argued that introduction of 3D technologies organically aligns with the global shift towards the digitalization of forensic expert activities.

A significant avenue for the advancement of forensic expert activity is the proactive fostering of international cooperation. In the present-day context, this holds strategic significance, as it facilitates not only the integration of advanced technologies and innovations and the implementation of leading international practices, but also the harmonization of approaches to the examination of digital evidence and the deployment of artificial intelligence, alongside the standardization of methodological frameworks.

Arts. 22–24 of the Law of Ukraine: *On Judicial Examination* stipulate various types of international cooperation: 1) conduct of a forensic examination on behalf of the relevant body or person of another state; 2) involvement of specialists from other states for joint forensic examinations; 3) international scientific cooperation²⁵. Thus, *“State specialized institutions*

23 Посашков О. О. Знач. твір. С. 729. DOI: 10.32631/vca.2025.1.58 (date accessed: 12.11.2025); Capuano N., Fenza G., Loia V., Stanzione C. Explainable Artificial Intelligence in CyberSecurity: A Survey. *IEEE Access*. 2016. Vol. 4. No. 10. 26 p. DOI: 10.1109/ACCESS.2022.3204171 (date accessed: 12.11.2025).

24 Коваленко А. В. Знач. твір. С. 91. URL: <http://repository.ukd.edu.ua/bitstream/handle/123456789/1684/3D%20expert.pdf?sequence=1&isAllowed=y> (date accessed: 12.11.2025).

25 Про судову експертизу : Закон України від 25.02.1994 р. № 4038-XII (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 12.11.2025).

*performing forensic examinations enjoy the right to forge international academic partnerships with institutions of forensic examinations, criminalistics, etc., of other states, to hold joint scientific conferences, symposia, seminars, to exchange trainees, scientific information and printed editions, and to collaborate on joint publications in the field of forensic examination and criminalistics”*²⁶. For Ukraine, which is actively deepening its integration into the European Research Area, international cooperation is gaining significance in the context of forensic science development. Furthermore, given the cross-border nature of digital challenges, international cooperation is not only desirable, but critically necessary, as it enables the pooling of best practices and directing them towards solving global challenges.

Currently, the development of international cooperation in the field of forensic examination is inextricably linked to comprehensive globalization of human activities, rapid development of science and technology, means of communication, fostering of international scientific ties, creation of novel technologies and AI, constant and rapid migration of populations across various countries and regions, as well as to transnational organized crime and international terrorism resulting from these processes²⁷.

Researchers and practitioners recognize the critical significance of interna-

tional cooperation in forensic expert activity. Thus, V. Shepitko surveyed forensic experts and identified the most promising areas of international cooperation in this area: ensuring software and hardware sustainability; conducting joint scientific research and panel forensic examinations with the participation of foreign experts; organizing collaborative scientific events on the problems of forensic examination; inviting foreign experts to conduct forensic examinations for the purpose of enhancing forensic analysis quality; preparing joint scientific editions²⁸. S. Yevdokimenko observes that the advancement of forensic expert activity in Ukraine is contingent upon the widespread involvement of forensic expert institutions in international organizations within the domain of forensic expert activity, as well as upon the access of Ukrainian experts to international standards and their capacity to implement them in practice. Members of international forensic organizations such as *ENFSI* benefit from streamlined access to these standards²⁹. P. Kipouras and I. Ovsianynkova are also convinced that it is impossible to ensure justice with high-quality expert examination without integration with the international community. Therefore, it is necessary to adopt the best foreign practices and use them to boost the efficiency of forensic expert activity in our country³⁰.

26 Там само.

27 Баулін О. В. Генеза і сучасний стан нормативно-правового регулювання міжнародного співробітництва України у галузі судової експертизи. *Криміналістика і судова експертиза*. 2023. Вип. 68. С. 30. DOI: 10.33994/kndise.2023.68.02 (date accessed: 12.11.2025).

28 Шепітько В. Судова експертиза та судово-експертна діяльність: погляд крізь призму думок експертів. *Теорія та практика судової експертизи і криміналістики*. 2023. Вип. 1 (30). С. 20. DOI: 10.32353/khrife.1.2023.02 (date accessed: 2.11.2025).

29 Євдокіменко С. В. Напрями міжнародного співробітництва у галузі судово-експертної діяльності. *Європейські перспективи*. 2024. № 1. С. 147. DOI: 10.32782/ep.2024.1.20 (date accessed: 12.11.2025).

30 Кіпурас П., Овсянникова І. Судово-експертна діяльність в умовах глобалізації. *Теорія та практика судової експертизи і криміналістики*. 2021. Вип. 3 (25). С. 169–184. DOI:

The aforementioned positions align closely with contemporary trends in the advancement of forensic expert activities, as, amid rapid digitalization and the emergence of novel forms of criminality, an individual state cannot effectively address all challenges independently. The comprehensive advancement of forensic expert activities is unattainable without cooperation with international organizations and foreign expert institutions. Such collaboration is of paramount importance in the field of innovative technologies, where developments are unfolding at an accelerated rate. Therefore, international cooperation constitutes not only a mechanism for the exchange of expertise but also a prerequisite for sustainable, professional, and innovative development.

The conditions of digital transformation are re-shaping the requirements for forensic experts' professional competencies. This is why improving the advanced training and professional development of expert staff is an essential component for subsequent development of forensic expert activities. Forensic experts must both be well versed in novel research methods and be ready to adapt to emerging challenges. This requires, in particular, the development of the following basic competencies: understanding the principles of cybersecurity, digital ethics, and working with large data sets; enhancing the capacity to critically evaluate obtained findings with the use of AI; increasing awareness of

technical limitations and risks associated with the use of such tools.

According to V. Khrystyian, high-quality training of staff is one of crucial issues today, since the quality of their work, and therefore the quality of expert research, depends on the qualifications, professional level and competence, as well as on personal and moral-ethical qualities of forensic experts (objectivity, impartiality, strong analytical capabilities, attentiveness, perseverance). Among the primary measures to enhance the qualifications of expert practitioners, the author identifies systematic completion of internships and engagement of experts in research activities, additionally emphasizing the efficacy of conducting scientific and theoretical seminars and their significance in addressing contemporary issues in expert theory and practice. Based on his findings, the exchange of experience with international experts through participation in scientific events abroad, alongside ongoing self-directed learning to enhance the professional competencies of experts, constitutes an important factor³¹.

In 2025, the rules for training expert staff underwent significant revision: a new procedure for certifying forensic experts has been approved by the Central Expert Qualification Commission under the Ministry of Justice of Ukraine³². As set out in cl. 1 of Ch. 1 of Sec. II: *Attestation for the purpose of assigning the qualification of a forensic expert in the relevant expert specialty* of this document, "*Training of persons who aim to obtain a qualification as a forensic expert in*

10.32353/khrife.3.2021.12 (date accessed: 10.11.2025).

31 Християн В. До питання підготовки судових експертів для роботи в підрозділах експертної служби МВС. *Теорія та практика судово-експертної діяльності* : мат-ли VIII Міжвідом. наук.-практ. конф. (Київ, 27.11.2019). Київ, 2019. С. 433—435. URI: <https://elar.navs.edu.ua/jspui/handle/123456789/15434> (date accessed: 12.11.2025).

32 Порядок проведення Центральною експертно-кваліфікаційною комісією при Міністерстві юстиції України атестації судових експертів : затв. наказ. Мін'юсту України від 06.05.2025 р. № 1224/5 (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/z0694-25#Text> (date accessed: 12.11.2025).

the relevant expert specialty (hereinafter referred to as specialists) involves two stages:

*theoretical training;
internship.*

Theoretical training of experts is conducted in accordance with the training program addressing theoretical, organizational, and procedural aspects of forensic examination by institutions that comply with the requirements set forth in paragraph 2 of this Chapter and are included in the list of institutions authorized to provide theoretical training for forensic experts pursuant to this Procedure <...>.

Internship of experts is carried out in conformity with internship programs in the relevant expert specialty”³³.

Simultaneously, it is stipulated that certification for the purpose of conferring the qualification of a forensic expert in the relevant specialty is conducted through a qualification examination utilizing an electronic system for automated testing. Automated testing encompasses three stages and is administered concurrently to all specialists participating in the qualifying examination; this process comprises the following:

- 1) test tasks for testing knowledge on theoretical, organizational and procedural issues of forensic examination;
- 2) test tasks for testing knowledge on issues within expert specialties;
- 3) a situational task (clauses 1, 9, 14, 18–20, Ch. 2: *Conferring the qualification of a forensic expert in the relevant expert specialty*, Sec. II)³⁴.

This approach enhances the transparency and objectivity of the procedure for

conferring the qualification of a forensic expert, and also helps align the Ukrainian expert training model with international standards.

An important amendment to the legislation is the indefinite validity of the forensic expert qualification certificate (cl. 28, Ch. 2, Sec. II) and mandatory advanced training (cl. 1, Ch. 1, Sec. III: *Attestation for confirmation of forensic expert qualification in the relevant expert specialty*)³⁵. Thus, within three years from the date of the decision adopted by the Qualification Chamber of the Central Expert Qualification Commission to confer the qualification of a forensic expert in the relevant expert specialty, the expert must earn at least 2 ECTS credits (para. 1, cl. 3, Chap. 1, Sec. III)³⁶. The types of advanced training include: completion of training under the advanced training program; participation in conferences, seminars, workshops, trainings, webinars, master classes, etc., on issues of forensic expert activity; in scientific-pedagogical, other teaching, scientific and scientific-technical activities in the field of forensic examination³⁷. Introduction of a new procedure for certifying forensic experts presupposes a systematic update of approaches to training expert staff in Ukraine. However, the quality of such training is of paramount importance: the depth of presented content and the flexibility of acquired skills, the relevance of provided information and the need to consider challenges, etc. This necessitates a rethinking of educational standards and the sustainable and continuous professional development of forensic experts.

33 Порядок проведення URL: <https://zakon.rada.gov.ua/laws/show/z0694-25#Text> (date accessed: 12.11.2025).

34 Там само.

35 Там само.

36 Там само.

37 Там само.

Updating teaching methods is also an urgent issue. Specifically, the use of modern technologies yields significant results not only during the conduct of forensic examinations, but also during training and advanced training of forensic experts. Among the most promising are forensic simulation platforms. They facilitate the reproduction of complex expert situations and the practice of running action algorithms without the risk of losing or damaging real objects (pieces of evidence).

For instance, VR is an environment created using computer technology that completely simulates reality and provides a high-fidelity reconstructed environment for learners. Specialised devices (VR headsets, glasses, controllers, etc.) are used to create a full sensory immersion that simulates clinical scenarios. In this context, augmented reality (AR) is essential, providing the overlay of digital information (3D models, images, videos) onto the physical world³⁸. Such technologies are currently deployed all over the world for the training of pilots, healthcare workers, for the study of foreign languages: they have proven themselves as an efficient tool for cultivating professional competences. As S. Ostapov notes, VR technologies in the training of forensic fire technicians (fire investigators) are a modern global trend and promising for Ukraine, as they allow solving a number of problems related to the quality of training, availability of resources and adaptation to novel international standards. However, certain factors complicate their adoption in Ukrainian realities. *Firstly*, high cost of technology due

to limited funding for state institutions and educational institutions. *Secondly*, a lack of proficiency among teachers and lack of specialists who will develop scenarios and adapt them to the real needs of forensic experts. *Thirdly*, inadequate standards for VR deployment in education, which complicates the process of integrating such technologies into educational programs. *Fourthly*, infrastructural challenges, since some educational institutions lack even the basic technical infrastructure for VR deployment: high-speed Internet or modern computers³⁹.

Under present circumstances, the issue of introducing VR technologies in the training of forensic experts is becoming particularly relevant. The increasing complexity of forensic examinations, the appearance of new types of traces, the need for prompt response to atypical situations in conditions of martial law and post-war reconstruction, necessitate in-depth practical skills from a forensic expert, which cannot be developed exclusively by traditional teaching methods. Furthermore, the significance is rooted in the fact that such technologies ensure effective acquisition of knowledge, repeated scenario simulation, formation of action algorithms and development of professional thinking, which is crucial in a field where the accuracy of decisions (in particular, those of a forensic expert) determines the establishment of important circumstances in a case or proceedings.

38 Лавринович О. А. Імерсивні технології у професійній підготовці фахівців. *Collection of Scientific Papers «ΛΟΓΟΣ»*. 2025. 4 Avr. P. 300. DOI: 10.36074/logos-04.04.2025.057 (date accessed: 10.11.2025).

39 Остапов С. Потенціал технологій віртуальної реальності у навчанні судових експертів-пожежотехніків в Україні. *Криміналістика і судова експертиза*. 2025. Вип. 70. С. 634. DOI: 10.33994/kndise.2025.70.48 (date accessed: 12.11.2025).

Conclusions

To conclude, global digital transformation of society has given rise to significant changes in the content, forms and methods of forensic expert activity. The emergence of digital traces, the development of AI, the spread of large data sets, cloud technologies, new means of communication and information manipulation tools have formed a new technological environment in which traditional approaches to conducting expert examinations no longer provide the appropriate level of credibility and efficiency. Under such circumstances, forensic expert activity faces qualitatively new tasks requiring the adaptation of methods, modernization of technical support, development of novel methodologies and introduction of innovative technologies.

Digital traces are now one of the principal sources of evidentiary information in criminal, civil, commercial and administrative proceedings. Investigating them necessitates specialised equipment, software, new methods and advanced digital proficiency on the part of forensic experts. At the same time, the development of AI has introduced a new set of possibilities alongside emerging difficulties: from automatic data analysis to the need to develop standards for verifying findings credibility, ensuring transparency of algorithms and human oversight.

In light of the findings, we can single out key trends in the development of forensic expert activity amid society digitalisation: 1) digitalisation of research objects (increase in the number of studies involving digital media, cloud services, metadata and other digital traces of various origins); 2) incorporation of modern technologies into forensic expert activity (AI, 3D modelling, laser scanning); 3) es-

tablishment of more rigorous competence requirements for a forensic expert (understanding of the principles of cybersecurity, digital technologies, mastery of methods for analysing large data sets); 4) enhancement of the depth and quality of training for forensic experts, particularly by introducing new methods (VR/AR technologies, simulation platforms, interactive learning environment); 5) pressing need to update the methodological support for forensic examinations; 6) growing role and significance of international cooperation.

Тенденції розвитку судово-експертної діяльності в умовах глобальної цифрової трансформації суспільства

Наталія Ткаченко

Стрімка цифровізація суспільства змінила характер злочинності, джерел доказової інформації та умови діяльності судових експертів. Сьогодні традиційних підходів до фіксації, дослідження й оцінки даних уже недостатньо для роботи з цифровими слідами, великими масивами інформації і їх новітніми формами та модифікаціями. Це зумовлює потребу у визначенні сучасних тенденцій розвитку судово-експертної діяльності й оновленні її нормативних, організаційних і методичних засад. Метою праці є комплексне дослідження тенденцій розвитку судово-експертної діяльності в умовах глобальної цифровізації та з'ясування впливу сучасних цифрових технологій на організаційні, процесуальні й методологічні основи експертного забезпечення правосуддя. Застосовано метод системного аналізу для виявлення загальних технологічних тенденцій; структурно-функціональний метод для визначення впливу цифровізації на зміст і завдання судово-експертної діяльності. Доведено, що цифрові сліди стають пріоритетним

об'єктом експертних досліджень, а штучний інтелект, 3D-технології та симуляційні платформи значно розширюють можливості експертної практики. Виявлено дефіцит методичного забезпечення, зумовлений складністю цифрових даних і появою їх нових форм та модифікацій. Окреслено необхідні зміни в підготовці експертних кадрів, зокрема впровадження автоматизованого тестування та розвиток цифрових компетентностей. Підкреслено зростання значення міжнародної співпраці в умовах транснаціонального характеру цифрових викликів. Цифровізація формує нову технологічну парадигму судово-експертної діяльності, що потребує оновлення методик, упровадження інноваційних технологій, розбудови цифрових компетентностей експертів і стандартизації підходів до роботи з цифровими доказами. Сталий розвиток експертної практики є неможливим без міжнародної інтеграції, модернізації навчання та зміцнення науково-методичного забезпечення.

Ключові слова: судово-експертна діяльність; цифровізація; цифрові сліди; штучний інтелект; 3D-технології; цифрові докази; методичне забезпечення; міжнародна співпраця; підготовка судових експертів; підвищення кваліфікації судових експертів.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

The author has contributed solely to intellectual discussion underlying

this document, case law research, writing and editing, and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

The author declares no conflict of interest.

References

- Arora, A. (2020). Future of Forensic and Crime Scene Science Technologies. Chapter 18 / *Technology in Forensic Science: Sampling, Analysis, Data and Regulations* ; Ed. D. Rawtani, Ch. M. Hus-sain. Wiley : Hoboken, NJ, USA. DOI: [10.1002/9783527827688.ch18](https://doi.org/10.1002/9783527827688.ch18).
- Baulin, O. V. (2023). Heneza i suchasnyi stan normativno-pravovoho rehuliuvannia mizhnarodnoho spivrobitnytstva Ukrainy u haluzi sudovoi ekspertyzy [Genesis and current state of legal regulation of international cooperation of Ukraine in the field of forensic science]. *Kryminalistyka i sudova ekspertyza*. Vyp. 68. DOI: [10.33994/kndise.2023.68.02](https://doi.org/10.33994/kndise.2023.68.02) [in Ukrainian].
- Brendel, O. (2023). Doslidzhennia avtentychnosti tsyfrovyykh video- ta zvukozapysiv [Investigating authenticity in digital video and sound recordings]. *Vykorystannya tsyfrovyykh tekhnolohii u kryminalistytsi ta sudovii ekspertyzi* : zb. mat-liv mizhnar. nauk.-prakt. «kruhl. stolu» (Kharkiv, 11.12.2023). Kharkiv. URL: <https://surl.lu/rrlwve> [in Ukrainian].
- Capuano, N., Fenza, G., Loia, V., Stanzi-one, C. (2016). Explainable Artificial Intelligence in CyberSecurity: A Survey. *IEEE Access*. Vol. 4. No. 10. DOI: [10.1109/ACCESS.2022.3204171](https://doi.org/10.1109/ACCESS.2022.3204171).
- Chornyy, S., Brendel, O., Gratiashvili, D. (2022). Authenticate images based on their semantic segmentation in deep learning neural networks with their pre-processing with use of filtering methods. *Theory and Practice of Forensic*

- Science and Criminalistics*. Is. 1 (26). DOI: [10.32353/khrife.1.2022.08](https://doi.org/10.32353/khrife.1.2022.08).
- Giverts, P., Kolomiitsev, O. (2024). Machine Learning and Possibility of its Application for Forensic Researches on Firearms. *Theory and Practice of Forensic Science and Criminalistics*. Is. 2 (35). DOI: [10.32353/khrife.2.2024.03](https://doi.org/10.32353/khrife.2.2024.03).
- Halushnevskaya, K. O. (2024). Komp'uterno-tekhnichna ekspertyza: perspektyvy rozvytku u sferi kiberzlochyniv [Computer forensics: development prospects in the field of cybercrimes]. *Aktualni problemy kryminalno-pravovoho, kryminalnoho protsesualnoho ta kryminalistichnoho zabezpechennia protydyi zlochynnosti v suchasnykh umovakh* : mat-ly Mizhnar. nauk.-prakt. konf. (Dnipro, 20.12.2024). Dnipro. URL: <https://surl.li/ievziq> [in Ukrainian].
- Husak, A. P. (2025). Efektyvnist vykorystannia 3D-modeliuvannia v balistytsi dlia vidnovlennia podii pry vykorystanni vohnepalnoi zbroi [Effectiveness of using 3d modelling in ballistics for reconstruction of firearms events]. *Ukrainska polityseistyka: teoriia, zakonodavstvo, praktyka*. № 2 (14). DOI: [10.32782/2709-9261-2025-2-14-6](https://doi.org/10.32782/2709-9261-2025-2-14-6) [in Ukrainian].
- Ivanović, A., Simakova-Yefremian, E., Pivnov, Ye. (2023). Scientific Activity in the Field of Forensic Science is the Methodology Basis Forensic Researches Under Martial Law. *Theory and Practice of Forensic Science and Criminalistics*. Is. 3 (32). DOI: [10.32353/khrife.3.2023.02](https://doi.org/10.32353/khrife.3.2023.02).
- Javadova, A. N. (2024). Using Artificial Intelligence in the Forensic Science for the Analysis of Microparticles: A Systematic Review. *Futurity: Economics & Law*. Vol. 4. No. 2. DOI: [10.57125/FEL.2024.06.25.13](https://doi.org/10.57125/FEL.2024.06.25.13).
- Khrystyian, V. (2019). Do pytannia pidhotovky sudovykh ekspertiv dlia roboty v pidrozdilakh ekspertnoi sluzhby MVS [On the training of forensic experts for service within the units of the expert division of the Ministry of Internal Affairs]. *Teoriia ta praktyka sudovo-ekspertnoi diialnosti* : mat-ly VIII Mizhvidom. nauk.-prakt. konf. (Kyiv, 27.11.2019). Kyiv. URL: <https://elar.navs.edu.ua/jspui/handle/123456789/15434> [in Ukrainian].
- Kipouras, P., Ovsianynkova, I. (2021). Forensic science activity in globalization context. *Theory and Practice of Forensic Science and Criminalistics*. Is. 3 (25). DOI: [10.32353/khrife.3.2021.12](https://doi.org/10.32353/khrife.3.2021.12).
- Kishko, D. (2023). Tsyfrovizatsiia sudovo-ekspertnoi diialnosti v umovakh viiny yak shliakh zabezpechennia bezperervnoi roboty ekspertnykh ustanov [Digital forensic operations as a means of ensuring the operational continuity within forensic institutions in wartime]. *Dosvid i problemy sudovo-ekspertnoi diialnosti v umovakh voiennoho stanu v Ukraini* : mat-ly vseukr. nauk.-prakt. konf. (Lviv — Kyiv — Odesa, 28.09.2023). Lviv. URL: <http://ndekc.lviv.ua/pdf/a05122023.pdf> [in Ukrainian].
- Kolesnikova, I. A. (2023). Tsyfrovii slidy: poniattia ta yikh znachennia pry rozsliduvanni kryminalnykh pravoporushen [Digital traces: concepts and their meaning in the investigation of criminal offenses]. *Yurydychnyi elektronnyi naukovyi zhurnal*. № 10. DOI: [10.32782/2524-0374/2023-10/114](https://doi.org/10.32782/2524-0374/2023-10/114) [in Ukrainian].
- Kovalenko, A. V. (2024). Perspektyvy zaprovadzhennia 3D-tekhnologii u sudovo-ekspertnu diialnist [Prospects for introducing 3D technologies in forensic activities]. *Kryminalistyka ta sudova ekspertyza u XXI stolitti* : mat-ly vseukr. nauk.-prakt. seminaru (Kyiv, 30.05.2024). Kyiv. URL: <http://repository.ukd.edu.ua/bitstream/handle/123456789/1684/3D%20expert.pdf?sequence=1&isAllowed=y> [in Ukrainian].
- Latysh, K. V. (2024). Vplyv tekhnologii shtuchnoho intelektu na sudovo-ekspertnu diialnist: mozhlyvosti ta zahrozy [Impact of artificial intelligence technologies on forensic activity: capabilities and threats]. *Sudovo-ekspert-*

- na diialnist: zberezhennia naukovoho ta kadrovoho potentsialu v umovakh voien-
noho stanu : mat-ly IV Vseukr. forumu
sud. ekspert. (Lviv, 07.06.2024). Odesa.
URL: <http://ndekc.lviv.ua/pdf/law.pdf> [in
Ukrainian].
- Lavrynovych, O. A. (2025). Imersyvnii tekhnolohii u profesiinii pidhotovtsi fakhiv-
tsiv [Immersive technologies in the
professional training of specialists].
Collection of Scientific Papers «Λ'ΟΗΟΣ».
4 Avr. DOI: [10.36074/logos-04.04.2025.057](https://doi.org/10.36074/logos-04.04.2025.057)
[in Ukrainian].
- Nizovtsev, Yu., Parfilyo, O., Plakhotnik, O.
(2023). Identification of Person Suspect-
ed of Committing a Cybercrime Using
Wi-Fi Technologies. *Theory and Practice
of Forensic Science and Criminalistics*. Is. 4
(33). DOI: [10.32353/khrife.4.2023.03](https://doi.org/10.32353/khrife.4.2023.03).
- Ostapov, S. (2025). Potentsial tekhnolohii vir-
tualnoi realnosti u navchanni sudovykh
ekspertiv-pozhezhotekhniv v Ukraini
[Potential of Virtual Reality Technologies
in the Training of Forensic Fire Scien-
tists in Ukraine]. *Kryminalistyka i sudova
ekspertyza*. Vyp. 70. DOI: [10.33994/kn-
dise.2025.70.48](https://doi.org/10.33994/kn-dise.2025.70.48) [in Ukrainian].
- Posashkov, O. O. (2025). Do pyttannia
vprovadzhennia shtuchnoho intelektu
v sudovi ekspertyzy pid chas dosudovo-
ho rozsliduvannia kryminalnykh pravo-
porushen [On the issue of implementing
artificial intelligence in forensic exami-
nation during pre-trial investigation of
criminal offences]. *Visnyk Kryminolohich-
noi asotsiatsii Ukrainy*. T. 34. № 1. DOI:
[10.32631/vca.2025.1.58](https://doi.org/10.32631/vca.2025.1.58) [in Ukrainian].
- Samoilenko, O. A. (2020). *Osnovy metodyky
rozsliduvannia zlochyniv, vchynenykh
u kiberprostorii* [Foundations of cyber-
crime investigation methodology] :
monohrafiia / za zah. red. A. F. Volobuie-
va. Odesa. DOI: [10.32837/11300.13264](https://doi.org/10.32837/11300.13264) [in
Ukrainian].
- Shcherbakovskiy, M. (2024). Open Sources
of Cyberspace as Objects of Forensic
Research. *Theory and Practice of Forensic
Science and Criminalistics*. Is. 2 (35). DOI:
[10.32353/khrife.2.2024.02](https://doi.org/10.32353/khrife.2.2024.02).
- Shepitko, M., Latysh, K. (2024). Use of arti-
ficial intelligence in forensic science.
*Theory and Practice of Forensic Science and
Criminalistics*. Is. 3 (36). DOI: [10.32353/
khrife.3.2024.03](https://doi.org/10.32353/khrife.3.2024.03).
- Shepitko, V. (2023). Forensic Science and Fo-
rensic Expert Activity: a View Through
the Prism of Forensic Experts' Opinions.
*Theory and Practice of Forensic Science and
Criminalistics*. Is. 1 (30). DOI: [10.32353/
khrife.1.2023.02](https://doi.org/10.32353/khrife.1.2023.02).
- Shepitko, V. Yu., Avdieieva, H. K., Konovalo-
va, V. O. ta in. (2023). *Innovatsiini metody,
zasoby ta tekhnolohii v kryminalistytsi ta
sudovii ekspertyzi* [Innovative methods,
tools and technologies in criminalistics
and forensic examination] : nauk.-prakt.
posib. / za red. V. Yu. Shepitka. Kharkiv.
URL: <http://surl.li/zhtvre> [in Ukrainian].
- Shepitko, V., Shepitko, M., Latysh, K., Ka-
pustin, M., & Demidova, E. (2024). Arti-
ficial intelligence in crime counteraction:
From legal regulation to implementa-
tion. *Social & Legal Studios*. Vol. 7. No. 1.
DOI: [10.32518/sals1.2024.135](https://doi.org/10.32518/sals1.2024.135).
- Stepaniuk, R. L., Kolesnyk, V. H. (2023). Su-
dova komp'iuterno-tekhnichna eksperty-
za: stan i perspektyvy rozvytku [Forensic
computer and technical expertise: state
and prospects of development]. *Visnyk
Luhanskoho derzhavnoho universytetu vnu-
trishnikh sprav im. E. O. Didorenka*. Vyp. 2
(102). DOI: [10.33766/2524-0323.102.289-
305](https://doi.org/10.33766/2524-0323.102.289-305) [in Ukrainian].
- Yevdokimenko, S. V. (2024). Napriamy mizh-
narodnoho spivrobitnytstva u haluzi
sudovo-ekspertnoi diialnosti [Areas of
international cooperation in the field of
forensic expert activities]. *Yevropeiski per-
spektyvy*. № 1. DOI: [10.32782/ep.2024.1.20](https://doi.org/10.32782/ep.2024.1.20)
[in Ukrainian].
- Zadnichenko, O. M., Pashynska, I. V. (2025).
Shtuchnyi intelekt v sudovo-ekspertnii
diialnosti [Artificial intelligence in foren-
sic expert activity]. *Sudova ekspertyza: per-
spektyvy rozvytku ta okremi vektory zmin* :

mat-ly V Vseukr. forumu sud. ekspert.
(Lviv, 06.06.2025). Odesa. URL: [https://](https://ondise.minjust.gov.ua/wp-content/up-)
ondise.minjust.gov.ua/wp-content/up-

[loads/2025/08/forum_ondise_law__2025.](https://ondise.minjust.gov.ua/wp-content/uploads/2025/08/forum_ondise_law__2025.pdf)
pdf [in Ukrainian].

Tkachenko, N. (2025). Recent Advancements in Forensic Expert Activity in the Context of Global Societal Digital Transformation. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 35—51. DOI: 10.32353/khrife.4.2025.03.

Principle of Tax Rate Equilibrium and its Application in the Tax System of the Republic of Armenia

Karen Mamikonyan ^{*a}, Armen Safaryan ^{**b}

^{*} Ph. D in Economics, Associate Prof., National Bureau of Expertises of the Republic of Armenia, Yerevan, Republic of Armenia, ORCID: <https://orcid.org/0000-0001-5719-7404>, e-mail: mamikonyankaren@gmail.com

^{**} Doctor of Economics, Yerevan, Republic of Armenia

^a Writing – original draft, Project administration, Supervision.

^b Writing – original draft, Methodology, Conceptualization.

DOI: [10.32353/khrife.4.2025.04](https://doi.org/10.32353/khrife.4.2025.04) UDC 343.98:336.225.621.11::347.72.035

Submitted: 3 Sept 2025 / Reviewed: 15 Sept 2025 / Approved for Print: 25 Dec 2025 /

Available online: 31 Dec 2025



Currently, the tax rates in developing countries, including the Republic of Armenia, create a suboptimal burden for economic entities. From the state's perspective, this situation also contributes to the issue of tax non-collection. This study may hold significant importance for other developing countries as well, as its primary objective is to determine the optimal tax burden on entrepreneurship through mechanisms for reducing tax rates. To achieve the set goal, general scientific methods were applied (analysis and synthesis, generalization, logical-structural, etc.). The article presents a methodological approach to assessing tax efficiency by analyzing comparative data on the burden of a unified tax rate and applying the principle of tax rate equilibrium. The application of the "50% Balance" principle is considered a key aspect of this research, which is fundamentally based on Arthur Laffer's concept of the relationship between progressive taxation and government tax revenue, commonly known as the "Laffer Curve". According to this concept, as marginal tax rates increase, there is a proportional expansion in the shadow economy due to increased tax evasion by taxpayers. This approach is based on the idea of achieving "maximum benefit" for both the state and business entities in the context of taxation. However, in this case, the most stable outcome is considered to be the minimal overall result from which neither side can gain more without changing the strategies of the other sides. Applying the stated principle, strategies were selected in the

final stage of the research that correspond to the minimum values of overall benefit for each group of tax rates, such as “profit tax – Value added tax (VAT)”, “income tax – social contribution”, and “turnover tax”, where the state’s benefit is minimized compared to the benefit of the business entity, taking into account the shares of individual taxes in the tax revenues collected in the state budget.

Keywords: Tax burden; tax rate; Nash equilibrium; minimum overall benefit; profit tax; value added tax; business taxation.

Research Problem Formulation

Tax burden is a comprehensive indicator that describes the role of taxes in the life of a country’s population and is defined as the ratio of the total amount of collected taxes to the value of the Gross National Product. This research examines the tax burden, considering that the tax system of a developing country, such as the Republic of Armenia, is characterized as stable and evolving if the tax burden is distributed primarily based on the principles of fairness and efficiency. When one of these principles becomes somewhat preferential, disrupting the balance, the possibility of fully applying the other principle decreases. Notable are the views expressed by A. Smith and J. M. Keynes on the issue of tax burden in the field of economics. Smith emphasized fairness and equality in the distribution of the tax burden, while J. M. Keynes assessed efficiency as the main goal of tax policy implementation.

The level of the tax burden depends on the tax policy adopted by the state. As is well known, there are several forms of implementing tax policy, including: Rational tax policy, which is characteristic of periods of economic growth and aims to address fiscal-budgetary, economic, and social aspects. Adaptive tax policy, which is focused on increasing economic stability during periods of economic downturns and crises, depending on specific socio-economic conditions. Maximum revenue pol-

icy, which is characterized by reducing tax benefits, increasing rates, and other similar measures. Within the framework of this research study, the primary fiscal aspect of a prudent tax policy characteristic of periods of economic growth will be discussed.

It should be borne in mind, the issue of evaluating the effectiveness of taxation has not yet received a definitive resolution. That is, there are numerous approaches and hypothetical calculations regarding which part of the taxpayer’s income collection is effective. Some authors propose calculating the tax burden in absolute terms, which is the ratio of the total collected taxes to the output from a specific sector of the economy. However, the types and proportions of these taxes vary depending on the sectors and objectives involved. Of course, in this case, the practical use of the absolute tax burden is limited due to the lack of analytical possibilities to compare and contrast its value with that of other organizations and states. Nevertheless, for the entire economy, the relative tax burden is more commonly assessed quantitatively. This is determined by the ratio of total tax revenues to the Gross Domestic Product (GDP), for an organization, the assessment is made based on the percentage ratio of planned or actual taxes paid to gross income.

However, the dynamics of tax revenues, as well as the tax burden in relation to aggregate demand, allow us to conclude that a significant increase in the tax load

on the economy has, to some extent, led to a reduction in tax collection.

According to data for 2023, the Gross Domestic Product (GDP) of Armenia's economy was 9,453.2 billion AM drams (23,633.0 million US dollars), while the tax revenues of the state budget amounted to 2,221.9 billion AM drams (5,554.75 million US dollars)¹. Thus, based on the official figures provided, the ratio of "collected taxes/GDP" was 23.5 percent.

However, in our observation, it is also necessary to discuss the following issue, namely: when performing calculations using the mentioned approach, it is not possible to reflect the actual state of taxation if the potential of tax arrears, which serve as a reserve for tax revenues, is not included in the calculation. Accounting for this and making international comparisons could significantly alter the picture.

As of January 1, 2024, the amount of unpaid or unsettled taxes or payments (arrears) under the supervision of the tax authority for entities operating in Armenia totals 189.4 billion AM drams (473.5 million US dollars). Of this amount, the majority – approximately 136.4 billion AM drams (341 million US dollars) – is attributed to taxpayers who have been declared bankrupt, while 53.0 billion AM drams (132.5 million US dollars) in tax liabilities are attributable to taxpayers who are actively conducting business. When adding the aforementioned latest data to the tax revenues of the state budget, the relative tax burden indicator for 2023 amounts to 24 percent.

In the Republic of Armenia, the main reason for tax evasion under the current

economic conditions is the high tax rates on entrepreneurial activity. This is because the capacity of the production base was not taken into account when determining them. The tax rates were set at levels close to those in other countries, but the socio-economic conditions of those countries, particularly the population's standard of living, were not considered.

J. A. Mirrlees², in his 1971 paper "An Exploration in the Theory of Optimum Income Taxation", proposed a model in which tax policy must account for the possibility that citizens may hide their true incomes or deliberately reduce their efforts if tax rates are too high. From our perspective, this approach is a very important impetus in the formation of fiscal policy. The model addresses optimal taxation, taking into account income concealment and changes in individuals' efforts in response to high tax rates. This paper is a key work in which J. A. Mirrlees develops ideas related to optimal taxation and information asymmetry. Mirrlees' optimal tax system is one that collects the necessary revenues for the state without suppressing economic activity and societal productivity. He proposed a tax policy that would provide the government with adequate revenue while avoiding major economic distortions. In practice, this requires a delicate balance between: equity (redistribution of wealth and reduction of inequality) and efficiency (maintaining incentives for work, entrepreneurship and investment)³.

It can be assumed that high tax rates perform their functions quite effectively on a regular basis in a society with a high level of welfare. However, it should be noted that

-
- 1 Annual Report of the Activities of the State Revenue Committee of the Republic of Armenia for 2023 / State Revenue Committee of the Republic of Armenia : web. URL: <https://www.src.am/en> (date accessed: 30.08.2025).
 - 2 James A. Mirrlees is a British economist, a representative of Neo-Keynesianism, and the recipient of the 1996 Nobel Prize for his research in the field of information asymmetry.
 - 3 Mirrlees J. A. An Exploration in the Theory of Optimum Income Taxation. *The Review of Economic Studies*. 1971. Vol. 38. Is. 2. Pp. 175–208.

in many countries, including Armenia, they do not correspond to relatively narrow tax bases.

Regarding the shadow economy, it is well-known that it comprises unregulated, untaxed, and illegal activities, and in our reality, it inevitably constitutes a certain part of global economic activity. The impact of the shadow economy on the reduction of tax revenues is unavoidable. As a short-term response to this situation, the state may increase tax rates; however, in the long term, this could have the opposite effect.

In reality, there are many reasons that encourage or force businesses to operate in the shadow economy. In other words, in many cases, this happens not by choice but out of necessity. Governments and organizations often engage directly with the shadow economy, leading to a whole range of ethical and political economic dilemmas. Nevertheless, it is important to understand what specifically drives businesses to operate in the shadow economy.

Table 1 below shows averaged data on the size of the shadow economy in different countries for comparison.

Table 1

**Estimated Size of the Shadow Economy
(as a Percentage of GDP) ⁴**

Country *	2025 (Forecast)	Average Value (2011–2025)
Australia	8.89	10.85
Azerbaijan	58.38	58.05

Brazil	34.2	34.69
Canada	13.8	14.3
China	9.9	10.12
Baltic States (Average)	24.34	25.89
Hong Kong	13.65	14.05
India	13.6	16.35
Indonesia	16.17	16.51
Italy	26.37	26.37
Japan	7.86	9.5
Russia	39.3	39.19
Singapore	14.06	12.86
Turkey	21.55	24.7
United Kingdom	10.83	11.33
USA	6.94	7.59
World	21.39	22.35

* Data related to Armenia are not included in this table.

As for the Republic of Armenia, then According to the IMF working paper, which summarizes statistical data on the shadow economies of 158 countries from 1991 to 2015, the average size of the shadow economy in Armenia as a percentage of GDP was 42.6 percent ⁵. It should also be noted that according to estimates by various researchers, the average size of the shadow economy in Armenia for the years 2019–2023 fluctuates between 23 and 27 percent of formal GDP, which certainly speaks of a high shadow economy ⁶.

4 Emerging from the shadows the shadow economy to 2025 / ACCA : web. URL: <https://www.accaglobal.com/gb/en/technical-activities/technical-resources-search/2017/june/emerging-from-the-shadows-the-shadow-economy-to-2025.html> (date accessed: 30.08.2025).

5 Medina L., and Schneider F. Shadow Economies Around the World: What Did We Learn Over the Last 20 Years? *IMF Working Paper*. No. 2018/017, 2018. 76 p. DOI: 10.5089/9781484338636.001 (date accessed: 30.08.2025).

6 ՀՀ սովերային տնտեսության գնահատումը հարկային համակարգի տեսանկյունից / «ԼՈՒՅՍ» հիմնադրամ : կայքէջ. 15 հունիսի 2020. URL: <https://www.luys.am/index.php?m=publication-sOne&pid=155&lang=arm> (date accessed: 30.08.2025) ; Մովսիսյան Ք. Հ. Հայաստանի Հանրապետության հարկային համակարգի արդյունավետության բարձրացման արդի հիմնախնդիրները : տնտեսագիտության թեկնածուի աստիճանի համարատեսակության ամփոփում. Երեվան, 2024. 22 էջ. URL: <https://degrees.hesc.am/sites/default/files/2024-07/knkush-movsisyan.pdf> (date accessed: 30.08.2025).

The reality is that in Armenia, a large number of economic entities, in each period, are objectively or not objectively unable to bear the existing tax burden (they hide taxes), which is why tax undercollection occurs. In practice, these entities have three options: either to engage in shadow transactions, to cease their operations, or to remain honest taxpayers but face bankruptcy due to accumulated tax liabilities. For the sake of fairness, it should be noted that there are also economic entities that are capable of bearing the full tax burden but choose not to do so. This reluctance

may depend on the business psychology exhibited by these entities. It must be acknowledged that the development of a business is not only based on adherence to laws and principles that ensure economic progress; emotional and psychological factors of managers can also play a significant role ⁷.

The issue discussed in this study is arguably directly related to the bankruptcy processes of economic entities. From this perspective, it is essential to reference certain statistical indicators of the activities of the RA State Revenue Committee.

Table 2

Bankruptcy Applications Satisfied by the State Revenue Committee of Armenia (2021–2023) ⁸

Decisions on Bankruptcy Applications Accepted by the State Revenue Committee of Armenia	Year-to-Date Growth (2021)		Growth Rate (%)	Year-to-Date Growth (2022)		Growth Rate (%)	Year-to-Date Growth (2023)		Growth Rate (%)
	Quantity	Amount (in million drams)		Quantity	Amount (in million drams)		Quantity	Amount (in million drams)	
	340	7,195.34	96%	328	6,063.01	84%	434	9,839.80	162%

According to the growth rate data presented in Table 2 above, the 2023 figures are somewhat discouraging, which is largely due to the increase in bankruptcy cases.

As is well known, fiscal policy can be either stimulating or restraining, depending on a country's development level. Specifically, to prevent economic downturns, a stimulating fiscal policy is implemented, which involves increasing government spending and reducing tax rates. In the

case of reduced public expenditures and increased tax rates, a restraining fiscal policy leads to a restriction of economic growth. Thus, it is considered that one of the fundamental methods for combating the shadow economy is the significant reduction of the tax burden, which is manifested through the establishment of tax incentives and, primarily, through the reduction of tax rates. The question of determining the optimal tax burden for enterprises, using

7 Մամիկոնյան Կ. Հ., Գալստյան Է. Լ. Բիզնեսի հոգեբանությունը. կամ՝ ձեռնարկատիրական վարման նոր կանոններ տնտեսական հանցագործությունների կանխարգելման համատեքստում. ՀՀ ԳԱԱ Փորձաքննությունների ազգային բյուրոյի ՊՈԱԿ-ի Դատական փորձաքննության և քրեագիտության հայկական հանդես. 2023. Համար 10. Էջ 122–129. DOI: 10.53587/25792865-2023.10-122 (date accessed: 30.08.2025).

8 Annual Reports of the State Revenue Committee of the Republic of Armenia for 2022–2023 / State Revenue Committee of the Republic of Armenia : web. URL: <https://www.src.am/en> (date accessed: 30.08.2025).

mechanisms to reduce tax rates, forms the basis of the objective of this research.

Analysis of Essential Researches and Publications

As is commonly believed: Fiscal policy plays a significant role in ensuring economic growth in the country⁹. In the case of a reduction in government spending, there is a decrease in production volumes, which consequently leads to a reduction in GDP figures. Logically, by increasing government spending and reducing tax rates, the state stimulates GDP growth. In this regard, it is worth discussing the views of some economist authors below.

Thus, based on the results of conducted research, some authors, on the contrary, assert that public or government expenditures have a negative impact on economic growth¹⁰. Some authors demonstrate, based on findings with practical and research significance, that general government expenditure does not effectively contribute to positive fiscal impacts on the European economy. Therefore, policymakers could enhance economic growth by

gradually reducing public spending and striving for balanced budgets to maintain macroeconomic stability. The reason, in particular, is the high share of social contributions, which is recognized as a factor hindering growth. G. Kutasi and A. Marton also considered that the high share of social contributions hinders the rate of economic growth¹¹. In contrast to this, authors Jie Zhang and Junsen Zhang found that social contributions contribute to overall economic growth¹². The co-authored work of M.-L. Th. Nguyen, N. Ph. Th. Hang and others has achieved great success in demonstrating the positive impact of tax revenue on economic growth in Vietnam. However, this impact has been considered negative, especially in the long term¹³. R. P. Pradhan, M. B. Arvin and others conclude in their co-authored research that both financial market development and taxation propensity stimulate economic growth in the long run. In contrast, the short-term results are not uniform and depend on the specific measure of financial market development used¹⁴. Other authors presents that no discernible patterns between tax indicators (level and structure) and economic

9 Mose N. Do Fiscal Transfers Foster Regional Economic Growth? *Financial Internet Quarterly*. 2021. Vol. 17. Is. 1. Pp. 19–27. DOI: 10.2478/fiqf-2021-0003 (date accessed: 30.08.2025).

10 Vintilă G., Gherghina S. C., Chiricu C. S. Does fiscal policy influence the economic growth? Evidence from OECD countries. *Economic Computation and Economic Cybernetics Studies and Research*. 2021. Is. 2. Vol. 55. Pp. 229–246. DOI: 10.24818/18423264/55.2.21.14 (date accessed: 30.08.2025).

11 Kutasi G., Marton A. The Optimal Tax Structure from GDP-growth Perspective. *Finanzas y Política Económica*. 2024. Vol. 16. No. 1. Pp. 121–143. DOI: 10.14718/revfinanzpoliticon.v16.n1.2024.6 (date accessed: 30.08.2025).

12 Zhang Ji., Zhang Ju. How Does Social Security Affect Economic Growth? Evidence from Cross-Country Data. *Journal of Population Economics*. 2004. Vol. 17 (3). Pp. 473–500. DOI: 10.1007/s00148-004-0198-x (date accessed: 30.08.2025).

13 Nguyen M.-L. Th., Hang N. Ph. Th., Bui T. N., Ho H. Th., Thai T. D. The relationship between tax revenue and economic growth: an empirical study in Vietnam. *Afro-Asian Journal of Finance and Accounting*. 2023. Vol. 13. No. 4. Pp. 434–451. DOI: 10.1504/AJFA.2023.132957 (date accessed: 30.08.2025).

14 Pradhan R. P., Arvin M. B., Nair M. S., Hall J. H. The dynamics between financial market development, taxation propensity, and economic growth: a study of OECD and non-OECD countries. *Quality & Quantity*. June, 2022. Vol. 56 (3). Pp. 1503–1534. DOI: 10.1007/s11135-021-01192-w (date accessed: 30.08.2025).

growth indicators were identified through statistical analysis. In essence, it cannot be definitively concluded that reduced tax levels and/or increased indirect tax shares do explicitly foster national economic growth. Tax impact on economic growth varies significantly across developed and developing economies, presenting a complex and nuanced picture. The co-authored work by N. Balasoïu and others has shown empirical results indicating, that corporate income taxes significantly negatively impact economic growth for both clusters of high- and limited fiscal efficiency countries. Additionally, personal income tax was associated with lower economic growth for countries in the limited fiscal efficiency group. Thus, from the perspective of policymakers, lowering direct taxation can increase disposable income, stimulate consumption and economic growth, encourage investment leading to job creation, increase competitiveness, and reduce tax evasion and avoidance, thereby leading to a more efficient tax system¹⁵.

Nevertheless, the bold idea proposed could, in some sense, also be considered a counterpoint to the aforementioned statements, suggesting that, in order to ensure stable long-term economic growth, it may not be necessary to exhibit flexibility in tax rates based on economic processes occurring in different phases of economic upturns or downturns. Instead, it is essential to develop and implement a strategy that establishes a balanced trajectory for tax rates, with the intention of keeping them unchanged in the long term.

In this case, it is important to refer to the following provisions in the Armenian government's program: *"The tax policy implemented by the state should aim at increasing the investment attractiveness of the economy and improving the level of economic activity, thereby creating stable conditions for export growth and long-term economic growth, redistribution of public goods, and strengthening fiscal stability. <...> To promote long-term economic growth, a reduction in direct tax burdens will be implemented at the expense of indirect taxes. This will enhance the competitiveness of the economy, leading to increased profitability and investment incentives in the export sector, which is crucial for future development"*¹⁶.

Indirect taxation constitutes an advantageous solution towards externalities—mainly because of the fact that increasing indirect taxation implies the rising of prices followed by a reduction in consumption and also a lessening of the negative effects caused by the defective management of governments in applying fiscal policies¹⁷.

Returning to the example of the Republic of Armenia, it is important to highlight the significant changes in tax rates implemented in the country in recent years. Specifically, as a result of changes in the Armenian Tax Code, the profit tax rate was reduced from 20% to 18% in 2020. Additionally, the progressive income tax system was replaced with a flat rate, which has been gradually decreasing each year, reaching 20% by 2023.

In the "Fiscal Policy" section of the Armenian government's program for

15 Balasoïu N., Chifu I., Oancea M. Impact of Direct Taxation on Economic Growth: Empirical Evidence Based on Panel Data Regression Analysis at the Level of EU Countries. *Sustainability*. 2023. Art. 15(9):7146. DOI: [10.3390/su15097146](https://doi.org/10.3390/su15097146) (date accessed: 30.08.2025).

16 Programme of the Government of Armenia 2019 – RA Government Decision No 65-A/2019 / Climate Change Laws of the World : web. URL: <https://surl.lu/zvukae> (date accessed: 30.08.2025).

17 Helbling Th. Back to Basics. What Are Externalities? What happens when prices do not fully capture costs. *Finance & Development*. Dec 2010. Pp. 47–49. URL: <https://www.elibrary.imf.org/view/journals/022/0047/004/article-A016-en.xml> (date accessed: 30.08.2025).

2021–2026, the main content of tax policy is defined, which should enhance the competitiveness of the business environment while also ensuring the tax revenues set by the state budget. Additionally, the creation of an environment that is perceivable, fair, and predictable from the investors' perspective is emphasized¹⁸. In contrast to the aforementioned, it should be emphasized that, as of January 2025, the tax rates for small and medium-sized enterprises (SMEs) in the Republic of Armenia have effectively doubled – thus creating the ground to bring or pull SME taxation into the general taxation at higher rates field in the future.

Research Methods

General scientific methods (analysis and synthesis, generalization, logical and structural, etc.).

Article Purpose

Primary objective is to determine the optimal tax burden on entrepreneurship through mechanisms for reducing tax rates.

Main Content Presentation

Methodology and Data

As presented regarding the aforementioned issue, the tax system of the Republic of Armenia requires the implementation of fundamental methods for optimizing tax burden management in combating the shadow economy. Among these methods, the proposed approach of “Tax Rate Equilibrium” could play a significant role. This concept may also serve as a strategic tool for ensuring GDP growth in the long run.

In the early 1950s, Nobel prize winner John Nash formulated his famous “Nash Equilibrium” concept in non-antagonistic games, which later became central to the entire theory of games. According to this concept, participants in a conflict should use an optimal strategy that leads to the creation of a stable equilibrium. It is advantageous for players to maintain this equilibrium, as any deviation would worsen their position.

The idea of balancing tax rates presented below is based on this very conceptual principle, according to which when the conflicting parties seek to achieve the ‘maximum benefit,’ the most stable outcome will be the one where none of the parties can gain further advantage without altering the strategies of others.

Nevertheless, within the framework of this research, it is necessary to identify the strategic points of tax rates where the minimum benefit for the State Revenue Committee (SRC) of Armenia corresponds to the minimum loss for the economic entities, as well as the points where the maximum benefit for the economic entities corresponds to the maximum loss for the SRC of Armenia.

It is worth noting that during the year 2023, the shares of specific tax types in the tax revenues of the state budget of the Republic of Armenia were as follows: Value added tax (VAT) – 35.6%, profit income tax – 14.9%, personal income tax – 25.7%, social contributions – 4.2%, and turnover tax – 2.4%. And it is important to emphasize that the above-mentioned shares of tax types will be used to make a specific selection among the tax rate strategies presented in this study.

As presented, it is fundamentally acceptable that, it has been fundamentally acknowledged that the current tax rates in

18 2022-2025 թվականների հարկային եկամուտների կառավարման ծրագիրը հաստատելու մասին ՀՀ կառավարության 12.08.2022թ.-ի N 919-Լ որոշում. URL: <https://www.irtek.am/views/act.aspx?aid=117426> (date accessed: 30.08.2025).

Armenia create a non-optimal burden for businesses. From the state's perspective, this situation also contributes to the problem of tax undercollection.

Based on this consideration, three groups of tax burdens have been constructed below, reflecting strategies with decreasing trends in the current tax rates in Armenia (except the new turnover tax rates, which will be implemented starting in 2025).

Nevertheless, in the first group, the profit tax rate range is {16-19} percent, compared to the current 18 percent, and the VAT range is {18-20} percent, compared to the current 20 percent (that is, in this group, the minimum aggregate tax rate amounts to $18 + 16 = 34$ percent). In the second group, the income tax rate range is {17-20} percent, compared to the current 20 percent, and the social contribution rate range is {3-5} percent, compared to the current 5 percent. In the third group, the rate range is {turnover tax on trade – 2, turnover tax on production – 1.5, turnover tax on other activities – 2, turnover tax on public catering – 2.5 from the lower limit to the upper limit starting from 2025: turnover tax on trade – 10, turnover tax on production – 7, turnover tax on other activities – 10, turnover tax on public catering – 12} percents.

It has also been accepted that tax burdens created by tax rates lower than the lower limits of the specified rates are unsuitable for planning the growth of tax revenues in the state budget of Armenia. Moreover, considering the comparative data presented below, it becomes evident that, in most developed and developing countries, no lower threshold applies than the corresponding tax rates in effect.

According to comparative data on the taxation of business activities in various developed countries and Armenia, Japan has the lowest burden with a combined tax rate of 33%, followed by Germany and Armenia with a combined tax burden of 38% (with a profit tax rate of 18% and VAT of 20%). In other countries, the burden from business taxation rates is higher, for example, the United Kingdom at 45%, the United States at 45%, France at 45%, Canada at 53%, and Italy at 46%, among others ¹⁹.

It should be noted that one of the main issues related to the transition to a unified general taxation system in the Republic of Armenia (profit tax and VAT) is the involvement of specialized (professional) skills required for tax accounting, particularly for calculating profit tax. This issue is especially problematic for small organizations. Moreover, the necessity of introducing alternative taxation systems, including the turnover tax system, has been justified by this issue. It should also be noted that the 20% standard VAT rate is the highest within the EAEU region and is applied in the Russian Federation, Belarus, and Armenia. Regarding the turnover tax, the main issue pertains to the principle of taxation, specifically which turnover threshold should be used as the dividing line between the general VAT and profit tax system and the simplified turnover tax system.

However, in the following, the lower limit for the combined profit tax and VAT rates in the 1st group of tax burdens in Armenia has been set at 34% (with a Profit Tax rate of 16% and a VAT rate of 18%).

In this study, within the framework of the methodological approach for determining the assessment of tax efficien-

19 Մամիկոնյան Կ. Հ., Մելքոնյան Ա. Մ., Հարիթյան Ա. Հ. հայաստանի հանրապետություն ապրանքների ներմուծման դեպքում ԱԱՀ-ի հետաձգված հաշվառման մեխանիզմի կիրառման հիմնավորումը (փորձագիտական կարծիք). ՀՀ ԳԱԱ Փորձաքննություն-ների ազգային թյուր ՊՈԱԿ-ի Դատական փորձաքննության և քրեագիտության հայկական հանդես. 2024. Համար 11. Էջ 79—94.
DOI: 10.53587/25792865-2024.11-79 (date accessed: 30.08.2025).

cy through the application of the tax rate equilibrium principle, in the first group of tax burden presented below, the lower bound of the combined tax rate for corporate profit tax and VAT in the Republic of Armenia has been set at 34 percent (Profit tax – 16%, VAT – 18%, the sum of the minimum rates). According to A. Laffer, the

optimal tax rate begins at 35 percent of income taxation (The “Discussions” section also presents some analyses regarding the Laffer Curve).

Results

The first group of tax burden strategies based on tax rates is presented below.

Table 3

Group of Strategies for Tax Burden Based on Profit Tax and VAT Rates

1	Tax rates		Damage > 36.5*	Benefit < 36.5
	1	Profit Tax – 16%, VAT – 20%		36
	2	Profit Tax – 16%, VAT – 19%		35
	3	Profit Tax – 16%, VAT – 18%		34
	4	Profit Tax – 17%, VAT – 20%	37	
	5	Profit Tax – 17%, VAT – 19%		36
	6	Profit Tax – 17%, VAT – 18%		35
	7	Profit Tax – 18%, VAT – 20%	38	
	8	Profit Tax – 18%, VAT – 19%	37	
	9	Profit Tax – 18%, VAT – 18%		36
	10	Profit Tax – 19%, VAT – 20%	39	
	11	Profit Tax – 19%, VAT – 19%	38	
	12	Profit Tax – 19%, VAT – 18%	37	
	Total		226	212

* Total value / number of strategies: $438 \div 12 = 36.5$.

Above the resulting average will be considered a loss, and below will be considered a benefit.

In the first group, the rows selected from the Loss column are 4, 8, and 12, and from the Benefit column, the rows selected are 1, 5, and 9. Considering that VAT contributes a larger share to the tax revenue than profit tax, the line with the lower VAT rate from the selected rows for the benefit of the RA State Revenue Committee (in the Loss column) is line 12, and for the benefit of the business entity, the line with the higher VAT rate is line 1.

In the first group, the selected lines are:

- for the SRC benefit (loss column): Lines 4, 8, and 12;

- for the taxpayer’s benefit (gain column): Lines 1, 5, and 9.

Considering that the share of VAT in tax revenues is higher than that of corporate tax, the selected lines are:

- for the SRC’s benefit: Line 12, which has the lower VAT rate;
- for the taxpayer’s benefit: Line 1, which has the higher VAT rate.

According to the “50% Equilibrium” principle, the minimum value of overall benefit in the group will be calculated as follows: $(37 + 36) \times 50\% = 36.5\%$.

Here, it should be noted that the basis for the “50% Balance” principle is presented below in the “Discussions” section.

The second group of tax burden strategies based on tax rates is presented below.

Table 4

**Group of Tax Burden Strategies
Based on Income Tax and social charge**

2	Tax rates		Damage > 22.5 *	Benefit < 22.5
	1	Income tax 20, social charge 5	25	
	2	Income tax 20, social charge 4	24	
	3	Income tax 20, social charge 3	23	
	4	Income tax 19, social charge 5	24	
	5	Income tax 19, social charge 4	23	
	6	Income tax 19, social charge 3		22
	7	Income tax 18, social charge 5	23	
	8	Income tax 18, social charge 4		22
	9	Income tax 18, social charge 3		21
	10	Income tax 17, social charge 5		22
	11	Income tax 17, social charge 4		21
	12	Income tax 17, social charge 3		20
	Total		142	128

* Overall Value / Number of Strategies = $270 \div 12 = 22.5$.

Values above the calculated average of 22.5 are considered as “Damage,” while those below this value are considered as “Benefit.”

In the second group, the lines selected are:

- For the SRC benefit (loss column): Lines 3, 5, and 7.
- For the taxpayer’s benefit (gain column): Lines 6, 8, and 5.

Considering that the share of income tax in tax revenues is higher than that of

social contributions, the selected lines are:

- For the SRC’s benefit: Line 7, which has the lower income tax rate.
- For the taxpayer’s benefit: Line 6, which has the higher income tax rate.

According to the “50% Equilibrium” principle, the minimum overall benefit for the group will be: $(23 + 22) \times 50\% = 22.5\%$.

The third group of tax burden strategies based on tax rates is presented below.

Table 5

**Group of Tax Burden Strategies
Based on Turnover Tax Rates
for Economic Entities**

3	Tax rates		Damage > 24.3 *	Benefit < 24.3
	1	Trade turnover tax – 10	39	
		Turnover tax from production activity – 7		
		Turnover tax from other activities – 10		
		Turnover tax from public food – 12		

Continue of table 5

		Tax rates	Damage > 24.3 *	Benefit < 24.3
3	2	Trade turnover tax – 9	34	
		Turnover tax from production activity – 6		
		Turnover tax from other activities – 9		
		Turnover tax from public food – 10		
	3	Trade turnover tax – 8	30	
		Turnover tax from production activity – 5		
		Turnover tax from other activities – 8		
		Turnover tax from public food – 9		
	4	Trade turnover tax – 7	26.5	
		Turnover tax from production activity – 4.5		
		Turnover tax from other activities – 7		
		Turnover tax from public food – 8		
	5	Trade turnover tax – 6		23
		Turnover tax from production activity – 4		
		Turnover tax from other activities – 6		
		Turnover tax from public food – 7		
	6	Trade turnover tax – 5		19.5
		Turnover tax from production activity – 3.5		
		Turnover tax from other activities – 5		
		Turnover tax from public food – 6		
	7	Trade turnover tax – 4		16
		Turnover tax from production activity – 3		
		Turnover tax from other activities – 4		
		Turnover tax from public food – 5		
	8	Trade turnover tax – 3		12.5
		Turnover tax from production activity – 2.5		
		Turnover tax from other activities – 3		
		Turnover tax from public food – 4		
	9	Trade turnover tax – 2.5		10
		Turnover tax from production activity – 2		
		Turnover tax from other activities – 2.5		
		Turnover tax from public food – 3		
	10	Trade turnover tax – 2		8
		Turnover tax from production activity – 1.5		
		Turnover tax from other activities – 2		
		Turnover tax from public food – 2.5		
	Total		129.5	89

* Total value / number of strategies = $218.5 \div 9 = 24.3$.

Values above the calculated average will be considered a loss, while values below will be considered a benefit.

In the third group, row 3 from the Damage column and row 4 from the Benefit column have been selected.

Considering that the share of trade turnover tax in tax revenues is higher compared to other types of turnover tax, the group with the lower trade turnover tax rate has been selected from the Damage column for the tax authority's benefit (i.e., row 3), while the group with the higher trade turnover tax rate has been selected for the business benefit (i.e., group 4). According to the "50% equilibrium" principle, the minimum value of the overall benefit in the group will be $(26.5 + 23) \times 50\% = 24.75$ percent.

Discussion

As introduced above, according to John Nash's well-known conceptual principle of "Nash Equilibrium," it is necessary to select the lowest benefit points for the RA State Revenue Committee (SRC) in tax rate strategies, which will be considered the minimum loss points for the economic entity, as well as the maximum benefit points for the economic entity, which will be considered the maximum loss points for the RA SRC.

Following this logic, in the next phase of the study, it was necessary to set the lower limit of the combined tax rate for profit tax and VAT in the first group of the tax burden in the Republic of Armenia (a combined minimum rate of 16% for profit tax and 18% for VAT). In this case, since, according to A. Laffer, the optimal tax rate starts at 35% for income taxation, the combined lower limit for profit tax and VAT in this study has been set at 34%.

It should be noted that the aforementioned "50% equilibrium" principle is fundamentally based on the idea of the

progressive nature of taxation and the relationship between budgetary tax revenues, which is known as the "Laffer Curve"²⁰. According to this principle, the higher the marginal tax rates, the more likely taxpayers are to engage in tax evasion, leading to an expansion of the shadow economy²¹. The essence of this hypothesis is that the marginal tax rate for budget revenue collection should be equal to 30 percent of the income, while the optimal tax rate should range between 35 and 40 percent. It should also be noted that, according to the research by Yu. Ananiashvili and V. Papava, in economies where the actual average tax rate exceeds 30%, it is entirely acceptable for the optimal rate to be considered within the 35-37% range²². Under a tax rate of 40-50% for income collection, the growth of budget revenues begins to slow down. When the rate exceeds 50%, which is referred to as the "forbidden zone," there is not only a sharp decrease in budget revenues but also a decline in savings and investments. This means that up to a 50% tax rate, budget revenues increase, while exceeding this threshold leads to tax under-collection, even with an increase in the tax burden on the subjects of tax relations. When the tax rate exceeds 50%, which is referred to as the "forbidden zone," there is a noticeable sharp decline not only in budgetary revenues but also in savings and investments. That is, with a tax rate of up to 50%, budget revenues increase, while exceeding this threshold leads to tax under-collection, even with an increase in the tax burden on the subjects of tax relations.

20 Laffer A., Meiselman D. The Phenomenon of Worldwide Inflation. American Enterprise Institute, 1975. 218 p. URL: <https://ideas.repec.org/b/aei/rpbook/725613.html> (date accessed: 30.08.2025).

21 Laffer A. B., Moore S., and Tanous P. J. The End Of Prosperity: How Higher Taxes Will Doom The Economy – If We Let It Happen. New York : Threshold Editions, 2008. 352 p.

22 Ananiashvili Iu., & Papava V. Laffer-Keynesian Synthesis and Macroeconomic Equilibrium. New York : Nova Science Publ., 2014. 106 p. URL: https://www.academia.edu/36611975/Laffer_Keynesian_Synthesis_and_Macroeconomic_Equilibrium (date accessed: 30.08.2025).

According to A. Laffer, the Laffer Curve has been empirically confirmed in the United States at least three times over the past 100 years: during the Harding-Coolidge tax reform (in the mid-1920s), when tax rates were reduced under President Kennedy (in the mid-1960s), and during the tax reform²³ under President Reagan (in the early 1980s). In other words, the functioning of the Laffer Curve enhances the country's economic growth indicators. Besides the United States, this phenomenon was also observed in the United Kingdom in the 1980s, in Ireland in the 1990s, and so on.

According to proponents of the aforementioned theory, lower tax rates contribute to improved tax collection, the expansion

of entrepreneurial activities, and an increase in investment activity²⁴. However, critics argue that reducing the tax burden is meaningful only for the ongoing tax liberalization of economic agents, supporting them, and stimulating production activities, rather than for replenishing the country's budget. They claim that such reductions cannot, under any circumstances, ensure a proportional increase in tax revenues.

Conclusions

As a result of combining and generalizing the presented data, the following minimum and maximum values for damage and benefit in the group have been obtained:

Table 6

Damage and benefit in the workload groups by tax rates

Groups	Economic entity		SRC	
	Damage	Benefit	Damage	Benefit
1	37	36	36	37
2	23	22	22	23
3	26.5	23	23	26.5
Total	86.5	81	81	86.5
Total	167.5		167.5	

Thus, in the final stage, the strategies corresponding to the minimum values of total benefits obtained for each of the three groups were selected. These strategies were chosen based on the cases where the benefit of the tax rates for the State Revenue Committee of Armenia is the lowest compared to the benefit for the business entity, considering the share of individual taxes in the total tax revenues collected for the state budget:

for the 1st group, the strategy selected is the one with the lower VAT rate, which is "Profit Tax – 19, VAT – 18";

for the 2nd group, the selected strategy is the one with the lower income tax rate, which is "Income Tax 18, social charge 5";

for the 3rd group, the selected strategy is the one with the lower trade turnover tax rate, which is: "Trade turnover tax – 6", "Turnover tax from production activity –

23 President Ronald Reagan's Initial Actions Project / A. B. Laffer (introduction). New York : Threshold Ed., 2009. 114 p.

24 Becsi Z. The Shifty Laffer Curve. *Economic review (Federal Reserve Bank of Atlanta)*. 2000. Art. 85 (Q3):53-64. URL: https://www.researchgate.net/publication/5025629_The_shifty_Laffer_curve (date accessed: 30.08.2025).

4”, “Turnover tax from other activities – 6”, “Turnover tax from public food – 7”.

The practical significance of this study lies primarily in determining the optimal tax burden for business activity taxation in the Republic of Armenia, however, but it may also be of great importance for other developing countries, as the issue of determining the optimal tax burden for entrepreneurship through tax rate reduction mechanisms is relevant in the tax systems of all states.

Принцип рівноваги податкових ставок і його застосування в податковій системі Республіки Вірменія

Карен Мамиконян, Армен Сафарян

Сьогодні податкові ставки в країнах, що розвиваються, зокрема в Республіці Вірменія, створюють неоптимальне навантаження на економічних суб'єктів. У контексті державних інтересів така ситуація також спричиняє проблеми несплати податків. Результати цього дослідження можуть стати у пригоді іншим країнам, що розвиваються, оскільки воно має на меті визначити оптимальне податкове навантаження на підприємництво, послуговуючись механізмом зниження податкових ставок. Для досягнення поставленої мети застосовано загальнонаукові методи (аналіз і синтез, узагальнення, логіко-структурний тощо). Викладено методичний підхід до оцінювання податкової ефективності шляхом аналізування порівняльних даних щодо податкового навантаження від єдиної податкової ставки й застосування принципу податкової рівноваги. Застосування принципу 50-відсоткового балансу є провідним аспектом цього дослідження, яке впливає із концепції А. Лаффера про взаємозв'язок між прогресивним оподаткуванням і державними податковими надходженнями, відомої як «крива Лаффера». Відповідно до

цєї концепції, зі збільшенням граничних ставок податку відбувається пропорційне розширення тіньової економіки через збільшення ухилення від сплати податків платниками податків. Здебільшого такий підхід послуговується забезпеченням «оптимальної користі» державі й бізнесу у сфері оподаткування. Однак у цьому разі найбільш стабільним результатом є мінімальний загальний результат, від якого жодна зі сторін не може отримати більше, не змінюючи стратегії інших сторін. На завершальному етапі дослідження обрано стратегії, які відповідають мінімальним значенням сумарної вигоди для кожної групи ставок податків, таких як «податок на прибуток — податок на додану вартість», «податок на прибуток — соціальні внески», «податок з обороту», де вигоду держави мінімізовано порівняно з вигодою суб'єкта господарювання з урахуванням частки окремих податків у податкових надходженнях до державного бюджету.

Ключові слова: податкове навантаження; податкова ставка; рівновага за Нешем; мінімальна сумарна вигода; податок на прибуток; податок на додану вартість; оподаткування бізнесу.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish, or manuscript preparation.

Participants

Authors have contributed solely to intellectual discussion underlying this document, case law research, writing and editing, and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

Authors declare no conflict of interest.

References

- Ananiashvili, Iu., & Papava, V. (2014). *Laffer-Keynesian Synthesis and Macroeconomic Equilibrium*. New York : Nova Science Publ. URL: https://www.academia.edu/36611975/Laffer_Keynesian_Synthesis_and_Macroeconomic_Equilibrium.
- Balasoïu, N., Chifu, I., Oancea, M. (2023). Impact of Direct Taxation on Economic Growth: Empirical Evidence Based on Panel Data Regression Analysis at the Level of EU Countries. *Sustainability*. Art. 15(9). DOI: 10.3390/su15097146.
- Becsi, Z. (2000). The Shifty Laffer Curve. *Economic review (Federal Reserve Bank of Atlanta)*. 2000. Art. 85 (Q3). URL: https://www.researchgate.net/publication/5025629_The_shifty_Laffer_curve.
- Helbling, Th. (2010). Back to Basics. What Are Externalities? What happens when prices do not fully capture costs. *Finance & Development*. Dec. URL: <https://www.elibrary.imf.org/view/journals/022/0047/004/article-A016-en.xml>.
- Kutasi, G., Marton, A. (2024). The Optimal Tax Structure from GDP-growth Perspective. *Finanzas y Política Económica*. Vol. 16. No. 1. DOI: 10.14718/revfinanzpoliticon.v16.n1.2024.6.
- Laffer, A. B., Moore S., and Tanous, P. J. (2008). *The End Of Prosperity: How Higher Taxes Will Doom The Economy – If We Let It Happen*. New York : Threshold Editions.
- Laffer, A., Meiselman, D. (1975). *The Phenomenon of Worldwide Inflation*. American Enterprise Institute. URL: <https://ideas.repec.org/b/aei/rpbook/725613.html>.
- Medina, L., and Schneider, F. (2018). Shadow Economies Around the World: What Did We Learn Over the Last 20 Years? *IMF Working Paper*. No. 2018/017. DOI: 10.5089/9781484338636.001.
- Mirrlees, J. A. (1971). An Exploration in the Theory of Optimum Income Taxation. *The Review of Economic Studies*. Vol. 38. Is. 2.
- Mose, N. (2021). Do Fiscal Transfers Foster Regional Economic Growth? *Financial Internet Quarterly*. Vol. 17. Is. 1. DOI: 10.2478/fiqf-2021-0003.
- Nguyen, M.-L. Th., Hang, N. Ph. Th., Bui, T. N., Ho, H. Th., Thai, T. D. (2023). The relationship between tax revenue and economic growth: an empirical study in Vietnam. *Afro-Asian Journal of Finance and Accounting*. Vol. 13. No. 4. DOI: 10.1504/AA-JFA.2023.132957.
- Pradhan, R. P., Arvin, M. B., Nair, M. S., Hall, J. H. (2022). The dynamics between financial market development, taxation propensity, and economic growth: a study of OECD and non-OECD countries. *Quality & Quantity*. Vol. 56 (3). DOI: 10.1007/s11135-021-01192-w.
- President Ronald Reagan's Initial Actions Project (2009) / A. B. Laffer (introduction). New York : Threshold Ed.
- Vintilă, G., Gherghina, S. C., Chiricu, C. S. (2021). Does fiscal policy influence the economic growth? Evidence from OECD countries. *Economic Computation and Economic Cybernetics Studies and Research*. Is. 2. Vol. 55. DOI: 10.24818/18423264/55.2.21.14.
- Zhang, Ji., Zhang, Ju. (2004). How Does Social Security Affect Economic Growth? Evidence from Cross-Country Data. *Journal of Population Economics*. Vol. 17 (3). DOI: 10.1007/s00148-004-0198-x.
- ՀՀ ստվերային տնտեսության գնահատումը հարկային համակարգի տեսանկյունից [Assessment of the shadow economy of the Republic of Armenia from the perspective of the tax system] (2020) / «ԼՈՒՅՍ» հիմնադրամ : կայքէջ. 15 հունիսի. URL: <https://www.luys.am/index.php?m=publicationsOne&pid=155&lang=arm> [in Armenian].
- Մամիկոնյան, Կ. Հ., Մելքոնյան, Ա. Մ., Հարթյան Ա. Հ. (2024). Հայաստանի հանրապետություն ապրանքների ներմուծման դեպքում ԱԱՀ-ի հետաձգված հաշվառման մեխանիզմի կիրառման հիմնավորումը (փորձագիտական կարծիք) [Rational for the Application of the Deferred VAT Calculation Mechanism when Importing Goods into the Republic of Armenia (Expert Opinion)]. ՀՀ ԳԱՄ Փորձաքննությունների ազգային բյուրո ԴՈԱԿ-ի Դատական փորձաքննության և քրեագիտության հայկական հանդես. Համար 11. DOI: 10.53587/25792865-2024.11-79 [in Armenian].

