MINISTRY OF INTERNAL AFFAIRS OF UKRAINE
NATIONAL ACADEMY OF INTERNAL AFFAIRS

SCIENTIFIC JOURNAL

OF THE NATIONAL ACADEMY OF INTERNAL AFFAIRS

Scientific Journal

Volume 28, No. 2
2023

Kyiv
2023

ISSN 2410-3594
E-ISSN 2786-7382
DOI: 10.56215/naia-herald/2.2023

Co-founders:
National Academy of Internal Affairs,
LLC "Scientific Journals"

Year of foundation: 1996

Recommended for printing and distribution
via the Internet by the Academic Council
of National Academy of Internal Affairs
(Minutes No. 13 of June 26, 2023)

Certificate of state registration
of the print media
Series KV No. 25084-15024 PR of December 29, 2021

The collection is included in the list of professional publications of Ukraine
Category "B". Branch of sciences – legal, specialty – 081 "Law"
(order of the Ministry of Education and Science of Ukraine of October 15, 2019, No. 1301)

The collection is presented international scientometric databases, repositories and scientific systems: Index Copernicus International, ERIH PLUS, Google Scholar, Academic Resource Index ResearchBib, Vernadsky National Library of Ukraine, The Maksymovych Scientific Library, Electronic repository NAIA

Scientific Journal of the National Academy of Internal Affairs / Ed. by S. Cherniavskyi (Editor-in-Chief) et al. Kyiv: National Academy of Internal Affairs, 2023. Vol. 28, No. 2. 82 p.

Editors office address:
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
Tel.: +38 (044) 520-08-47
E-mail: info@lawscience.com.ua
www: https://lawscience.com.ua/en

МІНІСТЕРСТВО ВНУТРІШНІХ СПРАВ УКРАЇНИ
НАЦІОНАЛЬНА АКАДЕМІЯ ВНУТРІШНІХ СПРАВ

НАУКОВИЙ ВІСНИК
НАЦІОНАЛЬНОЇ АКАДЕМІЇ ВНУТРІШНІХ СПРАВ

Науковий журнал

Том 28, № 2
2023

Київ
2023

ISSN 2410-3594
E-ISSN 2786-7382
DOI: 10.56215/naia-herald/2.2023

Співзасновники:
Національна академія внутрішніх справ,
ТОВ «Наукові журнали»

Рік заснування: 1996

Рекомендовано до друку та поширення
через мережу Інтернет Вченою радою
Національної академії внутрішніх справ
(протокол № 13 від 26 червня 2023 р.)

Свідоцтво про державну реєстрацію
друкованого засобу масової інформації
серії КВ 25084-15024 ПР від 29 грудня 2021 р.

Збірник входить до переліку фахових видань України
Категорія «Б». Галузь наук – юридичні, спеціальність – 081 «Право»
(наказ Міністерства освіти і науки України від 15 жовтня 2019 р. № 1301)

Збірник представлено в міжнародних наукометричних базах даних, репозитаріях і пошукових системах: Index Copernicus International, ERIH PLUS, Google Scholar, Academic Resource Index ResearchBib, Національна бібліотека України імені В. І. Вернадського, Наукова бібліотека ім. М. Максимовича, Електронний репозитарій НАВС

Науковий вісник Національної академії внутрішніх справ : наук. журн. / [редкол.: С. Чернявський (голов. ред.) та ін.]. – Київ : Нац. акад. внутр. справ, 2023. – Т. 28, № 2. – 82 с.

Адреса редакції:
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
Тел.: +38 (044) 520-08-47
E-mail: info@lawscience.com.ua
www: https://lawscience.com.ua/uk

SCIENTIFIC JOURNAL
OF THE NATIONAL ACADEMY OF INTERNAL AFFAIRS
Volume 28, No. 2

Editorial Board

НАУКОВИЙ ВІСНИК
НАЦІОНАЛЬНОЇ АКАДЕМІЇ ВНУТРІШНІХ СПРАВ
Том 28, № 2

Редакційна колегія

SCIENTIFIC JOURNAL
OF THE NATIONAL ACADEMY OF INTERNAL AFFAIRS
Volume 28, No. 2

CONTENTS

НАУКОВИЙ ВІСНИК
НАЦІОНАЛЬНОЇ АКАДЕМІЇ ВНУТРІШНІХ СПРАВ
Том 28, № 2

ЗМІСТ

UDC 340.66:343.985.7:355.012:341.322.5
DOI: 10.56215/naia-herald/2.2023.09

Topical issues of forensic medical examination in the investigation of war crimes

Andrii Vozniuk
Doctor of Law, Professor
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
https://orcid.org/0000-0002-3352-5626

Mariia Hryha*
PhD in Law
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
https://orcid.org/0000-0003-4561-712X

■ **Abstract.** The relevance of the study is conditioned by the importance of expert investigations into war crimes committed on the territory of Ukraine. Since many of these crimes result in the death or injury of victims, forensic examinations play a key role in investigations under the Criminal Procedure Code. The purpose of the study was to update the significance of the results of forensic medical examination in proceedings on war crimes, and to identify problematic aspects of the appointment of such an examination simultaneously with proposals for ways to overcome them. The methodological basis of the study was general scientific (dialectical, analysis, synthesis, induction and deduction) and special methods (system and structural, comparative legal, formal logical). It is established that modern capabilities of forensic medical examination contribute to achieving the goal of pre-trial investigation of military torts in limited conditions of forming a high-quality evidence base for such proceedings. However, the effective use of the potential of forensic medical examinations is hindered by a number of problems caused not only by the consequences of active military operations, but also by shortcomings in the legal regulation of this type of forensic examination, imperfect organisation of the structure and functioning of forensic medical institutions during the time of emergency. Possible ways to overcome the identified difficulties are proposed: reorganisation of the structure of forensic medical institutions, in particular, by establishing a department for forensic examination of corpses within a mobile military hospital with the involvement of specially trained forensic experts; simplification of the procedure for processing documents where the results of external examination of the corpse are recorded; updating the regulatory support for the activities of forensic doctors during martial law. The practical significance of the study lies in the fact that the conclusions obtained will help expand the understanding of pre-trial investigation officers of the possibilities of forensic medical examinations in the investigation of war crimes, and will also help identify the problems arising when appointing such examinations and suggest ways to solve them

■ **Keywords:** criminal proceedings; investigative action; expert; forensic medicine; evidence

■ **Suggested Citation:**
Vozniuk, A., & Hryha, M. (2023). Topical issues of forensic medical examination in the investigation of war crimes. *Scientific Journal of the National Academy of Internal Affairs,* 28(2), 9-18. doi: 10.56215/naia-herald/2.2023.09.

■ *Corresponding author

■ Received: 28.02.2023; Revised: 17.05.2023; Accepted: 26.06.2023

Introduction

The results of forensic examinations during pre-trial investigations of certain categories of crimes and criminal offences are important. In certain cases, these studies can not only determine the line of pre-trial investigation, but also ensure its effectiveness, form an evidence base, make procedural decisions and, accordingly, guarantee the fulfilment of the main task of criminal proceedings – bringing the perpetrators to criminal responsibility, restoring the rule of law and justice. The results of involving experts are particularly significant in the investigation of war crimes, in conditions when the pre-trial investigation bodies face unprecedented challenges caused by the consequences of waging a war of aggression on the territory of Ukraine. By the time of the large-scale invasion of the Russian Federation (hereinafter – RF) in Ukraine, there was virtually no practice of bringing to criminal responsibility for war crimes, and therefore, there were no scientific and methodological developments regarding the forensic support of their investigation.

As of 2023, prosecution for committing war crimes is extremely difficult. Among the reasons for this situation, in particular, the commission of some war crimes in the invaded territories and the inability to detain the persons who committed them and conduct investigative (search) actions with them, since these subjects are mostly located on the territory not controlled by Ukraine, and in case of capture they can be transferred for exchange as prisoners of war. In such circumstances, it is extremely difficult to ensure a full investigation of criminal offences committed by such persons.

The establishment of the evidence base and the procedural processing of evidence can be complicated by changes in the situation due to shelling, deaths or captivity, lack of access to the crime scene, the workload of law enforcement agencies and expert institutions, etc. In such situations, conducting expert examinations guarantees reliable forensically significant information, which creates an important basis for the evidence base in the investigation of war crimes. The results of forensic investigations are particularly relevant and important in this context. These examinations are most often assigned during investigations of bodily harm, murder, and sexual crimes, which can be either general or military, depending on the contextual element (Zack *et al.*, 2021).

The study of the problems of investigation of war crimes in connection with the beginning of a full-scale war in Ukraine has acquired unprecedented relevance, as evidenced by the rapid growth in the number of scientific studies in this area among both Ukrainian and foreign scholars. Researchers drew attention to the problematic issues of proving a crime under Article 438 of the Criminal Code of Ukraine[1], in particular, O.V. Taran *et al.* (2022), characterised the circumstances to be proved. A.V. Shulzhenko (2022) identified the problems of proving the objective side of violating the laws and customs of war. I.V. Glowyuk & H.K. Teteryatnik (2022) substantiated contextual elements in war crimes proceedings. A.I. Melnychuk & S.M. Melnychuk (2022) analysed problematic issues of legal qualification of acts under Article 438 of the Criminal Code of Ukraine.

Features of mechanisms of responsibility for war crimes committed as a result of the Russian invasion of Ukraine were considered by O. Kaluzhna & K. Shunevych (2022). O.M. Dufeniuk (2022) revealed logistical and forensic issues of war crimes investigation. A. Salari & S.H. Hosseini (2023) critically examined the capacity of the International Criminal Court to investigate crimes of aggression. The problems of establishing an evidence base in investigations of crimes under martial law, as well as expert support for determining the amount of damage and losses from the destruction as a result of armed aggression of the RF were considered by A.A. Vozniuk & M.A. Hryha (2022) and M.M. Hryha (2022). The scientific and practical manual, which covers the issues of qualification and investigation of crimes under Article 438 of the Criminal Code of Ukraine[2] at a high scientific level, was distinguished by its comprehensive approach (Chernyavskyi *et al.*, 2023). Standards for the investigation of war crimes, in particular, illegal deprivation of liberty and torture, are presented in methodological recommendations prepared by the author's team of the Office of the Prosecutor General (Pashkovskyi *et al.,* 2023).

The purpose of the study was to outline the modern possibilities of forensic medical examination as one of the main means of forming an evidence base in the investigation of war crimes and to identify problems that arise during the appointment of these studies and develop possible areas for their solution.

Materials and Methods

To achieve the purpose of the research, a wide range of scientific methods was used, and an integration approach was applied, which allowed the combination of general scientific and special methods, including sources to ensure a comprehensive consideration of the problem. The dialectical method helped to analyse the problems of forensic medical examination from different angles, revealing contradictions and

[1]Criminal Code of Ukraine. (April, 2001). Retrieved from https://ips.ligazakon.net/document/view/T012341?an=2339&ed=2009_01_01.
[2] Ibidem, 2001.

relationships between different aspects. It allowed considering the causes of problems and ways to solve them. The methods of induction and deduction were used to build a logical structure of research and solve the tasks set. Through induction, a general inference was made from specific examples, and deduction helped to apply laws to specific cases. The synthesis was used to summarise the current potential of forensic medicine in the investigation of war crimes and other torts. The synthesis helped to identify key aspects and establish connections between them. The method of analysis allowed identifying problematic aspects of forensic medical examination in war conditions and developing possible ways to overcome them. The analysis helped to understand the essence of the problems and find optimal solutions.

The system and structural method was used to classify the types of forensic examinations used in the investigation of war crimes. It helped to consider their structure and find out typical problems. Using the comparative legal method, an analysis of the legislation regulating the conduct of forensic medical examinations was carried out, in particular, in wartime conditions. Comparison with other legal norms helped to highlight the features and shortcomings of the current legislation. The formal and logical method was used to develop promising ways to overcome the complications associated with forensic medical examination in the investigation of war crimes. It helped to develop logically sound recommendations.

One of the key elements was the use of comparison to identify the provisions and practices of forensic medical examination in different countries or contexts, at different time intervals, which helped to understand unique aspects and identify possible approaches to solving problems. In the course of the study, papers by Ukrainian and foreign researchers who studied forensic medical examination and its role in the investigation of crimes were considered (Tatsiy *et al.,* 2019; Erhard *et al.,* 2022a; Cioffi & Cecannecchia, 2023). The use of forensic materials, including specific court decisions, has helped highlight and highlight real-world cases and challenges faced by practitioners. The analysis of the provisions of the Criminal Procedure Code and the legislation of Ukraine provided the legal basis for the study[1].

Experts from the practical environment were involved to find out the current state of forensic medical support. The experience of practitioners (investigators and experts), their feedback and views have become valuable sources of information on the current state of forensic support for the investigation of war crimes and identification of problems.

Results and Discussion

After the beginning of the full-scale military aggression of the Russian Federation, forensic medical examination institutions were not prepared for such a large number of dead (deceased) persons (The war in..., 2023). This type of forensic examinations is designed to solve extremely important issues in criminal proceedings on war crimes, in particular, those related to the determination of the cause of death of victims, the nature and degree of injuries inflicted, which is covered by the competence of forensic medical examination.

Forensic medical examination is included in the list of urgent investigative (search) actions that are carried out primarily for the purpose of timely collection and preservation of evidence while documenting various types of war crimes, such as illegal deprivation of liberty, hostage-taking, inhuman treatment, humiliation of dignity, torture, use of civilians as a "human shield", premeditated murder of civilians, etc. The main purpose of a forensic medical examination in such cases is to immediately document injuries that may disappear over time (Pashkovskyi *et al.,* 2023).

The range of areas of use of forensic medicine knowledge in the investigation of war crimes is quite wide. It covers:

1. Assistance to the investigator and prosecutor at the scene. This includes examinations of corpses and descriptions in the protocols of investigative (search) actions in relation to various injuries, such as gunshot wounds, burns of varying degrees, as well as other pathologies and injuries, considering anatomical data of the body structure and special terminology.

2. Conducting forensic medical examinations. This includes exhumation and examination of bodies from mass graves, autopsy of corpses to determine the causes of death, the duration of the postmortem period, the nature and characteristics of injuries, and the study of traces of biological origin.

3. Investigation of rapes and identification of persons from the remains.

4. Implementation of toxicological, medical-forensic, and other complex studies.

5. Conducting examinations for obtaining biological samples in cases of rape, suspected use of chemical weapons, and poisoning caused by environmental pollution as a result of active military operations.

6. Involvement of minors in questioning, especially if they have witnessed or suffered from violence.

These areas of forensic medicine play a key role in collecting and documenting evidence of war crimes, as well as in identifying the circumstances and perpetrators of these cases (Dufeniuk, 2022). It should be

[1]Criminal Code of Ukraine. (April, 2001). Retrieved from https://ips.ligazakon.net/document/view/T012341?an=2339&ed=2009_01_01.

emphasised that the possibilities of forensic medical examinations today are quite sufficient to solve most of the tasks necessary to clarify the important circumstances of war crimes. This potential can become even more powerful if we work with experts from partner countries. It is appropriate to identify modern methods of identification in forensic medicine, which are improved, implemented in practice and can be used, among other things, to solve the problems of criminal proceedings in the investigation of war crimes. Determining the timing of the burial of corpses during the examination of skeletal remains is difficult and in demand in the current environment. The available methods do not solve this problem separately. For this purpose, it is proposed to use the method of infrared spectrophotometry (IRS) of bone tissue, the spectra of which are transformed depending on the duration of the post-mortem period.

Graphic reconstruction of the face is effective (more than 70%) in order to establish the identity of the victim when identifying remains that cannot be identified (Aleksandrenko, 2021). The methodology of dimensional characteristics of the auricles is considered to be effective, as it is characterised by the absence of subjectivity and guarantees the reliability of the research results, regardless of the professional skills and experience of the expert. The technique of creating 3D models (including traces, damage, traumatic objects, etc.) has significant potential for use in identification. In particular, this approach can be applied to portrait expertise based on metric and descriptive characteristics of appearance. Models of the auricle are used during comparative studies to supplement the database of facial identification signs. It is relevant that for the implementation of this technique, data obtained using UAVs can be used, and the preservation of 3D models in various formats allows placing them in graphic editors (Autodesk 3ds Max, etc.) and conducting subsequent modelling of various situations, considering the initial data of the pre-trial investigation (Aleksandrenko, 2021). The use of copy models significantly expands the possibilities and increases the level of visibility and evidentiary potential of the conducted examinations. The range of objects that can be modelled using digital images is extremely wide (clothing with injuries, a bone fragment with fractures, a corpse, etc.).

With the help of spectral analysis of speech signals, as one of the methods of person identification, it is possible to extract stable identification features that characterise the biometric parameters of the speaker's speech. Personal computers with specialised Justiphone software installed can be used as spectrum analysers. In some cases, such a method as Virtopsy (virtual autopsy), which is one of the modern areas of development of autopsies, can become indispensable. With its help, it is possible to get important information about injuries to bones and soft tissues, without using a mechanical autopsy of the body. Virtopsy allows getting a 3D image and observing the event in virtual reality. Other methods used for the study of physical evidence include: the use of digital photographs as objects for forensic medical examination of traces-layers of blood; evidence-based methods for detecting traces of blood, the use of which clearly establishes the presence or absence of human blood on certain objects (Aleksandrenko, 2021).

In the context of the issue under study, it is also worth paying attention to the possibilities of methods used during forensic examination of gunshot injuries (Smiievska & Savka, 2020; Jabara *et al.*, 2021), because it is this kind of damage that most often becomes the subject of forensic medical examinations during the investigation of war crimes. In particular, the method of forensic diagnostics of the type and characteristics of the main traumatic factor in gunshot injuries by three-dimensional spatial reconstruction deserves attention. This method allows creating a three-dimensional model of not only the entire human body, but also an individual body injury, which makes it possible to carry out a comprehensive assessment of external and internal injuries of the body and to conduct a retrospective diagnosis of the traumatic factors that caused them as accurately as possible (Zmiievska & Savka, 2020).

Thus, the modern capabilities of forensic science are quite powerful, and their level is sufficient to meet the needs of pre-trial investigation, in particular, in proceedings on war crimes. However, the effective use of modern innovations and technologies in law enforcement activities is hindered by a number of complications, one of which is the basic lack of knowledge among employees of pre-trial investigation bodies about the capabilities and potential of forensic examinations and the range of issues resolved by forensic experts. As a result, important issues for pre-trial investigation are not raised (or incorrectly formulated), investigation is not conducted (or not conducted in full), which significantly limits the possibilities for forming a high-quality evidence base in criminal proceedings.

With the start of Russia's full-scale invasion, these problems have become even more acute. The practice has demonstrated the inability of territorial forensic medical examination bureaus to provide their own effective and timely execution of the required number of examinations, without using the help of additional forces and means from other territorial divisions, in particular, by sending some forensic experts to regions where a large number of investigations are conducted (Erhard *et al.*, 2022b; Kaluzhna & Shunevych, 2022). The way out of this situation may also be to involve representatives of expert institutions of partner states in conducting forensic medical

expert investigations in the de-occupied territories. It should be emphasised that the experience of organising such international special temporary missions already exists. Thus, E.Q. Reyes & M.I.B. Romero (2023), analysing the contribution of forensic anthropology to the investigation of war crimes by the International Criminal Tribunal for the former Yugoslavia during the armed conflict of 1992-1995, concluded that the work of these professionals provided evidence of systematic attacks during which civilians were killed as part of the implementation of the national policy of extermination of ethnic and religious groups in the region. In addition, the researchers also highlight the importance of involving Latin American specialists in these investigations, emphasising that such experience has enriched relevant research activities in Latin America itself.

O.M. Dufeniuk (2022) emphasised the importance of the participation in the work of the aforementioned tribunal of Danish and Swedish expert groups that conducted investigations in Kosovo in 1999. The researcher notes that as a result of autopsies conducted by such groups of bodies, it was confirmed that the death in the vast majority of cases was caused by gunshot wounds. There is a similar experience in Ukraine. In particular, French experts came to Ukraine to help investigate war crimes of the RF after the discovery of mass graves in the de-occupied territories. The mission arrived with a DNA laboratory and high-quality equipment to examine and identify the bodies. It operated in Ukraine for two weeks. The evidence obtained as a result of cooperation with French colleagues can be used both in national investigations and transferred to the International Criminal Court (French experts have..., 2022).

The war led to the effective organisation and improvement of international cooperation in this area. Before the start of a full-scale invasion, researchers stated (Tatsiy *et al.,* 2019) that cooperation in the field of forensic medical examination in criminal proceedings, in particular, between Ukraine and the Republic of Poland, is quite formal, which does not contribute to the effective use of the results of professional activities of experts in criminal proceedings. Under the influence of wartime conditions, problems in the legal regulation of the activities of forensic doctors also worsened. Thus, researchers and practitioners have previously noted that the current national legislation in the field of forensic medical examination is riddled with numerous gaps and conflicts, filled with letters from the Ministry of Health (MOH) of Ukraine instead of regulatory decisions. Consequently, acute legal uncertainty creates difficulties in law enforcement, which negatively affects the protection of human rights and violates the rule of law standards (Senyuta *et al.*, 2020). There are also problems with the legal regulation of such an important area today as molecular genetic expertise, in particular, in terms of the need for legislative regulation of the procedure for selecting biological samples from various categories of persons and entering them into automated databases of DNA profiles (Stepaniuk *et al.*, 2019).