- Մամիկոնյան, Կ. Հ., Գալստյան, Է. Լ. (2023). Բիզնեսի հոգեբանություն. կամ՝ ձեռնարկատիր չլինելու վարման նոր կանոններ տնտեսական հանցագործությունների կանխարգելման համատեքստում [Psychology of Business: Or – New Business Rules in the Context of the Prevention of Economic Crimes]. ՀՀ ԳԱՍՓ Փորձաքննությունների ազգային բյուրո ՊՈԼԿ-ի Դատական փորձաքննության և քրեագիտության հայկական համալսարան. Համար 10. DOI: [10.53587/25792865-2023.10-122](https://doi.org/10.53587/25792865-2023.10-122) [in Armenian].
- Մովսիսյան, Բ. Հ. (2024). Հայաստանի Հանրապետության հարկային համակարգի արդյունավետության բարձրացման արդի հիմնախնդիրները [Actual Problems of Increasing the Efficiency of the Tax System of the Republic of Armenia] : տնտեսագիտության թեկնածուի աստիճանի համար ատենախոսության ամփոփում. Երեվան. URL: <https://degrees.hesc.am/sites/default/files/2024-07/knkush-movsisyan.pdf> [in Armenian].
- Mamikonyan, K., Safaryan, A. (2025). Principle of Tax Rate Equilibrium and its Application in the Tax System of the Republic of Armenia. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 52—68. DOI: [10.32353/khrife.4.2025.04](https://doi.org/10.32353/khrife.4.2025.04).

Methodological Aspects of Complex Forensic Psychological and Linguistic Examination Realities of Armed Aggression of Russian Federation Against Ukraine

Yuliia Brailko ^{*a}, **Tetiana Yehorova** ^{**b},
Nataliia Kysla ^{***c}, **Patvakan Voskanian** ^{****d}

* Candidate of Philological Sciences, Docent, Poltava Branch,
NSC «Hon. Prof. M. S. Bokarius FSI», Poltava, Ukraine,
ORCID: <http://orcid.org/0000-0001-5203-7479>, e-mail: santie@ukr.net

** Poltava Branch, NSC «Hon. Prof. M. S. Bokarius FSI», Poltava, Ukraine,
ORCID: <https://orcid.org/0000-0002-3588-2475>, e-mail: expertegor@gmail.com

*** Candidate of Philological Sciences, Poltava Branch, NSC «Hon. Prof.
M. S. Bokarius FSI», Poltava, Ukraine, ORCID: <https://orcid.org/0000-0001-5137-6647>,
e-mail: kislaya_nataliya@ukr.net

**** PhD in Chemistry, Senior Researcher, National Bureau of Expertises
of the National Academy of Sciences (Armenia), Yerevan, Republic of Armenia

^a Writing – original draft, project administration, Supervision.

^b Writing – original draft, methodology, validation.

^c Writing – original draft, resources.

^d Conceptualization, formal analysis.

DOI: [10.32353/khrife.4.2025.05](https://doi.org/10.32353/khrife.4.2025.05) UDC [343.98"2022/2025"] (477)

Received: 03.09.2025 / Reviewed: 19.09.2025 / Accepted for printing: 25.12.2025 /

Available online: 31.12.2025



This article purpose is to highlight the features of conducting multidisciplinary forensic psychological and linguistic examinations in criminal proceedings regarding damage caused to national security of Ukraine. Methodological basis of the research is general scientific and special methods of scientific knowledge. Scientific and methodological principles of such researches are considered, special attention is paid to the object, topic, tasks and methods. Taking into account the multidimensionality of the object of multidisciplinary psychological and linguistic examination, it is proposed to consider it according to the following features: generic (material carrier on

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

which information material is recorded about the products of the communicative activity of a person / persons in a situation that is the subject of investigation / consideration in the legal process); special (information material recorded on a material carrier, containing a set of factual data about specifics, functions of information message as a communicative act and about potential of its influence on mental activity of recipients); information specifics in accordance with the field of special knowledge of the experts (1.2 “Linguistic research on speech” / 14.1 “Psychological research”). General and individual tasks of multidisciplinary psychological and linguistic examination in criminal proceedings regarding causing harm to information security of State are determined. Methods of a multidisciplinary psychological and linguistic information analysis are considered as a mutually agreed operational-logical system with the aim of obtaining data about research object in accordance with the tasks performed and the limits of competence of the forensic linguist and forensic psychologist.

Keywords: forensic science; multidisciplinary psychological and linguistic examination; research object; topic research, research tasks; research methods; methodology; national security; information security.

Research Problem Formulation

For a long time, Ukraine has been subjected to large-scale armed and information aggression by the Russian Federation. Russian propaganda is spread by means of information aggression, which poses a threat to the national security of our country.

Article 1 of the Law of Ukraine: *On National Security of Ukraine* stipulates that national security of the State consists in the protection of state sovereignty, territorial integrity, democratic constitutional order and other national interests of Ukraine from real and potential threats. The national interests of Ukraine primarily include the vital interests of a person, society and the state, which implementation guarantees State sovereignty of Ukraine, as well as safe living conditions

and well-being of its citizens. Threats to the national security of Ukraine are phenomena, trends and factors that make it impossible or complicate / can make it impossible or complicate the implementation of national interests and the preservation of national values of Ukraine¹.

Integral part of the Law of Ukraine: *On National Security of Ukraine* is the National Security Strategy of Ukraine defining destructive role of special services of foreign states, primarily the Russian Federation, which consists in intelligence and subversive activities against Ukraine, in fueling separatist sentiments, in the use of organized criminal groups and corrupt officials seeking to strengthen the infrastructure of influence. Among the means of destructive influence, propaganda from outside and inside Ukraine is singled out using contradictions in Ukrainian society,

1 Про національну безпеку України : Закон України від 21.06.2018 р. № 2469-VIII (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2469-19#Text> (date accessed: 12.08.2025).

incites hatred, provokes conflicts, thereby undermining social unity ².

Current challenges and threats to Ukraine national security include threats in the information field. Information Security Strategy states that information security is a component of the national security of Ukraine and its society that can be harmed by the spread of negative information influences, destructive propaganda, and the general use of information operations technologies, etc. Information threat is interpreted as “potentially or actually negative phenomena, trends, and factors of information influence on individuals, society, and the state, which are used in the information sphere with the aim of preventing or complicating the realization of national interests and the preservation of national values of Ukraine and may directly or indirectly harm the interests of the state, its national security and defense” ³. Global threats and challenges include an increase in the number of special disinformation operations by the aggressor state to manipulate the consciousness of individuals and groups of the Ukrainian population and to intensify internal contradictions in Ukraine.

Technologies of Russian information and psychological operation (hereinafter referred to as the PSYOP), implemented on the Internet (especially in social net-

works), are quickly adapting to the local contexts of the Ukrainian information space, destructively affecting the internal and external socio-political situation in our country. Reducing the criticality of the perception of information by Internet users forms the basis for possible manipulations of public opinion, contributes to the growth of the influence of disinformation and hostile propaganda, the popularity of conspiracy theories, creating threats to the social, political and economic stability of Ukraine.

As a socio-psychological weapon, the Russian PSYOP is aimed at achieving a strategic goal, namely: tectonic semantic shifts in Ukrainian cultural, ideological and historical values. The relevance of the scientific and practical study of such technologies of the aggressor state against Ukraine, in particular within the framework of multidisciplinary forensic psychological and linguistic examinations (hereinafter referred to as *MFPLE*), is beyond doubt.

Analysis of Essential Researches and Publications

Russia information war against Ukraine is the focus of attention of domestic political scientists, sociologists, and other scholars (e.g., Ye. Mahda ⁴, H. Pocheptsov ⁵,

2 Стратегія національної безпеки України : затв. Указ. Президента України від 14.09.2020 р. № 392/2020 (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/392/2020#Text> (date accessed: 12.08.2025).

3 Стратегія інформаційної безпеки : затв. Указ. Президента України від 28.12.2021 р. № 685/2021. URL: <https://zakon.rada.gov.ua/laws/show/685/2021#Text> (date accessed: 12.08.2025).

4 Магда Є. Виклики гібридної війни: інформаційний вимір. *Наукові записки Інституту законодавства Верховної Ради України*. 2014. № 5. С. 138—142. URL: http://nbuv.gov.ua/UJRN/Nzizvru_2014_5_29 (date accessed: 12.08.2025).

5 Почепцов Г. Смыслы и войны: Украина и Россия в информационный и смысловый войнах. Київ, 2016. 312 с. ; Его же. Войны новых технологий. Харьков, 2020. 601 с. ; Його ж. Сучасні інформаційні війни. Вид. 2-ге, допов. Київ, 2016. 502 с.

M. Dzyuba with co-authors ⁶ et al.), who note that the meanings integrated into the consciousness of Ukrainian people program behavior patterns for implementation of the Russian Federation long-term strategic goals. This opinion of politicians is confirmed by reality: for decades, especially since the beginning of the Russian Federation's full-scale invasion of Ukraine, the Ukrainian population has been subjected to massive attacks by Russian PSYOP. Their goal is to support Russian armed aggression, which the Russian Federation hypocritically nominates with the neutral-sounding military term "special military operation"; to approve the occupation of certain territories of Ukraine; to encourage cooperation with the aggressor state and the occupying authorities, etc. PSYOP arsenal includes artificial, propagandistic political clichés, implanting the Russian ideological matrix into the individual consciousness of Ukrainian people, disseminated through Internet resources, telecommunications, and even educational institutions (for example, "Novorosiya project," "Banderovism," "Ukrainian Nazis," "fascism in Ukraine," "Russia is liberator of the Ukrainian people," etc.).

Among the strategic goals of the PSYOP, special attention is paid to supporting Russian aggression against Ukraine, destroying Ukrainian identity, provoking extremism and panic in society. An unprecedented information campaign to create an alternative distorted information reality based on the narratives of the aggressor state has been launched in the occupied Ukrainian territories, in the regions where the line of combat collision passes. The Russian PSYOP constantly ma-

nipulates the consciousness of Ukrainian citizens, spreading, for example, myths and misinformation stereotypes about the negative consequences of Ukraine's accession to the EU and NATO.

Article Purpose

For highlighting peculiarities of conducting multidisciplinary forensic psychological and linguistic examinations based on the materials of criminal proceedings relating to damage caused to the national security of Ukraine.

Research Methods

Methodological basis of the study is general scientific and special methods of scientific knowledge.

Main Content Presentation

Actions aimed at harming national security are criminalized in Section I: *Criminal Offenses Against Foundations of National Security of Ukraine*, of the Special Part of Criminal Code of Ukraine in particular Article 109 (*Actions aimed at violently changing or overthrowing the constitutional order or seizing state power*), Article 110 (*Encroachment on Territorial Integrity and Inviolability of Ukraine*), Article 111 (*High Treason*), Article 111-1 (*Collaborationist Activities*), Article 114-2 (*Unauthorized dissemination of information about the direction, movement of weapons, armaments, and ammunition to Ukraine, the movement, relocation, or deployment of the Armed Forces of Ukraine or other military formations established in accordance with the laws of Ukraine, committed*

6 Дзюба М. Т., Жарков Я. М., Ольховой І. О., Онищук М. І. Нарис теорії і практики інформаційно-психологічних операцій : навч. посіб. / за заг. ред. В. В. Балабіна. Київ, 2006. 471 с. URL: https://shron1.chtyvo.org.ua/Balabin_Viktor/Narys_teorii_i_praktyky_informatsiino-psycholohichni_kh_operatsii.pdf (date accessed: 12.08.2025).

under conditions of martial law or a state of emergency”)⁷.

Let us turn our attention to criminal offenses which, according to the Criminal Code of Ukraine, do not constitute crimes against the foundations of Ukraine national security but, in accordance with the Law of Ukraine: *On National Security of Ukraine the National Security Strategy of Ukraine* and the *Information Security Strategy of Ukraine*, can be considered criminal offenses that cause harm to the state's information security. These crimes are defined in Articles 436: *War Propaganda* and 436-2: *Justification, Recognition as Lawful, Denial of Armed Aggression by the Russian Federation against Ukraine, Glorification of its Participants*, included in Section XX: *Criminal Offenses Against Peace, Human Security, and International Law and Order* of Criminal Code of Ukraine⁸.

The issue of whether the dispositions of these articles of the Criminal Code of Ukraine belong to the information security of the state is currently debatable in the circle of lawyers, so their consideration will be ignored.

Measures to implement the Information Security Strategy include the involvement of research institutions that provide analytical and expert support in the pro-

cess of forming and implementing the State information policy. In the current legislation of Ukraine, concept of *information security* covers many components, including linguistic and psychological factors that are essential for the legal qualification of criminal offenses that harm the information security of the State⁹.

Forensic experts from National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» (hereinafter referred to as *NSC «Hon. Prof. M. S. Bokarius FSI»*) and its regional branches perform most of the comprehensive forensic psychological and linguistic examinations in criminal proceedings concerning damage to Ukraine information security. As evidenced by expert practice, the performance of such comprehensive studies is complicated by the lack of a methodological basis, the vagueness and eclecticism of expert tasks, which often leads to experts exceeding their competence, illogical and unsubstantiated expert conclusions, etc. Violations of the principles of evidence, objectivity, and completeness of research, as well as exceeding the competence of a forensic expert, contradict the fundamental principles and regulations of forensic activity provided for by the current legislation of Ukraine¹⁰.

7 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2341-14#Text> (date accessed: 15.08.2025).

8 Там само.

9 Про національну безпеку України ... URL: <https://zakon.rada.gov.ua/laws/show/2469-19#Text> (date accessed: 12.08.2025) ; Стратегія національної безпеки України ... URL: <https://zakon.rada.gov.ua/laws/card/392/2020> (date accessed: 12.08.2025) ; Стратегія інформаційної безпеки ... URL: <https://zakon.rada.gov.ua/laws/show/685/2021#Text> (date accessed: 12.08.2025) ; Кримінальний кодекс ... URL: <https://zakon.rada.gov.ua/laws/card/2341-14#Text> (date accessed: 15.08.2025).

10 Про судову експертизу : Закон України від 25.02.1994 р. № 4038-XII (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 12.08.2024) ; Кримінальний процесуальний кодекс 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: 12.08.2024) ; Інструкція про призначення та проведення судових експертиз та експертних досліджень : затв. наказ. Мін'юсту України від 08.10.1998 р. № 53/5 (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/z0705-98#Text> (date accessed: 12.08.2024).

Professionals from NSC «Hon. Prof. M. S. Bokarius FSI» have developed methodological recommendations for a comprehensive psychological and linguistic study in criminal proceedings on causing harm to the information security of the state ¹¹ (hereinafter referred to as the *Methodological Recommendations*).

Scientific and methodological basis of MFPLE is the method of dialectical cognition of objective reality. Theoretical substantiation of this type of research is based on the provisions of philosophy, logic, theory of knowledge, general scientific principles of research, forensic expertology, linguistics and psychology, domestic legislation in the field of forensic examination and criminal law relating to national, in particular information, security of the state. The empirical base is statistical and scientific-practical data obtained from open sources, the practice of conducting MFPLE appointed in relevant criminal proceedings.

Methodological Recommendations outline the basic principles, object, subject, tasks, methods and algorithms of MFPLE in criminal proceedings for causing damage to information security of the State.

Methodological recommendations were developed with reliance on the syncretism of the methodology of linguistic and psychological research. MFPLE is a fairly new type of expertise in domestic practice of forensic examination. In the early stages of its formation, object of psychological and linguistic research was traditionally defined as a text that is

a product of speech communicative activity, united by meaning, structural integrity, content coherence and completeness (for example, books, articles, contracts, statements, notes, notes, etc.). With the development of the virtual social environment and the technological capabilities of the Internet, the range of MFPLE objects has increased significantly, so the expert study of the text only has become insufficient to perform tasks relevant to the pre-trial investigation and the court.

In particular, with mass distribution of digital media capable of recording video, the need for psychological analysis of combined (multimodal) information object in terms of relationships and hierarchy of verbal and non-verbal components of communication has increased. Therefore, media texts, including those with illustrative images (for example, articles in online publications), as well as variations of virtual communication in social networks and messengers (audio and video clips without comments, text and voice messages, comments of Internet users, etc.) have become relevant for psychological and linguistic research.

Thus, new objects containing information material, in terms of their communicative function, have gone beyond the traditional text format and have acquired characteristics that need to be studied by integrating knowledge in the fields of linguistics and psychology. The emergence of new objects and tasks of MFPLE requires their thorough methodological justification ¹².

11 Розробка методичних рекомендацій з комплексного психолого-лінгвістичного дослідження у кримінальних провадженнях щодо спричинення шкоди інформаційній безпеці держави / кер.: Т. М. Єгорова ; викон.: Є. В. Ковкіна, Ю. І. Браїлко, С. В. Полякова та ін. № ДР 0121U100229. Харків, 2023. 135 с.

12 Єгорова Т. М., Браїлко Ю. І. Актуальні проблеми комплексної судової психолого-лінгвістичної експертизи в умовах збройної агресії РФ проти України. *Актуальні питання судової експертології, криміналістики та кримінального процесу* : мат-ли IV Міжнар. наук.-практ. конф. (Київ, 16.12.2022). Київ, 2022. С. 515—518. URL: <https://files.znu.edu.ua/>

In modern theory and practice of forensic examination, the most controversial is the outline of the object and topic of research. In philosophy, an object is defined as a category “that denotes any real or imaginary, native or ideal **reality** considered as something external in relation to a person and his consciousness and which becomes the subject of theoretical and practical activity of the **subject**”¹³. For scientific and cognitive activity (which includes forensic examination), it is necessary to distinguish the object of cognition as a fragment of reality, endowed with many properties, manifestations and connections with reality.

As E. Simakova-Yefremian notes, forensic research object has a complex structure, since it contains information about itself as a material carrier, about the source of information, about the fact (event, phenomenon) and about the mechanism of transmitting this information from the source to it (carrier). Forensic research objects are distinguished by several criteria, among which the scientist distinguishes the object of comprehensive research as a systemic integral material (materialized) formation, combined by a common subject of research of its various aspects (properties), in order to perform a task that requires the application

of special knowledge in various fields of science, technology, art, etc.¹⁴

Taking into account the multidimensionality of MFPLE object, we propose to consider it on the following grounds:

- a) generic one: material carrier on which information material about the products of communicative activity of a person / people in a situation that is the subject of an investigation or is considered in a lawsuit is recorded;
- b) special one: information material recorded on a material carrier, containing a set of factual data on specifics, functions of the information message as a communicative act and the potential of its impact on the mental activity of recipients;
- c) information specifics: it is subject to research in two aspects depending on the expert specialty (1.2 *Linguistic research on speech* / 14.1 *Psychological research*), and therefore the objects have differences:
 - research object of forensic linguist is the product of human speech activity recorded on a material carrier in oral or written form, in particular text / fragment of text / other lingual units or verbatim text reproduction (transcript) of oral speech;

[files/Bibliobooks/Inshi74/0055200.pdf](https://Bibliobooks/Inshi74/0055200.pdf) (date accessed: 25.08.2025) ; Їх же. Проблема науково-методичного забезпечення комплексних психолого-лінгвістичних експертних досліджень у кримінальних провадженнях щодо злочинів проти інформаційної безпеки України. *Державна безпека України в умовах російської агресії: актуальні питання експертно-криміналістичного та науково-технічного забезпечення* : зб. мат-лів Всеукр. наук.-практ. конф. (Київ, 22.08.2023). Київ, 2023. Т. 1. С. 58—61. URL: https://tgk.kname.edu.ua/images/chaika/ZBIRNIK_Konferencii_Derzavna_bezpeka_Ukraini_22_08_2023_tom_1_.pdf (date accessed: 25.08.2025).

13 Йолон П. Об'єкт / Філософський енциклопедичний словник ; редкол.: В. І. Шинкарук (голова) та ін. Київ, 2002. С. 438—439. URL: https://shron1.chtyvo.org.ua/Shynkaruk_Volodymyr/Filosofskyi_entsyklopedychnyi_slovyk.pdf (date accessed: 25.08.2025).

14 Сімакова-Єфреман Е. Б. Комплексні судово-експертні дослідження: теорія та практика : монографія. Харків, 2016. 456 с.

- Research object for forensic psychologist is information material recorded on a physical medium that reflects the specifics of the verbal and nonverbal output of the subject(s) in the process of communication in terms of its potential informational impact on the mental activity of the recipient(s)/target audience. Such objects may include video recordings, screenshots, texts with illustrations, voice messages, written texts, printed materials, etc.

Note that one object can be the subject of research of different examinations, so the essence of the examination determines its subject. Many research papers of domestic and foreign scientists are devoted to the subject of expert research, but it is still debatable. In our opinion, approach of M. Shcherbakovskiy, who considers the subject of examination as a practical activity from the standpoint of the information approach, deserves attention, because in the epistemological and procedural aspects, the expert's activity is always aimed at obtaining information about the event of a criminal offense using special knowledge and within his competence¹⁵. Such information is the result of research on certain properties of the object submitted for examination.

Summarizing the domestic practice of forensic examination, we conclude that subject of forensic research is factual data on the phenomenon, established on the basis of specific expertise while studying

objects: material or materialized carriers of information about a certain event that is the topic of investigation or is considered in litigation.

Similarly, essence of MFPLE is defined through its subject matter. Information products contained on a material medium (on an optical disk, flash drive, in a book, printing products, etc.) acquire their epistemological significance when experts (linguist and psychologist) establish their ability to be the subject of cognition within their competence. It should be assumed that the isolation of the essential aspects of the object of examination and its specific consideration in a truncated set of manifestations is the subject of research that is determined by practice and expert tasks.

Taking into account specifics of the object and topic of multidisciplinary psychological and linguistic research, experts should be guided by the basic principles of cognitive activity, namely: system approach, structural approach, activity approach, level analysis, principle of contextuality.

Common tasks of MFPLE in criminal proceedings for causing damage to the information security of the state are to establish the linguistic and psychological features of information, the specifics of the communicative actions of the communication participants and the potential impact of the information material on the target audience in a situation that has legal significance depending on the disposition of the article of the Criminal Code of Ukraine¹⁶.

15 Щербаківський М. Г. Предмет судової експертизи. *Форум права*. 2016. № 5. С. 199–203. URL: http://nbuv.gov.ua/j-pdf/FP_index.htm_2016_5_34.pdf (date accessed: 25.08.2025).

16 Єгорова Т. М., Браїлко Ю. І., Кисла Н. В. Актуальні проблеми постановки завдань у судових лінгвістичних і комплексних психолого-лінгвістичних експертизах, призначених у кримінальних провадженнях щодо інформаційної безпеки держави. *Судова експертиза в контексті відновлення України* : мат-ли III всеукр. наук.-практ. конф. (Львів, 09.06.2023). Київ, 2023. С. 94–98. URL: <https://intelekt.org.ua/wp-content/uploads/2023/08/sudova-ekspertyza-2023-druk.pdf> (date accessed: 25.08.2025).

Conducting multidisciplinary psychological and linguistic study of information material has the following main stages: 1) research of forensic linguist; 2) research of expert psychologist; 3) integrated research.

Differentiation of specific expertise at the first and second stages occurs due to the specifics of the object and subjects of research of the expert linguist and expert psychologist and, accordingly, the tasks performed by them. At the third stage of the research (due to specific expertise synthesis), experts perform a joint task.

Typical tasks of an expert linguist in MFPLE are:

- a) establishing the objective content of the texts provided for research;
- b) detection of inducement illocutionary act (direct / indirect) and grammatical form of its expression;
- c) definition of linguistic signs of propaganda, denial, justification, glorification, support, etc.

If research object of is a polycode text, the forensic linguist analyzes its speech aspect. Undoubtedly, the analysis of the communicative goal, situation, tactics and strategies, etc. cannot be ignored. Assessing the non-verbal context, the expert, in accordance with the General Methodology of Forensic Linguistic Semantic and Textual Examination¹⁷, can take into account only well-known information or refer to the information specified in the document that is the basis for the examination, but not use data that require the application of knowledge from another

field of science and are not reflected in the written text / transcript of oral speech.

Typical tasks of forensic psychologist are:

- a) determining the method(s) of broadcasting and the structure of information in terms of its perception (visual, auditory, audiovisual);
- b) clarification of the specifics of communicative situation (its structural organization, the approximate circle of participants and their communicative roles (if possible), peculiarities of the communicative interaction between the addressee and the addressee or, in the case of public information, between the publisher and the recipients);
- c) determination of communicative intentions of the addressee / publisher, which are directly or implicitly reflected in content under research (intentions, guidelines, appeals, etc.);
- d) establishing focus of information on formation of certain social guidelines, stereotypes, emotional reactions, motives, social relationships, etc. in the recipient(s)/ target audience (based on the results of the research of forensic linguist);
- e) characteristics of the means and methods of communication used by the addressee/ publisher (in terms of the potential of their influence on the emotional, cognitive, motivational areas of the psyche; social stereotypes of recipients / target audience, etc.)¹⁸.

17 Будко Т. В. Загальна методика судово-лінгвістичної семантико-текстуальної експертизи. Київ, 2020. 55 с.

18 Єгорова Т. Актуальні питання експертного психологічного дослідження у кримінальних провадженнях щодо злочинів проти інформаційної безпеки України. *Актуальні питання судової експертизи та криміналістики* : зб. мат-лів Міжнар. наук.-практ. конф. з нагоди ювіл. видат. учен. 95-річ. від дня народж. Л. Ю. Ароцкера («Ароцкерівські читання») і 105-річ. від дня народж. М. В. Салтєвського (Харків, 19.05.2023). Харків, 2023. С. 122—124. URL: <https://drive.google.com/file/d/1WnOCsPaFLjSy4TdY0hSUCiAVWz44ANH17/view> (date accessed: 25.08.2025).

General methods of multidisciplinary psychological and linguistic analysis of information material are methods of communicative analysis, content analysis, intention analysis, discursive analysis, hermeneutic analysis and other specialized methods inherent in linguistic and psychological research. Features of the use of general methods depend on the competence of the expert psychologist and expert linguist, on specific tasks and special methods of linguistic and psychological research.

Conclusions

The methodological approach covered in Methodological Recommendations developed by the NSC «Hon. Prof. M. S. Bokarius FSI» defines the principles and general procedure for conducting multidisciplinary psychological and linguistic examinations / expert studies related to the national (information) security of the State. Indicative list of tasks and issues posed to the complex forensic psychological and linguistic examination, a detailed description of the algorithms of such a study defined in the Methodological Recommendations will significantly increase effectiveness of the work of experts and degree of evidence of their conclusions while of pre-trial investigation and judicial consideration of criminal offenses to harm the information security of the State.

Методологічні аспекти комплексної судової психолого-лінгвістичної експертизи в реаліях збройної агресії РФ проти України

**Юлія Браїлко, Тетяна Єгорова,
Наталія Кисла, Патванкан Восканян**

Мета статті — обґрунтувати систему критеріїв оцінювання висновків почер-

кознавчих експертиз для застосування її в суді; проаналізувати наявні підходи до розуміння доказового значення висновків експертів у контексті судової практики. Для досягнення поставленої мети застосовано сукупність загальнонаукових і спеціальних методів. Проаналізовано чинне законодавство, яким урегульовано порядок призначення, проведення й оцінювання судових експертиз (зокрема, процесуальні кодекси України та спеціальні нормативні акти, що регламентують судово-експертну діяльність). Увагу акцентовано на судовій практиці застосування висновків почеркознавчих експертиз і основних проблемах, пов'язаних з їх оцінюванням: суперечливості результатів експертних досліджень, недостатньому аргументуванню висновків, формальному підході до їх сприйняття судами. Особливий акцент зроблено на вільному оцінюванні доказів судом і межах його реалізації в разі потреби у застосуванні спеціальних знань. Запропоновано систематизовані критерії (зокрема, відповідність застосованих методик сучасним науковим вимогам, повнота опису об'єктів дослідження, логічна послідовність викладення міркувань експерта, чіткість формулювання висновків, наявність альтернативних гіпотез, а також узгодженість висновку з іншими доказами у справі), які стануть у нагоді суддям, адвокатам, прокурорам та іншим учасникам процесу для оцінювання якості висновків за почеркознавчими дослідженнями. Правники, які стикаються з необхідністю критичного аналізу висновків експертів у процесі доказування, можуть скористатися викладеними тут напрацюваннями як методичним орієнтиром. Порушено питання нагальної потреби в підвищенні кваліфікації суддів у частині оцінювання спеціальних знань і у виробленні єдиних підходів у судовій практиці до застосування висновків експертів як доказів.

Ключові слова: судова експертиза; почеркознавство; експерт; висновок експерта;

оцінка доказів; судова практика; доказове значення; критерії науковості.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

Authors contributed solely to the intellectual discussion underlying this document, case law research, writing and editing and assumes responsibility for its content and interpretation.

Declaration

of Competing Interest

Author declares no conflict of interest.

References

- Budko, T. V. (2020). *Zahalna metodyka sudovo-linhvistychnoi semantyko-tekstualnoi ekspertyzy* [General methodology of forensic linguistic semantic and textual examination]. Kyiv [in Ukrainian].
- Dziuba, M. T., Zharkov, Ya. M., Olkhover, I. O., Onyshchuk, M. I. (2006). *Narys teorii i praktyky informatsiino-psykholohichnykh operatsii* [Drawings of the theory and practice of information and psychological operations] : navch. posib. / za zah. red. V. V. Balabina. Kyiv. URL: https://shron1.chtyvo.org.ua/Balabin_Viktor/Narys_teorii_i_praktyky_informatsiino-psykholohichnykh_operatsii.pdf [in Ukrainian].
- Mahda, Ye. (2014). Vyklyky hibrydnoi viiny: informatsiyni vymir [The Challenges of Hybrid Warfare: Information Aspect]. *Naukovi zapysky Instytutu zakonodavstva Verkhovnoi Rady Ukrainy*. № 5. URL: http://nbuv.gov.ua/UJRN/Nzizv-ru_2014_5_29 [in Ukrainian].
- Pochepstov, G. (2020). *Voyny novykh tekhnologii* [Wars of New Technologies]. Kharkov [in Russian].
- Pochepstov, H. (2016). *Smysly i viiny: Ukraina i Rosiia v informatsiinii i smyslovii viinakh* [Meanings and Wars: Ukraine and Russia in Information and Meaning Wars]. Kyiv [in Ukrainian].
- Pochepstov, H. (2016). *Suchasni informatsiini viiny* [Current Information Wars]. Vyd. 2-he, dopov. Kyiv [in Ukrainian].
- Rozrobka metodychnykh rekomendatsii z kompleksnoho psykholoho-linhvistychnoho doslidzhennia u kryminalnykh provadzhenniakh shchodo sprychynennia shkody informatsiinii bezpetsi derzhavy [Development of methodological recommendations for comprehensive psychological and linguistic research in criminal proceedings on causing harm to the information security of the state] (2023) / ker.: T. M. Yehorova ; vykon.: Ye. V. Kovkina, Yu. I. Brailko, S. V. Poliakova ta in. № DR 0121U100229. Kharkiv [in Ukrainian].
- Shcherbakovskyi, M. H. (2016). Predmet sudovoi ekspertyzy [Subject of Forensic Expertise]. *Forum prava*. № 5. URL: http://nbuv.gov.ua/j-pdf/FP_index.htm_2016_5_34.pdf [in Ukrainian].
- Simakova-Iefremian, E. B. (2016). *Kompleksni sudovo-ekspertni doslidzhennia: teoriia ta praktyka* [Comprehensive Forensic Expert Studies: Theory and Practice] : monohrafiia. Kharkiv [in Ukrainian].
- Yehorova, T. (2023). Aktualni pytannia ekspertnoho psykholohichnoho doslidzhennia u kryminalnykh provadzhenniakh shchodo zlochyniv proty informatsiinoi bezpeky Ukrainy [Current issues of expert psychological research in criminal proceedings regarding crimes against information security of Ukraine]. *Aktualni pytannia sudovoi ekspertyzy ta kryminalistyky* : zb. mat-liv Mizhnar. nauk.-prakt. konf. z nahody yuvil. vydat. uchen: 95-rich. vid dnia narodzh. L. Yu. Arotskera («Arotskerivski chytannia») i 105-rich. vid

- dnia narodzh. M. V. Saltevs'koho (Kharkiv, 19.05.2023). Kharkiv. URL: <https://drive.google.com/file/d/1WnOCsPaFLjSy4TdY-0hSUCiAVWz4ANH17/view> [in Ukrainian].
- Yehorova, T. M., Brailko, Yu. I. (2022). Aktualni problemy kompleksnoi sudovoi psykholoho-linhvistychnoi ekspertyzy v umovakh zbroinoi ahresii rf proty Ukrainy [Actual Problems of Complex Forensic Psychological and Linguistic Examination in the Context of the Armed Aggression of Russia Against Ukraine]. *Aktualni pytannia sudovoi ekspertolohii, kryminalistyky ta kryminalnoho protsesu* : mat-ly IV Mizhnar. nauk.-prakt. konf. (Kyiv, 16.12.2022). Kyiv. URL: <https://files.znu.edu.ua/files/Bibliobooks/Inshi74/0055200.pdf> [in Ukrainian]
- Yehorova, T. M., Brailko, Yu. I. (2023). Problema naukovo-metodychnoho zabezpechennia kompleksnykh psykholoho-linhvistychnykh ekspertnykh doslidzhen u kryminalnykh provadzhenniakh shchodo zlochyniv proty informatsiinoi bezpeky Ukrainy [Issue of scientific and methodological support for comprehensive psychological and linguistic expert studies in criminal proceedings concerning crimes against Ukraine's information security]. *Derzhavna bezpeka Ukrainy v umovakh rosiiskoi ahresii: aktualni pytannia ekspertno-kryminalistichnoho ta naukovo-tekhnichnoho zabezpechennia* : zb. mat-liv Vseukr. nauk.-prakt. konf. (Kyiv, 22.08.2023). Kyiv. T. 1. URL: https://tgk.kname.edu.ua/images/chaika/ZBIRNIK_Konferencii_Derzavna_bezpeka_Ukraini_22_08_2023_tom_1_.pdf [in Ukrainian].
- Yehorova, T. M., Brailko, Yu. I., Kysla, N. V. (2023). Aktualni problemy postanovky zavdan u sudovykh linhvistychnykh i kompleksnykh psykholoho-linhvistychnykh ekspertyzakh, pryznachenykh u kryminalnykh provadzhenniakh shchodo informatsiinoi bezpeky derzhavy [Actual problems of setting tasks in forensic linguistic and complex psychological and linguistic examinations appointed in criminal proceedings regarding the information security of the state]. *Sudova ekspertyza v konteksti vidnovlennia Ukrainy* : mat-ly III vseukr. nauk.-prakt. konf. (Lviv, 09.06.2023). Kyiv. URL: <https://intelekt.org.ua/wp-content/uploads/2023/08/sudova-ekspertyza-2023-druk.pdf> [in Ukrainian].
- Yolon, P. (2002). Ob'iekt / *Filosofskyi entsyklopedychnyi slovnyk* [Philosophical Encyclopedic Dictionary] ; redkol.: V. I. Shynkaruk (holova) ta in. Kyiv. URL: https://shron1.chtyvo.org.ua/Shynkaruk_Volodymyr/Filosofskyi_entsyklopedychnyi_slovnyk.pdf [in Ukrainian].
- Brailko, Y., Yehorova, T., Kysla, N., Voskanian, P. (2025). Methodological Aspects of Complex Forensic Psychological and Linguistic Examination Realities of Armed Aggression of Russian Federation Against Ukraine. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 69–80. DOI: [10.32353/khrife.4.2025.05](https://doi.org/10.32353/khrife.4.2025.05).

Experimental Researches on Specifics of Terminal and External Ballistics of Damaging Elements of Cylindrical Shape with Diameter of 5.0 Mm

Igor Lurin ^{1a}, **Oleksiy Larin** ^{2b}, **Eduard Khoroshun** ^{3a}, **Volodymyr Nehoduyko** ^{4a},
Oleksandr Kolomiitsev ^{5c}, **Serhii Larkov** ^{6d}, **Oleh Kokorin** ^{7e},
Dmytro Klymchuk ^{8e}, **Vitalii Tyshchenko** ^{9e}, **Vitalii Shcherbak** ^{10e},
Viktor Sapielkin ^{11e}

¹ Doctor of Medical Sciences, Professor, Vice President NAMS of Ukraine, Academician NAMS of Ukraine, Major General of Medical Service, State Institution: Scientific and Practical Center for Preventive and Clinical Medicine of the State Directorate of Affairs, Kyiv, Ukraine, ORCID: <https://orcid.org/0000-0001-6280-1725>, e-mail: lurinnamn@ukr.net

² Doctor of Technical Sciences, Professor, Corresponding Member of NASU, Institute of Computer Modeling, Applied Physics and Mathematics, National Technical University “Kharkiv Polytechnic Institute”, Kharkiv, Ukraine, ORCID: <https://orcid.org/0000-0002-5721-4400>, e-mail: Oleksiy.Larin@khpi.edu

³ Hero of Ukraine, Candidate of Medical Sciences, Colonel of Medical Service, Military Clinical Center of the Northern Region of the Command of the Medical Forces of Armed Forces of Ukraine, Kharkiv National Medical University, Kharkiv, Ukraine, ORCID: <https://orcid.org/0000-0003-1258-1319>, e-mail: ehoroshun@i.ua

⁴ Doctor of Medical Sciences, Docent, Colonel of Medical Service, Clinic of Emergency Medical Care (Reception and Evacuation), Military Medical Clinical Center of the Northern Region of the Command of the Medical Forces of the Armed Forces of Ukraine, Kharkiv National Medical University, Kharkiv, Ukraine, ORCID: <https://orcid.org/0000-0003-4540-5207>, e-mail: vol-ramzes13@ukr.net

⁵ Candidate of Technical Sciences, NSC «Hon. Prof. M. S. Bokarius FSI», Kharkiv, Ukraine, ORCID: <https://orcid.org/0000-0001-5137-6647>, e-mail: sashagun@ukr.net

⁶ Candidate of Technical Sciences, State Space Agency of Ukraine, Kyiv, Ukraine, ORCID: <https://orcid.org/0000-0003-1180-252X>, e-mail: sergelarkov@ukr.net

⁷ Kharkiv Research Forensic Center of the Ministry of Internal Affairs of Ukraine, Kharkiv, Ukraine, ORCID: <https://orcid.org/0000-0001-6899-5794>, e-mail: jordan@3g.ua

⁸ Kharkiv Scientific Research Forensic Center of the Ministry of Internal Affairs of Ukraine, Kharkiv, Ukraine, ORCID: <https://orcid.org/0009-0007-68782968>, e-mail: klimchuk_dv@ukr.net

⁹ Kharkiv Scientific Research Forensic Center of the Ministry of Internal Affairs of Ukraine, Kharkiv, Ukraine, ORCID: <https://orcid.org/0009-0005-9725-5783>, e-mail: 231986@ukr.net

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

¹⁰ Candidate of Medical Sciences, Docent, State Specialized Institution Kharkiv Regional Bureau of Forensic Medical Examination of Ministry of Healthcare of Ukraine, Kharkiv, Ukraine, ORCID: <https://orcid.org/0000-0003-2527-9055>, e-mail: medkrim@ukr.net

¹¹ Candidate of Medical Sciences, Docent, Physician Emeritus of Ukraine, State Specialized Institution Kharkiv Regional Bureau of Forensic Medical Examination of Ministry of Healthcare of Ukraine, Kharkiv, Ukraine, ORCID: <https://orcid.org/0000-0002-9795-8463>, e-mail: bodydoc666@gmail.com

^a Conceptualization, methodology, supervision.

^b Conceptualization, methodology, investigation, software.

^c Writing – original draft, methodology, supervision.

^d Data curation, research, software.

^e Investigation, resources.

DOI: [10.32353/khrife.4.2025.06](https://doi.org/10.32353/khrife.4.2025.06) UDC 343.98

Received: 20.10.2025 / Reviewed: 30.10.2025 / Accepted for printing: 25.12.2025 /

Available online: 31.12.2025



This article purpose is to investigate specifics of damage formation mechanism in a viscoelastic medium that arose as a result of high-speed impact-contact interaction with ready-made cylindrical striking elements. For achieving the goal, general scientific and special methods were used. The main attention was paid to the study of striking elements with a diameter of 5.0 mm, since they are equipped with a significant number of fragmentation munitions (in particular, anti-personnel mines, ammunition for dropping from drones, as well as improvised explosive devices). Experimental researches were carried out in conditions of a ballistic route using optoelectronic measuring complexes, a biological tissue simulator (ballistic plasticine) and special cartridges. Introduction of ready-made striking elements into free flight was carried out using a neuroballistic hand-held throwing device, as well as rifled firearms of 5.6 mm and 5.45 mm caliber. It made possible to conduct full-scale experiments in a fairly wide range of contact velocities from 70 m/s to 1082 m/s during research on striking properties and in the range from 547 m/s to 1096 m/s during research on aeroballistic characteristics. As experimental shells, ready-made striking elements of cylindrical shape with a diameter of 5.0 mm and an elongation of 0.96-1.1, that are equipped with OZM-72 fragmentation barrage mines, were used. During research, it was determined that after hitting the specified ready-made striking elements in the thickness of the biological tissue simulator behave stably and form conical cavities. They cause the greatest damage in the area of the first quarter (third) of the damage channel. This is due to the almost complete transfer of their kinetic energy by the striking elements to the layers of environment adjacent to the central damage channel in this area. Dimensions of

the damage zone in this area of the channel are maximum. Based on obtained results, specifics of influence of the contact velocity and the position of striking element at the moment of impact on the parameters of the damage channel were determined. Empirical dependences of resistance coefficient of viscoelastic medium, the volume and length of the damage channel on the contact velocity were determined. The results of performed researches make possible to predict the severity of shrapnel wounds inflicted on a person and to solve a number of situational tasks related to the investigation of criminal crimes and terrorist acts, while which commission of fragmentation munitions or improvised explosive devices were used. Separate stage is the research on aeroballistic characteristics of kinetic projectile samples that makes possible to determine their striking properties depending on distance to the explosion center.

Keywords: ballistic plasticine; ammunition; coefficient of medium resistance; contact velocity; fragmentation-barrier mine OZM-72; fragmentation damage; cartridge; improvised explosive device; terminal ballistics; striking element of cylindrical shape.

Research Problem Formulation

Terminal ballistics of natural fragmentation fragments and ready-made striking elements is a rather complex field of research in military and forensic medicine. Formation rapidity of shrapnel wounds, simultaneous formation of multiple wounds and the rather high contact velocities of kinetic projectiles (fragments and ready-made striking elements) do not allow us to accurately determine influence of specific factors on formation of the shrapnel wound channel and severity of the damage caused to biological tissues. It is impossible to clearly determine the zones of damage (contusion (primary necrosis) and commotion (secondary necrosis)) in the thickness of biological tissues of the human body, since it is quite difficult to determine the nature of propagation of pressure waves in a viscoelastic medium during the high-velocity interaction of a fragment of arbitrary shape or a striking element of a typical (cube,

cylinder, sphere) shape, the hits of which are characterized not only by a high contact velocity, but by variability of their position at the moment of hit (lateral projection at a certain angle or end surface) and rotation around their longitudinal or polar axes (the “rollover” effect), etc. This makes impossible to predict consequences of fragments hitting human body and determine severity of the damage caused by. A separate issue is determining parameters of the flight trajectory of the studied kinetic projectiles and their striking properties depending on the distance to the explosion center, since this is also associated with the rather significant values of their initial velocities and the uncertainty of their behavior in free flight.

The only way to obtain reliable data on terminal and external ballistics of kinetic projectiles is to conduct full-scale tests and experimental researches. However, this procedure faces difficulties.. First of all, this is the range of contact velocities of kinetic projectiles that can be obtained

exclusively as a result of detonating charges of explosives of different masses. In addition, during detonation of charges, a multitude of fragments of natural fragmentation are formed or a significant number of ready-made striking elements are introduced into free flight that negatively affects objectivity of obtained data, since a certain number of kinetic projectiles can simultaneously hit the biological tissue simulator, which aftereffects are superimposed on each other, which makes practically impossible to identify specifics of fragmentary wound formation by a separate sample of a specific kinetic projectile. Use of devices in the form of protective shields for the separation of the fragment field does not completely solve the issue. This is due to the fact that probability of the studied kinetic projectile hitting a limited space in a specific direction after the explosion is quite small and obtaining certain results requires conducting a certain number of experiments with significant consumption of explosives and means of detonation. Use of technical devices for forced direction of the flow of fragments in the appropriate direction with their subsequent separation using protective devices does not solve this problem, since it cannot hit the biological tissue simulator directly, but as a result of ricocheting from the walls of directing device. In addition, probability of hitting the simulator simultaneously with several kinetic projectiles or their sequential hitting with overlapping consequences is not excluded.

Moreover, there are issues with determining the contact velocity of the kinetic projectiles under research. During explosion, it is quite difficult to secure the recording devices and determine the velocity of individual kinetic projectile in a fragmentation field. In general, these factors negatively affect research effectiveness and reliability degree of obtained data.

The outlined problematic issues can be solved using the methods of experimental (forensic) ballistics. Experimental researches should be carried out in a ballistic track equipped with measuring complexes (optoelectronic or Doppler radar chronograph such as *LabRadar*), using special cartridges and samples of firearms of the appropriate caliber, or using specialized ballistic installations or devices for throwing kinetic shells. As a simulator of biological tissues, it is advisable to use ballistic plasticine, since it forms a final cavity after hitting that makes possible to determine the zone of propagation of pressure waves, as well as the size and other parameters of the caused damage.

This approach helps to achieve an appropriate range of contact velocities, register the velocity value at the moment of impact, visualize nature of the damage caused, determine characteristics of this damage and exclude influence of the multiple effects of other kinetic projectiles on damage formation in the simulator of biological tissues by a separate damaging element. In addition, in this way it is possible to obtain reliable data on the stability of the damaging elements in flight and determine their aeroballistic characteristics.

Article Purpose

For investigating specifics of damage formation mechanism in a viscoelastic medium caused by high-speed impact-contact interaction with ready-made striking elements of a certain shape and size. Determine variability influence of initial contact conditions on parameters of the final cavity formed in thickness of the biological tissue simulator. Based on the results of experimental researches, determine dependence of the medium resistance coefficient, channel length, and volume of dam-

age inflicted on the contact velocity of the projectile and its position at the moment of impact. Concurrently these researches, conduct research on the aeroballistic characteristics of ready-made cylindrical striking elements that is necessary to determine the values of their kinetic energy dissipation along the trajectory.

Research Methods

General scientific (analysis, synthesis, etc.) and special methods (aerometric one, field experiments, etc.) were applied. Optoelectronic measuring complexes, ballistic plasticine (a simulator of biological tissues of the human body) and several types of weapons were used for research.

Analysis of Essential Researches and Publications

The main research provisions in the field of terminal ballistics of fragments and ready-made striking elements are set out in a number of fundamental scientific and scientific-practical research papers by such authors as V. Tsybaliuk with co-authors¹, R. M. Coupland with co-authors², N. Rozen & I. Dudkiewicz³, T. O. Terefe with co-authors⁴, et al. Their research papers not only provide general methods for studying injuries caused by fragments and bullets, but

describe in detail the methods of conducting experiments, present analytical models for determining the parameters of gunshot trauma and shrapnel injuries; outline empirical dependencies for determining the depth of wound channels, size of temporarily pulsating cavities, severity of damage to biological tissues, as well as the results of computer modeling of physical processes accompanying the impact of kinetic projectiles in biological tissues and their imitators. Most of these research papers are devoted to the researches on spherical striking elements, standardized fragment simulators with flat and chisel-shaped head parts, but practically no attention is paid to the researches on ready-made striking elements and fragments of natural fragmentation of real samples of ammunition and improvised explosive devices, although research results of such samples of kinetic projectiles are of greater practical importance both for military medicine and for forensic science. In this regard, we focused on the research on striking elements of a specific sample of ammunition, namely the OZM-72 barrage fragmentation mine.

Main Content Presentation

Cylindrical destructive elements are one of the most common ready-made destructive elements that are equipped with

- 1 Tsybaliuk V., Lurin I., Gumeniuk K., Herasymenko O., Furkalo S., Oklei D., Negoduyko V., Gorobeiko M., Dinets A. Modeling of wound ballistics in biological tissues simulators. *Medicini perspektivi*. 2023. Vol. 28. No. 1. C. 37—48. DOI: 10.26641/2307-0404.2023.1.275866 (date accessed: 18.09.2025).
- 2 Coupland R. M., Rothschild M. A., Thali M. J. Wound ballistics: basics and applications / B. P. Kneubuehl (Ed.). Berlin, 2014. 496 p. DOI: 10.1007/978-3-642-20356-5 (date accessed: 18.09.2025).
- 3 Rozen N., Dudkiewicz I. Wound ballistics and tissue damage / Armed Conflict Injuries to the Extremities. Berlin, 2011. Pp. 21—33. DOI: 10.1007/978-3-642-16155-1_2 (date accessed: 18.09.2025).
- 4 Terefe T. O., Chawla A., Datla N. V. Damage mechanisms from low-velocity penetrating shrapnel in ballistic gelatin. *Defence Technology*. 18 July 2025. DOI: 10.1016/j.dt.2025.07.008 (date accessed: 18.09.2025).

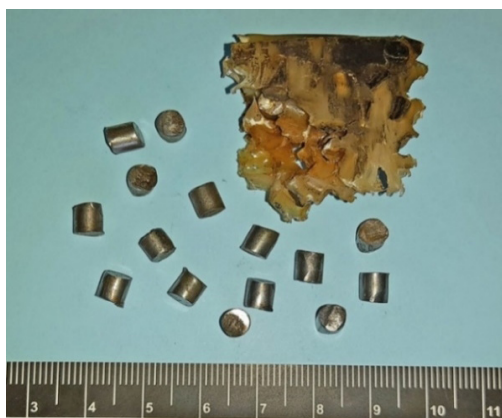
fragmentation and high-explosive ammunition, warheads of various types of weapons and improvised explosive devices. First of all, they are more technologically advanced in manufacture, and due to their high initial velocity, they have rather high damaging properties. This is due to the fact that, when they hit the target, they often transfer all their kinetic energy to biological tissues of the human body and cause significant damage.

The smallest finished striking element of cylindrical shape with a diameter of 5.0 mm. These elements are equipped with fragmentation-barrier mine OZM-72. The number of damaging elements in one mine is almost 2,400 pcs. The general view

of the mine and its damaging elements is indicated in Figures 1 and 2.



Fig. 1. General view of the OZM-72 fragmentation-barrier mine (photo from the Internet)



a



b

Fig. 2. General view of the finished damaging elements of cylindrical shape of the OZM-72 (a) mine and fragment of polymer shirt in which they are poured (b)

The main characteristics of damaging elements:

- shape: cylinder;
- dimensions: diameter — 5.0–5.1 mm, length — 4.8–5.5 mm;
- average mass of finished element: 0.77 g (0.65–0.80 g);
- average volume value: 0.105 cm³.

There are no reliable data on the value of the initial velocity of finished destruc-

tive elements of the OZM-72 mine in open information sources, but their initial velocity can be determined on the basis of data on the design specifics of ammunition and mass of its main structural elements involved in formation of fragmentation field.

Characteristics of OZM-72 mine:

- Explosive material (hereinafter referred to as EM) — TNT;

- detonation velocity at $\rho = 1600 \text{ kg/m}^3$, melted 6700 m/s;
- explosive charge mass — 0.66 kg;
- average mass of finished damaging element is 0.77 g;
- number of damaging elements — 2,400 pcs.;
- average value of total mass of fragments is 1.848 kg;
- total mass of the mine is 5.0 kg;
- mass of the guide barrel of the mine with a rope is 0.675 kg;
- mass of the mine without a guide sleeve — 4.325 kg;
- lethal radius: 25–30 m;
- flight range of individual damaging elements — up to 50 m;
- mass of expelling charge (smoky powder) — 7 g;
- mass of the intermediate charge (TNT) — 23 g.

Given that ready-to-use striking elements are located directly in the mine, that after the detonator and propellant charge are activated, flies upward from the guide cup, total mass of such a warhead will be 4.325 kg in the calculations.

According to the methods ⁵ initial velocity of the damaging elements can be calculated by the formula:

$$V_0 = \frac{D}{2} \sqrt{\frac{\alpha}{2-\alpha}}, \quad (1)$$

where:

V_0 is initial velocity of the damaging element, m/s;

Detonation velocity, m/s:

α — housing filling factor:

$$\alpha = \frac{m_{\text{exp}}}{m_k}, \quad (2)$$

where:

m_{exp} — explosive mass, kg;

m_k is the mass of the munition body involved in the formation of fragments:

$$m_k = M - m_{\text{пас}}, \quad (3)$$

where:

M is the total mass of the ammunition (warhead), kg;

$m_{\text{пас}}$ — passive mass of the ammunition body, kg.

If we assume that practically the entire mine body (warhead) is involved in the formation of fragments, then with exception of the explosive mass in accordance with (3) the value of $m_k = 4.325 - 0.66 = 3.665 \text{ kg}$. In this case, in accordance with (2), the filling factor of the body will be $\alpha = 0.180$.

Calculated value of initial velocity of the damaging elements according to the formula (1) will be $V_0 = 1053 \text{ m/s}$. This value of initial velocity of dispersal of the finished damaging elements is approximate, it is quite difficult to determine initial velocity of dispersal of the finished damaging elements experimentally, especially the velocity of a separate damaging element.

During experimental firing, the contact velocity of the striking element before hitting the target was recorded using the ИБХ-731.4 optoelectronic measuring complex (cf.: Fig. 3a). Biological tissues were imitated by Weible ballistic plasticine (cf.: Fig. 3b).

5 Прохоров-Лукін Г. В., Пащенко В. І., Биков В. І. та ін. Методика комплексного дослідження вибухових пристроїв, вибухових речовин і слідів вибуху. № ДР 0103U002003. Київ, 2011. 216 с. URL: https://arm.navs.edu.ua/arm/arm_bmb_exp/idb/metod_wte.html (date accessed: 18.09.2025) ; Полениця П., Науменко І., Ліцман А., Нестеров Д. Методика оцінювання ефективності дії осколково-фугасного снаряда по наземних цілях. Київ, 2024. 46 с. Реєстр. код ВП 7-07(01).010.1.12.



Fig. 3 General view of measuring equipment (a) and ballistic plasticine block (b)

Individual striking elements were introduced into free flight in three stages. At the first stage, a neuroballistic hand-held throwing device was used. It made possible to investigate the nature of the damage at contact velocities from 70 m/s to 110 m/s. At the second stage, firing was carried out from a small-caliber TOZ-8 ri-

fle, which made it possible to perform a research in the range of contact velocities of 140–260 m/s. At the final stage, firing was carried out from a 5.45 mm AK-74M assault rifle using special 5.45×39 caliber cartridges (cf.: Fig. 4). This provided the results of research in the range of contact velocities of 300–1082 m/s.



Fig. 4. General view of a special cartridge equipped with a ready-made destructive element of the OZM-72 (a) mine and the AK-74M (b) assault rifle

Using this approach, it was possible to achieve the contact velocities of the damaging elements, commensurate with the calculated values of initial flight velocities of the damaging elements of the OZM-72 mine.

In order to determine formation specific of blind and through injuries during research impacts on the torso and limbs of the biological object were simulated.

During research on blind damage, contact velocity effect of damaging element on the damage channel parameters

and resistance force of coefficients the medium was determined depending on the value of contact velocity and depth of penetration into the medium.

During research on through damage, the values of contact velocity of damaging element and its final velocity after overcoming obstacle, loss of kinetic energy and scale of the caused damage were determined.

The results of experimental researches on blind lesions in the thickness of ballistic plasticine are presented in Fig. 5–28 and in Table 1.

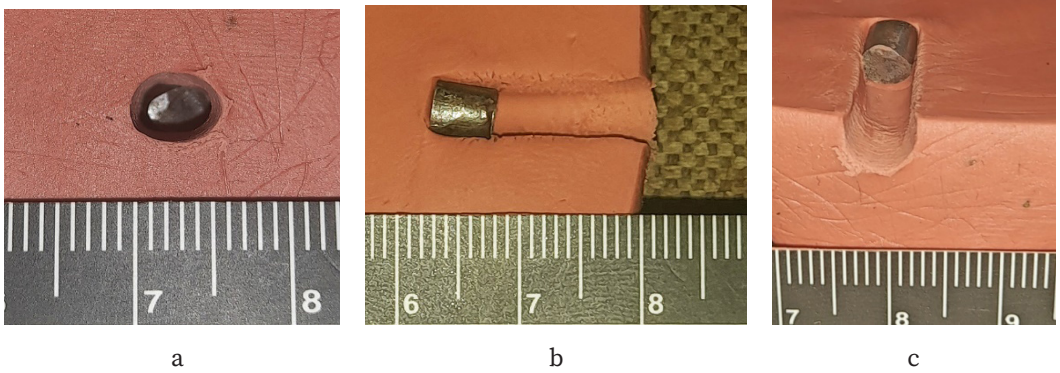


Fig. 5. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 70.5 m/s

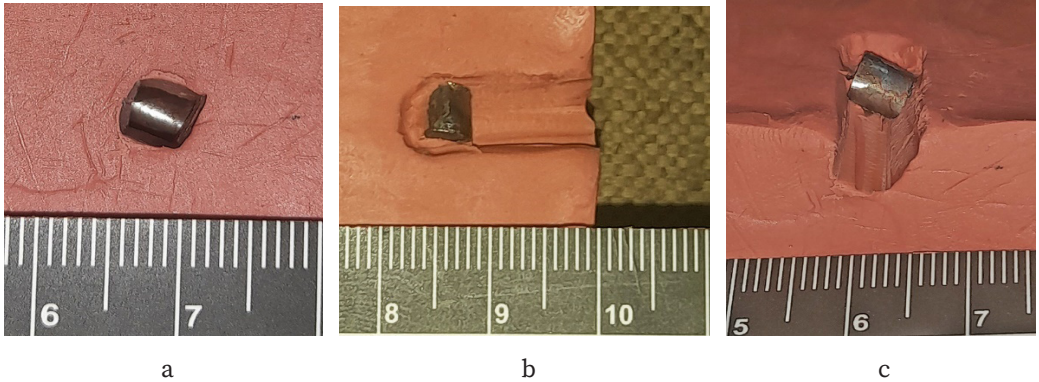


Fig. 6. Nature of damage to ballistic plasticine after hitting investigated damaging element at a contact velocity of 71.2 m/s

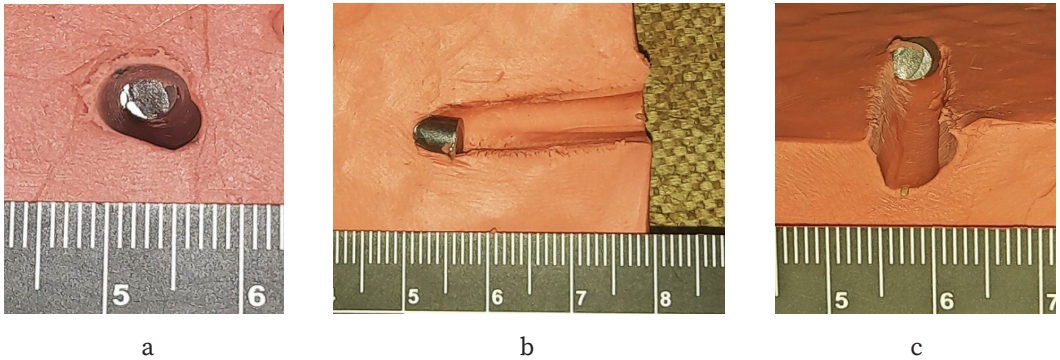


Fig. 7. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 94.0 m/s

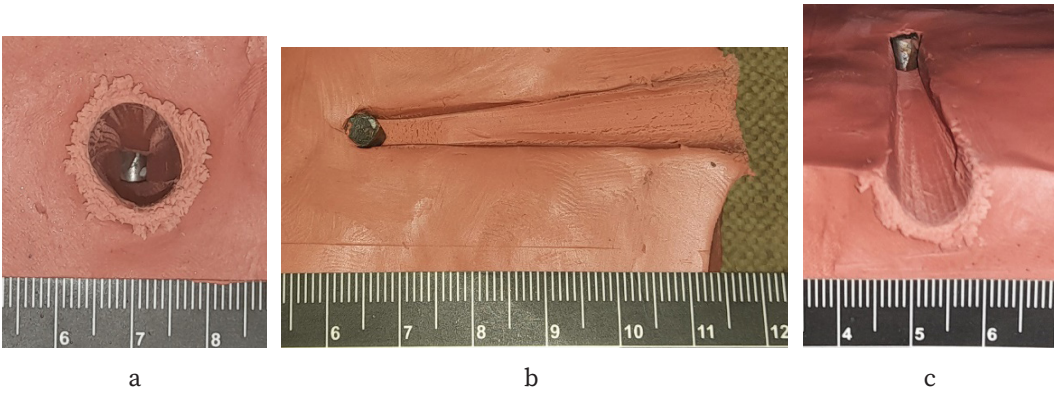


Fig. 8. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 108.2 m/s

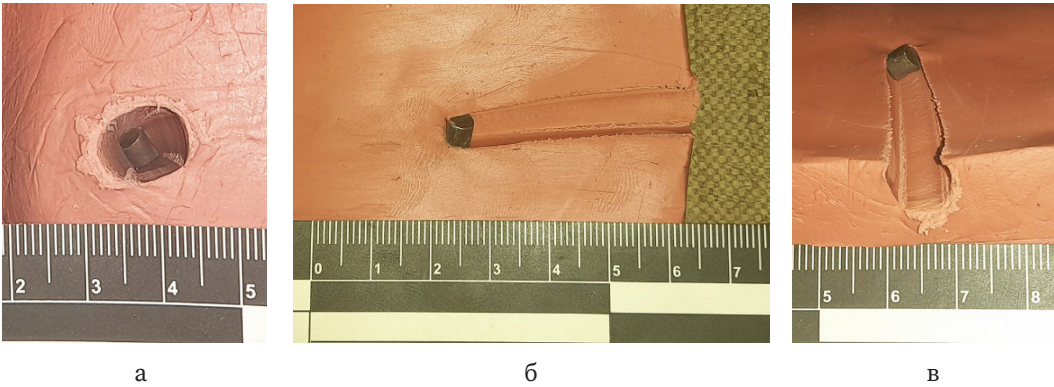


Fig. 9. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 147.5 m/s

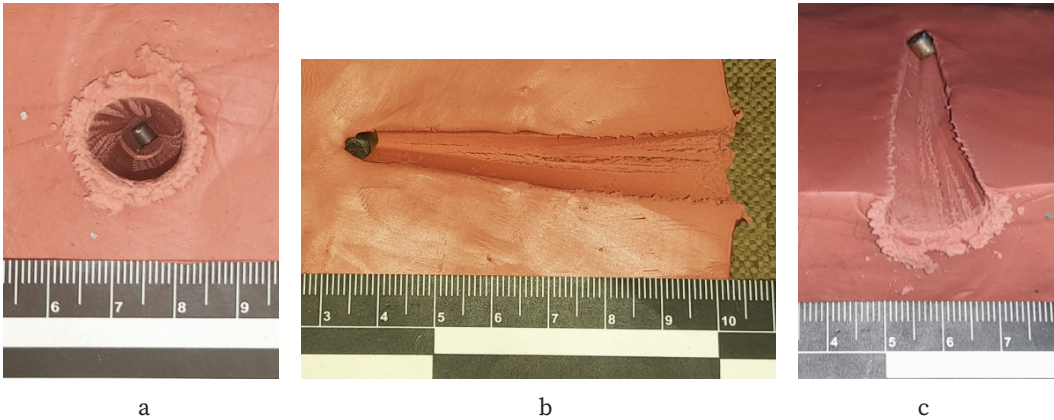


Fig. 10. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 187.0 m/s

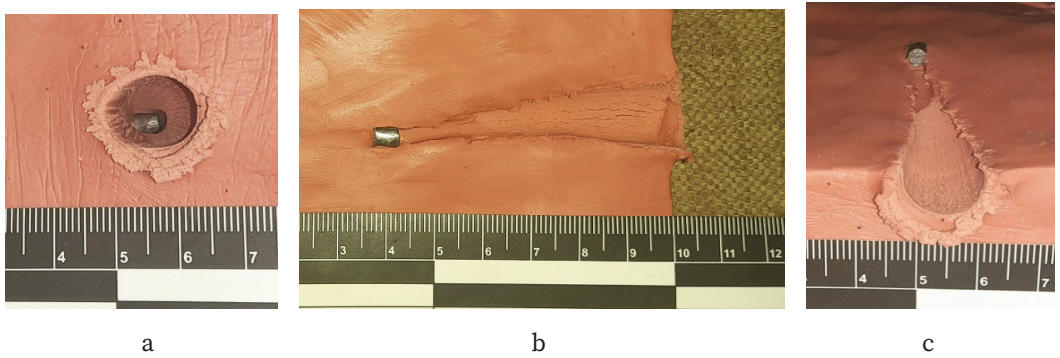


Fig. 11. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 202.2 m/s



Fig. 12. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 251.4 m/s

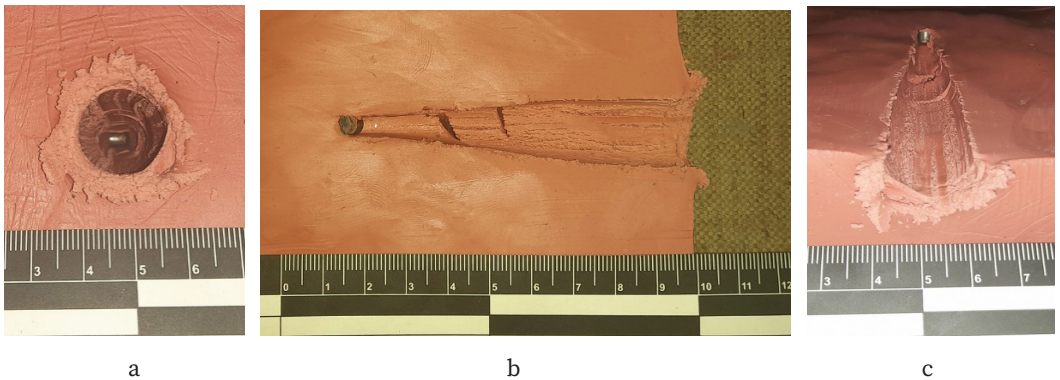


Fig. 13. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 308.4 m/s

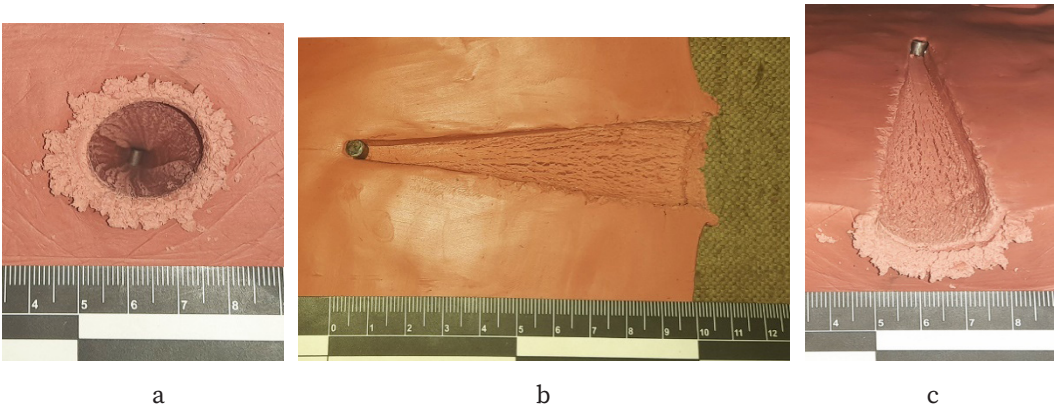


Fig. 14. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 349.1 m/s

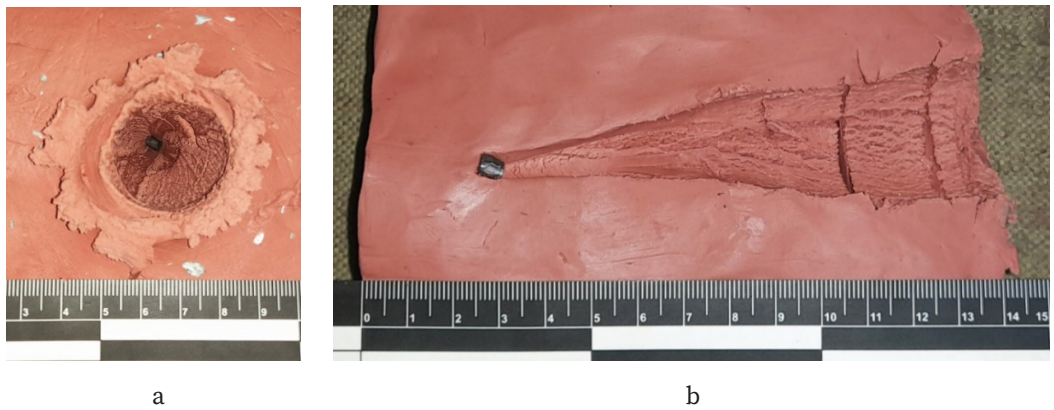


Fig. 15. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 432.1 m/s

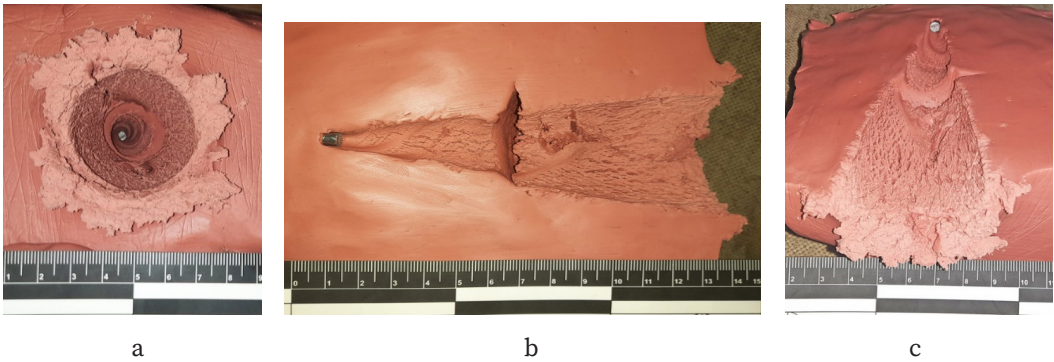


Fig. 16. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 572.2 m/s

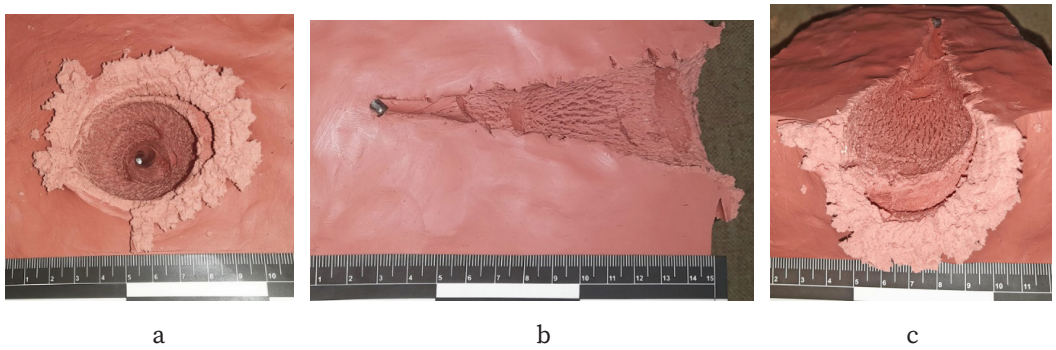


Fig. 17. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact speed of 595.9 m/s

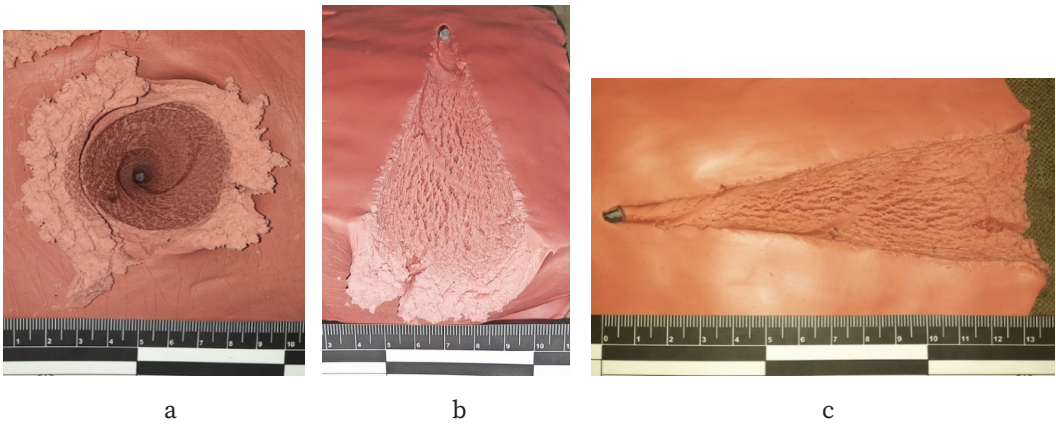


Fig. 18. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 608.9 m/s

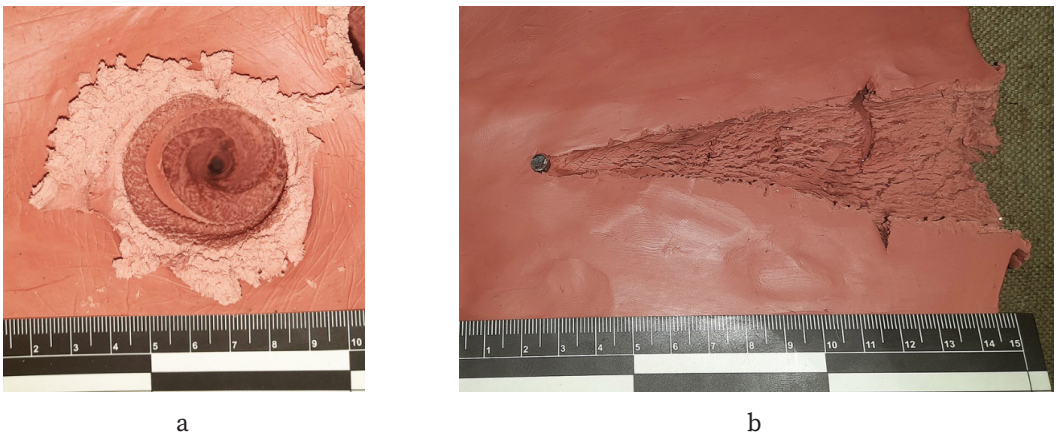


Fig. 19. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 648.3 m/s

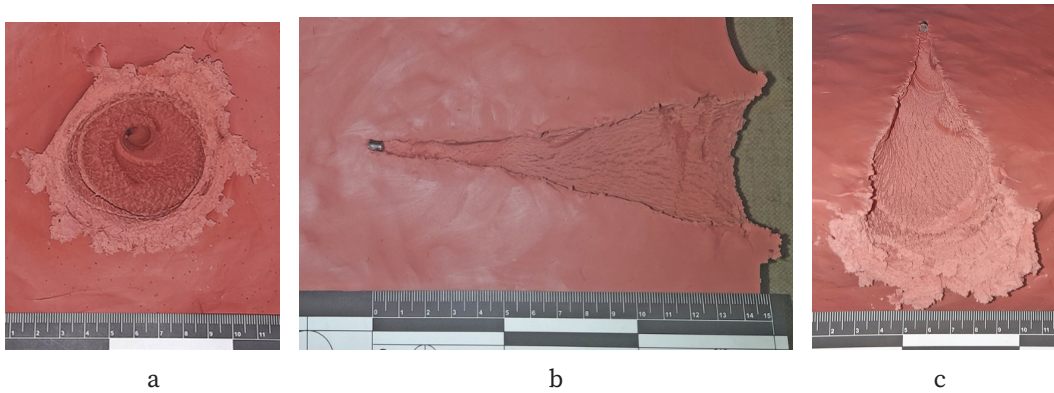


Fig. 20. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 712.3 m/s

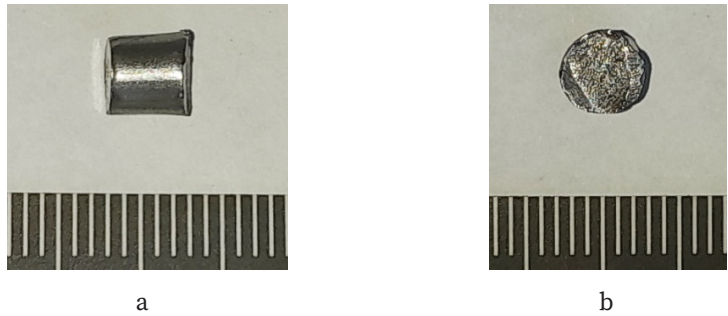


Fig. 21. General view of the finished hitting element after hitting the ballistic plasticine block

Since the impact of the finished striking element into the ballistic plasticine block occurred with a flat end part (*cf.*: Fig. 20), it underwent strong compression along its longitudinal axis as a result of the impact-contact interaction (*cf.*: Fig. 21). Diameter of the deformed part of the damaging element is 5.5 mm, the non-deformed part is 5.0 mm.

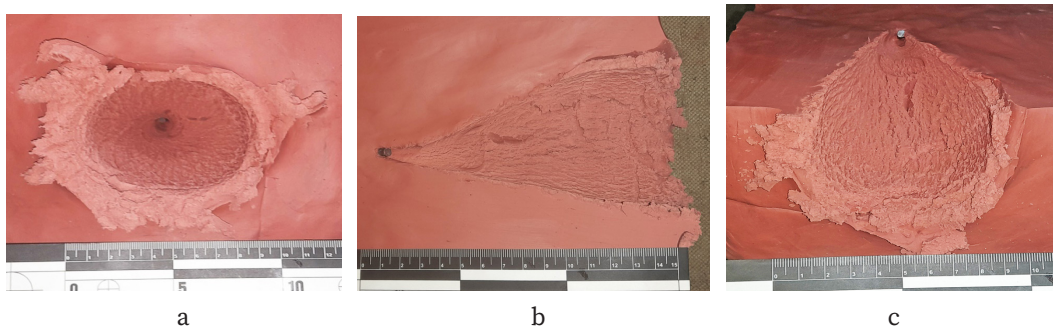


Fig. 22. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 963.2 m/s

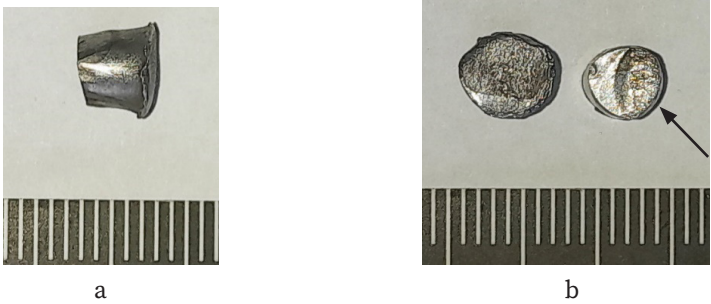


Fig. 23. General view of the finished hitting element after hitting the ballistic plasticine block and comparing it with the undeformed sample (marked with an arrow)

The impact of the finished striking element into the ballistic plasticine block occurred with a flat end part (*cf.*: Fig. 22), as a result of the impact-contact interaction, it underwent strong compression along its longitudinal axis (*cf.*: Fig. 23). The diameter of the deformed part of the damaging element is 6.1 mm, the non-deformed part is 5.0 mm.

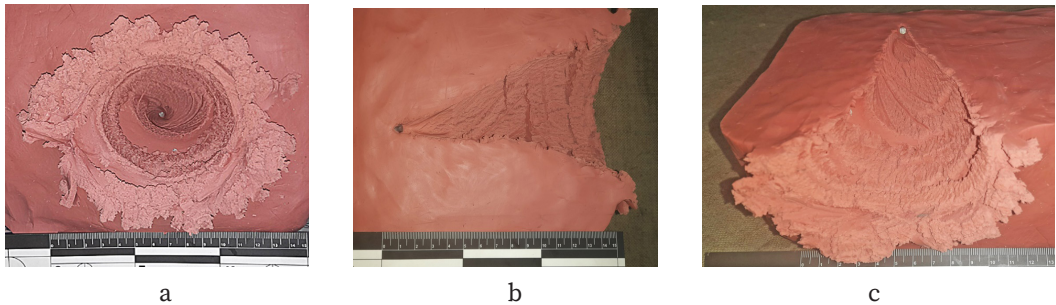


Fig. 24. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 975.6 m/s

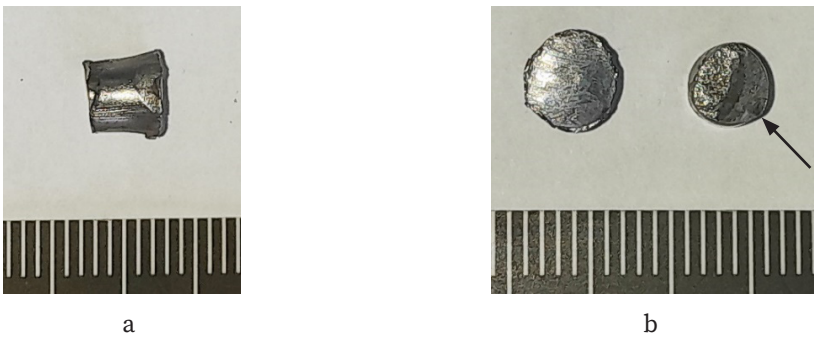


Fig. 25. General view of the finished hitting element after hitting the ballistic plasticine block and comparison with the undeformed sample (marked with an arrow)

Impact of the finished striking element into ballistic plasticine block occurred with a flat end part (*cf.*: Fig. 24), as a result of the impact-contact interaction, it underwent strong compression along its longitudinal axis (*cf.*: Fig. 25). The diameter of deformed part of the damaging element is 6.2 mm, the non-deformed part is 5.0 mm.

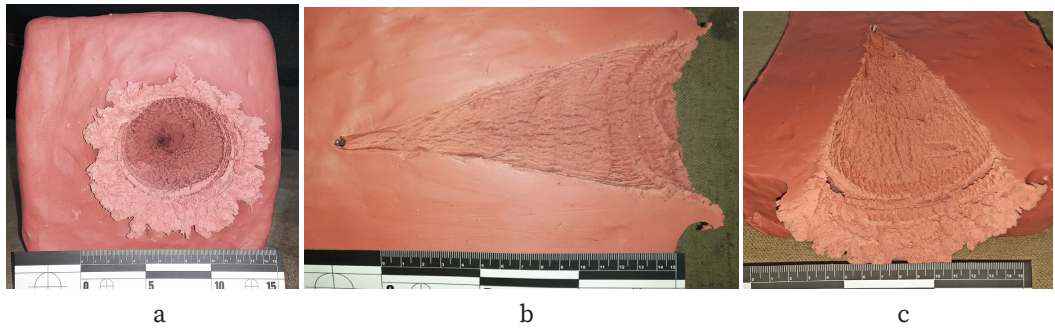


Fig. 26. Nature of damage to ballistic plasticine after hitting the investigated damaging element at a contact velocity of 1082.0 m/s

Table 1

**Characteristics of blind damage
caused by ready-made destructive elements of the OZM-72 mine**

Mass, g	Contact velocity, m/s	Contact kinetic energy, J	Damage channel length, mm	Damage channel volume, cm ³
0.77	70.5	1.91	19.3	0.52
0.75	71.2	1.90	17.1	0.68
0.76	94.0	3.36	28.1	0.92
0.78	108.2	4.57	52.7	3.71
0.78	147.5	8.48	41.2	2.21
0.81	187.0	14.16	69.8	6.91
0.78	202.2	15.95	62.9	4.72
0.74	251.4	23.38	71.0	8.71
0.78	308.4	37.09	87.2	13.40
0.78	349.1	47.53	101.1	19.40
0.75	432.1	70.02	118.2	43.31
0.75	572.2	122.78	124.0	85.21
0.75	595.9	133.16	112.0	91.30
0.75	608.9	139.03	131.0	96.51
0.75	648.3	157.61	129.0	88.30
0.76	712.3	192.80	145.0	138.0
0.75	887.3	295.24	140.0	167.0
0.77	963.2	357.19	140.0	228.0
0.80	975.6	380.72	142.0	262.0
0.79	1082.0	462.44	171.0	464.0

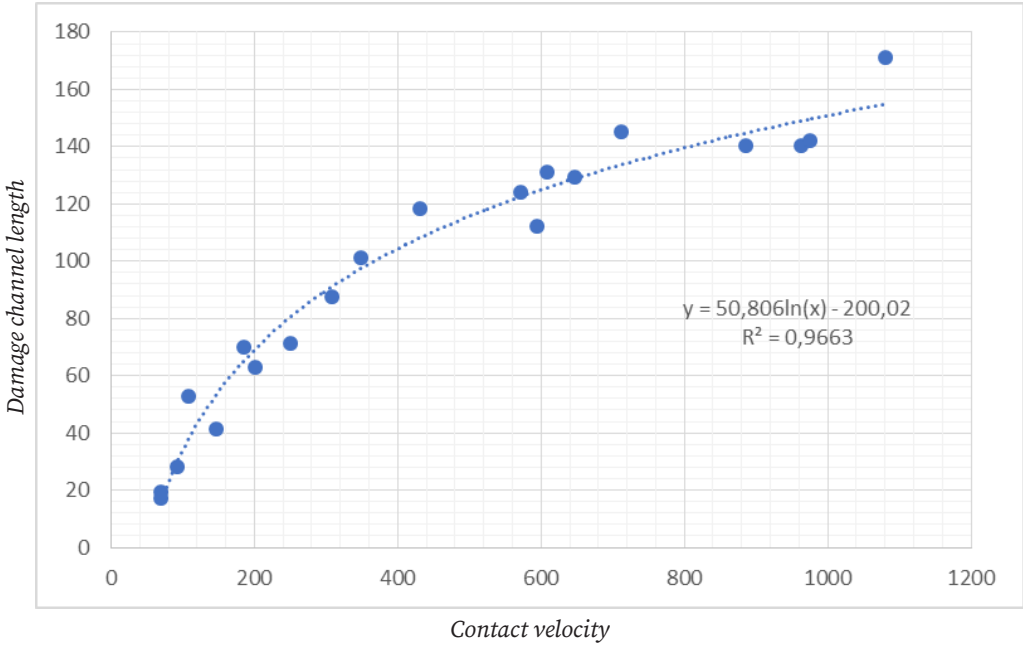


Fig. 27. Dependence of the length of damage channel in viscoelastic medium on the contact velocity of damaging element

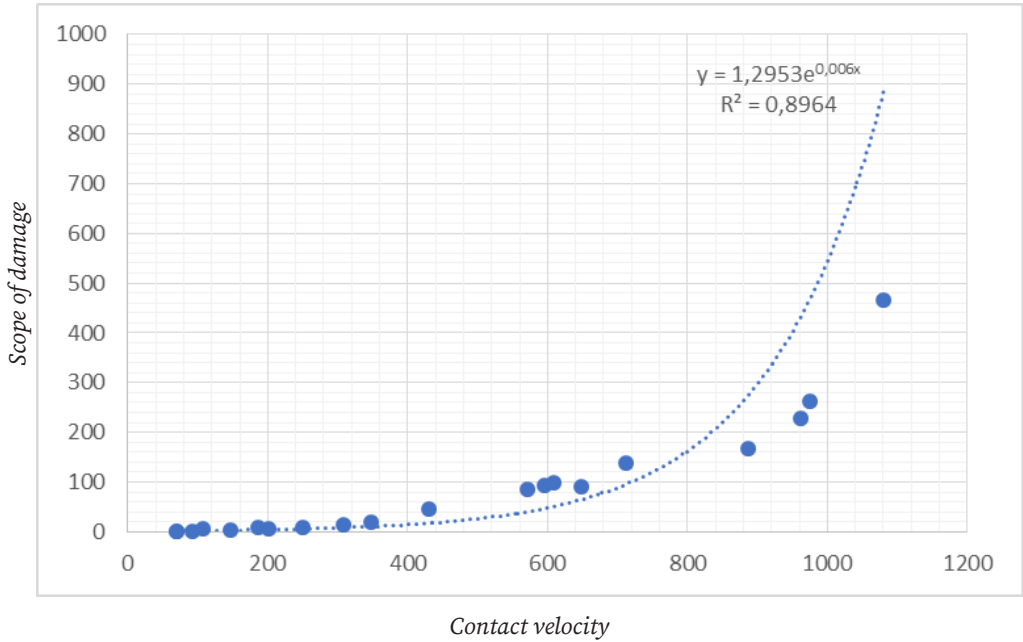


Fig. 28. Dependence of the damage volume in a viscoelastic medium on the contact velocity of the striking element

Approximation of the results of experimental researches makes possible to predict the nature of the damage and its parameters (volume of damage and depth of the wound canal).

In addition, on the basis of the empirical dependence (4), it is possible to determine the limiting velocity of the studied damaging element V_{gr} , at which it stops in visco-elastic environment ⁶:

$$x = 50,806 \cdot \ln(V_k) - 200,02, \quad (4)$$

where:

x is the length of the damage channel, mm;

V_k is the velocity of the striking element at the time of impact, m/s.

Limiting velocity V_{gr} can be determined if we assume that the striking element penetrates deep into the visco-elastic medium by the value of its longitudinal

size (depending on the position at the moment of impact) and stops.

The studied striking element of cylindrical shape with a diameter of 5.0 mm and an average length of 5.15 mm is characterized by hitting the target:

- end surface ($x = 5.15$ mm, contact area (cross-sectional area) $S_1 = 0.2$ cm²);
- at an the angle of 45° ($x = 7.18$ mm, contact area (cross-sectional area) $S_2 = 0.282$ cm²);
- at the angle of 90° ($x = 5.0$ mm, contact area (cross-sectional area) $S_3 = 0.26$ cm²);

Assuming that contact velocity is equal to the limiting velocity, then $\ln V_k = \ln V_{gr}$. By substituting these data into formula (4), it is possible to obtain the value of V_{gr} . The results of the studies are presented in the Table 2.

Table 2

Value of the limiting velocity V_{gr} for the studied damaging element, taking into account its position at the time of impact

Parameters	Hitting target		
	end surface, $S_1 = 0.2$ cm ²	at an angle of 45°, $S_2 = 0.282$ cm ²	at an angle of 90°, $S_3 = 0.26$ cm ²
x, mm	5.15	7,18	5,0
V_{gr} , m/s	56.73	59,04	56,56

Given that the graph of the dependence of the length of the damage channel on the value of the contact velocity (cf.: Fig. 27) reflects the value for all positions of the striking element at the time of impact, it is possible to mediate the value of V_{gr} , which will be 57.44 m/s. Obtained cal-

culated data on V_{gr} make possible to assert that they correlate with data of experimental researches.

Analysis of the obtained research results indicates that even at high contact velocities, the striking elements of the cylindrical shape with a degree of

6 Коломійцев О., Сапелкін В., Гіверц П., Герман О. Особливості визначення уражаючих властивостей малокаліберних куль після рикошету. *Теорія та практика судової експертизи і криміналістики*. 2022. Вип. 2 (27). С. 59–75. DOI: 10.32353/khrife.2.2022.05 (date accessed: 18.09.2025) ; Коломійцев А. В., Сапелкин В. В. Определение баллистических характеристик и поражающих свойств патронов самодельного снаряжения калибра 7,62×39. *Там само*. 2017. Вип. 17. С. 227–236. URL: http://nbuv.gov.ua/UJRN/Tpsek_2017_17_33 (date accessed: 18.09.2025).

elongation in the range of 1,0–1,1 (ratio of the length to the diameter of the cross-section) in the visco-elastic medium behave quite stably with the task of rectilinear channels.

Obtained research results make possible to determine indicators of the coefficient of resistance of the viscoelastic medium for hitting a cylindrical damaging element in the specified range of contact velocities (70.5–1082.0 m/s).

Resistance coefficient of the medium C_1 can be calculated by the formula (5) ⁷:

$$C_1 = \frac{m}{\rho \cdot S_i \cdot x} \ln \frac{V_c}{V_{gr}}, \tag{5}$$

where:

V_s is the contact velocity of the striking element at the time of impact, m/s;

V_{gr} — maximum velocity of the damaging element, 57.44 m/s;

m is the mass of the damaging element, g;

ρ is the medium density, g/cm³ ($\rho = 1.74$ g/cm³);

S_i is the cross-sectional area of the damaging element at the moment of impact, cm²;

x is the length of the damage channel, cm.

The research results are presented in the Table 3. Analysis of the results of researches and calculations indicates the effect on resistance force of the mass and the position of damaging element. If the indirect values of the mass of the damaging element are applied, then using formula (4) it is possible to calculate the values of the damage channel length and using formula (5) to establish corresponding values of the resistance coefficient of the viscoelastic medium. The results of the calculations are presented in Table 4 and Fig. 29.

Table 3

Resistance value of coefficient of the visco-elastic medium C_1 depending on the contact velocity and the position of striking element at the time of impact

Mass, g	Contact velocity, m/s	Channel length, mm	Resistance coefficient of the medium, C_1		
			$S_1 = 0.2 \text{ cm}^2$	$S_2 = 0.282 \text{ cm}^2$	$S_3 = 0.26 \text{ cm}^2$
0.77	70,5	19,3	0,470	0,333	0,361
0,75	71,2	17,1	0,541	0,384	0,416
0,76	94,0	28,1	0,766	0,543	0,589
0,78	108,2	52,7	0,539	0,382	0,414
0,78	147,5	41,2	1,026	0,728	0,789
0,81	187,0	69,8	0,787	0,558	0,606
0,78	202,2	62,9	0,897	0,636	0,690
0,74	251,4	71,0	0,884	0,627	0,680
0,78	308,4	87,2	0,864	0,613	0,665
0,78	349,1	101,1	0,800	0,567	0,616
0,75	432,1	118,2	0,736	0,522	0,566
0,75	572,2	124,0	0,799	0,567	0,615

7 Коломійцев О., Сапелкін В., Гіверц П., Герман О. Зазнач. твір. DOI: 10.32353/khrife.2.2022.05 (date accessed: 18.09.2025).

Completion of Table 3

Mass, g	Contact velocity, m/s	Channel length, mm	Resistance coefficient of the medium, C_1		
			$S_1 = 0.2 \text{ cm}^2$	$S_2 = 0.282 \text{ cm}^2$	$S_3 = 0.26 \text{ cm}^2$
0,75	595,9	112,0	0,900	0,639	0,693
0,75	608,9	131,0	0,777	0,551	0,598
0,75	648,3	129,0	0,810	0,574	0,623
0,76	712,3	145,0	0,758	0,538	0,583
0,75	887,3	140,0	0,843	0,598	0,648
0,77	963,2	140,0	0,891	0,632	0,686
0,80	975,6	142,0	0,917	0,650	0,705
0,79	1082,0	171,0	0,779	0,553	0,600

Analysis of the graph showing dependence of coefficient resistance of the visco-elastic medium C_1 on the contact velocity at the moment of impact indicates that when the striking element of the OZM-72 mine hits a human body, it transfers a significant part of its kinetic energy to the first quarter (one-third) of the wound channel, which leads to significant damage to biological tissues in the areas adjacent to the point of impact. As the striking element penetrates

deeper into biological tissues, the degree of damage in radial directions (lateral action) decreases. This differs significantly from nature of gunshot wounds caused by bullets from small arms, where, on the contrary, the greatest damage to biological tissues occurs in the middle section of the wound channel or in the terminal quarter (third) of the wound channel due to the bullet losing its gyroscopic stability as a result of its nutational oscillations.

Table 4

Calculated values of length of the damage channel and coefficient of resistance of the visco-elastic medium depending on the contact velocities at the mediated value of the mass of the damaging element 0.77 g

Contact velocity, m/s	Estimated value of damage channel, mm	Estimated value of resistance coefficient of the medium C_1
70,5	16,2	0,560
71,2	16,7	0,569
94,0	30,8	0,708
108,2	38,0	0,737
147,5	53,7	0,777
187,0	65,8	0,794
202,2	69,7	0,799
251,4	80,8	0,809
308,4	91,1	0,816
349,1	97,5	0,819
432,1	108,3	0,825
572,2	122,6	0,830
595,9	124,6	0,831

Completion of Table 4

Contact velocity, m/s	Estimated value of damage channel, mm	Estimated value of resistance coefficient of the medium C_1
608,9	125,7	0,831
648,3	128,9	0,832
712,3	133,7	0,833
887,3	144,9	0,836
963,2	149,1	0,837
975,6	149,7	0,837
1082,0	154,9	0,839

However, on the basis of performed researches, it is possible to identify the similarity of the nature and parameters of the damage caused by the studied damaging elements with the gunshot damage caused to a person as a result of hits of various types of expanding bullets ⁸.

Analysis of data in Table 4 and the graph (cf.: 29 on page 102) found that the dependence of the drag coefficient of the viscoelastic medium C_1 on the contact velocity of the striking element V_c has the formula of hyperbolic regression:

$$C_1 = a + \frac{b}{V_c}, \tag{6}$$

where:
a, b — coefficients;
 C_1 — coefficient of resistance of viscoelastic medium;
 V_c is the contact velocity of the striking element at the time of impact, m/s.
Using data in Table 4, it is possible to determine the values of the coefficients of the specified regression (cf.: Table 5).

Table 5

Auxiliary values of values C_1 and V_c

i	$x_i (V_c)$	$y_i (C_1)$	$1/x_i$	$1/x_i^2$	y_i/x_i
1	70,5	0,560	0,0141844	0,01418440	0,0002012
2	71,2	0,569	0,01404494	0,01404494	0,00019726
3	94,0	0,708	0,0106383	0,01063830	0,00011317
4	108,2	0,737	0,00924214	0,00924214	8.5417E-05
5	147,5	0,777	0,00677966	0,00677966	4.5964E-05
6	187,0	0,794	0,00534759	0,00534759	2.8597E-05
7	202,2	0,799	0,0049456	0,00494560	2.4459E-05
8	251,4	0,809	0,00397772	0,00397772	1.5822E-05
9	308,4	0.816	0.00324254	0.00324254	1.0514E-05

8 Лурін І. А., Цема Є. В., Гуменюк К. В., Сусак Я. М., Дубенко Д. Є., Цема Є. Є. Експериментальне моделювання залишкової ранової порожнини на балістичному пластиліні з використанням стандартних та експансивних куль. *Медична наука України*. Т. 17. № 4. С. 10—17. DOI: 10.32345/2664-4738.4.2021.02 (date accessed: 18.09.2025) ; Gumeniuk K., Lurin I., Tsema Ie., Susak Ya., Mykhaylenko O., Nehoduiko V. et al. Woundary ballistics of biological tissue's plastic deformation on the model of ballistic plastiline using hollow point and shape-stable bullets. *Journal of Education, Health and Sport*. 2021. Vol. 11. No. 11. Pp. 37—57. DOI: 10.12775/JEHS.2021.11.11.003 (date accessed: 18.09.2025).

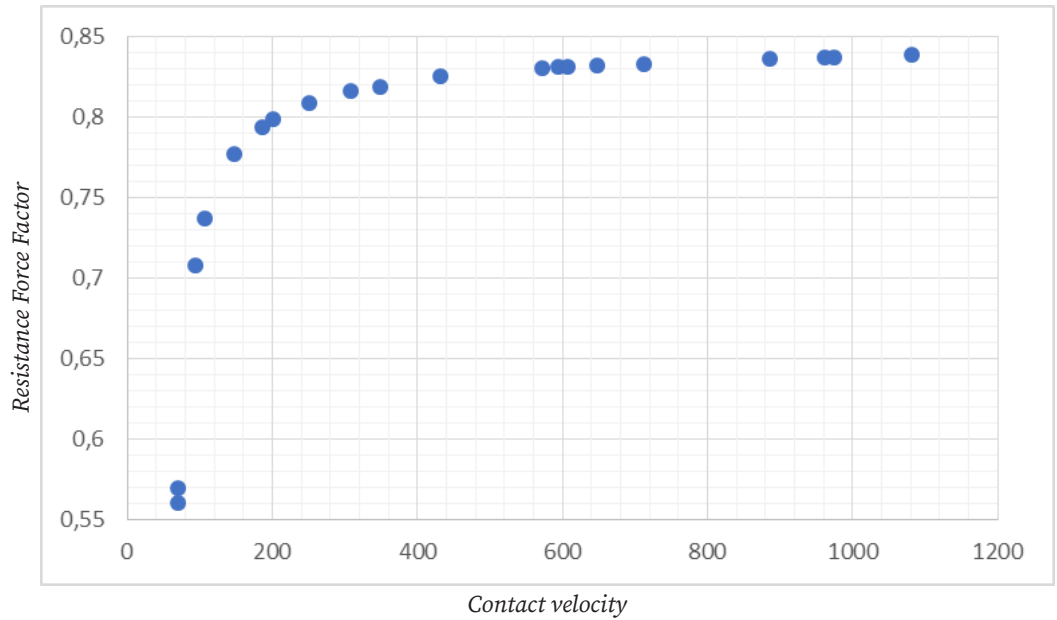


Fig. 29. Graph of dependence of the resistance coefficient of the visco-elastic medium C_1 on the contact velocity of striking element V_c

Completion of Table 5

i	$x_i (V_c)$	$y_i (C_1)$	$1/x_i$	$1/x_i^2$	y_i/x_i
10	349.1	0.819	0.00286451	0.00286451	8.2054E-06
11	432.1	0.825	0.00231428	0.00231428	5.3559E-06
12	572.2	0.830	0.00174764	0.00174764	3.0542E-06
13	595.9	0.831	0.00167813	0.00167813	2.8161E-06
14	608.9	0.831	0.00164231	0.00164231	2,6972E-06
15	648.3	0.832	0.0015425	0.00154250	2,3793E-06
16	712.3	0.833	0.0014039	0.00140390	1,9709E-06
17	887.3	0.836	0.00112701	0.00112701	1,2702E-06
18	963.2	0.837	0.00103821	0.00103821	1,0779E-06
19	975.6	0.837	0.00102501	0.00102501	1,0506E-06
20	1082.0	0.839	0.00092421	0.00092421	8,5417E-07
Σ	9267.3	15.719	0.08971061	0.08971061	0.00075314

According to the Table 5, empirical dependence of the resistance coefficient of the medium C_1 on the contact velocity V_c will be as follows:

$$C_1 = 0,8696 - \frac{18,6413}{V_c}, \quad (7)$$

where the coefficients a , b are calculated as:

$$b = \frac{n \sum \frac{y_i}{x_i} - \sum \frac{1}{x_i} \sum y_i}{n \sum \frac{1}{x_i^2} - (\sum \frac{1}{x_i})^2} = -18,6413;$$

$$a = \frac{1}{n} \sum y_i - \frac{b}{n} \sum \frac{1}{x_i} = 0,8696.$$

For assessing the significance of regression and correlation parameters, it is necessary to determine the mean value of the resistance force $\overline{C_1}$ coefficient, correlation index, determination index and the mean approximation error (cf.: Table 6).

The coefficient of resistance force is equal to:

$$\overline{C_1} = \overline{y_1} = \frac{1}{n} \sum y_i = 0,7859;$$

correlation index

$$R = \sqrt{1 - \frac{\sum (y_i - \hat{y}_i)^2}{\sum (y_i - \overline{y})^2}} = 0,9615;$$

determination index: $R^2 = 0.9246$;

average approximation error:

$$\overline{A} = \frac{1}{n} \sum \left| \frac{y_i - \hat{y}_i}{y_i} \right| \cdot 100\% = 2,4925 \%$$

Table 6

Auxiliary values

i	$x_i (V_c)$	$y_i (C_1)$	$\hat{y}_i$	$y_i - \overline{y}_i$	$(y_i - \overline{y}_i)^2$	ε_i	ε_i^2	A_i	$\Delta \varepsilon_i$	$(\Delta \varepsilon_i)^2$
1	70,5	0,560	0,6052	-0,2259	0,0511	-0,0452	0,002	0,0806	-	-
2	71.2	0.569	0.6078	-0,2169	0.0471	-0,0388	0.0015	0.0681	0.0064	0
3	94.0	0.708	0.6713	-0,0779	0.0061	0.0367	0.0014	0.0519	0.0755	0.0057
4	108.2	0.737	0.6973	-0,0489	0.0024	0.0397	0.0016	0.0539	0.0030	0
5	147.5	0.777	0.7432	-0,0089	0.0001	0.0338	0.0011	0.0435	-0,0059	0
6	187.0	0.794	0.7699	0.0081	0.0001	0.0241	0.0006	0.0304	-0,0097	0.001
7	202.2	0.799	0.7774	0.0131	0.0002	0.0216	0.0005	0.0271	-0,0025	0
8	251.4	0.809	0.7955	0.0231	0.0005	0.0135	0.0002	0.0168	-0,0080	0.001
9	308.4	0.816	0.8092	0.0301	0.0009	0.0069	4,7E-05	0.0084	-0,0067	0
10	349.1	0.819	0.8162	0.0331	0.0011	0.0028	7,8E-06	0.0035	-0,0040	0
11	432.1	0.825	0.8265	0.0391	0.0015	-0,0014	2,1E-06	0.0017	-0,0043	0
12	572.2	0.830	0.837	0.0441	0.0019	-0,0070	4,9E-05	0,0084	-0,0056	0
13	595.9	0.831	0.8383	0.0451	0.0020	-0,0073	5,4E-05	0.0088	-0,0003	0
14	608.9	0.831	0.839	0.0451	0.0020	-0,0080	6,4E-05	0.0096	-0,0007	0
15	648.3	0.832	0.8408	0.0461	0.0021	-0,0088	7,8E-05	0.0106	-0,0009	0
16	712.3	0.833	0.8434	0.0471	0.0022	-0,0104	0.0001	0.0125	-0,0016	0
17	887.3	0.836	0.8486	0.0501	0.0025	-0,0126	0.0002	0.0150	-0,0022	0
18	963.2	0.837	0.8502	0.0511	0.0026	-0,0132	0.0002	0.0158	-0,0007	0
19	975.6	0.837	0.8505	0.0511	0.0026	-0,0135	0.0002	0.0161	-0,0002	0
20	1082.0	0.839	0.8524	0.0531	0.0028	-0,0134	0.0002	0.0159	0.0001	0
Σ	-	-	-	-	0,1318	-	0,0099	0,4985	-	0,0061

F – Fisher’s criterion:

- critical (tabular): $F_{\text{tabl}} = F(\alpha, k_1, k_2) = F(0.05; 1; 18) = 4.4139$;
- Factual:

$$F_{\text{fakt}} = \frac{R^2}{1-R^2} \cdot \frac{k_2}{k_1} = 220,5979.$$

In addition: $k_1 = m = 1$; $k_2 = n - m - 1 = 18$;

$\alpha = 0.05$; where m is the number of parameters with variable regression equations.

Darbin-Watson factual test:

$$d = \frac{\sum (\varepsilon_i - \varepsilon_{i-1})^2}{\sum \varepsilon_i^2} = 0,6102$$

Analysis of obtained results indicates a high reliability of the approximation of experimental data. Experimental data correlate quite well with the calculated ones, which makes it possible to calculate the penetration depth of the studied damaging element with a sufficiently high degree of reliability.

The next research stage was to determine specifics of formation of through damage in the ballistic plasticine block that made possible to establish qualita-

tive indicators of the process of forming a fragmentation wound of human limbs.

During experimental researches, data were obtained on the contact hit rates, the velocities of the striking elements after overcoming the obstacle, as well as data on the cost of kinetic energy for breaking through the block of ballistic plasticine of a certain thickness and the value of the resistance force coefficients of the medium. The research results are presented in Tables 7, 8 and Figures 30–33.

Table 7

**Characteristics of through damage
caused by ready-made destructive elements of OZM-72 mine**

Mass, g	Contact velocity, m/s	Contact kinetic energy, J	Damage channel length, mm	Damage channel volume, cm ³
0.75	770,4	222,57	145	130,9
0,77	856,0	282,10	140	224,8
0,75	1027,0	395,52	148	297,6
0,75	1066,0	426,13	90	352,4

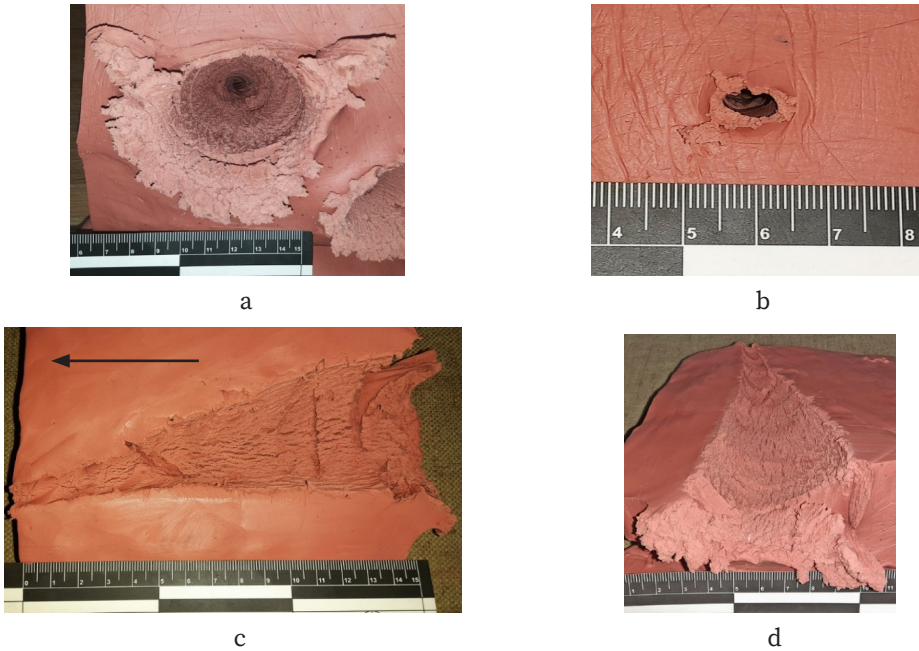


Fig. 30. General view of the inlet (a), outlet (b) and damage channel (c, d) caused by hitting the hitting element at a contact velocity of 770.4 m/s (movement direction of the hitting element is indicated by an arrow)

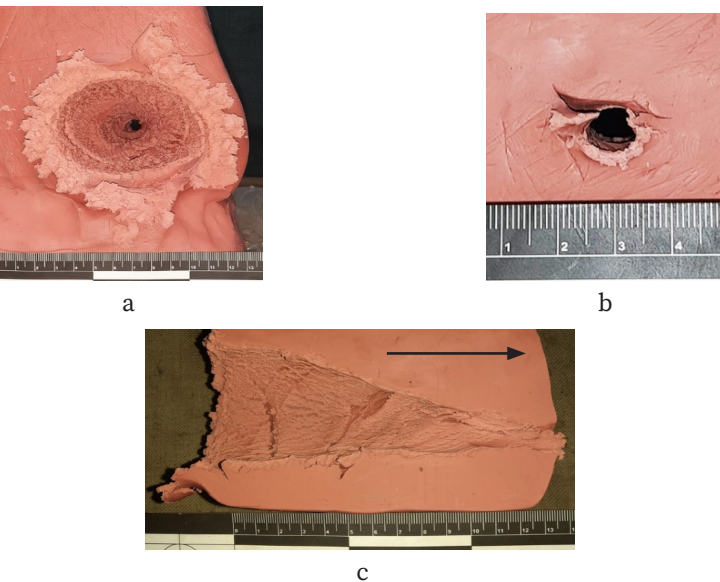


Fig. 31. General view of the inlet (a), outlet (b) and damage channel (c) caused by hitting the hitting element at a contact velocity of 856.0 m/s (direction of movement of the hitting element is indicated by an arrow)

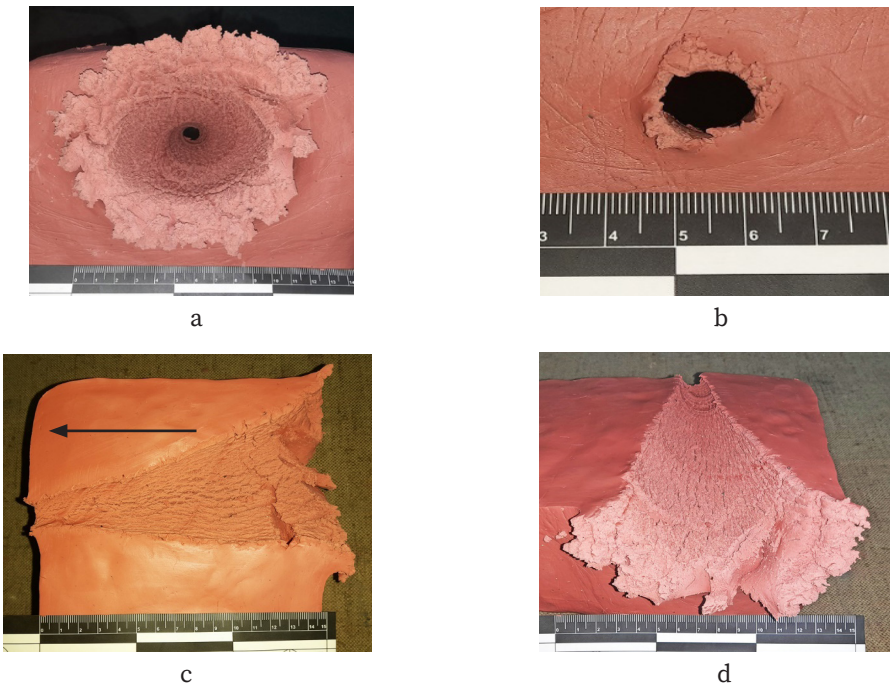


Fig. 32. General view of the inlet (a), outlet (b) and damage channel (c, d) caused by hitting the hitting element at a contact velocity of 1027.0 m/s (direction of movement of the hitting element is indicated by an arrow)

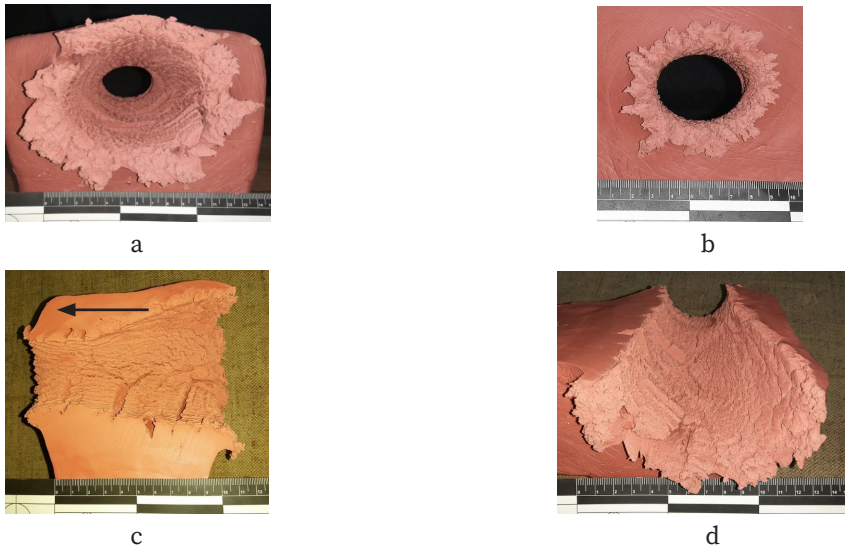


Fig. 33. General view of the inlet (a), outlet (b) and damage channel (c, d) caused by hitting the hitting element at a contact velocity of 1066.0 m/s (the direction of movement of the hitting element is indicated by an arrow)

Table 8

Loss of kinetic energy of damaging elements of the OZM-72 mine at the time of penetration of the ballistic plasticine block

Mass, g	Contact velocity, m/s	Channel length, mm	Velocity after punching, m/s	Contact kinetic energy, J	Kinetic energy after penetration, J	Kinetic energy losses, J
0,75	770,4	145	24,2	222,57	0,22	222,35
0,77	856,0	140	44,8	282,10	0,77	281,33
0,75	1027,0	148	86,5	395,52	2,81	392,71
0,75	1066,0	90	190,6	426,13	13,62	412,51

Applying the formula (5) with the replacement of the limit value of the velocity V_{gr} by the value of the velocity of the damaging element after overcoming (breaking through) the obstacle (final) V_f , based on the data of Table 4, it is possible to obtain

the value of the coefficient of resistance of the visco-elastic medium C_1 for the range of contact velocities 770.4-1066 m/s and depending on the position of the damaging element at the time of hitting. The results of calculations are presented in Table 9.

Table 9

Value of the resistance coefficient the medium C_1 in the range of contact velocities of the damaging elements 770.4-1066.0 m/s

Mass, g	Contact velocity, m/s	Channel length, mm	Velocity after punching, m/s	Resistance coefficient of medium C_1 for cross-sectional area		
				$S_1 = 0.2 \text{ cm}^2$	$S_2 = 0.282 \text{ cm}^2$	$S_3 = 0.26 \text{ cm}^2$
0,75	770,4	145	24.2	0.775	0.542	0.597

Completion of Table 9

Mass, g	Contact velocity, m/s	Channel length, mm	Velocity after punching, m/s	Resistance coefficient of medium C_1 for cross-sectional area		
				$S_1 = 0.2 \text{ cm}^2$	$S_2 = 0.282 \text{ cm}^2$	$S_3 = 0.26 \text{ cm}^2$
0.77	856.0	140	44.8	0.858	0.599	0.661
0.75	1027.0	148	86.5	0.843	0.589	0.649
0.75	1066.0	90	190.6	1.405	0.982	1.081

Analysis of data on the specific value of kinetic energy losses per unit length of the wound canal is rather ambiguous. At a contact velocity of 770.4 m/s, the loss of kinetic energy per 1 cm of the channel is 15.33 J/cm, at a speed of 856.0 m/s — 20.01 J/cm, at a velocity of 1027.0 m/s — 26.53 J/cm (at a measured thickness of the obstacle punched through 14.5 cm, 14.0 cm and 14.8 cm, respectively). Similarly, a smaller obstacle thickness (9.0 cm) leads to a significant increase in kinetic energy losses per unit length of the damage channel (45.83 J/cm), although at comparable values of contact velocities (1027 m/s and 1066 m/s), the losses at a smaller obstacle thickness are 1.73 times higher than the losses of kinetic energy at a larger obstacle thickness.

It can be due to the following: during experimental researches, it was found that at velocity's of more than 700 m/s and in case of contact of the striking element with the end surface of the ballistic plasticine block, there are significant plastic deformations of the striking element in the axial direction (*cf. Fig. 21, 23, 25*).

At the same time, even at a maximum velocity of 1082 m/s and in case of hitting the striking element by the side surface, no such deformations were detected.

Thus, a sharp increase in specific losses of kinetic energy can be explained by significant deformations of the end part of the striking element, with which it hit the obstacle. This led to an increase in the contact surface and, accordingly, a significant increase in resistance forces of the

viscoelastic medium, as evidenced by the nature of the inlet and outlet holes of the damage (*cf.: Fig. 33*).

Based on results of the researches, we obtained empirical dependencies for determining the parameters of injuries caused by strikes in biological tissues of finished damaging elements of a cylindrical shape with a diameter of 5.0 mm. On their basis, it is possible to predict the volume of the final cavity of the injury that makes possible to determine maximum zones of destruction of biological tissue layers adjacent to the wound canal, as well as the length of the wound canal, which can be formed as a result of hitting the specified damaging element depending on its velocity at the time of hitting. In addition, it is possible to determine characteristics of the through damage and the velocity of the damaging element after overcoming the obstacle. Let us demonstrate this with an example.

It is necessary to determine the damaging characteristics of the finished damaging element of the OZM-72 mine, the velocity of which at the time of hit was 800 m/s.

Taking into account the average values of the mass of the damaging element 0.77 g, its diameter 5.0 mm and length 5.15 mm, these indicators will be:

- wound length of the canal is 13.96 cm;
- damage volume — 157.4 cm³;
- value of kinetic energy at the time of hitting — 246.4 J;

- specific kinetic energy — 12.32 J/mm² (end surface: $S_1 = 0.2 \text{ cm}^2$); 8.74 J/mm² (at the angle of 45°: $S_2 = 0.282 \text{ cm}^2$); 9.48 J/mm² (at the angle of 90°: $S_3 = 0.26 \text{ cm}^2$);
- value of the resistance coefficient of visco-elastic medium C_1 is 0.846.
- 257.5 m/s (end surface: $S_1 = 0.2 \text{ cm}^2$);
- 161.8 m/s (at the angle of 45°: $S_2 = 0.282 \text{ cm}^2$);
- 183.3 m/s (at the angle of 90°: $S_3 = 0.26 \text{ cm}^2$).

In case of hitting the finished damaging element in human limb at a comparable length of the wound canal of 10 cm, the velocity of the damaging element after penetration can be calculated by the formula, taking into account the assumption that there are no plastic deformations of the damaging element due to its shock-contact interaction with the obstacle:

$$V_i = V_c \cdot e^{-\frac{C_1 \cdot \rho \cdot S_i}{2m} \cdot x}. \quad (6)$$

After substituting the corresponding values of V_{10} , we obtain:

By comparing the values of Table 9 with the calculated values (without taking into account plastic deformations of the damaging element), significant discrepancies were determined (*cf.*: Table 10). The analysis of tabular data indicates ambiguity of the calculations performed. The discrepancies can be explained by the fact that during the impact-contact interaction, the striking element is significantly deformed which leads to a significant increase in the contact area and, accordingly, to an increase in resistance forces and a decrease in velocity after overcoming the obstacle. It is quite difficult to take this into account when performing calculations.

Table 10

Comparison of calculated values of the velocity of the damaging element after overcoming the obstacle with the results of experimental researches and corresponding calculated values of the contact area and the equivalent diameter of the damaging element

$V_s, \text{ m/s}$	$V_i, \text{ m/s}$	$V_{i \text{ rose}}, \text{ m/s}$	$x, \text{ cm}$	$S_{i \text{ rose}}, \text{ cm}^2$	$d_{i \text{ pos.}}, \text{ cm}$
770,4	24,2	155,7	14,5	0,432	0,74
856,0	44,8	90,9	14,0	0,371	0,69
1027,0	86,5	121,2	14,8	0,301	0,62
1066,0	190,6	391,9	9,0	0,344	0,66

Note: $S_{i \text{ pos.}}$ is the equivalent cross-sectional area of the striking element; $d_{i \text{ pos.}}$ is the equivalent diameter of the cylindrical striking element.

Obtained array of data on the parameters of the fragmentation wound formation process makes possible to create a mathematical model of the shock-con-

tact interaction of the studied sample of the damaging element with a visco-elastic medium that simulates the biological tissues of the human body⁹.

9 Tsybaliuk V. et al. Op. cit. DOI: 10.26641/2307-0404.2023.1.275866 (date accessed: 18.09.2025); Коломійцев О., Гіверц П., Нікітюк В., Герман О. Застосування комп'ютерних технологій для розв'язання завдань термінальної балістики. Діджиталізація судово-експертної науки в умовах воєнного стану : мат-ли Міжнар. наук.-практ. конф. (Харків, 08.11.2024). Харків. 2024. С. 169—173. URL: <https://drive.google.com/file/d/1cDRJ14KDOGIXe5Y6HdN-VBzqAS7gbR-ML/view> (date accessed: 19.09.2025); Susu L., Cheng X., Yaoke W., Xiaoyun Zh. A new motion model of rifle bullet penetration into ballistic gelatin. *International Journal of*

Such a model can be created using computer simulation with the finite element method with an explicit time integration scheme and “element death” technology to simulate the process of material destruction (penetration of the striking element into human soft tissue simulator block; cf.: Fig. 34)¹⁰.

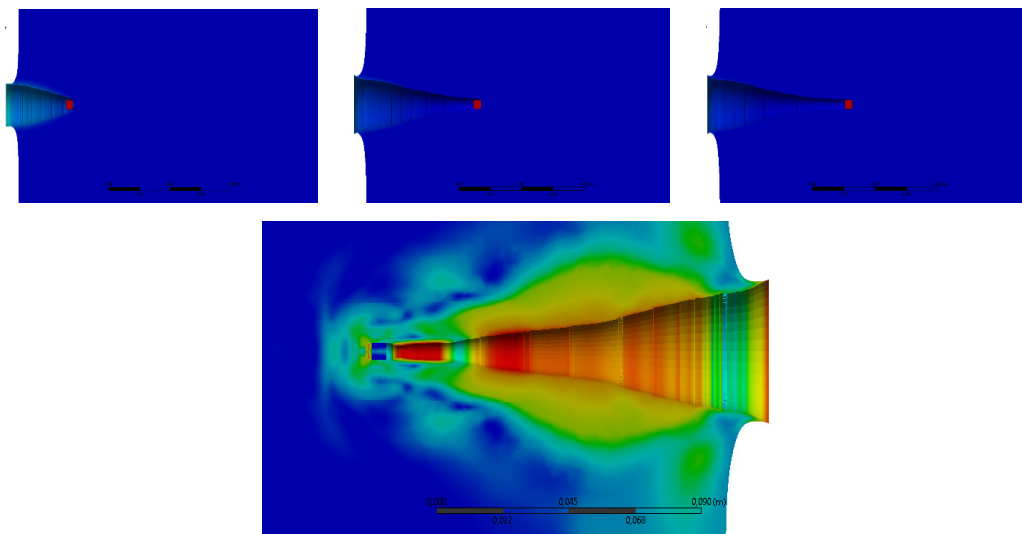


Fig. 34. Results of computer simulation of the process of damage channel formation caused by a cylindrical striking element, obtained by Prof. O. Larin during his researches¹¹

- Impact Engineering*. 2016. Vol. 93. Pp. 1–10. DOI: 10.1016/j.ijimpeng.2016.02.003 (date accessed: 19.09.2025) ; Gilson L., Rabet L., Imad A., Kakogiannis D., Coghe F. Development of a numerical model for the ballistic penetration of Fackler gelatine by small calibre projectiles. *The European Physical Journal Special Topics*. 2016. Vol. 225 (2). Pp. 375–384. DOI: 10.1140/epjst/e2016-02640-9 (date accessed: 19.09.2025) ; Wang Y., Shi X., Chen A., Xu Ch. The experimental and numerical investigation of pistol bullet penetrating soft tissue simulant. *Forensic Science International*. 2015. Vol. 249. Pp. 271–279. DOI: 10.1016/j.forsciint.2015.02.013 (date accessed: 19.09.2025) ; Gilson L., Rabet L., Imad A., Coghe F. Experimental and numerical characterisation of rheological properties of a drop test response of a ballistic plastilina. *Ibid*. 2020. Vol. 310. Art. 110238. DOI: 10.1016/j.forsciint.2020.110238 (date accessed: 19.09.2025).
- 10 Larin O., Tomashevskiy R., Lurin I., Gumeniuk K., Nehoduiko V. Computational Modeling and Analysis of Wound Formation in Gunshot Injuries. *6th International Conference on Nanotechnologies and Biomedical Engineering* : Conference proceedings (Chisinau, Moldova, 20–23 Sept 2023). Chisinau, 2023. Vol. 2 : Biomedical Engineering and New Technologies for Diagnosis, Treatment, and Rehabilitation. Pp. 218–227. DOI: 10.1007/978-3-031-42782-4_24 (date accessed: 19.09.2025) ; Kolisnyk K., Sokol Y., Shchapov P., Nehoduiko V. Mathematical Modelling of the Multifactorial Influence of Striking Fragments on the Dynamics of the Rehabilitation Processes of the Wounded. *Ibid*. Pp. 160–169. DOI: 10.1007/978-3-031-42782-4_18 (date accessed: 19.09.2025) ; Моделювання вогнепальних поранень : монографія / упорядники: І. А. Лурін, В. В. Негодуйко, Р. М. Михайлузов, К. В. Гуменюк ; під заг. ред. В. І. Цимбалюка. Харків, 2022. 322 с. URI: <https://repo.knmu.edu.ua/handle/123456789/32575> (date accessed: 19.09.2025).
- 11 Larin O., Grabovskiy A., Kolomiitsev O., Larkov S., Nehoduiko V. Numerical and Experimental Investigation of Cylindrical Shrapnel Penetration into Non-biological Soft Tissue Simulant

The results of experimental researches make possible to create a computer model of terminal ballistics of ready-made cylindrical projectiles with a diameter of 5.0 mm based on mathematical modeling methods that will be of significant practical importance for medicine and related specialized fields. Thus, it becomes possible to combine terminal and external ballistics of different types of ready-made striking elements into a single complex.

In order to determine the aeroballistic characteristics of the studied striking

elements in the conditions of a ballistic range using two ИБХ-731.4 optoelectronic measuring complexes, experimental firing was carried out with a 5.45 mm AK-74M assault rifle using special cartridges¹². During experiment, initial flight velocities of 547.2–1096.0 m/s were achieved. Based on the decrease in the flight velocity of the kinetic projectiles under study along the trajectory, the ballistic coefficient was determined. The results of researches and calculations are presented in Table 11.

Table 11

Results of experimental firing of ready-made striking elements of a cylindrical shape with a diameter of 5.0 mm

Shot number	M_p , g	V_{i0} , m/s	V_{ir} , m/s	L, m	C_i
1	0.79	956.6	326.1	20	175,86 *
2	0.77	615.9	455.0	15	67.67
3	0.79	534.6	389.3		70.89
4	0.76	584.3	422.9		72.25
5	0.79	681.7	515.3		62.54
6	0.76	691.9	494.1		75.25
7	0.76	658.7	480.3		70.59
8	0.79	657.6	496.2		62.94
9	0.79	547.2	408.9		65.11
10	0.77	797.0	566.9		76.14
11	0.75	939.8	690.7		68.83
12	0,75	592,7	424,9		74,39
13	0,75	851,4	602,1		77,43

(Ballistic Plasticine). 7th International Conference on Nanotechnologies and Biomedical Engineering: Conference proceedings (Chisinau, Moldova, 7–10 Oct 2025). Chisinau, 2025. Vol. 2 : Biomedical Engineering and New Technologies for Diagnosis, Treatment, and Rehabilitation. 2025. Pp. 534–542. DOI: 10.1007/978-3-032-06497-4_53 (date accessed: 19.09.2025).

12 Коломійцев О. В. Патрони для експериментальної стрільби готовими уражаючими елементами та осколками. *Актуальні проблеми забезпечення державної безпеки* : мат-ли II Всеукр. наук.-практ. конф. (Київ, 25.10.2024). Київ, 2024. С. 136–139. URI: <https://elar-kingu.kyiv.ua/handle/123456789/329> (date accessed: 19.09.2025) ; Його ж. Патрони для експериментальної стрільби високошвидкісними готовими уражаючими елементами та осколками. *Актуальні проблеми діяльності складових сектору безпеки і оборони України (до 10-ї річн. створ. Нацгвардії України)* : тези Всеукр. наук.-практ. конф. (Харків, 24.10.2024). Харків, 2024. С. 352–355. URL: http://repositsc.nuczu.edu.ua/bitstream/123456789/24214/1/Zbirnsk_tez_konfer._24.10.2024%20%281%29.pdf (date accessed: 19.09.2025).

Completion of Table 11

Shot number	M_i , g	V_{i0} , m/s	V_{ik} , m/s	L, m	C_i
14	0,75	759,7	553,6	15	70,73
15	0,78	1025,0	736,0		74,03
16	0,78	1096,0	816,7		65,74
17	0,78	1050,0	786,6		64,55

Note. M_i is the mass of the individual damaging element; V_{i0} is the initial velocity of the individual damaging element (the velocity recorded by the first measuring complex); V_{ik} is the velocity of the individual damaging element recorded by the second measuring complex; L is the firing distance (for 20 m the distance between the measuring complexes was 18.6 m; for 15 m – 13.6 m); C_i is the value of the ballistic coefficient for the individual damaging element; * is the movement of the destabilized damaging element.

Table 12 presents the results of measuring the flight velocities of only test shots (with the registration of the passage of striking elements through the frames of both measuring complexes) with a series of 25 shots. Due to the significant spread of the damaging elements at a firing distance of 20 m, the passage of eight damaging elements through the frame of the second measuring complex was not recorded.

In order to control the position of the studied damaging element on the trajectory by measuring complexes, paper tar-

gets were installed. Only in one case (shot № 1, cf.: Table 11) it was recorded that the striking element rotated in flight (the first target had a rounded hole, and the second – a rectangular hole, which is typical for the lateral projection of the striking element). In other cases, the movement of the damaging elements was stabilized (the holes in both targets were rounded). Such features of the flight of the studied damaging elements affected the value of the ballistic coefficient C_i (extreme value of C_i in Table 11 is marked “*”).

Table 12

Trajectory parameters and ballistic characteristics of individual OZM-72 mine striking element at an initial velocity of 1053 m/s and a throwing angle of 0°

X, m	Y, m	Q	V, m/s	t, c	E, J	Eud, J/mm ²
0	1.000	0.000	1053.000	0.000	426.891	21.747
10	1.000	-0,006	896.084	0.010	309.142	15.748
20	0.998	-0,015	724,988	0,023	202,359	10,309
30	0,994	-0,030	574,594	0,039	127.111	6.475
40	0.987	-0,053	451,160	0,059	78.365	3.992
50	0.975	-0,090	362,118	0,085	50,485	2,572
60	0.954	-0,144	307,224	0,116	36,339	1.851
70	0.924	-0,213	280,198	0,151	30,227	1.540
80	0.879	-0,300	244,581	0,190	23,031	1.173
90	0.818	-0,407	227,602	0,234	19,944	1.016
100	0.736	-0,532	208,332	0,281	16,708	0.851
110	0.631	-0,680	192,916	0,332	14,328	0.730
120	0.497	-0,854	176,792	0,388	12,033	0.613

Completion of Table 12

X, m	Y, m	Q	V, m/s	t, c	E, J	Eud, J/mm ²
130	0.331	-1,060	162,691	0,448	10,190	0.519
140	0.125	-1,305	149,369	0,514	8,590	0.438
145,172 *	0,000 *	-1,449 *	142,989 *	0,551 *	7,872 *	0,401 *

Note: X, m — flight range; Y, m — altitude of the flight path; Q, ° — angle of inclination of the flight path; V, m/s — flight velocity; t, s — flight time; E, J — kinetic energy; Eud, J/mm² — specific kinetic energy; * — the value of the flight path parameters at the point of incidence.

Analysis of the obtained results of experimental firing makes possible to determine the damaging properties of the studied kinetic projectiles at different distances from the center of the explosion: in the zone of continuous damage, at distances of effective damage and maximum dispersion; as well as to determine the safe zone.

This can be demonstrated by calculating the damaging properties of the OZM-72 kinetic projectile under the following initial conditions:

- 0 is initial velocity of the damaging element — 1053 m/s;
- average mass of the finished damaging element is 0.77 g;
- position of the striking element in flight — forward movement of the end surface (angle of attack in the flow (streamlining) — 0°);
- cross-sectional area — 19.63 mm²;
- indirect value of the ballistic factor of the damaging element based on the data of Table 12 — 69.94 m²/kg;
- angle of throwing a separate striking element from the center of the explosion — 0°;
- limit value of the specific kinetic energy of the damaging element, which is sufficient to cause a penetrating wound to the human body in one of the cavities (abdominal one, thoracic one, skull) ¹³ — 0.5 J/mm²;
- height of the mine detonation is 1.0 m.

The results of calculations using specialized *ExtBallistic* software under normal environmental conditions are presented in Table 12. Analysis of these results shows that with the horizontal flight of the studied damaging element (throwing angle — 0°), its maximum range is almost 142 m.

In addition, at a distance of up to 130 m inclusive, a separate striking element of the OZM-72 mine under the most optimal flight conditions (end surface forward) can cause a person permeable injury.

If we take into account that for guaranteed human damage, the fragment should have a kinetic energy of at least 80 J, then under the above conditions, the effective range of action on a live target can reach 40 m.

If the throwing angle of an individual hitting element increases, in particular up to 45°, then the hitting zones change significantly, since the hitting elements quite quickly go beyond the size of the target. If we take into account the height of the growth target of the 3CY № 8 (1.65 m), as well as the height of the average man in Ukraine (1.753 m), then affected areas will have completely different values. Thus, at a throwing angle of 5° at a distance of almost 10 m (trajectory height — 1.874 m) from the center of the explosion, the striking element goes beyond the height of the person, which excludes any possibility of hitting the target. Consequently, it can be argued that most of the finished destructive elements of the OZM-72 mine

13 Гамов Д. Ю. Встановлення належності об'єкта до бойових припасів вогнепальної стрілецької зброї та його придатності до стрільби : методика. Київ, 2006. 29 с.

located in the upper part of the hull can be targeted only if it is quite close to the center of the explosion.

More interesting are the results of researches on destabilized damaging elements. According to Table 11, such

a damaging element has the value of the ballistic coefficient $C_1 = 175.86 \text{ m}^2/\text{kg}$. The results of calculations under the above initial conditions of introducing the damaging element into free flight are presented in Table 13.

Table 13

**Trajectory parameters and ballistic characteristics
of the destabilized individual destructive element of the OZM-72 mine
at an initial velocity of 1053 m/s and a throwing angle of 0°**

X, m	Y, m	Q, °	V, m/c	t, c	E, J	Eud, J/mm ²
0	1.000	0.000	1053.000	0.000	426.891	21.747
10	1.000	-0,008	638.871	0.012	157.140	8.005
20	0.996	-0,037	354.735	0.034	48.447	2.468
30	0.984	-0,107	247,111	0,070	23,510	1,198
40	0.952	-0,282	147.246	0.124	8.347	0.425
50	0.862	-0.808	100.603	0.218	3.897	0.199
60	0.656	-1,591	83.863	0.336	2.708	0.138
70	0.304	-2,450	67.708	0.458	1.765	0.090
76,107 *	0,000 *	-3,189 *	65,738 *	0,547 *	1,664 *	0,085 *

Note: * is the value of flight path parameters of an individual striking element at the point of impact.

According to the results of calculations, damaging properties of the destabilized test sample of the kinetic projectile are significantly lower than those of the stabilized one. Thus, the zone of guaranteed damage does not exceed 10–20 m from the center of the explosion, and the zone of tasking a person with a penetrating wound is 40 m.

The values of velocities of the affecting elements on the trajectory given in Tables 12 and 13 make it possible to predict the depth of inflicted wound canal using an empirical relationship (4). For example, at a contact velocity of 227.602 m/s, which corresponds to a distance of 90 m from the center of the explosion (*cf.*: Table 12), the depth of the wound canal could be 75.7 mm.

The results of experimental researches indicate that determining the aeroballistic characteristics of the finished striking

elements, taking into account their position in flight, is a rather time-consuming process and requires a significant number of shots to obtain statistical material. However, modern mathematical methods and computer simulation of gas-dynamic processes of flowing bodies of different shapes in air in a wide range of velocities and at different values of the flow angle (angle of attack) will help to determine these parameters.

Based on the specialized *SOLID WORKS (Flow Simulation)* software, it is possible to obtain the results of airflow around the studied damaging elements at the velocity values set during experimental firing and at their different positions, which makes it possible to simulate real flight conditions. The values of the air resistance force, its coefficient depending on the flight velocity make possible to determine both the pa-

rameters of its trajectory and the damaging properties at different distances from the center of the explosion of the ammunition. The results of computer simulation of the flow of the striking elements are presented in Fig. 35–37 and in Table 14.

Table 14

**Calculation results of aerodynamic characteristics
of finished damaging elements of a cylindrical shape with a diameter of 5.0 mm**

Contact velocity, m/s	500			1082		
Angle of attack, °	0	45	90	0	45	90
Resistance force, N	2.887	3.747	3.588	11.811	11.655	13.132
Resistance force coefficient	0.96	1.25	1.19	0.79	0.83	0.93

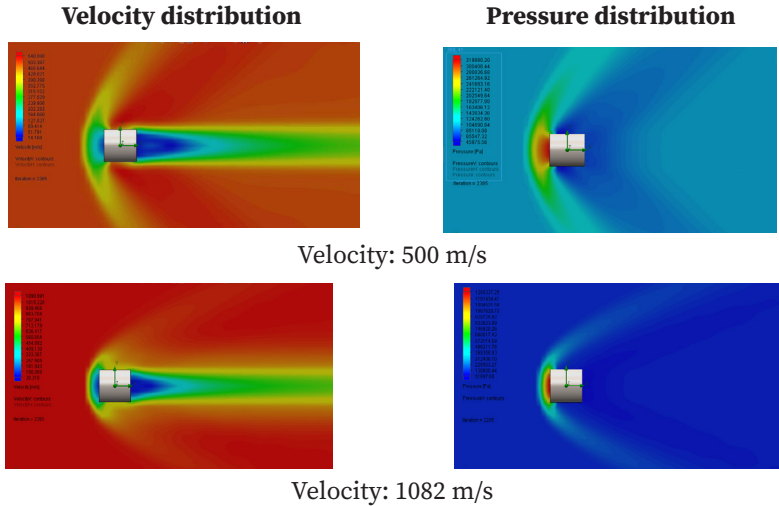


Fig. 35. Nature of wrap around the damaging element (angle of attack — 0°)

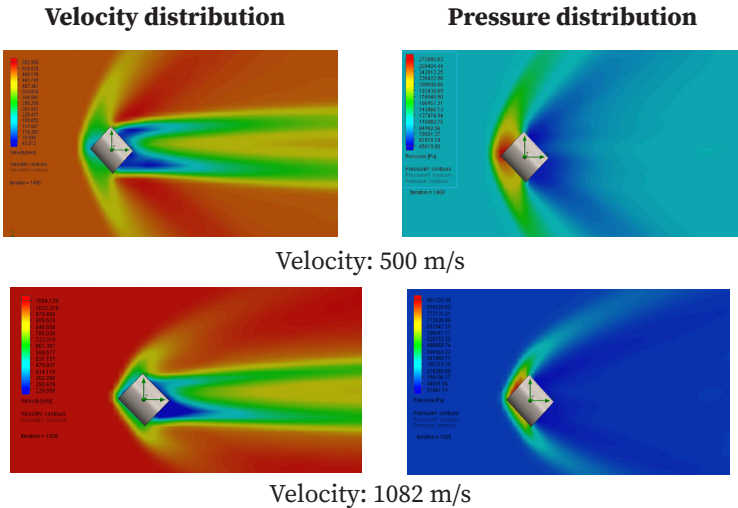


Fig. 36. Nature of wrap around the damaging element (angle of attack — 45°)

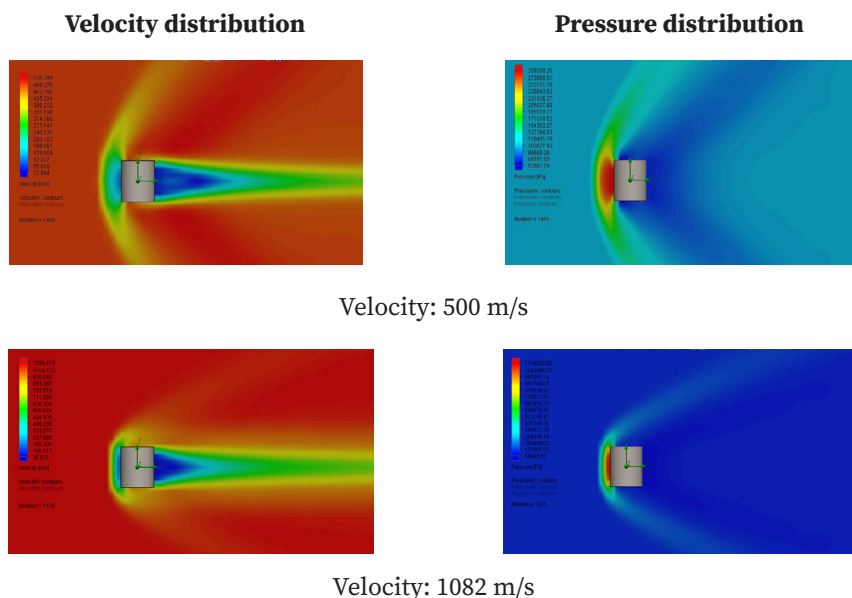


Fig. 37. Nature of wrap around the damaging element (angle of attack — 90°)

Thus, using computer simulations, it is possible to determine the motion parameters of both stabilized and destabilized finished striking elements of cylindrical shape without conducting large-scale field tests. Determining the aeroballistic characteristics of such damaging elements in full requires separate researches.

Conclusions

Introduction into free flight of individual ready-made destructive elements or fragments of free crushing in the range of velocities up to 1000 m/s and more and research on consequences of their hitting biological tissue simulators can be carried out using specialized equipment used during experimental research in the field of forensic ballistics. This opens up quite broad prospects for studying the specifics of wound (terminal) ballistics of various types of ready-made destructive elements and fragments of natural crushing of ammunition and improvised explosive devices.

Ready-made damaging elements of cylindrical shape and small degree of elongation behave stably in the viscoelastic medium. In case of impact, they form cavities of conical shape. The studied damaging elements cause the greatest damage in the area of the first quarter (third) of the damage channel. This is due to the almost complete transfer of their kinetic energy to the layers of the medium bordering on this zone with the central damage channel. Dimensions of the damage area in the designated section of the channel are maximum. With the loss of kinetic energy, the damaging elements continue to move in the stratum of obstacles and cause minimal damage to the adjacent layers of the environment.

The use of ready-made damaging elements of cylindrical shape in the target is characterized by the variability of their positions relative to the outer surface of the obstacle, which significantly affects the determination of the parameters necessary for calculating and predicting the se-

verity and volume of the damage caused. However, this can be corrected by a significant increase in the statistical material with subsequent differentiation of the results that correspond to the specific positions of the striking element at the time of hitting the target.

In case of hitting visco-elastic medium with contact velocities of more than 700 m/s and the end surface, the finished damaging elements under research can undergo significant plastic deformations in the longitudinal direction. However, in the case of hitting the target with a lateral projection at an angle of 45°–90°, no significant plastic deformations were observed in the studied damaging elements.

The results of experiments indicate the expediency of using the methods of experimental (forensic) ballistics not only for the study of the features of wound (terminal) ballistics of ready-made destructive elements and fragments of ammunition and explosive devices, but for the researches on their external ballistics and the determination of aeroballistic characteristics. This allows you to determine the size of the affected areas with fragments (ready-made destructive elements), as well as safe distances in the event of detonation of specific ammunition or improvised explosive devices.

Use of mathematical models and computer technologies to simulate the physical processes that accompany the penetration of ready-made damaging elements into biological tissues, in combination with modern technologies for determining their aeroballistic characteristics, makes possible to create a comprehensive method for predicting the damaging properties of fragments with determining the severity of the bodily injuries caused by them in a wide range of initial conditions of shock-contact interaction.

**Експериментальні дослідження
особливостей термінальної
та зовнішньої балістики
уражаючих елементів циліндричної
форми діаметром 5,0 мм**

**Ігор Лурін, Олексій Ларін,
Едуард Хорошун,
Володимир Негодуйко,
Олександр Коломійцев,
Сергій Ларьков, Олег Кокорін,
Дмитро Климчук,
Віталій Тищенко,
Віталій Щербак,
Віктор Сапелкін**

Мета статті — дослідити особливості механізму формування у в'язко-пружному середовищі пошкоджень, які виникли в результаті високошвидкісної ударно-контактної взаємодії з готовими уражаючими елементами циліндричної форми. Для досягнення мети застосовано загальнонаукові та спеціальні методи. Основну увагу приділено дослідженню уражаючих елементів діаметром 5,0 мм, оскільки ними споряджено значну кількість осколкових бойових припасів (зокрема, протипіхотні міни, боеприпаси для скидання з дронів, а також саморобні вибухові пристрої). Експериментальні дослідження проводили в умовах балістичної траси із застосуванням оптоелектронних вимірювальних комплексів, імітатора біологічних тканин (балістичного пластиліну) і спеціальних патронів. Уведення у вільний політ готових уражаючих елементів здійснювали за допомогою нейробалістичного ручного метального пристрою, а також нарізної вогнепальної зброї калібру 5,6 мм і 5,45 мм. Це дало змогу провести натурні експерименти в доволі широкому діапазоні контактних швидкостей від 70 м/с до 1082 м/с під час дослідження уражаючих властивостей і в діапазоні від 547 м/с до 1096 м/с під час дослідження аеробалістичних характеристик. Як експериментальні снаряди

використано готові уражаючі елементи циліндричної форми діаметром 5,0 мм із подовженням 0,96—1,1, якими споряджають осколкові загороджувальні міни ОЗМ-72. Під час досліджень визначено, що після влучання зазначені готові уражаючі елементи в товщі імітатора біологічних тканин поведуться стабільно й утворюють порожнини конічної форми. Найбільшої шкоди вони завдають на ділянці першої чверті (третини) каналу пошкодження. Це обумовлено практично повною передачею уражаючими елементами своєї кінетичної енергії шарам середовища, що примикають у цій зоні до центрального каналу пошкодження. Розміри зони пошкодження на цій ділянці каналу максимальні. На основі здобутих результатів визначено особливості впливу на параметри каналу пошкодження контактної швидкості й положення уражаючого елемента в момент улучання. Визначено емпіричні залежності коефіцієнта сили опору в'язко-пружного середовища, об'єму та довжини каналу пошкодження від контактної швидкості. Результати проведених досліджень дають змогу прогнозувати ступінь тяжкості завданих людині осколкових поранень і розв'язати низку ситуаційних завдань, пов'язаних із розслідуванням кримінальних злочинів та терористичних актів, під час скоєння яких застосовано осколкові бойові припаси або саморобні вибухові пристрої. Окремий етап — дослідження аеробалістичних характеристик зразків кінетичних снарядів, що дає змогу визначити їх уражаючі властивості залежно від відстані до центра вибуху.