Neither the Order of the Ministry of Health of Ukraine "On the Development and Improvement of the Forensic Medical Service of Ukraine"[1] nor the Law of Ukraine "On Forensic Examination"[2] contain provisions on the organisation and support of the activities of forensic institutions in the area of damage both during active hostilities and other emergency periods (natural disasters, technological disasters, accidents, etc.). An attempt to urgently address the urgent needs of practice in the conditions that developed immediately after the start of full-scale aggression in February 2022 was the adoption of a joint order of the Ministry of Internal Affairs of Ukraine, the Ministry of Health of Ukraine and the Office of the Prosecutor General No. 177/450/46 of 09.03.2022 "On the Approval of the Procedure for Interaction Between the Bodies and Units of the National Police of Ukraine, Health Care Institutions and the Prosecutor's Office of Ukraine When Establishing the Fact of the Death of a Person During Martial Law on the Territory of Ukraine". This regulation gives the right to employees of health care institutions to issue medical death certificates and carry out the issuance/burial of bodies without a referral for forensic examination, provided that the examination of the corpse was carried out by an employee of the health care institution and the fact of absence of signs of violent death was established or based on medical documentation that is available (without clarification)[3]. However, this document, despite its reasonable purpose, caused a lot of questions among forensic doctors.

This refers, in particular, to the norm that provides that in the case when it is impossible to conduct an examination of the victim, it is allowed, in

[1]Order of the Ministry of Health of Ukraine No. 6 "On the Development and Improvement of the Forensic Medical Service of Ukraine". (1995, January). Retrieved from https://zakon.rada.gov.ua/laws/show/z0248-95#Text.
[2]Law of Ukraine No. 4038-XII "On Forensic Examination". (2022, January). Retrieved from https://zakon.rada.gov.ua/laws/show/4038-12#Text.
[3]Order of the Ministry of Internal Affairs of Ukraine, the Ministry of Health of Ukraine and the Office of the Prosecutor General No. 177/450/46 "On the Approval of the Procedure for Interaction Between the Bodies and Units of the National Police of Ukraine, Health Care Institutions and the Prosecutor's Office of Ukraine When Establishing the Fact of the Death of a Person During Martial Law on the Territory of Ukraine". (2022, March). Retrieved from https://zakon.rada.gov.ua/laws/show/z0317-22#Text.

some cases, to conduct an expert examination only on the basis of medical documentation (medical history, individual card of an outpatient patient, etc.), if the available documents are original and contain all the necessary information. However, practitioners emphasise (Erhard *et al.*, 2022b), that if there is a need to establish the exact time of receiving injuries, the forensic medical expert will not be able to provide an unambiguous answer based on incomplete/inaccurate data in medical documents. In addition, this Order[1] provides for the possibility of conducting a forensic medical examination (external examination) or forensic medical examination (autopsy) of a corpse "on the basis of a decision, referral, statement or other document drawn up by an authorised person of the military administration, the National Police of Ukraine, the Prosecutor's Office, the Security Service of Ukraine, or other authorised bodies". However, this contradicts the provisions of the Law of Ukraine "On Forensic Expertise"[2], where the grounds for conducting a forensic examination are the relevant decision of the court or the pre-trial investigation body, or if ordered by other parties – the existence of a contract with an expert or expert institution.

Paragraph 4 of Section IV[3] of the above joint order states that "based on the results of the examination of the corpse, after clarifying the circumstances of death and in the absence of signs of violent death or suspicion of such, the territorial health care institution shall be notified of the need to issue a medical death certificate". Informing the territorial health care institution is assigned to an authorised employee of the bodies and divisions of the National Police of Ukraine, according to which it is necessary to issue a medical death certificate. However, there are questions about the procedural implementation of these provisions, because the prospect of issuing a medical death certificate only from the words of an authorised employee of the bodies and divisions of the National Police of Ukraine seems doubtful. It is necessary for a doctor to directly examine the body before issuing a medical certificate of death, or at least after examining the puncture wound at the scene. There were cases when the National Police of Ukraine incorrectly established the category of death (for example, in the case of hanging, they mistakenly indicated "no signs of violent death"), did not show signs of a closed craniocerebral injury, or did not recognise poisoning, although there were corresponding indicators. In this context, it is considered legally wrong for doctors to issue medical death certificates based solely on police reports without personally examining the body of the deceased person (Erhard *et al.*, 2022). Consequently, the mentioned order obviously requires revision to bring its provisions in line with the current legislation and the needs of practice.

The problematic issues of legal regulation of the activities of forensic doctors have already been considered by both foreign and Ukrainian researchers. A. Cioffi & C. Cecannecchia (2023), investigating the role of forensic medicine in the investigation of war crimes in the context of the Russian-Ukrainian conflict, focused on standardising the work of forensic doctors combined with reviewing the shortcomings identified in the Rome Statute. The findings of researchers can be considered when updating the Ukrainian legislation on the organisation of forensic medical examination. In this context, it is also worth paying attention to the study by V.Y. Tatsiy *et al.* (2019). Focusing on the importance of forensic examination in the investigation of crimes related to torture, the researchers analysed the compliance of the activities of forensic doctors with the Convention on Human Rights and Fundamental Freedoms, the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, and other international and Ukrainian legal acts. The inconsistency of the practice of forensic legal norms with the modern procedural needs in the qualification of crimes in the field of medical activity was pointed out by S. Lykhova *et al.* (2020). The researchers insisted on the need to introduce rules for conducting forensic medical examinations in cases of assessing the provision of medical care to unify approaches to conducting forensic medical examinations on the quality of medical care, in particular, establishing criteria for evaluating treatment, shortcomings in the provision of medical care and establishing a causal relationship with adverse consequences.

In addition to the above-mentioned complications, the effectiveness of forensic medical examinations in war crimes proceedings is negatively affected by other factors that characterise the process of pre-trial investigation of such acts as a whole. Among the most significant are the following: intensive changes in the operational situation; frequent changes in the location of military units; death, injury, captivity of participants in the proceedings during combat operations; distortion of the scene due to occupation, bombing, or shelling; limited access to the

[1]Order of the Ministry of Internal Affairs of Ukraine, the Ministry of Health of Ukraine and the Office of the Prosecutor General No. 177/450/46 "On the Approval of the Procedure for Interaction Between the Bodies and Units of the National Police of Ukraine, Health Care Institutions and the Prosecutor's Office of Ukraine When Establishing the Fact of the Death of a Person During Martial Law on the Territory of Ukraine". (2022, March). Retrieved from https://zakon.rada.gov.ua/laws/show/z0317-22#Text.
[2]Law of Ukraine No. 4038-XII "On Forensic Examination". (2022, January). Retrieved from https://zakon.rada.gov.ua/laws/show/4038-12#Text.
[3]Ibidem, 2022.

scene due to mining or sniper attacks; a significant number of proceedings carried out simultaneously in a limited time; bringing to criminal responsibility of the parties to an armed conflict; the inability to identify corpses after a significant period of time from the moment of death to the beginning of the investigation; difficulties in collecting evidence due to shootings in places where the presence of undesirable witnesses was excluded; a limited amount of military information (documents, objects, photos from drones, transcribed recordings of radio intercepts, etc.), which is provided to the criminal justice authorities for investigation purposes (Batiuk & Dmytriv, 2021).

It follows from the above list that the main problems regarding the appointment of forensic medical expertise in war crimes proceedings are often associated with the inability to obtain high-quality materials and samples for expert investigation, primarily due to the lack of full access to the scene of the incident or too long a period of time that has passed since the commission of the crime, which leads to distortion or loss of a significant number of traces. Thus, O.M. Dufeniuk (2022) noted that during the investigation of war crimes, there is often a need to identify corpses, which can be done visually (by signs of appearance, related things and documents) or through research in the field of forensic odontology and/or genomic DNA. Significant complications of the work of a forensic doctor are caused by a long stay of the corpse in open moist air, burial in moist soils and "mass graves", which cause the processes of rotting, autolysis, saponification of the corpse; fragmentation of the corpse as a result of explosions, firearms, and other injuries; repeated movement of the corpse by unauthorised persons, changing the place of burial, and thus – the trace pattern.

Thus, the most important challenge as of 2023 is the timely conduct of forensic medical examinations, especially in cases of prolonged occupation, where the real impossibility of performing such examinations arises due to the rapidly destructive nature of the objects under study. Obviously, a significant number of signs (identification and/or diagnostic) necessary for conducting a qualitative expert investigation disappear or are distorted due to inevitable physical processes (wound healing, tissue decomposition, disappearance of micro traces, etc.). At the same time, forensic examinations of corpses are often carried out after exhumation, while examinations in cases of sexual violence are generally meaningless after a long time. In this sense, the proposals on the expediency of making additions to Article 615 of the Criminal Procedure Code[1] are not devoid of logic, in particular, regarding the abolition of the requirement to conduct a forensic medical examination during the investigation of war crimes in the event of an objective impossibility of its timely conduct and the irrationality of such from the standpoint of forming the evidence base of proceedings under occupation. Otherwise, war criminals may avoid criminal liability due to the lack of opportunities to prove their guilt in the form established by procedural law (Kaluzhna & Shunevych, 2022).

It is also worth focusing on the problem that arises due to the lack of a sufficient number and arrangement of morgues where the bodies of the dead are stored until a forensic medical examination is carried out. This issue became quite acute after the de-occupation of certain territories (Kyiv and Kharkiv oblasts) and the discovery of a significant number of people killed there, including in mass graves. It seems that the way out of this situation could be mobile refrigerated morgues, which, if necessary, would be sent to the appropriate locations. Another problem highlighted by N.M. Erhard *et al.* (2022b), is the improper organisation of the structure of forensic institutions in areas with special conditions (where active hostilities are taking place, as well as in de-occupied territories where mass graves have been discovered and a significant number of forensic examinations are required). Therefore, there is an urgent need to develop an effective organisational structure for such institutions and adjust their activities during a special period in order to ensure the most effective work of forensic medical institutions.

The most promising way out of the current situation is to establish a mobile forensic department for the examination of corpses as a separate component of the mobile military hospital, involving forensic experts who have undergone special training and are able to carry out expert work in the difficult conditions of active hostilities. To ensure the effectiveness of the mobile unit, it is necessary to develop a structure of units that would ensure not only speed and consistency, but also coherence of the work of forensic experts in such difficult conditions. It is necessary to simplify the procedure for documenting the results of the examination of the body of a deceased person in cases of violent and nonviolent death, when it is not possible to carry out photographic recording after a limited time. This will help speed up forensic investigations and increase their volume in the event of mass deaths during active hostilities.

Conclusions

Thus, the analysis of the current state of the scientific potential of forensic medical examination indicates that the use of the results of special knowledge in this

[1]Criminal Procedure Code of Ukraine. (2012, April). Retrieved from https://zakon.rada.gov.ua/laws/show/4651-17#n5092.

area for the needs of pre-trial investigation bodies of war crimes is a powerful tool for the formation of a high-quality evidence base, especially in conditions when the activities of law enforcement officers are extremely complicated by the consequences of active combat operations, which makes it impossible to carry out a significant part of investigative (search) measures. However, the most effective use of the capabilities of forensic medical examination in the studied proceedings is hindered by a number of problematic aspects. Firstly, this is conditioned by gaps in the regulatory support for the activities of forensic doctors and insufficient organisation of the structure of forensic medical institutions, which leads to a significant overload of these specialists. Secondly, the lack of knowledge of the capabilities of forensic medical examinations and the range of issues that can be resolved within the framework of these studies also complicates the situation.

The necessity of making changes to the current legislation regulating the activities of forensic medical experts and reorganising the structure of forensic medical institutions, considering the needs of practice in war conditions, is substantiated. To optimise the work of forensic doctors in regions where there is a need to conduct a significant number of forensic medical examinations (mass graves, victims of rocket attacks, etc.), it is proposed to attract specialists from forensic medical institutions from other areas, as well as experts from partner countries within the framework of international cooperation.

The need to provide a sufficient number of mobile refrigerated morgues to preserve the bodies of the dead in the absence of the possibility of their placement in stationary morgues has been established. The author emphasises the need to conduct educational activities (publication of relevant methodological materials, scientific and practical events, and in-service training) among pre-trial investigation officers on the possibilities of forensic medical examinations in the investigation of war crimes, the range of issues addressed by forensic physicians and their correct formulation. Promising areas for further studies on this topic may include investigation of the development of effective mechanisms for improving the legal regulation of the activities of forensic medical experts during martial law and proposals for the restructuring of forensic medical institutions considering the requirements of war to maximise the rational use of their potential in war conditions.

Acknowledgements

None.

Conflict of Interest

None.

References

[1] Aleksandrenko, O.V. (2021). Once again to the question of innovations in criminology and forensics: Problems and solutions. In *Materials of the scientific and practical conference Innovations in criminology and forensic examination* (pp. 80-83). Kyiv: National Academy of Internal Affairs.

[2] Batiuk, O.V., & Dmytriv, S.O. (2021). To the question of the organization of the investigation of war crimes. *Social and Legal Studies,* 3(13), 77-87. doi: 10.32518/2617-4162-2021-3-77-87.

[3] Chernyavskyi, S.S., Vozniuk, A.A., Zhuk, I.V., Taran, O.V., Osukhovskyi, R.V., Areshonkov, V.V., Atamanchuk, V.M., & Malysh, I.H. (2023). *Qualification and investigation of violations of the laws and customs of war: Science and practice manual*. Kyiv: Norma Prava.

[4] Cioffi, A., & Cecannecchia, C. (2023). Role of forensic medicine in addressing the war crimes: Perspective from Russia-Ukraine conflict during the COVID-19 pandemic. *Medicine, Science and the Law*, 63(2), 168-173. doi: 10.1177/00258024221125135.

[5] Dufeniuk, O.M. (2022). Investigating war crimes: Logistical, forensic, and forensic issues. *Legal Scientific Electronic Journal*, 4, 369-374. doi: 10.32782/2524-0374/2022-4/88.

[6] Erhard, N.M., Kubalia, S.M., Sytnyk, Yu.V., Bogdash, V.V., & Selin, V.S. (2022a). Current issues of forensic medical examination during martial law. In *Materials of the 12th International scientific and practical conference "Modern directions of scientific research development"* (pp. 104-108). Odesa-Lviv: Odesa Research Institute of Forensic Expertise Ministry of Justice of Ukraine; Lviv Research Expert Forensic Center of the Ministry of Internal Affairs of Ukraine.

[7] Erhard, N.M., Mykhailychenko, B.V., Kobylianskyi, O.L., Mykoliuk, V.V., & Havrylchenko, M.O. (2022b). Problematic issues of establishing the fact of a person's death during martial law: Forensic and medical aspects. In *Materials of the 13th international scientific and practical conference "Modern scientific research: Achievements, innovations and development prospects"* (pp. 95-102). Berlin: MDPC Publishing.

[8] French experts have arrived in Ukraine to assist in the investigation of war crimes committed by the Russian Federation. (2022). Retrieved from https://www.gp.gov.ua/ua/posts/francuzki-eksperti-pribuli-do-ukrayini-dlya-dopomogi-u-rozsliduvanni-vojennix-zlociniv-rf.

[9] Glowyuk, I.V., & Teteryatnik, H.K. (2022). Contextual elements in war crimes proceedings: The subject of sui generis evidence. *Legal Scientific Electronic Journal*, 6, 394-398. doi: 10.32782/2524-0374/2022-6/87.

[10] Hryha, M.M. (2022). Problems of forming the evidence base during the investigation of criminal offenses under martial law. *Law and Society. International Journal*, 6, 41-47.
[11] Jabara, J.T., Gannon, N.P., Vallier, H.A., & Nguyen, M.P. (2021). Management of civilian low-velocity gunshot injuries to an extremity. *Journal of Bone Joint Surgery*, 103(11), 1026-1037. doi: 10.2106/JBJS.20.01544.
[12] Kaluzhna, O., & Shunevych, K. (2022). Liability mechanisms for war crimes committed as a result of Russia's invasion of Ukraine in February 2022: Types, chronicle of the first steps, and problems. *Access to Justice in Eastern Europe*, 3(15), 178-193. doi: 10.33327/AJEE-18-5.2-n000324.
[13] Lykhova, S., Pletenetska, A., & Sysoieva, V. (2020). The value of forensic medical expertise for the qualification of crimes in the medical activity. *Journal of Law and Political Science,* 23(2), 272-302.
[14] Melnychuk, A.I., & Melnychuk, S.M. (2022). Violation of laws and customs of war: Issues of theory and practice. *Law.ua*, 2, 71-76. doi: 10.32782/LAW.UA.2022.2.9.
[15] Pashkovskyi, M.I., *et al.* (2023). *Standards of investigation of war crimes. Illegal deprivation of liberty and torture*. Kyiv: Office of the Prosecutor General.
[16] Reyes, E.Q., & Romero, M.I.B. (2023). Forensic anthropology: Contributions to research on breaches of international humanitarian law. The case of Bosnia and Herzegovina. *Antipodal. Journal of Anthropology and Archaeology,* 1(50), 47-71. doi: 10.7440/antipoda50.2023.03.
[17] Salari, A., & Hosseini, S.H. (2023). Russain's attack on Ukraine: A review of the international criminal court's capacity to examine the crime of aggression. *Access to Justice in Eastern Europe*, 1(18), 8-27. doi: 10.33327/AJEE-18-6.1-a000107.
[18] Senyuta, I., Orlyuk, O., Buletsa, S., & Ivanchulynets, D. (2020). Forensic medical and forensic psychiatric examination: Some issues of legal regulation. *Georgian Medical News,* 2(299), 158-163.
[19] Shulzhenko, A.V. (2022). Problems of proving the objective party in crimes of violation of the laws and customs of war. *Bulletin of Luhansk State University of Internal Affairs named after E. Didorenko*, 98, 261-270. doi: 10.33766/2524-0323.98.261-270.
[20] Stepaniuk, R., Shcherbakovskiy, M., Kikinchuk, V., Lapta, S., & Guseva, V. (2019). Problems of using forensic molecular-genetic examination in Criminal Procedure Code of Ukraine. *Georgian Medical News*, 5(290), 162-163.
[21] Taran, O.V., Zapototskyi, A.P., & Starenkyi, O.S. (2022). Circumstances to be proved in the investigation of violations of the laws or customs of war. *Scientific Journal of the National Academy of Internal Affairs*, 27(3), 9-18. doi: 10.56215/0122273.09.
[22] Tatsiy, V.Y., Zhuravel, V.A., & Avdeeva, G.K. (2019). Independent forensic medical examination as a mean of proving the facts of a torture usage. *Medical News,* 72(12 cz 2), 2596-2601.
[23] The war in Ukraine claimed the lives of 9180 civilians, and nearly 16,000 were injured – UN. (2023). Retrieved from https://interfax.com.ua/news/general/921714.html.
[24] Vozniuk, A.Ah., & Hryha, M.A. (2022). Expert provision of determining the amount of damage and losses from damage and destruction of buildings, structures and other infrastructure objects as a result of the armed aggression of the Russian Federation. *Scientific Bulletin of the Uzhhorod National University*, 2(73), 123-130. doi: 10.24144/2307-3322.2022.73.51.
[25] Zack, F., Bernhardt, S., Arnold, C., & Büttner, A. (2021). Forensic medical examinations of persons suspected of a crime. Ananalysis of 270 expertises from 2006 to 2018. *Forensic Medicine*, 31(6), 501-508. doi: 10.1007/s00194-021-00468-7.
[26] Zmiievska, Yu.H., & Savka, I.H. (2020). Features of the national development of possibilities forensic diagnostics of the gunshot injuries. *Clinical and Experimental Pathology*, 1, 3-10. doi: 10.24061/1727-4338.XIX.1.71.2020.327.

Актуальні питання судово-медичної експертизи під час розслідування воєнних злочинів

Андрій Вознюк
Доктор юридичних наук, професор
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
https://orcid.org/0000-0002-3352-5626
Марія Грига
Кандидат юридичних наук
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
https://orcid.org/0000-0003-4561-712X

■ **Анотація.** Актуальність дослідження зумовлена важливістю експертних досліджень у воєнних злочинах, які вчиняють на території України. Оскільки чимало з таких злочинів призводять до смерті або тілесних ушкоджень потерпілих, судово-медичні експертизи відіграють ключову роль у розслідуванні відповідно до Кримінального процесуального кодексу. Мета дослідження полягала в актуалізації значення результатів судово-медичної експертизи в провадженнях про воєнні злочини, виявленні проблемних аспектів призначення такої експертизи одночасно з пропозиціями щодо напрямів їх подолання. Методологічним підґрунтям статті слугували загальнонаукові (діалектичний, аналізу, синтезу, індукції та дедукції) та спеціальні методи (системно-структурний, порівняльно-правовий, формально-логічний). Констатовано, що сучасні можливості судово-медичної експертизи сприяють досягненню мети досудового розслідування воєнних деліктів в обмежених умовах формування якісної доказової бази таких проваджень. Однак на заваді ефективному використанню потенціалу судово-медичних експертиз стоїть низка проблем, спричинених не лише наслідками ведення активних бойових дій, а й недоліками нормативно-правового регулювання цього виду судових експертиз, недосконалою організацією структури та функціонування судово-медичних установ в особливий період. Запропоновано можливі напрями подолання виявлених складнощів: реорганізація структури судово-медичних установ, зокрема шляхом утворення в складі мобільного військового шпиталю відділу судово-медичної експертизи трупів із залученням до його роботи спеціально підготовлених судово-медичних експертів; спрощення порядку оформлення документів, де фіксують результати зовнішнього огляду трупа; оновлення нормативно-правового забезпечення діяльності судових медиків у період дії воєнного стану. Практичне значення статті полягає в тому, що отримані в ній висновки сприятимуть розширенню розуміння працівниками органів досудового розслідування можливостей судово-медичних експертиз під час розслідування воєнних злочинів, а також допоможуть виявити проблеми, що виникають під час призначення таких експертиз, і запропонувати шляхи їх розв'язання

■ **Ключові слова:** кримінальне провадження; слідча дія; експерт; судова медицина; доказ

UDC 165.242.2:159:343.132
DOI: 10.56215/naia-herald/2.2023.19

Perception and understanding of information as determinants of the investigator's professional competence

Viacheslav Androsiuk*
PhD in Psychological Sciences, Professor
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
https://orcid.org/0000-0002-9106-2586
Oksana Voloshyna
PhD in Psychological Sciences, Professor
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
https://orcid.org/0000-0003-4166-2847
Ivo Svoboda
PhD, Associate Professor, Guarantor of Security Management Studies
Academy of the Police Force in Bratislava
835 17, 1 Sklabinska Str., Bratislava, Slovak Republic
https://orcid.org/0000-0002-0941-4686

■ **Abstract.** The experimental study is devoted to solving the problem of perception and understanding by investigators of the National Police of Ukraine of forensic information about offences presented in the form of texts. The expediency of forming the personality of a specialist investigator based on the competence approach is declared, due to which the contradiction between the professionalism of the individual and the professionalism of the activity is eliminated in the educational process. The purpose of the study was to establish correlates of understanding (sensemaking) of the forensic text by investigators in the process of its compression; personal factors that mediate the investigator's understanding of official information in the text form of the presentation. The methodological tools were based on the method of structural and functional analysis and empirical methods, systematic, teleological, and dialectical approaches that allowed analysing the dynamics of text information transformation and changes in the parameters of its mental reflection in the subject's thinking. The study established the dynamics of compression of experimental texts, features of the intensity of text compression depending on the time modes of working with it and individual characteristics of the investigator's cognitive processes – perception, memory, and thinking. The highest intensity of compression of the expanded text and the allocation of significant information is achieved in the conditions of free time working with the text. It is proved that at the initial stage of understanding a text message, the ratio between the main and concretising elements of information is a criterion of competence, and at the final stage of understanding – the intensity of sensemaking. The indicators of text compression intensity are analysed and it is revealed that under the conditions of a given operating mode, the elimination of text elements occurs more intensively than in the conditions of free time mode. It is proved that the ratio between the intensity of compression and the level of text connectivity has direct proportional relationships at all stages of compression. It is established that the process of understanding is significantly influenced by typological features of conceptual and figurative components of memory and thinking. The provisions formulated in the paper will contribute to the search for more effective methods of professional and psychological training of future investigators and improve the psychological support of investigative activities

■ **Keywords:** investigative activity; text data; material comprehension; text compression; correlates of perception; personal factors

■ **Suggested Citation:**
Androsiuk, V., Voloshyna, O., & Svoboda, I. (2023). Perception and understanding of information as determinants of the investigator's professional competence. *Scientific Journal of the National Academy of Internal Affairs,* 28(2), 19-29. doi: 10.56215/naia-herald/2.2023.19.