Ключові слова: балістичний пластилін; бойовий припас; коефіцієнт сили опору середовища; контактна швидкість; осколкова загороджувальна міна ОЗМ-72; осколкове пошкодження; патрон; саморобний вибуховий пристрій; термінальна балістика; уражаючий елемент циліндричної форми.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

Authors contributed solely to the intellectual discussion underlying this document, case law research, writing and editing and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

Authors declare no conflict of interest.

References

- Coupland, R. M., Rothschild, M. A., Thali, M. J. (2014). *Wound ballistics: basics and applications* / B. P. Kneubuehl (Ed.). Berlin. DOI: 10.1007/978-3-642-20356-5.
- Gilson, L., Rabet, L., Imad, A., Coghe, F. (2020). Experimental and numerical characterisation of rheological properties of a drop test response of a ballistic plastilina. *Forensic Science International*. Vol. 310. Art. 110238. DOI: 10.1016/j.forsciint.2020.110238.
- Gilson, L., Rabet, L., Imad, A., Kakogiannis, D., Coghe, F. (2016). Development of a numerical model for the ballistic penetration of Fackler gelatine by small calibre projectiles. *The European Physical Journal Special Topics*. Vol. 225 (2). DOI: 10.1140/epjst/e2016-02640-9.
- Gumeniuk, K., Lurin, I., Tsema, Ie., Susak, Ya., Mykhaylenko, O., Nehoduiko, V. et al. (2021). Wound ballistics of biological tissue's plastic deformation on the model of ballistic plastiline using hollow point and shape-stable bullets. *Journal of Education, Health and Sport*. Vol. 11. No. 11. DOI: 10.12775/JEHS.2021.11.11.003.

- Hamov, D. Yu. (2006). *Vstanovlennia nalezhnosti ob'ekta do boiovykh pryypasiv vohnepalnoi striletskoi zbroi ta yoho prydatnosti do strilby* [Determining whether an object is classified as ammunition for firearms and whether it is suitable for firing] : metodyka. Kyiv [in Ukrainian].
- Kolisnyk, K., Sokol, Y., Shchapov, P., Nehoduiko, V. (2023). Mathematical Modelling of the Multifactorial Influence of Striking Fragments on the Dynamics of the Rehabilitation Processes of the Wounded. *6th International Conference on Nanotechnologies and Biomedical Engineering* : Conference proceedings (Chisinau, Moldova, 20–23 Sept 2023). Chisinau. Vol. 2 : Biomedical Engineering and New Technologies for Diagnosis, Treatment, and Rehabilitation. DOI: [10.1007/978-3-031-42782-4_18](https://doi.org/10.1007/978-3-031-42782-4_18).
- Kolomiitsev, A. V., Sapelkin, V. V. (2017). Opre-delenie ballisticheskikh kharakteristik i porazhaiushchikh svoistv patronov samodelnogo snariazheniia kalibra 7,62×39 [Determination of the Ballistic Characteristics and the Damaging Properties of Self-Made Loading Cartridges of 7.62×39 Caliber]. *Teoriia ta praktyka sudovoi ekspertyzy i kryminalistyky*. Vyp. 17. URL: http://nbuv.gov.ua/UJRN/Tpsek_2017_17_33 [in Russian].
- Kolomiitsev, O. V. (2024). Patrony dlia eksperymentalnoi strilby hotovymy urazhaiuchymy elementamy ta oskolkamy [Cartridges for experimental firing with ready-made striking elements and fragments]. *Aktualni problemy zabezpechennia derzhavnoi bezpeky* : mat-ly II Vseukr. nauk.-prakt. konf. (Kyiv, 25.10.2024). Kyiv. URI: <https://elar-kingu.kyiv.ua/handle/123456789/329> [in Ukrainian].
- Kolomiitsev, O. V. (2024). Patrony dlia eksperymentalnoi strilby vysokoshvydkisnymy hotovymy urazhaiuchymy elementamy ta oskolkamy [Cartridges for experimental firing of high-velocity ready-made striking elements and fragments]. *Aktualni problemy diialnosti skladovykh sektoru bezpeky i oborony Ukrainy (do 10-i richnytsi stvorennia Natsionalnoi hvardii Ukrainy)* : tezy Vseukr. nauk.-prakt. konf. (Kharkiv, 24.10.2024). Kharkiv. URL: http://repositsc.nuczu.edu.ua/bitstream/123456789/24214/1/Zbirnsk_tez_konfer._24.10.2024%20%281%29.pdf [in Ukrainian].
- Kolomiitsev, O., Giverts, P., Nikitiuk, V., Herman, O. (2024). Zastosuvannia komp'uternykh tekhnolohii dlia rozv'iazannia zavdan terminalnoi balistyky [Application of Computer Technologies for Resolving Terminal Ballistics Issues]. *Didzhytalizatsiia sudovo-ekspertnoi nauky v umovakh voiennoho stanu* : mat-ly Mizhnar. nauk.-prakt. konf. (Kharkiv, 08.11.2024). Kharkiv. URL: <https://drive.google.com/file/d/1cDRJ14KDOGIxe5Y6HdNVBzqA-S7gbR-ML/view> [in Ukrainian].
- Kolomiitsev, O., Sapielkin, V., Giverts, P., & Herman, O. (2022). Peculiarities of Determining Affecting Properties of Small-bore Bullets After Ricochet. *Theory and Practice of Forensic Science and Criminalistics*. Vol. 27. No. 2. DOI: [10.32353/khrife.2.2022.05](https://doi.org/10.32353/khrife.2.2022.05).
- Larin, O., Grabovskiy, A., Kolomiitsev, O., Larkov, S., Nehoduiko, V. (2025). Numerical and Experimental Investigation of Cylindrical Shrapnel Penetration into Non-biological Soft Tissue Simulant (Ballistic Plasticine). *7th International Conference on Nanotechnologies and Biomedical Engineering* : Conference proceedings (Chisinau, Moldova, 7–10 Oct 2025). Chisinau. Vol. 2 : Biomedical Engineering and New Technologies for Diagnosis, Treatment, and Rehabilitation. 2025. DOI: [10.1007/978-3-032-06497-4_53](https://doi.org/10.1007/978-3-032-06497-4_53).
- Larin, O., Tomashevskiy, R., Lurin, I., Gumeniuk, K., Nehoduiko, V. (2023). Computational Modeling and Analysis of Wound Formation in Gunshot Injuries. *6th International Conference on Nanotechnologies and Biomedical Engineering* : Conference proceedings (Chisinau, Moldova, 20–23 Sept 2023). Chisinau. Vol. 2 : Biomedical Engineering and New Technologies for

- Diagnosis, Treatment, and Rehabilitation. DOI: 10.1007/978-3-031-42782-4_24.
- Lurin, I. A., Tsema, Ie. V., Gumenuik, K. V., Susak, Ya. V., Dubenko, D. Ye., Tsema, Ye. Ie. (2021). Experimental modeling of a residual wound cavity on a ballistic plasticine using conventional and hollow point bullets. *Medical Science of Ukraine*. Vol. 17. No. 4. DOI: 10.32345/2664-4738.4.2021.02.
- Modeliuvannia vohnepalnykh poranen [Gunshot wound simulation] (2022) : monohrafiia / uporiadnyky: I. A. Lurin, V. V. Nehoduyko, R. M. Mykhailusov, K. V. Humeniuk ; pid zah. red. V. I. Tsymbaliuka. Kharkiv. URI: <https://repo.knmu.edu.ua/handle/123456789/32575> [in Ukrainian].
- Polenytsia, P., Naumenko, I., Litsman, A., Nesterov, D. (2024). *Metodyka otsiniuvannia efektyvnosti dii oskolkovo-fuhasnoho snariada po nazemnykh tsiliakh* [Methodology for assessing the effectiveness of high-explosive fragmentation shells against ground targets]. Kyiv. Rieiestr. kod VP 7-07(01).010.1.12 [in Ukrainian].
- Prokhorov-Lukin, H. V., Pashchenko, V. I., Bykov, V. I. ta in. (2011). *Metodyka kompleksnoho doslidzhennia vybukhovyykh prystroiv, vybukhovyykh rehovyn i slidiv vybukhu* [Methodology for a comprehensive study of explosive devices, explosives and traces of an explosion]. № DR 0103U002003. Kyiv. URL: https://arm.navs.edu.ua/arm/arm_bmb_exp/idb/metod_wte.html [in Ukrainian].
- Rozen, N., Dudkiewicz, I. (2011). Wound ballistics and tissue damage / *Armed Conflict Injuries to the Extremities*. Berlin. DOI: 10.1007/978-3-642-16155-1_2.
- Susu, L., Cheng, X., Yaoke, W., Xiaoyun, Zh. (2016). A new motion model of rifle bullet penetration into ballistic gelatin. *International Journal of Impact Engineering*. Vol. 93. DOI: 10.1016/j.ijimpeng.2016.02.003.
- Terefe, T. O., Chawla, A., Datla, N. V. (2025). Damage mechanisms from low-velocity penetrating shrapnel in ballistic gelatin. *Defence Technology*. 18 July. DOI: 10.1016/j.dt.2025.07.008.
- Tsymbaliuk, V., Lurin, I., Gumeniuk, K., Herasymenko, O., Furkalo, S., Oklei, D., Negoduyko, V., Gorobeiko, M., Dinets, A. (2023). Modeling of wound ballistics in biological tissues simulators. *Medicni perspektivi*. Vol. 28. No. 1. DOI: 10.26641/2307-0404.2023.1.275866.
- Wang, Y., Shi, X., Chen, A., Xu, Ch. (2014). The experimental and numerical investigation of pistol bullet penetrating soft tissue simulant. *Forensic Science International*. Vol. 249. DOI: 10.1016/j.forsciint.2015.02.013.
- Lurin, I., Larin, O., Khoroshun, E., Nehoduyko, V., Kolomiitsev, O., Larkov, S., Kokorin, O., Klymchuk, D., Tyshchenko, V., Shcherbak, V., Sapielkin, V. (2025). Experimental Researches on Specifics of Terminal and External Ballistics of Damaging Elements of Cylindrical Shape with Diameter of 5.0 Mm. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 81–119. DOI: 10.32353/khrife.4.2025.06.

Using Specific Expertise During the Investigation of Criminal Offences Committed by Professional Participants in Court Proceedings

Yevhen Sup*

* Candidate of Legal Sciences, Doctoral Student at NSC «Hon. Prof. M. S. Bokarius FSI», Kharkiv, Ukraine, ORCID: <https://orcid.org/0009-0009-6912-2157>, e-mail: s.ye.7170@gmail.com

DOI: 10.32353/khrife.4.2025.07 UDC [343.36:343.98](477)

Received: 14.11.2025 / Reviewed: 30.11.2025 / Accepted for print: 25.12.2025 / Available online: 31.12.2025



The Article Purpose is to clarify particularities of using specific expertise during the investigation of criminal offenses committed by professional participants in court proceedings. This study applied a set of general scientific, special legal and empirical methods, which enabled us to comprehensively and thoroughly research the problem. The appointment of forensic experts, the involvement of specialists, the provision of professional advice, and the use of digital technologies helped to reveal procedural forms of utilizing specific expertise in pre-trial investigation. Typical types of forensic examinations appointed in cases of this category were analysed: handwriting, forensic, psychiatric, technical, video and sound recording. The potential of using non-typical forms of research (such as semantic-textual or psycholinguistic) is discussed. The author reveals tendencies toward the growing role of specific expertise in ensuring the objectivity of evidence, exposing falsifications, verifying findings of investigative (search) actions and establishing boundaries within which evidence is admissible. Emphasis is placed on the inadmissibility of delegating legal assessment to forensic experts, which is contrary to the procedural model of criminal proceedings. Findings of the study will contribute to improving forensic methodologies and to normatively establishing the use of specific expertise forms in investigating crimes against justice involving professional participants in court proceedings.

Keywords: court proceedings; justice; specific expertise; forensic examination; specialist; advising.

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

Research Problem Formulation

Supporting lawfulness, professional integrity and ethical standards among subjects that administer justice or ensure its functioning is the main prerequisite for public trust in the judicial system and the efficiency of the criminal justice system. Professional members in court proceedings possess special authority, and therefore play a decisive role in upholding the principles of the rule of law, adversarial nature and justice.

At the same time, analytical materials, statistics, and results of law enforcement activities demonstrate that representatives of this specific group of subjects commit certain criminal offenses that constitute a heightened threat to the public. Particularities of such crimes derive from the interplay between the official status, the access to procedural information, the availability of specific expertise and the ability to influence the course of criminal proceedings. Such offenses are often disguised as legitimate activities and implemented through complex mechanisms of abuse. Therefore, they require a thorough and professional assessment.

That is why investigating crimes committed by professional members in court proceedings requires specific expertise, including criminalistics, technical, software and hardware, etc. This expertise is necessary to identify hidden traces of unlawful activities, accurately interpret actions and decisions of officials, and ensure the objectivity and impartiality of the proving procedure.

Despite the well-recognized importance of this field, in the scientific doctrine the issue of utilizing specific expertise to investigate criminal offences committed by professional participants in court proceedings has only been examined in part

to date. The issues of determining the limits and forms of applying specific expertise, their alignment with procedural guarantees, as well as the evaluation of obtained findings in the course of proving procedure, remain problematic.

In view of the above, the present study explored the need for a careful analysis of the role, content and tactics of applying specific expertise during documentation, detection and proof of criminal offenses committed by professional participants in court proceedings. It is these aspects that constitute a scientific problem that requires comprehensive research.

Article Purpose

Define particularities of utilizing specific expertise during the investigation of criminal offenses committed by professional participants in court proceedings.

Research Methods

Methodological framework of the study has been developed taking into account the purpose and tasks of the research activities and is presented through a suite of mutually related general scientific, special legal and empirical methods, providing an integrated and systematic analysis of the issue of applying specific expertise during the investigation of criminal offenses committed by professional participants in court proceedings.

Analysing and synthesising played a central role in the methodological structure, enabling the characterization of the multidimensional phenomenon of using specific expertise in criminal proceedings and the integration of these elements into a coherent conceptual model. Employing the analysis method, particularities of utilizing specific expertise forms were identified, the specifics of typical expert

studies, as well as the nature of abuses and schemes for concealing criminal activity by professional participants in court proceedings, were outlined. Synthesis ensured the generalisation of identified patterns and the development of a logically consistent system of conclusions.

Induction helped to formulate general trends in the use of specific expertise in cases of this category based on a review of materials from investigative and judicial casework. Deduction was applied concurrently, allowing general theoretical provisions to be tested by comparing them with specific criminal proceedings.

System-structural method was employed to trace the functional relationship between the legal status of a professional participant in court proceedings, his/her powers and the nature of unlawful actions, which helped to define the role of a special subject as a component of a complex system of criminal and unlawful activities. These activities are implemented using official resources and formally legitimate procedural means.

Formal-legal method is viewed as an essential component of methodological support, which contributed to analysing the rules of the Criminal and Criminal Procedure Codes of Ukraine, the Law of Ukraine: *On Judicial Examination*, as well as other legal regulations governing the use of specific expertise. This allowed us to delineate the limits of expert research admissibility, the powers of forensic experts and specialists, and the relationship between the procedural form and the actual needs of proving.

Logical-legal method came in handy for developing a coherent legal argument and forming an internally consistent system of conclusions for organizing a scientific argument regarding the importance of specific expertise in supporting prov-

ing, for identifying hidden forms of abuse and establishing circumstances essential for proceedings.

Comparative-legal method had a distinct significance. It helped to analyse the differences in the forms of applying specific expertise across various categories of criminal offenses, specifically across general criminal offenses and those committed by professional participants in court proceedings. This contributed to the identification of unique features characteristic of offenses committed by professional participants in court proceedings, such as concealment of an act, crimes disguised as lawful behaviour, etc.

Empirical methods were also of use in the study, particularly the analysis of materials of criminal proceedings and court decisions, which served as a practical foundation for formulating conclusions about trends in expert support for investigative activities.

Only by integrating applied methods in this comprehensive study could we reach theoretically grounded and practically relevant conclusions regarding the role, patterns and prospects of using specific expertise during the investigation of criminal offenses committed by professional participants in court proceedings.

Analysis of Essential Researches and Publications

Incorporating specific expertise into pre-trial investigation is not just an optional element, but rather a determining factor in ensuring efficiency thereof. Making use of forensic examination findings, obtaining professional advice from specialists of various profiles, as well as utilizing modern technical means, can substantially enhance the procedure for improving the quality of evidentiary information, its

collection and evaluation, for minimizing investigative errors and aligning operational tasks with the principles of legal procedure and guarantees of the rights of participants in criminal proceedings.

In contemporary scholarly discourse there is growing interest in issues involving digital evidence and methods of its expert analysis as well as in the potential of specific expertise to establish guilt and determine moral harm ¹. These issues are notably relevant in the context of investigating war crimes as one of the leading categories of criminal offences requiring forensic expertise ². Similar attention is paid to economic crimes ³, violations of information security, etc. ⁴

There is a scarcity of research devoted to the issue of using specific expertise during the investigation of criminal of-

fenses committed by professional participants in court proceedings. Specific aspects of this problem were covered in a monograph by V. Hrytsenko, which elaborated on the historical aspects of establishing criminal liability for interference in judicial activities, identified current challenges in the organization of evidence, developed a forensic classification of criminal offenses against justice and outlined typical forms of utilizing specific expertise, as well as proposed methodological approaches to the effective use of expert capacity in this area ⁵.

Having analysed the case law, typical types of forensic examinations (handwriting, forensic psychiatry, technical, video and sound recordings) were determined. Errors were identified during their appointment. The role of specialists in con-

- 1 Черемнова А. І., Чернов О. В., Мурашко А. С. Комплексне використання результатів судово-медичної експертизи при виявленні, документуванні та розкритті кримінальних правопорушень, вчинених під час збройного конфлікту. *Вісник Одеського науково-дослідного інституту судових експертиз Міністерства юстиції України*. 2025. Вип. 17. С. 105—119. DOI: [10.32782/2522-9656/2025-17-11](https://doi.org/10.32782/2522-9656/2025-17-11) (date accessed: 25.10.2025).
- 2 Кривун С. І. Використання спеціальних знань під час розслідування нецільового використання бюджетних коштів : дис. ... д-ра філос. в галузі права. Київ, 2025. 193 с. URL: <https://elar.navs.edu.ua/server/api/core/bitstreams/f5f0ece1-d195-49a1-b3b3-25e4e16232f5/content> (date accessed: 25.10.2025) ; Орел А. М., Чумаков Д. Д., Веріженко О. С. Теоретико-правові засади та практичне застосування спеціальних знань у протидії економічній злочинності. *Наукові інновації та передові технології. Серія «Право»*. 2025. № 4 (44). С. 1732—1743. DOI: [10.52058/2786-5274-2025-4\(44\)-1732-1743](https://doi.org/10.52058/2786-5274-2025-4(44)-1732-1743) (date accessed: 25.10.2025).
- 3 Довгань О. Д., Ткачук Т. Ю., Тарасюк А. В. Counter forensics як загроза інформаційній безпеці України: проблематика судової експертизи цифрових доказів у реаліях війни. *Науковий вісник Ужгородського національного університету. Серія: Право*. 2025. Вип. 89. Ч. 2. С. 402—409. DOI: [10.24144/2307-3322.2025.89.2.61](https://doi.org/10.24144/2307-3322.2025.89.2.61) (date accessed: 25.10.2025).
- 4 Колонюк В. В. Сучасні можливості використання судових експертиз при досудовому розслідуванні злочинів проти інформаційної безпеки України. *Науковий вісник Міжнародного гуманітарного університету. Серія: Юриспруденція*. 2025. Вип. 74. С. 68—72. DOI: [10.32782/2307-1745.2025.74.13](https://doi.org/10.32782/2307-1745.2025.74.13) (date accessed: 25.10.2025) ; Братішко Н. До питання судової експертизи об'єктів інтелектуальної власності: предмет, завдання та межі компетенції. *Науковий вісник Дніпровського державного університету внутрішніх справ*. 2025. № 1 (134). С. 111—117. DOI: [10.32782/2078-3566-2025-1-16](https://doi.org/10.32782/2078-3566-2025-1-16) (date accessed: 25.10.2025).
- 5 Гриценко В. В. Використання спеціальних знань під час розслідування кримінальних правопорушень проти правосуддя : дис. ... д-ра філос. в галузі права. Харків, 2025. 250 с. URL: https://uacademic.info/ua/document/0825U000642#google_vignette (date accessed: 25.10.2025).

ducting investigative (search) actions was clarified. Emphasis is made on the insufficient use of such forms as preliminary criminalistics research, forensic semantic and textual examinations, specialists' advice and capabilities of information technologies. A clear systematisation of specific expertise forms is proposed, outlining their significance for performing tactical and procedural tasks, etc.⁶

The use of specific expertise and modern scientific and technical achievements plays a crucial role in ensuring the efficiency of investigating criminal offenses against justice in general and committed by professional participants in court proceedings in particular. S. Knyzhenko criticized the definition that reveals leading aspects of specific expertise use during the investigation of crimes against justice. She noted that specialist assistance is required from the outset of criminal proceedings, particularly during the inspection of a crime scene, where field forensics methods and technical means of detecting traces are employed. Simultaneously, in the context of today's pre-trial investigations into crimes against justice, the investigator extensively involves specialists not only at the inspection stage, but also during other investigative (search) actions. From the scientist's perspective, appointment of forensic examinations becomes especially relevant, since it is they that make it possible to ascertain factual circumstances that require the application of specific expertise. As the researcher emphasizes, there is a need to review traditional approach-

es to the assessment of handprints given the rapid development of technology and the emergence of new falsification forms (e.g., fake dactyloscopic research objects). This also requires asking forensic experts new questions, in particular regarding the authenticity of prints, and enhancing the methodological framework for such studies⁷.

Developments already available in the field of specific expertise application during the investigation of crimes against justice fail to fully encompass complex and specific cases of offenses committed by professional participants in court proceedings. This category of cases is marked by a high level of complexity, procedural guarantees for the participants involved, and often a carefully disguised mechanism of committing a crime, which makes it much more difficult to uncover the truth exclusively with the use of traditional investigative tools.

In contrast to common criminal offenses, where the limits of permissible and impermissible are clearly defined, abuse of power by justice authorities is often of a latent, concealed nature and occurs within the limits of formally lawful behaviour. Under such circumstances, the need for an interdisciplinary approach—the engagement of specialists in linguistics, psychology, forensics, and information technologies—is not only justified, but also critically essential.

As of today, there are no coherent theoretical models or methodological approaches capable of effectively structuring

6 Гриценко В. В. Знач. твір. URL: https://uacademic.info/ua/document/0825U000642#google_vignette (date accessed: 25.10.2025).

7 Книженко С. О. Окремі аспекти використання спеціальних знань при розслідуванні злочинів проти правосуддя. *Процесуальне та техніко-криміналістичне забезпечення досудового розслідування* : тези доп. всеукр. наук.-практ. конф. (Харків, 28.11.2019). Харків, 2019. С. 82—84. URL: https://univd.edu.ua/general/publishing/konf/28_11_2019/pdf/27.pdf (date accessed: 25.10.2025).

the mechanism of using specific expertise in such criminal proceedings. This indicates the necessity for further scientific investigations.

Main Content Presentation

Efficiency of crime investigation primarily depends on the use of specific expertise and state-of-the-art scientific and technical achievements. What is more, when the prosecuting party has limited professional competence, it is important to fulfil the tasks of criminal proceedings through other means and in the manner prescribed by law. In these scenarios the task of introducing procedural forms of using specific expertise is brought to the forefront, laying the groundwork for obtaining procedural sources of evidence in criminal proceedings.

Within the framework of investigating criminal offenses committed by professional participants in court proceedings, effective application of specific expertise gains special significance due to the complexity of such cases, the degree of legal preparedness of the subjects and the specifics of unlawful acts, often manifested as formally legitimate procedural actions. In this respect, the following forms of using specific expertise are expedient and effective: involvement of a specialist in conducting individual investigative

(search) actions; initiating expert research through the appointment of forensic examinations; obtaining professional advice as well as analytical assistance in the processing, verification and interpretation of information, especially when working with large arrays of procedural data or digital evidence.

In light of this, the activity of a forensic expert as the most qualified subject tasked with utilizing specific expertise in criminal proceedings deserves special attention. As set forth in Ukrainian legislation, a forensic expert is a person who has the corresponding education, training and qualifications, who is certified in a specific area of expertise and has been authorised to conduct a forensic examination (research)⁸. Such a status implies not only a high level of professional expertise, but also observing the standards of professional ethics, objectivity and scientific validity in the course of research, as clearly established in Arts. 3 and 10 of the Law of Ukraine: *On Judicial Examination*⁹.

Independence of a forensic expert, enshrined in Art. 4 of this Law¹⁰, serves as a safeguard against external pressure or influence on research results. This is of paramount importance in cases where the parties are judges, prosecutors or investigators: persons empowered to exert procedural influence. Therefore, it is forensic examination that is the most credible form

8 Про судову експертизу : Закон України від 25.02.1994 р. № 4038-XII (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 25.10.2025) ; Інструкція з організації проведення судових експертиз та експертних досліджень в Експертній службі Служби безпеки України : затв. наказ. Центр. управл. СБУ від 30.05.2025 р. № 209 (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/z0913-25/ed20250718#Text> (date accessed: 25.10.2025) ; Положення про Експертно-кваліфікаційну комісію при Службі безпеки України та атестацію судових експертів : затв. наказ. Центр. управл. СБУ від 02.06.2025 р. № 210. URL: <https://zakon.rada.gov.ua/laws/show/z1106-25/ed20250602#n32> (date accessed: 25.10.2025).

9 Про судову експертизу URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 25.10.2025).

10 Там само.

of using specific expertise, since its results stem from legislatively defined requirements for a forensic expert, procedural transparency, as well as scientific verification of the expert's opinion. Accordingly, the opinion is of great evidentiary value in proceedings.

Regarding the forms of specific expertise application. Here, a certain level of controversy becomes apparent. Some scientists assume the possibility of singling out exclusively the procedural forms of specific expertise use¹¹, others supplement them with non-procedural ones¹², and some note the existence of forms of a hybrid nature¹³.

When defining procedural forms and reviewing law application practice, V. Hrytsenko concluded that it is typical to engage a forensic expert to conduct forensic examinations and obtain advice from specialists during the investigation of criminal offences against justice. Predominantly, in such proceedings the following types of forensic examinations are ordered: handwriting, forensic psychiatric, psychological, forensic medical, questioned document, as well as video and sound recordings, etc. However, the capabilities of forensic semantic and textual examination remain underutilized. This is despite the substantial potential for fulfilling tactical tasks in pre-trial investiga-

tions. The researcher also underscores the extremely low usage of specific expertise in psychology¹⁴.

S. Knyzhenko highlights that in cases associated with threats or violence against persons involved in justice administration, there is a need for a forensic psycholinguistic examination. It involves determining whether threats exist, their content, and interpreting speech acts in the context of a specific communicative situation. The researcher rightly emphasizes that discussions regarding the improvement of expert support in this area continue and require a systematic methodological approach as well as adapting recent advances in related humanities disciplines¹⁵. Therefore, researchers primarily focus on the importance and possibilities of procedural forms of applying specific expertise. At the same time, they outline the prospects for expanding the use of specific expertise in criminal justice.

Traditional practical approaches to implementing particular forms of specific expertise during the investigation of criminal offences committed by professional participants in court proceedings must not be overlooked. According to the analysis of law application practice, forensic examinations are more often ordered by the prosecution representatives in this category of cases.

- 11 Спіцина Г. О., Бідняк Г. С. Форми використання спеціальних знань. *Теорія та практика судової експертизи і криміналістики*. 2018. Вип. 18. С. 240—248. DOI: 10.32353/khrife.2018.26 (date accessed: 25.10.2025).
- 12 Ревака В. М. Форми використання спеціальних пізнань в досудовому провадженні : автореф. дис. ... канд. юрид. наук. Харків, 2006. 14 с.
- 13 Черноус Ю. М., Лісіцький А. В. Спеціальні знання у кримінальному провадженні: поняття, зміст, форми реалізації під час розслідування кримінальних правопорушень. *Юридичний науковий електронний журнал*. 2023. № 1. С. 477—480. DOI: 10.32782/2524-0374/2023-1/112 (date accessed: 25.10.2025).
- 14 Гриценко В. В. Зазнач. твір. URL: https://uacademic.info/ua/document/0825U000642#google_vignette (date accessed: 25.10.2025).
- 15 Книженко С. О. Зазнач. твір. URL: https://univd.edu.ua/general/publishing/konf/28_11_2019/pdf/27.pdf (date accessed: 25.10.2025).

For instance, in one criminal proceeding, a police officer was charged with abuse of authority or official power, accompanied by violence, as well as with illegal apprehension. As stated in the case file, the events took place in the police office, where two victims were injured during their detention. The charge was for an official of a law enforcement agency exceeding the legally granted powers, which resulted in physical violence against detainees ¹⁶.

For the purpose of objectively establishing factual circumstances of a case and confirming the presence of physical injuries, their nature, mechanism of formation and degree of severity, forensic medical examinations were appointed to verify the authenticity of victims' statements as well as to qualify the act properly during the pre-trial investigation. A forensic medical report dated 15 December 2020 and prepared in respect of one of the victims, confirmed the presence of minor bodily injuries manifested as bruises, abrasions and contusions. Another report, dated 30 November 2020, confirmed that the victim had suffered a closed traumatic brain injury with a concussion, which was also classified as a minor bodily injury ¹⁷.

Accordingly, appointing forensic medical examinations in this case was of paramount importance for detecting the signs of violence and assessing its legal consequences. The experts' opinions provided a sound evidentiary basis and helped ensure that the criminal proceedings were

conducted objectively and comprehensively. The use of the results of such forensic examinations within the framework of investigative and judicial activities is one of the main mechanisms for compliance with the standards of proof in cases of abuse of power by law enforcement agencies ¹⁸. Simultaneously, an official's explanation of the reasons for using physical violence (suppressing detainees' physical resistance, inducing them to confess to committing a crime) may become grounds for her/his accusation. That is why it is essential to record the fact of violence, which can constitute a component of the method of criminal unlawful activity in such investigative situations.

In another criminal proceeding (involving actions committed by a law enforcement officer against life and health) that took place on 30 June 2021, it was established that the accused deliberately abused his official position and drew up knowingly false official documents (protocols for presenting an individual for photo identification), intending to artificially create evidence of guilt against a person who was not guilty. Furthermore, he failed to include the facts and circumstances that disproved the person's guilt in the documents, did not carry out the necessary investigative (search) actions and used inadmissible evidence to serve the person with a notice of suspicion ¹⁹.

When investigating this case, a forensic examination, specifically a forensic handwriting examination, was ordered to

16 Вирок Кобеляц, райсуду Полтав. обл. від 11.08.2022 р. Справа № 532/96/21. Провадж. № 1-кп/532/14/2022 / ЄДРСР : вебсайт. URL: <https://revestr.court.gov.ua/Review/105678859#> (date accessed: 25.10.2025).

17 Там само.

18 Там само.

19 Вирок Славут, міськрайсуду Хмельниц. обл. від 06.10.2025 р. Справа № 682/1696/23. Провадж. № 1-кп/682/9/2025 / ЄДРСР : вебсайт. URL: <https://revestr.court.gov.ua/Review/130763613> (date accessed: 25.10.2025).

assess the adequacy and admissibility of investigative documents from the legal perspective, since the official's actions showed signs of deliberate tampering with these documents and abuse of official power.

To verify the authenticity of the signature origin in the protocols for presenting an individual for photo identification, a forensic handwriting examination was appointed as part of the criminal proceedings concerning the prosecution of a knowingly innocent person. The resolution on its conduct was issued on 22 February 2023. The protocols for obtaining samples of handwriting and signatures are dated 20 February 2023. Obtained samples were documented and attached to the proceedings in conformity with the provisions of the Criminal Procedure Code of Ukraine ²⁰ (hereinafter referred to as the CPC of Ukraine) ²¹.

The forensic examination findings, outlined in the expert's opinion, proved to be a key source of unbiased information on the fact of signature forgery in the protocols dated 30 June 2021, drawn up by the investigator stemming from the results of identification by witnesses. The handwriting expert determined that some of the signatures in these documents did not belong to persons who, according to the protocols, were apparently present as at-testing witnesses during the investigation. This fact both substantiated the violation of the identification procedure, and directly testified to the deliberate tampering with evidence ²².

Feasibility of conducting a forensic handwriting analysis in these proceedings is supported by verifying the authenticity and veracity of signatures in procedural documents in order to establish the circumstances that were decisive for developing the evidentiary basis. Under such circumstances, the expert's opinion became not only evidence of document forgery, but also a crucial component in uncovering the mechanism of tampering, which resulted in the bringing of charges under Pt. 1 of Art. 366 and Pt. 2 of Art. 372 of the Criminal Code of Ukraine ²³ (hereinafter referred to as the *CC of Ukraine*) ²⁴.

Therefore, the accused was charged with official forgery and bringing a knowingly innocent person to criminal liability by tampering with evidence (protocols for presenting an individual/witness for photo identification), particularly by preparing protocols with the participation of witnesses without observing procedural guarantees (without the presence of at-testing witnesses, with the imposition of identification and the introduction of unreliable information) and by subsequently using these documents as evidence for the prosecution. Hence, in the context of these criminal proceedings, the forensic handwriting examination functioned as the key mechanism in ensuring the objectivity and lawfulness thereof: it contributed to uncovering the truth, protecting individuals' rights, observing procedural guarantees, and creating a solid basis for

20 Кримінальний процесуальний кодекс 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: 25.10.2025).

21 Вирок Славут. міськрайсуду ... URL: <https://reyestr.court.gov.ua/Review/130763613> (date accessed: 25.10.2025).

22 Там само.

23 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2341-14#Text> (date accessed: 25.10.2025).

24 Вирок Славут. міськрайсуду ... URL: <https://reyestr.court.gov.ua/Review/130763613> (date accessed: 25.10.2025).

evaluating the actions of an official and formulating a court decision²⁵.

Criminal proceedings have been opened following the judge's notoriously unjust decisions against participants in the peaceful protest action held in Dnipropetrovsk on 26–28 January 2014. The study of motives and circumstances, and the procedural justification for adopting resolutions on the application of preventive measures, were of particular importance for qualifying the actions of the accused judge. Emphasis is placed on identifying the extent to which the judge's actions adhere to the provisions of the Criminal Procedure Law, in particular, regarding the existence of reasonable suspicion, assessment of risks, based on which the application of preventive measures is allowed, as well as concerning the adequacy of evidence²⁶.

In this respect, within the framework of the court proceedings, the prosecution submitted a conclusion from the Department of Criminal Law of Yaroslav Mudryi National Law University, which aimed to provide a legal assessment of the judge's actions on the grounds of a crime element stipulated in Pt. 3 of Art. 371 of the CC of Ukraine²⁷, as well as to clarify whether the investigator could be considered the subject of a crime. Although the court critically reviewed this conclusion and did not recognize it as evidence under criminal procedural law, its presentation and analysis had a supporting role in addressing the

issues related to the qualification of legal relations and assessing the lawfulness of the judge's actions in the context of international standards governing the administration of justice and constitutional guarantees of personal liberty²⁸.

Though it may have advisory value, we believe that a forensic expert's opinion based on legal examination is not a source of evidence in a criminal trial. Pursuant to established practice and the position of the Supreme Court, the legal qualification of an act, the definition of the subject of a crime, the interpretation of procedural rules and their application fall within the exclusive competence of the court. Assigning this task to a forensic expert contradicts the principle of optionality, adversarial nature of parties and functional separation of roles in criminal proceedings. When talking about the legal qualification of a criminal offence, the forensic expert cannot replace the court.

Moreover, legal examinations by their nature are not aimed at revealing factual circumstances of a case; therefore, they cannot confirm or refute the circumstances to be proven. The above-mentioned case was not about technical or specific expertise in the traditional sense of forensic analysis (such as trace evidence analysis, handwriting or biological examination), but rather about legal analysis of legal regulations and the qualification of a judge's behaviour: that is, about what falls within the duties of the court as a justice authority.

25 Вирок Славут. міськрайсуду ... URL: <https://reyestr.court.gov.ua/Review/130763613> (date accessed: 25.10.2025).

26 Вирок Ленін. райсуду м. Запоріжжя від 22.12.2023 р. Справа № 200/5046/15-к. Провадж. № 1-кп/334/41/23 / Там само. URL: <https://reyestr.court.gov.ua/Review/115854766> (date accessed: 25.10.2025).

27 Кримінальний кодекс ... URL: <https://zakon.rada.gov.ua/laws/show/2341-14#Text> (date accessed: 25.10.2025).

28 Вирок Ленін. райсуду ... URL: <https://reyestr.court.gov.ua/Review/115854766> (date accessed: 25.10.2025).

Accordingly, the admission of a legal expert's opinion as expert evidence disrupts the balance between the parties, creates a risk of biased influence on the judicial assessment of evidence, and usurps the procedural functions normally performed by the court. That is why (taking into account criminal procedure tasks, the legal nature of the subject of proof and legislation requirements) the appointment and use of the results of the legal examination in this case were inappropriate and contradicted the principles of criminal proceedings.

Let us look at another example. The Dnipro District Court of Kyiv found an authorised operative of the department for combating illegal drug trafficking guilty of compiling a knowingly false report on the apprehension of a person and of committing a knowingly illegal detention (without a ruling by an investigating judge and without the grounds set forth in the Criminal Procedure Code of Ukraine, the person was forcibly taken to the police station and held there for more than seven hours)²⁹.

During the pre-trial investigation stage, the prosecution appointed a forensic handwriting examination to establish the authorship of signatures in procedural documents, particularly in protocols for presenting an individual for photo identification. The forensic examination was carried out pursuant to the investigator's ruling: experimental samples of the handwriting and signatures of the persons appearing in the relevant procedural documents, obtained in accordance with the procedure envisaged by law, were analysed. The expert's opinion became one of the pieces of evidence attached to the

case file (to clarify circumstances related to the authenticity of signatures in documents)³⁰.

Having analysed investigative and case law practice, the following general trends in the use of specific expertise during the investigation of criminal offenses committed by professional participants in court proceedings can be singled out:

- 1) Growing role of specific expertise in the investigation of complex crimes against justice. Criminal offenses committed by judges, prosecutors, investigators, police officers and other justice actors are characterized by a high level of formal soundness, which substantially complicates their detection and investigation. In such cases, classic procedural tools are insufficient, actualizing the application of specific expertise as a means of verifying evidence authenticity and exposing tampering.
- 2) Predominance of procedural forms in the use of specific expertise. In the practice of pre-trial investigation, it is common that procedural forms are utilized: appointment of forensic examinations, involvement of specialists, providing advice and obtaining analytical support. In particular, handwriting, forensic, questioned document examination, psychological and linguistic studies, etc., play a pivotal role. These forms are used both to establish the objective circumstances of a case and to verify the authenticity of actions of professional parties to the proceedings;

²⁹ Вирок Дніпр. райсуду м. Києва від 07.06.2013 р. Справа № 755/7224/13-к. Провадж. № 1-кп/755/193/13 / ЄДРСР : вебсайт. URL: <https://reyestr.court.gov.ua/Review/32273294> (date accessed: 25.10.2025).

³⁰ Там само.

- 3) Enhancing the importance of handwriting analyses in cases involving tampering with procedural documents. Practice testifies to the growing role of forensic handwriting examination in criminal proceedings related to the forgery of protocols of investigative (search) actions (e.g., presentation for identification). These forensic examinations help prove the fact of tampering and identify a person who has entered false data, which is critical for qualifying a crime and determining its subject;
 - 4) Insufficient use of expertise from related humanities. In spite of their potential effectiveness, semantic-textual, psycholinguistic, and psychological examinations remain rare. Psycholinguistic studies in cases involving psychological pressure on a person demand particular attention. Their application holds potential for revealing the hidden content of communicative acts and for evaluating context;
 - 5) Existence of a controversial practice related to the use of legal examinations. The analysis shows the practice of submitting legal opinions in cases against judges or prosecutors. At the same time, this practice has been criticised because legal qualification is the exclusive competence of the court. Lawyers' conclusions in such cases are recognized as supportive, but they do not have the status of evidence and cannot replace the court's procedural assessment. What is more, the current criminal procedural legislation prohibits the appointment of forensic examinations to resolve legal issues³¹.
 - 6) The role of a forensic expert in guaranteeing impartiality and objectivity. Given the specifics of the participants (professional participants in proceedings), it is fundamentally important for forensic experts to adhere to independence standards. Given these circumstances and the governed procedure, the special status of a forensic expert, and the obligation to observe scientific approaches, forensic examination is steadily gaining trust.
 - 7) Focus on obtaining evidence capable of proving the fact of abuse of power. In conditions where the actions of the accused have signs of formal legitimacy (for example, issuing a decision, drawing up a protocol), forensic examinations are often used to identify substantive breaches (forgery of signatures, absence of participants during the investigative procedure, fabrication of evidence, etc.), which makes it possible to prove abuse of official position or unlawfulness of actions.
- Consequently, one may observe a consistent trend towards the institutionalization of specific expertise as an essential tool in criminal proceedings for the investigation of crimes committed by professional participants in court proceedings. The practice of relying on emerging forensics fields and systematic training of specialists capable of performing interdisciplinary tasks at the intersection of law, psychology, linguistics, and information technologies should be further expanded.

31 Кримінальний процесуальний кодекс ... URL: <https://zakon.rada.gov.ua/laws/show/4651-17#Text> (date accessed: 25.10.2025).

Conclusions

In light of the research performed, it can be concluded that an effective investigation of criminal offenses committed by professional participants in court proceedings is impossible without extensive and well-founded use of specific expertise. Given the particularities of such offenses, their latent nature, adherence to “formal procedural requirements”, and the exercise of official powers and the use of legal procedures by the parties involved, traditional procedural measures fail to fully and objectively clarify the circumstances of a committed criminal offense. That is why appointing forensic examinations, involving specialists, obtaining advice from well-versed persons, conducting preliminary studies and deploying digital technologies are necessary means that aid in fulfilling the tasks of criminal proceedings.

According to the case law, handwriting, forensic, psychiatric, psychological, technical, video and sound recording examinations are most frequently requested in such proceedings. Forensic examinations that enable the detection of tampering with procedural documents or the confirmation of the excess of official powers are gaining significance. At the same time, the potential of expert research in psycholinguistics and semantic-textual analysis, as well as the opportunity to obtain advice from specialists in the field of information technology, has not been unlocked. This is especially relevant in the digital age, when a number of traces linked to criminal illegal activity can be detected in the digital environment.

It is furthermore essential to note that the use of specific expertise must meet the criteria of expediency, proportionality and legal certainty. Within this framework, it is impermissible to mix competences,

specifically to entrust legal assessment functions to forensic experts and specialists. Legal experts' conclusions cannot be sources of evidence: they should be regarded solely as guidelines for the prosecution's or defence's analytical work.

Therefore, incorporating specific expertise into pre-trial investigation practice is not only a technical or supporting element, but also a structural component of efficient, legal and objective criminal proceedings. Simultaneously, this requires further development of methodological support, interdisciplinary training of specialists, improvement of the regulatory framework and formation of a recognized practice that would be appropriate for applying specific expertise in cases involving professional participants in court proceedings.

Використання спеціальних знань під час розслідування кримінальних правопорушень, учинених професійними учасниками судочинства

Євген Сун

Мета статті — визначити сутність і зміст, а також особливості техніко-криміналістичного забезпечення початкового етапу розслідування кримінальних правопорушень, пов'язаних із контрабандою. Для реалізації поставленої мети застосовано загальнонаукові методи аналізу та синтезу, індукції та дедукції, а також спеціальні методи — діалектичний, системно-структурний, порівняльно-правовий і метод узагальнення. З'ясовано, що техніко-криміналістичне забезпечення є комплексом організаційних і технічних заходів, спрямованих на ефективне застосування науково-технічних засобів і методів для виявлення, фіксування, вилучення й дослідження доказової інформації. На

підставі узагальнення теоретичних підходів і практики розслідування кримінальних правопорушень з'ясовано, що особливості застосування науково-технічних засобів зумовлені слідчими ситуаціями, характерними для контрабанди, які своєю чергою визначають алгоритм слідчих (розшукових) і негласних слідчих (розшукових) дій. Перспективи вдосконалення техніко-криміналістичного забезпечення розслідування контрабанди вбачаються у поєднанні технологічних інновацій, удосконаленні методичного підходу, підвищенні кваліфікації представників органів досудового розслідування, розширенні матеріально-технічної бази й забезпеченні належного правового регулювання застосування науково-технічних засобів. Саме поєднання цих чинників здатне забезпечити точність, доказову цінність і швидкість отримання результатів слідчих (розшукових) та інших процесуальних дій, а також судових експертиз у цій складній категорії кримінальних правопорушень.

Ключові слова: криміналістичне забезпечення; досудове розслідування; початковий етап; науково-технічний засіб; спеціаліст-криміналіст.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

The author has contributed solely to intellectual discussion underlying this document, case law research, writing and editing, and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

The author declares no conflict of interest.

References

- Bratishko, N. (2025). Do pytannia sudovoi ekspertyzy ob'ektiv intelektualnoi vlasnosti: predmet, zavdannia ta mezhi kompetentsii [On the issue of forensic examination of intellectual property objects: object, tasks and limits of competence]. *Naukovyi visnyk Dniprovskoho derzhavnoho universytetu vnutrishnikh sprav*. № 1 (134). DOI: [10.32782/2078-3566-2025-1-16](https://doi.org/10.32782/2078-3566-2025-1-16) [in Ukrainian].
- Cheremnova, A. I., Chernov, O. V., Murashko, A. S. (2025). Kompleksne vykorystannia rezultativ sudovo-medychnoi ekspertyzy pry vyiaвленni, dokumentuvanni ta rozkrytti kryminalnykh pravoporushen, vchynenykh pid chas zbroinoho konfliktu [Comprehensive Use of Forensic Examination Results in Detecting, Documenting and Solving Criminal Offences Committed During the Armed Conflict]. *Visnyk Odeskoho naukovo-doslidnoho instytutu sudovykh ekspertyz Ministerstva yustytzii Ukrainy*. Vyp. 17. DOI: [10.32782/2522-9656/2025-17-11](https://doi.org/10.32782/2522-9656/2025-17-11) [in Ukrainian].
- Chornous, Yu. M., Lisitskyi, A. V. (2023). Spetsialni znannia u kryminalnomu provadzheni: poniattia, zmist, formy realizatsii pid chas rozsliduvannia kryminalnykh pravoporushen [Special Knowledge in Criminal Proceedings: Concept, Content, Forms of Implementation During the Investigation of Criminal Offenses]. *Yurydychnyi naukovi elektronnyi zhurnal*. № 1. DOI: [10.32782/2524-0374/2023-1/112](https://doi.org/10.32782/2524-0374/2023-1/112) [in Ukrainian].
- Dovhan, O. D., Tkachuk, T. Yu., Tarasiuk, A. V. (2025). Counter forensics yak zahroza informatsiini bezpetsi Ukrainy: problematyka sudovoi ekspertyzy tsyfrovyykh dokaziv u realiiakh viiny [Counter forensics as a threat to the information security of Ukraine: the problem of forensic expertise of digital evidence in the realities of war]. *Naukovyi visnyk Uzhhorodskoho natsionalnoho universytetu. Serii: Pravo*. Vyp. 89. Ch. 2. DOI: [10.24144/2307-3322.2025.89.2.61](https://doi.org/10.24144/2307-3322.2025.89.2.61) [in Ukrainian].

- Hrytsenko, V. V. (2025). *Vykorystannia spetsialnykh znan pid chas rozsliduvannia kryminalnykh pravoporushen proty pravosuddia* [The use of specialized knowledge in the investigation of criminal offenses against justice] : dys. ... d-ra filos. v haluzi prava. Kharkiv. URL: https://uacademic.info/ua/document/0825U000642#-google_vignette [in Ukrainian].
- Knyzhenko, S. O. (2019). Okremi aspekty vykorystannia spetsialnykh znan pry rozsliduvanni zlochyniv proty pravosuddia [Certain Aspects of Using Specific Expertise when Investigating Crimes against Justice]. *Protsesualne ta tekhniko-kryminalistychnе zabezpechennia dosudovoho rozsliduvannia* : tezy dop. vseukr. nauk.-prakt. konf. (Kharkiv, 28.11.2019). Kharkiv. URL: https://univd.edu.ua/general/publishing/konf/28_11_2019/pdf/27.pdf [in Ukrainian].
- Koloniuk, V. V. (2025). Suchasni mozhyvosti vykorystannia sudovykh ekspertyz pry dosudovomu rozsliduvanni zlochyniv proty informatsiinoi bezpeky Ukrainy [Modern possibilities of using forensic expertise in pre-trial investigation of crimes against the information security of Ukraine]. *Naukovyi visnyk Mizhnarodnoho humanitarnoho universytetu. Seriya: Yurysprudentsiia*. Vyp. 74. DOI: [10.32782/2307-1745.2025.74.13](https://doi.org/10.32782/2307-1745.2025.74.13) [in Ukrainian].
- Kryvun, S. I. (2025). *Vykorystannia spetsialnykh znan pid chas rozsliduvannia netsilovoho vykorystannia biudzhetykh koshtiv* [Using specialized knowledge when investigating misuse of budget funds] : dys. ... d-ra filos. v haluzi prava. Kyiv. URL: <https://elar.navs.edu.ua/server/api/core/bitstreams/f5f0ece1-d195-49a1-b3b3-25e4e16232f5/content> [in Ukrainian].
- Orel, A. M., Chumakov, D. D., Verizhenko, O. S. (2025). Teoretyko-pravovi zasady ta praktychne zastosuvannia spetsialnykh znan u protydii ekonomichnii zlochynnosti [Theoretical and Legal Principles and Practical Application of Special Knowledge in Combating Economic Crime]. *Naukovi innovatsii ta peredovi tekhnolohii. Seriia «Pravo»*. № 4 (44). DOI: [10.52058/2786-5274-2025-4\(44\)-1732-1743](https://doi.org/10.52058/2786-5274-2025-4(44)-1732-1743) [in Ukrainian].
- Revaka, V. M. (2006). *Formy vykorystannia spetsialnykh piznan v dosudovomu provadzheni* [The forms of the use of special knowledge in pre-trial investigation] : avtoref. dys. ... kand. yuryd. nauk. Kharkiv [in Ukrainian].
- Spitsyna, H. O., Bidniak, H. S. (2018). Forms of Special Knowledge Use. *Theory and Practice of Forensic Science and Criminalistics*. Vol. 18. DOI: [10.32353/khrife.2018.26](https://doi.org/10.32353/khrife.2018.26).

Sup, Ye. (2025). Using Specific Expertise During the Investigation of Criminal Offences Committed by Professional Participants in Court Proceedings. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 120—134. DOI: [10.32353/khrife.4.2025.07](https://doi.org/10.32353/khrife.4.2025.07).

Specific Economic Expertise in Investigation of Economic Criminal Offenses

Vitalii Usatii *

* Candidate of Legal Sciences, NSC «Hon. Prof. M. S. Bokarius FSI», Kharkiv, Ukraine,
ORCID: <https://orcid.org/0009-0004-3325-4530>, e-mail: usatii.v.o@gmail.com

DOI: 10.32353/khrife.4.2025.08

UDC 343.985(477)

Received: 14.11.2025 / Reviewed: 30.11.2025 / Accepted for printing: 25.12.2025 /

Available online: 31.12.2025



This article purpose is to clarify the role, place and significance of special economic knowledge in the investigation of criminal offenses in the sphere of economic activity, as well as to determine the optimal forms of their application at different stages of criminal proceedings. The methodological research basis was general scientific and special legal methods (dialectical, systemic-structural, functional, legal-dogmatic, interpretative and comparative-legal ones). It is substantiated that effective investigation of economic criminal offenses is impossible without involving knowledge that goes beyond the boundaries of traditional legal competence. Complexity of financial schemes, the multi-stage nature of economic processes and the similarity of criminal transactions to legal economic activity require the participation of economists, auditors, accountants and other specialists in the financial and economic field. Significance of audits and documentary checks as a non-procedural form of application of special economic knowledge is revealed, and the clarification of the audit report is also characterized as a reference and consulting activity that ensures the correct interpretation of special terms, methods and financial conclusions. Particular attention is paid to the participation of a specialist economist in investigative (detective) actions, primarily in interrogation as a procedural tool for increasing the accuracy, completeness and reliability of the testimony received. It is argued that professional support of the investigator

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

from a specialist is an important element in ensuring the proper quality of evidentiary information. The grounds and significance of the appointment of forensic economic and forensic accounting examinations are determined, which are the main forms of scientifically substantiated assessment of financial and economic operations and the elimination of contradictions that arise during the analysis of audit materials. It is summarized that special economic knowledge is a system-forming component of evidence in criminal proceedings of an economic nature. Their rational use contributes to increasing the efficiency of pre-trial investigation, ensures the accuracy of financial assessments, minimizes the risk of errors, and helps restore the violated rights of the state and business entities.

Keywords: special economic expertise; forensic economic examination; audit; documentary verification; specialist economist; interrogation; economic criminal offenses.

Research Problem Formulation

Current trends in commission of criminal offenses in the field of economic activity are characterized by an increase in the level of complexity of financial schemes, the use of high-tech methods, in particular in the aspect of forgery of documents, the implementation of modern methods of money laundering, as well as active integration into the economic environment of entities operating contrary to the provisions of the law, even despite holding a particularly responsible position. Under such conditions, an effective investigation of economic criminal offenses is impossible without the involvement of special economic knowledge that goes beyond the professional competence of investigators, prosecutors and other procedural participants.

The use of special economic expertise allows deeper analysis of financial and economic documentation, revealing hidden schemes of misappropriation,

embezzlement, legalization of property and funds, tax evasion and other economic crimes. At the same time, the current criminal procedural legislation does not always provide adequate legal mechanisms for the effective involvement of relevant specialists (experts and specialists) in the pre-trial investigation. All this requires a comprehensive study of the role of special economic knowledge in identifying, documenting and qualifying economic criminal offenses, which determining relevance of the chosen topic.

Article Purpose

Find out the role, place and significance of economic knowledge in investigation of economic criminal offenses.

Research Methods

Methodological basis of the research is general scientific, special legal and in-

terdisciplinary methods of cognition which use has ensured the systematic and comprehensive nature of the analysis of the forms of application of special economic knowledge in the investigation of criminal offenses in the field of economic activity.

Dialectical method has become useful for studying the evolution of approaches to understanding special economic expertise, changing their role in the criminal procedure, as well as the relationship between the development of economic relations and the complication of the forms of their criminal law protection.

System-structural approach helped to clarify the place and role of various forms of application of special economic knowledge (audit, verification, forensic economic examination, explanation of the audit report, participation of an economist in interrogation) in the mechanism of proof. He made possible to consider them as interrelated elements of a single system of procedural and non-procedural means of obtaining and interpreting evidence.

System-functional method helped to analyze the practical purpose of each form of use of special economic knowledge: from the information-oriented role of audits and checks to the evidentiary value of forensic economic examinations and the tactical value of the participation of an economist in investigative (search) actions.

Methods of formal logic (analysis, synthesis, induction, deduction, generalization, modeling) were used to classify the forms of use of special economic expertise, identify their advantages and limitations, as well as to substantiate the need for an expanded approach to the involve-

ment of economists in economic criminal proceedings.

Legal and dogmatic method was needed to analyze the provisions of the criminal procedural legislation governing the procedure for audits and inspections, the appointment of forensic examinations, the procedural status of a specialist and the possibility of using the results of control measures in evidence.

The interpretative method contributed to clarifying the content of legal norms regulating procedural and non-procedural forms of using special economic knowledge, as well as to assess their consistency and identify conflicts between the Criminal Procedural Code of Ukraine ¹ and special financial and tax legislation.

Comparative legal method made it possible to compare the approaches of different scientists to the definition of the concept of *special economic expertise*, procedural status of the audit and the role of forensic economic examination, as well as to outline trends in the development of doctrine and law enforcement practice in this area.

Method of document analysis helped in the study of audit reports, audit materials, generalizations of investigative and judicial practice and scientific sources, which made it possible to specify the problematic aspects of the appointment and use of forensic economic examinations, as well as to check the effectiveness of existing forms of application of special economic expertise.

These methods together provided a holistic theoretical and practical justification for the concept of using special economic expertise in criminal proceedings for economic offenses.

1 Кримінальний процесуальний кодекс 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: 10.11.2025).

Analysis of Essential Researches and Publications

Scientists are constantly researching the use of special knowledge in criminal proceedings. In order to meet the requests of law enforcement practice, they develop, improve and implement new methods of conducting expert research, organizational and tactical principles of interaction of law enforcement and judicial bodies with forensic institutions, etc.

That is why the specifics of the use of special knowledge in the criminal process are studied at the level of monographic research.

The issue of using specific expertise through the prism of economic crimes and the application of economic knowledge was developed, in particular, by A. Volobuiev ², K. Hovorova ³, I. Hubanova ⁴, V. Didenko ⁵, H. Dondyk ⁶, N. Dondyk ⁷, S. Kniaziev ⁸, V. Nehanov ⁹, I. Petrova ¹⁰, I. Pyrih ¹¹, E. Simakova-Yefremian ¹², O. Shapoval ¹³,

- 2 Волобуєв А. Ф. Проблеми методики розслідування розкрадань майна в сфері підприємництва : монографія. Харків, 2000. 336 с.
- 3 Говорова К. І. Теоретичні та загально-методичні положення судової економічної експертизи документів фінансово-кредитних операцій : дис. ... д-ра філос. в галузі права. Харків, 2021. 212 с. URL: https://uacademic.info/ua/document/0821U100821#google_vignette (date accessed: 10.11.2025).
- 4 Губанова І. В. Теоретичні та загально-методичні положення судової економічної експертизи фінансово-господарської діяльності підприємств : дис. ... д-ра філос. в галузі права. Харків, 2025. 358 с. URL: <https://drive.google.com/file/d/1Y2WmdhFjRx-FGO1s1J68j-dWM4smSSk-b/view> (date accessed: 10.11.2025).
- 5 Діденко В. Л. Використання спеціальних знань при розслідуванні кримінальних правопорушень у бюджетній сфері : дис. ... канд. юрид. наук. Дніпро, 2024. 238 с. URL: https://dduvs.edu.ua/wp-content/uploads/files/Structure/science/rada/new_d0872702/2024/1/1/d.pdf (date accessed: 10.11.2025).
- 6 Дондик Г. П. Використання спеціальних бухгалтерських знань при розслідуванні злочинів у сфері сільськогосподарського виробництва : дис. ... канд. юрид. наук. Дніпропетровськ, 2011. 256 с. URL: <https://uacademic.info/ua/document/0411U006932> (date accessed: 10.11.2025).
- 7 Дондик Н. Я. Використання спеціальних бухгалтерських знань при розслідуванні економічних злочинів : дис. ... канд. юрид. наук. Харків, 2006. 208 с. URL: https://uacademic.info/ua/document/0406U002942#google_vignette (date accessed: 10.11.2025).
- 8 Князев С. В. Теорія та практика розслідування кримінальних правопорушень у бюджетній сфері України : дис. ... д-ра юрид. наук. Київ, 2025. 517 с. URL: <https://www.uacademic.info/ua/document/0525U000090> (date accessed: 10.11.2025).
- 9 Неганов В. В. Використання висновків ревізій у кримінальному провадженні : дис. ... канд. юрид. наук. Київ, 2018. 292 с.
- 10 Петрова І. А. Теоретико-правові та організаційно-методологічні засади регулювання судово-товарознавчих експертиз споживчих товарів : дис. ... д-ра юрид. наук. Харків, 2012. 541 с. URL: <https://uacademic.info/ua/document/0512U000231> (date accessed: 10.11.2025).
- 11 Пиріг І. В. Теоретико-прикладні проблеми експертного забезпечення досудового розслідування : монографія. Дніпропетровськ, 2015. 368 с. URL: <https://dduvs.edu.ua/wp-content/uploads/files/Structure/library/student/monogr.pdf> (date accessed: 10.11.2025).
- 12 Сімакова-Єфремян Е. Б. Теоретико-правові та методологічні засади комплексних судово-експертних досліджень : дис. ... д-ра юрид. наук. Харків, 2017. 392 с. URL: <https://uacademic.info/ua/document/0517U000760> (date accessed: 10.11.2025).
- 13 Шаповал О. В. Криміналістичне забезпечення розслідування економічних злочинів : автореф. дис. ... канд. юрид. наук. Київ, 2017. 20 с.

O. Shevchenko¹⁴ O. Shramko¹⁵, M. Shcherbakovskyi¹⁶.

The narrow sectoral issues of involving specialists and forensic experts in investigation of economic criminal offenses are revealed in the works of V. Zhukova¹⁷, S. Yevdokymenko¹⁸, S. Kryvun¹⁹, D. Kurylenko²⁰, I. Petrova²¹, S. Tyuleneva²², S. Tracha²³ et al.

Scientists also outlined aspects of the use of economic knowledge. V. Fedchyshy-

na studies the state and possibilities of applying special economic expertise and the participation of forensic experts in the legal systems of Europe, Australia and the United States. It substantiates the need to create an institute of forensic economic examinations and emphasizes the importance of international cooperation for the effective investigation of economic offenses²⁴.

O. Horlachuk reveals the requirements for competence of a forensic economist

- 14 Шевченко О. В. Використання спеціальних товарознавчих знань під час досудового розслідування : дис. ... канд. юрид. наук. Київ, 2017. 317 с. URL: <https://elar.navs.edu.ua/server/api/core/bitstreams/d98763bb-23dc-4972-a52b-f8ee188e34ef/content> (date accessed: 10.11.2025).
- 15 Шрамко О. М. Використання спеціальних знань під час розслідування корупційних кримінальних правопорушень : дис. ... д-ра філос. в галузі права. Київ, 2021. 269 с. URL: <https://uacademic.info/ua/document/0821U102258> (date accessed: 10.11.2025).
- 16 Щербаківський М. Г. Теоретико-методологічні та праксеологічні засади судових експертиз у кримінальному процесі : автореф. дис. ... д-ра юрид. наук. Харків, 2016. 42 с. URL: <http://dspace.univd.edu.ua/xmlui/handle/123456789/2582> (date accessed: 10.11.2025).
- 17 Жукова В. І. Залучення обізнаних осіб для визначення розміру матеріальних збитків у кримінальному провадженні. *Право і суспільство*. 2022. № 6. С. 230–238. DOI: [10.32842/2078-3736/2022.6.35](https://doi.org/10.32842/2078-3736/2022.6.35) (date accessed: 10.11.2025).
- 18 Євдокіменко С. В. Форми використання спеціальних економічних знань у кримінальному провадженні та судочинстві. *Вісник Чернівецького факультету Національного університету «Одеська юридична академія»*. 2016. Вип. 2. С. 372–384. URL: http://nbuv.gov.ua/UJRN/vchfo_2016_2_39 (date accessed: 10.11.2025).
- 19 Кривун С. І. Використання спеціальних знань під час розслідування нецільового використання бюджетних коштів : дис. ... канд. юрид. наук. Київ, 2025. 193 с. URL: <https://elar.navs.edu.ua/server/api/core/bitstreams/f5f0ece1-d195-49a1-b3b3-25e4e16232f5/content> (date accessed: 10.11.2025).
- 20 Куриленко Д. В. Інститут обізнаних осіб у змагальному кримінальному провадженні : автореф. дис. ... канд. юрид. наук. Харків, 2017. 16 с. URL: <https://dspace.univd.edu.ua/server/api/core/bitstreams/6f82595b-1d94-4b6e-9ca8-8903b4b79b7c/content> (date accessed: 10.11.2025).
- 21 Петрова І. А. Зазнач. твір. URL: <https://uacademic.info/ua/document/0512U000231> (date accessed: 10.11.2025).
- 22 Тюленев С. Місце і значення економічних експертиз у кримінальних провадженнях щодо розслідування рейдерства. *Сучасні напрямки розвитку судової експертизи та криміналістики* : зб. Всеукр. наук.-практ. конф. з нагоди 110-річ. діяльн. ОНДІСЕ Мін'юсту України (Одеса, 05.09.2024). Одеса, 2024. С. 462–465. URL: <https://ndekc.lviv.ua/pdf/311020242.pdf> (date accessed: 05.05.2025) ; Його ж. Призначення судових експертиз під час розслідування кримінальних правопорушень, пов'язаних із рейдерством. *Право і безпека*. 2024. № 1 (92). С. 112–122. DOI: [10.32631/pb.2024.1.10](https://doi.org/10.32631/pb.2024.1.10) (date accessed: 10.11.2025).
- 23 Трач С. С. Криміналістична методика розслідування кримінальних правопорушень у сфері господарської діяльності в Україні : монографія. Одеса, 2023. 450 с.
- 24 Федчишина В. В. Спеціальні економічні знання у правових системах Європи, Австралії та США. *Науковий огляд*. 2018. Т. 3. № 46. С. 124–143. URL: <https://naukajournal.org/index.php/naukajournal/article/view/1505/1588> (date accessed: 10.11.2025).

and substantiates that to ensure effective economic research, he must have diverse special knowledge both in economic disciplines (accounting, finance, taxation, etc.) and in certain areas of law. The researcher emphasizes the importance of legislative regulation and interdisciplinary consistency of knowledge to improve the interaction of experts with the judiciary in investigation of economic crimes ²⁵.

A. Orel and his co-authors analyze the theoretical and legal foundations and practical aspects of the application of special knowledge in combating economic crime, given the complexity of investigating such offenses in the age of digitalization that is growing day by day. The authors consider the normative regulation of expert activity in Ukraine and at the international level, focusing on the methods of financial monitoring, forensic analysis and the role of specialized institutions in the investigation of economic crimes ²⁶.

Despite availability of a significant number of research papers devoted to the use of special knowledge in criminal proceedings in general and in the context of the investigation of economic criminal offenses in particular, the existing developments are fragmentary. Recently, scientists often focus on certain aspects (the competence of experts, regulatory regulation or foreign experience), leaving out a holistic theoretical and practical justification for the application of specific economic expertise in economic criminal proceedings.

In this regard, there is a need for a deeper, systematic analysis that would combine theoretical foundations, legislative mechanisms, practical experience and interdisciplinary integration to form an effective model for the use of special economic knowledge in combating economic crime.

Main Content Presentation

Proven and substantiated in scientific literature is the position that during the investigation of criminal offenses in the field of economic activity, specific expertise is applied in two main forms:

- 1) involvement of specialists (accountants, auditors, auditors, economists, energy specialists, etc.) to obtain professional advice on:
 - a) peculiarities of conducting accounting transactions, mechanisms of non-cash electronic settlements and making payments using bank payment instruments;
 - b) procedure for document circulation during accounting operations both in the financial and credit sphere and at a specific enterprise;
 - c) telecommunication technologies, including the performance of computer operations;
- 2) appointment and conducting forensic examinations, in particular handwriting, technical and forensic, economic (forensic accounting, financial and economic ones), com-

25 Горлачук О. До питання про спеціальні знання судового експерта-економіста. *Теорія та практика судової експертизи і криміналістики*. 2021. Вип. 2 (24). С. 136—151. DOI: [10.32353/khrife.2.2021.09](https://doi.org/10.32353/khrife.2.2021.09) (date accessed: 10.11.2025).

26 Орел А. М., Чумаков Д. Д., Веріженко О. С. Теоретико-правові засади та практичне застосування спеціальних знань у протидії економічній злочинності. *Наукові інновації та передові технології. Серія «Право»*. 2025. № 4 (44). С. 1732—1743. DOI: [10.52058/2786-5274-2025-4\(44\)-1732-1743](https://doi.org/10.52058/2786-5274-2025-4(44)-1732-1743) (date accessed: 10.11.2025).

puter and technical, commodity, etc.²⁷

In general, we like this approach, but with the amendment that involvement of specialists in this category of cases should not be limited solely to consulting assistance.

Mostly, all the outlined forms of using specific expertise relate to the field of economics. Special economic knowledge constitutes the theoretical basis that provides the solution of expert economic problems, contributes to the formation of new scientific approaches and determines the limits of competence and professional competence of forensic economic examination. Analysis of the history of the formation of special economic expertise, as well as the development of forensic economic expertise, indicates the absence of unified criteria or a single methodological approach to interpretation of the concept of *special economic expertise*²⁸.

Some of the outlined forms of interaction between the prosecution and the bearers of special knowledge are implemented long before the start of the pre-trial investigation. It is these materials that become a source of information about the commission of a criminal offense, there-

fore, the basis for registering factual data on a specific fact of violation of the law in the Unified Register of Pre-Trial Investigations (hereinafter referred to as *URPTI*). Such documents, in particular, are the materials of audits and inspections conducted by the state financial control bodies.

Audit is a set of control measures aimed at checking the legality, expediency and economic efficiency of business operations for a certain period, as well as assessing the legality of the actions of officials during their implementation. During the audits, they not only confirm the already known facts of abuse, but also reveal new cases of embezzlement of material values and monetary resources, identify persons involved in illegal actions²⁹. The inspector and the auditor are usually considered to belong to the category of expert witnesses because they are not granted any other status in the criminal procedural legislation³⁰.

Other approaches are covered in legal literature. Scientists note that an audit is a procedural action initiated by an investigator or prosecutor and carried out on the basis of a ruling by an investigating judge. Its content consists in involving authorized officials who have the right to

27 Тимчишин А. М. Спеціальні знання у кримінальному процесі України: теорія та практика : дис. ... д-ра юрид. наук. Кропивницький, 2023. С. 370—371. URL: https://dnuvs.ukr.education/wp-content/uploads/2023/10/dysertacziya_tymchyshyn.pdf (date accessed: 10.11.2025).

28 Федчишина В. В. Спеціальні економічні знання та їх використання в ході оперативно-розшукової діяльності, досудового розслідування і судового розгляду: теоретико-правові основи. *Актуальні проблеми вітчизняної юриспруденції*. 2018. № 3. С. 215. URL: http://apnl.dnu.in.ua/3_2018/48.pdf (date accessed: 10.11.2025).

29 Щербаковский М. Г., Кравченко А. А. Применение специальных знаний при раскрытии и расследовании преступлений. Харьков, 1999. С. 49.

30 Шрамко О. М. Зазнач. твір. URL: <https://uacademic.info/ua/document/0821U102258> (date accessed: 10.11.2025) ; Пчеліна О. В. Теоретичні засади формування та реалізації методики розслідування злочинів у сфері службової діяльності : автореф. дис. ... д-ра юрид. наук. Харків, 2017. С. 25. URL: <https://dspace.univd.edu.ua/server/api/core/bitstreams/8a2b0b63-3f26-4980-90a2-a383f9f6f39/content?trackerId=15a163407f39c4ae> (date accessed: 10.11.2025).

conduct control, inspection or verification measures in order to establish circumstances important for the pre-trial investigation³¹. According to some researchers, conducting an audit within the framework of criminal proceedings should be considered as a separate form of using specific expertise Appointed by an investigator or prosecutor, it loses its original administrative nature and turns from a financial control tool into a procedural action of criminal justice. Therefore, an audit combines the features of both procedural and administrative activities: in criminal proceedings, it is a method of obtaining evidentiary information through an inspection of the financial and economic operations of an enterprise, institution or organization carried out by an investigator or prosecutor with the participation of an auditor, in compliance with the requirements of criminal procedural law³².

Audit is proposed to be considered as one of the investigative (search) actions, since it is carried out solely by the decision of the investigator, and the auditor acts as a specialist, not independently, but within the powers determined by the pre-trial investigation body³³. Currently, this position should be recognized as obsolete and inconsistent with the provisions of the law.

In context of our chosen of research topic, we note that audits and checks can-

not be considered solely as forms of realization of economic expertise, although such expertise in some cases plays a leading role. In essence, audit and verification are control procedures designed to assess the activities of business entities, government agencies, institutions and organizations. Depending on the subject of control, they can rely on various areas of specific expertise: economic, technical, legal, environmental, engineering, etc. Thereby, generalization according to which audits and inspections are identified exclusively with the economic sphere, does not correspond to their real content and practice of application.

At the same time, in criminal proceedings related to economic activity, audits and documentary checks are most often of a financial and economic nature. Their conducting involves the analysis of accounting and financial documentation, establishing the legality and validity of business transactions, identifying material losses and assessing the effectiveness of the use of financial resources. In this context, economic knowledge is basic for the implementation of such checks, since without a deep understanding of financial and economic processes, a proper analysis of the relevant materials is impossible.

However, it should be noted that within the framework of criminal procedu-

31 Копитько В. Ю., Атаманчук В. Методика залучення спеціаліста до ревізій та аудиторських перевірок у кримінальному провадженні. *Науковий вісник Ужгородського національного університету. Серія: Право*. 2025. Т. 3. № 89. С. 380. DOI: [10.24144/2307-3322.2025.89.3.54](https://doi.org/10.24144/2307-3322.2025.89.3.54) (date accessed: 10.11.2025).

32 Чернявський С. С., Цуцкірідзе М. С. Актуальні проблеми призначення судово-економічних експертиз та документальних ревізій у кримінальному провадженні. *Актуальні питання використання можливостей позапланових документальних ревізій та інших перевірок у кримінальному судочинстві* : мат-ли міжвідом. наук.-практ. семінару (Київ, 30.06.2016). Київ, 2016. С. 123–126. URI: <https://elar.navs.edu.ua/jspui/handle/123456789/4516> (date accessed: 10.11.2025).

33 Дондик Г. П. Напрями вдосконалення використання спеціальних бухгалтерських знань при розслідуванні злочинів у сфері економіки. *Науковий вісник Херсонського державного університету. Серія «Юридичні науки»*. 2013. Вип. 5. Т. 2. С. 100–103.

ral law, an audit is not only an economic procedure, but also a measure related to obtaining information about the mechanism of criminal illegal activity. Thus, audits and checks are not a universal form of realization of economic knowledge, but in criminal proceedings for economic offenses they are mostly focused on economic competencies.

If the results of the audit are sent to law enforcement agencies for the purpose of taking measures provided for by current legislation, the investigator or detective must carefully analyze these materials, as they usually contain information about identified violations of current legislation (budgetary, tax, etc.). At the same time, it should be borne in mind that such violations do not always constitute criminal offenses. For example, if the State Audit Service draws up an act of inspection of the economic activities of an enterprise and records violations by officials without causing material damage (causing material damage is a mandatory element of many criminal offenses in the budgetary area ³⁴). It is important to remember that persons involved in illegal activities are aware of the consequences of inspections and may take measures to conceal evidence, destroy documents, or take other actions aimed at avoiding responsibility. Sometimes, the losses identified by the audit are compensated during the control measure. In such situations, this often becomes a reason for refusing to enter information into the Unified Register of Pre-tri-

al Investigations, which effectively allows the guilty parties to avoid punishment ³⁵.

Regarding initiation of inspections and audits during the pre-trial investigation, the Criminal Procedural Code of Ukraine does not give the investigator or prosecutor the authority to apply to the investigating judge with a request to appoint or conduct such a measure. In this regard, scientists recognize the reasonable practice of those investigating judges who refuse to satisfy such petitions. In addition, Criminal Procedural Code of Ukraine does not contain and has never contained procedural rules on the procedure for consideration by the investigating judge of a request for audits or inspections, and does not determine the type of procedural decision to be taken as a result of such consideration ³⁶.

We agree that today there is a conflict between the provisions of the criminal procedural and tax laws, which should be resolved on the basis of the conflict rules enshrined in Part 1 of Art. 1 and Part 3 of Art. 9 of Criminal Procedural Code of Ukraine ³⁷. Given that in practice there is often an inappropriate procedure for considering the requests of investigators and prosecutors to conduct audits or inspections and their subsequent preferential satisfaction, the decision of the investigating judge to appoint an unscheduled inspection or audit should be subject to appeal. This will ensure that the individual's right of access to justice and effective judicial review are respected.

34 Князев С. В. Знач. твір. С. 317. URL: <https://www.uacademic.info/ua/document/0525U000090> (date accessed: 10.11.2025).

35 Харкевич Ю. І. Криміналістична методика розслідування кримінальних правопорушень, пов'язаних із державним фінансуванням галузі охорони здоров'я в умовах пандемії : дис. ... д-ра філос. в галузі права. Київ, 2024. С. 108. URL: <https://uacademic.info/ua/document/0824U001492> (date accessed: 10.11.2025).

36 Кримінальний процесуальний кодекс URL: <https://zakon.rada.gov.ua/laws/show/4651-17#Text> (date accessed: 10.11.2025).

37 Там само.

Special attention should be paid to the fact that the tax audit is one of the most effective mechanisms for obtaining information on the fulfillment by the taxpayer of obligations to accrue and pay taxes and fees. Given its importance, there is an urgent need to harmonize the norms of criminal procedural and financial legislation, eliminating existing regulatory inconsistencies. This is the only way to ensure that law enforcement agencies can properly exercise their functions, and that business entities can effectively protect their rights in case of their violation ³⁸.

The analysis of law enforcement practice shows that it is audits and checks that are common forms of application of special economic knowledge. At the same time, these measures should be considered non-procedural forms of specific expertise application ³⁹, which is primarily due to the fact that the procedural aspects of such measures are not regulated by criminal procedural legislation.

The next important form of specific expertise use that is directly related to the results of audits and inspections is the explanation of the act of verification or audit, which should be considered precisely as a form of application of special economic expertise. The content of such acts is usually based on the methods of accounting, financial analysis, audit of business transactions, assessment of the effectiveness of management decisions and determination of the amount of material losses. Thereby, without a professional interpretation of their provisions, the investigator or pro-

secutor is often deprived of opportunity to correctly assess economic nature of the violations found.

Explanation of the act of audit or inspection involves the interpretation of special economic categories, accounting principles, logic of business transactions, applied methods of calculations, criteria for determining losses and other elements belonging to the field of professional economic competence. In this aspect, such activities are a continuation and deepening of application of economic expertise, since they provide a correct understanding of which violations are recorded, what is the mechanism of their occurrence and whether they have criminal law significance in terms of legal qualification in particular.

The form of clarification of the act of inspection or revision, unlike forensic examination, does not require procedural registration, but it performs a critical function: it contributes to the transformation of special economic information into available for law enforcement. In fact, we are talking about the transfer of professional knowledge from a specialist to a pre-trial investigation body, which makes possible to avoid misinterpretation of financial documents and ensure a proper assessment of the economic essence of identified violations.

In this context, explanation of verification act or audit acquires the importance of an independent form of application of specific economic expertise, which ensures the full, accurate and correct use of

38 Капліна О., Маринів Н. Проведення ревізій та перевірок у кримінальному провадженні: дисонанс законодавства та правозастосовної практики. *Підприємництво, господарство і право*. 2018. № 2. С. 204. URL: http://nbuv.gov.ua/UJRN/Pgip_2018_2_37 (date accessed: 10.11.2025).

39 Ковальов Ю. Ю. Використання спеціальних знань під час розслідування корупційних злочинів : дис. ... д-ра філос. в галузі права. Харків, 2021. С. 77. URL: https://uacademic.info/ua/document/0821U100819#google_vignette (date accessed: 10.11.2025).

the results of control measures in criminal proceedings. Its role is not only to transmit information, but to ensure that investigator or prosecutor can adequately understand the economic nature of the events that are the topic of the investigation, which greatly increases the validity of procedural decisions and the effectiveness of the pre-trial investigation as a whole.

Such explanation (as a form of application of special economic knowledge) has nature of reference and consulting assistance, since it is aimed at providing the investigator or prosecutor with professional explanations on the content, methodology and conclusions of the act of audit or verification. It does not create independent evidence in criminal proceedings, but provides proper conditions for the correct perception and analysis of the control materials already obtained.

Reference and consulting assistance in the form of an explanation of the audit or inspection report includes:

- 1) interpretation of special economic terms and categories;
- 2) explanation of accounting and financial analysis methods used during the audit;
- 3) clarification of the logic of the calculations, determination of losses, validity of conclusions;
- 4) explanation of causal relationships between business transactions and established violations;
- 5) interpreting specific elements of document flow and accounting procedures⁴⁰.

It is in this form that the specialist does not replace the forensic expert and does not go beyond non-procedural assistance, but provides the investigator with the necessary intellectual tools to understand the economic essence of the control document. It makes possible to minimize the risks of misinterpretation of audit findings and to provide a more accurate and complete assessment of provided materials within the framework of criminal proceedings.

If the investigator or the court has difficulty in determining list of documents necessary for the examination, it is advisable to seek the advice of an economist beforehand. Such a specialist will help to determine the list of financial documents, accounting registers, contracts, payment documents and other documentation that must be provided to the expert. It is important that the submitted expert materials are systematized chronologically or in accordance with the episodes under study and properly designed⁴¹.

Consequently, explanation of the act of verification or audit as a form of reference and consulting activities of a specialist occupies an important place in the mechanism of using specific economic expertise, ensuring effective integration of economic information into evidence.

The next form of using special economic expertise in investigation of criminal offenses in the field of economic activity is participation of a specialist in conducting investigative (search) actions. Such interaction belongs to the procedural form

40 Дікань Л. В., Понікаров В. Д., Кожушко О. В. Судово-економічна експертиза : навч. посіб. Харків, 2014. 432 с. URL: <https://surl.li/bdbhf> (date accessed: 16.08.2025) ; Опанасенко Н. О. Криміналістична характеристика та основні положення розслідування шахрайства, вчиненого організованими злочинними групами у сфері житлового будівництва : дис. ... канд. юрид. наук. Київ, 2018. 253 с. URL: <https://uacademic.info/ua/document/0419U000090> (date accessed: 16.08.2025).

41 Чернявський С. С., Цуцкірідзе М. С. Зазнач. твір. URI: <https://elar.navs.edu.ua/jspui/handle/123456789/4516> (date accessed: 10.11.2025).

of using specific expertise. In this sense, the participation of an economist in an interrogation is a mechanism defined by law for interaction between an investigator and a knowledgeable person, aimed at achieving the tactical goals of the investigation and ensuring the completeness, accuracy and reliability of collected testimony. Such a specialist does not replace the investigator, but complements his professional activity thanks to his own specific economic expertise, without which the collection and interpretation of facts in cases of economic orientation is often impossible.

The need to involve an economist during the interrogation arises from the fact that a significant part of the evidentiary information in such criminal proceedings is of a complex financial and economic nature. The investigator is not always able to independently identify, correctly interpret or critically evaluate facts relating to accounting transactions, tax schemes, document management system or economic logic of economic processes. In the absence of a specialist, the testimony obtained may be incomplete or distorted, which creates the risk of losing important information for further expert research or a general evidence base.

Involvement of an economist in the interrogation opens up possibility for a deeper study of processes and phenomena of an economic nature. Such a specialist assists the investigator at all stages of the preparation and conduct of the interrogation. In particular, at the stage of preparation for interrogation, the economist provides:

- determination of the range of issues that need to be clarified, taking into account the specifics of the financial and economic activities of the enterprise;

- formulation of accurate and correct questions that correspond to economic essence of the events;
- analysis of financial documents and identification of the main contradictions or risk areas that need to be checked during interrogation;
- planning tactical methods of presenting documents or other materials of an economic nature.

Preparation for interrogation in cases of economic criminal offenses without a specialist often complicates the use of professional terminology, special schemes or distorted economic concepts by the interrogated person, which can lead to misleading representatives of law enforcement agencies.

Directly during interrogation, the economist plays the role of a professional consultant to the investigator, ensuring:

- prompt assessment of the answers of the interrogated person in terms of their economic logic and compliance with generally accepted accounting and taxation standards;
- initiating clarifying questions that can reveal contradictions or false statements;
- consulting assistance in the procedure of submitting documents (audit certificates, financial statements, bank documents, internal accounting registers, etc.);
- immediate detection of the interrogated person's attempts to evade answers using special terminology or deliberate complication of economic explanations.

After completing interrogation, the specialist performs:

- analysis of the received indications from the point of view of their economic adequacy;

- identification of factors that require additional investigative actions or forensic researches;
- formulation of recommendations on further investigation tactics, taking into account the economic information received.

Therefore, the participation of an economist in the interrogation has an unconditional applied value, since it increases the quality of the interrogation, provides a deeper understanding of the economic essence of the facts, reduces the risk of errors in the perception of professional information and increases the efficiency of proof. Although some interviewed respondents note that the presence of a specialist can complicate the establishment of psychological contact between the investigator and the interrogated, most practitioners rightly note that in the investigation of crimes in the field of economic activity, the refusal to involve an economist significantly reduces the effectiveness of the interrogation. In such proceedings, special economic knowledge not only complements the professional competence of the investigator, but also becomes a necessary condition for the correct collection of evidentiary information.

Thus, the concept of participation of economist in the interrogation is based on the fact that he provides methodological, technical and intellectual support to the investigator, which is leading to a full, comprehensive and objective research on the circumstances of criminal offenses of an economic nature. Such participation is an integral part of the rational and effective use of specific expertise in criminal proceedings.

The application of special economic expertise in criminal proceedings related

to offenses in the field of economic activity also covers the appointment of economic expertise. One of the most controversial issues in the practice of applying special economic expertise is expediency of appointing forensic economic expertise after conducting a documentary audit or inspection. In scientific literature and law enforcement practice, the prevailing opinion is that if the auditor's conclusions do not raise doubts in the investigator and are not disputed by other participants in the criminal proceedings, there is no need to appoint a corresponding economic expertise. In such a situation, the results of the audit can be used as an independent source of evidence, and additional expert research will only prolong the pre-trial investigation ⁴².

However, if there are doubts about completeness or correctness of the audit, the question arises as to the most effective way to eliminate them: conducting an additional or repeated audit, appointing a forensic economic examination or interrogating the auditor to clarify certain provisions of the act. The decision should be made taking into account the nature and scale of the deficiencies identified. Analysis of case files of criminal proceedings in cases of crimes in the field of economic activity indicates that audit reports often contain significant gaps that cannot be eliminated solely by interrogation of the auditor. In such cases, investigators usually order an additional or repeated audit, and, if necessary, a further forensic economic examination.

If forensic examination is appointed specifically to verify correctness of the auditor's conclusions, resolution or ruling should clearly indicate which provisions of the act are questionable, what makes

42 Чернявський С. С., Цуцкірідзе М. С. Зазнач. твір. С. 123. URI: <https://elar.navs.edu.ua/jspui/handle/123456789/4516> (date accessed: 10.11.2025).

them unreliable or incomplete, what evidence they contradict, or what arguments of the parties cast doubt on their objectivity. This not only ensures procedural certainty, but creates conditions for the proper structuring of expert task.

Actual grounds for appointing a forensic economic examination are as follows:

- 1) need to resolve issues that require special economic expertise;
- 2) incompleteness or poor quality of the documentary audit, confirmed by materials from criminal proceedings or repeated control measures;
- 3) the existence of a reasoned request from the suspect or defense counsel;
- 4) contradictions between the conclusions of different experts or auditors.

The purpose of appointing a forensic accounting examination is to eliminate contradictions in the materials of criminal proceedings and obtain new evidence: conclusion of an expert accountant. Before deciding to appoint such an examination, the investigator must carefully study all the materials of the proceedings, including audit reports and other results of special inspections. Practice shows that forensic accounting examinations after an audit are most often appointed in the following cases:

- investigator's doubts about the accuracy or completeness of the audit findings (imperfect research methods, lack of auditor experience, inaccuracies in calculations, etc.);
- availability of two or more audit reports containing contradictory data;
- contradictions between the audit findings and other evidence;
- defense stated reasonable objection to the audit findings.

Financial and economic expertise is a key tool for investigating the economic aspects of criminal acts, as it allows for assessing the economic feasibility of concluded commercial contracts, establishing compliance with financial discipline, and analyzing the legality and validity of financial transactions.

In proceedings concerning crimes committed in the field of budget financing, financial and economic expertise occupies a leading place among other types of forensic economic research. Thanks to this, the investigation can figure out the economic meaning of the legal relationship between the people involved in business deals, spot signs of artificially inflating the cost of goods or services, unfair redistribution of budget resources, and figure out the real amount of material damage done to the state or other businesses.

The subject of financial and economic expertise is factual data on financial transactions and performance indicators of enterprises that reflect the processes of formation, movement, and use of income, cash, and funds. Thus, within the framework of criminal proceedings, it not only ensures detection of financial and economic violations, but also allows for their objective economic assessment. This is what makes financial and economic expertise one of the most important mechanisms for the practical application of specific economic expertise in investigation of criminal offenses in the field of economic activity.

Multidisciplinary forensic accounting and financial and economic examination is appointed when it is necessary to analyze the financial and economic activities of a specific business entity, and sometimes several enterprises or banking institutions in their interrelationship. If necessary, a forensic economic examina-

tion should be conducted to confirm the results of audits and documentary checks. Since there are a significant number of possible questions for a forensic accountant during the investigation of criminal offenses in the field of economic activity, it is difficult to determine in advance the entire list of materials needed to conduct the investigation, the investigator should consult with a specialist in advance to avoid delays related to the satisfaction of his requests for additional documents submitted in accordance with paragraph 2 of part 3 of Article 69 of Criminal Procedural Code of Ukraine ⁴³.

Therefore, the appointment of forensic economic or forensic accounting expertise in criminal proceedings of an economic nature is a logical continuation and deepening of the application of special economic knowledge that makes possible to eliminate doubts about the reliability of audit conclusions and ensure an adequate level of evidence.

Conclusions

The research provides grounds for asserting that specific economic expertise is a key intellectual resource in the mechanism of evidence gathering during the investigation of criminal offenses in the field of economic activity. Its application is comprehensive and covers both non-procedural and procedural forms of activity that ensure the completeness, accuracy, and reliability of establishing the facts.

Basic forms of using specific expertise are engaging specialists and appointing forensic examinations. Engaging econo-

mic specialists cannot be limited solely to consultations, since in complex financial and economic legal relations, their participation is necessary at various stages of criminal proceedings, from preparing investigative actions to analyzing evidence. Forensic examinations, in particular forensic accounting and financial and economic examinations, are an indispensable tool in cases where it is necessary to provide a comprehensive scientifically based assessment of economic transactions, verify validity of audit conclusions, or resolve contradictions in the case files.

Audits and documentary checks, although they do not have procedural status in the narrow sense of the Criminal Procedural Code of Ukraine, play a significant role as a form of non-procedural application of special economic knowledge. Their results from the information base for the start of a pre-trial investigation and provide indicative information about the mechanism of possible criminal actions. At the same time, audits cannot completely replace forensic economic expertise, as they often contain incomplete or contradictory data that require professional expert research.

Clarification of audit or inspection report is defined as a separate form of application of specific economic expertise that has nature of reference and consulting assistance. It eliminates gaps in the perception of special terms, methods and audit conclusions, ensures adequate interpretation of financial documents and creates appropriate conditions for their correct use in evidence.

Participation of an economist in investigative (detective) actions, in particular in

43 Тимчишин А. М. Зазнач. твір. С. 309. URL: https://dnuvs.ukr.education/wp-content/uploads/2023/10/dysertacziya_tymchyshyn.pdf (date accessed: 10.11.2025) ; Кримінальний процесуальний кодекс URL: <https://zakon.rada.gov.ua/laws/show/4651-17#Text> (date accessed: 10.11.2025).

interrogation, is an important procedural mechanism for increasing investigation efficiency. Such participation contributes to the proper formulation of questions, a deeper analysis of the explanations received, the prompt identification of contradictions and the correct interpretation of the economic aspects of the testimony. This significantly reduces the risk of errors and increases the quality of evidentiary information.

Appointment of economic expertise after audits should be mandatory. Expert research is a guarantee of objectivity and scientific reliability of conclusions regarding financial transactions and economic activities.

Therefore, specific economic expertise is a system-forming element of the evidentiary process in criminal proceedings concerning economic crimes. Their rational and scientifically substantiated application ensures the effectiveness of criminal prosecution, improves the quality of judicial control, and contributes to the restoration of violated rights of the state and economic entities.

**Спеціальні економічні знання
в розслідуванні
господарських кримінальних
правопорушень**

Віталій Усатий

Мета статті — з'ясувати роль, місце та значення спеціальних економічних знань у розслідуванні кримінальних правопорушень у сфері господарської діяльності, а також визначити оптимальні форми їх застосування на різних етапах кримінального провадження. Методологічним підґрунтям дослідження стали загальнонаукові та спеціально-юридичні методи (діалектичний, системно-структурний, функціональний, юридико-догматичний,

інтерпретаційний і порівняльно-правовий). Обґрунтовано, що ефективне розслідування господарських кримінальних правопорушень неможливе без залучення знань, які виходять за межі традиційної юридичної компетентності. Складність фінансових схем, багатоступеневість економічних процесів і подібність злочинних операцій до легальної господарської діяльності потребують участі економістів, аудиторів, бухгалтерів та інших фахівців фінансово-економічного профілю. Розкрито значення ревізій і документальних перевірок як непроцесуальної форми застосування спеціальних економічних знань, а також охарактеризовано роз'яснення акта ревізії як довідково-консультаційну діяльність, що забезпечує коректне тлумачення спеціальних термінів, методик і фінансових висновків. Особливу увагу приділено участі спеціаліста-економіста в слідчих (розшукових) діях, насамперед у допиті як процесуальному інструменті підвищення точності, повноти й достовірності отриманих показань. Аргументовано, що фахова підтримка слідчого з боку спеціаліста є важливим елементом забезпечення належної якості доказової інформації. Визначено підстави та значення призначення судово-економічних і судово-бухгалтерських експертиз, які є основними формами науково обґрунтованої оцінки фінансово-господарських операцій та усунення суперечностей, що виникають під час аналізу ревізійних матеріалів. Узагальнено, що спеціальні економічні знання є системоутворювальним компонентом доказування в кримінальних провадженнях господарсько-економічної спрямованості. Їх раціональне використання сприяє підвищенню ефективності досудового розслідування, забезпечує точність фінансових оцінок, мінімізує ризик помилок і допомагає відновити порушені права держави й суб'єктів господарювання.

Ключові слова: спеціальні економічні знання; судово-економічна експертиза; ревізія; документальна перевірка; спеціаліст-економіст; допит; господарські кримінальні правопорушення.

References

- Cherniavskiy, S. S., Tsutskiridze, M. S. (2016). Aktualni problemy pryznachennia sudovo-ekonomichnykh ekspertyz ta dokumentalnykh revizii u kryminalnomu provadzhenni [Actual problems of the appointment of forensic economic examinations and documentary audits in criminal proceedings]. *Aktualni pytannia vykorystannia mozhlyvosti pozaplanovyykh dokumentalnykh revizii ta inshykh perevirok u kryminalnomu sudochynstvi* : mat-ly mizhvidom. nauk.-prakt. seminaru (Kyiv, 30.06.2016). Kyiv. URI: <https://elar.navs.edu.ua/jspui/handle/123456789/4516> [in Ukrainian].
- Didenko, V. L. (2024). *Vykorystannia spetsialnykh znan pry rozsliduvanni kryminalnykh pravoporushen u biudzhethnii sferi* [The use of special knowledge during the investigation of criminal offenses in the budgetary sphere] : dys. ... kand. yuryd. nauk. Dnipro. URL: https://dduvs.edu.ua/wp-content/uploads/files/Structure/science/rada/new_d0872702/2024/1/1/d.pdf [in Ukrainian].
- Dikan, L. V., Ponikarov, V. D., Kozhushko, O. V. (2014). *Sudovo-ekonomichna ekspertiza* [Forensic economic examination] : navch. posib. Kharkiv. URL: <https://surl.li/bdbhfa> [in Ukrainian].
- Dondyk, H. P. (2011). *Vykorystannia spetsialnykh bukhhalterskykh znan pry rozsliduvanni zlochyniv u sferi silskohospodarskoho vyrobnytstva* [The usage of special accountant knowledge during the investigation of crimes in the sphere of agricultural production] : dys. ... kand. yuryd. nauk. Dnipropetrovsk. URL: <https://uacademic.info/ua/document/0411U006932> [in Ukrainian].
- Dondyk, H. P. (2013). *Napriamy vdoshkonalennia vykorystannia spetsialnykh bukhhalterskykh znan pry rozsliduvanni zlochyniv u sferi ekonomiky* [Directions for improving the use of special accounting knowledge in the investigation of economic crimes]. *Naukovyi visnyk Khersonskoho derzhavnoho universytetu. Seriya «Iurydychni nauky»*. Vyp. 5. T. 2 [in Ukrainian].
- Dondyk, N. Ya. (2006). *Vykorystannia spetsialnykh bukhhalterskykh znan pry rozsliduvanni ekonomichnykh zlochyniv* [Using special accounting knowledge in economic crime investigation] : dys. ... kand. yuryd. nauk. Kharkiv. URL: https://uacademic.info/ua/document/0406U002942#google_vignette [in Ukrainian].
- Fedchyshyna, V. V. (2018). *Spetsialni ekonomichni znannia ta yikh vykorystannia v khodi operatyvno-rozshukovoi diialnosti, dosudovoho rozsliduvannia i sudovoho rozghliadu: teoretyko-pravovi osnovy* [Special economic knowledge and their use during operational and investigative activities, pre-trial investigation and trial: theoretical and legal foundations]. *Aktualni problemy vitchyznianoï yurysprudentsii*. № 3. URL: http://apnl.dnu.in.ua/3_2018/48.pdf [in Ukrainian].
- Fedchyshyna, V. V. (2018). *Spetsialni ekonomichni znannia u pravovykh systemakh Yevropy, Avstralii ta SSHA* [Special economic knowledge in the legal systems of Europe, Australia and the United States]. *Naukovyi ohliad*. T. 3. № 46. URL: <https://naukajournal.org/index.php/naukajournal/article/view/1505/1588> [in Ukrainian].
- Horlachuk, A. (2021). On Forensic Economist Specific Expertise. *Theory and Practice of Forensic Science and Criminalistics*. Is. 2 (24). DOI: 10.32353/khrife.2.2021.09.
- Hovorova, K. I. (2021). *Teoretychni ta zahalno-metodychni polozhennia sudovoi ekonomichnoi ekspertyzy dokumentiv finansovo-kredytnykh operatsii* [Theoretical and General Methodological Provisions of the Forensic Economic Examination of the Documents of Financial and Credit Operations] : dys. ... d-ra filos. v haluzi prava. Kharkiv. URL: https://uacademic.info/ua/document/0821U100821#google_vignette [in Ukrainian].
- Hubanova, I. V. (2025). *Teoretychni ta zahalno-metodychni polozhennia sudovoi ekonomichnoi ekspertyzy finansovo-hospodarskoi diialnosti pidpriemstv* [Theoretical and general methodological provisions of the forensic economic examination of financial and

- economic activity of enterprises] : dys. ... d-ra filos. v haluzi prava. Kharkiv. URL: <https://drive.google.com/file/d/1Y2Wmdh-FjRx-FGO1s1J68jdWM4smSSk-b/view> [in Ukrainian].
- Kaplina, O., Maryniv, N. (2018). Proveden-
nia revizii ta perevirok u kryminalnomu
provadzheni: dysonans zakonodavstva
ta pravozastosovnoi praktyky [Conducting
audits and inspections in criminal proceed-
ings: dissonance of legislation and law en-
forcement practice]. *Pidpryemnytstvo, hos-
podarstvo i pravo*. № 2. URL: http://nbuv.gov.ua/UJRN/Pgip_2018_2_37 [in Ukrainian].
- Kharkevych, Yu. I. (2024). *Kryminalistychna
metodyka rozsliduvannia kryminalnykh
pravoporushen, pov'iazanykh iz derzhavnym
finansuvanniam haluzi okhorony zdorov'ia
v umovakh pandemii* [Criminalistics metho-
dology for investigating criminal offences
related to public funding of the healthcare
sector in a pandemic] : dys. ... d-ra filos.
v haluzi prava. Kyiv. URL: [https://uaca-
demic.info/ua/document/0824U001492](https://uacademic.info/ua/document/0824U001492) [in
Ukrainian].
- Kniaziev, S. V. (2025). *Teoriia ta praktyka rozslidu-
vannia kryminalnykh pravoporushen u biu-
dzhetnii sferi Ukrainy* [Theory and practice
of investigation of criminal offenses in the
budgetary sphere of Ukraine] : dys. ... d-ra
yuryd. nauk. Kyiv. URL: [https://www.uaca-
demic.info/ua/document/0525U000090](https://www.uacademic.info/ua/document/0525U000090) [in
Ukrainian].
- Kopytko, V. Yu., Atamanchuk, V. (2025). Meto-
dyka zaluchennia spetsialista do revizii
ta audytorskykh perevirok u kryminal-
nomu provadzheni [Methodology or in-
volving a specialist in audits and checks
in criminal proceedings]. *Naukovyi visnyk
Uzhhorodskoho natsionalnoho universytetu*.
Seriia: Pravo. T. 3. № 89. DOI: [10.24144/2307-
3322.2025.89.3.54](https://doi.org/10.24144/2307-3322.2025.89.3.54) [in Ukrainian].
- Kovalov, Yu. Yu. (2021). *Vykorystannia spetsialnykh
znan pid chas rozsliduvannia koruptsiynykh
zlochyniv* [Use of special knowledge in the in-
vestigation of corruption crimes] : dys. ... d-ra
filos. v haluzi prava. Kharkiv. URL: [https://
uacademic.info/ua/document/0821U100819#-
google_vignette](https://uacademic.info/ua/document/0821U100819#-google_vignette) [in Ukrainian].
- Kryvun, S. I. (2025). *Vykorystannia spetsialnykh
znan pid chas rozsliduvannia netsilovoho
vykorystannia biudzhetykh koshtiv* [Us-
ing specialized knowledge when investi-
gating misuse of budget funds] : dys. ...
kand. yuryd. nauk. Kyiv. URL: [https://elar.
navs.edu.ua/server/api/core/bitstreams/
f5f0ece1-d195-49a1-b3b3-25e4e16232f5/
content](https://elar.navs.edu.ua/server/api/core/bitstreams/f5f0ece1-d195-49a1-b3b3-25e4e16232f5/content) [in Ukrainian].
- Kurylenko, D. V. (2017). *Instytut obiznanykh osib
u zmahalnomu kryminalnomu provadzheni*
[The Concept of versed persons in adver-
sary criminal proceeding] : avtoref. dys. ...
kand. yuryd. nauk. Kharkiv. URL: [https://
dspace.univd.edu.ua/server/api/core/bit-
streams/6f82595b-1d94-4b6e-9ca8-8903b4b-
79b7c/content](https://dspace.univd.edu.ua/server/api/core/bitstreams/6f82595b-1d94-4b6e-9ca8-8903b4b-79b7c/content) [in Ukrainian].
- Nehanov, V. V. (2018). *Vykorystannia vysnovkiv
revizii u kryminalnomu provadzheni* [Use of
revision's (audit's) findings in criminal pro-
ceedings] : dys. ... kand. yuryd. nauk. Kyiv
[in Ukrainian].
- Opanasenko, N. O. (2018). *Kryminalistychna
kharakterystyka ta osnovni polozhennia roz-
sliduvannia shakhraistva, vchynenoho orha-
nizovanykh zlochynnykh hrupamy u sferi
zhytlovoho budivnytstva* [Criminalistic cha-
racteristics and the substantive provisions
of the investigation of fraud, committed
by organized crime groups in the field
of housing construction] : dys. ... kand.
yuryd. nauk. Kyiv. URL: [https://uacadem-
ic.info/ua/document/0419U000090](https://uacademic.info/ua/document/0419U000090) [in
Ukrainian].
- Orel, A. M., Chumakov, D. D., Verizhenko, O. S.
(2025). *Teoretyko-pravovi zasady ta prak-
tychne zastosuvannia spetsialnykh znan
u protyidii ekonomichnii zlochynnosti* [The-
oretical and legal principles and practical
application of special knowledge in com-
bating economic crime]. *Naukovi innovatsii
ta peredovi tekhnologii*. *Seriia «Pravo»*. № 4
(44). DOI: [10.52058/2786-5274-2025-4\(44\)-
1732-1743](https://doi.org/10.52058/2786-5274-2025-4(44)-1732-1743) [in Ukrainian].
- Pchelina, O. V. (2017). *Teoretychni zasady for-
muвання та realizatsii metodyky rozslidu-
vannia zlochyniv u sferi sluzhbovoi diial-
nosti* [Theoretical basis of formation and
implementation of methods of investiga-
ting crimes in sphere of service activity] :
avtoref. dys. ... d-ra yuryd. nauk. Kharkiv.
URL: [https://dspace.univd.edu.ua/serv-
er/api/core/bitstreams/8a2b0b63-3f26-](https://dspace.univd.edu.ua/server/api/core/bitstreams/8a2b0b63-3f26-)

- 4980-90a2-a383f9f6fe39/content?tracker-Id=15a163407f39c4ae [in Ukrainian].
- Petrova, I. A. (2012). *Teoretyko-pravovi ta orhanyzatsiino-metodolohichni zasady rehuliuvannia sudovo-tovaroznachykh ekspertyz* [Theoretical-legal and organizational-methodological bases of regulation of the forensic and commodity examinations of consumer goods] : dys. ... d-ra yuryd. nauk. Kharkiv. URL: <https://uacademic.info/ua/document/0512U000231> [in Ukrainian].
- Pyrih, I. V. (2015). *Teoretyko-prykladni problemy ekspertnoho zabezpechennia dosudovoho rozsliduvannia* [Theoretical and applied problems of expert support of pre-trial investigation] : monohrafiia. Dnipropetrovsk. URL: <https://dduvs.edu.ua/wp-content/uploads/files/Structure/library/student/monogr.pdf> [in Ukrainian].
- Shapoval, O. V. (2017). *Kryminalistychnye zabezpechennia rozsliduvannia ekonomichnykh zlochyniv* [Forensic support for the investigation of economic crimes] : avtoref. dys. ... kand. yuryd. nauk. Kyiv [in Ukrainian].
- Shcherbakovskiy, M. H. (2016). *Teoretyko-metodolohichni ta prakseolohichni zasady sudovykh ekspertyz u kryminalnomu protsesi* [Theoretical, Methodological and Praxeological Principles of Forensic Expertise in Criminal Proceedings] : avtoref. dys. ... d-ra yuryd. nauk. Kharkiv. URI: <http://dspace.univd.edu.ua/xmlui/handle/123456789/2582> [in Ukrainian].
- Shcherbakovskii, M. G., Kravchenko, A. A. (1999). *Primenenie spetsialnykh znanii pri raskrytii i rassledovanii prestuplenii* [Application of special knowledge in the disclosure and investigation of crimes]. Kharkov [in Russian].
- Shevchenko, O. V. (2017). *Vykorystannia spetsialnykh tovaroznavchykh znan pid chas dosudovoho rozsliduvannia* [Use of special commodity knowledge during pre-trial investigation] : dys. ... kand. yuryd. nauk. Kyiv. URL: <https://elar.navs.edu.ua/server/api/core/bitstreams/d98763bb-23dc-4972-a52b-f8ee188e34ef/content> [in Ukrainian].
- Shramko, O. M. (2021). *Vykorystannia spetsialnykh znan pid chas rozsliduvannia koruptsiinykh kryminalnykh pravoporushen* [Use of special knowledge in the investigation of corruption offenses] : dys. ... d-ra filos. v haluzi prava. Kyiv. URL: <https://uacademic.info/ua/document/0821U102258> [in Ukrainian].
- Simakova-Iefremian, E. B. (2017). *Teoretyko-pravovi ta metodolohichni zasady kompleksnykh sudovo-ekspertnykh doslidzhen* [Theoretical and methodological foundations of complex forensic research] : dys. ... d-ra yuryd. nauk. Kharkiv. URL: <https://uacademic.info/ua/document/0517U000760> [in Ukrainian].
- Tiulieniev, S. (2024). *Mistse i znachennia ekonomichnykh ekspertyz u kryminalnykh provadzhenniakh shchodo rozsliduvannia reiderstva* [The place and significance of economic expertise in criminal proceedings regarding the investigation of raiding]. *Suchasni napriamky rozvytku sudovoi ekspertyzy ta kryminalistyky* : zb. Vseukr. nauk.-prakt. konf. z nahody 110-rich. diialn. ONDISE Min'istru Ukrainy (Odesa, 05.09.2024). Odesa. URL: <https://ndekc.lviv.ua/pdf/311020242.pdf> [in Ukrainian].
- Tiulieniev, S. A. (2024). Appointment of forensic examinations in the course of investigation of criminal offences related to raiding. *Law and Safety*. Vol. 92. No. 1. DOI: 10.32631/pb.2024.1.10.
- Trach, S. S. (2023). *Kryminalistychna metodyka rozsliduvannia kryminalnykh pravoporushen u sferi hospodarskoi diialnosti v Ukraini* [Forensic methods of investigation of criminal offenses in the field of economic activity in Ukraine] : monohrafiia. Odesa [in Ukrainian].
- Tymchyshyn, A. M. (2023). *Spetsialni znannia u kryminalnomu protsesi Ukrainy: teoriia ta praktyka* [Special knowledge in the criminal process of Ukraine: theory and practice] : dys. ... d-ra yuryd. nauk. Kropyvnytskyi. URL: https://dnuvs.ukr.education/wp-content/uploads/2023/10/dysertacziya_tymchyshyn.pdf [in Ukrainian].
- Volobuiev, A. F. (2000). *Problemy metodyky rozsliduvannia rozkradan maina v sferi pidpriemnytstva* [Problems of the methodology for investigating embezzlement of property in the field of entrepreneurship] : monohrafiia. Kharkiv [in Ukrainian].
- Yevdokimenko, S. V. (2016). *Formy vykorystannia spetsialnykh ekonomichnykh znan*

u kryminalnomu provadzhenni ta sudochynstvi [Forms of use of special economic knowledge in criminal proceedings and legal proceedings]. *Visnyk Chernivetskoho fakultetu Natsionalnoho universytetu «Odeska yurydychna akademiia»*. Vyp. 2. URL: http://nbuv.gov.ua/UJRN/vchfo_2016_2_39 [in Ukrainian].

Zhukova, V. I. (2022). Zaluchennia obiznanykh osib dlia vyznachennia rozmiru materialnykh zbytkiv u kryminalnomu provadzhenni [Involvement of knowledgeable persons to determine the amount of material damages in criminal proceedings]. *Pravo i suspilstvo*. № 6. DOI: [10.32842/2078-3736/2022.6.35](https://doi.org/10.32842/2078-3736/2022.6.35) [in Ukrainian].

Usatii, V. (2025). Specific Economic Expertise in Investigation of Economic Criminal Offenses. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 135–154. DOI: [10.32353/khrife.4.2025.08](https://doi.org/10.32353/khrife.4.2025.08).

Counteraction to Investigation and Abuse of Procedural Rights: Forensic Correlation and Limits of Conceptual Delimitation

Oleksandr Tarkan *

* Candidate of Legal Sciences, Doctoral Candidate at NSC «Hon. Prof. M. S. Bokarius FSI», Kharkiv, Ukraine, ORCID: <https://orcid.org/0009-0004-3325-4530>, e-mail: oleksandrtarkan7@gmail.com

DOI: 10.32353/khrife.4.2025.09 UDC 343.985(477)

Received: 14.11.2025 / Reviewed: 30.11.2025 / Accepted for printing: 25.12.2025 / Available online: 31.12.2025



This article purpose is to determine, based on a comprehensive analysis of the theoretical and practical aspects of the abuse of procedural rights by participants in criminal proceedings, the correlation of this phenomenon with opposition to the investigation and to clarify its place in the system of forensic science. Methodological research basis is a complex of general scientific, special and philosophical methods (dialectical, system-structural, functional-activity, comparative-legal, modeling, analysis and synthesis). It is generalized that opposition to the investigation is a complex, multi-factorial and poly-structural phenomenon that encompasses both procedural and extra-procedural forms of influence on the course of criminal proceedings. Its implementation is based on the use of tactical, psychological, organizational and sometimes corrupt means aimed at complicating the clarification of the truth, preventing collection of evidence or influencing the participants in the proceedings. Abuse of procedural rights is an internal, procedurally formalized type of counteraction, characterized by the deliberate use of formally permitted instruments contrary to their functional purpose. It is substantiated that the relationship between the concepts is of the nature of “part - whole”: each abuse is a form of counteraction, however, counteraction is not limited to procedural behavior and

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

may go beyond the limits of criminal procedural regulation. It is proven that forensic science has grounds for including the category of "abuse of procedural rights" in the system of forensic science doctrine of counteraction to the investigation, since this phenomenon has its own mechanism, regularities of detection and is subject to tactical overcoming. Its study creates conditions for the formation of effective procedural and forensic measures to neutralize the manipulative activities of the participants in the proceedings. It is concluded that the integration of theoretical and applied aspects of the analysis of abuses within the framework of the forensic concept of counteraction makes it possible to create a holistic model of counteractive behavior, clarify the boundaries of procedural integrity, identify typical mechanisms of destructive influence on evidentiary information, and develop substantiated tactical recommendations for investigators, prosecutors and the court.

Keywords: counteraction to investigation; abuse of rights; procedural measure; investigative (search) action; tactical operation.

Research Problem Formulation

Current stage of development of criminal procedural relations in Ukraine is characterized by increased competition, expansion of procedural rights of participants and an increase in the role of judicial control. Under these conditions, the problem of counteraction to the pre-trial investigation and trial is becoming increasingly relevant, which is manifested in the conscious use of procedural rights not for their intended purpose, but for the purpose of artificial complication, delay or other interference with the performance of the tasks of criminal proceedings. Abuse of procedural rights forms a specific form of counteraction to law enforcement and judicial bodies, which directly affects the fulfillment of the tasks of criminal proceedings, the level of human rights protection and the effectiveness of the criminal justice mechanism.

Analysis of law enforcement practice indicates an increase in the number of cases where participants in criminal pro-

ceedings, as well as representatives of the defense and prosecution, use procedural tools not as means of exercising rights and guarantees, but as methods of manipulative influence on the course of the investigation and trial. Such typical manifestations include: filing numerous similar motions, groundless recusals, evading participation in procedural actions, initiating knowingly unfounded examinations and false testimonies, improper use of the right to familiarize oneself with materials, as well as manipulation of information that constitutes the secret of the pre-trial investigation. All these actions complicate the work of the investigator and prosecutor, create an additional burden on the investigative and judicial systems, and in some cases, actually block the development and course of criminal proceedings.

Despite the problem urgency, the issue of systematic research on counteraction based on abuse of procedural rights has not been sufficiently studied in Ukrainian science. The content and limits of the phenomenon of *procedural abuse* in criminal

proceedings, its place in the general system of counteraction to the investigation, typical mechanisms for its implementation, as well as effective procedural measures to neutralize such actions, tested in investigative and judicial practice, need to be clarified. This is of particular importance in the context of reforming the criminal procedural legislation, when new approaches are being formed to ensure a balance between the rights of participants in the proceedings and the interests of justice.

Thus, the research relevance is due to the need for a comprehensive scientific analysis of the forms of abuse of procedural rights as one of the most common types of counteraction to criminal proceedings, as well as the need to determine sufficient, legitimate and effective procedural mechanisms for their neutralization.

Article Purpose

Based on a comprehensive analysis of the theoretical and practical aspects of abuse of procedural rights by participants in criminal proceedings, determine the correlation of this phenomenon with counteraction to the investigation and find out its place in the system of forensic science.

Research Methods

For achieving this goal, a set of general scientific, special and philosophical methods of cognition was used, which provided a comprehensive definition of the nature, structure and mechanisms for implementing counteraction to the investigation and abuse of procedural rights, as well as substantiation of effective procedural measures to their neutralization.

Dialectical method has become theoretical basis for the analysis of the stu-

died phenomena as dynamic, interdependent and contradictory processes that are formed within the conflict of interests of the parties to criminal proceedings, responding to changes in legislation and the social and legal context. The use of this method made possible to identify the internal logic of the development of forms of counteraction and procedural abuses, as well as to trace the evolution of their manifestations in modern criminal justice.

System-structural analysis helped to identify the main elements of the mechanism of counteraction and abuse, their functional nature, relationships between subjects, motives, methods, objects of influence and consequences.

Functional-activity approach has become useful for considering counteraction and abuse as a conscious activity that has a purposeful nature, certain logic, mechanism, phasing and tactical features. It made possible to interpret them not only as legal categories, but as specific types of behavioral strategies of participants in criminal proceedings.

Modeling method is used to reconstruct typical situations of counteraction and procedural abuses, to create imaginary models of their implementation, as well as to predict their impact on the dynamics of criminal proceedings and the effectiveness of investigative activities.

Methods of analysis and synthesis contributed to identification of the unity lack in the professional environment regarding the conceptual boundaries of the concepts of *counteraction to investigation and abuse of procedural rights*, formulation of scientifically based conclusions about the correlation between counteraction and abuse of procedural rights, determining their place in the forensic theory and investigation methodology, as well as the generalization

of typical features, mechanisms and consequences of these phenomena.

Comparative and legal method is used to form generalized conclusions about the patterns of behavior and the specifics of the implementation of procedural tools with a manipulative purpose.

The applied methodological complex provided a deep and systematic study of the selected issues, helped to clarify the content of the basic concepts, determine the patterns of development of counteraction and procedural abuses and created the basis for the formation of practice-oriented recommendations.

Analysis of Essential Researches and Publications

In the scientific discourse, the issues of counteraction to the investigation and unfair use of procedural rights are still largely covered segmentally. Researchers either focus on the analysis of actions aimed at blocking or complicating the pre-trial investigation, or separately consider the problems of procedural abuses that are implemented by the parties to criminal proceedings¹.

As for countering the investigation, a significant scientific foundation for understanding these problems was laid in the second half of the twentieth century by V. Bakhin, V. Bernaz, V. Honcharenko, A. Ishchenko, N. Karpov, V. Konovalov,

V. Kolmakov, V. Korzh, V. Kuzmichov, V. Lysychenko, F. Sokyran, V. Tertyshnik, M. Shumylo et al. Their developments contributed to the formation of conceptual ideas about the nature of counteraction to the investigation, outlined its common forms and created starting points for finding ways to their overcoming.

At the beginning of the 21st century, scientific research on this topic received a new impetus: comprehensive approaches to explaining the content of counteraction, its classification, peculiarities of detection in certain categories of criminal offenses appeared. A significant contribution to the development of these issues was made by O. Aleksandrenko, R. Bohdaniuk, V. Vartsaba, I. Hrytsiuk, K. Hutnik, R. Mudretskyi, V. Piddubnyi, V. Pletenets, Yu. Popelniuk, O. Romtsiy, V. Trepak, M. Chesakova, V. Shevchuk, R. Shekhavtsov, B. Shchur et al. At the same time, despite the accumulated theoretical material, available studies are often limited to individual components of the problem and do not provide a systematic understanding of the interaction between counteraction to investigation and abuse of procedural rights.

Ukrainian scientists have devoted a number of thorough dissertation studies to the issue of abuse of procedural rights, in particular O. Khablo: *Abuse in the Field of Criminal Procedure*², D. Kryvoruchko: *Abuse of Law during Pre-Trial Investigation*

- 1 Борејко Г. Д. Зловживання правом сторонами кримінального провадження на етапі завершення досудового розслідування. *Соціально-правові студії*. 2021. Вип. 1 (11). С. 61—68. URI: <http://dspace.lvduvs.edu.ua/handle/1234567890/3700> (date accessed: 07.11.2025) ; Прилуцький С. В., Савчук І. І. Проблема зловживання правом прокурором у кримінальному процесі. *Вісник кримінального судочинства*. 2019. № 1. С. 50—59. URL: https://vkslaw.knu.ua/images/verstka/1_2019_prilycky_i_savchuk.pdf (date accessed: 07.11.2025) ; Розумовський О. Зловживання процесуальними правами за чинним кримінальним процесуальним законодавством України. *Підприємництво, господарство і право*. 2021. № 4. С. 247—252. DOI: [10.32849/2663-5313/2021.4.38](https://doi.org/10.32849/2663-5313/2021.4.38) (date accessed: 07.11.2025).
- 2 Хабло О. Ю. Зловживання у сфері кримінального процесу : дис. ... канд. юрид. наук. Київ, 2008. 215 с.

in *Criminal Proceedings*³, N. Herasymchuk: *Abuse of Procedural Rights by a Lawyer in Criminal Proceedings*⁴, O. Vozniuk: *Abuse of Procedural Rights in Criminal Proceedings*⁵ and others.

Multidimensionality of this approach disperses attention and does not make possible to understand the interdependence of both phenomena as components of a single mechanism of procedural destruction. At the same time, theorists and practitioners have repeatedly stressed that a significant part of the forms of counteraction actually used in law enforcement practice are not covered by existing procedural prohibitions, they are not accompanied by the sanctions provided for by law⁶. It creates a kind of “gray zone”, within which the subjects of criminal proceedings can implement manipulative or obstructive actions, while remaining within the limits of formally lawful behavior.

In view of this, there is a need for an integrated approach that would unite both phenomena within a single methodological framework and help to determine their internal logic, common determinants and specific mechanisms of influence on the effectiveness of criminal proceedings. It is the integration of these two areas within one research creating conditions for development of holistic and effective procedural means of their neutralization.

Main Content Presentation

Counteraction to investigation and abuse of procedural rights are two interrelated phenomena that, although different in formal status, have a common nature, mechanisms of implementation and consequences for criminal proceedings.

In our opinion, counteraction to investigation, should be considered as a specific form of conflict interaction within the framework of criminal proceedings that arises between its participants; primarily the parties and other persons interested in a certain result. By its nature, it combines intellectual and psychological elements of confrontation, since it involves the use of knowledge, experience, tactics and strategies to influence the course and results of the investigation. Therefore, counteraction is an objective phenomenon, which, however, is manifested in the subjective behavior of specific persons, which is repeatedly emphasized in the domestic forensic doctrine.

In modern researches, resistance to investigation is described using typical forms of behavior aimed at complicating the establishment of the truth in criminal proceedings. Such forms include: concealing the fact of committing a crime; using corrupt mechanisms and connections to create obstacles to the pre-trial

3 Криворучко Д. В. Зловживання правом під час досудового розслідування в кримінальному провадженні : дис. ... д-ра філос. в галузі права. Харків, 2023. 263 с.

4 Герасимчук Н. А. Зловживання адвокатом процесуальними правами у кримінальному провадженні : дис. ... д-ра філос. в галузі права. Київ, 2024. 293 с.

5 Вознюк О. Л. Зловживання процесуальними правами у кримінальному провадженні : дис. ... д-ра філос. в галузі права. Київ, 2025. 240 с. URL: <https://elar.navs.edu.ua/handle/123456789/35944> (date accessed: 07.11.2025).

6 Судді ККС ВС розповіли про проблему зловживання процесуальними правами та про останню практику ОП ККС ВС / Верховний суд : офіц. вебсайт. 15.11.2021. URL: <https://supreme.court.gov.ua/supreme/pres-centr/news/1211840/> (date accessed: 07.11.2025) ; Удалова Л. Д., Хабло О. Ю. Зловживання у сфері кримінального процесу : монографія. Київ, 2010. 176 с. URL: <https://elar.navs.edu.ua/server/api/core/bitstreams/5274299e-57fe-4eaf-a820-a2b1ff8e900c/content/> (date accessed: 07.11.2025).

investigation; manipulating the information environment (in particular, through the media); providing knowingly false testimony; falsifying evidentiary information; using threats or physical violence to influence participants in the proceedings. The formulated approach allows us to define resistance to investigation as a purposeful activity of individuals that contradicts the objectives of criminal proceedings and is aimed at distorting, destroying or blocking evidentiary information, influencing participants in the proceedings, artificially delaying the process or creating obstacles to establishing the factual circumstances of the event ⁷.

Abuse in the field of criminal proceedings should be defined as the unlawful behavior of participants in criminal proceedings, which consists in using the rights and powers granted to them in a manner that contradicts their functional and intended purpose and is due to the presence of personal or other illegal interest. Such behavior is aimed at causing harm to public or private interests and creates obstacles to the proper implementation of the tasks of criminal justice ⁸. Developing this position, H. Boreiko rightly notes that procedural rights reflect the authorized capabilities of the subject, the implementation of which ensures the fulfillment of his procedural status within the limits of what is permitted, while the procedur-

al duties imposed on him determine his functional role and outline the permissible boundaries of behavior ⁹. O. Vozniuk notes that abuse of procedural rights and powers is the intentional use of opportunities granted by law contrary to their purpose, which creates obstacles to the proper and effective course of criminal proceedings, disrupts the balance between the parties, and harms the interests of justice without an obvious violation of the letter of the law.

In order to scientifically substantiate the relationship between the abuse of procedural rights and counteraction to the investigation, we consider it necessary to analyze their immanent features that will allow us to outline the boundaries of each phenomenon and identify the conceptual points of their intersection.

The *first fundamental sign* of abuse of procedural rights is the presence of the subject of the relevant procedural law or statutory authority. It is possible to abuse only what belongs to the content of the procedural status of a person. The very fact of endowing procedural opportunities creates preconditions for their potential unfair use. In case of abuse, the participant in criminal proceedings formally acts within the limits of what is allowed, but chooses a method of implementation that contradicts the intended purpose of the right, violates the balance of interests, limits the opportunities of other participants in the process or

7 Гусева В. О. Теоретичні основи методики розслідування злочинів проти авторитету органів державної влади у сфері правоохоронної діяльності : дис. ... д-ра юрид. наук. Харків, 2021. С. 351—352. URL: <https://core.ac.uk/download/pdf/442209993.pdf> (date accessed: 07.11.2025) ; Лепісевич П. М., Курляк М. Д. Практичні засади усунення протидії розслідуванню злочинів у сучасних умовах. *Науковий вісник Львівського державного університету внутрішніх справ. Серія юридична*. 2018. Вип. 1. С. 278—279. URI: <http://dspace.lvduvs.edu.ua/handle/1234567890/1261> (date accessed: 07.11.2025).

8 Хабло О. Ю. Зазнач. твір. С. 57.

9 Бореико Г. Д. Чи можуть посадові особи зловживати правами у кримінальному провадженні? *Інноваційний розвиток правової науки в умовах модернізації суспільства* : мат-ли X Міжнар. наук.-практ. конф. (Київ, 28.02.2020). Тернопіль, 2020. Т. 1. С. 353. URL: <https://er.kai.edu.ua/items/f9a94690-7fcd-4dfc-af5a-a381a08eb004> (date accessed: 07.11.2025).

distorts the tasks of justice ¹⁰. This combination of external legitimacy and internal illegality creates a “legal visibility effect” complicating abuse detection.

In the context of countering an investigation, the presence of procedural law is not a prerequisite: countering can be carried out both within the limits of legitimate instruments and beyond them (corrupt influence, concealment of evidence, etc.). However, this very feature demonstrates one of the main points of intersection of phenomena: abuse constitutes an internal, proceduralized type of countering, relying on formally provided legal instruments.

The *second sign* is the creation of the appearance of legal implementation of procedural law. As O. Khablo and N. Herasymchuk rightly note, such behavior can be expressed in active actions (serial unreasonable motions, manipulation of evidence, submission of unreasonable challenges) or in conscious inaction (delay in conducting procedural actions, untimely appearances) ¹¹. The ECtHR in the decision of *Alessandro Ferrara against Italy and 18 other* emphasizes that professional participants in the proceedings are obliged to exercise procedural rights in good

faith, and the submission of knowingly unfounded statements undermines confidence in justice ¹².

The sign of “imitation of legality” in the field of counteraction to the investigation is broader: counteraction can also be disguised as supposedly objective obstacles (change of residence, sudden illness, informative attacks in the media), but (unlike abuse) it is not limited by procedural rights. At the same time, the very possibility of creating “legal visibility” within criminal proceedings is an indicator that the procedural form is a convenient mechanism for transforming counteraction into legitimate behavior.

The *third sign* is the use of unauthorized or dishonest ways of implementing procedural opportunities. This may be pressure on participants in the process, the creation of artificial procedural obstacles, manipulative use of legislative gaps, concealment of important information. The ECtHR in the *cases of Kongresna Narodna Stranka and Others against Bosnia and Herzegovina and Gevorg Safaryan against Armenia* recognizes the abuse of the situation when persons deliberately manipulate norms or information in order to gain an advantage in the process ¹³.

10 Гарасимчук Н. Поняття та ознаки зловживання процесуальними правами адвокатом у кримінальному провадженні. *Юридичний вісник*. 2021. № 2. С. 212. DOI: [10.32837/yuv.v0i2.2175](https://doi.org/10.32837/yuv.v0i2.2175) (date accessed: 07.11.2025); Вознюк О. Л. Зазнач. твір. С. 31. URL: <https://elar.navs.edu.ua/handle/123456789/35944> (date accessed: 07.11.2025).

11 Хабло О. Ю. Зазнач. твір. С. 80; Гарасимчук Н. Зазнач. твір. С. 212. DOI: [10.32837/yuv.v0i2.2175](https://doi.org/10.32837/yuv.v0i2.2175) (date accessed: 07.11.2025); Вознюк О. Л. Зазнач. твір. С. 31–32. URL: <https://elar.navs.edu.ua/handle/123456789/35944> (date accessed: 07.11.2025).

12 Case of Alessandro Ferrara against Italy and 18 other (Application no. 2394/22): Judgment of the ECtHR. 16 May 2023 / HUDOC. European Court of Human Rights: web. URL: <https://hudoc.echr.coe.int/?i=001-225360> (date accessed: 07.11.2025).

13 Вознюк О. Л. Зазнач. твір. С. 31–32. URL: <https://elar.navs.edu.ua/handle/123456789/35944> (date accessed: 07.11.2025); Case of Kongresna Narodna Stranka and Others against Bosnia and Herzegovina (Application no. 414/11): Judgment of the ECtHR. 26 April 2016 / HUDOC. European Court of Human Rights: web. URL: <https://hudoc.echr.coe.int/eng?i=001-163253> (date accessed: 07.11.2025); Case of Gevorg Safaryan against Armenia (Application no. 16346/10): Judgment of the ECtHR. 14 January 2020 / Ibid. URL: <https://hudoc.echr.coe.int/eng?i=001-201097> (date accessed: 07.11.2025).

Although counteraction to the investigation may contain a wider range of illegal or semi-legal activities, this feature is characteristic of it: dishonesty, manipulation, the use of “procedural traps” or extralegal means are characteristic tools of counteraction. Thereby this feature actually demonstrates the transition from the internal (procedural) to the external (forensic) form of counteraction to the investigation.

The *fourth sign* is the implementation of procedural law contrary to its functional purpose. Most researchers rightly point out that it is the distortion of the target function of law that is an essential characteristic of abuse. Typical manifestations are unreasonable serial bends, repeated petitions for the same purpose, filing applications in the absence of real grounds¹⁴.

In the context of countering the investigation, this sign can be traced as a larger phenomenon: actions that contradict the task of finding out the truth can be carried out not only through the use of rights contrary to their goals, but also behavior that generally goes beyond procedural legality (concealment of evidence, pressure on witnesses, misinformation). Thus, the common feature is a departure from

the purpose of criminal proceedings, and the distinctive feature is the tools used to achieve this.

The *fifth sign* is a conscious, intentional nature of behavior. The researchers emphasize that abuse is impossible without a purposeful intention to go beyond the fair exercise of the right¹⁵.

Counteraction to investigation can be as intentional and as situationally unintentional one (for example, due to the ignorance or emotional state of the person), although its dominant form is certainly a conscious influence on the course of the investigation. Consequently, intentionality is an obligatory sign of abuse and a characteristic, but not always obligatory sign of counteraction. This makes it possible to argue that abuse constitutes a concentrated purposeful kind of counteraction, while counteraction as a phenomenon covers a wider range of forms.

The *sixth sign* is causing negative consequences for other participants in the process or for criminal proceedings in general. As part of the abuse, such consequences include delaying the proceedings, violation of the principles of equality of arms, overloading the court and complicating the clarification of the truth¹⁶.

- 14 Білокінь Р. М. Кримінально-процесуальна відповідальність : монографія. Київ, 2017. С. 28. URL: <https://surl.li/lanmaq> (date accessed: 07.11.2025) ; Хабло О. Ю. Зазнач. твір. С. 57 ; Криворучко Д. В. Зазнач. твір. С. 20 ; Михайленко В. В. Процесуальні зловживання під час досудового розслідування / Судово-юридична газета : блог. 03.06.2021. URL: <https://sud.ua/ru/news/blog/203970-protsesualni-zlovzhivannya-pid-chas-dosudovogo-rozsliduvannya> (date accessed: 07.11.2025) ; Вознюк О. Л. Зазнач. твір. С. 33. URL: <https://elar.navs.edu.ua/handle/123456789/35944> (date accessed: 07.11.2025).
- 15 Narasymchuk N. Noted work. P. 214. DOI: 10.32837/yuv.v0i2.2175 (date of appeal: 07.11.2025) ; Одерій О. В., Мудрецький Р. В. Протидія судовому розгляду у кримінальних провадженнях та шляхи її подолання у сучасних реаліях : монографія. Київ, 2021. С. 21. URL: <https://rep.dnuvs.ukr.education/server/api/core/bitstreams/93749650-3fae-4563-bdfd-cbbcf582661d/content> (date accessed: 07.11.2025) ; Вознюк О. Л. Зазнач. твір. С. 34. URL: <https://elar.navs.edu.ua/handle/123456789/35944> (date accessed: 07.11.2025).
- 16 Калюжний Р. А., Андрущенко І. Г. Зловживання правом: сутність та шляхи протидії. Бюлетень Міністерства юстиції України. 2006. № 8 (58). С. 19. URL: <http://er.nau.edu.ua/handle/NAU/26483> (date accessed: 07.11.2025) ; Петков С. В., Добрянська Н. В. Аналіз правозастосовної практики щодо зловживань процесуальними правами адвокатів

In case of counteraction to investigation, the range of possible consequences is much wider: from the destruction of evidence, pressure on victims and witnesses, corrupt influence to distortion of the evidence base and blocking the investigation. Thereby, counteraction can be considered as a phenomenon with a wider “force of influence” and abuse as its separate structural element acting within the procedural form.

The *seventh sign* of abuse is the evaluative nature of wrongfulness. Abuse does not have a rigidly defined composition, and its qualification depends on the specific situation, the assessment of the court and the correlation of behavior for the purpose of procedural institution¹⁷.

In the case of counteraction, evaluative nature is also present, but manifests itself more comprehensively: it can cover both clearly illegal actions and formally neutral ones, but those that cumulatively create obstacles to the investigation. Therefore, evaluation is a common feature of both phenomena, but in abuse it is tied to the content of a particular procedural law, while in counteraction it is tied to the general ability of actions to complicate the clarification of the truth.

The *last, eighth sign* is the lack of classical legal liability. Abuse entails the application of procedural response measures (leaving the petition without consideration, ignoring repeated applications), but not punitive sanctions¹⁸.

Counteraction to the investigation, on the contrary, may entail both procedural consequences and criminal liability (for concealing a crime, obstructing the investigator’s activities, influencing witnesses, etc.). It makes possible to distinguish phenomena according to the degree of social danger and legal significance: abuse is an internal procedural mechanism for violating integrity, while counteraction is a broader phenomenon that under certain conditions develops into criminally punishable actions.

The analysis allows us to form a generalized idea of the nature and limits of the concepts of *counteraction to investigation* and *abuse of procedural rights* and determine feasibility of using the latter as a forensic category. It is advisable to consider counteraction to the investigation as a broad, multifaceted form of conflict interaction within the framework of criminal proceedings manifested in the targeted actions of participants or other interested parties aimed at complicating the establishment of the factual circumstances of the event, distortion or destruction of evidence, blocking of investigative activities or influence on participants in the procedure. Its character combines intellectual-psychological and tactical components and covers both objective manifestations in specific actions and subjective motives.

Abuse of procedural rights is a narrow, intra-procedural type of such resistance, which consists in using the rights

у кримінальному провадженні. Журнал східноєвропейського права. 2024. № 127. С. 48–49. URL: https://easternlaw.com.ua/wp-content/uploads/2024/10/petkov_dobryanska_127.pdf (date accessed: 07.11.2025) ; Вознюк О. Л. Зазнач. твір. С. 35. URL: <https://elar.navs.edu.ua/handle/123456789/35944> (date accessed: 07.11.2025).

17 Рєзнікова В. В. Сучасна доктрина зловживання процесуальними правами : презентація / Ratio Decidendi: юридичний портал : вебсайт. 46 с. URL: <https://surl.li/xgwlda> (date accessed: 07.11.2025) ; Вознюк О. Л. Зазнач. твір. С. 36. URL: <https://elar.navs.edu.ua/handle/123456789/35944> (date accessed: 07.11.2025).

18 Вознюк О. Л. Зазнач. твір. С. 36–37. URL: <https://elar.navs.edu.ua/handle/123456789/35944> (date accessed: 07.11.2025).

or powers granted by law in a way that contradicts their functional and intended purpose. Formally being within the limits of what is permitted, such behavior acquires a destructive meaning, since it hinders the achievement of the objectives of criminal proceedings, complicates the provision of evidence and violates the balance of interests. Therefore, abuse should be considered as a proceduralized form of resistance to the investigation, disguised as lawful activity.

Relationship between the phenomena has the character of *part – whole*: counteraction to the investigation covers both procedural and non-procedural ways of complicating investigative activities, while abuse is narrower and limited to the process. At the same time, both phenomena are caused by similar determinants legislative gaps, insufficient procedural control, organized nature of criminal activity, socio-psychological motives and ability to manipulate information.

It combines these forms and similarities of implementation mechanisms: the preparation of appropriate conditions, active actions aimed at influencing evidence or procedures, and further concealment or masking of their actions. A common result for them is a negative result: violation of the principles of criminal proceedings, creation of obstacles to clarifying the truth and potential assistance in avoiding criminal liability.

Effective detection and neutralization of relevant findings requires a unified methodological approach that includes the development of tactical recommendations, improvement of procedural guarantees and mechanisms of judicial control, as well as the development of criteria for the fair exercise of procedural rights. Integration of forensic and procedural analysis creates the basis for the forma-

tion of systemic guidelines for diagnosing and overcoming procedural destruction.

Despite the fact that the concept of *abuse of procedural rights* belongs to the categories of criminal process, it has a direct forensic significance, since it affects the process of forming and preserving evidence, creates specific traces of procedural behavior and determines the conditions for conducting investigative (search) actions. That is why it is advisable to use it in forensic science as an element of the counteraction model, and not as an independent legal institution. From the point of view of forensic methodology, abuse is a form of obstructive behavior that is subject to detection, analysis and tactical overcoming, and can also become part of the forensic classification of forms of counteraction.

Conclusions

Counteraction to the investigation and abuse of procedural rights are interrelated manifestations of procedural destruction, but differ in scale, forms and mechanisms of implementation. Abuse of procedural rights can and should become part of forensic categories, but with a clear understanding of its derivative nature.

Counteraction to investigation is a broad forensic phenomenon, covering both procedural and non-procedural ways of complicating the clarification of the truth, including distortion or destruction of evidence, influence on participants in the proceedings and blocking investigative activities. Its nature combines intellectual-psychological and tactical elements and is due to a complex of legal, organizational and socio-psychological factors.

Abuse of procedural rights in essential dimension is an internal procedural, narrowly defined type of counteraction, which

is manifested in the use of the rights granted by law contrary to their intended and functional purpose. It creates the appearance of legitimacy, but has a destructive content aimed at complicating the proof and upsetting the balance of interests of the parties.

Therefore, the relationship between the outlined phenomena is characterized by the *part – whole* model: each abuse is a form of counteraction, while counteraction also covers actions that go beyond procedural regulation. They are united by common determinants, similarity of the structural stages of implementation (preparation, active influence, camouflage) and identical negative consequences for criminal proceedings.

Abuse of procedural rights is a narrowly specialized manifestation of a broader forensic category: counteraction to the investigation, it can be used in forensic science for:

- building forensic characterization;
- modeling of typical counteraction situations;
- development of tactical recommendations for investigators and prosecutors;
- formation of a system of preventive measures and tactical response algorithms.

Consequently, forensic science not only can, but should operate with the concept of *abuse of procedural rights*, since it is an effective tool for explaining, modeling and overcoming procedural opposition that is becoming increasingly relevant in modern criminal proceedings.

Effective overcoming of the relevant forms of destructive behavior requires the integrated application of procedural and forensic methods, development of tactical means of its diagnosis and neutralization, the improvement of judicial

control mechanisms and criteria for the fair exercise of procedural rights.

**Протидія розслідуванню
і зловживання
процесуальними правами:
криміналістичне співвідношення
та межі концептуального
розмежування**

Олександр Таркан

Мета статті — на підставі комплексного аналізу теоретичних і практичних аспектів зловживання процесуальними правами учасниками кримінального провадження визначити співвідношення цього явища з протидією розслідуванню та з'ясувати його місце в системі криміналістичного вчення. Методологічну основу дослідження становить комплекс загальнонаукових, спеціальних і філософських методів (діалектичний, системно-структурний, функціонально-діяльнісний, порівняльно-правовий, моделювання, аналіз і синтез). Узагальнено, що протидія розслідуванню є складним, багаточинниковим і поліструктурним явищем, яке охоплює як процесуальні, так і позапроцесуальні форми впливу на перебіг кримінального провадження. Її реалізація ґрунтується на використанні тактичних, психологічних, організаційних та інколи корупційних засобів, спрямованих на ускладнення з'ясування істини, перешкоджання збиранню доказів або вплив на учасників провадження. Зловживання процесуальними правами є внутрішнім, процесуально оформленим різновидом протидії, що характеризується умисним застосуванням формально дозволених інструментів у супереч їх функційному призначенню. Обґрунтовано, що співвідношення між поняттями має характер «частина — ціле»: кожне зловживання є формою протидії, однак протидія не вичерпується лише процесуальною поведінкою і може виходити за

межі кримінального процесуального регулювання. Доведено, що криміналістика має підстави для зарахування категорії «зловживання процесуальними правами» до системи криміналістичного вчення про протидію розслідуванню, оскільки це явище має власні механізми, закономірності виявлення та підлягає тактичному подоланню. Його дослідження створює умови для формування ефективних процесуальних і криміналістичних заходів нейтралізації маніпулятивної діяльності учасників провадження. Зроблено висновок, що інтеграція теоретичних і прикладних аспектів аналізу зловживань у межах криміналістичної концепції протидії дає змогу створити цілісну модель протидіючої поведінки, уточнити межі процесуальної добросовісності, виявити типові механізми деструктивного впливу на доказову інформацію та розробити обґрунтовані тактичні рекомендації для слідчих, прокурорів і суду.

Ключові слова: протидія розслідуванню; зловживання правами; процесуальний захід; слідча (розшукова) дія; тактична операція.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

Author contributed solely to the intellectual discussion underlying this document, case law research, writing and editing and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

Author declares no conflict of interest.

References

- Bilokin, R. M. (2017). *Kryminalno-protsesualna vidpovidalnist* [Criminal procedural responsibility] : monohrafiia. Kyiv. URL: <https://surl.li/lanmaq> [in Ukrainian].
- Boreiko, H. D. (2020). Chy mozhut posadovi osoby zlovzhyvaty pravamy u kryminalnomu provadzhenni? [Can officials abuse rights in criminal proceedings?] *Innovatsiyni rozvytok pravovoi nauky v umovakh modernizatsii suspilstva* : matly X Mizhnar. nauk.-prakt.konf. (Kyiv, 28.02.2020). Ternopil. T. 1. URL: <https://er.kai.edu.ua/items/f9a94690-7fcd-4dfc-af5a-a381a08eb004> [in Ukrainian].
- Boreiko, H. D. (2021). Zlovzhyvannia pravom storonamy kryminalnoho provadzhennia na etapi zavershennia dosudovoho rozsliduvannia [Abuse of law by the parties of the criminal proceedings at the stage of completion of the pre-trial investigation]. *Sotsialno-pravovi studii*. Vyp. 1(11). URI: <http://dspace.lvduvs.edu.ua/handle/1234567890/3700> [in Ukrainian].
- Harasymchuk, N. (2021). Poniattia ta oznaky zlovzhyvannia protsesualnymy pravamy advokatom u kryminalnomu provadzhenni [The concept and features of abuse of the procedural rights by an attorney in criminal proceedings]. *Yurydychnyi visnyk*. № 2. DOI: [10.32837/yuv.v0i2.2175](https://doi.org/10.32837/yuv.v0i2.2175) [in Ukrainian].
- Herasymchuk, N. A. (2024). *Zlovzhyvannia advokatom protsesualnymy pravamy u kryminalnomu provadzhenni* [Abuse of Procedural Rights in Criminal Proceedings] : dys. ... d-ra filos. v haluzi prava. Kyiv [in Ukrainian].
- Husieva, V. O. (2021). *Teoretychni osnovy metodyky rozsliduvannia zlochyniv proty avtoritetu orhaniv derzhavnoi vlady u sferi pravookhoronnoi diialnosti* [Theoretical bases of a methods of investigating crimes against authority of public authorities in terms of law enforcement activity] : dys. ... d-ra yuryd. nauk. Kharkiv. URL: <https://>

- core.ac.uk/download/pdf/442209993.pdf [in Ukrainian].
- Kaliuzhnyi, R. A., Andrushchenko, I. H. (2006). Zlovzhyvannia pravom: sutnist ta shliakhy protydii [Abuse of law: the essence and ways of counteraction]. *Biuleten Ministerstva yustytzii Ukrainy*. № 8(58). URL: <http://er.nau.edu.ua/handle/NAU/26483> [in Ukrainian].
- Khablo, O. Yu. (2008). *Zlovzhyvannia u sferi kryminalnogo protsesu* [Abuse in the field of criminal procedure] : dys. ... kand. yuryd. nauk. Kyiv [in Ukrainian].
- Kryvoruchko, D. V. (2023). *Zlovzhyvannia pravom pid chas dosudovoho rozsliduvannia v kryminalnomu provadzhenni* [Abuse of law during pre-trial investigation in criminal proceedings] : dys. ... d-ra filos. v haluzi prava. Kharkiv [in Ukrainian].
- Lepisevych, P. M., Kurliak, M. D. (2018). *Praktychni zasady usunennia protydii rozsliduvanniu zlochiniv u suchasnykh umovakh* [Practical principles for elimination of counteraction to investigation of crimes in modern conditions]. *Naukovyi visnyk Lvivskoho derzhavnogo universytetu vnutrishnikh sprav. Seriiia yurydychna*. Vyp. 1. URI: <http://dspace.lvduvs.edu.ua/handle/1234567890/1261> [in Ukrainian].
- Mykhailenko, V. V. (2021). *Protsesualni zlovzhyvannia pid chas dosudovoho rozsliduvannia* [Procedural abuses during pre-trial investigation] / *Sudovo-iurydychna hazeta* : bloh. URL: <https://sud.ua/ru/news/blog/203970-protsesualni-zlovzhivannya-pid-chas-dosudovogo-rozsliduvannya> [in Ukrainian].
- Oderii, O. V., Mudretskyi, R. V. (2021). *Protydiia sudovomu rozghliadu u kryminalnykh provadzhenniakh ta shliakhyii podolannia u suchasnykh realiiah* [Opposition to judicial proceedings in criminal proceedings and ways to overcome it in modern realities] : monohrafiia. Kyiv. URL: <https://rep.dnuvs.ukr.education/server/api/core/bitstreams/93749650-3fae-4563-bdfd-cb-bcf582661d/content> [in Ukrainian].
- Pietkov, S. V., Dobrianska, N. V. (2024). *Analiz pravozastosovnoi praktyky shchodo zlovzhyvan protsesualnymy pravamy advokativ u kryminalnomu provadzhenni* [Analysis of Case Law on Abuse of Procedural Rights by Attorneys in Criminal Proceedings]. *Zhurnal skhidnoiev-ropeiskoho prava*. № 127. URL: https://easternlaw.com.ua/wp-content/uploads/2024/10/petkov_dobryanska_127.pdf [in Ukrainian].
- Prylutskyi, S. V., Savchuk, I. I. (2019). *Problema zlovzhyvannia pravom prokurorom u kryminalnomu protsesi* [The problem of abuse of law by the prosecutor in the criminal proceeding]. *Visnyk kryminalnoho sudochynstva*. № 1. URL: https://vkslaw.knu.ua/images/verstka/1_2019_prylutskyi_savchuk.pdf [in Ukrainian].
- Rieznikova, V. V. (n. d.). *Suchasna doktryna zlovzhyvannia protsesualnymy pravamy* [Modern Doctrine of Abuse of Procedural Rights] : prezentatsiia / Ratio Decidendi: yurydychnyi portal : vebсайт. URL: <https://surl.li/xgwlda> [in Ukrainian].
- Rozumovskiy, O. (2021). *Zlovzhyvannia protsesualnymy pravamy za chynnym kryminalnym protsesualnym zakonodavstvom Ukrainy* [Abuse of procedural rights under the current criminal procedure legislation of Ukraine]. *Pidpryiemnytstvo, gospodarstvo i pravo*. № 4. DOI: 10.32849/2663-5313/2021.4.38 [in Ukrainian].
- Suddi KKS VS rozpovily pro problemu zlovzhyvannia protsesualnymy pravamy ta pro ostanniu praktyku OP KKS VS [The judges of the CCS of the SC told about the problem of abuse of procedural rights and about the latest practice of the CCS of the SC] (2021) / *Verkhovnyi sud* : ofits. vebсайт. 15.11.2021. URL: <https://supreme.court.gov.ua/supreme/pres-centr/news/1211840/> [in Ukrainian].
- Udalova, L. D., Khablo, O. Yu. (2010). *Zlovzhyvannia u sferi kryminalnogo protsesu* [Abuse in the field of criminal procedure] : monohrafiia. Kyiv. URL: <https://>

elar.navs.edu.ua/server/api/core/bitstreams/5274299e-57fe-4eaf-a820-a2b1ff8e900c/content/ [in Ukrainian].