■ *Corresponding author

■ Received: 03.03.2023; Revised: 22.05.2023; Accepted: 26.06.2023

Introduction

The establishment of the National Police in Ukraine provides for the reform of professional education based on competence, acmeological, and systematic approaches. This requires rethinking scientific, theoretical, and technological experience in the investigation of offences and strengthens interdisciplinary links aimed at developing the competencies of future investigators. The structure of the professional competence of a police investigator includes a number of functional competencies, among which the key one is informational, which determines the understanding and translation of forensically important information. The carriers of this information are oral and written texts that require the investigator to be able to display, structure, comprehend, and build mental constructs. Of particular importance is understanding as a system-forming process that combines perception with knowledge, during which new concepts and systems of understanding the objects of an offence are formed.

Information about an offence is a socially significant factor, and knowledge is a personal one. That is why the development of information competence of an investigator has the following areas: the ability to understand this information, and then turn it into knowledge as a personal asset. This process is determined by the personal characteristics of the investigator and the individual style of Information work mediated by them. Theoretical, methodological, and technological studies of cognitive psychology and psycholinguistics contribute to the clarification of the latter. Understanding is prepared by analysis in its various forms and completed by synthesis. A significant contribution to the development of ideas about semantic constructs of language understanding was made by American psycholinguist D. Slobin (2017). The theoretical foundations of understanding information presented in the form of texts are established by the prominent scientist N. Chomsky (2015). He emphasised the most important social and mental contexts in the perception and understanding of textual information.

Thus, a number of studies by L.M. Kisil (2021), H. Eldridge (2019), J. Monckton-Smith *et al.* (2022) are devoted to the investigation of various methodologies of information work of investigators and forensic scientists, the collection and interpretation of evidentiary data, and their weight in the materials of criminal cases. Australian researcher L.M. Howes (2017), found that investigators do not pay enough attention to scientific research in criminal investigations. This is especially true for the procedures for collecting, evaluating, and using information about the event of an offence, as a result of which these procedures are marked by the arbitrariness of investigators and largely lose their evidentiary value in court proceedings.

The authors agree with the idea that the process of understanding the text consists in highlighting the reference nodes in it, translating the text into “one’s own language”, gradually rearranging it, compressing this text to simple judgments about the meaning of the message (Molyako, 2019; Miroshnychenko, 2019; Panchenko, 2022). O.V. Heina (2022) investigated aspects of presentation as a form of compression of a scientific text. The researcher analysed the key steps of preparing and conducting a presentation, and the influence of certain personal characteristics on the process of creating a presentation. It is established that teaching text compression includes the development of students’ culture of working with scientific materials, improving the skills of analysing, understanding, and writing secondary scientific texts based on the structural reflection of the source text.

The investigator’s information activity is clearly systemic in nature. The collection of information about the event of an offence is carried out from various sources – direct participation in the conduct of investigative and operational actions, the procedure for interrogating participants in the investigation, analysis of documents and printed materials, which provides for an initial assessment, systematisation, and generalisation of the information received. However, the most important stage of working with information is the mental recognition by the investigator of the most significant features of an offence, understanding its circumstances, the behaviour of participants in the event, and creating holistic model ideas about its course, which is embodied by the investigator in working notes, diagrams, and text documents provided for by procedural requirements. It is this stage that characterises the specifics of the psychological process of isolating the most significant semantic units from text media, its recombination in the internal thinking language, and further extrapolation into the text materials of the case under investigation. The information search for research on the above-mentioned stage of the investigator’s work with text information showed the absence of significant scientific developments that can contribute to improving the effectiveness of the investigation and improving the relevant information competencies of the investigator of the National Police of Ukraine.

The purpose of the study was to establish the determinants of understanding the forensic text by investigators in the process of its compression; personal characteristics that contribute to the investigator’s understanding of official information presented in text form. Research tasks are selected according to the purpose:

- set time parameters for text compression while understanding it;
- characterise the specifics of isolating predicates of a legal text in the process of sensemaking;

- determine the dependence of text understanding on certain personal factors.

Literature Review

Some studies of Ukrainian and foreign researchers give fragmentary ideas about working with information in the system of law enforcement agencies, which actualises this problem, especially in the context of optimising the information support of the process of investigating offences at the modern scientific and technological level. L. Hudachek & A. Quigley-McBride (2022) investigated the impact of pre-existing beliefs and biases on information perception and understanding. Pre-existing beliefs have been found to influence the perception and interpretation of new relevant information, especially the assessment of forensic psychologists' testimony. Since both sides of the trial involve experts who support their position, the jury must face different expert opinions. The researchers analysed how biases affect jury judgments based on congruence and non-congruence of information from different experts.

A. Arndorfer & S.D. Charman (2022) investigated the effect of various methods for assessing the reliability of witness cognition on the reliability-accuracy ratio. In their opinion, there are no significant differences in the ratio of reliability and accuracy depending on the nature of the reliability assessment – verbal and descriptive reports on reliability turned out to be the same diagnosis of identification accuracy as numerical reports on reliability. Therefore, reliability acts as a predictor of accuracy, including when the witness's confidence is achieved through open responses. Thus, it is proved that the use of any of the above-mentioned assessment techniques (scales containing either words or numbers, or a verbatim report from the words of a witness) can contribute to the reliability and accuracy of the information reflected in the testimony.

American researchers L. Carlson *et al.* (2022) identified and analysed some of the determinants of professional communication of investigative subjects that determine the effectiveness of coordinating activities for collecting, evaluating, and interpreting evidence. Special attention is paid to the information saturation of evidence and the correction of individual interpretation under the influence of communicative interaction. Canadian forensic scientists B. Snook *et al.* (2020) critically evaluate the step-by-step interview model that the Royal Canadian Mounted Police (RCMP) has implemented in Canada. They provide compelling empirical evidence that the three basic practices (minimisation of guilt, mischaracterisation of evidence, and setting leading questions) in the step-by-step interrogation model lead to distortion of evidentiary information and, consequently, jeopardise the truth-finding function in police interrogations. In addition, the researchers concluded that the promotion and dissemination of an interrogation protocol containing dangerous or untested methods may prevent detectives and Investigators of the Royal Canadian Mounted Police from achieving their goal of obtaining voluntary statements and accurate information.

Important are the research on the use of artificial intelligence to classify types of crimes, in particular, F. Schiliro *et al.* (2021) propose an innovative approach to identifying types of crimes. They use cognitive computing-enabled neural networks (CC-CNN) that are based on unstructured text data. Training algorithms are designed to provide police investigators with support and assistance in understanding different types of crimes. Another important task of investigators is to establish the motives of criminal offences. J. Chopin *et al.* (2021) investigate the issue of unmotivated homicides. They note that such murders are characterised by a lack of a clear motive, which can create difficulties for the investigation. The authors of the study suggest analysing models of geographical mobility and other aspects associated with such murders to better understand the situation. Their study allows the identification of various mobility patterns associated with unmotivated homicides and their correlations of criminal events.

Research on the problems of perception and understanding of information presented in text form focuses on individual and typological features of the cognitive sphere of the individual. I. Khizhnyak & N. Lyashov (2019) discussed the features of decoding three-dimensional texts by philological students, considering their future professional activities. They emphasised the role of cognitive skills and personal characteristics in the process of perception of texts. The results of their research showed that the perception of a literary text depends on the psychological type of student and their degree of personal professional development. Although philological students have developed skills in reproducing information from large texts, their ability to understand the subtext and motives of authors and characters is less developed. This highlights the importance of studying the deep mechanisms of these processes and developing practical measures for their further development.

Thus, a number of modern studies have established the basis for determining the factors and determinants of the investigator's information activity, in particular, those facts and circumstances of offences that are revealed in the process of obtaining information from its carriers – participants in the investigation, and which is extrapolated in the form of oral or written texts. These texts in the form of documents, protocols, and records on technical devices are perceived by the investigator, re-structured, compressed,

and acquire the quality of objective knowledge about the event of the offence, and are fixed in the forms provided for by the current legislation.

Materials and Methods

The systematic approach facilitated an understanding of the integrity of the perception of text information, recombination and synthesis of semantic elements of the text, and the relationship and interaction of the text compression process with the personal characteristics of the investigator. The importance of considering the content characteristics and psychological essence of the investigator's information activity in the context of the category "cognition" is substantiated based on a teleological approach. The dialectical approach led to an understanding of the dynamics of text information transformation and changes in the parameters of its mental reflection in the subject's thinking. Using the method of structural and functional analysis, the parameters of mental processing of text information and the role of individual mental cognitive processes in the process of sensemaking are determined.

In addition, a number of empirical methods were used in the study. In particular:

- modified text analysis method DITEX (diagram-text-sense) by N.V. Chepeleva (2015) is aimed at determining the structure of the text and the ratio of sensemaking and concretising text elements, the effectiveness of preserving basic information and the area of text compression;

- questionnaire focused on identifying features of thinking (Questionnaire determination of..., 2022);

- G. Ebinghaus' blank methods and Bourdon-Anfimov tables for identifying the features of perception and memory (Portnytska *et al.,* 2016).

The experimental sample was made up of 200 investigators of the Main Investigation Department of the National Police of Ukraine with 5 years of experience. Quantitative characterisation of the sample ensured compliance with the requirements of variation statistics at the level of $P \leq 0.5$. The presence of work experience in the position determined a sufficient level of information competence. This study meets all ethical standards. As a test material, 4 artificial texts with a volume of 1 200 characters each describing the plots of criminal offences were used. Each text sequentially consisted of 30 matrix (sensemaking, predicates) text elements (MTE) and a number of complementary, concretising text elements (CTE). The subjects were asked to make a synopsis of the proposed text (1st order synopsis) while preserving the meaning of the crime plot. In the future, the same subjects were asked to make the 2nd order synopsis from the original text they had already compiled.

Two series of experiments were conducted. In the first series, the time spent working with the test was not regulated, in the second – it was set. The investigators were asked to draw up the 1st order synopsis based on the source text, and then – the 2nd order synopsis based on the compiled 1st order synopsis. The source text was removed. After working with the texts, respondents were asked to answer five control questions from each text, based on the 2nd order synopsis, and in case of difficulties in the answers – the 1st order. Synopses of all orders were analysed using the DITEX method. Abstracting was carried out with a special indicator pen, which was connected to the stopwatch. This allowed registering certain time parameters, namely: T*w* – total working time with text, and T*p* – time from the beginning of reading the text to the beginning of abstracting.

The mathematical framework of the study was used to calculate standard deviations, Pearson's χ^2-criterion, and Mann-Whitney and C. Spearman correlation coefficients.

The equation describes a straight line that characterises the graph indicator of text compression intensity:

$$J = \frac{100}{KX+b}, \quad (1)$$

where $K = t\alpha$; X (%) – number of eliminated text elements; b – time from the beginning of reading to the beginning of the actual compression.

Results and Discussion

It should be noted in advance that the assumption that the compression of a forensic text by investigators is conditioned not only by the organisation and semantic units of the text, but also by certain personal properties of the subject of understanding, and specific features of mental cognitive processes, is confirmed by some studies that reflect these considerations.

The specific feature of the professional language of the investigator is characterised by a tendency to consolidate, forced, in fact, the use of a limited set of language tools, and the attitude to the maximum detection of the content side of the language units of the text is manifested in syntactic compression (syntactic condensation). Syntactic compression involves maximising the amount of information per text element. It is determined that various types and methods of compression are elliptical, deictic, and universal, the choice of which is dictated by a number of conditions related to the type of text (scientific, every day, etc.), – regulated by special rules that are determined by the semantic and formal structure of the text and its sequence. The desire to eliminate redundancy, to shorten the text without losing information characterises the complex of information competencies of the investigator. A total of 30 observation units were obtained for each experimental subject.

The reliability of the data meets the requirements of variation statistics and is $P \leq 0.5$.

Analysis of the scientific work on the problems of perception and understanding of information presented in textual form on the development of D. Slobin (2017), initiated by C. Barbero (2022), in which the researcher notes that reading begins with a rather short act of perception and immediately proceeds to the act of recognising written words. This act consists of two simultaneous and parallel actions – phonological, which turns groups of letters into sounds, and lexical, which provides access to an individual thesaurus (the meaning of perceived terms). Analysing the act of reading, the researcher emphasises that in its course the reader is interested not so much in a simple understanding of the perceived signs, but mainly in determining those characteristics of texts that help classify them as works of a particular genre. The latter is provided by the activation of the mental cognitive processes of the individual – attention, perception, memory, thinking, etc. Thus, when the readers perceive (reads and understands) the text, they first imagine the meaning of the text in perspective, and then form an objective and holistic model representation of the content of what is read. Therefore, the study proved that the quality of perception and understanding of information depends proportionally on the quality of the reading process.

In earlier studies, it was found that indicators of understanding test information are the number of semantic units of the text (predicates) preserved in the final synopsis, the intensity of information compression per unit of time, and the sequence of elimination of excessive commenting information while preserving the main meaning of the text (Androsiuk, 1980). Therefore, the study attempted to identify the features of highlighting the most significant information by the investigator (according to the text), to establish the ability of investigators to reflect it in a new text form, the features of text compression, and the specifics of understanding information in free and limited modes.

Information activities of the investigator are carried out both in conditions of limited time and in a free mode. Therefore, it was decided to check whether there are features of perception of text information depending on the mode of operation (free or set). Registration of time parameters allowed considering the compression intensity indicator *J* (Fig. 1). Since the number of text elements in each of the experimental texts is different, it can be assumed that the entire number of elements reflects 100% of the information. Accordingly, during the compression process, the stored and eliminated number of elements makes up some of the 100% of the information. This allows unifying the safety dimension of text elements on all graphs. The actual compression intensity is characterised by the sharpness of the straight-line BC, in particular, the angle α. The lower the value of the angle α, the more intense the text compression. The angle α varies from 90° to 0° (extreme values: no compression – instantaneous compression). The features of text compression and the specifics of understanding information are shown in Figures 1 and 2. The abscissa axis contains the amount of important information (in%) that remains in the process of shortening the text at the first (Fig. 1) and at the second stage (Fig. 2). The ordinate axis shows the duration of text synopsis. The intensity of text compression is determined by the size of the angle α, a decrease in which indicates an increase in intensity.

A direct line that characterises *J* is described by equation (1). The values obtained using this equation are shown in Table 1.

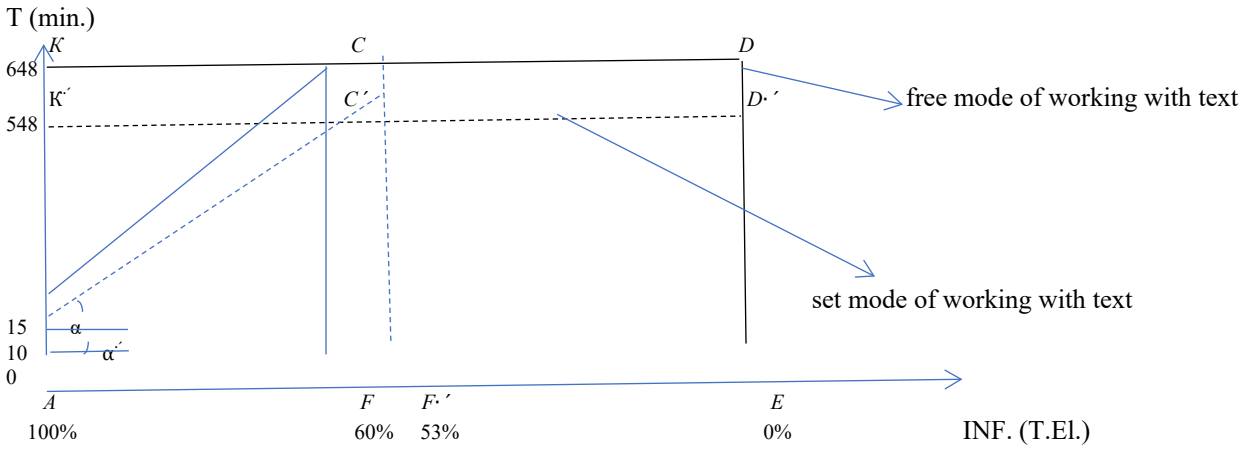

Figure 1. Graph of the intensity of Text 1 compression (1st order synopsis)
Source: developed by the authors

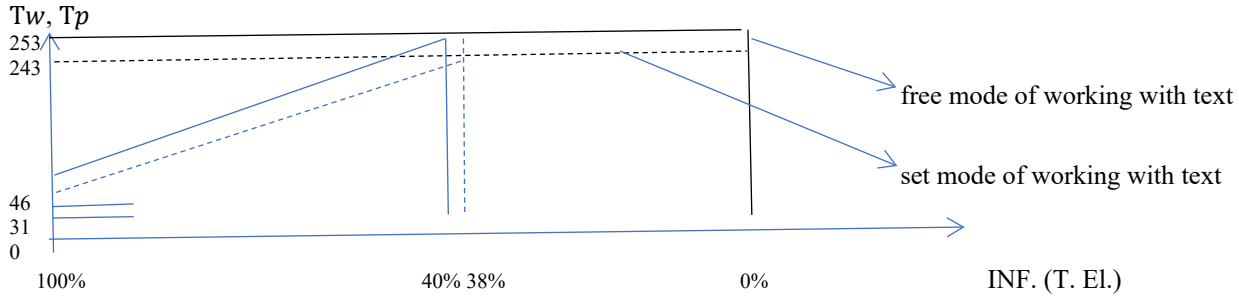

Figure 2. Graph of the intensity of Text 2 compression (2nd order synopsis)
Source: developed by the authors

Table 1. Intensity of text compression in different time modes of operation

Work mode	Synopsis 1				Synopsis 2			
	Text 1	Text 2	Text 3	Text 4	Text 1	Text 2	Text 3	Text 4
Free	0.49	0.44	0.52	0.56	1.53	1.42	1.58	1.86
Set	0.68	0.63	0.80	0.97	1.95	1.94	2.30	3.23

Source: developed by the authors

Rectangles *AKCF* and *FCDE* characterise the volumes of eliminated and stored information at the corresponding compression stages. Analysis of the intensity of compression text elements in the conditions of free and given modes revealed that when compiling the 1st and 2nd order synopses, the intensity is in all cases higher in the given mode of working with text than in the free mode. The sequence of increasing the intensity from the lowest to the highest remains stable at each stage and in both modes of operation:

Text 2→ Text 1→ Text 3→ Text 4

This order fully corresponds to the order of arrangement of experimental texts as the integrity and semantic completeness increase. Under the conditions of a given mode, the intensity of compression increases in all cases, but this is due to the completeness and depth of understanding. This is evidenced by an average increase of 9-13% in the number of incomplete and erroneous answers to control questions. The analysis of successively compiled synapses 1 and 2 showed that the reason for this is the false elimination of text elements of some semantic levels, based on which the development and verification of sensemaking hypotheses takes place, as a result of which the information contained in abbreviated text elements falls out of the hypothesis formation scheme, is not transferred to the next stage of compression and the semantic connections of the text as a whole are broken. When compressing in a given mode, the weight of the written component T*w* increases, T*p* decreases, which results in an increase in the compression intensity.

Comparative analysis *J* under different time regimes revealed that while at the first stage of compression the intensity is much higher in the given mode, and thus the volume of text abbreviations is larger, at the second stage the measured indicators are almost levelled out, which can be explained by the fact that under the conditions of a limited time, the following operations must be performed at the first stage of compression:

- reading of the text;
- definition of the scheme, “skeleton” of the text (structural analysis);
- determination of the hierarchy of text sensemaking elements and their interrelations (semantic analysis);
- formulation of sensemaking hypotheses;
- development of syntactic abbreviations;
- exteriorisation of text in the form of a synopsis 1;
- control and redistribution of time between the above operations.