Vozniuk, O. L. (2025). *Zlovzhyvannia protsesualnykh pravamy u kryminalnomu*

provadzhenni [Abuse of procedural rights in criminal proceedings] : dys. ... d-ra filosof. v haluzi prava. Kyiv. URL: <https://elar.navs.edu.ua/handle/123456789/35944> [in Ukrainian].

Tarkan, O. (2025). Countering Investigation and Abuse of Procedural Rights: Forensic Correlation and the Limits of Conceptual Delineation. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 155—168. DOI: [10.32353/khrife.4.2025.09](https://doi.org/10.32353/khrife.4.2025.09).

Legal Support for Customs and Forensic Examinations (Expert Studies) in Foreign Economic Activities and Customs Formalities under EU and Ukraine's Customs Legislation

Iryna Korostashova *

* Candidate of Legal Sciences, Docent, University of Customs and Finance, Dnipro, Ukraine, ORCID: <https://orcid.org/0000-0003-4024-802X>, e-mail: irynakorostashova@ukr.net

DOI: 10.32353/khrife.4.2025.10 UDC 342.9:341.1

Received: 12.11.2025 / Reviewed: 09.12.2025 / Accepted for print: 25.12.2025 /

Available online: 31.12.2025



The primary concerns of this study are to evaluate the adequacy of legal support for customs and forensic examinations (expert studies) under EU and Ukraine's Customs Legislation, and to analyse legal relations in the context of foreign economic activities and customs affairs. Therefore, authorized forensic subjects have to conduct customs and forensic examinations of goods and perform customs formalities to support forensic expert activities. In pursuit of this goal, the author employed a range of general scientific and special legal methods. An analysis of principles governing the legal regulation of customs and forensic examinations (expert studies) and standards for their implementation, as outlined in EU and Ukrainian legislation, was conducted. In this paper, the researcher underscored the extent to which legal relations evolve in the context of foreign economic operations. Classification thereof was developed on the basis of several criteria. The study defines the "customs examination" concept and the range of subjects authorized to conduct this study, as well as the scope within which expert activity subjects operate under EU and Ukraine's Customs Legislation. As set forth in Ukrainian legislation, customs examinations involve customs operations with goods that are carried out for customs purposes and within the scope of customs procedures. Legal relations in the field

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

of foreign economic activities and customs affairs are closely intertwined with forensic analyses (expert studies) conducted by forensic experts. A comparative analysis was carried out to examine the status of experts affiliated with the State Customs Service and the Ministry of Justice of Ukraine. Legal safeguards for the independence and accuracy of expert opinions were considered. It was emphasized that forensic and customs experts must adhere to corresponding international standards when carrying out expert activities, thereby facilitating the integration into specialized European and international expert networks.

Keywords: customs examinations (studies); forensic examination (expert study/testing); product samples; customs control; customs procedures; customs formalities; customs legislation; foreign economic activities; foreign economic operations; European integration.

Research Problem Formulation

In an increasingly interconnected global landscape, one of the essential factors in economic development is international trade. It is carried out through foreign economic operations by Ukrainian and foreign business entities. Foreign economic activity is one of the most complex types of activity (due to the added complexity of the foreign element). The *foreign element* concept is set forth in para. 2 of Pt. 1 of Art. 1 of the Law of Ukraine: *On Private International Law*¹: it presupposes certain features of legal relations emerging within the realm of foreign economic activities (hereinafter referred to as FEAs/FEA), and delves into their multifaceted nature. One of FEAs avenues is foreign trade, which is

associated with the movement of goods and vehicles across Ukraine's customs border. A wide range of various goods that are foreign trade subjects sometimes justifies the need for customs and forensic examinations (expert studies) when carrying out foreign trade operations and/or customs formalities and customs procedures.

Legal regulation issues of customs and forensic examinations (expert studies) become especially relevant in conditions of globalized international trade. For the facilitation and acceleration thereof, customs procedures are gradually being harmonized and simplified in compliance with relevant international standards². *Integration into the European Union (hereinafter referred to as the EU), which is taking place during wartime, presents an additional chal-*

- 1 Про міжнародне приватне право : Закон України від 23.06.2005 р. № 2709-IV (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2709-15#Text> (date accessed: 24.08.2025).
- 2 Міжнародна конвенція про спрощення і гармонізацію митних процедур (Київська конвенція) : від 18.05.1973 р. (зі змін. та допов.) ; ратифік. Закон. України від 05.10.2006 р. № 227-V (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/995_643#Text (date accessed: 06.09.2025) ; Угода про асоціацію між Україною, з однієї сторони, та Європейським Союзом, Європейським співтовариством з атомної енергії і їхніми державами-членами, з іншої сторони : від 27.06.2014 р. (зі змін. та допов.) ; ратифік. із заяв. Закон. України від 16.09.2014 р. № 1678-VII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/984_011#Text (date accessed: 15.09.2025).

lenge for Ukraine in terms of fulfilling a comprehensive set of conditions and obligations, particularly in the areas of foreign trade and customs affairs. Considering this situation, the issue of providing legal support for customs and forensic examinations of goods moving across the customs borders of Ukraine and the EU, as well as implementing customs formalities in compliance with international and EU standards, which is an integral component of foreign trade and customs relations, is becoming increasingly urgent. In view of Ukraine's integration into Europe, the aforementioned issue is coming to the forefront, which is why this topic has been chosen for the study.

Analysis of Essential Researches and Publications

T. Kachalova ³, P. Kipouras and O. Ovsiannykova ⁴, I. Korostashova ⁵, O. Kliuiev ⁶, O. Lopata ⁷, O. Matvieievskyi and B. Babin ⁸, E. Simakova-Yefremian ⁹, V. Khosha and O. Manulenko ¹⁰, I. Yatsenko ¹¹, and other researchers and practitioners dedicated their research to studying legal support for forensic examinations and to reviewing international standards of forensic activities and international cooperation.

Organizational and legal aspects of customs examinations are extensively detailed in research papers by N. Avramenko and

- 3 Качалова Т. Є. Правові основи міжнародного співробітництва МВС та ENFSI. *Молодий вчений. Юридичні науки*. 2020. № 11 (87). С. 302—306. DOI: 10.32839/2304-5809/2020-11-87-65 (date accessed: 06.09.2025).
- 4 Кіпоурас П., Овсянникова О. Судово-експертна діяльність в умовах глобалізації. *Теорія та практика судової експертизи і криміналістики*. 2021. Вип. 3 (25). С. 169—184. DOI: 10.32353/khrife.3.2021.12 (date accessed: 06.09.2025).
- 5 Коросташова І. М. Особливості судової експертизи (експертних досліджень) у сфері інтелектуальної власності, пов'язаних з умовами надання правової охорони промисловим зразкам, визначення критеріїв їх охороноздатності та обсягу використання. *Криміналістика і судова експертиза*. 2022. Вип. 67. С. 648—657. DOI: 10.33994/kndise.2022.67.65 (date accessed: 06.09.2025).
- 6 Ключев О. Міжнародні наукові стандарти в судово-експертній сфері України. *Теорія та практика судової експертизи і криміналістики*. 2022. Вип. 3 (28). С. 5—10. DOI: 10.32353/khrife.3.2022.01 (date accessed: 06.09.2025).
- 7 Лопата О. А. Міжнародне співробітництво експертної служби МВС України : автореф. дис. ... канд. юрид. наук. Київ, 2017. 22 с. URL: <https://elar.navs.edu.ua/server/api/core/bitstreams/200b763a-9317-4e30-b4c8-56bae4f8e280/content> (date accessed: 06.09.2025).
- 8 Матвеевський О. В., Бабін Б. В. Міжнародно-правові стандарти судової експертизи та їх національна реалізація. *Правничий вісник*. 2018. Вип. 1 (22). Т. 4. С. 73—79. URL: http://pjjv.nuoua.od.ua/v1-4_2018/16.pdf (date accessed: 06.09.2025).
- 9 Сімакова-Єфремян Е. Про необхідність удосконалення законодавства щодо здійснення судово-експертної діяльності в Україні. *Теорія та практика судової експертизи і криміналістики*. 2019. Вип. 1 (19). С. 118—129. DOI: 10.32353/khrife.1.2019.09 (date accessed: 06.09.2025).
- 10 Хоша В. В., Мануленко О. В. Перспективи розвитку судово-експертних установ Міністерства юстиції України в аспекті вступу до європейської системи ENFSI. *Теорія та практика судової експертизи і криміналістики*. 2009. Вип. 9. С. 244—249.
- 11 Яценко І. І. Завдання та принципи міжнародного співробітництва в галузі судової експертизи (оглядова стаття). *Вісник Харківського національного університету внутрішніх справ*. 2020. № 3 (90). С. 202—211. DOI: 10.32631/v.2020.3.20 (date accessed: 06.09.2025).

O. Kulhanik ¹², A. Brachuk ¹³, H. Karpenko ¹⁴, I. Korostashova ¹⁵, O. Punda and P. Kostyrina ¹⁶, et al. Scholars have largely overlooked the study of issues of legal support for customs and forensic examinations (expert studies), which result from legal relations in the field of FEAs and customs affairs, and the implementation of international standards in this area (see research papers by I. Korostashova ¹⁷, O. Punda and D. Arziantseva ¹⁸).

Article Purpose

Examine the legal frameworks governing customs affairs and FEAs, necessitating the conduct of customs and forensic examinations (expert studies) as well as assess their legal support under EU and Ukraine's legislation. Consider customs formalities aimed at supporting expert activities. The follow-

ing tasks are set within the defined goal: 1) to examine the customs legislation rules, which define the legal basis for the implementation of customs formalities regarding the conduct of customs and forensic examinations (expert studies) of goods moved across the customs border of Ukraine, as well as to scrutinize legal relations stemming from the customs formalities for the conduct of customs and forensic examinations (expert studies), and to analyse types and features thereof; 2) to define the *customs examinations* concept and the range of subjects authorized to conduct them as well as to consider forensic examinations (expert studies) for customs and other purposes/ other foreign trade operations; 3) to analyse the purpose and scope of customs and forensic examinations (expert studies) related to foreign economic activities; 4) to perform a comparative analysis of the sta-

- 12 Авраменко Н. Л., Кульганік О. М. Роль митних експертиз у зовнішньоекономічній діяльності суб'єктів підприємництва. *Економіка та суспільство*. 2023. Вип. 57. 6 с. DOI: [10.32782/2524-0072/2023-57-21](https://doi.org/10.32782/2524-0072/2023-57-21) (date accessed: 06.09.2025).
- 13 Брачук А. О. Митні експертизи: поняття, характеристика та види. *Митна справа*. 2015. № 3 (99). С. 62—67. URL: http://nbuv.gov.ua/UJRN/Ms_2015_3_11 (date accessed: 06.09.2025).
- 14 Карпенко Г. Л. Експертиза в митній справі: організаційно-правовий аспект : автореф. дис. ... канд. юрид. наук. Одеса, 2007. 18 с. URL: <https://dspace.onua.edu.ua/server/api/core/bitstreams/686a82cc-d8fc-4fe0-87b9-4290c20824f3/content> (date accessed: 06.09.2025).
- 15 Коросташова І. М. Правове забезпечення у митному законодавстві України проведення судових експертиз / експертних досліджень у сфері зовнішньоекономічної діяльності: питання застосування митних формальностей та процедур із захисту прав інтелектуальної власності й притягнення до адміністративної відповідальності за порушення митних правил. *Судово-експертна діяльність: збереження наукового та кадрового потенціалу в умовах воєнного стану* : мат-ли IV Всеукр. форуму суд. експерт. (Львів, 07.06.2024). Одеса, 2024. С. 181—185. URL: <https://ndekc.lviv.ua/pdf/law.pdf> (date accessed: 06.09.2025).
- 16 Пунда О. О., Костирін П. І. Удосконалення нормативно-правового забезпечення проведення податкових та митних експертиз в Україні. *Юридичний науковий електронний журнал*. 2019. № 5. С. 207—210. DOI: [10.32782/2524-0374/2019-5/49](https://doi.org/10.32782/2524-0374/2019-5/49) (date accessed: 06.09.2025).
- 17 Коросташова І. М. Правові засади експертизи товарів у сфері зовнішньоекономічної діяльності та митної справи за митним законодавством Європейського Союзу. *Судова експертиза: перспективи розвитку та окремі вектори змін* : мат-ли V Всеукр. форуму суд. експерт. (Львів, 06.06.2025). Одеса, 2025. С. 254—258. URL: <https://ndekc.lviv.ua/pdf/09072025.pdf> (date accessed: 06.09.2025).
- 18 Пунда О., Арянцева Д. Розвиток системи митних експертиз в Україні в контексті дотримання вимог Європейського Союзу. *Університетські наукові записки*. 2019. Т. 18. № 4 (72). С. 106—117. DOI: [10.37491/UNZ.72.11](https://doi.org/10.37491/UNZ.72.11) (date accessed: 06.09.2025).

tus of forensic experts subordinated to the Ministry of Justice and the State Customs Service of Ukraine.

Research Methods

This study covers the following methods: general scientific methods (analysis, synthesis, induction, deduction, etc.) and special legal methods (formal legal, comparative legal, interpretation of legal rules, etc.). Analysis and synthesis methods, the formal legal method, as well as the method of interpreting legal rules have facilitated an understanding of the *customs examination* concept. Comparative legal method aided in studying the status of the subjects of customs and forensic examinations.

Main Content Presentation

Performing foreign economic operations related to the movement of goods and vehicles across Ukraine's customs border involves certain risks. Goods and means of transport moved across the customs border have the potential to harm the interests of interests of the country and/or violate the rights of certain subjects of foreign economic and/or economic activity and citizens (e.g., goods may pose danger to the life and health of people and/or the environment; physical and chemical characteristics of goods may not correspond to the stated information: all this is done in order to reduce tax burden or bypass non-tariff regulations).

P. Hordkhan, public figure and expert, emphasizes the fact that *"customs lie at the*

heart of the globalization process, and are a catalyst for the competitiveness of countries and companies. Not only do customs collect government revenues at the border, but they are also responsible for managing international trade and supporting economy and society in the aspect of cross-border movement of goods" [hereinafter translated by the author. — Ed.] ¹⁹. The foregoing correlates directly with the issues of customs security, which is defined as *"the state whereby the customs interests of Ukraine are protected"* ²⁰ in Pt. 2 of Art. 6 of the Customs Code of Ukraine (hereinafter referred to as the CC of Ukraine). In Pt. 1 of Art. 6 of the CC of Ukraine, the legislator defines the *customs interests* term as follows: *"customs interests of Ukraine shall constitute the national interests of Ukraine that are ensured and implemented by administering the state customs affairs"* ²¹. Thus, we are looking at a multifaceted array of national interests. Supporting these interests falls within the competence of customs authorities.

Taking the above into account, currently the scope of risks that fall under the responsibility of customs authorities goes far beyond economic security. This is because customs security is complex and encompasses various spheres of national interest that are connected to the movement of goods across Ukraine's customs border. That is why proper legal regulation and guarantee of customs security in national and international dimensions are one of the key issues today.

One of the constitutive documents of paramount international importance in the field of foreign trade and customs

19 Gordhan P. Customs in the 21st century. *World Customs Journal*. 2007. Vol. 1. No. 1. Pp. 49–54. URL: https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/key-issues/customs-in-the-21st-century/customs_in_the_21st_century.pdf (date accessed: 06.09.2025).

20 Митний кодекс України від 13.03.2012 р. № 4495-VI (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/4495-17#Text> (date accessed: 06.09.2025).

21 Там само.

security is the Framework of Standards to Secure and Facilitate Global Trade²² (hereinafter referred to as the *Framework of Standards*), developed by the World Customs Organization (hereinafter referred to as the WCO). This document is a pivotal and unique instrument that enables the customs administrations of most countries worldwide to transition to novel principles involving safe international trade. They introduced new approaches to the customs administration activities in various countries worldwide, to the development of relations with FEA subjects, to the simplification of customs control and determination of its scope and nature stemming from the risk management system.

A. Brachuk notes: *"The prevailing paradigm in the standardization of customs procedures, which occurs within the framework of the World Customs Organization, is to cultivate a climate for the development of international trade by speeding up and simplifying customs procedures. However, maintaining an adequate level of security and ensuring compliance with customs legislation remains an essential requirement"*²³. Therefore, today the issue of ensuring the quality of customs control is quite acute in the context of simplification and harmonization of customs procedures for international trade acceleration, reduction of time standards for carrying out customs formalities and inspection procedures/ measures. That is why when performing foreign trade operations, specifically during customs control, there may be a need to con-

duct customs and forensic examinations (expert studies).

Within the framework of customs control measures, customs and forensic examinations are of paramount importance for customs authorities to fulfil their purpose and main tasks as prescribed by the legislator in Art. 544 of the CC of Ukraine²⁴ and they entail: 1) adoption of decisions on core activities by customs authorities; 2) provision of evidence in administrative and criminal proceedings; 3) confirmation or refutation of research (analysis, expert examination) findings: at the request of the declarant; 4) appeal against actions or inaction of customs authorities, etc. Accordingly, the need to conduct customs and forensic examinations is justified and rooted in legal relations occurring as a result of foreign trade operations, customs control, customs formalities and customs procedures.

It should be pointed out that types of forensic examinations (expert studies) conducted in the field of FEAs and customs affairs are inextricably linked to: a) the type of legal relations occurring as a result of foreign economic operations; b) customs procedures, within the scope of which samples of goods are taken; c) the type of subject that is the initiator of an expert examination; d) features of expert examination (expert studies/ objects under study) objects, i.e. various goods moved across Ukraine's customs border.

Among juridical ties established through the execution of foreign econom-

22 SAFE Framework of Standards at the June 2005. World Customs Organization, 2021. 88 p. / WCO : web. URL: <https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/safe-package/safe-framework-of-standards.pdf> (date accessed: 06.09.2025).

23 Брачук А. О. Особливості забезпечення митної безпеки та митних інтересів в умовах спрощення митних процедур. *Lex Portus*. 2017. № 1 (3). С. 157. URL: <https://lexportus.net.ua/vipusk-1-2017/brachuk.pdf> (date accessed: 06.09.2025).

24 Митний кодекс України ... URL: <https://zakon.rada.gov.ua/laws/show/4495-17#Text> (date accessed: 06.09.2025).

ic operations, it is possible to single out legal relations: a) that arise during the conclusion of foreign economic agreements (between Ukrainian and foreign business entities); b) are directly linked to the movement of goods and means of transport across Ukraine's customs border and to the implementation of customs formalities (between FEA subjects or their representatives and public authorities).

In legal relations that occur during the execution of foreign economic agreements and relate to the breaches of contractual obligations by parties (for example, breaches concerning the quality and/or characteristics of goods supplied), the party/parties of a foreign economic agreement, as well as a court, are initiators of forensic examinations (expert studies). Under such circumstances, forensic experts can conduct expert studies at the stage of pre-trial settlement of disputes, and forensic experts – during the trial.

Legal relations associated with the movement of goods and vehicles across Ukraine's customs border are more diverse. Among them, it is possible to identify the following ones: a) directly linked to customs control; b) associated with smuggling detection; c) related to the detection of customs regulation breaches; d) relating to the suspension of customs clearance of goods that are suspected of encroaching upon intellectual property rights; e) which arise in connection with the violation of the rights of FEA subjects (decisions, actions or inaction of customs or other official control officers) and which are appealed in judicial and administrative procedures.

Legal relations involving customs control are primary in nature. Remaining types of customs legal relations are rooted

in legal relations involving customs control. Therefore, it should be pointed out that paras. 1–3 of Pt. 1 of Art. 320: *Selectivity of Customs Control* of the CC of Ukraine provides as follows:

“1. The forms and scope of customs control shall be selected by:

- 1) customs officials based on the results of the application of the risk management system; and/or*
- 2) automated risk management system”²⁵.*

That is why, in legal relations pertaining to the implementation of customs control measures by customs authorities, forms and scope of such control and customs formalities are determined within the customs procedures based on the principle of selectivity stemming from risk analysis. The principle of selectivity of customs control governed by national customs legislation also applies to legal relations involving the completion of customs formalities regarding the selection of samples of goods for further customs and/or forensic examinations (expert studies). Thus, as set forth in para. 1 of Pt. 4 of Art. 320 of the CC of Ukraine, *“The forms and scope of customs control determined in accordance with clause 2, Part 1 of this Article shall be mandatory for customs officials. These officials shall not be allowed to make a decision not to conduct customs control in the indicated forms and scope”²⁶.*

In legal relations involving smuggling detection, subjects who are authorized to initiate customs examinations as well as forensic examinations (expert studies) shall be: customs authorities (for example, those who determine customs value of goods or classify goods as cultural property, etc., in conformity with a proce-

25 Митний кодекс України ... URL: <https://zakon.rada.gov.ua/laws/show/4495-17#Text> (date accessed: 06.09.2025).

26 Там само.

dures provided for by the CC of Ukraine); law enforcement agencies that have the right to conduct pre-trial investigations of smuggling; the court considering a criminal case on smuggling (in the manner determined by the rules of the Criminal Procedure Code of Ukraine ²⁷ (hereinafter referred to as the *CPC of Ukraine*); as well as a person who is suspected of committing a criminal offense, or the defence counsel of his/her rights, whom he/she freely chooses as prescribed by Art. 59 of the Constitution of Ukraine ²⁸.

In legal relations related to proceedings concerning breaches of customs regulations, subjects that can initiate the conduct of customs examination, forensic examinations (expert studies) can be: customs authorities, a court, as well as a person who is held administratively liable for breaches of customs regulations, or the defender of his/her rights (lawyer).

In legal relations involving suspension of customs clearance of goods suspected of infringing intellectual property rights (hereinafter referred to as the *IPRs*), the subjects who have the right to initiate a forensic examination (expert study) may be: intellectual property (hereinafter referred to as the *IP*) right holder or his/her representative (in the case and in the manner provided for by the CC of Ukraine); customs authorities; a person suspected of violating *IPRs*; law enforcement agencies conducting criminal proceedings in the case in accordance with the procedure set out in the *CPC of Ukraine*; a court of com-

petent jurisdiction in compliance with the procedure stipulated in the procedural law. Taking into account the specifics of legal relations in the field of intellectual property, peculiarities of the legal regulation of these relations under Ukrainian customs legislation, the status of the *IP* right holder (natural or legal person), as well as depending on the methods of protecting *IP* chosen by the *IPR* holder, etc., forensic examinations may be appointed in conformity with the procedure set out in: the Code of Commercial Procedure of Ukraine, the Civil Procedure Code of Ukraine, the Code of Administrative Proceedings of Ukraine (hereinafter referred to as the *CAPU*); *CPC of Ukraine*, etc.

“Implementation of customs and administrative protection measures of intellectual property rights is very specific, as it depends both directly and indirectly on the results of forensic examinations/expert studies. <...> the opinion of a forensic expert serves as the basis for a customs official to initiate proceedings for breaches of customs regulations under Art. 476 ‘Infringement of Intellectual Property Rights’ [CC of Ukraine. — Ed.]. The IP right holder is responsible for ensuring the conduct of such an expert study” ²⁹. Therefore, in the event of customs clearance suspension under the customs registry: *“The owner of IP rights and/or the declarant may, with the permission of the customs authority, take samples of goods for which a decision has been made to suspend customs clearance, and submit them for forensic examination”* ³⁰. Therefore, within the framework of the

27 Кримінальний процесуальний кодекс 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: 26.08.2025).

28 Конституція України : Закон України від 28.06.1996 р. № 254к/96-ВР (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/254к/96-вр#Text> (date accessed: 26.08.2025).

29 Коросташова І. М. Правове забезпечення С. 184—185. URL: <https://ndekc.lviv.ua/pdf/law.pdf> (date accessed: 06.09.2025).

30 Її ж. Імплементація норм митного законодавства ЄС в процесі євроінтеграції України: досвід ЄС та особливості митних процедур та митних формальностей, спрямованих на захист прав інтелектуальної власності у міжнародній торгівлі / V. Borsa, V. Zaiats,

procedure for facilitating IP protection and for resolving the issue of bringing the violator to administrative responsibility for customs regulation breaches, the IP rights holder (his/her representative) shall independently contact forensic activity subjects and assign them the task to conduct expert studies.

In legal relations that occur in connection with appeals against decisions, actions or inaction of customs or other control authorities, the subjects that possess the right to initiate forensic examinations (expert studies) may be: the court (on its own initiative); parties to a legal dispute (this is determined by a court order). Should such persons commission an expert study, this will be settled by an agreement with either a forensic expert or an expert institution.

N. Avramenko and O. Kulhanik underscore that *“conducting customs examinations is an essential component of the customs management system, since it helps detect and prevent unlawful activities at the stage of customs clearance and is an important tool in supporting both the economic stability of a country and the business entity”*³¹. H. Karpenko believes that *“customs examination falls into a specific category of*

*forensic examination, as it has its own characteristic features: subject, tasks, objects and research methods”*³². It follows from the above that customs examinations are one of the important components of customs affairs, which have a specific subject, purpose, tasks and research objects.

Let us consider legal regulation features of customs examinations as outlined in EU and Ukraine's Customs Legislation.

It is worth pointing out that neither the Union Customs Code³³ (hereinafter referred to as the UCC) nor the CC of Ukraine defines the *customs examination* term. Although this is the title of Ch. 50 of the CC of Ukraine³⁴ that outlines diverse legal relations arising within the customs domain pertaining to expert research (analyses, expert examinations).

We have previously observed that *“primary EU customs legislation only indirectly governs expert activities carried out in connection with customs supervision of goods that are the subject of foreign economic transactions, namely through the regulation of customs formalities for selecting samples of such goods”*³⁵. The analysis of Part 1 of Art. 46 of the UCC³⁶ demonstrates that sample selection is one of the measures of

S. Kapitanets, et al. Development of Ukraine's customs policy in the context of European integration : Scientific monograph. Riga, 2023. P. 122. DOI: 10.30525/978-9934-26-278-4-5 (date accessed: 26.08.2025).

31 Авраменко Н. Л., Кульганік О. М. Знач. твір. С. 4. DOI: 10.32782/2524-0072/2023-57-21 (date accessed: 06.09.2025).

32 Карпенко Г. Л. Організаційно-правовий механізм митних експертиз. *Lex Portus*. 2017. № 6 (8). С. 111. URL: <https://dspace.onua.edu.ua/server/api/core/bitstreams/83085b3d-fedf-4cd6-9f91-87731836f659/content> (date accessed: 26.08.2025).

33 Регламент Європейського Парламенту і Ради (ЄС) № 952/2013 від 9 жовтня 2013 року про встановлення Митного кодексу Союзу (нова редакція) (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/984_009-13#Text (date accessed: 06.09.2025).

34 Митний кодекс України ... URL: <https://zakon.rada.gov.ua/laws/show/4495-17#Text> (date accessed: 06.09.2025).

35 Коросташова І. М. Правові засади експертизи С. 256. URL: <https://ndekc.lviv.ua/pdf/09072025.pdf> (date accessed: 06.09.2025).

36 Регламент Європейського Парламенту URL: https://zakon.rada.gov.ua/laws/show/984_009-13#Text (date accessed: 06.09.2025).

customs control, which also presupposes: review of customs declarations and other documents, inspection of goods, inspection of vehicles and luggage, etc. The legal support for the conduct of a forensic examination of goods under customs control is regulated by the secondary legislation (delegated/subordinate legislation) of the EU, in particular by a number of regulations and directives.

The CC of Ukraine stipulates customs control measures for taking samples (probes) of goods, which “shall be taken by the customs officials as part of customs control and customs clearance” (para. 1, Pt. 1, Art. 356) and for handling of probes (samples) taken (Art. 357) ³⁷. The legislator defines the *handling* term as a certain set of actions with goods. That is, we are considering specific customs formalities aimed at ensuring expert activity and related to conducting expert examinations (expert studies).

Having summarized Pts. 1 and 2 of Art. 357 of the CC of Ukraine ³⁸ and Art. 1 of the Law of Ukraine: *On Judicial Examination* (hereinafter referred to as the *Relevant Law*) ³⁹, it is possible to conclude that **customs examinations** are studies (analyses, examinations) of samples (probes) of goods that are carried out by a group of subjects defined by Ukrainian customs legislation and stem from specific expertise in the field of science, technology, art, crafts, etc. These studies are aimed at supporting customs control and customs clearance.

Sent. 1 of Pt. 2 of Art. 357 of the CC of Ukraine sets out the range of such sub-

jects: “Testing (analysis, expert examination) shall be conducted by the professionals of a specialised expert examination and testing agency of the central executive authority in charge of implementing the state customs policy or its separate structural unit, or other expert institutions (organisations) appointed by the customs authority” ⁴⁰. That is, we are talking about forensic experts from different departmental affiliations, including experts from: 1) the Specialized Customs Laboratory for Examination and Research of the State Customs Service (hereinafter referred to as the *SLER*); 2) separate subdivisions of SLER and 3) other forensic institutions (organizations), which can be appointed by the customs authority to conduct a study (analyses, expert examinations). An analysis of the aforementioned provision reveals that the range of subjects who are authorized or can be appointed to conduct customs examination for the purpose of supporting customs control defined by the legislator is quite extensive. This is because the legislator granted the customs authorities the power to order expert studies for customs purposes from other expert institutions (organisations) without setting out clear requirements or criteria for such institutions (organisations) in the CC of Ukraine, nor any restrictions on their selection.

According to the customs legislation, customs authorities usually appoint precisely the forensic activity subjects operating under the Relevant Law ⁴¹ for the purpose of conducting customs examinations.

37 Митний кодекс України URL: <https://zakon.rada.gov.ua/laws/show/4495-17#Text> (date accessed: 06.09.2025).

38 Там само.

39 Про судову експертизу : Закон України від 25.02.1994 р. № 4038-XII (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 06.09.2025).

40 Митний кодекс України URL: <https://zakon.rada.gov.ua/laws/show/4495-17#Text> (date accessed: 06.09.2025).

41 Про судову експертизу URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 06.09.2025).

However, these may also be other laboratories accredited by the National Accreditation Agency of Ukraine in accordance with the procedure set out in the Law of Ukraine: *On Accreditation of Conformity Assessment Bodies* (hereinafter referred to as the *Law On Accreditation*)⁴².

Due consideration must also be given to the fact that Ukrainian customs legislation contains a rule of a restrictive nature. This rule determines when customs authorities may commission expert institutions (organizations) to conduct a forensic examination in order to support customs control. As prescribed by Pt. 3 of Art. 357 of the CC of Ukraine, *"The testing (analysis, expert examination) may be conducted at other institutions (organisations) only provided that a specialised expert examination and testing agency of the central executive authority in charge of implementing the state customs policy or its separate structural unit is unable to conduct testing (analysis, expert examination), or when the declarant or person authorised by him/her so requests to confirm or refute the results of testing (analysis, expert examination) completed"*⁴³. Given the rationale behind this rule, in any case, the customs authority may choose an expert institution (organization) capable of conducting an expert examination, taking into account the type of expert examination and its object.

Therefore, a fairly wide range of subjects can conduct customs examinations. These subjects have varying legal capac-

ities and are governed by different legal regulations. Specifically, in cases stipulated by law, these can be forensic experts along with other certified experts from accredited calibration laboratories. An essential feature that distinguishes customs examinations from other types of expert examinations is their purpose defined in sent. 2 of Pt. 2 of Art. 357 of the CC of Ukraine: *"ensuring that customs control and customs clearance are completed"*⁴⁴. Subject area of such expert opinions aligns with this goal. The aforementioned rule also stipulates that, in certain cases, studies (analyses, expert examinations) are also conducted at the request of an FEA subject or its representative in other institutions (organizations). Furthermore, in the event of a legal dispute between the FEA subject and a customs authority (a public authority) regarding the appeal of decisions, actions or inaction of the customs authority, and in conformity with national legislation requirements, a court, at the request of a party to the case or at its own initiative, may order an expert examination in a case pursuant to the set of requirements outlined in Pt 1 of Art. 102 of the Code of Administrative Proceedings of Ukraine⁴⁵ (hereinafter referred to as the *CAPU*). Accordingly, in administrative proceedings, expert examination is conducted pursuant to a court order in the manner prescribed by Art. 102 of the CAPU, or at the request of a party to the case in accordance with Art. 104 of the CAPU⁴⁶.

42 Про акредитацію органів з оцінки відповідності : Закон України від 17.05.2001 р. № 2407-III (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2407-14#Text> (date accessed: 06.09.2025).

43 Митний кодекс України URL: <https://zakon.rada.gov.ua/laws/show/4495-17#Text> (date accessed: 06.09.2025).

44 Там само.

45 Кодекс адміністративного судочинства України від 06.07.2005 р. № 2747-IV (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2747-15/conv#n10237> (date accessed: 15.09.2025).

46 Там само.

As per Art. 1 of the Relevant Law, “*Forensic examination is research based on specific expertise in the field of science, technology, art, craft, etc., on objects, phenomena and processes for the purpose of provision of an opinion on issues that are or will be the subject of trial*”⁴⁷. As set forth in Art. 108 of the CAPU, “*An expert opinion for a court shall not have the preliminary determined force and shall be evaluated by the court together with other evidence under the rules established by Art. 90 of this Code. The court’s rejection of the expert opinion must be motivated in the judgment*”⁴⁸. Therefore, the expert opinion is one of the pieces of evidence in a legal case. At the same time, if the expert opinion is rejected, the administrative court must state the reasons for rejection in the court judgment.

It should be noted that, according to national legislation rules, forensic examination has its own subject area, as it is performed on issues that are or will be the subject of litigation (Art. 1 of the *Relevant Law*)⁴⁹ and, accordingly, is used to provide a robust evidentiary basis during a trial concerning a disputed legal relationship or regarding a criminal proceeding. However, under the rationale of Pt. 2 of Art. 357 of the CC of Ukraine⁵⁰, forensic activity subjects may also be subjects of an expert examination performed for customs purposes (customs examinations). Stemming from the foregoing, it is

evident that only relying on the purpose of forensic examinations can we decide if it belongs to the category of customs examinations. Forensic analyses never depend on the legal status of the subject of an expert examination.

It should also be pointed out that Art. 3 of the Relevant Law defines the principles (standards) of forensic expert activities, which encompass lawfulness, independence, objectivity and completeness of research⁵¹. At the same time, Art. 8 of the CC of Ukraine⁵² discusses principles of customs operations, which, on the one hand, are universal for customs authorities, their officials and employees, and therefore, apply to the experts from the SLER and its separate divisions, and on the other hand, do not take into account the specifics of expert activities.

As prescribed by Art. 4 of the Relevant Law, an essential component of the forensic expert status is independence guarantees for forensic experts and accuracy of their opinions, which are *ensured* through:

- *procedure for forensic expert appointment defined by law;*
- *prohibition from interfering with the conduct of a forensic examination under the threat of legal liability;*
- *existence of forensic institutions that are independent of law enforcement agencies, pre-trial investigation authorities and courts;*

47 Про судову експертизу URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 06.09.2025).

48 Кодекс адміністративного судочинства URL: <https://zakon.rada.gov.ua/laws/show/2747-15/conv#n10237> (date accessed: 15.09.2025).

49 Про судову експертизу URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 06.09.2025)

50 Митний кодекс України URL: <https://zakon.rada.gov.ua/laws/show/4495-17#Text> (date accessed: 06.09.2025).

51 Про судову експертизу URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 26.03.2025).

52 Митний кодекс України URL: <https://zakon.rada.gov.ua/laws/show/4495-17#Text> (date accessed: 06.09.2025).

- streamlining expert processes, including supporting forensic experts' material and social security;
- holding a forensic expert criminally liable for a knowingly false opinion and for refusal to perform duties without good reason;
- possibility of appointing a forensic re-examination;
- presence of participants in the proceedings in cases provided for by law during a forensic examination⁵³.

However, Ukrainian customs legislation fails to stipulate similar independence guarantees for departmental experts (customs experts), and there is no requirement for the accuracy of their findings.

Currently, an important aspect of expert activities in Ukraine is their conformity with international standards. In particular, O. Kliuiev notes: *"It is a vital necessity to implement international standards and experience in the domestic forensic science to ensure high-quality expert support for justice in Ukraine. It should be stressed that a unified approach to resolving problems in the forensic field will positively impact the transparency of justice in the country"*⁵⁴. O. Matvieievskiy and B. Babin also pinpoint: *"Forensic expert activities of various states must comply with national principles, international legal and professional standards. An opinion drawn up by experts of one state must possess evidentiary value for the courts of another state"*⁵⁵. From the perspective of E. Simakova-Yefremian, the main drivers of reforming forensic expert activity are: *"Fos-*

*tering international cooperation in the field of forensic science to strengthen the position of Ukrainian forensics in the world, augmenting the experts' body of knowledge, developing new technological complexes, including through the fastest possible tailoring of novel foreign methodologies for practical application, and introducing modern Ukrainian methodologies into the practical activities of expert laboratories worldwide"*⁵⁶. The extent to which this area of forensic activity is developed in the context of Ukraine's integration into the EU determines the step-by-step realization of the ambitious goal stated above. Also, participation in professional networks of European forensic institutions plays a pivotal role.

Thus, O. Kliuiev highlights: *"There has been active interaction and exchange of experience within the European Network of Forensic Science Institutes (ENFSI) for a long time. ENFSI is one of the most authoritative organisations of forensic science institutes in the world: all leading European forensic institutions are affiliated with this network"*⁵⁷.

The European Network of Forensic Science Institutes (ENFSI) was established in 1995 to promote dialogue between European forensic science experts and enhance forensic medicine activities. It collaborates closely with European Police Forces. It not only addresses quality, research and education, but its working groups also delve into various forensic medicine disciplines. ENFSI therefore has been recognized as the monopoly organization in the field of forensic science by the European

53 Про судову експертизу ... URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 26.03.2025).

54 Ключев О. Зазнач. твір. С. 5. DOI: 10.32353/khrife.3.2022.01 (date accessed: 26.09.2025).

55 Матвеевський О. В., Бабін Б. В. Зазнач. твір. С. 73. URL: http://pjv.nuoua.od.ua/v1-4_2018/16.pdf (date accessed: 26.09.2025).

56 Сімакова-Єфремян Е. Б. Зазнач. твір. С. 118. DOI: 10.32353/khrife.1.2019.09 (date accessed: 26.09.2025).

57 Ключев О. Зазнач. твір. С. 6. DOI: 10.32353/khrife.3.2022.01 (date accessed: 26.09.2025).

Commission. ENFSI is a non-profit organization⁵⁸. One of its principal requirements is accreditation of members in accordance with the provisions of the International Standard ISO/IEC 17025⁵⁹.

Highlighting international cooperation prospects in the field of forensic science, T. Kachalova notes the following: “Overall, membership <...> of domestic forensic subjects [in ENFSI. — Ed.] is of paramount importance, as it enables:

- recognition of opinions of Ukrainian forensic experts as valid by international and/or foreign courts;
- realization of proper supervision over adherence to quality standards in expert studies pursuant to international requirements (ДСТУ ISO/IEC 17025:2006);
- <...>
- use of global and European expert methods in the course of forensic examinations;
- compliance with international standards of forensic activities”⁶⁰.

When considering forensic institution accreditation, V. Khosha and O. Manulenko underscore the following: “Accreditation aims to establish a consistent technical policy in the field of conformity assessment, to create conditions for the mutual recognition of accredited bodies’ results internationally,

etc. Certification bodies, testing laboratories, metrological services and other participants in metrological technical regulation systems undergo the accreditation procedure. The accreditation system serves as the basis for the recognition of conformity assessment results both in Ukraine and abroad”⁶¹. P. Kipouras and O. Ovsianynkova, developing the topic of forensic expert activity in conditions of globalization, note: “The main task of international accreditation in the field of forensic science is to recognize domestic forensic experts’ opinions at the international level by verifying their competence, therefore accrediting forensic expert laboratories based on internationally agreed principles and procedures is the most important step towards... mutual trust”⁶².

As set forth in para. 2 of Art. 1 of Ukraine’s Law on Accreditation, “Accreditation as the formal process where the National Accreditation Body of Ukraine confirms a conformity assessment body’s competence to perform specific tasks, ensuring they meet relevant international and European standards, or the requirements of such standards, and, where necessary, additional requirements for accreditation in relevant areas for specific conformity assessment activities”⁶³.

Therefore, corresponding international cooperation and accreditation under ДСТУ EN ISO/IEC 17025:2019 opens up

58 § 3 Public Benefit / European Networks of Forensic Science Institutes Constitution / ENFSI : web. URL: https://enfsi.eu/wp-content/uploads/2017/06/181107_ENFSI-Constitution_181107-approved.pdf (date accessed: 09.09.2025).

59 Лопата О. А. Європейська мережа судово-експертних установ (ENFSI): перспективний напрям взаємодії. *Актуальні проблеми кримінального права, процесу, криміналістики та оперативно-розшукової діяльності* : тези Всеукр. наук.-практ. конф. (Хмельницький, 03.03.2017). Хмельницький, 2017. С. 837–840. URI: <https://dspace.nadpsu.edu.ua/handle/123456789/1110> (date accessed: 09.09.2025).

60 Качалова Т. Є. Зазнач. твір. DOI: 10.32839/2304-5809/2020-11-87-65 (date accessed: 06.09.2025).

61 Хоша В. В., Мануленко О. В. Зазнач. твір. С. 247.

62 Кіпоурас П., Овсянникова О. Зазнач. твір. С. 178. DOI: 10.32353/khrife.3.2021.12 (date accessed: 26.09.2025).

63 Про акредитацію органів URL: <https://zakon.rada.gov.ua/laws/show/2407-14#Text> (date accessed: 28.09.2025).

great prospects for national forensic institutions. First and foremost, this concerns enhancing the quality of forensic activities and the recognition of opinions of Ukrainian forensic experts by courts and law enforcement agencies in other countries.

Implementing international standards in the field of customs examination has become one of the priorities of the Ukrainian customs authorities over the last decade. Thus, O. Punda and D. Arziantseva, researching the development of the customs examination system in Ukraine in the context of compliance with European Union requirements, emphasize: “Current cooperation in harmonising national legislation with European Union requirements in the field of forensic science is promoting the formation of a unified understanding of the content of expert competencies, the development of training and certification programmes for experts, as well as mutual accreditation of forensic service providers. <...> This helps utilize each other's methodological developments in expert activities as well as obtain expert opinions that are substantiated with the necessary level of accuracy in terms of content, and that are comparable in form”⁶⁴.

In the EU, one of the essential sources of legal regulation of Member States' customs administrations at the supranational level (in particular, in the field of customs examination) is Regulation (EU) No. 1294/2013 of the European Parliament and of the Council of 11 December 2013 establishing an action programme for customs in the European Union for the period 2014–2020 (*Customs 2020*) and re-

pealing Decision No. 624/2007⁶⁵ (hereinafter referred to as *the Regulation*): the EU action programme has been introduced to facilitate the Customs Union operation. It encompasses a general objective, specific tasks and methodologies for execution thereof, specifically:

“1. *The general objective of the Programme shall be to support the functioning and modernisation of the customs union in order to strengthen the internal market by means of cooperation between participating countries, their customs authorities and their officials. The general objective shall be pursued through the achievement of specific objectives.*

2. *The specific objectives shall be to support customs authorities in protecting the financial and economic interests of the Union and of the Member States, including the fight against fraud and the protection of intellectual property rights, to increase safety and security, to protect citizens and the environment, to improve the administrative capacity of the customs authorities and to strengthen the competitiveness of European businesses”⁶⁶.*

This Programme has become the main regulatory source for organisational and expert activities of the Customs Laboratories European Network (hereinafter referred to as *CLEN*), which has been formally recognized as the *World Customs Organization (WCO) Regional Customs Laboratory (RCL)* since 2020, and coordinates the activities of EU Customs Laboratories. CLEN activities are carried out on an ad hoc and voluntary basis by customs laboratories themselves. Third countries'

64 Пунда О., Арзянцева Д. Зазнач. твір. С. 106, 114. DOI: 10.37491/UNZ.72.11 (date accessed: 06.09.2025).

65 Regulation (EU) No 1294/2013 of the European Parliament and of the Council of 11 December 2013 establishing an action programme for customs in the European Union for the period 2014–2020 (*Customs 2020*) and repealing Decision No 624/2007/EC / EUR-Lex : web. URL: <http://bit.ly/2IKEFYf> (date accessed: 28.09.2025).

66 Ibid.

customs laboratories may also participate under certain conditions⁶⁷. *“The principal accomplishment of CLEN is the development of a Common Quality Policy grounded in the international standard ISO 17025, alongside the standardization of methods for product analysis and sampling for customs purposes. <...> In addition, representatives of customs laboratories contribute to the formulation of policies regarding the consistent interpretation of European Union standards pertaining to product requirements”*⁶⁸.

SLER holds the status of a specialized body for forensic examination and research in the system of territorial bodies of the State Customs Service of Ukraine. Its scope of activity is the entire territory of Ukraine, and its testing subdivisions are located in Kyiv, Dnipro, Lviv, Odesa, Sievierodonetsk, Uzhhorod and Kharkiv. Obtaining accreditation *“will provide the Specialized Laboratory for Forensic Examination and Research of the State Customs Service with the possibility of closer cooperation with forensic science institutions of the World Customs Organization, which in turn will allow for substantial improvement in the expert support to the customs of the State Customs Service”*⁶⁹. Since July 2021, SLER

and its separate testing subdivisions have been accredited by the National Accreditation Agency of Ukraine in accordance with ДСТУ EN ISO/IEC 17025:2019⁷⁰ (hereinafter referred to as the *Standard*), which has been in force in Ukraine since 1st January 2021, pursuant to the procedure established by the Law on Accreditation⁷¹. *“The national standard corresponds to EN ISO/IEC 17025:2017; ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories”*⁷², therefore SLER accreditation in conformity with the Standard constitutes a necessary condition for integration into international expert organizations, specifically into WMO and CLEN.

Following the Standard, SLER accreditation scope extends to testing of food and feed products, alcohol, beverages and components for their manufacture, tobacco and tobacco products, biologically active compounds, medicinal products, veterinary medicinal products, plant protection products, inorganic substances, organic and inorganic chemical products, ceramic products, metals and articles thereof, mineral fuels, oil and products thereof, paints and varnishes, perfumes

67 European Customs Laboratories / European Commission : web. URL: https://taxation-customs.ec.europa.eu/customs/customs-laboratories_en (date accessed: 10.11.2025).

68 Пунда О., Арзянцева Д. Значч. твір. С. 111. DOI: [10.37491/UNZ.72.11](https://doi.org/10.37491/UNZ.72.11) (date accessed: 06.09.2025).

69 Митна лабораторія отримала атестат про акредитацію у Національному агентстві акредитації України / Державна митна служба України : офіц. сайт. 07.07.2021. URL: <https://customs.gov.ua/news/zagalne-20/post/mitna-laboratoriia-otrimala-atestat-pro-akreditatsiiu-u-natsionalnomu-agentstvi-akreditatsiyi-ukrayini-573> (date accessed: 30.09.2025).

70 ДСТУ EN ISO/IEC 17025:2019 Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій (EN ISO/IEC 17025:2017, IDT; ISO/IEC 17025:2017, IDT) : затв. наказ. ДП «УкрНДНЦ» від 23.12.2019 р. № 483 [Чинний від 01.01.2021]. Київ, 2020. 24 с. URL: https://online.budstandart.com/ua/catalog/doc-page.html?id_doc=88724 (date accessed: 30.08.2025).

71 Про акредитацію органів URL: <https://zakon.rada.gov.ua/laws/show/2407-14#Text> (date accessed: 28.09.2025).

72 ДСТУ EN ISO/IEC 17025:2019. URL: https://online.budstandart.com/ua/catalog/doc-page.html?id_doc=88724 (date accessed: 30.08.2025).

and cosmetics, paper and textile products, polymer materials, forensic and engineering and technical examination, etc.⁷³

Therefore, SLER and its separate testing subdivisions are primarily responsible for conducting customs examinations. They are accredited in accordance with the Standard and are integrated into specialised international expert organizations belonging to the International Organization for Standardization. The above demonstrates that, despite significant differences in the statuses of forensic experts and customs laboratory experts—attributable to their departmental affiliations, distinct legal frameworks governing their activities, and membership in various international expert networks—both forensic expert activities and customs examinations performed by SLER and its separate subdivisions, following the entry into force of the Standard in Ukraine, are conducted in accordance with uniform international standards.

That is why customs and forensic examinations of goods moved across Ukraine's customs border are one of the cornerstones that enable customs authorities and bodies authorized to perform official controls to effectively deliver their official mandate, and FEA subjects / IP rights holders to exercise their rights in the field of foreign economic activities, including the right to conduct customs and forensic examinations (expert studies) of goods, in particular, for the purpose of protecting their rights.

The multifaceted nature of customs-related legal relations that occur as a result of foreign economic operations and necessitate customs and forensic ex-

aminations, as well as specific features of the legal regulation of customs formalities concerning the selection of samples and specimens of goods, operations conducted with goods for the purpose of supporting expert activities, stimulates further academic discourse on this topic.

Conclusions

According to national legislation, legal regulation principles of relations associated with carrying out customs and forensic examinations (expert studies)/ customs formalities and supporting expert activities in the field of customs affairs are stipulated in the CC of Ukraine. The primary sources governing legal regulation of customs examinations within the European Union comprise the UCC, regulations enacted by the European Parliament, and secondary legislative instruments of the EU. In cases prescribed by the national legislation, the source of legal regulation governing legal relations in the context of forensic examinations (expert studies) is also the Relevant Law. The main international standard that defines general requirements for the competence of testing and calibration laboratories performing customs and forensic examinations is the Standard adopted in both the EU and Ukraine. Furthermore, when an expert opinion is provided on issues that are or will be the subject of litigation, sources governing legal regulation of relations occurring in connection with the conduct of foreign trade operations are also national procedural laws (civil, commercial, administrative, criminal, etc.). The type of laws depends on the specifics

73 Перелік випробувальних лабораторій, акредитованих на відповідність вимогам ДСТУ EN ISO/IEC 17025:2019 (EN ISO/IEC 17025:2017) / Національне агентство з акредитації України : офіц. сайт. 15.08.2023. 791 с. URL: https://naau.org.ua/userfiles/files/17025-VL_15_08_2023.pdf (date accessed: 30.08.2025).

of legal relations in the field of customs affairs and other factors.

Customs examinations should be regarded as research (analyses, expert examinations) of samples of goods based on specific expertise in the field of science, technology, art, crafts, etc., in order to ensure customs control and customs clearance, which are conducted by a range of subjects defined by Ukrainian customs legislation.

Legal regulations governing customs examinations in the EU and Ukraine's Customs Legislation stem from: a) the specifics of the field and particularities of legal relations, which require expert examinations to be conducted; b) the purpose of their conduct; c) the scope of expert examinations; d) the range of subjects authorized to conduct them.

Types of commodity examinations carried out due to foreign trade operations depend on: a) the type of legal relations in the field of FEAs; b) the subject – the initiator of expert examination (expert study); c) features of expert examination (expert study) objects.

The criterion for differentiating expert examinations related to foreign trade operations into customs and forensic ones is the purpose for which these expert examinations are commissioned (conducted). The goal of conducting customs examinations is to facilitate customs control and clearance, specifically to verify or invalidate the findings of a prior expert examination conducted at the request of the declarant or an authorized representative). At the same time, the purpose of conducting forensic examinations (expert studies) involving foreign trade operations is to provide a conclusion on issues that are or will be the subject of litigation under a court decision or resolution of a pre-trial investigation authority, or under a contract with an expert or an expert

institution (if an expert examination is carried out at the request of the declarant or an authorized representative).

Subjects authorized to conduct customs examinations include: 1) SLER; 2) separate testing subdivisions of SLER; 3) other expert institutions (organizations) appointed by the customs authority. Specifically, such institutions are usually forensic expert institutions operating pursuant to the Relevant Law, as well as other expert institutions accredited in the manner prescribed by law.

The primary subjects conducting customs examinations (expert studies) are departmental bodies that do not hold the legal status of forensic experts. SLER and its separate testing subdivisions are accredited by the National Accreditation Agency of Ukraine in accordance with the procedure prescribed by the Law on Accreditation and international standards. Such subjects provide expert support to customs authorities: 1) within the scope of customs control and clearance procedures; 2) when making decisions regarding binding origin information; 3) in cases of customs regulation breaches.

All forensic science institutions are authorized to conduct expert examinations in cases where such expert examinations are ordered by customs authorities for customs purposes, provided that SLER and its separate subdivisions are unable to conduct such expert examinations (analyses, studies).

Forensic examinations (expert examinations) of goods moved across the customs border within the scope of foreign trade operations (excluding cases where they are ordered by customs authorities for customs purposes) are conducted by forensic expert institutions in the manner and on the grounds determined by the Relevant Law.

Unlike experts from the SLER and its separate testing subdivisions whose status depends on their affiliation with the State Customs Service of Ukraine, forensic experts have a special status defined by the Relevant Law that guarantees their independence and the accuracy of their opinions. Introduction of DCTY EN ISO/IEC 17025:2019 in Ukraine in 2021 helped align forensic and customs examinations with uniform international standards and enabled the State Customs Service and Ministry of Justice to join specialized European expert organizations. This laid the groundwork for recognizing Ukraine's forensic and customs experts' conclusions in other countries, especially in EU member states.

**Правове забезпечення
митних і судових експертиз
(експертних досліджень)
у сфері зовнішньоекономічної
діяльності
та митні формальності
за митним законодавством
Європейського Союзу й України**

Ірина Коросташова

Мета дослідження — проаналізувати правове забезпечення митних і судових експертиз (експертних досліджень) за законодавством ЄС та України і правовідносини у сфері зовнішньоекономічної діяльності та митної справи, у зв'язку з якими виникає потреба у проведенні уповноваженими суб'єктами експертної діяльності митних і судових експертиз товарів та здійснення митних формальностей для забезпечення експертної діяльності. Для досягнення поставленої мети застосовано загальнонаукові та спеціально-правові методи. Проведено аналіз засад правового регулювання митних і судових експертиз (експертних досліджень) та стандартів їх здійснення за законодавствами

ЄС і України. Досліджено правовідносини, що виникають у зв'язку зі здійсненням зовнішньоекономічних операцій, та розроблено їх класифікацію за низкою критеріїв. Визначено поняття «митні експертизи» і коло суб'єктів, уповноважених їх здійснювати, а також межі, у яких діють суб'єкти експертної діяльності за законодавством України та ЄС. З'ясовано, що згідно із законодавством України митні експертизи належать до митних операцій з товарами, здійснюваних у митних цілях і в межах митних процедур. Розглянуто правовідносини у сфері зовнішньоекономічної діяльності й митної справи, у зв'язку з виникненням яких експертизи (експертні дослідження) проводять судові експерти. Проведено порівняльний аналіз статусу експертів відомчої належності Держмитслужби й Мін'юсту України. Розглянуто правові гарантії незалежності та правильності висновків судових експертів. Увагу акцентовано на міжнародних стандартах, за якими судові та митні експерти здійснюють експертну діяльність, що відкриває шлях інтеграції до спеціалізованих європейських і міжнародних експертних мереж.

Ключові слова: митні експертизи (дослідження); судова експертиза (експертне дослідження); проби (зразки) товарів; митний контроль; митні процедури; митні формальності; митне законодавство; зовнішньоекономічна діяльність; зовнішньоекономічні операції; євроінтеграція.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

The author has contributed solely to intellectual discussion underlying this document, case law research, writing and editing, and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

The author declares no conflict of interest.

References

- Avramenko, N. L., Kulhanik, O. M. (2023). Rol mytnykh ekspertyz u zovnishnoekonomichnii diialnosti sub'ektiv pidpriemnytstva [The role of customs expertise in the foreign economic activity of business entities]. *Ekonomika ta suspilstvo*. Vyp. 57. DOI: [10.32782/2524-0072/2023-57-21](https://doi.org/10.32782/2524-0072/2023-57-21) [in Ukrainian].
- Brachuk, A. O. (2015). Mytni ekspertyzy: poniattia, kharakterystyka ta vydy [Customs Examinations: Concepts, Characterizations and Types]. *Mytna sprava*. № 3 (99) [in Ukrainian].
- Brachuk, A. O. (2017). Osoblyvosti zabezpechennia mytnoi bezpeky ta mytnykh interesiv v umovakh sproshchennia mytnykh protsedur [Features of Ensuring the Customs Security and Customs Interests in Terms of Simplification of Customs Procedures]. *Lex Portus*. № 1 (3). URL: <https://lexportus.net.ua/vipusk-1-2017/brachuk.pdf> [in Ukrainian].
- Gordhan, P. (2007). Customs in the 21st century. *World Customs Journal*. Vol. 1. No. 1. URL: https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/key-issues/customs-in-the-21st-century/customs_in_the_21st_century.pdf.
- Kachalova, T. Ye. (2020). Pravovi osnovy mizhnarodnoho spivrobitnytstva MVS ta ENFSI [Legal basis of international cooperation between the MIA and ENFSI]. *Molodyi vchenyi. Yurydychni nauky*. № 11 (87). DOI: [10.32839/2304-5809/2020-11-87-65](https://doi.org/10.32839/2304-5809/2020-11-87-65) [in Ukrainian].
- Karpenko, H. L. (2007). *Ekspertyza v mytnii spravi: orhanizatsiino-pravovyi aspekt* [Expertise in Customs Practice: Organizational and Legal Aspect] : avtoref. dys. ... kand. yuryd. nauk. Odesa. URL: <https://dspace.onua.edu.ua/server/api/core/bitstreams/686a82cc-d8fc-4fe0-87b9-4290c20824f3/content> [in Ukrainian].
- Karpenko, H. L. (2017). Orhanizatsiino-pravovyi mekhanizm mytnykh ekspertyz [The Organizational and Legal Mechanism of Customs Expert Researches]. *Lex Portus*. № 6 (8). URL: <https://dspace.onua.edu.ua/server/api/core/bitstreams/83085b3d-fedf-4cd6-9f91-87731836f659/content> [in Ukrainian].
- Khosha, V. V., Manulenko, O. V. (2009). Perspektyvy rozvytku sudovo-ekspertnykh ustanov Ministerstva yustytсии Ukrainy v aspekti vstupu do yevropeiskoi systemy ENFSI [Development Prospects for Forensic Science Institutions of the Ministry of Justice of Ukraine in the Context of Joining the ENFSI Network]. *Teoriia ta praktyka sudovoi ekspertyzy i kryminalistyky*. Vyp. 9 [in Ukrainian].
- Kipouras, P., Ovsiannikova, I. (2021). Forensic science activity in globalization context. *Theory and Practice of Forensic Science and Criminalistics*. Is. 3 (25). DOI: [10.32353/khrife.3.2021.12](https://doi.org/10.32353/khrife.3.2021.12).
- Kliuiev, O. (2022). International Scientific Standards in Forensic Science Field of Ukraine. *Theory and Practice of Forensic Science and Criminalistics*. Is. 3 (28). DOI: [10.32353/khrife.3.2022.01](https://doi.org/10.32353/khrife.3.2022.01).
- Korostashova, I. M. (2022). Osoblyvosti sudovoi ekspertyzy (ekspertnykh doslidzhen) u sferi intelektualnoi vlasnosti, pov'iazanykh z umovamy nadannia pravovoi okhorony promyslovym zrazkam, vyznachennia kryteriiv yikh okhoronozdatnosti ta obsiahu vykorystannia [Features of the forensic examination (of expert research) in the field of intellectual property are related to the terms of provision of legal protection of industrial designs, defining the criteria for their protection

ability and volume of use]. *Kryminalistyka i sudova ekspertyza*. Vyp. 67. DOI: 10.33994/kndise.2022.67.65 [in Ukrainian].

Korostashova, I. M. (2023). Implementatsiia norm mytnoho zakonodavstva YeS v protsesi yevrointehratsii Ukrainy: dosvid YeS ta osoblyvosti mytnykh protsedur ta mytnykh formalnostei, spriamovanykh na zakhyst prav intelektualnoi vlasnosti u mizhnarodnii torhivli [Implementation of norms of EU customs legislation in the European integration process of Ukraine: EU experience and features customs procedures and customs formalities for the protection of intellectual property rights in international trade] / V. Borsa, V. Zaiats, S. Kapitanets, et al. *Development of Ukraine's customs policy in the context of european integration* : Scientific monograph. Riga. DOI: 10.30525/978-9934-26-278-4-5 [in Ukrainian].

Korostashova, I. M. (2024). Pravove zabezpechennia u mytnomu zakonodavstvi Ukrainy provedennia sudovykh ekspertyz / ekspertnykh doslidzhen u sferi zovnishnoekonomichnoi diialnosti: pytannia zastosuvannia mytnykh formalnostei ta protsedur iz zakhystu prav intelektualnoi vlasnosti y prytyahennia do administrativnoi vidpovidalnosti za porushennia mytnykh pravyl [Legal Support for Ukraine's Customs Legislation: On Forensic Examinations and Expert Studies in Foreign Economic Activities: Issues in the Application of Customs Formalities, Intellectual Property Rights Enforcement, and Administrative Liability for Customs Breaches]. *Sudovo-ekspertna diialnist: zberezhennia naukovooho ta kadrovoho potentsialu v umovakh voiennoho stanu* : mat-ly IV Vseukr. forumu sud. ekspert. (Lviv, 07.06.2024). Odesa. URL: <https://ndekc.lviv.ua/pdf/law.pdf> [in Ukrainian].

Korostashova, I. M. (2025). Pravovi zasady ekspertyzы tovariv u sferi zovnishnoekonomichnoi diialnosti ta mytnoi spravy za mytnym zakonodavstvom Yevropeisk-

kohe Soiuzu [Legal Framework Governing Commodity Examination in Foreign Economic Activities and Customs Affairs under European Union Customs Legislation]. *Sudova ekspertyza: perspektyvy rozvytku ta okremi vektory zmin* : mat-ly V Vseukr. forumu sud. ekspert. (Lviv, 06.06.2025). Odesa. URL: <https://ndekc.lviv.ua/pdf/09072025.pdf> [in Ukrainian].

Lopata, O. A. (2017). *Mizhnarodne spivrobitnytstvo ekspertnoi sluzhby MVS Ukrainy* [International cooperation of the Expert Service of the Ministry of Internal Affairs of Ukraine] : avtoref. dys. ... kand. yuryd. nauk. Kyiv. URL: <https://elar.navs.edu.ua/server/api/core/bitstreams/200b763a-9317-4e30-b4c8-56bae4fbe280/content> [in Ukrainian].

Lopata, O. A. (2017). Yevropeiska merezha sudovo-ekspertnykh ustanov (ENFSI): perspektyvnyi napriam vzaiemodii [The European Network of Forensic Expert Institutions (ENFSI): A Promising Avenue for Cooperation]. *Aktualni problemy kryminalnoho prava, protsesu, kryminalistyky ta operativno-rozshukovoi diialnosti* : tezy Vseukr. nauk.-prakt. konf. (Khmelnyskyi, 03.03.2017). Khmelnytskyi. URI: <https://dspace.nadpsu.edu.ua/handle/123456789/1110> [in Ukrainian].

Matvieievskiy, O. V., Babin, B. V. (2018). Mizhnarodno-pravovi standarty sudovoi ekspertyzы ta yikh natsionalna realizatsiia [International legal standards for the forensic examination and their national realisation]. *Prykarpatskyi yurydychnyi visnyk*. Vyp. 1 (22). T. 4. URL: http://pjv.nuoua.od.ua/v1-4_2018/16.pdf [in Ukrainian].

Mytna laboratoriia otrymala atestat pro akredytatsiiu u Natsionalnomu ahentstvi akredytatsii Ukrainy [The Customs Laboratory Successfully Secured Official Accreditation from the National Accreditation Agency of Ukraine] (2021) / Derzhavna mytna sluzhba Ukrainy : ofits. sait. 07.07.2021. URL: <https://customs.gov.ua/news/zagalne-20/post/mitna-lab->

oratoriia-otrimala-atestat-pro-akreditatsiiu-u-natsionalnomu-agentstvi-akreditatsiyi-ukrayini-573 [in Ukrainian].

- Perelik vyprobuvalnykh laboratorii, akredytovanykh na vidpovidnist vymoham DSTU EN ISO/IEC 17025:2019 (EN ISO/IEC 17025:2017)* [List of testing laboratories that meet the requirements of ДСТУ EN ISO/IEC 17025:2019 (EN ISO/IEC 17025:2017)] (2023) / Natsionalne ahentstvo z akredytatsii Ukrainy : ofits. sait. 15.08.2023. URL: https://naau.org.ua/userfiles/files/17025-VL_15_08_2023.pdf [in Ukrainian].
- Punda, O. O., Kostyrin, P. I. (2019). Udoskonalennia normatyvno-pravovoho zabezpechennia provedennia podatkovykh ta mytnykh ekspertyz v Ukraini [Improving of legislative provisions on implementing of tax and customs expertise in Ukraine]. *Yurydychnyi naukovyi elektronnyi zhurnal*. № 5. DOI: [10.32782/2524-0374/2019-5/49](https://doi.org/10.32782/2524-0374/2019-5/49) [in Ukrainian].
- Punda, O., Arziantseva, D. (2019). Development of the System of Customs Examinations in Ukraine in the Context of Compliance with the Requirements of the European Union. *University Scientific Notes*. T. 18. No. 4 (72). DOI: [10.37491/UNZ.72.11](https://doi.org/10.37491/UNZ.72.11).
- Simakova-Yefremian, E. (2019). About the Need for Improvement of Legislation Regarding Implementation of Forensic Science Activities in Ukraine. *Theory and Practice of Forensic Science and Criminalistics*. Is. 1 (19). DOI: [10.32353/khrife.1.2019.09](https://doi.org/10.32353/khrife.1.2019.09).
- Yatsenko, I. I. (2020). Zavdannia ta pryntsyipy mizhnarodnoho spivrobitnytstva v haluzi sudovoi ekspertyzy (ohliadova stattia) [Tasks and Principles of International Cooperation in the Field of Forensic Examination (Review Article)]. *Visnyk Kharkivskoho natsionalnoho universytetu vnutrishnikh sprav*. № 3 (90). DOI: [10.32631/v.2020.3.20](https://doi.org/10.32631/v.2020.3.20) [in Ukrainian].
- Korostashova, I. (2025). Legal Support for Customs and Forensic Examinations (Expert Studies) in Foreign Economic Activities and Customs Formalities under EU and Ukraine's Customs Legislation. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 169–190. DOI: [10.32353/khrife.4.2025.10](https://doi.org/10.32353/khrife.4.2025.10).

Involvement of Specialists in Smuggling Investigation

Yurii Kovalov ^{*a}, Andrii Fedotenko ^{**b}

* Candidate of Legal Sciences, Doctoral student at NSC «Hon. Prof. M. S. Bokarius FSI», Kharkiv, Ukraine, ORCID: <https://orcid.org/0009-0003-9159-4499>, e-mail: koval.98819@gmail.com

** Candidate of Legal Sciences, Educational and Research Institute of Law and Psychology of National Academy of Internal Affairs, Kyiv, Ukraine, ORCID: <https://orcid.org/0009-0008-7804-0375>, e-mail: android15181@gmail.com

^a Writing – original draft, project administration, methodology.

^b Writing – original draft, resources, formal analysis.

DOI: [10.32353/khrife.4.2025.11](https://doi.org/10.32353/khrife.4.2025.11)

UDC 343.985(477)

Received: 15.11.2025 / Reviewed: 02.12.2025 / Accepted for print: 25.12.2025 /

Available online: 31.12.2025



The Article Purpose is to single out typical forms of specialists' participation in criminal proceedings involving the investigation of smuggling and to clarify their role in ensuring the efficiency of proof depending on the subject of a crime (timber materials, cultural valuables, weapons and ammunition). General scientific (analysis and synthesis, induction and deduction) and special (dialectical, systemic-structural, comparative-legal and generalization) methods were employed to fulfil this goal. The authors determine that a specialist in criminal proceedings is the central figure of technical-forensic, analytical and organizational-tactical support, and his/her participation extends beyond mere advisory support, covering active assistance during investigative (search) and covert investigative (search) actions. Having summarized case law, it was found that in cases of timber smuggling, specialists in forestry play a decisive role; in proceedings concerning the smuggling of cultural valuables, art historians are involved; and in cases of illegal transfer of weapons, representatives of customs authorities, weapons experts, and ballisticians are actively engaged. It was demonstrated that only with the help of their conclusions and actions could proper identification of objects be ensured, including the detection of concealment methods,

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

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

formulation of investigative versions, and the initiation of subsequent expert research, thereby contributing to the efficient conduct of the investigation. Prospects for improving the involvement of specialists in the investigation of smuggling are due to the development of unified methodological guidelines, strengthening interagency cooperation, modernization of material and technical resources and systematic skill-upgrading of specialists, which will jointly promote the completeness, accuracy and evidentiary strength of collected information in this category of criminal offenses.

Keywords: forensic support; pre-trial investigation; smuggling; specific expertise; specialist.

Research Problem Formulation

As of today, the criminal justice field is in urgent and growing need of specific expertise, which makes the task of increasing requirements for skill-upgrading of specialists involved in criminal proceedings particularly relevant. The primary focus of criminalistics as a science is the development of theoretical and practical guidelines along with the creation of specific tools that would enable law enforcement agencies of various departments to establish crime circumstances in a timely, comprehensive and objective manner and to support a proof procedure. As evidenced by law application practice materials and positions expressed in the scientific literature, the above-mentioned cannot be implemented without the involvement of criminalists, bomb disposal officers, biologists and geneticists, commodity experts, specialists in economic security, etc.

Scientific-technical and forensic support of investigative activities are notably relevant during the investigation of criminal offenses related to smuggling. Crimes of this type exhibit a high degree of latency, presuppose complex methods of concealment, involvement of international logistics schemes, modern covert

methods for maintaining secrecy, forgery of documents and digital technologies. As the volume of international trade grows, so does the economic motivation to commit smuggling. After the beginning of the full-scale armed aggression of the Russian Federation, trends have shifted: the transit of heroin and cocaine has decreased, while synthetic drugs trafficking has increased several times; the growing number of weapons on the territory of the country has highlighted the risks associated with their illegal movement across the customs border; large-scale losses of the State budget involving the smuggling of tobacco products amount to hundreds of millions of dollars every year.

In light of these conditions, the use of forensic means is an essential prerequisite for revealing the truth in criminal proceedings. Research of documents, extraction of microparticles, identification of goods and industrial designs, trace evidence analysis of vehicles, use of technical systems for port and customs control, research of digital media, instrumental monitoring of the chemical substance composition: all these require participation of specialists with relevant expertise.

Given the foregoing, there is a demand for thoroughly analysing the capabilities

of specialists in smuggling investigation, clarifying their role in ensuring the efficiency of criminal proceedings, and assessing the potential of contemporary technical and forensic resources in countering one of the most widespread and economically dangerous types of crime.

Article Purpose

Define typical forms of specialists' participation in criminal proceedings for smuggling investigation.

Research Methods

In pursuit of this goal, general scientific methods of analysis and synthesis, induction and deduction were used. The researchers also employed special methods: dialectical, system-structural, comparative-legal and generalization. The totality of these methods allowed for the analysis of the legal basis for the participation of a specialist in criminal proceedings, and thereby facilitated the characterization of typical forms pertaining to his/her involvement and identification of features associated with such participation in the investigation of various smuggling categories (timber materials, cultural valuables, weapons and ammunition).

Dialectical method provided a holistic vision of the phenomenon relating to the involvement of a specialist in smuggling investigation, in terms of the development and interconnection of the legal, organisational and practical aspects of his/her activities. It is owing to this method that internal contradictions between the formal statutory regulation of a specialist's status and the real needs of investigative practice were revealed, and the evolution of the role of well-versed persons in criminal proceedings amid the increasing

sophistication of smuggling methods was traced.

Systemic-structural method helped: 1) single out principal components of the mechanism of involving specialists (statutory regulation, organization of interaction, forms of participation, functional workload within the scope of individual and covert investigative [search] actions); 2) classify specialists by expertise (forestry, art history, weapon science, customs, etc.) and by the nature of their participation (mandatory, universal, situational); 3) determine the specialist's place in the structure of subjects involved in a proof procedure and allocate responsibilities between the investigator, prosecutor, specialist and forensic expert.

Formal and logical methods (analysis, synthesis, induction, deduction) served as a valuable resource for researching the content of the rules of the Criminal Procedure Code of Ukraine (hereinafter referred to as *the CPC of Ukraine*), departmental instructions and other legal regulations governing the participation of a specialist, as well as for processing case law materials. Analysis provided a step-by-step study of the specialist's legal status, scope of his/her rights and obligations, procedure for involvement and responsibility; synthesis enabled the integration of obtained data into an agreed model of the specialist's participation in smuggling investigation; induction allowed for the formulation of general laws based on the study of individual criminal proceedings for the smuggling of timber, cultural valuables, and weapons; deduction enabled the testing of received theoretical conclusions against empirical data from specific court decisions.

We utilized the comparative legal method to compare approaches related to the involvement of specialists in criminal

proceedings for the investigation of smuggling and other illegal activities within the economic sector, as well as to assess the participation of specialists with varied expertise (foresters, art historians, weapons experts, customs officers) within the limits of different smuggling categories. This helped distinguish between technical-forensic, scientific-technical and organizational-tactical support, identify common and distinctive features related to the involvement of specialists depending on the subject of smuggling and the procedural status of the authorized body (SSU, customs officer, other law enforcement agencies).

Generalization method was employed to systematize the results stemming from the analysis of doctrinal sources and case law and formulate conclusions regarding the optimal areas for improving the participation of specialists in smuggling investi-

gation. Drawing upon it, we propose approaches to the development of uniform methodological guidelines for the involvement of specialists, for the enhancement of interdepartmental cooperation as well as skill-upgrading of specialists and ways of strengthening the role of specific expertise within the framework of forensic support for combating smuggling.

Analysis of Essential Researches and Publications

Various aspects of investigating smuggling offenses were studied in monographs by A. Buha ¹, O. Zaverkhovskiy ², R. Maliuha ³, A. Poliakh ⁴, I. Rudnytskyi ⁵, Ya. Furman ⁶, V. Shevchuk ⁷, et al.

The issue of specialist participation in criminal proceedings is explicitly outlined in monographs by O. Kuvshynova ⁸,

- 1 Буга А. Ю. Методика розслідування злочинів, пов'язаних з незаконним обігом лікарських засобів : дис. ... д-ра філос. в галузі права. Одеса, 2020. 258 с. URL: <https://uacademic.info/ua/document/0822U100024> (date accessed: 07.11.2025).
- 2 Заверховський О. В. Криміналістична характеристика контрабанди та її значення для правозастосовчої діяльності : дис. ... канд. юрид. наук. Київ, 2020. 230 с.
- 3 Малюга Р. В. Кримінальне процесуальне доказування контрабанди наркотичних засобів, психотропних речовин, їх аналогів чи прекурсорів або фальсифікованих лікарських засобів у досудовому розслідуванні : дис. ... канд. юрид. наук. Київ, 2015. 273 с. URL: <https://uacademic.info/ua/document/0415U005439> (date accessed: 07.11.2025).
- 4 Полях А. М. Криміналістична характеристика та основи розслідування контрабанди наркотичних засобів, психотропних речовин, їх аналогів або прекурсорів : автореф. дис. ... канд. юрид. наук. Харків, 2009. 22 с. URL: <https://uacademic.info/ua/document/0409U001634> (date accessed: 07.11.2025).
- 5 Рудницький І. Л. Особливості виявлення та розслідування контрабанди наркотичних засобів, що вчиняються організованими злочинними групами : дис. ... д-ра філос. в галузі права. Львів, 2019. 250 с. URL: <https://lpnu.ua/sites/default/files/2020/radaphd/1857/dysertaciyarudnykyu.pdf> (date accessed: 07.11.2025).
- 6 Фурман Я. В. Основи методики розслідування контрабанди культурних цінностей : автореф. дис. ... канд. юрид. наук. Київ, 2009. 22 с. URL: <https://uacademic.info/ua/document/0410U001200> (date accessed: 07.11.2025).
- 7 Шевчук В. М. Методика розслідування контрабанди: проблеми теорії та практики : монографія. Харків, 2003. 280 с.
- 8 Кувшинов О. Д. Спеціаліст у кримінальному провадженні (кримінальний процесуальний та криміналістичний аспекти) : дис. ... д-ра філос. в галузі права. Кропивницький, 2024. 305 с. URL: <https://dnuvs.ukr.education/wp-content/uploads/2025/02/dysertacziya-kuvshynov-o.d.pdf> (date accessed: 07.11.2025).

D. Kurylenko ⁹, V. Yaremchuk ¹⁰, and others.

According to the scientists, analysis of the pre-trial investigation practice involving criminal offenses in the economic sector, which includes smuggling, demonstrates that the main challenges are most often associated with insufficient application of specific expertise during investigative (search) actions and limited interaction between the investigator and the specialists engaged. The underlying cause of this situation is that the participation of specialists, predominantly, is limited exclusively to the provision of advice. At the same time, procedural actions requiring professional, technical or analytical support are carried out without their direct involvement. This approach often results in the loss of significant evidentiary information and makes it difficult to determine the actual circumstances of a criminal offense ¹¹.

In light of this, we believe that only by systematically engaging specialists in criminal proceedings could the efficiency of investigating crimes in the economic sector be enhanced. However, this should not always be limited exclusively to investigative (search) actions. Given that no multidisciplinary research has been conducted to date on the potential involvement of specialists in the investigation of criminal offenses involving smuggling, we deem the chosen topic to be relevant

and one that warrants further scientific research.

Main Content Presentation

The application of specific expertise in criminal proceedings relies upon clearly regulated procedural and non-procedural forms. The scientific doctrine of criminalistics has traditionally classified these forms based on the nature of the involvement of a well-versed person and the nature of his/her activities in a specific event. The procedural form stipulates the use of specific expertise within the scope of relevant procedures directly governed by the CPC of Ukraine: the ones implemented during the conduct of forensic examinations, investigative (search) actions, less often, during the application of measures to support criminal proceedings. The non-procedural form has a subordinate role; it falls under departmental legal regulations and presupposes providing the investigator with advisory and information support both at the initial stage and throughout the entire pre-trial investigation ¹².

The CPC of Ukraine defines a specialist as a participant to criminal proceedings (cl. 25, Pt. 1, Art. 3), and his/her legal status is clarified in Arts. 71–72: specialist shall be a person “*who has special knowledge and skills*” necessary to use technical or other devices, and “*who is able to consult*” or provide

9 Куриленко Д. В. Інститут обізнаних осіб у змагальному кримінальному провадженні : автореф. дис. ... канд. юрид. наук. Харків, 2017. 16 с. URL: <https://dspace.univd.edu.ua/server/api/core/bitstreams/6f82595b-1d94-4b6e-9ca8-8903b4b79b7c/content> (date accessed: 07.11.2025).

10 Яремчук В. О. Організація і тактика залучення спеціаліста при проведенні слідчих (розшукових) дій : монографія / за ред. В. Ю. Шепітька. Харків, 2015. 228 с.

11 Завидняк І. О. Участь спеціаліста у проведенні слідчих (розшукових) дій та його консультативна допомога. *Порівняльно-аналітичне право*. 2019. № 6. С. 453—456. URL: <https://surl.li/kmotbx> (date accessed: 07.11.2025).

12 Кримінальний процесуальний кодекс 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: 07.11.2025).

practical assistance during a pre-trial investigation and judicial proceedings¹³.

In addition to the CPC of Ukraine provisions, the participation of a specialist in criminal proceedings is also governed by departmental acts. Accordingly, the Regulation on the Investigative Units of the National Police of Ukraine defines a forensic specialist as an official who “*possesses scientific, technical or other specific expertise and skills*” and relies on them when participating in investigative (search) actions¹⁴. Similarly, the Instruction on the Participation of Employees of the Ukrainian Research Institute of Special Equipment and Forensic Science of the Security Service of Ukraine defines specialists to criminal proceedings as employees of expert divisions of the Security Service of Ukraine involved in criminal proceedings as prescribed by Art. 71 of the CPC of Ukraine¹⁵. As a result, such persons acquire the procedural rights and duties of a specialist as stipulated by law. However, it is worth noting that all criminal offenses related to smuggling fall within the investigative jurisdiction of the Security Service of Ukraine according to the provisions of Art. 216 of the CPC of Ukraine¹⁶.

The legislator provides ample opportunities for engaging a specialist on the initiative of both the prosecution and the de-

fence (Art. 220 of the CPC of Ukraine). The specialist shall participate not only in the pre-trial investigation, but also in court sessions: the judge presiding in the court session shall have the right to receive oral consultations, written explanations he/she has given, and ask questions about the applied specific expertise (Art. 360 of the CPC of Ukraine)¹⁷. The ultimate goal of the specialist's work is to provide technical and professional assistance during procedural actions (photographic documentation, drawing up of diagrams, taking of samples and recording of evidence, etc.).

The CPC of Ukraine envisages the possibility of involving a specialist in two completely different situations: when there is a forensic specialist in the investigative and operational team or when his or her absence is compensated for by the involvement of another specialist with the relevant expertise¹⁸. Otherwise, the law does not limit the number of specialists, their sectoral belonging or areas of competence, thereby helping the investigator to ensure that well-versed persons from different fields are involved in conformity with the requirements of a specific procedural action.

Legal principles of the specialist's activities shape his/her procedural status

13 Кримінальний процесуальний кодекс ... URL: <https://zakon.rada.gov.ua/laws/show/4651-17#Text> (date accessed: 07.11.2025).

14 Положення про слідчі підрозділи Національної поліції України : затв. наказ. МВС України від 06.07.2017 р. № 570 (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/z0918-17#Text> (date accessed: 07.11.2025).

15 Інструкція про участь співробітників та працівників Українського науково-дослідного інституту спеціальної техніки та судових експертиз Служби безпеки України як спеціалістів в кримінальному провадженні : затв. наказ. Центр. упр. СБУ від 19.03.2016 р. № 138. URL: <https://zakon.rada.gov.ua/laws/show/z0564-16#Text> (date accessed: 07.11.2025) ; Кримінальний процесуальний кодекс ... URL: <https://zakon.rada.gov.ua/laws/show/4651-17#Text> (date accessed: 07.11.2025).

16 Кримінальний процесуальний кодекс ... URL: <https://zakon.rada.gov.ua/laws/show/4651-17#Text> (date accessed: 07.11.2025).

17 Там само.

18 Там само.

specified in Arts. 71–72 of the Criminal Procedure Code of Ukraine: the right to ask questions, use technical means, view records of the procedural actions he/she participated in and submit comments thereon, receive remuneration for the job done, and apply for security¹⁹. At the same time, he/she is obliged to appear upon summons, follow the instructions of the investigator or court, not disclose any details directly related to the essence of the criminal proceeding, and recuse himself/herself where circumstances are provided for by Art. 79 of the CPC of Ukraine²⁰.

The CPC of Ukraine and by-laws stipulate that a specialist is liable for improper fulfilment of his/her duties. In particular, where a specialist fails to appear before court without valid reasons or fails to notify the reasons for his/her failure to appear, all costs related to the adjournment of court session shall be imposed by court on the specialist concerned (Art. 72 of the CPC of Ukraine)²¹. Thus, the law guarantees specialists reimbursement of expenses and payment of remuneration in accordance with special government regulations (see, e.g., the Instruction on the Procedure and Rates for Compensation [Reimbursement] of Expenses and Payment of Remuneration to Persons Summoned to Pre-Trial Investigation Authori-

ties, the Prosecutor's Office, the Court, or Authorities Investigating Administrative Offenses, and on Payments to State Specialized Forensic Institutions for the Performance of Expert and Specialist Functions by Their Employees)²².

Regulating a specialist's activities during investigative (search) actions is of central importance when talking about his/her legal status. The CC of Ukraine directly envisages the mandatory or recommended participation of a specialist in a number of procedural actions, namely: inspection (Art. 237), search (Art. 236), presentation for identification (Art. 228), investigative experiment (Art. 240), obtaining samples for examination (Art. 245), work with information systems (Arts. 264, 266), copying and collecting information from electronic information systems (Art. 265), documentation of physical evidence in special cases (Art. 100)²³. All actions of the specialist must be properly recorded in protocols, and information carriers must be attached as integral appendices to procedural documents (Arts. 104, 107 of the CPC of Ukraine)²⁴.

Research findings and law application practice will be of value for determining the organizational and tactical principles of a specialist's participation in a pre-trial investigation.

19 Кримінальний процесуальний кодекс ... URL: <https://zakon.rada.gov.ua/laws/show/4651-17#Text> (date accessed: 07.11.2025).

20 Там само.

21 Там само.

22 Інструкція про порядок і розміри компенсації (відшкодування) витрат та виплати винагороди особам, що викликаються до органів досудового розслідування, прокуратури, суду або до органів, у провадженні яких перебувають справи про адміністративні правопорушення, та виплати державним спеціалізованим установам судової експертизи за виконання їх працівниками функцій експертів і спеціалістів: затв. постанов. КМУ від 01.07.1996 р. № 710 (зі змін. та допов.). URL: <http://zakon0.rada.gov.ua/laws/show/710-96-%D0%BF> (date accessed: 07.11.2025).

23 Кримінальний процесуальний кодекс ... URL: <https://zakon.rada.gov.ua/laws/show/4651-17#Text> (date accessed: 07.11.2025).

24 Там само.

D. Kurylenko accurately points out that a specialist in criminal proceedings fulfils two interrelated functions. *Firstly*, he/she provides technical and organizational-tactical support to the court and parties to proceedings during the collection, recording and initial processing of evidentiary information. *Secondly*, the specialist offers explanations covering both background information and guidance notes (in particular, from a legal perspective) that require corresponding specific expertise. Certificates summarise specialised information, whereas advice is based on an analysis of a specific criminal case file and relates directly to the circumstances of the criminal offence under investigation²⁵. We share the view expressed by D. Kurylenko and it is important to note that the criminal procedure legislation fails to outline all those forms in which a well-versed person can implement specific expertise during the investigation of smuggling crimes.

At the same time, it is proposed to classify all specialists involved in investigative (search) actions in criminal proceedings into three groups. *Firstly*, these are specialists whose participation is mandatory pursuant to the express provisions of the law. *Secondly*, universal specialists capable of participating in most procedural actions of a certain type: in modern times, they include criminalists: for non-verbal investigative (search) actions, as well as psychologists: for verbal procedural actions that require the assessment of behavioural and psycho-emotional aspects. *Thirdly*, specialists with a narrow, situation-specific focus, whose involvement is determined by the specifics of a particular criminal offense and the need to perform

certain tasks that necessitate the use of specific expertise²⁶. That is why, guided by the above classification, we suggest dwelling on the analysis of the investigation/trial practice of criminal offenses involving smuggling.

Primarily, it should be emphasized that the role of specialists is of crucial importance in the forestry sector and in cases of illegal movement across the customs border of Ukraine of timber materials prohibited for export without appropriate certification. For instance, in case No. 938/536/24, an involved specialist was pivotal at the stage of customs control during the inspection of a batch of lumber intended for export. The specialist conducted a detailed visual and technical analysis of the wood, taking into account the professional characteristics typical of certain species and varieties of timber: colour palette, heartwood structure, occurrence of resin pockets, specific knot characteristics, colour characteristics, condition of bark, and nature of lumber processing. As a result of applying specific expertise in the field of dendrology and woodworking technology, the specialist was able to reasonably conclude that part of the wood did not correspond to the species-specific wood characteristics outlined in the certificate and customs documents and was actually unrecorded forest products. This later became the basis for the customs authority to draw up a protocol on breaches of customs rules and the initiation of criminal prosecutions for attempted smuggling. The investigating authorities used the data obtained with the participation of a specialist to appoint a forensic commodity examination. According to the expert opinion, the special-

25 Куриленко Д. В. Зазнач. твір. С. 12. URL: <https://dspace.univd.edu.ua/server/api/core/bitstreams/6f82595b-1d94-4b6e-9ca8-8903b4b79b7c/content> (date accessed: 07.11.2025).

26 Кувшинов О. Д. Зазнач. твір. С. 241. URL: <https://dnuvs.ukr.education/wp-content/uploads/2025/02/dysertacziya-kuvshynov-o.d.pdf> (date accessed: 07.11.2025).

ist's initial conclusions were that part of the wood did not comply with regulatory documents. This assessment provided evidence to qualify the act under Art. 201–1 of the Criminal Code of Ukraine ²⁷ (hereinafter referred to as *the CC of Ukraine*) ²⁸. In this way, the specialist's participation ensured the accuracy and scientific validity of the initial recording of factual data. This affected the subsequent evidentiary value and made it possible to identify the hidden, misdeclared part of a product. The specialist's conclusions were key to establishing the method of concealing illegally obtained forest products, determining the volume of unaccounted timber, and identifying the mechanism by which it was added to the general export lot. Ultimately, information established by the specialist formed the basis for finding the accused guilty, ensured the conclusion of a plea agreement and the imposition of an agreed punishment ²⁹.

Similarly, in case No. 715/987/21, forestry specialists identified seized logs by species, size, and quality, determined their assortment, and calculated their share of the total lot pursuant to the technical conditions. The engaged specialist further substantiated the characteristics of the wood and pointed to the absence of significant defects during the initial inspection. This was essential for assessing the credibility of further expert opinions ³⁰.

Having analysed court verdicts passed in criminal proceedings on charges of timber smuggling (Pt. 2 of Art. 15, Pt. 1 of Art. 201–1 of the CC of Ukraine ³¹), we are in a position to confirm that specialists are systematically involved during pre-trial investigation and customs control. All investigated cases fall into the category of criminal offenses in the economic sector and are related to the transfer of lumber across the customs border of Ukraine without proper documentary confirmation of its origin.

In the course of criminal proceedings, participation of specialists with diverse expertise is documented specifically during scene inspection, including participation of customs specialists and employees of state forestry agencies. During such inspections, specialists fulfil technical tasks related to the complete unloading and inspection of timber, conducting measurements, determining the actual volume of wood, and analyzing its external characteristics. These actions were instrumental in carrying out technical and oversight functions by the specialist and establishing correspondence between the vehicle's contents and the certificates of origin, invoices and consignment notes.

Forestry specialists, who are predominantly employees of state-owned enterprises of regional forestry branches, provide advisory assistance, which involves carrying out diagnostic tasks related to

27 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2341-14#Text> (date accessed: 25.10.2025).

28 Вирок Верхов. райсуду Івано-Франк. обл. від 17.06.2024 р. Справа № 938/536/24. Провадж. № 1-кп/938/106/24 / ЄДРСР : вебсайт. URL: <https://reyestr.court.gov.ua/Review/119765051> (date accessed: 07.11.2025).

29 Вирок Верхов. райсуду Івано-Франк. обл. URL: <https://reyestr.court.gov.ua/Review/119765051> (date accessed: 07.11.2025).

30 Вирок Глибоц. райсуду Чернів. обл. від 28.07.2023 р. Справа № 715/987/21. Провадж. № 1-кп/715/3/23 / ЄДРСР : вебсайт. URL: <https://reyestr.court.gov.ua/Review/112478006> (date accessed: 07.11.2025).

31 Кримінальний кодекс URL: <https://zakon.rada.gov.ua/laws/show/2341-14#Text> (date accessed: 25.10.2025).

identifying wood species, verifying correspondence between morphological features and documents, and determining the amount of unaccounted lumber. Their involvement helped confirm that wood not listed in the certificate of origin had been mixed or loaded. This also lays the groundwork for initiating qualified research by forensic commodity experts in order to determine the market value, volume, and compliance of cargo with the regulatory documentation supporting it.

The measures taken during urgent investigative (search) actions by specialists included forming independent procedural sources of evidence necessary to qualify the actions as a completed attempt to transfer timber while evading customs control, i.e., providing a preliminary legal assessment of an incident. The main signs of offence are detected and recorded by a specialist: use of documents with unreliable data, inconsistency of actual wood characteristics with those declared in certificates, presence of unaccounted-for lumber and attempts to export it. In all criminal proceedings, specific expertise played a key role in establishing factual circumstances, which were verified primarily through the appointment of corresponding forensic analyses.

Therefore, the studied case law shows that an efficient investigation of criminal offenses involving illegal timber trafficking is impossible without the organized participation of specialists capable of providing technical, diagnostic, control, advisory support for investigative (search) and procedural actions.

Involving specialists in the investigation of cultural valuables smuggling is common. An art historian holds a key role in this case. According to the study of investigative

and case law practice, this well-versed person cannot be considered a forensic expert; however, he or she is engaged for technical, advisory and organizational-tactical assistance to law enforcement agencies during investigative (search) actions. In essence, such crimes involve transferring objects that may be of historical, artistic, ethnographic, or cultural value, and therefore require prompt identification, estimation of originality, and determination of relevant inherent characteristics.

Oftentimes, art historians are employees of museum institutions, research institutes of culture, state reserves or leading art history centres who are qualified in attribution of artworks, determination of their stylistic features, time of creation, artistic techniques, and origin. Participation of these specialists in investigative (research) actions primarily fulfils the specialist's technical and analytical roles: they help identify cultural valuable on the spot, verify or refute its historical and cultural value in advance, and bring signs of forgery, restoration intervention, or illegal origin of an object to the attention of investigating authorities.

Such specialists can be engaged in the inspection of crime scenes, inspection of international postal shipments, vehicles, warehouses, antique items, and provision of advice to the investigator on the adequate recording and packaging of art objects in order to avoid damaging them and ensure proper conditions for conducting subsequent examinations of the discovered items. The accurate version of the object's nature, its probable value, authenticity, and cultural significance, is developed with the help of their explanations and advice. This substantially affects the qualification of the act under Art. 201 of the CC of Ukraine ³²).

32 Кримінальний кодекс URL: <https://zakon.rada.gov.ua/laws/show/2341-14#Text> (date accessed: 25.10.2025).

Furthermore, an art historian fulfils an organizational and tactical function, contributing to the choice of the right algorithm for further procedural actions: determining the need to seize an object, feasibility of involving an expert in the relevant field, the need to refer to international catalogues for stolen and missing cultural property, as well as assessing the risk of illegal movement of rarities that are under state protection. Such participation enhances the efficiency of a pre-trial investigation, as it helps to avoid situations where acquiring the cultural value status is either too slow or inaccurate.

When addressing the smuggling of weapons and special technical means (Pt. 1 of Art. 201 of the CC of Ukraine), including additional qualification pursuant to Art. 263 of the CC of Ukraine (*Unlawful handling of weapons, ammunition or explosives*³³), we can single out the following typical objects (crime subject): parts of rifled firearms, ammunition of various calibres, propellant-type explosives. This necessitates the involvement of specialists who are able to determine whether detected items belong to the category of weapons components, evaluate their functional properties, signs of suitability for shooting, and also identify possible ways of their covert movement.

Under such circumstances, specialists representing customs units, as well as weapons experts and ballisticians, are involved in an investigation. The latter engages in the initial inspection, actual detection of hidden parts of the weapon, and the recording of identified signs indicating belonging to the components of rifled

firearms. These actions involve technical assistance to law enforcement agencies in identifying, recording, and preliminary analysing items that may constitute goods prohibited from moving across the border.

It should be pointed out that activities of customs specialists also contribute to the preventive function. It is thanks to their participation that the design features of weapon parts are documented, allowing the customs authority to delay the shipment and submit materials to the SSU. What is more, specialists ensure proper organization of covert investigative (search) actions: oversight over the commission of a crime involving the controlled receipt of a parcel by the prosecution. Therefore, their participation is valuable not only from a technical perspective, but also from an organisational and tactical one. It strengthens the investigative authorities' capabilities in documenting the process of smuggling and recording its actual receipt by the addressee³⁴.

For this reason, in cases of arms smuggling, involvement of specialists, primarily from customs authorities, enhances the efficiency of decision-making, guarantees that both technical and organizational-tactical components of assistance to the investigation are executed, which, consequently, makes it possible to timely detect, document and stop the illegal movement of weapons across the state border.

Conclusions

The research has demonstrated that the efficiency of a pre-trial investigation of criminal offenses involving smuggling is

33 Кримінальний кодекс URL: <https://zakon.rada.gov.ua/laws/show/2341-14#Text> (date accessed: 25.10.2025).

34 Вирок Оболон. райсуду м. Києва від 27.04.2023 р. Справа № 756/14469/21. Провадж. № 1-кп/756/613/23 / ЄДРСР : вебсайт. URL: <https://reyestr.court.gov.ua/Review/110671189> (date accessed: 07.11.2025).

directly linked to the systematic and professionally organized involvement of specialists from diverse fields. A specialist in criminal proceedings does not serve as a secondary subject, but rather as the main element of the proof mechanism. He/she is capable of providing the appropriate level of technical-criminological, analytical and organizational-tactical support for procedural activities. Legislative settlement of his/her legal status, as well as corresponding analysis of departmental regulations, presupposes not only the formal involvement of a well-versed person, but also the meaningful use of his/her competence at all stages of criminal proceedings: from discovery of an event to development of an evidentiary basis.

In the context of smuggling, specialist participation helps establish circumstances necessary to qualify an act according to the relevant articles of the codes, and opinions obtained serve as the foundation for procedural decisions and driving motivation for further expert research.

Investigating timber smuggling is frequently associated with the involvement of forestry specialists. They play a pivotal role in primary identification of wood, determination of its species, assortment and actual volume. All these processes substantially facilitate the detection of substitution or re-loading of unaccounted-for products.

Participation of art historians is indispensable in proceedings involving the smuggling of cultural valuables. They ensure quick attribution of objects, determination of their cultural and historical value, identification of forgery signs, as well as procedurally correct documentation of cultural property in the protocol, which affects the qualification of an act under Art. 201 of the CC of Ukraine.

In cases involving illegal movement of weapons and ammunition, specialists rep-

resenting customs units, as well as weapon experts and ballisticians, ensure prompt identification of weapon parts, establishment of their functional characteristics, and recording of signs that testify to their status as objects of restricted trafficking. These have a direct impact on the seizure of dangerous objects and the organization of further covert investigative (search) actions.

Having summarized the law application practice, we have reasons to conclude that participation of specialists ensures:

- 1) completeness and accuracy of identifying actual circumstances of a crime;
- 2) corresponding documentation of physical sources of evidence;
- 3) prompt response to the actions of offenders who utilize complex technical or logistical concealment methods;
- 4) strengthening of the evidentiary value of collected information;
- 5) formulation of accurate investigative versions and optimization of subsequent investigation tactics.

This underscores the necessity of developing uniform methodological guidelines for the participation of specialists in criminal proceedings involving smuggling investigations, improving interagency cooperation, and systematically developing the expertise of specialists who provide scientific and technical assistance to investigations.

Залучення спеціалістів до розслідування контрабанди

**Юрій Ковальов,
Андрій Федотенко**

Мета статті — визначити типові форми участі спеціалістів у кримінальних провадженнях щодо розслідування кон-

трабанди й окреслити їхню роль у забезпеченні ефективності доказування залежно від предмета злочину (лісоматеріали, культурні цінності, зброя та боєприпаси). Для реалізації поставленої мети застосовано загальнонаукові (аналіз і синтез, індукція і дедукція) та спеціальні (діалектичний, системно-структурний, порівняльно-правовий і узагальнення) методи. З'ясовано, що спеціаліст у кримінальному провадженні є основним суб'єктом техніко-криміналістичного, аналітичного й організаційно-тактичного забезпечення, а його участь виходить за межі суто консультативної допомоги, охоплюючи активне сприяння під час проведення слідчих (розшукових) і негласних слідчих (розшукових) дій. На підставі узагальнення судової практики з'ясовано, що у справах про контрабанду лісоматеріалів визначальну роль відіграють спеціалісти в галузі лісового господарства, у провадженнях щодо контрабанди культурних цінностей — мистецтвознавці, а у справах про незаконне переміщення зброї — представники митних органів, зброезнавці й балісти. Показано, що саме їхні висновки та дії забезпечують належну ідентифікацію предметів, виявлення способів приховування, формування слідчих версій і ініціювання подальших експертних досліджень. Перспективи вдосконалення залучення спеціалістів до розслідування контрабанди пов'язані з розробленням єдиних методичних рекомендацій, посиленням міжвідомчої взаємодії, модернізацією матеріально-технічної бази та системним підвищенням кваліфікації фахівців, що сукупно сприятиме підвищенню повноти, точності й доказової сили зібраних відомостей у цій категорії кримінальних правопорушень.

Ключові слова: криміналістичне забезпечення; досудове розслідування; контрабанда; спеціальні знання; спеціаліст.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

The authors have contributed solely to intellectual discussion underlying this document, case law research, writing and editing, and assume responsibility for its content and interpretation.

Declaration of Competing Interest

The authors declare no conflict of interest.

References

- Buha, A. Yu. (2020). *Metodyka rozsliduvannia zlochyniv, pov'iazanykh z nezakonnym obihom likarskykh zasobiv* [Methods of investigation of crimes associated with drug trafficking] : dys. ... d-ra filos. v haluzi prava. Odesa. URL: <https://uacademic.info/ua/document/0822U100024> [in Ukrainian].
- Furman, Ya. V. (2009). *Osnovy metodyky rozsliduvannia kontrabandy kulturnykh tsinnosti* [The fundamentals of methodology of investigation of cultural property smuggling] : avtoref. dys. ... kand. yuryd. nauk. Kyiv. URL: <https://uacademic.info/ua/document/0410U001200> [in Ukrainian].
- Kurylenko, D. V. (2017). *Instytut obiznanykh osib u zmahalnomu kryminalnomu provadzhenni* [The Concept of versed persons in adversary criminal proceeding] : avtoref. dys. ... kand. yuryd. nauk. Kharkiv. URL: <https://dspace.univd.edu.ua/server/api/core/bitstreams/6f82595b-1d94-4b6e-9ca8-8903b4b-79b7c/content> [in Ukrainian].
- Kuvshynov, O. D. (2024). *Spetsialist u kryminalnomu provadzhenni (kryminalnyi protsesualnyi ta kryminalistychnyi aspekty)* [Specialist in Criminal Proceedings (Criminal Procedural and Forensic Aspects)] : dys. ... d-ra filos. v haluzi prava. Kropyvnytskyi. URL:

<https://dnuvs.ukr.education/wp-content/uploads/2025/02/dysertacziya-kuvshynov-o.d.pdf> [in Ukrainian].

- Maliuha, R. V. (2015). *Kryminalne protsesualne dokazuvannya kontrabandy narkotychnykh zasobiv, psykhotropnykh rechovyn, yikh analogiv chy prekursoriv abo falsyfikovanykh likarskykh zasobiv u dosudovomu rozsliduvanni* [Criminal procedure proving of smuggling of narcotics, psychotropic substances, their analogues or precursors or counterfeit drugs in pre-trial investigation] : dys. ... kand. yuryd. nauk. Kyiv. URL: <https://uacademic.info/ua/document/0415U005439> [in Ukrainian].
- Poliakh, A. M. (2009). *Kryminalistychna kharakterystyka ta osnovy rozsliduvannya kontrabandy narkotychnykh zasobiv, psykhotropnykh rechovyn, yikh analogiv abo prekursoriv* [The criminalistical characteristics and the basis of investigation of narcotics smuggling, psychotropic substances, their analogues and precursors trafficking] : avtoref. dys. ... kand. yuryd. nauk. Kharkiv. URL: <https://uacademic.info/ua/document/0409U001634> [in Ukrainian].
- Rudnytskyi, I. L. (2019). *Osoblyvosti vyavlennia ta rozsliduvannya kontrabandy narkotychnykh zasobiv, shcho vchyniaiuetsia orhanizovanyymi zlochyynnymi hrupamy* [Features of exposure and investigation of contraband goods of narcotic facilities that is accomplished by the organized criminal groups] : dys. ... d-ra filos. v haluzi prava. Lviv. URL: <https://lpnu.ua/sites/default/files/2020/radaphd/1857/dysertacyiarudnycky.pdf> [in Ukrainian].
- Shevchuk, V. M. (2003). *Metodyka rozsliduvannya kontrabandy: problemy teorii ta praktyky* [Smuggling investigation methodology: problems of theory and practice] : monohrafiia. Kharkiv [in Ukrainian].
- Yaremchuk, V. O. (2015). *Orhanizatsiia i taktyka zaluchennia spetsialista pry provedenni slidchykh (rozshukovykh) dii* [Organization and tactics of involving a specialist in investigative (search) actions] : monohrafiia / za red. V. Yu. Shepitka. Kharkiv [in Ukrainian].
- Zaverkhovskiy, O. V. (2020). *Kryminalistychna kharakterystyka kontrabandy ta yiyi znachennya dlya pravozaastosovchoyi diyal'nosti* [Forensic characterization of smuggling and its importance for law application] : dys. ... kand. yuryd. nauk. Kyiv [in Ukrainian].
- Zavydniak, I. O. (2019). *Uchast spetsialista u provedenni slidchykh (rozshukovykh) dii ta yoho konsultatyvna dopomoha* [Participation of the specialist in carrying out investigative (search) actions and his advisory assistance]. *Porivnialno-analitychne pravo*. № 6. URL: <https://surl.li/kmotbx> [in Ukrainian].
- Kovalov, Yu., Fedotenko, A. (2025). Involvement of Specialists in Smuggling Investigation. *Theory and Practice of Forensic Science and Criminalistics*. Issue 4 (41). Pp. 191–204. DOI: [10.32353/khrife.4.2025.11](https://doi.org/10.32353/khrife.4.2025.11).

Current State and Prospects for Incorporating Specific Psychology Expertise into Multidisciplinary Forensic Examinations

Oleksandr Yevsiukov *

* Candidate of Pedagogical Sciences, Docent, Doctoral Student at NSC «Hon. Prof. M. S. Bokarius FSI», Kharkiv, Ukraine,
ORCID: <https://orcid.org/0000-0002-3554-8848>, e-mail: a.evsiukov1971@gmail.com

DOI: [10.32353/khrife.4.2025.12](https://doi.org/10.32353/khrife.4.2025.12)

UDC 343.98

Received: 14.11.2025 / Reviewed: 30.11.2025 / Accepted for print: 25.12.2025 /
Available online: 31.12.2025



Current state of science and technology development, as well as challenges posed by war, should be addressed by the expert community in order to ensure an adequate level of expert support to justice. These issues inspire researchers to enhance forensic expert activities, particularly those related to the use of specific expertise in forensic psychology. Multidisciplinary forensic examinations are crucial in this regard. The primary concerns of this paper are to analyse scientific papers, legal regulations, and forensic expert practice and provide, on this basis, a description of the current state and prospects for integrating specific expertise in forensic psychology into multidisciplinary forensic examinations. General, individual, and special methods were applied during the study of questions pertaining to the Article's purpose. Within the framework of modernizing Ukrainian legislation, which governs forensic expert activity, and against the backdrop of developing various branches of specific expertise, the practice of conducting forensic psychological and other types of multidisciplinary forensic examinations is being supplemented with new categories and methodologies reflecting the essence of the subject matter, tasks, objects, subjects and research methods. That is why this issue is becoming increasingly relevant and must be thoroughly analysed. The issue of integration and differentiation of specific expertise was considered and the following classification

This article is translation of the original Ukrainian content, which source is available at the link: <https://khrife-journal.org/index.php/journal> (translated by Daryna Dukhnenko). The authors acknowledge translation as corresponding to the original.

© 2025 The Author(s). Published by National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» & Yaroslav Mudryi National Law University.

This is an open access article distributed under Creative Commons Attribution License (CC_BY_4.0.0) allowing unlimited use, distribution and reproduction on any medium, subject to reference to the Author and original sources.

of multidisciplinary forensic examinations was proposed: psychological and psychiatric; medical, psychiatric and psychological (sexological and psychological); medical and psychological; psychological and engineering-technical; psychological and handwriting; psychological and linguistic; psycholinguistic and video/sound recording; psychology and art studies; military and psychological. The aforementioned provisions and recommendations are intended for implementation in expert practice, with the aim of boosting the efficiency of forensic expert activity.

Keywords: *criminal procedure; proceedings; integration; differentiation; specific expertise; multidisciplinary forensic examination; psychological research; methodology; technique.*

Research Problem Formulation

Within the framework of modernizing Ukrainian legislation, which governs forensic expert activity, and against the backdrop of developing various branches of specific expertise, the practice of conducting forensic psychological and other types of multidisciplinary forensic examinations is being supplemented with new categories and methodologies reflecting the essence of the subject matter, tasks, objects, subjects and research methods. That is why this issue is becoming increasingly relevant and must be thoroughly analysed.

Analysis of Essential Researches and Publications

Before addressing the types of multidisciplinary forensic psychological examina-

tions and making an attempt to classify and differentiate them according to subject-matter subtypes, let's focus on the nature of specific expertise integration (specific expertise synthesis), which is the basis for multidisciplinary forensic examinations and is vital for understanding the dynamic processes that constantly take place in forensic examination. To begin, research papers addressing the integration of specific expertise should be analysed.

From our perspective, Ella Simakova-Yefremian's monographs ¹, along with several of her research papers and other scientific publications ², extensively analysed theoretical-legal and methodological foundations of multidisciplinary forensic examinations. Specifically, stemming from the analysis of papers on theoretical and applied issues of forensic expertise by

- 1 Сімакова-Єфремян Е. Б. Теоретико-правові та методологічні засади комплексних судово-експертних досліджень : дис. ... д-ра юрид. наук. Харків, 2017. 503 с. URL: <https://uacademic.info/ua/document/0517U000760> (date accessed: 12.11.2025).
- 2 Див., напр.: Її ж. Теорія і методологія комплексної експертизи контактної-слідової взаємодії об'єктів : монографія. Харків, 2004. 176 с. ; Її ж. Комплексні судово-експертні дослідження: теорія та практика : монографія. Харків, 2016. 456 с. ; Сімакова-Єфремян Е. Б., Федоренко В. Л., Свиридова Л. В. та ін. Класифікація судових експертиз : монографія / за заг. ред. Е. Б. Сімакової-Єфремян. Харків, 2021. 568 с. URL: <https://nncise.org.ua/diyalnist/naukova> (date accessed: 12.11.2025) ; Сімакова-Єфремян Е. Б. Шляхи вдосконалення нормативно-правового регулювання судово-експертної діяльності. Вісник Академії правових наук України. 2001. № 1 (24). С. 190—197 ; Її ж. Загальна теорія

researchers and practitioners and relying on personal scientific developments, the researcher offers an author's definition of the interdisciplinary subject of multidisciplinary research in forensic examination, emphasizing the need to clarify the *forensic examination object* concept, which, as set out in the Law of Ukraine: *On Judicial Examination* ³, encompasses phenomena and processes. The scientist argues that this rule is somewhat inaccurate, since a forensic expert does not directly examine the phenomenon or processes related to a crime: they have already taken place in the past. The researcher pinpoints that a forensic expert examines both tangible carriers and materialized media of information about the aforementioned phenomena and processes, which is contained in these media. Furthermore, Ella Simakova-Yefremian formulated the author's definition of the integrated forensic examination object (a complex object requiring a multidisciplinary approach for its analysis). From our perspective, the above-mentioned concept most accurately

corresponds to the definition of the object of multidisciplinary forensic examination. This kind of forensic research is being increasingly implemented in practice. She also proposed her own definition of the *forensic examination methodology* concept (in particular, multidisciplinary) and justified the need to make certain structural components mandatory when developing forensic examination methodologies (research subjects; tasks to be performed; an approximate list of issues to be resolved; objects under study; subject(s) of research [requirements for experts in specific disciplines]; methods used to fulfil tasks: technical specifications for researching standardized and non-standardized methods [if there is an assessment of their suitability and measurement uncertainty], equipment, measurement traceability, initial standards and sample substances, procedures for selecting experimental samples, etc.; an algorithm of the expert's [experts'] sequential actions according to the stages (steps) of expert research; expert evaluation of obtained results and formulation

судової експертизи як основа методології проведення комплексних судово-експертних досліджень. *Там само*. 2006. № 3 (46). С. 225–235. URL: https://dspace.nlu.edu.ua/bitstream/123456789/720/1/VestnikAprN3_2006.pdf (date accessed: 12.11.2025) ; Її ж. Деякі проблеми та шляхи вдосконалення правового регулювання судово-експертної діяльності. *Держава і право. Юридичні і політичні науки*. 2001. Вип. 11. С. 447–451 ; Її ж. Вирішення теоретичних та процесуальних проблем комплексних судово-експертних досліджень – важливий чинник удосконалення судово-експертної діяльності. *Право України*. 2006. № 8. С. 78–82 ; Її ж. Процесуальні та теоретичні проблеми комплексної судової експертизи. *Теорія та практика судової експертизи і криміналістики*. 2005. Вип. 5. С. 113–122 ; Її ж. Сутність суб'єкта інтеграції знань при проведенні комплексних судово-експертних досліджень. *Там само*. 2006. Вип. 6. С. 108–117 ; Її ж. Проблеми методичного забезпечення комплексних експертних досліджень. *Там само*. 2013. Вип. 13. С. 225–232. URL: <https://khrife-journal.org/index.php/journal/issue/view/14/2013-1> (date accessed: 12.11.2025) ; Її ж. Інтеграційні процеси в судовій експертизі: сутність та проблемні питання комплексних досліджень. *Там само*. 2016. Вип. 16. С. 172–183. DOI: 10.32353/khrife.2016 (date accessed: 12.11.2025) ; Її ж. Сутність комплексних досліджень за міжгалузевим предметом інтеграції знань. *Проблемні питання судової експертизи* : зб. мат-лів міжнар. наук.-практ. конф. (Дніпропетровськ, 03–04.10.2013). Дніпропетровськ, 2013. С. 14–18 тощо.

3 Про судову експертизу : Закон України від 25.02.1994 р. № 4038-XII (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 12.11.2025).

of opinions). Apart from these mandatory components, expert research methodology may contain other recommendations, such as documenting the procedure and findings of expert examination in the expert's (experts') opinion, preparing materials for conducting research, or having an investigator (court) evaluate obtained results, etc. One of the essential scientific achievements of Ella Simakova-Yefremian's research papers is that she provided her own definition of the *multidisciplinary expert examination* concept and, based on the analysis, submitted a proposal to supplement the Law of Ukraine: *On Judicial Examination* and procedural legislation with a corresponding definition, and also justified the need to amend the Criminal Code of Ukraine in the aspect of increasing liability for exerting unlawful pressure on a forensic expert (preclusion of appearance of an expert, or his/her coercion to refuse to testify or give an opinion, and also give any knowingly false testimony or opinion) and drafted the provisions of the relevant article of this Code. Ella Simakova-Yefremian's ⁴ above-mentioned papers and other works also address various issues related to the improvement and further development of forensic expertise

provisions in the context of multidisciplinary forensic analyses.

Indisputably, other researchers also discussed the issues of multidisciplinary research in forensic examination. Thus, Yu. Hroshevyi and S. Stakhivskiy ⁵ emphasize the evaluation of experts' opinions as sources of evidence. Various types of expert examinations, in particular, their multidisciplinary subtypes, are given particular attention in a guide edited by V. Honcharenko and I. Hora ⁶. V. Shepitko, V. Zhuravel, and H. Avdieieva ⁷, considering innovations in forensics, also underscore the systematic and multidisciplinary nature of verbal and non-verbal information established during pre-trial investigation, specifically to obtain such sources of evidence as an expert's opinion. In one of the first manuals on forensic expertise in Ukraine, N. Klymenko ⁸ addresses multidisciplinary forensic examinations. Given the interpretation and functions of expert versions, V. Konovalova ⁹ also pays attention to the synthesis of specific expertise when proposing expert versions. From our perspective, fundamental methodological papers on forensic expertise are papers by Ukrainian scientists M. Sehai and V. Strynzh ¹⁰, analysing integration signs of specif-

4 Див. виноски «1» і «2».

5 Грошевий Ю. М., Стахівський С. М. Докази і доказування у кримінальному процесі : наук.-практ. посіб. Київ, 2006. 272 с.

6 Бойченко С. Б., Бояров В. І., Будко Т. В., Варфоломеева Т. В. та ін. Експертизи у судочинстві України : наук.-практ. посіб. / за заг. ред. В. Г. Гончаренка, І. В. Гори. Київ, 2015. 504 с.

7 Шепітько В. Ю., Журавель В. А., Авдієєва Г. К. Інновації в криміналістиці та їх впровадження в діяльність органів досудового слідства. *Питання боротьби зі злочинністю*. 2011. Вип. 21. С. 39–46. URL: <https://dspace.nlu.edu.ua/jspui/handle/123456789/5481> (date accessed: 12.11.2025).

8 Клименко Н. І. Судова експертологія: курс лекцій : навч. посіб. для студ. юрид. спец. Київ, 2007. 528 с.

9 Коновалова В. Е. О значении и функциях экспертных версий. *Криминалистика и судебная экспертиза*. 1977. Вып. 14. С. 53–58.

10 Сегай М. Я. Методология судебной идентификации : монография. Киев, 1970. 256 с. ; Сегай М. Я., Сترینжа В. К. Судебная экспертиза материальных следов-отображений (проблемы методологии) : монография. Киев, 1997. 174 с.

ic expertise in the processes of developing the methodology for performing identification, diagnostic and situational tasks of forensic examination, in particular, through multidisciplinary forensic examinations. One should also highlight publications by M. Shcherbakovskiy¹¹, which, in addition to considering the issues within expert support to justice, outline multidisciplinary forensic examinations.

Theoretical and applied aspects of interdisciplinary links between sciences, which play a decisive role in performing multidisciplinary forensic examinations, resonate not only with specialists in forensic science and criminalistics, but also with specialists in philosophy and science studies, whose works delve into the methodology of jurisprudence, the latest Western philosophy of science, certain inquiries into philosophical meanings, particular aspects of the dialectical method (as a general method of cognition in law) and are dedicated to general dialectics as a methodology of legal science, methodological approaches to the analysis of public administration features amidst the challenges of globalisation, the methodology of scientific cognition (from phe-

nomenon to essence), etc.¹². Accordingly, in the view of R. Shevchuk, “*Within an ontological framework, scientific cognition methodology is a system of philosophical underpinnings of cognitive process and corresponding general scientific, interdisciplinary and branch scientific principles, methods, categories, and theoretical provisions facilitating the acquisition and systematization of new knowledge about objective reality. Within an epistemological framework, it is a doctrine about essential properties and regularities of the emergence, functioning and development of a set of methodological systems*”¹³. In the light of multidisciplinary forensic examination, we focus on the consideration of interdisciplinary principles that serve as the basis for the methodology system of any multidisciplinary research.

In this respect, when compiling the methodology for multidisciplinary forensic examinations (and at the same time applying integration approaches), the differentiation of specific expertise should be viewed as their methodological tool. As N. Klymenko notes, the integration function consists in “*systematization and presentation <...> of empirical data obtained during the conduct of various types and kinds*

11 Див., напр.: Щербаковський М. Г. Проведення та використання судових експертиз у кримінальному провадженні : монографія. Харків, 2015. 560 с.

12 Див., напр.: Добронравова І. С., Білоус Т. М., Комар О. В. Новітня західна філософія науки : підручник. Київ, 2008. 216 с. ; Костицький М. В. Про діалектику як методологію юридичної науки. *Філософські та методологічні проблеми права*. 2012. № 1. С. 3—17 ; Його ж. Позитивізм як методологія юриспруденції. *Там само*. 2014. № 2. С. 16—35. URL: http://nbuv.gov.ua/UJRN/Fmpp_2014_2_4 (date accessed: 12.11.2025) ; Шевчук Р. М. Діалектичний метод у правознавстві: окремі аспекти. *Там само*. 2012. № 2. С. 25—31. URL: http://nbuv.gov.ua/UJRN/Fmpp_2012_2_5 (date accessed: 12.11.2025) ; Його ж. Методологія наукового пізнання: від явища до сутності. *Там само*. 2016. № 1 (11). С. 31—45. URL: http://nbuv.gov.ua/UJRN/Fmpp_2016_1_5 (date accessed: 12.11.2025) ; Кримський С. Б. Запити філософських смислів. Київ, 2003. 240 с. ; Мозговий Л. І., Бичко І. В., Додонов Р. О. та ін. Філософія. Кредитно-модульний курс : навч. посіб. / за ред. Р. О. Додонova, Л. І. Мозгового. Київ, 2009. 456 с. ; Шкурат В. І. Методологічні підходи до аналізу особливостей державного управління в умовах глобалізації. *Державне управління*. 2006. № 1. С. 14—22 та ін.

13 Шевчук Р. М. Методологія наукового пізнання С. 42—43. URL: http://nbuv.gov.ua/UJRN/Fmpp_2016_1_5 (date accessed: 12.11.2025)

of forensic examinations, the use of new natural science and technical methods that can be employed in expert research, their adaptation to the performance of forensic examination tasks, their evaluation of in conformity with the principles of forensic expertise cognition”¹⁴. From the standpoint of E. Simakova-Yefremian, we share the view that the differentiation of specific expertise “drives the emergence of new expert specialties, each defined by a specific field of research”¹⁵. At the same time, the researcher pinpoints the following: “An overemphasis on the differentiation of expertise sometimes leads to situations where well-versed individuals can operate at full capacity exclusively within their ‘own’ area of expertise and face significant obstacles when it comes to the conduct of multidisciplinary forensic examinations”. In this regard, she cites K. E. Boulding’s reasoning regarding the organisation of systems: “The discourse remains limited to physicists talking only to physicists and economists talking only to economists; to make things even worse, nuclear physicists interact exclusively with nuclear physicists, and econometricians interact with econometricians. The central question guiding this study is whether science has become an isolated domain, inhabited by a community of hermits separated by high walls, each communicating in a unique language that only he/she can comprehend. The prevalence of “professional deafness” means that someone who needs to know something that someone else knows is incapable of understanding another due to a lack of cross-disciplinary receptivity”¹⁶. In an effort to avert this scenario, forensic experts, just like any researchers specialized in multidisciplinary forensic examinations, should not only possess specific expertise in the

field in which they hold a formal degree and were trained, but also be well-versed in common issues of science studies, philosophy and theory, in particular, the theory of forensic expertise, as well as in the interdisciplinary fields of forensic expertise and criminalistics. It is an indisputable fact that integration of specific expertise affects the forensic examination classification, and, therefore, the classification of multidisciplinary forensic examinations.

Article Purpose

For the purposes of this study, we deem it appropriate to meticulously study the classification of multidisciplinary forensic examinations, one component of which is forensic psychological examination incorporated into other areas of specific expertise, and to supplement it not only with new structural components, but also with provisions regarding the content of classification units.

Research Methods

With respect to the issue in question, general, separate and special research methods were applied.

Main Content Presentation

Throughout our research on incorporating specific psychology expertise into multidisciplinary forensic examinations, we will rely on the classification developed by E. Simakova-Yefremian:

“5. Multidisciplinary forensic psychological and medical (psychiatric, etc.) examination.

14 Клименко Н. І. Інтеграційна функція експертології. Теорія та практика судової експертизи і криміналістики. 2006. Вип. 6. С. 118.

15 Сімакова-Єфреміян Е. Б. Комплексні судово-експертні дослідження С. 19.

16 Сімакова-Єфреміян Е. Б. Там само. С. 19–20.

5.1. Multidisciplinary forensic psychological and psychiatric examination (study of the nosological nature and degree of mental deviation manifestations and their impact on the mental activity of a person).

5.2. Multidisciplinary forensic medical, psychiatric and psychological (sexological and psychological) examination (a study of how mental activity influences the behaviour of people with disorders in the field of sexual development).

5.3. Multidisciplinary forensic medical and psychological examination (a study of the manifestations, nature, and interaction of psychological and somatopathological factors of a specific nosological affiliation, which are reflected in the peculiarities of a person's mental activity).

5.4. Multidisciplinary forensic psychological and engineering-technical examination (a study of the relationship between the occurrence of a traffic collision, man-made emergency, and the individual psychological features of human behaviour under these conditions).

5.5. Multidisciplinary forensic psychological and handwriting examination (investigation of causal links between individual psychological traits, the emotional state of a person who executed the handwritten text, and the presentation of these peculiarities in the handwritten text).

5.6. Multidisciplinary forensic psychological and linguistic examination (investigation of causal links between a person's speech activity and individual psychological traits and the emotional state of a person (audience)).

5.7. Multidisciplinary forensic psychological and art studies examination (a study of the way people's minds are affected by multimedia content, including print, audio and video, that is either erotic or pornographic or promotes a cult of violence and cruelty)"¹⁷.

As is clearly demonstrated, multidisciplinary psychological and psychiatric examination is at the top of this classification. In our previous publications, we have already emphasized the issues of multidisciplinary psychological-psychiatric, psychological-military, etc., studies¹⁸. Drawing upon forensic practice, we propose expanding the spectrum of multidisciplinary studies in which specific psychology expertise is applied.

Let us first address multidisciplinary forensic psychological and psychiatric examination. This study is responsive to the dynamics of social processes and contemporary challenges. It methodologically re-evaluates traditional scientific achievements and transforms them into new, flexible theoretical and practical systems.

As set out in Art. 1 of the Law of Ukraine: *On Judicial Examination*, "Research stemming from a particular expertise in science, technology, art, crafts, etc., on objects, phenomena, and processes for the

17 Сімакова-Єфремян Е. Б. Комплексні судово-експертні дослідження С. 106—107.

18 Див., напр.: Євсюков О. Ф. Вирішення комплексною військово-психологічною експертизою завдань щодо оцінювання впливу деструктивної пропаганди. *Вісник Луганського навчально-наукового інституту імені Е. О. Дідоренка*. 2025. Вип. 2 (110). С. 117—125. DOI: 10.32782/2786-9156.110.2.117-125 (date accessed: 12.11.2025) ; Його ж. Можливості дослідження пропаганди в межах комплексної військово-психологічної експертизи. *Військова експертиза в умовах сьогодення: проблемні питання та шляхи їх вирішення* : зб. мат-лів Всеукр. наук.-практ. конф. (Дніпро, 25.04.2025). Дніпро, 2025. С. 69—72 ; Yevsiukov O. Complex forensic psycho-psychiatric examination: modernity and prospects. *Trends and Prospects for the Development of Science and Education : Proceedings of the 2nd International Scientific Conference* (Oxford, UK, 10 July 2025). Oxford, 2025. Pp. 204—207. DOI: 10.64076/iedc250710.32 (date accessed: 12.11.2025).

purpose of providing a conclusion on issues that are or will be the subject of trial”¹⁹. The law fails to specify the meaning of the specific expertise concept, but only links thereof to science, technology, art, crafts, etc. In the preamble of this Law, forensic activity purpose is defined as follows: “Upholding justice in Ukraine through independent, qualified and objective expert examinations that make the most of scientific and technological advances”²⁰. Therefore, when justifying the need to extend the specified list, we will rely on the provided rules.

The following Ukrainian scholars devoted their research papers to theoretical and applied issues of specific expertise: D. Hurina and I. Kalinina²¹, M. Shcherbakovskiy²², I. Petrova²³, H. Spitsyna and H. Bidniak²⁴, E. Simakova-Yefremian²⁵,

N. Filipenko et al.²⁶, and others). “Conversely, various interpretations of specific expertise essence have become the “cornerstone” underlying the discrepancies concerning the lawfulness of engaging a specialist who is qualified in a particular field to conduct a forensic examination”²⁷.

H. Spitsyna defines specific expertise as a set of knowledge and skills in various disciplines; a system of data from science, technology and other areas of human activity; knowledge used procedurally in pre-trial investigation and in court proceedings; utilized in conjunction with scientific and technical means; applied and implemented by “participants in criminal proceedings in practical activities, special training, taking into account professional experience and based on the body of theo-

- 19 Про судову експертизу : Закон URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 12.11.2025).
- 20 Про судову експертизу : Закон URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 12.11.2025).
- 21 Гуріна Д. П., Калініна І. В. До питання щодо компетенції та компетентності судового експерта у кримінальному провадженні. *Криміналістика і судова експертиза*. 2018. Вип. 63 (1). С. 195—203. URL: [http://nbuv.gov.ua/UJRN/krise_2018_63\(1\)_23](http://nbuv.gov.ua/UJRN/krise_2018_63(1)_23) (date accessed: 12.11.2025).
- 22 Щербаковський М. Г. Співвідношення спеціальних знань з уміннями та навичками. *Сучасні тенденції розвитку криміналістики та кримінального процесу*: тези доп. міжнар. наук.-практ. конф. до 100-річ. від дня народж. проф. М. В. Салтєвського (Харків, 08.11.2017). Харків, 2017. С. 225—226. URL: <http://dspace.univd.edu.ua/xmlui/handle/123456789/14545> (date accessed: 12.11.2025).
- 23 Петрова І. А. Теоретико-правові та організаційно-методологічні засади регулювання судово-товарознавчих експертиз споживчих товарів : дис. ... д-ра юрид. наук. Харків, 2012. 541 с. URL: <https://uacademic.info/ua/document/0512U000231> (date accessed: 12.11.2025).
- 24 Спіцина Г. О., Бідняк Г. С. Форми використання спеціальних знань. *Теорія та практика судової експертизи і криміналістики*. 2018. Вип. 18. С. 240—248. DOI: 10.32353/khrife.2018.26 (date accessed: 12.11.2025).
- 25 Сімакова-Єфремія Е. Б. Про необхідність удосконалення законодавства щодо здійснення судово-експертної діяльності в Україні. *Там само*. 2019. Вип. 19. С. 118—129. DOI: 10.32353/khrife.1.2019.09 (date accessed: 12.11.2025).
- 26 Філіпенко Н. Є., Снігерьев О. П., Бубликов А. В. Застосування спеціальних знань під час виявлення, профілактики й розслідування злочинів у сфері комп’ютерної інформації та високих технологій (оглядова стаття). *Там само*. 2020. Вип. 22. С. 162—178. DOI: 10.32353/khrife.2.2020.12 (date accessed: 12.11.2025).
- 27 Євсюков О. Ф. Використання спеціальних психологічних знань у кримінальних провадженнях. *Правовий часопис Донбасу*. 2025. № 1 (90). С. 87. DOI: 10.32782/2523-4269-2025-90-87-91 (date accessed: 12.11.2025).

retical knowledge in the relevant field; <...> implementation of specific expertise is both labour-intensive and cognitively demanding; <...> specific expertise contributes to the development of technical means and methods of working with evidence and to the establishment of compelling circumstances that are vital for proof procedure”²⁸.

M. Mykheienko et al. stress that “commonly known, publicly available scientific knowledge, everyday and household information, as well as knowledge of law” are not included in the specific expertise structure²⁹. V. Shepitko views specific expertise as “a system of scientific data (knowledge) or skills of an objective nature, obtained as a result of higher professional training, scientific activities, hands-on experience — all meeting modern standards”³⁰. V. Honcharenko et al. emphasize that specific expertise is knowledge and skills acquired as a result of “professional education and/or hands-on experience in any field of science, technology, art or craft, which are used <...> by participants in proceedings within the scope of their granted powers to solve procedural tasks following a specific procedure”³¹.

In previous publications we stressed that specific expertise is a holistic system reflecting the extent to which the forensic expert perceives tangible and materialized objects within the scope of his/her competence. The logical organization of

the cognitive process of an expert psychologist is aimed at obtaining and substantiating the knowledge gained about the object under study, at transforming one’s cognitive activity into a subject-oriented, conscious scientific and practical search related to the concepts and categories of specific fields of knowledge. This is accomplished through appropriate methods and techniques of forensic psychological examination³².

General classification of expert sciences views forensic psychological examination and forensic psychiatric examination as adjacent generic expert disciplines. This is linked to the fact that these branches of science (forensic psychology and forensic psychiatry) primarily focus on the study of peculiarities of human mental activity. At the same time, it stressed that a forensic psychologist studies the mental activity of a mentally healthy person, and a forensic psychiatrist examines a person suffering from mental disorders. When evaluating human mental functioning, well-versed individuals (expert psychologists and expert psychiatrists) fulfil tasks within their areas of competence and incorporate specific expertise into a common opinion. The authority of forensic experts participating in conducting a multidisciplinary forensic analysis is defined not only by the forensic examination subject (tasks), but also by its

28 Спіцина Г. О., Бідняк Г. С. Зазнач. твір. С. 241. DOI: 10.32353/khrife.2018.26 (date accessed: 12.11.2025).

29 Михеєнко М. М., Шибіко В. П., Дубинський А. Я. Науково-практичний коментар Кримінально-процесуального кодексу України: за станом законодавства і постанов Пленуму Верховного Суду України на 15 серпня 1997 р., зі змінами законодавства станом на 01 квітня 1999 р. / ред.: В. Ф. Бойко, В. Г. Гончаренко. 2-ге вид. Київ, 1999. 622 с.

30 Шепітько В. Ю. Проблеми використання спеціальних знань крізь призму сучасного кримінального судочинства в Україні. *Судова експертиза*. 2014. № 1. С. 11.

31 Гончаренко В. Г., Курдюков В. В., Легких К. В. Спеціальні знання: генезис, предмет, рівні, форми використання в доказуванні. *Вісник Академії адвокатури України*. 2007. Вип. 2 (9). С. 24. URL: http://nbuv.gov.ua/UJRN/vaau_2007_2_5 (date accessed: 12.11.2025).

32 Євсюков О. Ф. Використання ... С. 88. DOI: 10.32782/2523-4269-2025-90-87-91 (date accessed: 12.11.2025).

object and subjects (experts with specific expertise). The set of research methods employed by forensic experts within their professional remit is also an essential component.

Sent. 1 of para. 6 of cl. 1.2.13 of Sec. I of the Instructions on the Appointment and Conduct of Forensic Examinations and Expert Research stipulates the following: *“Multidisciplinary is an expert examination conducted with the application of specific expertise from diverse domains, such as various fields of science, technology, or other specific expertise (various specializations within the same field) to address one joint (integration) task (issue)”*³³. Notably, even though the Criminal Procedure Code of Ukraine contains Art. 486: *Comprehensive psychology-psychiatric and psychological examination of an underage suspect or accused*, it does not fully define multidisciplinary expert examination³⁴. The situation remains consistent across the other codes of Ukraine, even though they include articles titled *Multidisciplinary expert examination* (Art. 112 of the Civil Procedure Code of Ukraine³⁵, Art. 106 of Code of Commercial Procedure of Ukraine³⁶, Art. 110 of the Code of Administrative Proceedings of Ukraine³⁷). However, they do fail to include the interpretation of the multidisciplinary forensic examination concept; instead, they contain a rule that requires an expert who disagrees with another expert's opinion to provide a separate opin-

ion on all issues, or on those on which he/she disagrees. This violates the fundamental multidisciplinary expert examination principle, which presupposes that opinions can only be drawn on the basis of the integration of specific expertise from various fields of science. We would like to emphasise once again that when conducting a multidisciplinary forensic examination, it is impossible to reach a conclusion without synthesizing cross-disciplinary knowledge, and the application of the rule concerning the possibility of providing a separate expert opinion based on the results of a multidisciplinary expert examination will lead to a deadlock.

When considering multidisciplinary forensic psychological and psychiatric examination (hereinafter referred to as the *FPPE*), it is worth pointing out that the expert psychologist only examines examinees who have been diagnosed as mentally healthy by the expert psychiatrist. These boundaries of experts' competence are determined by the scope of their specific expertise.

An expert psychologist *“tackles highly complex tasks to reconstruct the specific nature of a person's mental activity in a situation that developed in the past. Retrospective analysis requires the application of a suite of knowledge and skills: possession of empirical and theoretical knowledge in the field of psychology, mastery of methods for verifying and substantiating obtained results, the ca-*

33 Інструкція про призначення та проведення судових експертиз та експертних досліджень : затв. наказ. Мін'юсту України від 08.10.1998 р. № 53/5 (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/z0705-98#Text> (date accessed: 12.11.2025).

34 Кримінальний процесуальний кодекс 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: 12.11.2025).

35 Цивільний процесуальний кодекс України від 18.03.2004 р. № 1618-IV (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/1618-15#Text> (date accessed: 12.11.2025).

36 Господарський процесуальний кодекс України від 06.11.1991 р. № 1798-XII (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/1798-12#Text> (date accessed: 12.11.2025).

37 Кодекс адміністративного судочинства України від 06.07.2005 р. № 2747-IV (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2747-15#Text> (date accessed: 12.11.2025).

capacity for synthesizing specific properties of psychological phenomena and abstractions (e.g., ideal models of a personality's structure, models of the structure of his/her mental activity), description and expert evaluation of studied mental phenomena, which have been categorised and conceptualized within the framework of scientific psychology and special concepts of forensic psychological examination, etc. Therefore, in the course of research, the expert synthesizes knowledge of forensic examination theory and scientific psychological knowledge, as well as organizes his/her professional activities according to a procedural framework for conducting an expert examination"³⁸.

From the perspective of V. Pervomaiskyi, when evaluating the specific expertise and competence of an expert psychiatrist, the following should be emphasized: *"The object of forensic psychiatric examination is not only the person directly involved, but also all other physical media containing information about a person's past (including the relevant timeframe for the investigation and court) and current states of consciousness (his/her perception of himself/herself, his/her environment, and behaviour)* [Here and hereinafter, translation into Ukrainian is provided by the authors.—Ed.]. The scientist also notes that *"two aspects must be singled out in the "competency" concept. The first one encompasses the range of questions stipulated by legislative acts and departmental instructional documents derived from them, which must be resolved by a forensic expert. These same documents set forth certain requirements for expert examination and the expert's opinions. The second one is the range of questions that experts may address in the presence of all the necessary*

materials and based on the potential of their respective fields. The overlap of these aspects of the concept serves as an obligatory prerequisite for defining the limits of the expert psychiatrist's competence. The limits of the expert psychiatrist's competence include:

- *smth that makes up the forensic psychiatry subject;*
- *smth that can be obtained using a forensic psychiatric diagnostic method;*
- *smth that can be proved using the tools of this field;*
- *smth that cannot be refuted by anyone other than another specialist in this area of knowledge"*³⁹.

If we align the cited reasoning with the limits of an expert psychologist's competence, then they include a component of the forensic psychology subject. This component can be obtained using forensic psychological examination methods, are proven by this science, and cannot be refuted by anyone except another specialist in this field.

Therefore, taking into account the specifics of the forensic psychological and forensic psychiatric examination described above, during the conduct of a FPPE:

- An expert psychologist studies peculiarities of the mental activity of a person without mental disorders (describes, analyses, evaluates them) and case materials necessary for addressing questions.
- An expert psychiatrist examines (detects, evaluates, diagnoses) an examinee and studies medical records.

A sample-based analysis of expert practice demonstrates that approaches to the conduct of a FPPE vary depending on

38 Євсюков О. Ф. Використання С. 89. DOI: 10.32782/2523-4269-2025-90-87-91 (date accessed: 12.11.2025).

39 Первомайский В. Б. Невменяемость. Киев, 2000. 320 с. URL: <http://www.psychiatry.ua/books/insanity/> (date accessed: 12.11.2025).

different regions of Ukraine, specifically due to the lack of multidisciplinary scientific research by psychologists and psychiatrists, which would contain general methodological guidelines for FPPE conduct. This methodological gap requires the delineation of concepts that would help describe the object under study using categories derived from the parent sciences (psychology and psychiatry) and adapted to the intellectual repository of psychological and psychiatric examination. This will also help methodologically organise and unify the process of interdisciplinary expert cognition for subsequent application in case law.

Consequently, in light of contentious issues that occur during research activities carried out at the intersection of forensic psychology and forensic psychiatry, it is necessary to synthesize the findings of expert psychologists from the Ministry of Justice and of expert psychiatrists from the Ministry of Health of Ukraine in order to organize the scientific and methodological support for FPPE. Scientific-methodological and organizational-management support for forensic expert activities is set out in Art. 8 of the Law of Ukraine: *On Judicial Examination* ⁴⁰. *We propose that joint activities on scientific and methodological support for FPPE be carried out in two stages. At the first stage, it is advisable to develop and agree on the terminology for these types of forensic examinations. We consider the problem of applying terminology that combines certain aspects of forensic psychological and forensic psychiatric examinations to be of primary importance. A glossary of terms for forensic psychological and psychiatric examinations will ensure the correctness and scientific accuracy of expert language, taking into*

account peculiarities of interdisciplinary terminology. This approach stems from the principles of terms universality (adaptation to different fields of specific expertise while preserving the core meaning) and contextual variability (clarification of the term meaning depending on the expert discipline). *At the second stage, it is crucial to develop modern methodologies (methodological guidelines) for FPPE, which will contribute to the regulation of forensic expert activities, providing objective answers to the investigation's (court's) questions.*

Similar to the above is the issue of synthesizing knowledge during a multidisciplinary forensic medical, psychiatric and psychological (sexological-psychological) examination. This research aids in studying the impact of the mental activity of a person suffering from sexual development disorders on his/her behaviour. How exactly does this type differ from the one described above? From our perspective, this category can be considered a type of multidisciplinary forensic psychological and psychiatric examination in theory. However, to assess the sexual maturity of an examinee and biological and medical signs of his/her disease, causes (etiology or aetiology), mechanisms of development (pathogenesis), and single out classifications and nomenclatures, not only expertise in the field of psychiatry and psychology is required, but also in medicine, since disease should be considered a holistic phenomenon that requires systematization and classification for correct diagnosis, treatment and prevention. For this purpose, specialists qualified in therapy, gynaecology, and endocrinology (other medical experts) are engaged, without whom it is often impossible to di-

⁴⁰ Про судову експертизу : Закон URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 12.11.2025).

agnose a specific disease characterized by a specific cluster of symptoms, functional and morphological changes, as well as by a certain cause and mechanism of development.

Objects that will be examined during a multidisciplinary forensic medical and psychological-sexological examination encompass the examinee, medical records, and other documentation. Since human activities depend on many factors and can yield both external (man-made artifacts, accomplishments) and internal (personal growth, self-realization) outcomes, they are manifested in actions that society and a person himself/herself categorize as either positive or negative, depending on their purpose and content. That is why expert examination objects also comprise various products for free creativity and self-expression created and crafted of one's own will (e.g., diaries, personal notes), results of experimental psychological studies, etc., exploring the intersection of somatopathological, psychopathological, and psychological phenomena, etc. The main task of multidisciplinary forensic medical and psychological-sexological examination is to identify whether a person suffering from borderline personality disorder of a sexological nature is able (or unable) to express will, reflect, and have a clear mental perception of reality. Predominantly, in criminal proceedings involving sexual offences, investigative authorities formulate the following questions to fulfil this task: "What are the psychological factors of a person's sexual behaviour?"; "Can a person with specific sexual mental disorders, at a certain level of socio-psychological and mental development, with individual psychological traits and an emotional state, comprehend

the nature and significance of sexually violent acts committed against him/her and resist them?"; "Is a person, given his/her level of mental development and individual psychological traits, capable of fully understanding the nature and actual content of his/her actions, exercising complete control over them, and anticipating their consequences?"; Have (and how exactly) individual properties of a person's mental processes (specify, depending on what is important in a case: memory, attention span, perception, thinking, nature of emotional responses) affected the adequacy of his/her perception of the nature and context of a situation (clarify inherent signs of a situation investigated in a case), or presentation thereof in the testimony?; "Does a person possess individual psychological traits that significantly influenced the nature of his/her testimony in a case?".

Apart from general research methods, the following are employed within the analytical toolkit of multidisciplinary forensic medical and psychological-sexological examination: clinical-diagnostic, directed observation, diagnostic conversation, experimental-psychological examination, etc., and specialized methodologies for expert analysis in the relevant specialties (excluding forensic-medical and forensic-psychiatric ones, which are not subject to registration) from the *Register of Methodologies for Conducting Forensic Examinations*⁴¹.

During a multidisciplinary forensic medical and psychological-sexological examination, the expert committee primarily studies case (proceedings) materials and only after that proceeds to the evaluation of the victim's sexual maturity (medical-somatic examinations) and the identification of sexual development disorders (if any). If

41 Реєстр методик проведення судових експертиз : вебсайт. URL: <https://rmpse.minjust.gov.ua/page/24> (date accessed: 12.11.2025).

present, the type and degree of expressiveness of the person's borderline mental disorder are studied, and intermediate medical and psychiatric opinions are formulated. At the second stage, an expert psychiatrist and an expert psychologist conduct a clinical follow-up and an experimental psychological study, respectively. They identify core personality traits, study a person's emotional and volitional sphere, leading and situational motives of activity, and ways of acting; analyse regulatory, protective, and compensatory mechanisms; assess the level of mental development, specific instances of a victim's understanding of sexual relations; analyse the development of a criminal situation and peculiarities of the victim's awareness of the perpetrator's sexually inappropriate actions during the early stages; evaluate the emotional state of a victim in a certain criminal situation; analyse the adequacy of moral and ethical assessment of events, and shed light on the understanding of the social significance of actions committed against the victim. Drawing upon a synthesis of the collective findings, experts compile a joint opinion about the degree of sexual maturity of an individual, the awareness of his/her own actions, the level of volitional control over his/her own behaviour, and his/her ability to choose means of resisting the perpetrator in the situation under investigation. Experts' answers to the questions posed should be formulated in a categorical or probable manner, or in the form of an expert opinion stating the impossibility of resolving an issue, accompanied by specific reasons. The opinion of the multidisciplinary forensic medical, sexological and psychological examination is signed by a medical expert, an expert psychiatrist, and an expert psychologist.

Similar to the above type of multidisciplinary expert examination is multidis-

ciplinary forensic medical and psychological examination. Its subject matter is the factual data and circumstances of a case, which are established by synthesizing knowledge in the fields of forensic medicine and forensic psychology. They concern the assessment of manifestations, nature and interaction of psychological and somatic-pathological factors of a particular nosology, reflected in the peculiarities of a person's mental activity and interlinked with disturbances in his/her physical health.

The committee of forensic experts identifies individual psychological traits of an examinee resulting from somatic disease. The question may be phrased as follows: "Are there any health-related psychological traits of an individual that have significantly influenced the nature of his/her actions during crime commission (attention span, sensory sphere, fatigue, reaction time, etc.)?"; "Was the person in an emotional state (intense fear, depression, confusion, despair, mental strain, fatigue, etc.) that significantly affected his/her consciousness during crime commission?"; "Is a person able, given his/her state of health, psychophysiological and emotional state, and individual psychological traits, to correctly understand the circumstances relevant to a particular proceeding and give adequate testimony about them?"; "Have the person's state of health and individual psychological traits (memory, attention span, thinking, emotional reactions) affected his/her ability to accurately apprehend the specific features and nature of a given situation and to reproduce them in their testimony?".

The objects of multidisciplinary medical and psychological examination are a certain person, medical records and other documentation compiled based on the individual's examination results and activ-

ities (diaries, profiles, etc.), findings of an experimental psychological study on the interdependence of somatopathological and psychological phenomena in the behaviour of an individual.

The methods of multidisciplinary medical and psychological examination include: general, separate (clinical-diagnostic, directed observation, diagnostic conversation, experimental-psychological study, etc.) and special methods, functions of which are fulfilled using established expert research methodologies in relevant specialties (excluding forensic medical examinations, which are not subject to registration) from the *Register of Methods for Conducting Forensic Examinations*⁴².

At the first stage, the expert committee studies case materials and conducts a medical-somatic expert examination (where the medical expert plays a leading role): it assesses the nosological nature, type and severity of health disorders. At the second stage, an expert psychologist determines the following: dominant individual personality traits; regulatory, protective and compensatory mechanisms; mental state of a person in a criminal situation; a person's behaviour in certain situational circumstances of a crime. Based on expert examination findings, the expert committee draws a conclusion on the impact of the person's health problems on his/her mental activity in the context of the alleged offense. The expert's opinion may be categorical, probable, or in the form of a conclusion stating that it is impossible to resolve the issue, with reasons provided. The conclusion is signed by both experts (the medical expert and the expert psychologist).

Multidisciplinary forensic psychological and engineering-technical examination is used to determine facts and circumstan-

es surrounding the interconnection between events of a technical nature (traffic collisions, man-made emergencies) and individual psychological and behavioural traits of a person. Under such circumstances, experts in the fields of engineering and psychology examine, within their competence, the elements of a complex system: person — technology — environment.

The primary objective of this research type is to establish whether a connection exists between the occurrence of a man-made emergency or traffic collision and the individual psychological traits of human behaviour in this particular context. To achieve this, the following questions are proposed for consideration: “Does a particular individual possess individual psychological traits that have significantly influenced the nature of his/her actions during a man-made emergency or traffic collision (increased dependence, hesitancy, vulnerability, anxiety, etc.)?”; “Was a certain person in an emotional state (intense fear, depression, confusion, despair, emotional stress, frustration, etc.) that significantly impaired his/her consciousness and disrupted his/her activities while performing duties (operating machines, mechanisms, vehicles, etc.) stipulated by the relevant regulatory documents?”; “Was a particular individual capable of taking measures to prevent a man-made (emergency) situation, given their psychophysiological state?”; “Have the individual psychological or sensory characteristics of a particular individual (memory, attention span, perception, thinking, emotional reactions, vision, smell, hearing) affected his/her ability to properly understand the circumstances of an accident or man-made emergency and reproduce them in his/her testimony about the man-made (emergency) situation?”.

42 Реєстр методик ... URL: <https://rmpse.minjust.gov.ua/page/24> (date accessed: 12.11.2025).