This situation does not contribute to the implementation of an individual type of work with the text. The reading time is reduced, as evidenced by the reduction T*p* in comparison with the free mode of operation, as well as the analysis of electrooculograms of respondents, structural analysis is carried out exclusively in connection with paragraph dissection of the text. In the absence of such external schematisation criteria (Text 3), structural analysis is difficult. The hierarchy of elements by the level of information significance becomes erroneous – MTEs are not evaluated as such, and, on the contrary, CTEs are distinguished as supporting sensemaking hypotheses, semantic inter-element and inter-paragraph links are broken. The process of writing a synopsis, being in a certain way a function of the individual pace of writing, is almost impossible to reduce in time. Therefore, a smaller number of characters can

be registered per unit of time. This partly explains the increase in syntactic abbreviations.

In the conditions of free operation, an individual style of working with text is implemented. The need to control the time required for text processing is reduced. This contributes to a thorough structural and semantic analysis. It becomes possible to re-read the text, and, consequently, to mentally recombine text elements in order to find out their relationships and semantic significance. An increase in the recombination of elements of sensemaking contributes to the development of more hypotheses. Structural analysis is carried out in combination with semantic analysis, which results in the development of a complete formal and semantic plan of the text. At the second stage of compression, the elimination of discrepancies between *J* in limited time modes is caused by the fact that at this stage the meaning of the text is generated as a single whole and its design is made in the form of an external record. Verification of sensemaking hypotheses and generation of adequate or erroneous (which is subjectively not recognised as such) meaning occurs in fairly stable time intervals. Some individual stylistic features of working with text information revealed in the study made it necessary to analyse the role of certain personal components and thinking in the process of sensemaking.

When studying the time parameters of compression and the features of abstracting, attention is drawn to significant individual differences, which turned out to be quite difficult to explain by the features of experimental texts and differences in the initial level of knowledge of respondents. There is reason to assume that the determining factor of differences is an individually developed method of processing a text message, which depends on the characteristics of mental processes involved in the activity of understanding. An additional study was conducted to test this assumption. Using standardised methods, individual typological features of perception, memory, and thinking of investigators were determined, and then correlations between these features and temporal compression indicators were calculated. Correlation between T*w* and the predominance of analytical or synthetic perception is low (respectively $r^s = 0.32$ and $r^s = -0.42$) and indicates that in general, T*w* in both groups of respondents have approximately the same with a tendency to increase in the group with a dominant analytical type of perception.

The predominance of imaginative or logical components of memory and thinking differentially affected the nature of the compiled synapses and the time spent working with the text. The relationship between indicators of the predominance of imaginative or verbal logical memory and T*w* for Texts 1, 2, 3, and 4 is insignificant. It was statistically significant only in Text 1 ($r^s = -0.42$, $p \leq 0.05$). This indicates that in the case of an equal ratio of figurative and conceptual components of Text 1, information processing is carried out based on mnemic activity, in particular, on its figurative component, a different nature of dependence is found between T*w* and the prevailing type of thinking: Text 1 -$r^s = -0.06$,Text 2 -$r^s = -0.55$, $p \leq 0.01$; Text 3 -$r^s = 0.43$; $p \leq 0.01$; Text 4 -$r^s = -0.66$; $p \leq 0.01$.When the prevailing theoretical and conceptual information in the text coincided and, accordingly, the expressive indicators of the respondents' logical and conceptual thinking, the understanding of the texts became easier, which was expressed in a reduction in the duration of text processing and an increase in the number of correct answers to control questions. This allowed for the conclusion that the integrative indicator of the corresponding level of isomorphic structure of the synopsis and the time spent on its compilation acts as an indicator of individual differences between the subject who perceives and understands the text.

When perceiving text information, the criteria for the effectiveness of meaning formation are the intensity of text compression and the ratio of the main and concretising text elements. This means that at the initial stage of understanding textual information, the relationship between predicates (main elements) and concretising elements of information is a criterion of competence, and at the final stage – the intensity of message sensemaking. The study by O.V. Heina (2022) provides a list of features of presentation as one of the types of compression of a scientific text, analyses the main stages of preparing and conducting a presentation, and the impact of certain personal properties on its creation. It is proved that compression training is the development of a culture of working with scientific text, improving the skills and abilities of understanding, analysing scientific text, and writing a secondary scientific text based on the disclosure of the semantic structure of the original source text.

Naturally, in order to improve these and other indicators of perception of text information, investigators need to organise correctional and developmental work, the priorities of which should be exercises for the development of thinking and speech and awareness of the motivation for using cyberspace. This is also confirmed by the findings of Ukrainian researchers. N. Akimova *et al.* (2022) investigated the understanding of texts on the Internet by young consumers. The relevance of this type of research is determined by the specific features of communication in cyberspace, which consists in a significant reduction in textual information, which, in some cases, actually consists of predicates. In this paper, it is stated that the success of understanding internet texts by young people at the stage of interpretation according to the diagnostic study data was found at the level of 16.3% of the content load. It is also determined by

the factors of the Internet orientation of the individual and mental and speech development.

The adequacy of assessing the intelligibility of internet texts is also related to the level of mental and speech development and the Internet orientation of the individual. The consistency of emotional attitudes at a young age is more determined by the specifics of internet texts than by the subjective factors analysed, and the correlations found are insignificant. As a result of the ascertaining study, it was revealed that the most difficult thing in understanding Internet texts for young people is the coordination of emotional attitude, forecasting by illustration (from 14.8% of correct forecasts), and interpretation of the semantic load of texts (from 16.3% of the content of texts are interpreted).

In another study, N. Akimova & K. Aleksandrenko (2019) found that the level of experience most significantly affects the understanding process at the reception stage, directing user activity and the accuracy of their expectations. With the accumulation of experience using the Internet, stability and attention switching improve, the level of performance in a virtual environment increases, and the accuracy of predicting the content of texts increases by an average of 15.0%. At the stage of interpretation, with the accumulation of experience, the adequacy and completeness of the interpretation of Internet texts improves by almost 10.0%. However, Internet texts are difficult to interpret rationally: experienced users were able to correctly interpret only a quarter of the dominants, while random users – only a sixth. Even less important is the level of experience and internet activity at the stage of emotional identification, neither the assessment of comprehensibility nor the consistency of emotional attitudes are almost independent of the experience of using the Internet.

The results of the intensity and performance of text compression are important, depending on the predominance of analytical or synthetic thinking in the individual. In the category of experienced investigators, it was found that there are no clear differences. In general, there is a slight increase in the intensity of information processing in investigators with different characteristics of synthetic thinking. American researchers, B.A. Spellman *et al.* (2022), suggest that the success of an investigator's cognitive activity largely depends on the specific features of thinking and reasoning. That is why the effectiveness of investigative activities correlates with the intensity of using structural and logical schemes of mental processing of information about the event of an offence and evaluating evidence. In the same context, the authors of the handbook "Introduction to Forensic and Criminal Investigations" by J. Monckton-Smith *et al.* (2022) propose a productive methodology for the development of core skills and understanding of issues related to the process of criminal investigation. Consistent study of gnostic models of individual stages of investigation allows activating the cognitive processes of the personality of future investigators, which leads to the development of appropriate methods of investigative activity. The final goal of training is the ability to create a model representation of a criminal event, considering the cognitive potential of the investigator and the factors of uniqueness of the offence.

L. Tereshchenko & S. Gladyo (2022) formulated a problem, namely, identifying factors that contribute to the assessment of the truthfulness of written texts, especially in connection with the investigator's determination of untruths in the testimony of witnesses and suspects. They suggested that the content and form of false statements, regardless of language, are influenced by a number of common mental factors. They can be indicated by the following signs: less emotional, sensory, and spatial detail; shorter length of false texts than true texts; fewer mentions of the speaker's identity; and actualisation of different concepts in true and false texts. In their opinion, psycholinguistic studies of lying must necessarily consider the linguistic and cultural context, since the significance of a large proportion of verbal signs of lies identified in English-language studies has not been confirmed on new language material. That is, the existing English-language methods of analysing the falsity of the text need to be tested in a different linguistic and cultural environment.

Therefore, after analysing other studies on the analysis of the process of information processing, it is noted that the degree of compression of the text depends on the type of thinking of the person, and there is a slight increase in the intensity of information processing in investigators with synthetic thinking. It is determined that the success of the investigator's work significantly depends on the features of thinking and reasoning. The paper also highlights the methodology for developing skills and understanding the problems of criminal investigation, which helps activate the cognitive processes of investigators. In addition, it is clarified that the analysis of the falsity of written texts is an important aspect of research in the field of criminal investigation, and the consideration of linguistic and cultural context is necessary in psycholinguistic research.

Conclusions

Thus, the study attempted to determine the essence of abstracting as a type of compression of text, and analyse its types and stages, including features inherent in the note-taking process. Summarising the results of the study of cognitive features of information competence of investigators in the context of perception, processing, and understanding of textual information, which has a significant share in the procedure

for investigating offences, there is the presence of a number of important factors of predetermination of the cognitive component by some personal properties of subjects, as well as differentiation of the process of sensemaking depending on the time parameters of working with information. In particular, the process and effectiveness of understanding text information by investigators are determined by the intensity of compression and the dynamics of working with text. In turn, the cognitive process itself is mediated primarily by individual parameters of creativity and typological features of symbolic and imaginative thinking. Partial correlates of understanding include personal factors of practicality, insight, self-regulation, and radicalism. Consideration of the identified patterns serves as the basis for developing special cognitive competencies and criteria for evaluating practical skills in the education system of future police investigators. The analysis of the compression intensity indicator convincingly proves that the elimination of text elements in the conditions of a given operating mode in all cases occurs more intensively than in the free time mode. However, this accelerated elimination is achieved at the expense of the adequacy of understanding.

The compression intensity indicator allows characterising the coherence of the material presented in the text under study. The ratio between the compression intensity and the level of text connectivity is directly proportional at all stages of compression. Further studies of the process of information processing and sensemaking by investigators in conditions of intense activity are promising, corresponding to the modern realities of the work of law enforcement agencies. The experiment allowed identifying the duration of mental information processing and the time spent on graphic design of compressed texts, which in the future will help analyse the parameters of sensemaking. Research on the understanding of online texts among young people also points to the possibility of optimising online messages. The obtained data should be considered in the training of higher educational institutions and improving the information competence of investigators.

Acknowledgements

None.

Conflict of Interest

None.

References

[1] Akimova, N., & Oleksandrenko, K. (2019). The effect of experience using the Internet on the peculiarities of understanding Internet texts. *Psycholinguistics. Series: Psychology,* 26(1), 11-37. doi: 10.31470/2309-1797-2019-26-1-11-36.

[2] Akimova, N., Akimova, A., & Akimova, A. (2022). The specifics of understanding Internet texts in youth. *Psycholinguistics,* 32(1), 6-29. doi: 10.31470/2309-1797-2022-32-1-6-28.

[3] Androsiuk, V.G. (1980). *Psychological features of note-taking of scientific and technical texts*. Kyiv: Znanie.

[4] Arndorfer, A., & Charman, S.D. (2022). Assessing the influence of the witness identification credibility assessment method on the credibility-accuracy ratio. *Psychology, Public Policy and Law,* 28(3), 414-432. doi: 10.1037/law0000348.

[5] Barbero, C. (2022). Philosophy of literature in aesthetics. *Croatian Journal of Philosophy,* 22(65), 267-285. doi: 10.52685/cjp.22.65.8.

[6] Carlson, L., Kennedy, J., Zeller, K.A., & Busey, Th. (2022). Describing communication during a forensic investigation using the Pebbles on a Scale metaphor. *Forensic Science International: Synergy,* 4, article number 100199. doi: 10.1016/j.fsisyn.2021.100199.

[7] Chepeleva N.V. (2015). *The text and the reader: A guide*. Zhytomyr: Publication of ZhDU named after I. Franka.

[8] Chomsky, N. (2015). *Aspects of the theory of syntax, 50th anniversary edition*. Cambridge: Massachusetts Institute of Technology Press.

[9] Chopin, J., Beauregard, E., & Real, K. (2021). Criminal mobility and motiveless homicide: An investigative approach. *Journal of Police and Criminal Psychology,* 36(4), 716-728. doi: 10.1007/s11896-021-09458-7.

[10] Eldridge, H. (2019). Juror comprehension of forensic expert testimony: A literature review and gap analysis. *Forensic Science International: Synergy,* 1, 24-34. doi: 10.1016/j.fsisyn.2019.03.001.

[11] Heina, O.V. (2022). Compression of a scientific text from a major as the formation of professional foreign language communicative competence of foreign students. *Scientific notes of the National University "Ostroh Academy": Series "Philology",* 13(81), 188-192.

[12] Howes, L.M. (2017). "Sometimes I give up on the report and ring the scientist": Bridging the gap between what forensic scientists write and what police investigators read. *Policing and Society,* 27(5), 541-559. doi: 10.1080/10439463.2015.1089870.

[13] Hudachek, L., & Quigley-McBride, A. (2022). Juror perceptions of opposing expert forensic psychologists: Preexisting attitudes, confirmation bias, and belief perseverance. *Psychology, Public Policy, and Law,* 28(2), 213-225. doi: 10.1037/law0000334.

[14] Khizhnyak, I., & Lyashov, N. (2019). Analysis of the problem of perception and understanding of literary works by philology students. *Psycholinguistics. Series: Psychology,* 26(1), 363-384. doi: 10.31470/2309-1797-2019-26-1-363-384.
[15] Kisil, L.M. (2021). Referencing a scientific text from a specialty as a component of professional speech training for foreign students of technical institutions of higher education. *Scientific Journal of M.P. Drahomanov NPU,* 80(1), 129-133. doi: 10.31392/NPU-nc.series5.2021.80.1.26.
[16] Miroshnychenko, I.G. (2019). Concise text in the mass media discourse of the Ukrainian-speaking segment of the Internet. *Scientific Notes of the National University "Ostroh Academy": Series "Philology",* 5(73), 46-49. doi: 10.25264/2519-2558-2019-5(73)-46-49.
[17] Molyako, V.O. (2019). Futurological methodology of H.S. Kostyuk in the study of mental activity. *Actual Problems of Psychology. Psychology of Creativity,* 12(25), 6-15.
[18] Monckton-Smith, J., Adams, T., Adam, H., & Webb, J. (2022). *Introducing forensic and criminal investigation*. New-York: SAGE Publications LTD.
[19] Panchenko, O.I. (2022). Modern understanding of condensed text. *Scholarly Notes of TNU named after VI Vernadskyi. Series "Philology". Journalism,* 33(72), 226-231. doi: 10.32782/2710-4656/2022.5.1/38.
[20] Portnytska, N.F., Grechuha, I.A., Lytvinchuk, A.I., Mozharovska, T.V., & Khomenko, N.V. (2016). *Practicum in general psychology: Workbook methodical recommendations for laboratory classes from the course "Practicum in General Psychology" compilers*. Zhytomyr: Department of ZhDU named after I. Franka.
[21] Questionnaire determination of types of thinking and level of creativity. (2022). Retrieved from http://ni.biz.ua/11/11_8/11_87772_instruktsiya.html.
[22] Schiliro, F., Beheshti, A., & Moustafa, N. (2021). A novel cognitive computing technique using convolutional networks for automating the criminal investigation process in policing proceedings of the 2020. In *Advances in intelligent systems and computing* (pp. 528-539). Heidelberg: Springer. doi: 10.1007/978-3-030-55180-3_39.
[23] Slobin, D. (2017). Afterword. Typologies and language use: Cognitive foundations of language structure and use. In *Motion and space across languages. Theory and applications* (pp. 419-446). Amsterdam: John Benjamins Publishing Company. doi: 10.1075/hcp.59.17slo.
[24] Snook, B., Fahmy, W., Fallon, L., Lively, Ch.J., Luther, K., Meisner, Ch.A., Barron, T., & House, J.C. (2020). Problems of the "instrumental" approach to investigative interrogation: A critical analysis of the Royal Canadian Mounted Police (RCMP) staged interrogation model. *Psychology, Public Policy, and Law,* 26(3), 261-273. doi: 10.1037/law0000245.
[25] Spellman, B.A., Bieber, P., & Eldridge, H. (2022). Challenges to reasoning in forensic science decisions. *Forensic Science International: Synergy,* 4, article number 100200. doi: 10.1016/j.fsisyn.2021.100200.
[26] Tereshchenko, L., & Gladyo, S. (2022). Falsity of a written text: Ways of its determination. *Psycholinguistics,* 31(2), 116-137. doi: 10.31470/2309-1797-2022-31-2-116-136.

Сприймання та розуміння інформації як детермінанти професійної компетентності слідчого

Вячеслав Андросюк
Кандидат психологічних наук, професор
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
https://orcid.org/0000-0002-9106-2586

Оксана Волошина
Кандидат психологічних наук, професор
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
https://orcid.org/0000-0003-4166-2847

Іво Свобода
Доктор філософії, доцент, гарант вивчення менеджменту безпеки
Академія поліції в Братиславі,
835 17, вул. Склабінська, 1, м. Братислава, Словацька Республіка
https://orcid.org/0000-0002-0941-4686

■ **Анотація.** Експериментальне дослідження присвячено розв'язанню проблеми сприймання та розуміння слідчими Національної поліції України криміналістичної інформації про правопорушення, поданої у формі текстів. Декларовано доцільність формування особистості фахівця-слідчого на засадах компетентнісного підходу, завдяки якому в освітньому процесі усувається суперечність між професіоналізмом особистості та професіоналізмом діяльності. Метою дослідження було встановлення корелятів розуміння (смислоутворення) криміналістичного тексту слідчими в процесі його компресії; особистісних чинників, які опосередковують розуміння слідчим службової інформації в текстовій формі подання. Основу методологічного інструментарію становили метод структурно-функціонального аналізу й емпіричні методи, а також системний, телеологічний та діалектичний підходи, що дали змогу проаналізувати динаміку перетворення текстової інформації та зміни параметрів психічного її відображення в мисленні суб'єкта. У дослідженні встановлено динаміку компресії експериментальних текстів, особливості інтенсивності згортання тексту залежно від часових режимів роботи з ним й індивідуальних особливостей пізнавальних процесів слідчого – сприймання, пам'яті, мислення. Найвищої інтенсивності стискання розгорнутого тексту й виокремлення значущої інформації досягають в умовах вільного часу роботи з текстом. Доведено, що на початковому етапі розуміння текстового повідомлення співвідношення між основними та конкретизаційними елементами інформації є критерієм компетентності, а на завершальному етапі розуміння – інтенсивність формування смислу інформації. Проаналізовано показники інтенсивності згортання тексту й виявлено, що в умовах заданого режиму роботи елімінація елементів тексту відбувається інтенсивніше, ніж в умовах вільного часового режиму. Доведено, що співвідношення між інтенсивністю згортання та рівнем зв'язності тексту має прямі пропорційні зв'язки на всіх етапах компресії. Встановлено, що на процес розуміння суттєво впливають типологічні особливості понятійних та образних компонентів пам'яті й мислення. Сформульовані в статті положення сприятимуть пошуку ефективніших методів професійно-психологічної підготовки майбутніх слідчих і вдосконаленню психологічного супроводу слідчої діяльності

■ **Ключові слова:** слідча діяльність; текстові дані; розуміння матеріалу; компресія тексту; кореляти сприйняття; особистісні фактори

UDC 343.222.4:[343.37: 620.91]
DOI: 10.56215/naia-herald/2.2023.30

Energy market manipulation: Criminal law analysis and signs

Iryna Botnarenko*
PhD in Law
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
https://orcid.org/0000-0003-4697-3767

Valentyna Kryzhna
PhD in Law
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
https://orcid.org/0000-0002-0402-4224

■ **Abstract.** Article 42 of the Constitution of Ukraine establishes the principles of preventing abuse of a monopoly position in the market and unfair competition in economic activity. Manipulation of the Energy Market – an act that violates the procedure for state regulation of the electric energy market and the natural gas market approved by the current legislation – poses an increased public danger. The purpose of the study is to investigate objective signs of manipulation in the energy market as part of a criminal offence under Article 222-2 of the Criminal Code of Ukraine. Within the framework of the study, a complex of scientific methods was applied: dialectical, hermeneutical, systemic, formal logical, generalisation, system and structural, method of ascent from the abstract to the concrete, analysis, and synthesis. It is proved that the object of manipulation in the energy market is covered by public relations that control the procedure for state regulation of the electric energy market and the natural gas market approved by the current legislation – the implementation by the state of comprehensive measures to manage the demand, prices, and volumes of the wholesale energy market, prevent abuse and violations in this area. The criminal legal content of the concept of "manipulation" is determined by the deliberate activity of a person(s) who violate the conditions of functioning of the wholesale energy market, is carried out by performing a set of illegal actions, the purpose of which is to obtain financial benefits for themselves and third parties, by changing the price of a financial asset. The essence of manipulation of the wholesale energy market is highlighted through its inherent features, which indicate a violation of the conditions necessary for making transactions on the wholesale energy market and a deviation of the asset price from the real market price in the right direction for manipulators (the presence of a process of overstating (underestimating) the total price of the contract, which leads to the loss of its market status). The practical significance of the study lies in the fact that the analysis carried out is of auxiliary importance for law enforcement practice in solving issues related to the legal qualification of manipulation in the energy market

■ **Keywords**: object of criminal offence; public relations; electricity market; natural gas market; wholesale energy market; abuse

■ **Suggested Citation:**
Botnarenko, I., & Kryzhna, V. (2023). Energy market manipulation: Criminal law analysis and signs. *Scientific Journal of the National Academy of Internal Affairs,* 28(2), 30-40. doi: 10.56215/naia-herald/2.2023.30.