During a multidisciplinary forensic engineering-technical and psychological examination, the expert committee proceeds to individual studies after reviewing case materials submitted to resolve issues related to the establishment of a causal relationship between the actions of a person from an operational and technical perspective and his/her psychophysiological features. First, a forensic engineering expert assesses technical features of the incident's onset, sequence of events, and consequences of an emergency. He/she analyses the actions of a participant in the event exclusively from a technical standpoint, that is, the expert analyses to what extent the person's actions comply (non-comply) with the requirements of regulatory acts (legal regulations): for example, whether these actions comply with the technical specifications of Road Traffic Regulations, etc.

Subsequently, an expert psychologist identifies the person's psychophysiological profile in the event of an emergency. The psychologist constructs a mental model of a person's appropriate behaviour in normal conditions and compares it with the context of a specific emergency that has taken place, determining the psychological parameters of the situation (extremity or normality), the extent of the individual's ability to accurately assess the situation as threatening, the extent of their ability to consciously control, accept and implement decisions, the degree of the individual's ability to correctly perceive, remember and reproduce the circumstances of the event in their testimony, etc. The joint expert opinion stemming from the conducted research should encompass the definition of circumstances, nature, and mechanisms of a man-made emergency (accident) and their relationship with indi-

vidual psychological traits and the mental state of an individual.

A completely different nature of specific expertise integration can be traced in multidisciplinary psychological and handwriting examination, which covers the identification of the relationship between individual psychological traits, the emotional state of a person who has executed the handwritten text, and the reflection thereof in the handwritten text. The question can be posed as follows: "Was a person who wrote the handwritten text in an atypical psychophysiological condition? If so, what condition is it?"

The scope of objects (apart from a person who has executed the handwritten text) of this type of multidisciplinary expert examination includes handwritten texts and comparative samples (free, conditionally free, experimental), as well as other proceedings materials documenting the mental activity of a specific person in a situation involving handwritten text execution, etc. Apart from general and specific methods (diagnostic interview, experimental-psychological examination, microscopic examination, forensic photography, etc.), specialized methods employing specific methodologies for the relevant specialties listed in the Register for Conducting Forensic Examinations⁴³ are also used during multidisciplinary psychological and handwriting examinations.

Although many have studied the influence of a person's psycho-emotional states on his/her motor skills (a system of movements characteristic of a certain person), specifically on handwriting, this type of research has not been adequately addressed to date. Following the standard procedure of previous multidisciplinary expert examinations, the expert committee first familiarizes itself with

43 Реєстр методик ... URL: <https://rmpse.minjust.gov.ua/page/24> (date accessed: 12.11.2025).

the submitted case materials. Firstly, the handwriting expert identifies an author of the manuscript. Then, he/she establishes whether the manuscript has been written under unusual circumstances or in an unusual state. In the event of a favourable outcome, at the second stage, the expert psychologist determines the set of individual psychological traits of an individual and the nature of his/her emotional state during the execution of the handwritten text. The joint opinion, which is signed by all experts, should cover the identification of the emotional state (indicate the specific state) of a person who, under certain conditions, executed the handwritten text. The forms of opinions are the same as mentioned earlier.

Similar in methodology to the above is multidisciplinary forensic psychological and linguistic examination (authorship analysis), but it focuses not on the executor, but on the text author or the semantic and textual peculiarities of text (words, phrases). This research's subject matter involves studying facts and circumstances related to determining peculiarities of an author's speech activity and their interconnection with individual psychological traits and emotional state of the recipient (audience). Following the previous research, the system of multidisciplinary forensic examinations fails to distinguish this type of research as a separate category either. At the same time, such questions arise in expert practice, so they need to be resolved. In our view, typical tasks of multidisciplinary psychological and linguistic examination (authorship analysis) entail the determination of the nature and features of written communication (speeches, texts in social networks, or other types of communication), its potential impact on the cognitive, motivational, and emotional spheres of those to whom it is ad-

dressed. Expert psychologists are usually addressed with the following questions: "Does a particular statement (word, text) by the communicator have the potential to influence the cognitive (motivational, emotional) sphere of the recipient (audience) with the aim of bringing the recipient's value systems, attitudes, motivations, social stereotypes, and guiding principles into line with the communicator's desired outcome?"; "If the communicator's speech, textual reproduction of which is provided in the video recording review protocol, contains demands for providing undue advantage in exchange for taking certain actions or inaction, and the communicator uses his/her official standing over a person under his/her authority, how could this affect the recipient's perception of this information?". The expert linguist's opinions serve as the basis for addressing these questions.

The scope of objects for this multidisciplinary expert examination may cover relevant materials of proceedings related to the products of mental and speech activity: e.g., texts, phrases, and individual words (both handwritten and printed: since it is about the author of a text, video recording review protocols).

Methods are classified according to the following criteria: general, specific and special. The methods are freely selected based on the expert's professional expertise, since the choice of the forensic analysis method falls within the expert's remit. At the initial investigation stage, the expert committee familiarises itself with the provided case materials/ other objects and determines the sufficiency (insufficiency) of materials and, if necessary, submits a corresponding motion for additional information. Thereafter, the expert linguist identifies speech production peculiarities, such as its characteristics, purpose, category

based on presentation type, and meaningful components, along with the communicative environment. During the research, socio-biographical details of the text author, including native language and educational background, can also be established from available materials. Subsequently, an expert psychologist assesses the communicative potential of the text and reviews the collected data. Following the multidisciplinary expert examination, the expert committee formulates and signs an opinion (an expert psychologist discusses the impact of the researched speech production on the recipient, person or audience in his/her opinion). Experts' answers to the questions posed should be formulated in a categorical or probable manner, or in the form of an expert opinion stating the impossibility of resolving the issue, accompanied by specific reasons.

Similar to the above-mentioned type of multidisciplinary expert examination is multidisciplinary forensic psychological, linguistic, video and audio recording examination. It aims to assess the communicative influence in communication scenarios captured on video and audio recordings. The object of such a study is information (video and audio recordings and protocols for the review of audio and video recordings, documented on paper-based or digital media) containing factual data about a specific communicative interaction (human speech activity). Given the functions of communicative acts and their symbolic nature, the subject of multidisciplinary psychological and linguistic examination of speech and video/audio recordings is a set of factual data on peculiarities of human speech production and the presence (absence) of communicative influence, which are established through the synthesis of knowledge from related fields of science—linguistics, psychology,

and video/audio recording research—and are of paramount importance in legally relevant situations.

The subject of expert examination in the field of video and audio recording is the factual data about a speaker featured in the video or audio recording. These data facilitate the identification of this person by physical parameters of his/her voice or by linguistic features of his/her speech; physical media and video/audio recording devices help obtain information about technical specifications and technology of video/audio recording based on specific expertise. The subject of the expert linguist's research is factual data captured on video and audio recordings relating to speech forms (provision of information, coercion, persuasion, threats, etc.), which are identified using specific expertise. The subject of the expert psychologist's research is factual data recorded on video and audio recordings about peculiarities of communicative interaction between persons (verbal and non-verbal behaviour aimed at achieving a specific communicative and practical goal in the context of certain psychological attitudes, characteristics of the communicative space), which are established relying on specific psychology expertise.

The task of an expert examining audio and video recordings containing communicative interactions is to determine technical settings and technologies for obtaining video and audio recordings and/or identifying persons. It is worth noting that establishing the textual content of conversations captured via video and audio recordings is not a separate expert task, as it does not require specific expertise: it is carried out by an expert during speaker profiling and attribution or speech intelligibility improvement. For research purposes, the expert is provided

with the relevant inspection and listening protocols, which contain the content of conversations. The task of an expert linguist examining recorded situations of communicative interaction is to determine the objective content of statements provided for research, identify imperative speech forms (direct and indirect), and the grammatical structure of utterances (factual statements, value judgments, etc.). The task of an expert psychologist analysing recorded situations of communicative interaction is to identify whether the communicator utilises any verbal and non-verbal communication means of a motivational, manipulative, suggestive nature (determine how they influence the recipient's behaviour, emotional state, cognitive and personal spheres).

The integration component of the outlined research subjects is the communicative influence exerted in a situation of communicative interaction, recorded on the video and sound recording and verbalized in the inspection and listening protocol (provided that the content of conversations is available). This necessitates the execution of a common task based on the synthesis of specific expertise in the fields of psychology, linguistics, and video and sound recording examination.

Given current circumstances, experts use the *General methodology for appointing and conducting multidisciplinary forensic examinations by the expert committee (as*

*amended by the decision of the Coordinating Board dated 12 September 2014)*⁴⁴ when conducting multidisciplinary forensic examinations. At the same time, expert practice emphasizes the importance of developing an algorithm of actions for forensic experts in the course of multidisciplinary expert examinations to establish communicative influence in situations of communicative interaction recorded on video or audio.

The subsequent type of multidisciplinary expert examination is multidisciplinary forensic psychological and art studies examination. It is ordered when, drawing upon the synthesis of specific expertise in the fields of art history and psychology, it is necessary to identify factual data on the presence of erotic, pornographic information or information promoting the cult of violence and cruelty in printed, audio, video products, etc., as well as to assess the impact of these data on socio-psychological traits of a consumer (in particular, minors).

Predominantly, forensic expert practice demonstrates that similar studies fall within the competence of a forensic art historian, and they are carried out in conformity with appropriate methodologies (for example: *Methodology for forensic art examination of pornographic content*⁴⁵, *Methodology for examination of works glorifying the cult of violence and cruelty*⁴⁶). At the same time, the psychological and

44 Загальна методика призначення та проведення комплексних судових експертиз, що виконуються комісією експертів (із змінами, внесеними рішенням Координаційної ради від 12.09.2014) : зареєстр. 06.02.2009 р. Харків, 2007. Реєстр. код 0.1.16 / Реєстр методик URL: <https://rmpse.minjust.gov.ua/search> (date accessed: 12.11.2025).

45 Методика судово-експертного мистецтвознавчого дослідження продукції порнографічного характеру : зареєстр. 01.03.2013 р. Харк., Дон. і Крим. НДІСЕ Мін'юсту України; ДНДЕКЦ МВС України, Дон. та Запоріж. НДЕКЦ при МВС України, 2011. Реєстр. код 15.1.12 / Там само. URL: <https://rmpse.minjust.gov.ua/search> (date accessed: 12.11.2025).

46 Методика дослідження творів, що пропагують культ насильства і жорстокості: держреєстр. 28.01.2022 р. ДНДЕКЦ МВС України, Він. НДЕКЦ МВС України, 2021. Реєстр. код 15.1.16 / Реєстр методик URL: <https://rmpse.minjust.gov.ua/search> (date accessed: 12.11.2025).

art examination concept has not yet been well-defined. Research & Development (hereinafter referred to as R&D) led by M. Zhuravleva and carried out by a collaborative research team from Odessa Scientific Research Institute of Forensic Sciences (hereinafter referred to as OS-RIFS)⁴⁷ can be considered a significant step forward in this field. The subject of the aforementioned expert methodology is the phenomenon of child pornography. Results of expert studies conducted in the relevant OSRIFS departments served as the initial data for this R&D project. As the authors note, according to cl. 2 of the Comment to Art. 156–1 of the Criminal Code of Ukraine, child pornography “*shall mean depicting in any way a child or a person who looks like a child, in a real or simulated sexually explicit image or involved in real or simulated sexual behaviour, or any image of the child’s genitals for sexual purposes*”⁴⁸. However, the legislation does not contain a legal rule that would clearly define both the concept of *sexually explicit imagery* and *sexual*. That is why defining the *child pornography* concept is considered one of the main accomplishments of this R&D project. Its authors have developed classification criteria for child pornography in the visual arts (audio-visual products, painting, graphic art, photography, etc.). Researchers have provided a classification of pornographic objects for philocartia objects, items of a decorative and utilitarian nature, objects and phenomena of contemporary art (ready-made, installa-

tions, actions, performances, etc.) and advertising, as well as defined the concepts of *pornographic*, *erotic*, *sexual*, and other specialized terminology. The theoretical and applied significance of this study lies in the following: for the first time, a methodology for expert examination of child pornography products has been created; discrepancies in the definition of typical classification features of pornographic products and methods for their assessment have been addressed (specifically, art studies criteria for child pornography have been amended); algorithms for identifying camouflaged and overt child pornography have been developed⁴⁹. Applying the developed methodology in forensic expert practice will contribute to the development of a common approach to the performance of the integration task. This can be implemented through the comprehensive use of specific expertise in psychology and art studies, during the investigation of criminal offences involving production and distribution of pornography and sexual offenses against children.

We have already discussed multidisciplinary forensic military and psychological examination⁵⁰. As set out in cl. 8.1 of Sec. VIII of the *Scientific and Methodological Guidelines on the Preparation and Appointment of Forensic Examinations and Expert Research* (hereinafter referred to as the SMG), the principal tasks of military expert examination are “*establishing circumstances of the deployment and actions of military units; identifying circumstances that have*

47 Розробка методики проведення комплексної психолого-мистецтвознавчої експертизи дитячої порнографії : звіт про НДР (остаточ.) / наук. кер. М. О. Журавльова, відповід. викон. С. В. Ласунова, Д. В. Хамула. № ДР 0122U000933. Одеса, 2024. 704 с.

48 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/2341-14#Text> (date accessed: 12.11.2025).

49 Розробка методики

50 Євсюков О. Ф. Вирішення DOI: 10.32782/2786-9156.110.2.117-125 (date accessed: 12.11.2025).

*resulted in grave consequences, the death of people (military personnel, employees of the Security Service of Ukraine, the Armed Forces of Ukraine, the Ministry of Internal Affairs of Ukraine, the National Guard of Ukraine and other representatives of ministries and departments, civilian population), loss of weapons, military equipment, government facilities and infrastructure, personal property of citizens during the deployment of military units; assessing the compliance of actions (inaction) of officials with the requirements of relevant governing documents (assigned duties)”*⁵¹. From our perspective, performance of the specified tasks should encompass not only the managerial (command and control) scope of the established facts and circumstances in specific criminal proceedings, but also the human factor, which gains critical relevance in the activities and combat potential of the Armed Forces of Ukraine and other military units. This is a pivotal factor given the current informational influence of destructive propaganda and other challenges of information warfare. Both military personnel and representatives of other law enforcement agencies and units can become targets of destructive propaganda. Therefore, forensic expert examinations of this kind must be conducted solely through synthesizing specific expertise across various disciplines, namely military and psychological, i.e., in a comprehensive manner. It is precisely this kind of multidisciplinary forensic analysis that can fully and objectively assess the informational impact of the enemy's destructive propaganda on the decision-making of military units commanders (staffs) in the context of hy-

brid warfare. Such studies will also serve a preventive purpose, which will consist in improving the moral and psychological state of military staff and enhancing the national security posture of the State.

Given these considerations, we propose supplementing the list of multidisciplinary forensic examinations with multidisciplinary military and psychological examinations, since moral and psychological support for the daily activities of troops is inseparable from command and control.

In our opinion, the body (person) that orders an expert examination (engages an expert) in military matters specified in para. 8.1 of Sec. VIII of the SMG⁵² should also take into account the psychological component of the behavioural conduct of military forces in specific circumstances of criminal proceedings. Therefore, according to the studies of human behavioural acts related to the peculiarities of their mental perception of the investigated event and issues, it is necessary to order multidisciplinary forensic military and psychological examination when the military personnel who gives orders (instructions) or the military personnel who executes them (discards them) are subjected to the informational influence of destructive propaganda from other countries (persons). These findings will facilitate assessing the potential of such destructive influence of another country's propaganda (its representatives) on the cognitive, emotional, motivational spheres and social stereotypes. The tasks of the proposed multidisciplinary forensic military and psychological examination are integrative

51 Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень : затв. наказ. Мін'юсту України від 08.10.1998 р. № 53/5 (зі змін. та допов.). URL: <https://zakon.rada.gov.ua/laws/show/z0705-98#Text> (date accessed: 12.11.2025).

52 Там само.

in nature. This involves a thorough study of management activities in the military sphere and individual psychological and personal components (the principle of completeness)⁵³.

Conclusions

Following the analyses of specialised literature and regulatory acts on the synthesis of specific expertise, the classification of multidisciplinary forensic examinations has been provided. Furthermore, a proprietary system of multidisciplinary forensic examinations has been proposed, where the incorporation of specific psychology expertise into other fields of science and technology has been observed. General methodological guidelines for multidisciplinary forensic examinations of the proposed types have been discussed.

Our classification is as follows:

- multidisciplinary forensic psychological and psychiatric examination;
- multidisciplinary forensic medical, psychiatric and psychological (sexological and psychological) examination;
- multidisciplinary forensic medical and psychological examination;
- multidisciplinary forensic psychological and engineering-technical examination;
- multidisciplinary forensic psychological and handwriting examination;
- multidisciplinary forensic psychological and linguistic examination;
- multidisciplinary forensic psychological-linguistic and video and sound recording examination;
- multidisciplinary forensic psychological and art studies examination;

- multidisciplinary forensic military and psychological examination.

The proposed research will contribute to the improvement and creation of relevant scientific and methodological materials. Once approved and introduced into expert practice, these materials will significantly enhance the efficiency of forensic expert activities.

Сучасний стан і перспективи інтеграції спеціальних знань у галузі психології в комплексні судово-експертні дослідження

Олександр Євсюков

Сучасний стан розвитку наук і технологій, виклики війни, на які має реагувати експертна спільнота для належного рівня експертного забезпечення правосуддя, спонукають дослідників до вдосконалення судово-експертної діяльності, зокрема, пов'язаної з використанням спеціальних знань у галузі судової психології. Важливу роль у цьому аспекті відіграють комплексні судово-експертні дослідження. Метою цієї дослідницької роботи є проведення аналізу наукових праць, нормативно-правових актів та експертної практики й надання на цій підставі характеристики сучасного стану та перспектив інтеграції спеціальних знань у галузі судової психології у комплексні судово-експертні дослідження. Під час опрацювання питань за темою статті застосовано загальні, окремі та спеціальні методи. В умовах реформування законодавства України, що регулює судово-експертну діяльність, розвитку різних галузей спеціальних знань, практика проведення судових психологічних та інших видів досліджень у формі комплексних су-

53 Про судову експертизу : Закон URL: <https://zakon.rada.gov.ua/laws/show/4038-12#Text> (date accessed: 12.11.2025).

дових експертиз наповнюється новими категоріями й методологією, які відбивають сутність предмета, завдань, об'єктів, суб'єктів і методів досліджень. Саме тому це питання набуває все більшої актуальності й потребує докладного аналізу. Розглянуто питання інтеграції та диференціації спеціальних знань і запропоновано таку класифікацію комплексних судових експертиз: психолого-психіатрична; медична, психіатрична та психологічна (сексолого-психологічна); медико-психологічна; психологічна та інженерно-технічна; психолого-почеркознавча; психолого-лінгвістична; психолого-лінгвістична та відео-, звукозапису; психолого-мистецтвознавча; військово-психологічна. Наведені положення й рекомендації спрямовані на впровадження в експертну практику й підвищують ефективність судово-експертної діяльності.

Ключові слова: кримінальний процес; судочинство; інтеграція; диференціація; спеціальні знання; комплексна судова експертиза; психологічні дослідження; методологія; методика.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

Participants

The author has contributed solely to intellectual discussion underlying this document, case law research, writing and editing, and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

The author declares no conflict of interest.

References

- Boichenko, S. B., Boiarov, V. I., Budko, T. V., Varfolomeieva, T. V. ta in. (2015). *Ekspertyzy u sudochynstvi Ukrainy* [Expert Examinations in the Judiciary of Ukraine] : nauk.-prakt. posib. / za zah. red. V. H. Honcharenka ta I. V. Hory. Kyiv [in Ukrainian].
- Dobronravova, I. S., Bilous, T. M., Komar, O. V. (2008). *Novitnia zakhidna filosofia nauky* [The Latest Western Philosophy of Science] : pidruchnyk. Kyiv [in Ukrainian].
- Filipenko, N. Ye., Snigerov, O. P., Bublikov, A. V. (2020). The Use of Special Knowledge While Identification, Prevention and Investigation of Crimes in the Field of Computer-Based Information and High Technologies (Review Article). *Theory and Practice of Forensic Science and Criminalistics*. Is. 22. DOI: 10.32353/khrife.2.2020.12.
- Honcharenko, V. H., Kurdiukov, V. V., Lehykh, K. V. (2007). Spetsialni znannia: henezys, predmet, rivni, formy vykorystannia v dokazuvanni [Special Knowledge: Genesis, Subject Matter, Levels, and Forms of Use in Evidence]. *Visnyk Akademii advokatury Ukrainy*. Vyp. 2 (9). URL: http://nbuv.gov.ua/UJRN/vaau_2007_2_5 [in Ukrainian].
- Hroshevyi, Yu. M., Stakhivskiy, S. M. (2006). *Dokazy i dokazuvannya u kryminalnomu protsesi* [Evidence and proof in criminal procedure] : nauk.-prakt. posib. Kyiv [in Ukrainian].
- Hurina, D. P., Kalinina, I. V. (2018). Do pytan- nia shchodo kompetentsii ta kompetent- nosti sudovoho eksperta u kryminalnomu provadzhenni [To the Question of the Competency and Competence of Forensic Expert in Criminal Proceeding]. *Kryminalistyka i sudova ekspertyza*. Vyp. 63 (1). URL: [http://nbuv.gov.ua/UJRN/krise_2018_63\(1\)_23](http://nbuv.gov.ua/UJRN/krise_2018_63(1)_23) [in Ukrainian].
- Klymenko, N. I. (2006). Intehratsiina funktsiia ekspertolohii [Integrative function of expertology]. *Teoriia ta praktyka sudovoi ekspertyzy i kryminalistyky*. Vyp. 6 [in Ukrainian].
- Klymenko, N. I. (2007). *Sudova ekspertolohiia: kurs lektsii* [Forensic science: a course of lectures] : navch. posib. dlia student. yuryd. spets. vyshch. navch. zakl. Kyiv [in Ukrainian].

- Konovalova, V. E. (1977). O znachenii i funkciyah ekspertnyh versij [On the meaning and functions of forensic expert versions]. *Kriminalistika i sudebnaya ekspertiza*. Vyp. 14 [in Russian].
- Kostytskiy, M. V. (2012). Pro dialektyku yak metodolohiiu yurydychnoi nauky [On dialectics as a legal science methodology]. *Filosofski ta metodolohichni problemy prava*. № 1 [in Ukrainian].
- Kostytskiy, M. V. (2014). Pozytyvizm yak metodolohiia yurysprudentsii [Positivism as Methodology of Jurisprudence]. *Filosofski ta metodolohichni problemy prava*. № 2. URL: http://nbuv.gov.ua/UJRN/Fmpp_2014_2_4 [in Ukrainian].
- Krymskiy, S. B. (2003). *Zapyty filosofskykh smysliv* [Inquiries into Philosophical Meanings]. Kyiv [in Ukrainian].
- Mozghovyi, L. I., Bychko, I. V., Dodonov, R. O. ta in. (2009). *Filosofiia. Kredytno-modulnyi kurs* [Philosophy: a credit-modular course] : navch. posib. / za red. R. O. Dodonova, L. I. Mozghovoho. Kyiv [in Ukrainian].
- Mykheienko, M. M., Shybiko, V. P., Dubynskiy, A. Ya. (1999). *Naukovo-praktychnyi komentar Kryminalno-protsesualnoho kodeksu Ukrainy: za stanom zakonodavstva i postanov Plenumu Verkhovnoho Sudu Ukrainy na 15 serpnia 1997 r., zi zminamy zakonodavstva stanom na 01 kvitnia 1999 r.* [Scientific and practical commentary on the Criminal Procedure Code of Ukraine: based on the legislation and resolutions of the Plenary Session of the Supreme Court of Ukraine dated August 15, 1997, with legislative amendments dated April 1, 1999] / red.: V. F. Boiko, V. H. Honcharenko. 2-he vyd. Kyiv [in Ukrainian].
- Pervomaiskii, V. B. (2000). *Nevmeniaemost* [Insanity]. Kiev. URL: <http://www.psychiatry.ua/books/insanity/> [in Russian].
- Petrova, I. A. (2012). *Teoretyko-pravovi ta orhanizatsiino-metodolohichni zasady rehuliuвання sudovo-tovarnavchykh ekspertyz spozhyvchykh tovariv* [Theoretical-legal and organizational-methodological bases of regulation of the forensic and commodity examinations of consumer goods] : dys. ... d-ra yuryd. nauk. Kharkiv. URL: <https://uacademic.info/ua/document/0512U000231> [in Ukrainian].
- Segaj, M. Ya. (1970). *Metodologiya sudebnoj identifikacii* [Forensic identification methodology] : monografiya. Kiev [in Russian].
- Segaj, M. Ya., Strinzha, V. K. (1997). *Sudebnaya ekspertiza materialnyh sledov-otobrazhenij (problemy metodologii)* [Forensic analysis of physical trace-impressions (methodology challenges)] : monografiya. Kiev [in Russian].
- Shcherbakovskiy, M. H. (2015). *Provedennia ta vykorystannia sudovykh ekspertyz u kryminalnomu provadzhenni* [Conduct and use forensic examinations in criminal cases] : monohrafiia. Kharkiv [in Ukrainian].
- Shcherbakovskiy, M. H. (2017). Spivvidnoshennia spetsialnykh znan z uminniamy ta navychkamy [Correlation of specific expertise with abilities and skills]. *Suchasni tendentsii rozvytku kryminalistyky ta kryminalnoho protsesu* : tezy dop. mizhnar. nauk.-prakt. konf. do 100-rich. vid dnia narodzh. prof. M. V. Salt-evskoho (Kharkiv, 08.11.2017). Kharkiv, URL: <http://dspace.univd.edu.ua/xmlui/handle/123456789/14545> [in Ukrainian].
- Shepitko, V. Yu. (2014). Problemy vykorystannia spetsialnykh znan kriz pryzmu suchasnoho kryminalnoho sudochynstva v Ukraini [Challenges in the use of specific expertise within modern Ukrainian criminal justice]. *Sudova ekspertiza*. № 1 [in Ukrainian].
- Shepitko, V. Yu., Zhuravel, V. A., Avdieieva, H. K. (2011). Innovatsii v kryminalistytsi ta yikh vprovadzhennia v diialnist orhaniv dosudovoho slidstva [Innovations in criminalistics and their implementation in the activities of pretrial investigation bodies]. *Pytannia borotby zi zlochynnistiu*. Vyp. 21. URL: <https://dspace.nlu.edu.ua/jspui/handle/123456789/5481> [in Ukrainian].
- Shevchuk, R. M. (2012). Dialektychnyi metod u pravoznavstvi: okremi aspekty [Dialectical method in law: certain aspects]. *Filosofski ta metodolohichni problemy prava*. № 2. URL: http://nbuv.gov.ua/UJRN/Fmpp_2012_2_5 [in Ukrainian].
- Shevchuk, R. M. (2016). Metodolohiia naukovoho piznannia: vid yavyshcha do сутности [Methodology of Scientific Cognition: from Phenomenon to the Essence]. *Filosofski ta metodolohichni problemy prava*. № 1 (11). URL: http://nbuv.gov.ua/UJRN/Fmpp_2016_1_5 [in Ukrainian].

- Shkurat, V. I. (2006). Metodolohichni pidkhody do analizu osoblyvosti derzhavnoho upravlinnia v umovakh hlobalizatsii [Analyzing public administration features under globalization: methodological approaches]. *Derzhavne upravlinnia*. № 1 [in Ukrainian].
- Simakova-Iefremian, E. B. (2001). Deiaki problemy ta shliakhy vdoskonalennia pravovoho rehuliuвання sudovo-ekspertnoi diialnosti [Some Problems and Ways to Improve the Legal Regulation of Forensic Expert Activity]. *Derzhava i pravo. Yurydychni i politychni nauky*. Vyp. 11 [in Ukrainian].
- Simakova-Iefremian, E. B. (2017). *Teoretyko-pravovi ta metodolohichni zasady kompleksnykh sudovo-ekspertnykh doslidzhen* [Theoretical-legal and methodological foundations of complex forensic research] : dys. ... d-ra yuryd. nauk. Kharkiv. URL: <https://uacademic.info/ua/document/0517U000760> [in Ukrainian].
- Simakova-Iefremian, E. B. (2001). Shliakhy vdoskonalennia normatyvno-pravovoho rehuliuвання sudovo-ekspertnoi diialnosti [Optimizing the legal and regulatory framework governing forensic expert activity]. *Visnyk Akademii pravovykh nauk Ukrainy*. № 1 (24) [in Ukrainian].
- Simakova-Iefremian, E. B. (2004). *Teoriia i metodolohiia kompleksnoi ekspertyzy kontaktno-slidovoi vzaiemodii ob'ektiv* [Theory and methodology of comprehensive examination of contact-trace interaction of objects] : monohrafiia. Kharkiv [in Ukrainian].
- Simakova-Iefremian, E. B. (2005). Protsesualni ta teoretychni problemy kompleksnoi sudovoi ekspertyzy [Procedural and theoretical issues of multidisciplinary forensic analysis]. *Teoriia ta praktyka sudovoi ekspertyzy i kryminalistyky*. Vyp. 5 [in Ukrainian].
- Simakova-Iefremian, E. B. (2006). Sutnist sub'iekta intehtatsii znan pry provedenni kompleksnykh sudovo-ekspertnykh doslidzhen [The essence of the subject of knowledge integration when conducting comprehensive forensic research]. *Teoriia ta praktyka sudovoi ekspertyzy i kryminalistyky*. Vyp. 6 [in Ukrainian].
- Simakova-Iefremian, E. B. (2006). Vyrishennia teoretychnykh ta protsesualnykh problem kompleksnykh sudovo-ekspertnykh doslidzhen — vazhlyvyi chynnnyk udoskonalennia sudovo-ekspertnoi diialnosti [Resolving theoretical and procedural issues in multidisciplinary forensic examinations as a key factor in improving forensic expert activities]. *Pravo Ukrainy*. № 8 [in Ukrainian].
- Simakova-Iefremian, E. B. (2006). Zahalna teoriia sudovoi ekspertyzy yak osnova metodolohii provedennia kompleksnykh sudovo-ekspertnykh doslidzhen [General theory of forensic science as the basis of methodology of multidisciplinary forensic examinations]. *Visnyk Akademii pravovykh nauk Ukrainy*. № 3 (46). URL: https://dspace.nlu.edu.ua/bitstream/123456789/720/1/VestnikAprN3_2006.pdf [in Ukrainian].
- Simakova-Iefremian, E. B. (2013). Sutnist kompleksnykh doslidzhen za mizhhaluzevym predmetom intehtatsii znan [Defining the essence of multidisciplinary analyses through cross-disciplinary knowledge synthesis]. *Problemi pytannia sudovoi ekspertyzy* : zb. mat-liv mizhnar. nauk.-prakt. konf. (Dnipropetrovsk, 03—04.10.2013). Dnipropetrovsk [in Ukrainian].
- Simakova-Iefremian, E. B. (2016). *Kompleksni sudovo-ekspertni doslidzhennia: teoriia ta praktyka* [Multidisciplinary forensic examinations: theory and practice] : monohrafiia. Kharkiv [in Ukrainian].
- Simakova-Iefremian, E. B., Fedorenko, V. L., Svyrydova, L. V. ta in. (2021). *Klasyfikatsiia sudovykh ekspertyz* [Classification of forensic examinations] : monohrafiia / za zah. red. E. B. Simakovoi-Iefremian. Kharkiv, URL: <https://nncise.org.ua/diyalnist/naukova> [in Ukrainian].
- Simakova-Iefremian, E. (2019). About the Need for Improvement of Legislation Regarding Implementation of Forensic Science Activities in Ukraine. *Theory and Practice of Forensic Science and Criminalistics*. Is. 19. DOI: 10.32353/khrife.1.2019.09.
- Simakova-Iefremian, E. B. (2013). Problemy metodychnoho zabezpechennia kompleksnykh ekspertnykh doslidzhen [Problems of methodological support of complex expert research]. *Teoriia ta praktyka sudovoi ekspertyzy i kryminalistyky*. Vyp. 13. URL: <https://khrife-journal.org/index.php/journal/issue/view/14/2013-1> [in Ukrainian].

- Simakova-Yefremian, E. B. (2016). Integration Processes in Forensic Examination: Essence and Problem Issues of Comprehensive Researches. *Theory and practice of forensic examination and criminalistics*. Is. 16. DOI: [10.32353/khrife.2016](https://doi.org/10.32353/khrife.2016).
- Spitsyna, H. O., Bidniak, H. S. (2018). Forms of Use of Special Knowledge. *Theory and practice of forensic science and criminalistics*. Is. 18. DOI: [10.32353/khrife.2018.26](https://doi.org/10.32353/khrife.2018.26).
- Yevsiukov, O. F. (2025). Mozhlyvosti doslidzhen-
nia propahandy v mezhakh kompleks-
noi viiskovo-psykholohichnoi ekspertyzy
[Opportunities for propaganda analysis in
multidisciplinary forensic military and psy-
chological examination]. *Viiskova ekspertyza
v umovakh sohodennia: problemni pytannia ta
shliakhy yikh vyrishennia* : zb. mat-liv Vseukr.
nauk.-prakt. konf. (Dnipro, 25.04.2025). Dni-
pro [in Ukrainian].
- Yevsiukov, O. F. (2025). Vykorystannia spetsial-
nykh psykholohichnykh znan u kryminal-
nykh provadzhenniakh [The Use of Special
Psychological Knowledge in Criminal Pro-
ceedings]. *Pravovi chasopys Donbasu*. № 1
(90). DOI: [10.32782/2523-4269-2025-90-87-91](https://doi.org/10.32782/2523-4269-2025-90-87-91)
[in Ukrainian].
- Yevsiukov, O. F. (2025). Vyrishennia kompleks-
noi viiskovo-psykholohichnoi eksper-
tyzoiu zavdan shchodo otsiniuvannia vply-
vu destruktivnoi propahandy [Solving the
Tasks of Assessing the Impact of Destruc-
tive Propaganda by Comprehensive Military
Psychological Expertise]. *Visnyk Luhanskoho
navchalno-naukovoho instytutu imeni E. O.
Didorenka*. Vyp. 2 (110). DOI: [10.32782/2786-
9156.110.2.117-125](https://doi.org/10.32782/2786-9156.110.2.117-125) [in Ukrainian].
- Yevsiukov, O. (2025). Complex forensic psy-
cho-psychiatric examination: modernity
and prospects. *Trends and Prospects for the
Development of Science and Education* : Pro-
ceedings of the 2nd International Scientific
Conference (Oxford, UK, 10 July 2025). Ox-
ford. DOI: [10.64076/iedc250710.32](https://doi.org/10.64076/iedc250710.32).
- Yevsiukov, O. (2025). Current State and Prospects for Incorporating Specific Psychology Exper-
tise into Multidisciplinary Forensic Examinations. *Theory and Practice of Forensic Science and
Criminalistics*. Issue 4 (41). Pp. 205–230. DOI: [10.32353/khrife.4.2025.12](https://doi.org/10.32353/khrife.4.2025.12).

Congratulations to the Celebrant!



On 20 December 2025, **Valerii Shepitko**, Doctor of Law, Professor, Professor of the Department of Forensic Science at Yaroslav Mudryi National Law University, Academician and Academic Secretary of the Department of Criminal Law Sciences of the National Academy of Legal Sciences of Ukraine, President of the International Congress of Criminalists, Honored Worker of Science and Technology of Ukraine, Laureate of the State Prize of Ukraine in the Field of Science and Technology, Honorary Professor of Yaroslav Mudryi National Law University, Honorary Member of the Lithuanian Society of Criminalists, a renowned criminalist and forensic expert, celebrated his 65th birthday and the 40th anniversary of his scientific, pedagogical, and public activities.

A substantial part of the Academician's research has been devoted to forensic examination and forensic sciences. Since 1997, he has held the qualification of a forensic expert with the right to conduct expert examinations (trace evidence examinations, questioned document examination of documents, and psychological examinations). He is an Honorary Professor of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» and one of the initiators of its establishment, as well as co-editor-in-chief of the *Theory and Practice of Forensic Examination and Criminalistics* Research Paper Collection (founders: NSC «Hon. Prof. M. S. Bokarius Forensic Science Institute» and Yaroslav Mudryi National Law University). He also revived the *Archives of Criminology and Forensic Sciences* Scientific Journal (publisher: the NSC «Hon. Prof. M.S. Bokarius Forensic Science Institute»). Valerii Shepitko is a permanent lecturer in advanced professional training courses for forensic experts conducted at the Kyiv Branch of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute». His influence on the scientific and methodological support of the activities of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute», as well as on the certification of forensic experts and the accreditation of educational programs, is significant. Valerii Yuriiovych takes an active part in scientific and practical conferences, congresses, symposia, round tables, and seminars organized and conducted by the National Scientific

Center «Hon. Prof. M. S. Bokarius Forensic Science Institute». Several generations of forensic experts in Ukraine have been trained on the basis of his works, which have also laid the groundwork for the establishment of international relations in the field of expert support to justice.

The areas of Valerii Shepitko's scientific activity include the study of doctrinal issues of criminalistics and forensic sciences, problems of forensic didactics and forensic technique, digital and nuclear forensics, criminalistics tactics and methodologies of investigating criminal offenses, forensic examination, and legal psychology. He is the author of **more than 600 scholarly, educational, methodological, and reference papers**, including single-author and collective monographs, encyclopedias, textbooks, and teaching manuals, and holds 10 patents for inventions and author's certificates.

Evidence of Mr. Valerii's scientific and pedagogical talents is the establishment of his own school of criminalistics and the training of thousands of graduates of Yaroslav Mudryi National Law University, as well as 4 Doctors of Legal Sciences and 35 Candidates of Legal Sciences and Doctors of Philosophy in Law. He actively delivers lectures and conducts practical and laboratory classes for students, cadets, postgraduate students, practitioners, and forensic experts.

Valerii Shepitko was born on 20 December 1960 in the city of Romny, Sumy Oblast (Ukraine). From 1975 to 1979, he studied at the Kharkiv Radio Technical College, majoring in *Aircraft Control Systems*, and from 1979 to 1982 he served in the Armed Forces. Upon returning to Kharkiv, he worked at the "Radioelement" factory.

From 1982 to 1986, he studied at the Kharkiv Law Institute (currently, Yaroslav Mudryi National Law University) in the judicial and prosecutorial faculty, from which he graduated with honors. He subsequently worked as a research trainee at the Department of Criminalistics of this educational institution. In 1988, he was admitted as a postgraduate student of the Department of Criminalistics of the Kharkiv Law Institute (academic supervisor — Professor V. Konovalova). He prepared his dissertation research: *Interrogation of Minors: Psychology and Tactics* (interdisciplinary research between forensics and psychology) ahead of schedule and successfully defended it on 7 May 1991.

At the Department of Criminalistics, he successively held the positions of assistant (1991–1993) and associate professor (1993–1994). In 1994, he was awarded the academic title of Docent. In the same year, he entered a doctoral studies. His doctoral dissertation: *Theoretical Problems of Systematization*

of Tactical Techniques in Criminalistics was defended ahead of schedule on 17 September 1996. One year later, he was awarded the academic title of Professor. From 1996 to 2023, he served as Head of the Department of Criminalistics of his *alma mater*. Since August 2023, he has been working as a Professor of this Department.

Since 2002, he has served as academic secretary and a member of the specialized academic council Д 64.086.04 of Yaroslav Mudryi National Law University. He has repeatedly acted as an official opponent at the defenses of Candidate's and Doctoral dissertations in specialized academic councils of universities (academies) in Ukraine, Latvia, and Lithuania. From 1998 to 2004, he was a member of the Expert Council on Legal Sciences of the High Attestation Commission of Ukraine.

From 1998 to 2024, Valerii Yuriiiovych headed (on a part-time basis) a laboratory of the Institute for the Study of Crime Problems (currently, *Academician V. V. Stashis Scientific Research for the Study of Crime Problems*). From 1998 to 2002, he served as Head of the Bureau of Forensic Examinations of this institution.

From 2019 to 2022, V. Shepitko participated in conducting multidisciplinary forensic examinations within criminal proceedings aimed at investigating the consequences of the Holodomor of 1932–1933 and the mass artificial famines of 1921–1923 and 1946–1947.

The creative team established on the initiative of Valerii Shepitko developed sets of scientific and technical forensic equipment (the “Universal Criminalistics Kit for Investigators”, the “Forensic Kit for Trace Evidence Examination”, the “Investigator’s Case (Kit for Traffic Accident Scene Examination)”, the “Dactyloscopic Case”, etc.), which have been introduced into the practice of the Prosecutor’s Office, the Ministry of Internal Affairs, and the Security Service of Ukraine.



Under his leadership, the following were also developed and implemented in practice: the “Controller” Device for Measuring the Velocity of a Ballistic Object, the RAIPS-Portrait Computer Facial Composite System, the “Insight” Automated Investigator’s Workstation, as well as the databases “Investigative Precedent”, “Investigator’s Practice”, and “Killer Profile”, etc.

Valerii Shepitko is a member of the editorial boards of numerous research paper collections and international specialized academic journals. He is a member of the Academic Council of the *Bulletin of the National Academy of Legal Sciences of Ukraine Journal* (National Academy of Legal Sciences of Ukraine, Kharkiv); Chairman of the Editorial Board and Editor-in-Chief of the *Criminalist International Scientific and Practical Law Journal* (Kryminalist Pershodrukovanyi) (Yaroslav Mudryi National Law University); a member of the Editorial Board of the *Law of Ukraine Legal Journal* (National Academy of Sciences of Ukraine, Yaroslav Mudryi National Law University, the Supreme Court of Ukraine, the Ministry of Justice of Ukraine); a member of the Editorial Board of the *Bulletin of Criminal Proceedings Scientific and Practical Journal* (Taras Shevchenko National University of Kyiv, Legal Unity LLC); a member of the Editorial Board of the *Forensic Bulletin Scientific and Practical Collection* (State Research Forensic Center of the Ministry of Internal Affairs of Ukraine, National Academy of Internal Affairs); and a member of the Editorial Board of the *Problemy współczesnej kryminalistyki Journal* (Poland).

V. Shepitko takes an active part in the drafting and review of legislative bills and other regulatory acts, preparation of responses to inquiries from state authorities and local self-government bodies, and preparation of expert opinions on draft legal regulations.

Shepitko combines his research work with teaching activities: he delivers lectures and conducts practical classes in the disciplines “Criminalistics,” “Legal Psychology,” and “Psychology of Investigative and Prosecutorial Activity” at the Faculty of Justice and the Faculty of Prosecutor’s Office of Yaroslav Mudryi National Law University. In different years, he also taught at other faculties and institutes of the University, delivering lectures and conducting practical and seminar classes in various disciplines.

His lectures and practical classes are characterized by a high scientific and theoretical level, innovative and methodological approaches, and are aimed at improving the educational process and enhancing the quality of training for legal professionals. For many years, he served as the academ-



ic supervisor of the student scientific club for criminalistics and legal psychology.

Thanks to the efforts of Valerii Yuriiiovych, a comprehensive educational and methodological complex for criminalistics has been established at the Department of Forensic Science of Yaroslav Mudryi National Law University, and a computer and video centers, as well as criminalistics and photo-video laboratories, have been equipped. Under his leadership, a project was developed, and the Museum of Criminalistics was modernized and restored. In 2018, he also initiated the establishment of a criminalistics training ground (with an area of more than 800 sq. m) at the Department, which meets international standards and constitutes a specially equipped facility (area) designed for conducting practical and laboratory classes in criminalistics under field conditions. At the initiative of and based on the scenarios developed by V. Shepitko, a number of educational forensic video films were produced at the Department's video center, as well as the video clips *Museum of Criminalistics* and *Criminalistics Training Ground*.

Under his leadership, textbooks on criminalistics were prepared and published (1998, 2001, 2004, 2008, 2016, 2019), as well as his single-author textbook "Criminalistics" (2010) and a course of lectures on criminalistics (2003, 2005, 2006, 2008, 2009, 2010, 2011). In co-authorship with Professor Violetta Konovalova, he also prepared the textbooks: *Legal Psychology* (2004, 2008, 2019, 2025) and *Fundamentals of Legal Psychology* (2005, 2006, 2007, 2008, 2009, 2010).

The scholar's body of work also includes participation in the preparation of Volume 20 of *The Great Ukrainian Legal Encyclopedia (Criminalistics, Forensic Examination, Legal Psychology, 2018)*; the publication of *The Investigator's Desk Book* (2003, 2007, 2008, 2011); *The Guide to Crime Investigation* (2009, 2010); *The Investigator's Handbook* (2001, 2003, 2008, 2011, 2013); *The*

Encyclopedic Dictionary (2000); *The Dictionary of Terms* (2004); *The Encyclopedia: Criminal Law, Criminalistics, and Forensic Sciences* (2021); and other publications.

As a result of V. Shepitko's establishment of international scholarly



cooperation with higher education institutions in Lithuania, Latvia, Poland, the Czech Republic, and Slovakia, he has participated in international projects, including, in the publication—jointly with scholars from these institutions—of the English-language textbook *Textbook of Criminalistics* in two parts (2016, 2023), the organization of joint scientific and practical conferences and congresses, and in the peer review of scholarly works. Within the framework of academic mobility, the Professor delivered lectures in English to students of Mykolas Romeris University (Lithuania). Since 2012, he has been the Founder and President of the International Congress of Criminalists (INGO “*Criminalists Congress*”). He is currently working on the establishment of the European Federation of National Criminalistic Societies (Associations).

Mr. Valerii takes an active part in international grant-funded projects, including, in *Countering Murders Involving the Use of Weapons of Mass Destruction (WMD) in Ukraine by Enhancing Local Capacity to Detect and Respond to Proliferation Threats, implemented under a grant agreement with the United States Department of State*. He is also the principal investigator of the research project “Digital Criminalistics and Its Role in the Formation of Evidentiary Information under Conditions of Armed Conflict,” conducted under a contract with a central executive authority and funded by the Ministry of Education and Science of Ukraine.

The scientific and pedagogical achievements of Valerii Shepitko have been recognized by various ministries and agencies of Ukraine, including the Ukrainian Parliament, with numerous orders and medals, honorary titles, and certificates of merit.

Academician Valerii Shepitko is an outstanding and distinctive criminalistics scholar, forensic expert, and psychologist, widely recognized far beyond the borders of Ukraine. His active civic, scholarly, and patriotic stance has earned Valerii Yuriiiovych well-deserved authority and respect among students and faculty members, researchers and forensic experts, as well as representatives of the judiciary and law enforcement agencies.

We wish Mr. Valerii good health, happiness, and a long, fruitful creative life, as well as inspiration through innovative scientific ideas in criminalistics and forensic sciences. Many happy and blessed years in a peaceful and united Ukraine!

*The information was prepared by **Mykhailo Shepitko**,
Doctor of Law, Professor, Corresponding Member of the National
Academy of Legal Sciences of Ukraine, Professor of the Department
of Criminal Law at Yaroslav Mudryi National Law University*

NSC FSI is a co-organizer of the International Scientific Conference: *The Forensic Expert as a Key Element in Ensuring Trust in Justice*

On 3 October 2025, the International Scientific Conference: *The Forensic Expert as a Key Element in Ensuring Trust in Justice* was held in online and offline formats at the National Center of Forensic Expertise of the Ministry of Justice of the Republic of Moldova (Chişinău, Republic of Moldova; hereinafter referred to as *the Moldovan NCFE*). The co-organizers included, inter alia, the National Scientific Center «Honored Professor M. S. Bokarius Forensic Science Institute» (hereinafter referred to as NSC FSI).

The purpose of the event was to bring together forensic experts and practitioners in the field of justice, scholars, and representatives of legal institutions in order to define the role of the forensic expert in ensuring fair, objective, and transparent justice.

The event was opened with a keynote address by **Stanislav Copetchi**, State Secretary of the Ministry of Justice of the Republic of Moldova, Associate Professor, PhD in Law. The participants were also welcomed by **Olga Cataraga**, Director of the National Center of Forensic Expertise of the Republic of Moldova, PhD in Law; **Anastasiia Kupriianova**,

Head of «National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute», Candidate of Legal Sciences; and by other distinguished guests.

In her welcoming address, Ms. Anastasiia highlighted the long-standing partnership between the NSC FSI and the National Center of Forensic Expertise of the Republic of Moldova within the framework of a cooperation agreement aimed at conducting joint scientific research in the fields of science, education, and forensic expert activity, organizing and participating in events (scientific programs, projects, seminars, symposia, conferences, meetings, and working sessions), as well as exchanging experience and providing mutual consultations on matters of scientific and practical activity, etc.

More than 120 participants joined the conference, including representatives of the Ministry of Justice of the Republic



of Moldova, specialized institutions of the Ministry of Justice of Ukraine, the National Bureau of Expertise of the National Academy of Sciences of the Republic of Armenia, higher education institutions of Romania, as well as forensic experts from other countries worldwide.

The participants delivered presentations on the following: the role of the expert in the administration of justice and the cross-border dimension of forensic examination; forensic identification and fiscal expertise as important evidence for judicial proceedings; the specific features of technical, medico-legal, and psychological examinations; the application of artificial intelligence and digital technologies in judicial and criminal proceedings; the ethics, objectivity, and impartiality of the expert; and other pressing issues of contemporary relevance.

The fruitful discussions and exchange of experience demonstrated the leading importance of forensic examination as an indispensable element in establishing the truth and ensuring due process in judicial proceedings, as well as the significance of international cooperation in the field of forensic examination for sharing best practices and jointly addressing complex interdisciplinary challenges, and for formulating recommendations for the further development of the institution of forensic examination aimed at strengthening the rule of law and ensuring justice. Special attention during the event was given to issues of the independence and competence of forensic experts, the need for standardization of methodologies, and the implementation of innovative technologies to enhance the quality and reliability of expert opinions. The participants expressed their readiness to continue the dialogue and to implement the ideas developed.



*The information was prepared by **Viktoriiia Hrokhovska**,
Researcher at NSC FSI*

NSC FSI Presented Contemporary Areas of Forensic Expert Activity at the 22nd International Multidisciplinary Scientific and Practical Conference



On 20–21 November 2025, specialists of National Scientific Center “Hon. Prof. M. S. Bokarius Forensic Science Institute” (hereinafter referred to as the *NSC FSI*) took part in the two-day 22nd International Multidisciplinary Scientific and Practical Conference: *Medical and Pharmaceutical Law, the State Pharmacopoeia of Ukraine: Innovations, Evidence-Based Quality Control and Circulation of Medicines within the System of Legal Relations ‘Healthcare Professional — Patient — Lawyer — Expert.*

Participants included representatives from the Ministry of Health, the Ministry of Education and Science, the Ministry of Justice, the National Academy of Sciences, the National Academy of Medical Sciences of Ukraine, and other agencies, institutions, bar associations, public organizations of Ukraine, and international organizations.

On the first day of the event, **Kateryna Rudnieva**, Head of the Laboratory of Forensic and Military Examinations at NSC FSI, delivered a presentation on the activities of the institution under current conditions. She noted that specialists of the NSC FSI conduct forensic examinations in nearly 100 specialties (including examinations of narcotic drugs, psychotropic substances, their analogues, and precursors), as well as carry

out large-scale scientific research and provide training and advanced professional development for experts and researchers in the field of forensic examination. She emphasized the importance of international cooperation in the fields of forensic examination, criminalistics, law, the training of highly qualified scientific personnel, and educational activities. Owing to their professionalism, high qualifications, and unquestionable competence, the staff of the NSC FSI contribute to the solving of a significant number of high-profile crimes.

During the plenary sessions, the conference participants presented their findings on the potential benefits and risks of applying information technologies and artificial intelligence in the education of pharmacology students, considered experience in combating drug-related crime and drug addiction among youth and adolescents in Ukraine, and other topics.

The event served as a platform for discussing the role of the forensic expert within the interaction “healthcare professional – patient – lawyer – expert” with regard to ensuring the quality and safety of medicines during their circulation. The methods for preventing chemical dependencies among minors, the prospects of plasma technologies, as well as issues of professional development and communicative competencies of healthcare professionals, etc., were taken into account.

Співробітники ННЦ «ІСЕ ім. Засл. проф. М. С. Бокаріуса» плідно працюють над актуальними експертними проблемами:

- проводять судові експертизи майже як за 100 спеціальностями
- сприяють розкриттю значної кількості резонансних злочинів сьогодення.



*Information was prepared by **Kateryna Rudnieva**,
Laboratory Head at NSC FSI*

NSC FSI is a Participant in the Scientific and Practical Conference of Polygraph Examiners



Participants of the 9th Scientific and Practical Conference of the All-Ukrainian Association of Polygraph Examiners, entitled: *Current Issues of Modern Polygraphology*, held on 21–22 November 2025 in Kyiv, discussed the specifics of polygraph examinations aimed at ensuring the security of personnel at critical infrastructure facilities; the detection and investigation of crimes, including war crimes; and the conduct of forensic psychological examinations using a computerized polygraph.

duct of forensic psychological examinations using a computerized polygraph.



On behalf of the NSC FSI, **Tetiana Kharina**, Senior Forensic Expert of the Laboratory of Handwriting, Linguistic, Psychological, and Art Studies, delivered a presentation on the main procedural and non-procedural forms of applying specific psychology expertise in forensic expert activity.

She noted that an expert opinion is a procedural source of evidence in civil, criminal, commercial, and administrative proceedings. An analysis of judicial practice indicates that the results of an expert examination conducted using a specialized technical device—the computerized polygraph—on matters that constitute the subject of a dispute may be useful in the process of proof, provided that an appropriate forensic psychological examination is conducted by a certified forensic expert (either by court order or at the request of the parties).

*Information was prepared by **Tetiana Kharina**, Senior Forensic Expert at NSC FSI*

The All-Ukrainian Scientific and Practical Conference: *Forensic Linguistic Examination under Martial Law*



On 24–25 November 2025, a two-day All-Ukrainian Scientific and Practical Conference: *Forensic Linguistic Examination under Martial Law* was held in Kyiv. The event was organized by the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» of the Ministry of Justice of Ukraine (hereinafter referred to as the *NSC FSI*) and the Kyiv Scientific Research Institute of Forensic Expertise of the Ministry of Justice of Ukraine (hereinafter referred to as the *KSRIFE*). One of the key themes of the conference was the issue of strengthening national security through the prism of forensic examination.

Andrii Haichenko, Deputy Minister of Justice of Ukraine for the Enforcement Service, PhD (Law), addressed the participants with a welcoming speech. He emphasized the strategic role of forensic linguists in ensuring justice and noted that 37 specialists of this profile within the system of the Ministry of Justice have recently conducted more than 14,000 expert examinations, demonstrating impartiality and a high level of professionalism.

The conference was opened by the heads of the organizing institutions: **Anastasiia Kupriianova**, Candidate of Legal Sciences (NSC FSI), and **Maksym Kyselov**, PhD (Law), Honored Lawyer of Ukraine (KSRIFE). Heads of leading expert units of the Ministry of Justice of Ukraine, the Security Service of Ukraine, and the Ministry of Internal Affairs of Ukraine also gave a welcoming address.

The first day of the conference was devoted to linguistic analysis in criminal proceedings directly related to the defense of the state, addressing current issues in conducting forensic linguistic examinations in criminal cases concerning treason, propaganda of war, collaborationist activities, threats of murder, terrorist acts, incitement of hostility, and related offenses.

On the second day of the conference, which was opened by **Nataliia Tkachenko**, Director of the Department of Expert Support of Justice of the Ministry of Justice of Ukraine, Candidate of Legal Sciences, Honored Lawyer of Ukraine, participants focused on the investigation of corruption-related crimes and on urgent issues in conducting forensic linguistic examinations of speech objects with the semantics of an offer, promise, or receipt of a benefit in the course of investigating corruption offenses, as well as on other issues of forensic linguistic examination.

Staff members of the NSC FSI presented noteworthy findings related to the theme of the event. In a scholarly presentation by **Anastasiia Kupriianova**, Head of the NSC FSI, and **Yevheniia Kovkina**, Laboratory Head, the co-authors examined the specific features of analyzing statements expressed in the form of calls to commit a terrorist act, provided examples of linguistic analysis of such speech acts, and emphasized the need to develop a unified approach to the disposition of Art. 258-2: *Public Incitement to Commit an Act of Terrorism* of the Criminal Code of Ukraine.

Experts of the NSC FSI, **Nataliia Kysla** and **Yuliia Brailko**, in their presentation formulated a definition of slang nominations for money as a dynamic and vivid component of contemporary Ukrainian colloquial speech and emphasized that the semantic qualification of such units requires a comprehensive approach, while an understanding of the mechanisms of formation and use of slang names for money helps to avoid expert errors.

In the presentation: *Directive Statements as Linguistic Indicators of Communicative Control in a Criminal Environment*, **Yevheniia Kovkina** and **Krystyna Zaichyk** noted that the establishment of influence (including within a criminal environment) in communication is possible through the identification of linguistic indicators of control and the pragmatic behavior of interlocutors. “*The combination of these characteristics is decisive for the expert’s opinion regarding the distribution of roles within a criminal group and for confirming the fact of organizational (leadership) influence within a communicative act*”, the authors emphasized.

Overall, 13 abstracts authored by 18 staff members of the NSC FSI were included in the conference proceedings.



The final session of the conference was devoted to technological progress and complex social issues. Participants discussed the use of artificial intelligence in the work of a linguist, the nuances of authorship (forensic authorship) examination, and the specific features of protecting minors in cases of crimes against sexual freedom through the analysis of speech acts.

The conference demonstrated that forensic linguistic examination today is not merely a philological study, but also a powerful evidentiary tool in the most complex categories of cases — ranging from treason and the exposure of corruption schemes to the protection of citizens' rights and freedoms.

*Information was prepared by **Anatolii Tiapkin**,
Sector Head at NSC FSI*

The NSC FSI Took Part in the Intergovernmental Conference on Missing Persons, which was held in Warsaw



Viktoriia Bulavina, Head of the Sector of Biological, Veterinary, and Molecular Genetic Examinations at National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» of the Ministry of Justice of Ukraine (hereinafter referred to as the *NSC FSI*), took part in the Intergovernmental Conference on Missing Persons: Ukraine and South-Eastern Europe, held in Warsaw (Poland) under the auspices of the International Commission on Missing Persons (hereinafter referred to as the *ICMP*) on 27–28 November 2025. Her participation underscored the leading role of our institution in shaping modern approaches to the identification of missing persons, in particular with regard to molecular genetic research,

which remains one of the key tools for personal identification in wartime conditions.

The conference brought together government delegations, expert institutions, and organizations representing families of missing persons from Ukraine and the countries of South-Eastern Europe, including Bosnia and Herzegovina, Albania, Croatia, Serbia, Kosovo, and Montenegro. Participants exchanged experiences, discussed applied search models, and shared innovative working methods.

Over the two days of work, expert round tables were held: *Experience of different countries' specialized state authorities: challenges during and after conflict and the evolution of their role in the process of accounting for missing persons, Involvement of families of missing persons and their associations to ensure the right to truth, justice, and reparations, Cooperation of former parties to the conflict in resolving cases of missing persons, Technical challenges in forensic and medical identification of missing persons, with a focus on complex cases, DNA analysis, odontology, fingerprints, and morgue management.* The round tables were moderated by ICMP experts.

Based on the outcomes of the discussions, the participants developed a list of principles aimed at strengthening the capacities of states in the field of searching for missing persons:

Scientific News

- strengthening the institutional and regulatory framework;
- creation of a unified database;
- development of national strategies and systematic professional training;
- expanding the participation and support of families.

The ICMP programme in Ukraine is implemented with the support of Norway, Germany, the Netherlands, the United States, and Canada.



The participation of the NSC FSI in the event and its working cooperation with the ICMP open up new opportunities for improving forensic expert activity in Ukraine. Such cooperation will contribute to increasing the accuracy and efficiency of examinations, optimizing the use of resources, and implementing international standards in the field of searching for and identifying missing persons.

*Information was prepared by **Viktoriia Bulavina**,
Candidate of Veterinary Sciences,
Docent, Sector Head at NSC FSI*

International Training Course: *Advanced Training of Forensic Experts in the Field of Anti-Corruption* held in Tokyo



During 01–13 December 2025, staff members of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» (hereinafter referred to as the NSC FSI) — **Viktoriia Alieksieichuk, Yevheniia Kovkina, Iryna Hubanova, and Iryna Savchenko** — accompanied by a representative of the Ministry of Justice of Ukraine and with the support of the Japan International Cooperation Agency (JICA), a governmental organization under the Ministry of Foreign Affairs of Japan, took part in the International Training Course: *Advanced Training of Forensic Experts in the Field of Anti-Corruption* held in Tokyo.

The course program was aimed at deepening knowledge in the field of forensic methods, practical approaches to documenting corruption schemes, and ensuring proper collection and preservation

of digital evidence. The organizers paid special attention to methodologies for conducting trace evidence, portrait, computer-technical, and other types of expert examinations, as well as to current investigative mechanisms and software used in cases involving modern technologies, including cryptocurrency fraud.

During the training, the participants attended a series of lectures delivered by leading Japanese specialists, including prosecutors, judges, lawyers, forensic experts, and scholars; they also took part in practical seminars and case studies, where they practiced algorithms of interaction between experts, investigators, and prosecutors in the investigation of complex corruption cases.

Training abroad also enabled the participants to familiarize themselves with best practices from other countries, establish professional contacts, and exchange experience with colleagues working in related fields.





The knowledge and skills acquired will be useful for improving expert activity procedures at the NSC FSI, enhancing the quality of expert conclusions in high-profile criminal proceedings, and strengthening the effectiveness of anti-corruption efforts in Ukraine.

*Information was prepared by **Yevheniia Kovkina**,
Candidate of Philological Sciences,
Laboratory Head at NSC FSI*

All-Ukrainian Scientific and Practical Conference: Current Issues in Conducting Scientific-Technical and Forensic Examinations on the Detection and Examination of Modern Methods and Means of Committing Criminal Offenses in Conditions of War



On 05.12.2025, the All-Ukrainian Scientific and Practical Conference: *Current Issues in Conducting Scientific-Technical and Forensic Examinations on the Detection and Examination of Modern Methods and Means of Committing Criminal Offenses in Conditions of War* was held at the Kyiv Branch of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» (hereinafter referred to as *the Kyiv Branch of the NSC FSI*).

Co-organizers of the event: the Kyiv Scientific Research Institute of Forensic Expertise of the Ministry of Justice of Ukraine; the State Scientific Research Institute of Cybersecurity Technologies and Information Protection of the State Service of Special Communications and Information Protection of Ukraine; the Central Scientific Research Institute of Armaments and Military Equipment of the Armed Forces of Ukraine of the Ministry of Defense of Ukraine.

The conference brought together representatives of institutions subordinated to the State Service of Special Communications and Information Protection, the Ministry of Justice

and the Ministry of Defense, law enforcement agencies, and scholars with the aim of consolidating efforts and exchanging scientific and practical results in the field of scientific and technical expert examinations as well as forensic examinations related to the detection and investigation of modern methods and means of committing criminal offenses in wartime conditions.

In the report: *Blockchain as the Basis for Cryptocurrency Research in Forensic Computer and Technical Examination*, forensic experts of the Kyiv Branch of the NSC FSI **Andrii Derecha** and **Taras Abrosimov** focused on the significance of forensic expert conclusions for law enforcement agencies in tracing suspicious transactions, identifying patterns, and collecting evidence of illegal activities. In certain cases, forensically relevant circumstances can be established only through the appointment and conduct of a comprehensive forensic computer and technical as well as economic examination. The authors also emphasized the need to develop methodological guidelines for cryptocurrency research and to strengthen material and technical support with modern technical equipment and software.

Oleksandr Shmereho, Principal Forensic Expert, provided a detailed analysis of the use of malicious software for committing crimes involving the use of explosive devices. The researcher noted that the study and description of explosion and fire mechanisms, as well as their consequences, may serve as a basis for developing an expert methodology for comprehensive electrical engineering and fire-technical examinations aimed at determining the causes and conditions of explosions and fires.

The participants of the event also analyzed new methods for examining the consequences of criminal offenses in wartime conditions.

The conference facilitated the establishment of contacts, enhanced the level of interagency cooperation, and expanded scientific and professional ties in the fields of scientific and technical as well as forensic expertise.



Information was prepared by **Tetiana Kipusheva**,
Researcher at NSC FSI

Confirmation of the High Professional Qualification of an NSC FSI Expert: Vitalii Nikitiuk Obtained Permanent Membership in AFTE



On 8 December 2025, *The Association of Firearm and Tool Mark Examiners* (hereinafter referred to as the AFTE) officially approved the application of **Vitalii Nikitiuk**, Head of the Firearms and Explosive Examinations Sector of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» (hereinafter referred to as the NCS FSI), for obtaining the status of a *Regular Member* with voting rights.

This decision was the result of a long professional journey and a recognition of the high qualifications of the Ukrainian expert by a leading international organization in the field of ballistics and toolmark examination. The status of a Regular Member of AFTE confirms that the expert examinations conducted at the NCS FSI meet international standards.

Membership in AFTE opens up new opportunities, namely:

- access to advanced standards (regular membership provides full access to AFTE's restricted resources, including the unique database of scientific articles from the AFTE Journal, forums for professional discussions, and the development of practical standards);
- voice in the global professional community (**Vitalii Nikitiuk** is granted voting rights in deciding key issues of the Association's activities, electing its leadership, and shaping international expert policies);
- direct contact with technical consultants and experts from around the world to resolve complex cases related to the examination of firearms;
- participation in annual seminars.

The next AFTE training seminar will take place in Baltimore (Maryland, USA), where participants will review the latest American and European methodologies.

*Information was prepared Nataliia Zhyla,
Researcher at NSC FSI*

VII Annual International Scientific and Practical Conference: *Current Issues of Forensic Expertology, Criminalistics, and Criminal Procedure*



On 10 December 2025, **Anastasiia Kupriianova**, Head of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute», took part in the VII Annual International Scientific and Practical Conference: *Current Issues of Forensic Expertology, Criminalistics, and Criminal Procedure*. In her welcoming address, she noted: “We are systematically working to strengthen cooperation between leading forensic institutions and to expand the circle of international partners. The Ukrainian forensic expert community has unique experience, and our task is to transform it into common standards, joint projects, and shared solutions. Only in this way will we be able to ensure high-quality forensic expertise in the face of modern challenges and enhance trust in the justice system of Ukraine”.

At the conference, speeches were delivered by **Andrii Haichenko**, Deputy Minister of Justice of Ukraine for the Enforcement Service, **Maksym Kyseliov**, Director of the KRIFE, **Nataliia Tkachenko**, Director of Forensic Science Support to Justice Department at the Ministry of Justice of Ukraine, **Andrii Le-shchenko**, Deputy Prosecutor General of Ukraine, as well as by heads of research institutions of the Ministry of Justice, the Ministry of Internal Affairs, the Security Service of Ukraine, and others.



The conference proceedings included eight reports by researchers of the NCS FSI, devoted to issues of forensic technical examinations of mobilization documents, fire and technical studies of municipal solid waste landfills, forensic examinations related to unrecorded electricity consumption, as well as other relevant areas of forensic expert research.

The conference served as a platform for scholars, forensic experts, representatives of the prosecutor's office, other law enforcement agencies, and research institutions working on the development of Ukraine's forensic support system for justice.

The conference program included three panel discussions:

- *Forensic examination: current development trends;*
- *The Ukrainian forensic examination activity in the context of European integration;*
- *Criminal procedure and criminalistics within the paradigm of modern scientific research.*

Information was prepared by **Oksana Chala**,
Researcher at NSC FSI

Requirements for Research Papers

Requirements for content

According to the Edition subject matter, content regarding coverage of criminalistic current issues, relevant issues of performing various types of forensic examinations and specific expertise application in legal proceedings is published on the pages of the Scientific Edition.

Based on research, presentational, evaluative and communicative functions of the Scientific Edition, **research papers** (where an author outlines main work outcomes); **research and methodological papers** (where an author analyses methods, processes, tools helping to achieve certain scientific results); **research and theoretical papers** (texts where an author presents results of theoretical ways for problem solution); **research and practical** (articles where an author describes his personal practical experience and performed scientific experiments), **review research papers** (dedicated to evaluation, conclusions, overview, analysis of earlier published information). The Editorial Board is also interested in **debatable articles, research ideas or short reports**: results of an experiment, personal experience, etc. Scientific style of the content presentation (accuracy, logic, conciseness, clarity, connectivity, integrity, completeness) and its high scientific level.

Article structural elements should include:

- Article Title;
- Abstract and Keywords. Abstract (summary) text should be not less than 1,800 characters (separately in article language and English). Abstract should include the following: outline of research problem, *purpose*, main research results, conclusions, keywords (7–10 words, should match the content of the article and display the publication topic). Titles of annotation structural parts other except the purpose should not be indicated;
- Formulation of research problem, its connection with scientific and practical interests (it is necessary to reveal essence and state of the scientific problem, theoretical and practical significance of a research, connection with scientific and

practical tasks, substantiation of the research relevance);

- Article purpose (it is necessary to formulate the publication main thesis differing from previously considered research on the chosen topic in accordance with outlined problem and analysis of current researches);
- Research methods applied (are presented individually if they contain novelty and are notable, given the article subject matter);
- Analysis of essential researches and publications on the selected article topic, outlining the problematic field of the research that article is devoted; with obligatory reference to authors and their scientific papers;
- Main content presentation with obtained results (to reveal important theoretical positions and research results, analyze scientific facts, ideas, thoughts, regularities, concepts, as well as trends of further topic development, emphasizing personal contribution of the research author(s));
- Conclusions (main research results in a clear, consistent, logically presented form in compliance with set goal);
- References (the list of used sources transliterated according to the Roman alphabet, for example, on the site of Vernadsky National Library of Ukraine: <http://nbuv.gov.ua/node/929>);
- Abstract in English, indicating the author(s) surname, article title and keywords.

Requirements for scope

Total scope of a scientific article (information about the author, article title, abstract, keywords, article text, bibliographic references, extended resume) should be not less than 36,000 characters.

Requirements for design

Article is submitted for publication in Ukrainian or English.

Text of the article should be printed using the Microsoft Word processor; A4 paper size; page orientation. Text should not contain hyphens and macros.

Article information should be presented according to the following sequence.

Information about the publication author (co-authors) The author's full name, academic degree, academic rank, place of employment, locality, country, Researcher ID, ORCID ID, official email address). One publication permits no more than three co-authors. If the article is prepared by a group of authors, it is important to stress participation of each according to the methodology: CRediT (Contributor Roles Taxonomy, for more details: <https://credit.niso.org/>).

Article title should be without acronyms and abbreviations.

If a research is executed within the framework of international projects (grants), then it should be mentioned.

Analyzing main researches on the article problematics, it is obligatory to consider the status of the issue in foreign and domestic sources (not less than 20 publications, at the same time the majority should be represented by international indexed editions). References to the author(s) personal scientific papers are allowed only if they do not exceed 10 % of all references.

The article text should adhere to requirements for content, general rules of citation and references to used sources. Each quotation should be accompanied by a reference to the source which bibliographic description should be completed depending on its type (primary or secondary source) according to the National Standard of Ukraine ДСТУ 8302: 2015: *Information and documentation. Bibliographic reference. General terms and conditions of compilation*.

In bibliographic references, it is necessary to use footnotes or endnotes involving separate reference to each source. While numbering references, authors should use continuous numbering (in Arabic numerals) throughout the article text.

Illustrations (tables, diagrams, graphics, schemes, formulas) can be submitted in the text article. Illustrations should be delivered in separate files. They should be provided in a format enabling to format (for translation

purposes). Formulas should be performed using the Math Type formula editor not using Cyrillic characters.

Requirements for submission

Author (co-authors) should provide reference (the reference of such content file name should consist of the last name (last names) of the author (co-authors) and the sent date with the note: research paper title; author full name (co-authors) in Ukrainian and English; academic degree (area of specialization code); academic rank (department name or area of specialization code); job position; institutional affiliation; settlement, country; ORCID (if available) or Researcher ID (if available); official and personal email address; mailing address; phone.

By submitting a research paper for publication to the *Theory and Practice of Forensic Science and Criminalistics* Scientific Edition, the author (co-authors) fully and unconditionally accepts the Licensing Agreement terms.

Since each article submitted for publication operates double anonymized peer review.

Licensing & Copyright

The author (co-authors) bears the responsibility for the accuracy of the provided content, and the affiliation of the latter to him personally and the translation quality of the quotations from foreign sources.

Content submitted in violation of these requirements are not published.

The Editorial Board has the right to review (double anonymized peer review), edit, reduce and reject research papers.

License Terms: Authors preserve the copyright and entitle the Scientific Edition Editorial Board to publish original research papers and claim that the results of their experimental and theoretical researches provided in the submitted article are not under consideration for publication to other publishing houses. All content is distributed according to Creative Commons Attribution License International CC-BY allowing third parties to distribute research content if research paper copyright and first publication in this Scientific Edition are recognized.

Scientific Edition

**THEORY AND PRACTICE OF FORENSIC SCIENCE
AND CRIMINALISTICS**

Research Paper Collection

Issue 4 (41)

Executive Editor: *Oleksandr Sviderskyi*

Translators: *Andriy Bublikov, Daryna Dukhnenko*

Desktop Publisher: *Vitalii Lototskyi*

Cover design by *Anatoliy Tiapkin*

Certificate of State Registration of printed mass media:

KB No 23467-13307IIP dated on 06.08.2018.

Media ID R30-02416 (Decision of National Council of Television
and Radio Broadcasting of Ukraine No. 1835 dated on 12.21.2023).

Manuscript Accepted for print: *__-__-2025*. Format: 70×100/16.

Wood free uncoated paper (WFU). Typeface: Source Serif Variable.

Digital printing (DP). Conventional printed sheets: *__-__*.

Circulation of 60 copies.

National Scientific Center

«Hon. Prof. M. S. Bokarius Forensic Science Institute»,

8a, Zolochivska St., Kharkiv, Ukraine, 61177

Phone: +38 (057) 372-12-20

Certificate on the entry of publishing business subject in the State Register
of Publishers, Manufacturers and Distributors of Publishing Products –
series: ДК No 7420 dated on 09.08.2021

LLC “Biotechknyha”,

28 Zolochivska St., Kharkiv, Ukraine

Mailing address: P.O. Box 824, Kharkiv, 61023, Ukraine

Tel.: (075) 103-10-66

Website: <https://biotechknyha.com.ua>

E-mail: biotechbook@ukr.net

Certificate of State Registration

as a Publishing Entity DK No. 8188 dated 10.10.2024

Printed by Printing House «PROMART»

12, Vesnina St., Kharkiv, Ukraine, 61023

Phone: +38 (057) 717-28-80

Certificate on the entry of publishing business subject in the State Register
of Publishers, Manufacturers and Distributors of Publishing Products –
series: ДК No 5748 dated on 06.11.2017