■ *Corresponding author

■ Received: 08.03.2023; Revised: 26.05.2023; Accepted: 26.06.2023

Introduction

In response to the challenges of global competition exacerbated by the global financial and energy crisis, the energy-saving policy of many countries in recent years is aimed at the development and implementation of such energy strategies, which are primarily aimed at protecting national interests, developing effective energy consumption management systems and limiting the scale of financial, economic and energy-economic impacts. Ukraine is no exception, where the electricity generation market as of 2023 can be described as highly concentrated, competitively limited, and manipulative. Competition is most pronounced in such areas as the supply of electricity within and outside the relevant energy association, as well as in economic and trade operations with electricity with independent suppliers and individual energy companies. Among the main phenomena that negatively affect the state of Ukraine's energy sector and energy security are corruption, arbitrariness, the control of monopolistic oligarchs, and market closure. The consequences of these negative phenomena can be observed through real manifestations of inconsistency, an imbalance between supply and demand for energy resources: their producers receive losses, and electricity suppliers – super-profits.

Only at the beginning of the war, namely in February 2022, the volume of electricity consumption in Ukraine decreased by almost 30% (Why suppliers..., 2022). These indicators were influenced, first of all, by the mass relocation of a significant part of Ukrainians who were forced to leave due to incessant rocket attacks and airstrikes on the energy infrastructure, and the termination of the activities of industrial enterprises that consume a considerable amount of electricity. This is especially true in regions where active military operations are being conducted (De Klerk *et al.,* 2023).

In addition, the crisis processes in the energy sector of Ukraine during the Russian-Ukrainian war caused not only military operations related to damage and destruction of energy facilities, but also the artificial creation of challenges and problems in the market by individual state services. Therefore, the intensification of efforts of various state institutions to ensure the development of an effective mechanism for countering crime in the energy sector in Ukraine seems to be an extremely urgent issue. Establishing such a process is the key to solving socially significant problems – de-monopolisation and decriminalisation of the fuel and energy complex industries, and will also eliminate outstanding accounts receivable and payable of generating companies, the operator of the wholesale electricity market and energy supply enterprises, which tends to accumulate (Vozniuk & Kamenskyi, 2022). Consequently, issues related to ensuring energy security as an integral component of economic and national security are gaining a significant role in Ukraine. The state capacity in the sphere of ensuring the protection of national economic interests and the removal of economic threats is in the same plane as the socio-economic development of Ukraine, influencing both its constancy and inflexibility, and determining its effectiveness in international cooperation. In addition, economic crime (in almost all its manifestations) and the scale of its spread are a threat to the national security of any country (Mozol *et al.,* 2020).

Among the experts who considered issue of criminalisation of abuse in energy markets and innovations of the Criminal Code of Ukraine, it is necessary to mention I.I. Bartosh (2022A), who conducted a comprehensive study on the protection of economic relations in the sphere of functioning of the energy market and the analysis of the grounds and reasons for criminalisation of behaviour described in Article 222-2 of the Criminal Code of Ukraine. The provisions substantiated by the researcher form a conceptual basis for further scientific analysis of this topic, which is the latest and at the same time debatable. Critical analysis of the decision of the Verkhovna Rada of Ukraine to supplement Article 222-2 of the Criminal Code of Ukraine, which resulted in a scientific conclusion on the expediency of its exclusion from the system of Section VII of the Special Part, was carried out by R.O. Movchan & I.I. Parfenyuk (2021). It is also worth mentioning the prominent scholars A.A. Vozniuk & D.V. Kamensky (2022), who carried out a general analysis of criminal liability for manipulation in the energy market with relevant recommendations for improving criminal law prohibition. Researchers partially considered the content and description of objective signs of the specified composition of a criminal offence. However, despite the researchers' attempts to solve criminal and legal problems of qualifying manipulative abuses in the energy markets, qualitative changes in ensuring effective protection of the latter have not yet taken place. Therefore, the task of forming an effective mechanism for criminal legal protection of the energy market from manipulative abuse remains one that needs to be solved, first of all, at the scientific level.

The purpose of the study is a criminal legal assessment by a detailed review of objective signs of a criminal offence that establishes responsibility for actions related to energy market manipulation. The purpose of the study is to clarify problematic issues of their legal regulation, in particular, the concept of "manipulation", and formulate specific proposals and recommendations for improving criminal legislation based on the above.

Materials and Methods

The research methodology is based on modern approaches to criminal law and is based on universal

values and various methods of scientific cognition. An important factor in this methodology is the use of various scientific methods for a deep understanding and analysis of the subject matter. One of the key methods used in this paper is the dialectical method. This approach allowed considering the connections between the manipulation of the energy market and social processes through the interaction of opposites and the development of the phenomenon over time. The dialectical method helped analyse the dynamics and changes in this area, and identify the main trends.

The hermeneutical method was used to interpret concepts in the context of criminal law. This revealed their meaning and significance, especially in relation to manipulation in the energy market. The system method was used to analyse the object of research – a criminal offence. It allowed considering this phenomenon as a complex systemic formation that combines various aspects and components. Etymological analysis helped understand the origin and change in the meaning of the term "manipulation" over time, and the formal logical method allowed systematising actions with signs of manipulation in the energy market and developing specific proposals for improving legislation.

The generalisation was used to formulate new proposals based on existing trends and positions in the scientific literature. This enriched the understanding of the concept of "energy market manipulation". The system and structural method was used to determine the features of the generic and direct objects of the criminal offence under study. The dogmatic method identified the possibilities of adjusting the content of the norm, which establishes criminal liability for energy market manipulation. The comparative legal method allowed comparing this paper with Ukrainian and foreign studies on this issue, which contributed to a more in-depth analysis. Moreover, the method of convergence from the abstract to the concrete was used to analyse the object of manipulation in the energy market, and the synthesis method was used to formulate general conclusions. In general, the combination of these methods facilitated a deep and comprehensive investigation of the problem of manipulation in the energy market in the context of criminal law, revealing its essence and possible solutions.

The normative basis of the study was the Constitution of Ukraine, the Criminal Code of Ukraine, and legislation of Ukraine regulating the principles of activity in the electric power industry". A significant component of the theoretical basis of the research turned out to be the works of prominent Ukrainian and foreign researchers, which allowed revealing the complexity and features of the process of energy market manipulation, and the impact of manipulation processes on the social environment.

■ Results and Discussion

After entry into force on June 16, 2020, the Law of Ukraine No. 738-IX "On Making Changes to Some Legislative Acts of Ukraine Regarding the Simplification of Investment Attraction and the Introduction of New Financial Instruments", Section VII of the Criminal Code of Ukraine has been supplemented with prohibitions on illegal behaviour in wholesale energy markets (hereinafter – WEM): Article 222-2 "Manipulation in the Energy Market" and Article 232-3 "Illegal use of insider information regarding wholesale energy products". The current version of Article 222-2 of the Criminal Code of Ukraine provides for two parts and four notes, where the estimated concepts of "significant size", "significant harm", "grave consequences", and "subject of crime" are clarified. Its qualifying features in the legal regulation are defined as: a) repetition; b) actions committed by a group of persons by prior agreement; c) grave consequences.

Object of a criminal offence

When qualifying the corpus delicti of a criminal offence, the establishment of its object is of primary importance. The importance of clarifying this component is beyond doubt – it is well known that it is the object of a criminal offence that reveals the social essence of an act, contributing to its accurate qualification and differentiation from related criminal acts and offences. First of all, the object of the crime under study needs scientific analysis. In accordance with the provisions of Article 13 of the Constitution of Ukraine, the protection of the rights of all subjects of property and economic rights and the social orientation of the economy is guaranteed by the state. According to the law, all subjects of property rights (parties to legal relations) are equal. Article 17 of the Basic Law of the state stipulates that ensuring the economic and information security of Ukraine is a key state function, "the concern of the entire Ukrainian people". Economic criminal offences are often identified with economic criminal torts. However, this position is not entirely correct. Based on the generalisation of various specific characteristics of economic criminal offences, it can be argued that criminal offences in the field of economics are characterised by encroachment on the economic system as a whole and violation of its functioning, as well as property and self-serving orientation (causing harm to various material values and/or obtaining benefits (gain) both for themselves and other persons). This type of criminal offence can also include criminal offences against property, in the sphere of drug trafficking, and some offences in the field of official activity.

In this regard, it seems appropriate to propose amendments to the Criminal Code, namely, at the beginning of Section VII in a separate Article, to regulate the concept of criminal offences in the field of

economic activity. The disposition of the proposed article can be set out in the following wording: "Article ... The concept of a criminal offence in the field of economic activity. 1. A criminal offence in the field of economic activity is recognised as an intentional or negligent socially dangerous act (action or omission) provided for in this section, committed in the field of economic activity (production or sale of products (goods), performance of works or provision of services of a cost nature) and caused significant damage to the subject or other participant in relations in the field of economic activity".

Thus, the concept of a generic object of economic criminal offences is defined as a system of management that includes economic relations in the production, distribution, exchange, consumption, and sale of goods and services. This is the economic content of these relations (Boboshko & Nesterenko, 2019). Specialists in criminal law, E.M. Kisiliuk & O.V. Protsyuk (2015) define the generic object of criminal offences in the field of economic activity as social relations that have developed in the process of production of a public product by all sectors of the economy, its distribution and exchange, performance of works and provision of services of a valuable nature, and in the process of creation and execution of budgets from the results of economic activity.

The commented Article 222-2 of the Criminal Code of Ukraine has direct and additional objects. The act provided for in Article 222-2 of the Criminal Code of Ukraine is a violation of a clearly defined pricing procedure for WEM, disorganises its constancy, causes an imbalance and the creation of artificial prices, causes the appearance of economic disparity and the receipt of unjustified profits by certain WEM participants, leads to a reduction in investment specifically in WEM, etc. The main purpose of these markets is the purchase and sale of wholesale energy products, and therefore, the main purpose of the corresponding abuses of market participants is an illegal influence on the value of a particular wholesale energy product (Bartosh, 2022b).

Manipulation-related activities are described in sufficient detail in Directive 2003/6/EC of the European Parliament and of the Council of 28 January 2003 on insider activity and market manipulation, which describes these activities as transactions or orders related to trade: which give or may give false (deceptive) ideas about the supply, acquisition, or tariffs of a financial instrument, or which are coordinated by one or more persons, resulting in the establishment of artificial or phenomenally high or low tariffs on one or more financial instruments. The only exception is cases when the person who started operations or issued a trade order proves the legality of the grounds for committing such actions, or the compliance of such actions with the established practice in the relevant organised market. This includes transactions or orders for trading using unfair methods or other types of fraud. Therefore, market manipulation is a deliberate act aimed at significantly changing the price, demand, supply or volume of goods by distorting true information using appropriate methods and techniques.

From the content of the above-mentioned signs of manipulative activity, it can be concluded that manipulation in the markets is one of the forms of financial fraud, the forms of which, according to O.V. Kravchenko *et al.* (2021), are subject to both legal and socio-psychological regulation. This is a method of management and/or control aimed at the behaviour of individual participants in order to shape the energy market situation using hidden psychological influence and/or dishonest methods. Various techniques and methods, market factors (supply, demand, quantity, price, time, competition) are used, transactions are carried out in interrelated segments of the energy market, and orders are placed in trading systems. First of all, manipulative abuses are aimed at supply or demand to change (towards decreasing or increasing) the rate price in order to encourage individual market participants to purchase or sell at the rates that are profitable for the initiator of such operations.

Objective side of a criminal offence

According to the construction of the objective side, an illegal act under Article 222-2 of the Criminal Code of Ukraine is a criminal offence with a material composition – mandatory signs are an act in the form of an action, socially dangerous consequences and direct causal relationship. The objective side of a criminal offence is established by the following components:

1) Acts in the form of deliberate actions of persons in the energy market (in particular, in the electricity market and the natural gas market) who show signs of manipulation in the WEM, which are defined by the legislation in the energy sector.

2) Consequences are significant damage to the rights, freedoms, and interests of individuals protected by law, state, or public interests, or the interests of legal entities.

3) Making a profit – a person or third parties make a significant profit.

4) Avoiding losses – individuals avoid significant losses.

5) Causal relationship.

The formulated disposition of the said article in such a textual presentation cannot be called completely correct and accurate. In this area, it is worth supporting O. Koshovyi *et al.* (2019), who argue that the prohibition of a certain type of illegal behaviour in the form of manipulation on the stock exchange consists only of describing its specific features. The

content of the very concept of "manipulation" is not disclosed, however, attention is simultaneously directed to another – the law in its larger understanding as general term "legislation". The researchers emphasise that the appeal to other legislation is necessary from the standpoint of appropriate qualification of actions that are covered by manipulation in the stock market. The question arises about the range of actions with signs of manipulation provided for by the legislation in the energy sector. This issue is quite complex, since the regulatory legislation does not contain a clear list of such actions, and accordingly, this wording complicates the construction of the composition of a criminal offence.

The concept of manipulation was first voiced on April 21, 2011 in the Law of Ukraine "On State Regulation of the Securities Market in Ukraine" of October 30, 1996 No. 48/96-BP: (article 10-1). This article was called "Manipulation of the Stock Market". It was then that the president of Ukraine V.F. Yanukovych signed the Law of Ukraine "On Amendments to Certain Legislative Acts of Ukraine on Prevention of Legalisation (Laundering) of Criminal Proceeds", which provided for criminal liability for manipulating the stock market with a penalty in the form of a fine in the amount of 750 to 2 thousand tax-free minimum incomes of citizens or imprisonment for up to three years (in case of recidivism or group commission of a crime – a fine of 2 to 3 thousand tax-free minimum incomes of citizens or imprisonment for up to five years).

Regulation of the European Parliament and of the Council EU No. 1227/2011 "On Integrity and Transparency in the Wholesale and Energy Markets" of 25 October 2011 covers the manipulation of the WEM by actions committed by persons by artificially setting prices not conditioned by market forces of supply and demand, including the actual availability of production, storage or transportation capacity, and demand. Forms of market manipulation are defined as: 1) placement and withdrawal of false (fictitious) applications; 2) dissemination of false or deceptive information or news through the mass media (the Internet or by any other means (methods)); 3) deliberate provision of false information to business entities whose field of activity is to ensure the provision of reports or quotes on the state of the market, which results in misleading market participants who act based on such reports or quotes on the state of the market; deliberate formulation of the idea that the availability of electric generation power or availability or the transmission capacity is different from what is actually technically available if such information affects or may affect the price of wholesale energy products. Thus, in the general sense, energy market manipulation is a complex of economically or technologically unjustified actions that manifest themselves in an illegal (artificial) reduction/increase in the value of energy goods, the purpose of which is to persuade other market participants (consumers) to purchase or sell at the proposed and profitable rate for the initiator of these actions.

Manipulation of the energy market

The consequences of manipulation in the energy market, according to A.A. Vozniuk & D.V. Kamensky (2022), are: hidden monopolisation of the energy market (subjects, committing abuses, impose private interests on other business entities and society, ignoring their needs; illegal enrichment of some participants in the energy market and unprofitability of others; increase in tariffs for energy products to the population. However, it would be a bit of a mistake to assume that the issue of manipulating the energy market boils down only to changing the value of an energy commodity and improving its own profits. This is a trading activity that is associated with a violation of the relevant objective procedure for compliance with the conditions and factors for performing an action to make transactions on the WEM. In other words, such activities are characterised by a wide range of relevant illegal actions with wholesale energy products.

Moreover, according to legislation, manipulation in the energy market refers to the unfair practice of business management in the market, the purpose of which may also be to conduct financial transactions aimed also at legalising (laundering) proceeds from crime. The implementation of this business (trading activity) by manipulation involves misleading other persons, who, under the influence of which, have a desire (interest) to become its participant.

The electricity market model, which was introduced in the summer of 2019, was aimed at abolishing the monopoly of a single wholesale buyer of this product and creating competitive conditions for all its participants, ensuring free pricing and providing better services. However, as a result of these changes, the facts of trade in non-existent goods by some suppliers and buyers of electricity were recorded, which gave them the opportunity to enrich themselves with millions of USD in profits, at the expense of other market participants. The largest losses, as noted by the journalists of "Schemes", were received by large companies "Energoatom" and "Guaranteed Buyer" (Chornovalov, 2020; Kulish *et al.,* 2021; Blinov & Parus, 2023).

According to the energy market model introduced in 2019, four sectors of the wholesale electricity market are conditionally defined:

1) Conclusion of bilateral contracts (agreement between the producer (trader) and the consumer on the sale of electricity for a certain time at a contractual price;

2) "Market one day ahead" (sale of electricity to be consumed the next day). On the one hand, manufacturers and traders appear on the market with

ready-to-sell prices, on the other – consumers announce tariffs at which they are ready to make a purchase. If the price and volume match, the purchase and sale transaction is automatically recorded;

3) "Intraday market" (a consumer can buy additional electricity "today for today", but its price will be higher than when buying on the "day-ahead market").

4) "Balancing market" (purchase and sale of electricity volumes that are beyond the current projected production or consumption). For example: a consumer has purchased a partial amount of electricity needed in previous markets. Accordingly, a consumer has the right to automatically purchase additional electricity on the "balancing market". Or, if a producer generates more energy than it sold in previous markets, this excess is put on the "balancing market". The goal is to prevent market imbalances and prevent negative consequences that may affect the energy security sector (Chornovalov, 2020). Most electricity markets operate on a two-way application basis, where electricity producers, suppliers, and consumers submit applications for the desired volume and purchase and sale price. The selection of applications and further calculation take place at the intersection of the demand curves of suppliers (consumers) and supply of electricity producers (Blinov, 2015). Schematically, the main components of the electric energy market are shown in Figure 1.

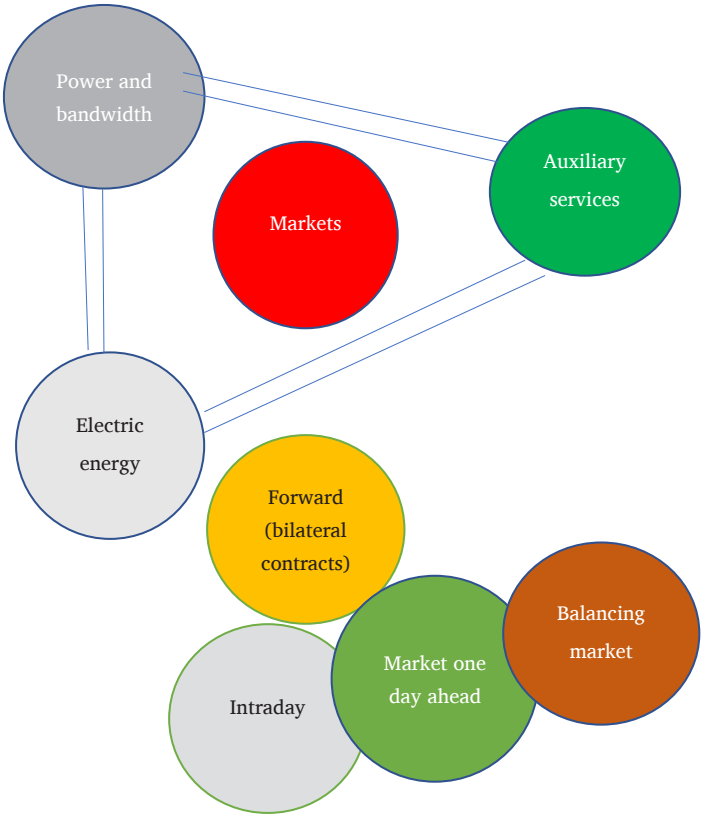

Figure 1. Main components of the electricity market
Source: Participants and structure of the electricity market (2019)

Materials published by lawyer A. Kryveshko (2020), witnessed statements about significant manipulative abuses in the market, which were filed by the National Energy and Utilities Regulatory Commission, SE "Market Operator" and SE "Guaranteed Buyer" in early 2020. The following forms of abuse have been recorded: a) some market participants (mostly traders and electricity suppliers) have set dumping tariffs in their applications for electricity sales, taking into account previous billing periods; b) the actual volume of electricity for sale has been exceeded. The consequence of these actions was the inability of most electricity producers to supply electricity at the market price "for a day ahead", as a result of which there was a forced transition to the next stages of transactions (sales) – on the intraday market and, in a situation of non-purchase – on the balancing market (sale of excess electricity at a dumping price).

Consequently, manipulative abuses can be expressed in distortions as trading operations in the energy market by selling generation that is not supported by actual volumes. As a result, there is an unmotivated waste of funds by the relevant enterprises, organisations, the state, and practices of inflated pricing, which creates restrictions in competition in the electricity market. In fact, there are two blocks of

situations that reveal the features of manipulation: economic withdrawal of electricity capacity (submission of an economically unmotivated application for the sale of electric energy); active (physical) withdrawal of electricity capacity (the real volume of electric energy is not reflected in the contract). Criminal manipulative schemes can be different, but in most cases they are manifested in corrective actions in order to change the price mechanism of electric energy.

Manipulative actions are an act of economic influence with a self-serving orientation, which, due to the violation of the integrity of the market pricing mechanism, have an increased public danger. Thus, they cause market destabilisation and lead to corresponding economic imbalances in the consumer market. Currently, there is no clear legislative interpretation of the concept of "manipulation" in the legislation of Ukraine. It is worth considering how the concept of "manipulation" is interpreted in the scientific literature, and what content lawyers put into its understanding.

"Manipulation" is a term of Latin origin (from the Latin word "*manipulare*" in the etymological sense of "to control", "to manage with knowledge", etc.). Its content is endowed with the characteristics of a nondescript (unconscious) influence that is supposed to be exerted on the person over whom they intend to control. Its primary understanding, emphasised by researchers V. Tertyshnyk & O. Koshovyi (2018), is combined with a complex of actions of both positive and negative nature. This also includes various "frauds". Laws and regulations do not provide for signs by which it would be possible to distinguish "positive" manipulation from socially dangerous "fraud". Consequently, there may be a situation of bringing to justice a person who has committed socially useful (necessary) actions or who has shown the interests of the state on formal grounds.

The concept of preventing manipulation of the securities market, unfair trading practices, and violation of the ethics of professional activity in the stock market, approved by the decision of the National Securities and Stock Market Commission of 14.01.2003 No. 21, defines the concept of "manipulation" as follows: deliberate or voluntary actions aimed at misleading or abusing trust (fraud) in relation to participants in the securities market, by establishing price control or artificially influencing the value of securities[1].

Manipulation that is being investigated by V. Tertyshnyk & O. Koshovyi (2018) and D.V. Kamensky (2020), is defined as an action taken by market participants or a group of participants aimed at controlling prices through artificial interventions. This process takes place through the purchase and sale of securities, in particular wholesale energy products. The main goal is to create a false or deceptive illusion of active trading in the market. This practice is aimed at trying to change prices (tariffs) by giving a false impression that significant trading operations are actually taking place in the market. Such manipulation can lead to an illegal change in the exchange rate price of the stock instrument, which can affect the normal price indicator. Researchers note that this type of manipulation encourages other market participants to perform certain actions regarding the purchase and sale of securities based on the created artificial environment. The final result is a purposeful change in the exchange rate price of a stock instrument relative to its normal level.

O.V. Kravchenko *et al.* (2021) characterised manipulative trades as profitable malicious trades made on the following principles: trading is designed to move prices in a certain direction; the trader is not sure that prices are able to move without making a trade; the profit received arises solely from the trader's ability to move prices, and not from their possession of valuable information. Thus, financial manipulations have a clearly defined goal – to obtain personal benefits or for third parties, by changing the price of a financial asset in the right direction. The result of foreign researchers' understanding of manipulative transactions is the active trading activity of the latter, associated with the establishment of deceptive artificial control over the market price in order to obtain financial benefits.

E.M. Kisiliuk & O.V. Protsyuk (2015) identified four common components for any type of manipulation: 1) intentional action or omission; 2) intent; 3) causal relationship; 4) artificial price. The omission should have a conscious character and direct intent to commit the corresponding act, which has signs of manipulation, as a result of which a situation is formed that does not correspond to the real state. However, given the feature of concealment (carried out unnoticed, which distinguishes manipulation from other abuses, it seems that this act may also have a passive form – committed by inaction (failure to provide, failure to enter information, etc.). The Draft Law of Ukraine No. 4503 of 16.12.2020, which proposed amendments to the Law of Ukraine "On the Electricity Market", manipulation of the electric energy market is disclosed as actions for making transactions, providing orders and/or instructions for making transactions with wholesale energy products,

[1]Decision of the State Securities and Stock Market Commission No. 21 "On Approval of the Concept of Preventing Manipulation of the Securities Market, Unfair Trade Practices and Violation of the Ethics of Professional activity on the Stock Market". (2003, January). Retrieved from https://zakon.rada.gov.ua/rada/show/vr021312-03#Text.

which: 1) create energy products; 2) provide (try to provide) a person (group of persons) with the opportunity to form prices for one or more wholesale energy products at an artificial level; 3) spread false or deceptive information through the media or in any other way both for demand and supply, or relative to the prices of wholesale energy products[1].

O.K. Vasylyak (2016) defined the generic object of economic crimes as a system and procedure for legally protected public relations that arise during the activities of business entities in the field of social construction. These relations are associated with the production, sale of products and provision of value-based services that serve as the basis for entrepreneurial and other economic activities. Coverage of these relations focuses on the economic competence of business entities in various types of economic activity. However, it is subject to clarification that the scope of their occurrence is somewhat broader than emphasised by the author, that is, it is not covered only by social construction, but concerns economic systems of various levels and types (industry, agriculture, communications, trade, services, etc., as well as their sub-sectors).

The generic object of criminal offences in the field of economic activity is outlined by specialists in criminal law, E.M. Kisiliuk & O.V. Protsyuk (2015), as social relations that have developed in the process of production of a social product by all sectors of the economy, its distribution and exchange, performance of works and provision of services of a cost nature, and in the process of forming and executing budgets from the results of management. This definition of the concept of a generic object, according to researchers, has a somewhat generalised character. Therefore, for a clearer characterisation with an emphasis on the branch of production or type of activity, in these illegal acts, E.M. Kisiliuk & O.V. Protsyuk (2015) also identified specific objects. Consumer and market conditions for the functioning of the electric power industry are a criterion for classifying manipulation in the wholesale energy market (hereinafter – WEM) as criminal offences in the consumer market. The specific object of a criminal offence, in this case, is necessary to specify and narrow the field of public relations that arise in the process of managing, and which are violated (or there is a threat of their violation) by committing an illegal act. It is the specific object that is the link between the generic and direct object, including manipulation on the WEM.

R.O. Movchan & I.I. Parfenyuk (2021) and I.I. Bartosh (2022a) defined the main direct object of the specified criminal offence as a specifically defined pricing procedure (i.e., legitimate pricing) for WEM. Considering the anti-social focus on the procedure for violating the legitimate pricing of WEM, such abuses are actually independent manifestations of anti-competitive actions, which, at the same time, occur in a specific area – the field of WEM. I.I. Bartosh (2022b), analysing the object of this criminal act, comes to the conclusion that social relations that connect the foundations of fair competition in the plane of "*legitimus*" (legitimate) billing on WEM by preventing manipulation on the latter is its main direct object. The researcher makes arguments about the consistency of the relevant fundamental provisions concerning the content of market manipulation. In particular, the proposed definition by the researcher fully corresponds to: a) the generally accepted understanding of manipulation in the stock market in legal science - an illegal practice by creating a deliberately false belief in other persons about the active trade of increasing or decreasing the value of goods (Kamensky, 2020); b) the European interpretation of the content of the category of "manipulation" on the WEM, the features of which REMIT called – the focus on artificially setting the price within the limits not determined by market forces of supply and demand, including the actual availability of production, storage, or transportation capacities, and demand (Bartosh, 2022b).

Considering the field of public relations, which is covered by the understanding of the generic object of economic crimes, the direct object of manipulation in the energy market can be defined as public relations that ensure normal conditions for the functioning of the WEM, arise on a contractual basis and cover the production, transfer, distribution, purchase, and sale, supply of electric energy (natural gas). These relationships arise when performing operations using resources in the production, transmission (transportation, supply) and distribution of electricity to the WEM (Dudorov & Movchan, 2020). The generic feature that allows them to be attributed to the economic field is precisely the economic orientation of illegal manifestations, that is, the connection with economic relations, the commission of illegal encroachments in the process of carrying out economic activities in the energy markets.

The specifics of the institution of manipulation in the energy market indicate the existence of an additional object of this illegal act, which are property relations. Manipulation in the energy market leads to an imbalance, which results in an unjustified (abnormal) increase in energy prices and tariffs, an increase

[1]Draft Law of Ukraine No. 4503 "On Amendments to Certain Legislative Acts of Ukraine on the Implementation of the Provisions of the European Union Legislation on Integrity, Transparency and Prevention of Distortion of Competition in Wholesale Markets". (2020, December). Retrieved from http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=70681.

in the cost of electricity and natural gas. The consequences of these abuses are also covered in the mass media. According to O. Khyshchenko (2020), manipulation in the energy market, in particular in the electricity market, causes an unnatural redistribution of profits from electricity trading. This process contributes to an excessive increase in profit for individual traders, and can also lead to incorrect "leaching" of funds from real generation, making it unprofitable. When the volume of manipulations in the market increases, when they reach critical levels, there is an artificial decline in prices in the market. This, in turn, leads to the fact that all generating companies, without exception, are forced to sell electricity at prices below its cost price.

O.O. Dudorov & E.O. Pysmensky (2013) note that the violation of property relations occurs during any manifestation of manipulation, respectively, researchers note, that they must be recognised as a mandatory additional object of this criminal offence. The opinion deserves support, because, according to other researchers, artificial distortion of objective prices will characterise the economic nature of manipulation (Koshovyi *et al.* (2019). In the event of a socially dangerous act causing damage to the main and additional objects, according to E.M. Kisiliuk & O.V. Protsyuk (2015), the final value is only the harm caused to the main direct object, the public danger from causing harm to an additional object is considered already covered, respectively, such an act does not require cumulative qualification.

Consequently, the criminal offence under Article 222-2 of the Criminal Code of Ukraine encroaches on public relations that ensure normal conditions for the functioning of the WEM, which is based on competitive pricing in relation to equal and fair rules of conduct for its participants, on the principle of transparency of the electric energy (natural gas) markets; on ensuring that its participants and consumers are informed about the production, transmission, distribution, purchase, and sale, reliable and safe supply of electric energy; on ensuring the protection of investors and consumers of electric energy and natural gas from possible abuses. Public relations that ensure the property interests of citizens, organisations, or the state constitute an additional mandatory object of the specified criminal offence. The legal basis for regulating these relations, in particular, is the Law of Ukraine of April 13, 2017 "On the Electricity Market"[1].

Conclusions

Therefore, the direct object of manipulation in the energy market is defined as public relations that ensure normal conditions for the functioning of the WEM, arise on a contractual basis, and cover the production, transmission, distribution, purchase and sale, and supply of electric energy (natural gas). An additional object of a criminal offence is public relations that ensure the property interests of citizens, organisations, or the state. The increased public danger of manipulation in the energy market consists in undermining energy security by violating the integrity of the energy market and the trust of investors in it.

Manipulation in the energy market can be defined as a complex of economically or technologically illegal actions of individuals that disrupt the functioning of the wholesale energy market. This may include false statements, misrepresentation of information, fictitious transactions to involve in trading operations or investments in order to attract participation in trading operations with energy products or to invest the financial capabilities of the person carrying out the specified activity. The proposed disposition of Part 1 of Article 222-2 of the Criminal Code should be stated as follows: "Manipulation in the energy market, that is, intentional actions of an individual in the field of production, transfer, distribution, purchase and sale, supply of electric energy that violate the necessary conditions for operations in the wholesale energy market, which led to the receipt of income in significant amounts by a person or third parties, or the avoidance by such persons of losses in significant amounts, or if they caused significant damage to the rights, freedoms and interests of individual citizens protected by law, or state or public interests, or the interests of legal entities, is punishable...".

For the purpose of uniform law enforcement, it is proposed to supplement Section VII of the Criminal Code with an article with the following content: "Article ... The concept of a criminal offence in the field of economic activity. 1. A criminal offence in the field of economic activity is recognised as an intentional or negligent socially dangerous act (action or omission) provided for in this section, committed in the field of economic activity (production or sale of products (goods), performance of works or provision of services of a cost nature) and caused significant damage to the subject or other participant in relations in the field of economic activity."

The study of the objective signs of the criminal offence consolidated in Article 222-2 of the Criminal Code of Ukraine allowed recording the diversity of ways of manipulating the energy market, which, in addition, in the context of competition and the existing serious problems of energy supply caused by the massive missile attacks by the Russian Federation,

[1]Law of Ukraine No. 2019-VIII "On the Electricity Market". (2017, April). Retrieved from https://zakon.rada.gov.ua/laws/show/2019-19#Text.

demonstrates the importance of this issue and the impossibility of limiting the results to these. The restructuring of the management system in the field of energy security determines the urgent need to significantly improve the mechanisms of criminal law provision of energy security, based on the current legislation and taking into account the current conditions of functioning of the energy market. And it is the thoroughly developed legislation and well-established judicial practice of qualifying and investigating criminal abuses in the energy market that will not only help to punish the perpetrators fairly, but also prevent the emergence of new ones. Therefore, to ensure the legality of bringing a person to criminal responsibility for manipulation in the energy market, the issue that requires its priority clarification in subsequent studies is the maximum detail and clear definition of the range of illegal acts covered by the concept of "manipulation".

Acknowledgements

The author expresses gratitude to the leadership of the National Academy of Internal Affairs for the opportunity to prepare and publish the scientific article. Professional interaction and exactingness became the key to writing it. Sincere gratitude is expressed for the opportunity to be a part of this university.

Conflict of Interest

None.

References

[1] Bartosh, I.I. (2022b). *Criminal law protection of economic relations in the field of functioning of the energy market* (Dissertation, Vasily Stus Donetsk National University, Vinnytsa, Ukraine).

[2] Bartosh, I.I. (2022a). On socially dangerous acts provided for by Art. 232-3 of the Criminal Code of Ukraine. *Constitutional State*, 47, 65-72. doi: 10.18524/2411-2054.2022.47.265285.

[3] Blinov, I.V. (2015). *Theoretical and practical principles of competitive functioning electricity market*. Kyiv: Naukova dumka.

[4] Blinov, I.V., & Parus, E.V. (2023). *Wholesale and retail market of electric energy: Study guide*. Kyiv: KPI named after I. Sikorsky.

[5] Boboshko, O.M., & Nesterenko, K.O. (2019). Financial relations as an object of encroachment in crimes of the credit and financial system. *Lex Portus*, 2, 94-105. doi: 10.26886/2524-101X.2.2019.7.

[6] Chornovalov, O. (2020). *A new miracle scheme on the electricity market: How Centernergo and other producers trade in "air" and earn billions*. Retrieved from https://www.radiosvoboda.org/a/schemes/30725466.html.

[7] De Klerk, L., Shlapak, M., Shmurak, A., Mykhaylenko, O., Hasan-Zade, O., Kortuis, A., & Zasyadko, Ye. (2023). *The impact of the Russian war in Ukraine on the climate*. Retrieved from https://ecoaction.org.ua/wp-content/uploads/2023/07/vplyv-ros-viyny-na-klimat-2023.pdf.

[8] Dudorov, O.O., & Movchan, R.O. (2020). Development of Ukrainian legislation on criminal offenses in the sphere of economic activity: Problems and trends. *Bulletin of E.O. Didorenko Luhansk State University of Internal Affairs*, 4(92), 120-140. doi: 10.33766/2524-0323.92.120-140.

[9] Dudorov, O.O., & Pysmenskyi, E.O. (Eds.). (2013). *Criminal law (Special part)*. Kyiv: VD "Dakor".

[10] Kamensky, D.V. (2020). *Liability for economic crimes in the United States of America and Ukraine: A comparative legal study*. Kyiv: VD "Dakor".

[11] Khyshchenko, O. (2020). *"Scheme" profit: How traders abuse the shortcomings of the electricity market*. Retrieved from https://daily.rbc.ua/ukr/show/shemnaya-pribyl-treydery-zloupotreblyayut-1605537115.html.

[12] Kisiliuk, E.M., & Protsyuk, O.V. (2015). General principles of qualification of criminal offenses in the sphere of economic activity. *Herald of Criminal Justice*, 2, 168-174.

[13] Koshovyi, O.H., Tertyshnyk, V.M., & Sheludko, N.M. (Eds.). (2019). *Abuse on the capital market: Economic and legal aspects*. Dnipro: LIRA.

[14] Kravchenko, O.V., Shapoval, O.B., Nebaba, N., & Botvinov, R. (2021). Blockchain technology: State and prospects of development in Ukraine. *Bulletin of the Khmelnytskyi National University. Series "Economic Sciences"*, 2(6), 267-272. doi: 10.31891/2307-5740-2021-300-6/2-44.

[15] Kryveshko, A. (2020). Manipulation of price bids and volumes of electricity on the market: How to deal with it? *Legal Newspaper*, 4(720).

[16] Kulish, A., Yunin, O., Us, O., Shapovalova, I., & Yaromii, I. (2021). Smuggling as a threat to economic security of the state. *Entrepreneurship and Sustainability Issues*, 8(3), 384-399. doi: 10.9770/jesi.2021.8.3(25).

[17] Movchan, R.O., & Parfenyuk, I.I. (2021). Addition of Articles 222-2 and 232-3 to the Criminal Code of Ukraine: A critical analysis of the legislative decision. *Scientific Bulletin of the International Humanitarian University. Jurisprudence Series,* 53, 86-90. doi: 10.32841/2307-1745.2021.53.17.

[18] Mozol, S.A., Sukhomlyn, Yu.V., Khakhutsiak, O.Yu., Bondarenko, H.V., & Kalinina, I.V. (2020). Prevention of economic crimes in Ukraine: Problems of management and coordination of law enforcement agencies. *International Journal of Management*, 11(4), 585-594.
[19] Participants and structure of the electricity market. (2019). Retrieved from https://iknet.com.ua/uk/article/structure-of-the-electricity-market.
[20] Tertyshnyk, V., & Koshovyi, O. (2018). Doctrinal problems of liability for abuses on the stock market. *Entrepreneurship, Economy and Law,* 6, 283-288.
[21] Vasylyaka, O.K. (2016). The generic object of economic crimes: Debatable issues. *Scientific Bulletin of the Uzhhorod National University. Series: Right*, 41(2), 104-106.
[22] Vozniuk, A.A., & Kamenskyi, D.V. (2022). Manipulation on the energy market: Current issues of criminal responsibility. *Legal Scientific Electronic Journal*, 8, 392-396. doi: 10.32782/2524-0374/2022-8/89.
[23] Why suppliers suffer significant losses due to consumer imbalance bills. (2022). Retrieved from https://energy365.com.ua/tpost/k84lzr9mk1-chomu-postachalniki-zaznayut-suttvih-zbi.

Маніпулювання на енергетичному ринку: кримінально-правовий аналіз та ознаки

Ірина Ботнаренко
Кандидат юридичних наук
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
https://orcid.org/0000-0003-4697-3767

Валентина Крижна
Кандидат юридичних наук
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
https://orcid.org/0000-0002-0402-4224

■ **Анотація.** У статті 42 Конституції України закріплено принципи недопущення зловживання монопольним становищем на ринку й недобросовісної конкуренції в економічній діяльності. Підвищену суспільну небезпеку становить маніпулювання на енергетичному ринку – діяння, що порушує утверджений чинним законодавством порядок державного регулювання ринку електричної енергії та ринку природного газу. Мета статті – дослідити об'єктивні ознаки маніпулювання на енергетичному ринку як складу кримінального правопорушення, передбаченого ст. 222-2 Кримінального кодексу України. У межах дослідження застосовано комплекс наукових методів: діалектичний, герменевтичний, системний, формально-логічний, узагальнення, системно-структурний, метод сходження від абстрактного до конкретного, аналізу й синтезу. Обґрунтовано, що об'єкт маніпулювання на енергетичному ринку охоплено суспільними відносинами, які регулюють утверджений чинним законодавством порядок державного регулювання ринку електричної енергії та ринку природного газу – здійснення державою комплексних заходів щодо управління попитом, цінами й обсягами гуртового енергетичного ринку, запобігання зловживанням і порушенням у цій сфері. Кримінально-правовий зміст поняття "маніпулювання" визначений умисною діяльністю особи (осіб), що порушує умови функціонування гуртового енергетичного ринку, здійснюється шляхом виконання комплексу неправомірних дій, метою яких є отримання фінансової вигоди для себе і третіх осіб, шляхом зміни ціни фінансового активу. Сутність маніпулювання гуртовим енергетичним ринком висвітлено через притаманні йому ознаки, якими означено порушення умов, необхідних для здійснення правочинів на гуртовому енергоринку та відхилення ціни активів від реальної ринкової ціни в потрібний маніпуляторам бік (наявність процесу завищення (заниження) загальної ціни договору, що спричиняє втрату її ринкового статусу). Практична значущість дослідження полягає в тому, що здійснений аналіз має допоміжне значення для правозастосовної практики під час вирішення питань, які стосуються правової кваліфікації маніпулювання на енергетичному ринку

■ **Ключові слова:** об'єкт кримінального правопорушення; суспільні відносини; ринок електроенергії; ринок природного газу; гуртовий енергетичний ринок; зловживання

UDC 343.2/.7 + 343.985.4
DOI: 10.56215/naia-herald/2.2023.41

Critical infrastructure as an object of criminal encroachment: General characteristics and features of the investigation organisation

Ihor Yefimenko*
PhD in Law
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
https://orcid.org/0000-0002-6684-7760

Volodymyr Slipchenko
PhD in Law, Associate Professor
Dnipro Humanitarian University
49033, 35A Vasyl Slipak Str., Dnipro, Ukraine
https://orcid.org/0000-0002-7033-9830

Adrián Vaško
PhD in Law, Associate Professor
Matej Bel University
97401, 20 Komenskeho Str., Banská Bystrica, Slovak Republic
https://orcid.org/0000-0002-2113-7909

■ **Abstract.** New technologies used in infrastructure systems add complexity to the management and protection of these systems, and therefore, the consideration of issues related to criminal attacks on critical infrastructure and the organisation of investigations are becoming increasingly important. The main goal was to identify the problematic aspects and unique features of organising pre-trial investigation of crimes committed at critical infrastructure facilities. The methodological tools of scientific research were based on the diagnostic method for studying social and legal phenomena, analytical, dogmatic, comparative legal, formal legal, and modelling methods. Based on the results of the study, the current state of criminal law norms regulating the grounds for criminal liability for criminal offences involving critical infrastructure was comprehensively analysed. Based on the assessment of the current state of criminal legal protection of critical infrastructure facilities, it is established that it is insufficient and needs to be improved. It is proposed to supplement the norms of the special part of the Criminal Code of Ukraine with additional qualification criteria that would establish criminal liability for encroachment on critical infrastructure facilities. The issues of the development of a unified concept of protection of critical infrastructure facilities from criminal offences through a comprehensive scientific and practical approach to the development and assessment of forensic support for countering criminal offences involving critical infrastructure are updated. Specific steps are outlined to improve laws and regulations that define the specifics of organising investigations at critical infrastructure facilities and conducting priority investigative (search) actions in this regard. The practical significance of the results obtained lies in the development and argumentation of conclusions and proposals for improving the system of protection of critical infrastructure from criminal encroachments

■ **Keywords:** protection of critical infrastructure facilities; high-risk facilities; investigation of criminal offences; emergency situation; investigative and operational group; incident site inspection

■ **Suggested Citation:**
Yefimenko, I., Slipchenko, V., & Vaško, A. (2023). Critical infrastructure as an object of criminal encroachment: General characteristics and features of the investigation organisation. *Scientific Journal of the National Academy of Internal Affairs,* 28(2), 41-51. doi: 10.56215/naia-herald/2.2023.41.

■ *Corresponding author

■ Received: 12.03.2023; Revised: 30.05.2023; Accepted: 26.06.2023

Introduction

Ensuring the security of critical infrastructure is a complex and long-term process that requires an organisational and integrated approach (Vasyutynska, 2021). It is inherent in any civilised country, with no exception for Ukraine, where, in the context of a full-scale Russian invasion, the key priority of the national policy is to protect critical infrastructure facilities from criminal encroachments. For example, according to the Office of the Prosecutor General (2023), of all recorded missile strikes, more than 70% were coordinated specifically in critical areas of state activity. According to these facts, the National Police of Ukraine alone opened more than 80,000 criminal proceedings, including those provided for in Article 438 of the Criminal Code of Ukraine (Violation of the laws and customs of war) (Crimes committed by..., 2023; Yurii Belousov: We consider..., 2023).

The analysis of legal literature shows that the study of problematic aspects of pre-trial investigation of criminal offences involving critical infrastructure facilities is relatively new. For the most part, they relate to issues of ensuring cybersecurity at critical energy facilities. In particular, considering external threats to NATO member states, S.D. Ducaru (2017) emphasises the security of energy infrastructure through the feasibility of an integrated network approach that will help reduce vulnerability and increase the sustainability of critical infrastructure in the Alliance's energy sector. Similar views are held by R. Lordan-Perret *et al.* (2019), O. Batiuk & I. Yevtushenko (2022), noting that the proper functioning of the energy system depends on the smooth operation of its interconnected sectors of critical infrastructure, and therefore, attacks on this infrastructure can cause a cascade effect. According to D.M. Nicol (2018), H. Zhu *et al.* (2021), one of the most dangerous types of threats to critical infrastructure facilities is and remains unauthorised access to their information and telecommunications systems. In this regard, as the researchers note, the digitalisation of society, despite significant advantages and opportunities, significantly increased the level of cyber threats and contributed to the emergence of new ways of committing criminal offences involving critical infrastructure facilities (Chowdhury & Gkioulos, 2021; Al-abassi *et al.,* 2022). These criminal acts can manifest themselves not only in so-called Internet espionage, or for example, illegal acquisition of information with restricted access, but also in illegal possession of other people's property, blocking users' access to the relevant system resources and/or destruction or damage to the relevant infrastructure in general.

Along with this, physical threats are no less dangerous. These may include those potential hazards that caused the occurrence of a crisis situation at the critical infrastructure facility that threatens the life and health of the personnel of this facility and/or the local population in the area of residence in which it is located, and the safety of other citizens and/or their financial situation. The risks at critical infrastructure facilities can manifest themselves in the form of sabotage, terrorist acts, theft, deliberate destruction and/or damage to property necessary for their functioning, etc. It is important to note that these criminal acts, unlike cyber torts, can lead to the death of a large number of people, cause physical or moral suffering, cause significant material damage, and cause irreparable damage to the environment, which makes it impossible for people to live in a certain territory and ultimately poses a threat to the future existence of humanity.

Despite the relevance and great practical significance of this topic, in departmental regulations[1,2] do not provide practical recommendations on the algorithm of indicative actions of authorised bodies when responding to applications and reports of criminal offences committed at critical infrastructure facilities and the specifics of the investigation methodology of this category of torts. This circumstance, as a result, led to the choice of the topic of research, the main purpose of which was to investigate the problematic aspects and features of organising pre-trial investigation of criminal offences at critical infrastructure facilities.

Materials and Methods

The regulatory framework for scientific research was laws and bylaws, the norms and provisions of which regulate certain issues of security and sustainability of critical infrastructure. In particular, the latter may include the Criminal Code of Ukraine[3], the Code of Civil Protection of Ukraine[4], laws of Ukraine "On the Main Principles of Ensuring Cyber Security of Ukraine"[5], "On the National Security of Ukraine"[6],

[1]Order of the Ministry of Internal Affairs of Ukraine No. 575 "On Instructions on the Organisation of Cooperation of Pretrial Investigation Bodies with Other Bodies and Units of the National Police of Ukraine in the Prevention of Criminal Offences". (2017, July). Retrieved from https://zakon.rada.gov.ua/laws/show/z0937-17/print.

[2]Order of the Ministry of Internal Affairs of Ukraine No. 357 "On Instruction from the Organization of Response to Statements and Reports About Criminal, Administrative Offences or Events and Operational Information in Bodies (Subdivisions) of the National Police of Ukraine". (2020, April). Retrieved from https://zakon.rada.gov.ua/laws/show/z0443-20#Text.

[3]Criminal Code of Ukraine. (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/2341-14#Text.

[4]Code of Civil Protection of Ukraine. (2012, October). Retrieved from https://zakon.rada.gov.ua/laws/show/5403-17?find=1&text=%D0%B0%D0%B2%D0%B0%D1%80%D1%96% D0%B9%D0%BD%D0%BE#Text.

[5]Law of Ukraine No. 2163-VIII "On the Main Principles of Ensuring Cyber Security of Ukraine". (2017, October). Retrieved from https://zakon.rada.gov.ua/laws/show/2163-19#Text.

[6]Law of Ukraine No. 2469-VIII "On the National Security of Ukraine". (2018, June). Retrieved from https://zakon.rada.gov.ua/laws/show/2469-19#Text.

"On Critical Infrastructure"[1], the Decision of the National Security and Defence Council of Ukraine of October 30, 2021 "Strategy For Ensuring State Security"[2], etc. The theoretical basis of the research was scientific works that examined certain aspects of the organisational and legal basis for ensuring the safety of critical infrastructure facilities (Biryukov, 2015; Yurii Belousov: We consider..., 2023). Data on criminal legal protection of critical infrastructure facilities were also important (Taran & Sandul, 2019; Kucherina & Olejnikov, 2021). The basics of forensic support for countering criminal offences at critical infrastructure facilities were identified as important (Batiuk & Yevtushenko, 2022; Fediuk, 2022).

From a methodological standpoint, the study is based on the general laws and categories of the theory of cognition. To solve the research tasks, a diagnostic method of cognition of social and legal phenomena and concepts in their development and interdependence was used. Formal logical methods of analysis and synthesis, induction, deduction, analogy, etc., were the basis for the study and analysis of laws and regulations, analytical materials, concepts, and opinions of researchers on individual issues that were included in the subject of study. Other theoretical and empirical research methods were also used. For example, with the help of descriptive-analytical and hermeneutical methods, the analysis of interpretations of legal (juridical) categories was carried out, definitions and clarifications of the terminology were formed, and proposals were developed to improve the current Ukrainian legislation on the topic under study. Comparative legal and formal legal methods were used to analyse laws regulating certain issues related to the organisation of pre-trial investigation and the specifics of conducting individual investigative (search) actions. With the help of data analysis, conclusions and proposals were formulated to improve the national system for protecting critical infrastructure by making appropriate changes and additions to the provisions of laws and bylaws that regulate certain issues of criminal liability for encroachment on infrastructure facilities, as well as the specifics of organising investigations of this category of criminal offences.

The empirical basis of the study consists of analytical and statistical materials of the Ministry of Internal Affairs (MIA) of Ukraine, the Office of the Prosecutor General, and the Security Service of Ukraine on issues related to the pre-trial investigation of criminal offences related to damage or destruction of critical infrastructure facilities in 2022-2023 as a result of Russian military aggression against Ukraine (Crimes committed by..., 2023).

Results

General characteristics of criminal offences targeting critical infrastructure

In a general sense, criminal offences involving critical infrastructure can be divided into those that, firstly, are directly aimed at destroying or damaging critical infrastructure facilities. That is, when the perpetrator deliberately commits an act aimed at disrupting the normal functioning of life support facilities, which is the main goal. The motives in this case may be different and do not affect the qualification of a socially dangerous act. Secondly, those where the disruption of critical infrastructure facilities is not an end goal for the perpetrator, but a means of achieving another goal, which may or may not be directly related to these acts. For example, considering such a criminal offence as sabotage (Article 114 of the Criminal Code of Ukraine)[3], then the subject of its criminal encroachment may be specific critical infrastructure facilities that ensure the security and protection of the state in the economic, environmental, military, political or any other sphere, illegal interference in which contributes to the weakening of the state. These facilities may include power plants, water, oil, and gas pipelines, bridges, dams, reservoirs, information and telecommunications systems, railway stations, airports, sea or river ports, and other business entities, regardless of their ownership forms, that produce or provide vital functions and/or services for the state and its population, violation of the operating mode of which may lead to unpredictable consequences for the national security, defence of the country, and the well-being of its citizens. Therewith, a mandatory feature of the objective side of criminal offences involving critical infrastructure facilities is the presence of a causal relationship between criminal acts and socially dangerous consequences.

Depending on the significance of the facility, the nature of the consequences caused may have a facility-based, local, regional (industry), state, and sometimes international level of danger. As an example, such facilities can include enterprises, institutions, and organisations that ensure the functioning and development of the food, chemical, nuclear industry, military-industrial complex, financial sector, civil protection of the population, etc. In this context, the main factors that affect the qualification of criminal offences that encroach on the regular functioning of critical infrastructure facilities are the category of

[1]Law of Ukraine No. 1882-IX "On Critical Infrastructure". (2021, November). Retrieved from https://zakon.rada.gov.ua/laws/show/1882-20#Text.
[2]Approved by the Decree of the President of Ukraine No. 56/2022 "On the Decision of the National Security and Defence Council of Ukraine. Strategy For Ensuring State Security". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/56/2022#Text.
[3]Criminal Code of Ukraine. (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/2341-14#Text.

their criticality, the scale and nature of socially dangerous consequences caused, the number of forces and means involved in their elimination, the organisation of participants in the criminal offence, the methods of its commission, and the purpose and motives that prompted the perpetrator(s) to implement criminal actions.

With this in mind, criminal offences against the security of critical infrastructure are mostly mixed in nature, which refers to other laws and regulations that define the most important infrastructure facilities for the state and its society, the procedure for their identification, registration, categorisation, and certification, as well as rules for their operation, protection, and safety. According to the Law of Ukraine "On Critical Infrastructure"[1], the list of these facilities should be contained in the appropriate automated register, the development and maintenance of which is entrusted to the authorised central state authority in the field of critical infrastructure protection. The complexity of this issue lies in the fact that at the time of the study, the specified body and register have not yet been established in Ukraine, and this, in turn, makes it difficult for an authorised official to make correct operational-tactical and procedural-based decisions on the prevention, detection, termination, disclosure, and investigation of criminal offences involving critical infrastructure facilities.

The provisions of the law of Ukraine on criminal liability also do not give clear answers to this issue. Despite the fact that the Criminal Code of Ukraine (hereinafter - CC of Ukraine)[2] does not define such a generic object of criminal offences as "security of critical infrastructure", a similar concept is contained in the dispositions provided for in Article 259 (Deliberately false information about a threat to the security of citizens, destruction or damage to property) and Article 360 (Intentional damage or destruction of telecommunications networks) of the CC of Ukraine. In particular, Part 2 of Article 259 referred to the qualification features of this criminal offence if its subject is "critical infrastructure facilities". A similar term is used in the note to Article 360 of the CC of Ukraine, combined with such an assessment category as "grave consequences". In other words, the consequences that led to the termination of the provision of telecommunications services at critical infrastructure facilities.

Not limited to these articles, critical infrastructure can also act as an object, subject, or place of commission of other criminal offences. Considering the special importance of certain sectors of critical infrastructure for the functioning of the state, the legislator identified special types of criminal offences related to the destruction or damage of property. This means those independent elements of criminal offences, the objective side of which is characterised by the commission of a socially dangerous act, which consists in the destruction or damage of separately defined critical infrastructure facilities. These facilities included enterprises, institutions, organisations of their systems and structured elements that ensure the activities of the electric power industry, the nature reserve fund, housing and communal services, nuclear energy, transport communications, the military-industrial complex, etc. (Anufriev *et al.*, 2023).

Along with this, the security of critical infrastructure can also act as an additional qualification feature of criminal offences under Articles 194 (Intentional destruction or damage to property), 195 (Threat of destruction of property), 196 (Negligent destruction or damage to property), 197 (Violation of obligations to protect property), 219 (Bringing to bankruptcy), 233 (Illegal privatisation of state and municipal property), 270 (Violation of fire or man-made safety requirements established by law), 280 (Coercion of transport workers to fail to perform their duties) of the CC of Ukraine[3]. Therefore, it is proposed to separately supplement the dispositions of these criminal law norms with additional qualification features in case these acts encroach on critical infrastructure facilities. Under this condition, the subject of these criminal attacks can only be those facilities that are not classified as special types of criminal offences provided for in the CC of Ukraine. These proposals will provide additional guarantees for the protection of critical infrastructure from criminal attacks and play an important role in the proper organisation of pre-trial investigation of criminal offences involving critical infrastructure.

Features of organising the investigation of criminal offences involving critical infrastructure

The specifics of organising the investigation of crimes committed at critical infrastructure facilities are informing the authorised bodies in the field of critical infrastructure protection about the occurrence of an emergency situation at the facility, in order to carry out urgent actions to eliminate its consequences, conduct rescue and restoration work. After an emergency situation occurs at a critical infrastructure facility, the critical infrastructure operator must immediately notify the relevant sectoral and functional authorities in the field of critical infrastructure protection, local executive authorities and civil-military administration.

[1]Law of Ukraine No. 1882-IX "On Critical Infrastructure". (2021, November). Retrieved from https://zakon.rada.gov.ua/laws/show/1882-20#Text.
[2]Criminal Code of Ukraine. (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/2341-14#Text.
[3]Ibidem, 2001.

The information in the message must contain data on the time and place of the incident, its circumstances, consequences, the intended or already known cause, the organisation of medical care for injured persons, their number, the estimated number of victims, etc.

The organisation of emergency rescue operations should be carried out immediately, while simultaneously taking measures to restrict access to the scene of an accident by unauthorised persons. The scene of an accident must be assessed regarding the likely location of potentially dangerous objects on its territory. This will ensure the safety of persons involved in the elimination of the consequences of an emergency and conducting procedural actions. The complex of dangerous factors that occur after an explosion or fire is also considered by determining the danger and emergency zones[1]. The presence of people within the "danger zone" and any work within it is prohibited (The Security Service…, 2013). Elimination of the consequences of an emergency situation is carried out only after the final elimination of dangerous factors in the area of emergency rescue operations. If there is information about possible radiation, chemical or bacteriological (biological) contamination of the environment, the work should be carried out with the participation of qualified specialists in the relevant field of knowledge in compliance with all existing facility or departmental instructions (Ratushnyi *et al.,* 2020; Tertyshnyk, 2022).

The next feature of organising a crime investigation is the organisation of protection of the scene of an accident and the involvement of the necessary participants in its conduct. Having received a message about the occurrence of an emergency situation at the critical infrastructure facility, the relevant investigation team is urgently sent to the scene of the incident. Depending on the nature of the emergency situation and the category of criticality of the facility, representatives of various law enforcement agencies may arrive at the scene, which complicates the process of making operational decisions by authorised subjects of the national critical infrastructure protection system. Therefore, it is proposed to regulate the formation and activities of permanent departmental and interdepartmental teams for the investigation of criminal offences involving critical infrastructure facilities. In the future, this provided an opportunity to organise and conduct joint exercises to work out the notification scheme, the immediate departure system, and coordinate the actions of each participant of the investigation team at the incident site.

Such an investigation team should include a prosecutor, an investigator (group of investigators), a forensic specialist, and employees of the relevant operational units, depending on the jurisdiction of the criminal offence. In cases where the disruption of critical infrastructure facilities was caused by an explosion, an explosives specialist from the relevant expert service is involved in the inspection. Specialists of pyrotechnic units of the state emergency service may also be involved, but it is necessary to consider their lack of practical skills in the detection, registration, and removal of objects of forensic significance. When the victims are found at the scene, a specialist in the field of forensic medicine is involved in the examination. Depending on the circumstances and the number of victims, it is advisable to involve emergency doctors and psychologists to participate in the examination. If it is necessary to use police tracking dogs, specialist dog handlers are invited to conduct the inspection (Selyukov, 2022). Competent assistance can also be provided by employees of a critical infrastructure facility who are aware of its design features (Batiuk, 2021).

Before starting the inspection, each of the investigation team participants must be provided with special personal protective equipment (respirators, hard hats, gloves, overalls, etc.) and the necessary technical equipment for its implementation (photo and video cameras, dosimeters, rangefinders, etc.). In order to facilitate the process of cognition, it is advisable to involve a specialist operator of an unmanned aerial vehicle in the inspection, which would allow the participants of the inspection to analyse the scene of the incident from top to bottom and better simulate the past event. In addition, the use of UAVs will significantly speed up the inspection, which will have a positive impact on the time of restoration work (Yefimenko, 2022). Without violating the principle of unity of command, depending on the scope of the necessary work, it is recommended to allocate the relevant subgroups of investigators, specialists, and operational workers as part of the investigation team, including a separate group that would ensure security at the scene of an accident and communicate with the media.

The last stage of the investigation of criminal offences is to conduct an incident site inspection. In criminal proceedings involving critical infrastructure facilities, an incident site inspection is one of the most complex and important investigative (search) actions with a clearly defined specifics of its implementation. Delay in the examination inevitably leads to the loss of evidence and a change in the primary environment due to the instability of individual traces and conditions that resulted in this event. At the same time, the importance of functioning of critical infrastruc-

[1]Order of the Ministry of Energy and Coal Industry No. 282 "On the Approval of Methodological Recommendations for the Execution of Works During the Liquidation of Oil and Gas Wells and Open Oil and Gas Fountains". (2015, May). Retrieved from https://ips.ligazakon.net/document/FN011106.

ture facilities requires prompt elimination of the consequences of an emergency (Komisarov *et al.,* 2022). Therefore, with the arrival of the investigation team at the scene, emergency rescue operations may not yet be completed. At this stage, all efforts should be coordinated for careful video and photo recording of the situation that is observed at the time of arrival.

If many criminally significant traces may be lost, it is advisable to conduct an inspection in parallel with emergency rescue operations. If possible, the investigator should immediately coordinate their actions in such a way as to ensure the preservation of criminally significant traces located next to the restoration work. First of all, those facilities that require immediate restoration or evacuation should be examined. Upon arrival at the scene, the investigation team should assess the extent of the emergency and the presence and number of victims. If there are victims at the scene, it is necessary to find out whether they were provided with assistance and, if necessary, take urgent measures to provide it. Next, measures are taken to protect the scene of the accident, link it and, if necessary, expand it.

Before starting the inspection, the safety of the persons participating in it must be ensured. All necessary measures are being taken to prevent unauthorised persons from appearing at the scene, including in the "danger zone". Investigation team is also outside of it. Group members should be instructed to comply with personal safety measures. If there is a risk of an explosion, the inspection does not begin without involving the relevant specialists of the explosives service. When explosive devices or unexploded ordnance are detected at the scene, the team leader, together with the relevant specialist, makes a decision on their neutralisation or/or destruction at the scene of the event or outside it. Neutralisation or destruction of explosive objects is carried out by a qualified specialist in compliance with all existing rules and instructions for performing such work (Klymas, 2022).

Due to possible large-scale destruction and the large number of facilities that need to be examined, the inspection time increases, and sometimes even up to several weeks. In this case, the territory of the scene of an accident is divided into smaller sections, the inspection of which is entrusted to a specific investigator of this group. The investigator's interaction with other participants in the examination should be organised in such a way that he has the opportunity to constantly maintain communication with them. The investigator also needs to consider the fact that the relevant (departmental) commission can simultaneously conduct an internal investigation at the scene of the incident. Therefore, the investigator needs to familiarise themself with the functional duties of the chairman of this commission and its composition. The results of an internal investigation can serve as auxiliary materials for planning and conducting further procedural actions (Taran *et al.,* 2020; Syvodyed, 2023).

During the inspection, special attention is paid to the places of destruction or damage to critical infrastructure facilities, their systems and elements, and the presence of foreign objects within their borders. If they are difficult to describe, their diagrams, plans, and photo images are attached to the protocol, and competent employees are invited to log them. If particularly dangerous objects (nuclear, chemical, thermobaric ammunition, etc.) are found at the scene of an accident, the inspection is immediately stopped until the arrival of appropriate specialists. If the facility is completely destroyed and is a construction ruin, it is necessary to carry out disassembly, first examining the destroyed fragments.

It is advisable to conduct other investigative (search) actions simultaneously with the inspection. Operational officers are instructed to identify eyewitnesses and victims, organise the protection of the scene and traces that were not examined, collect information about persons who were within the event, preserve technical documentation describing the activities of the critical infrastructure facility, help in carrying out rescue operations, etc.

Discussion

Analysing the current state and prospects for improving the legislative regulation of the grounds for criminal liability for crimes that encroach on critical infrastructure facilities, O. Taran & O. Sandul (2019) point to the fact that the provisions of the current CC of Ukraine do not contain specially defined norms that would provide for liability for socially dangerous acts that encroach on critical infrastructure facilities. Considering this circumstance, the authors propose to introduce a separate article in section 1 of the Special part (Crimes against the foundations of national security), which would provide for criminal liability for encroachment on critical infrastructure facilities[1].

Denying the feasibility of implementing these changes and additions, S.Ye. Kucherina & D.O. Olejnikov (2021) argue that at the present stage, the level of criminal legal protection of critical infrastructure facilities is insufficient and unsystematic. The reason for this is that, first of all, the legislation of Ukraine on criminal liability does not have an individualised approach to critical infrastructure in general and its facilities in particular. That is, criminal

[1]Criminal Code of Ukraine. (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/2341-14#Text.

legal protection of critical infrastructure facilities is carried out at the level of the subject of other objects of criminal offences of a more general nature, and secondly, the current legislation, which establishes responsibility for socially dangerous acts, does not consider current trends in the development of organisational and legal bases of critical infrastructure, as a result of which the ability to fully protect the interests of the state and society, which are implemented in this area, is lost. Given the above, researchers propose to review the list of general objects of criminal legal protection and to include the protection of critical infrastructure in the tasks of the CC[1] of Ukraine. These changes, according to the researchers, will contribute to the introduction of separate criminal liability for encroachment on critical infrastructure facilities, which in the future will provide it with additional protection through existing criminal legal means.

Holding similar views, V. Fediuk (2022) draws attention to the provisions of the Law of Ukraine "On critical infrastructure"[2] in the preamble of which it is noted that this law is a component of legislation in the field of national security. Despite this, when forming an idea of "critical infrastructure facilities", the legislator draws attention to the importance of their functioning not only for national security but also for the economy of the country, its defence, and other areas of state activity that affect national interests. In other words, this means that the vital interests of a person, society, and the state depend on the proper functioning of critical infrastructure facilities, the implementation of which ensures the state sovereignty of Ukraine, its progressive democratic development, and safe living conditions and the well-being of citizens.[3] In this context, encroachments on critical infrastructure cannot only affect relations in the field of ensuring the foundations of national security. Violation of the operating mode of critical infrastructure facilities destabilises other public relations and creates obstacles to the implementation of functions, the production of goods, and the provision of services that are vital for people and the country's activities. Researchers define "vital goods and services" as those goods and services that meet the basic needs of the country and its citizens, including the functioning of the national security and defence systems. In turn, "vital functions of the state" imply any activities of the state or private structures that create conditions and mechanisms for human life and functioning of the country in peacetime, in conditions of emergency and martial law and a state of war (Sakhanyuk, 2020; Franchuk *et al.,* 2021).

Therefore, agreeing with V. Fediuk (2022), when defining areas for improving the criminal legal protection of critical infrastructure facilities, it is necessary to consider a number of their inherent features and criteria that determine their social, political, and economic significance for ensuring the country's defence, security of citizens, society, the state, and the rule of law. In fact, such criteria include, firstly, the provision of functions and/or obedience by these facilities that are vital for the state and its society, secondly, the existence of external and internal challenges and threats (their vulnerability) in relation to these facilities, thirdly, the probability of causing significant (major) damage to the normal living conditions of the population, and fourthly, the scale and duration of elimination of negative consequences in case of unauthorised interference in their work (Biryukov, 2015; Tkalya, 2022). Given the above, researchers refer to these facilities enterprises, institutions, and organisations that are of strategic importance for the economy and security of the state, are potentially dangerous, classified as civil protection, are subject to mandatory protection and defence in an emergency, are particularly important for the energy sector and the oil and gas industry, provide the activities of conference communication systems, emergency services, payment services and electronic communications, ensure the functioning of the agricultural and industrial complex, food industry, educational institutions, healthcare, cultural and educational and national-patriotic education, etc.

Summing up the above, it is worth noting that the security and protection of critical infrastructure facilities in criminal law have different generic objects. This gives grounds to consider the prospects for improving the criminal legal protection of critical infrastructure within the framework of making certain dispositive additions to existing norms, through the establishment of additional qualification features in the event that these acts encroach on critical infrastructure facilities. For example, Part 2 of Article 194 of the CC of Ukraine[4] is proposed to be supplemented with a note if: "intentional destruction or damage to someone else's property, which caused large-scale damage to critical infrastructure facilities." In this case, only those critical infrastructure facilities that are not classified as special types of criminal offences under Articles 194-1 (Intentional damage to electric power facilities) 252 (Intentional destruction or damage to territories taken under state protection and objects of the nature reserve fund), 411 (Intentional destruction or damage to military property) 270-1 (Intentional destruction or

[1]Criminal Code of Ukraine. (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/2341-14#Text.
[2]Law of Ukraine No. 1882-IX "On Critical Infrastructure". (2021, November). Retrieved from https://zakon.rada.gov.ua/laws/show/1882-20#Text.
[3]Law of Ukraine No. 2469-VIII "On the National Security of Ukraine". (2018, June). Retrieved from https://zakon.rada.gov.ua/laws/show/2469-19#Text.
[4]Criminal Code of Ukraine. (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/2341-14#Text.

damage to housing and communal facilities) may be the subject of this criminal offence.

Special attention should be paid to the specifics of organising pre-trial investigation of criminal offences involving critical infrastructure facilities. In this context, forensic methodology becomes important (Yefimov & Pyrig, 2022), which is the basis for developing appropriate recommendations for organising and conducting pre-trial investigations of certain types of criminal offences (Mudretskyi, 2019). Given the totality of objective and subjective features that allow qualifying a socially dangerous act as a specific criminal offence, criminalistics proposed to classify criminal offences, including by the object of criminal encroachment (Guseva, 2019). In this regard, it is worth noting that at the present stage of the development of criminalistics, the definition of individual methods for investigating criminal offences at critical infrastructure facilities is still in its infancy. The reason for this is that, firstly, for Ukrainian legislation, public relations on the protection and security of critical infrastructure are relatively new, and secondly, due to the lack of full functioning of the central state authority in the field of protection of critical infrastructure, in Ukraine, the corresponding list of facilities has not yet been formed.

Along with this, exploring the problematic aspects of forensic support of criminal offences at critical infrastructure facilities, O. Batiuk (2021) suggests that their content include such elements as forensic characteristics of criminal offences at critical infrastructure facilities; circumstances to be established and proved; features of detection of criminal offences at critical infrastructure facilities; typical investigative situations that arise at the initial and subsequent stages of the investigation; typical versions and features of Investigation planning; features of using special knowledge; features of interaction of relevant participants in criminal proceedings; features of the organisation of investigation team in the conditions of its work at the critical infrastructure facility where emergency situation has occurred; identification of the causes and conditions that contributed to the commission of a criminal offence; features of using forensic information databases in the investigation of the relevant category of criminal offences, etc.

Given the above, it can be concluded that at the present stage of the development of forensic science, topical issues of the methodology for investigating criminal offences at critical infrastructure facilities are open for discussion and require further scientific research. Considering the limits of the paper, the specifics of organising pre-trial investigation of criminal offences involving critical infrastructure, and, in this case, conducting an incident site inspection as one of the most complex investigative (search) actions of this category of criminal offences were revealed.

■ Conclusions

Thus, the results of the scientific analysis indicate that the legislation on critical infrastructure and its protection is part of the legislation in the field of national security, the norms and provisions of which determine the legal and organisational basis for the creation and functioning of the national system for the protection of critical infrastructure. Persons guilty of violating these regulations are liable as defined by law. Thus, critical infrastructure facilities can be the object, subject, or place of commission of a criminal offence not only at the national level, but also be the subject of consideration by international instances. Despite the urgency of this issue, the level of criminal legal protection of critical infrastructure facilities in the norms of the current Criminal Code of Ukraine is insufficient. The main reason for this is that due to the lack of a fully functioning central executive body in the field of critical infrastructure protection, Ukraine has not yet formed a statutory register of critical infrastructure facilities. In addition, the process of identifying critical infrastructure facilities is permanent and may change depending on internal and external challenges and threats that affect the level (degree) of protection of national interests.

At the same time, the functioning of the national system of protection of critical infrastructure forces the legislator to supplement certain norms of the special part of the CC of Ukraine with additional qualification features that would provide for liability for destruction or damage to critical infrastructure facilities. In this context, the types of criminal offences involving critical infrastructure can be conditionally divided into special, that is, those that encroach on the object of a particular sector of critical infrastructure (Article 194-1 of the CC of Ukraine) and general (Article 194 of the CC of Ukraine), encroach on other, not separately allocated critical infrastructure facilities.

Considering the importance of the functioning of critical infrastructure facilities, from a practical standpoint, additional regulatory and methodological support is also required for issues related to the priority actions of authorised subjects for the protection of critical infrastructure after receiving information about the occurrence of an emergency situation at the critical infrastructure facility, their interaction on the prevention, detection, termination, disclosure, and investigation of criminal offences involving critical infrastructure facilities, as well as the specifics of organising priority investigative (search) actions under a state of emergency.

■ Acknowledgements

None.

■ Conflict of Interest

None.

References

[1] Al-abassi, A., Jahromi, A.N., Karimipour, H., Dehghantanha, A., Siano, P., & Leung, H. (2022). A self-tuning cyber-attacks' location identification approach for critical infrastructures. *Institute of Electrical and Electronics Engineers Transactions on Industrial Informatics,* 18(7), 5018-5027. doi: 10.1109/TII.2021.3133361.

[2] Anufriev, M.I. *et al.* (2023). *Scientific and practical commentary on the Criminal Code of Ukraine*. In I.M. Kopotun (Ed.). Kyiv: "KNT".

[3] Batiuk, O. (2021). *Forensic support for combating crimes at critical infrastructure facilities*. Lutsk: Volyn Polygraph.

[4] Batiuk, O., & Yevtushenko, I. (2022). The importance of the science of forensics in ensuring countermeasures against crimes at critical infrastructure facilities. *Honor and Law,* 2(81), 42-47. doi: 10.33405/2078-7480/2022/2/81/263764.

[5] Biryukov, D.S. (2015). Protection of critical infrastructure in Ukraine: From scientific understanding to the development of policy principles. *Scientific and Information Bulletin of the Academy of National Security,* 3(4), 155-170.

[6] Chowdhury, N., & Gkioulos, V. (2021). Key competencies for critical infrastructure cyber-security: A systematic literature review. *Information and Computer Security,* 29(5), 697-723. doi: 10.1108/ICS-07-2020-0121.

[7] Crimes committed by the Russian military during the full-scale invasion of Ukraine. (2023). Retrieved from https://www.npu.gov.ua/news/zlochyny-vchyneni-viiskovymy-rf-pid-chas-povnomasshtabnoho-vtorhnennia-v-ukrainu-stanom-na-29052023.

[8] Ducaru, S.D. (2017). The security of critical energy infrastructure in the age of multiple attack vectors: NATO's multi-faceted approach. *Europolity-Continuity and Change in European Governance*, 11(1), 5-20. doi: 10.25019/europolity.2017.11.1.01.

[9] Fediuk, V. (2022). The Law of Ukraine "On Critical Infrastructure": Issues of criminal law. In *International scientific conference* (pp. 229-233). Riga: Baltic International Academy. doi: 10.30525/978-9934-26-229-6-59.

[10] Franchuk, V.I., Pryhunov, P.Ya., & Melnyk, S.I. (2021). Security of critical infrastructure facilities in Ukraine: Organizational and regulatory problems and approaches. *Social and Legal Studies*, 3(13), 142-148.

[11] Guseva, V. (2019). Forensic classification of crimes: Current state of scientific support and prospects for further research. *National Law Journal: Theory and Practice*, 3(1), 151-156.

[12] Klymas, R. (2022). Inspection of the fire site in the presence of explosive objects by specialists of the research and testing laboratories of the State Emergency Service under martial law. In *The European choice of Ukraine, the development of science and national security in the realities of large-scale military aggression and global challenges of the 21st century: Materials International scientific-practical conferences* (pp. 440-444). Odesa: "Helvetyka" Publishing House.

[13] Komisarov, O., Batyuk, O., & Pavlov, S. (2022). Forensic and military combat support against terrorist and sabotage threats at critical infrastructure facilities. *Honor and Law*, 4(79), 33-39. doi: 10.33405/2078-7480/2021/4/79/251498.

[14] Kucherina, S.Ye., & Olejnikov, D.O. (2021). Current state of criminal and legal protection critical infrastructure facilities. *Information and Law,* 1(36), 90-98. doi: 10.37750/2616-6798.2021.1(36).238187.

[15] Lordan-Perret, R., Wright, A.L., Burgherr, P., Spada, M., & Rosner, R. (2019). Attacks on energy infrastructure targeting democratic institutions. *Energy Policy,* 132, 915-927. doi: 10.1016/j.enpol.2019.06.025.

[16] Mudretskyi, R. (2019). Forensic classification of methods of countermeasures against judicial review of criminal proceedings. *Entrepreneurship, Economy and Law*, 6, 306-312. doi: 10.32849/2663-5313/2019.6.57.

[17] Nicol, D.M. (2018). Cyber risk of coordinated attacks in critical infrastructures. In *2018 Winter simulation conference (WSC)* (pp. 2759-2768). Gothenburg: Publisher Institute of Electrical and Electronics Engineers Inc. doi: 10.1109/WSC.2018.8632318.

[18] Ratushnyi, R.T., Loyik, V.B., Synel'nikov, O.D., & Koval'chuk, V.M. (2020). *Organization of emergency and rescue work: Training manual*. Lviv: Lviv State University Security of Life Activities.

[19] Sakhanyuk, O.M. (2020). *Types of vaccines and their development. Vaccination as the most effective method of protecting the population from infectious diseases.* Retrieved from https://www.dec.gov.ua/wp-content/uploads/Conference/2020/6/section/9/s9f3.pdf.

[20] Selyukov, V. (2022). Prospects for improving legal regulation in the field of canine activity in Ukraine. *Entrepreneurship, Economy and Law*, 11, 153-158. doi: 10.32849/2663-5313/2020.11.26.

[21] Syvodyed, I. (2023). Investigating genocide and ecocide in wartime conditions. *Scientific works of the Interregional Academy of Personnel Management. Legal Sciences*, 2(62), 59-64. doi: 10.32689/2522-4603.2022.2.9.
[22] Taran, O., & Sandul, O. (2019). Issue of criminal liability for offences against critical infrastructure objects in nuclear industry. *Nuclear and Radiation Safety,* 3(83), 58-67. doi: 10.32918/nrs.2019.3(83).07.
[23] Taran, O.V., Sushchenko, V.D., Yefimenko, I.M., Khutoryanskyi, O.V., Griga, M.A., & Kuchmenko, S.V. (2020). *Investigation of crimes against production safety*. In S.S. Chernyavskyi (Ed.). Kyiv: National Academy of Internal Affairs.
[24] Tertyshnyk, V.M. (2022). *Constitution of Ukraine. Scientific and practical commentary*. Kyiv: Alerta.
[25] The Prosecutor General's Office considers Russian attacks on energy facilities as part of the crime of genocide. (2023). Retrieved from https://www.ukrinform.ua/rubric-ato/3668749-v-ofisi-genprokurora-rozgladaut-ataki-rf-na-energoobekti-ak-skladovu-zlocinu-genocidu.html.
[26] The Security Service of Ukraine prevented attempts to hack the state electronic system in the field of construction. (2013). Retrieved from https://ssu.gov.ua/novyny/sbu-zapobihla-sprobam-zlamu-derzhavnoi-elektronnoi-systemy-u-haluzi-budivnytstva-video.
[27] Tkalya, O.V. (2022). National interests and values as the basis for the existence and development of the national state. *Legal Scientific Electronic Journal,* 4, 58-61. doi: 10.32782/2524-0374/2022-4/12.
[28] Vasyutynska, L.A. (2021). Theoretical aspects of infrastructure research in the context of the project approach. *Problems of Innovation and Investment Development,* 25, 16-22. doi: 10.33813/2224-1213.25.2021.2.
[29] Yefimenko, I. (2022). Modern possibilities of using unmanned aerial vehicles by police bodies and units: International and domestic experience. *Scientific Bulletin of the National Academy of Sciences*, 27(3), 65-77. doi: 10.56215/0122273.65.
[30] Yefimov, M.M., & Pyrig, I.V. (2022). *Methods of investigation of certain types of criminal offenses*. Dnipro: Bila K.O. Publisher.
[31] Yurii Belousov: We consider enemy attacks on critical infrastructure as a component of the crime of genocide. (2023). Retrieved from https://www.gp.gov.ua/ua/posts/yurii-bjelousov-ataki-voroga-na-kriticnu-infrastrukturu-mi-rozglyadajemo-yak-skladovu-zlocinu-genocidu.
[32] Zhu, H., Zhang, Ch., Ramirez-Marquez, J.E., Wu, S., & Monroy, R. (2021). The integration of protection, restoration, and adaptive flow redistribution in building resilient networked critical infrastructures against intentional attacks. *Institute of Electrical and Electronics Engineers Systems Journal,* 15(2), 2959-2970. doi: 10.1109/JSYST.2020.3039466.

Критична інфраструктура як об'єкт злочинного посягання: загальна характеристика й особливості організації розслідування

Ігор Єфіменко
Кандидат юридичних наук
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
https://orcid.org/0000-0002-6684-7760

Володимир Сліпченко
Кандидат юридичних наук, доцент
Дніпровський гуманітарний університет
49033, вул. Василя Сліпака, 35А, м. Дніпро, Україна
https://orcid.org/0000-0002-7033-9830

Адріан Вашко
Кандидат юридичних наук, доцент
Університет Матея Бела
97401, вул. Коменського, 20, м. Банська Бистриця, Словацька Республіка
https://orcid.org/0000-0002-2113-7909

■ **Анотація.** Нові технології, які використовують в інфраструктурних системах, додають складності управлінню та захисту цих систем, а тому розгляд питань, пов'язаних зі злочинними посяганнями на критичну інфраструктуру, й організація розслідувань набувають важливого значення. Основною метою було дослідження проблемних аспектів та унікальних рис організації досудового розслідування злочинів, які вчинено на об'єктах критичної інфраструктури. Методологічний інструментарій наукового дослідження ґрунтувався на діагностичному методі для вивчення соціальних і правових явищ, аналітичному, догматичному, порівняльно-правовому, формально-юридичному й методі моделювання. За результатами дослідження було комплексно проаналізовано сучасний стан норм кримінального права, які регулюють підстави кримінальної відповідальності за кримінальні правопорушення, об'єктами яких є критична інфраструктура. На підставі оцінювання сучасного стану кримінально-правової охорони об'єктів критичної інфраструктури встановлено, що вона є недостатньою та потребує вдосконалення. Запропоновано доповнити норми Особливої частини Кримінального кодексу України додатковими кваліфікаційними ознаками, які встановлювали б кримінальну відповідальність за посягання на об'єкти критичної інфраструктури. Актуалізовано питання розроблення єдиної концепції захисту об'єктів критичної інфраструктури від кримінальних правопорушень за допомогою комплексного науково-практичного підходу до формування та оцінювання криміналістичного забезпечення протидії кримінальним правопорушенням, об'єктами яких є критична інфраструктура. Окреслено конкретні кроки з удосконалення нормативно-правових актів, які визначають особливості організації розслідування на об'єктах критичної інфраструктури та проведення у зв'язку із цим першочергових слідчих (розшукових) дій. Практична значущість одержаних результатів полягає у формуванні та аргументації висновків і пропозицій з удосконалення системи захисту критичної інфраструктури від злочинних посягань

■ **Ключові слова:** захист життєво важливих об'єктів; об'єкти підвищеної небезпеки; розслідування кримінальних правопорушень; надзвичайна ситуація; слідчо-оперативна група; огляд місця події

UDC 343.132:343.137.5:343.982
DOI: 10.56215/naia-herald/2.2023.52

Extraction of information from a cellular phone (mobile communication device) during investigative (search) actions

Mykola Kobets*
PhD in Law, Associate Professor
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
https://orcid.org/0000-0002-2233-0946

■ **Abstract.** The relevance of the study is substantiated by the need to develop a system for procedural registration of information (statements) withdrawn from a mobile phone using hardware and software complexes, the content of which proves the involvement of a person in the commission of a criminal offence, since such a documentation mechanism has not been developed in practice. The purpose of the study was to highlight theoretical and applied approaches to the legal support of investigators' actions to extract information from a mobile phone found at the incident scene. In accordance with the set goal and specifics of the subject of research, a set of the following methods was applied: formal logical, system and structural, hermeneutical, modelling, and generalisation. The study considers the actions of the investigator during the pre-trial investigation of criminal offences, when a cellular phone (mobile communication device) was found at the incident scene, which makes it necessary to use special knowledge. The profile and qualification of a specialist who needs to be involved in the inspection of a mobile phone are determined depending on the purpose and objectives of the investigative (search) action, established primary data on the nature of a criminal offense. A procedure for obtaining information (computer data) from a cellular phone (mobile communication device) is proposed, which provides for the creation of an "image"/electronic report of available information, which is recorded on a digital medium in the form of a file, fixed with an electronic label as a checksum. The practical value of the study lies in the procedural solution of the issue of extracting information (statements) from mobile phones, which is important during pre-trial investigation and documentation of digital information (computer data)

■ **Keywords:** computer data; protocol; mobile terminal; hardware and software complex; pre-trial investigation; specialist; special knowledge

■ **Suggested Citation:**
Kobets, M. (2023). Extraction of information from a cellular phone (mobile communication device) during investigative (search) actions. *Scientific Journal of the National Academy of Internal Affairs,* 28(2), 52-60. doi: 10.56215/naia-herald/2.2023.52.

■ *Corresponding author

■ Received: 16.03.2023; Revised: 02.06.2023; Accepted: 26.06.2023

Introduction

With the rapid development of scientific and technological progress, humanity is increasingly using modern innovative technologies both in its professional activities and in everyday life. However, despite the technical capabilities of modern information systems and electronic communication networks, information technologies are vulnerable to fraudsters and other criminal elements. Such illegal actions are protected by law. This is especially true for the storage, use and dissemination of confidential information about a person without their consent. Law enforcement officers in certain situations, if it concerns the protection of national security interests, economic well-being and human rights are allowed to exercise these temporary restrictions, as defined by law, but only by a court decision (Article 32 of the Constitution of Ukraine[1]). Therefore, law enforcement officers use the entire arsenal of technological progress in their activities to detect, stop and investigate criminal offences.

In this regard, in order to clarify the circumstances of the commission of a criminal offence and establish the truth in criminal proceedings, there is an urgent need for data obtained from electronic information devices and systems. This is due to the fact that criminals have become more likely to use modern information and computer technologies in their illegal activities. To solve this problem, effective detection, suppression and investigation of relevant criminal offences and considering the realities of today, the legislator introduced in the CPC of Ukraine[2] such investigative (search) actions as the extraction of information from electronic information systems and the examination of mobile terminals (mobile communication devices) at the accident scene.

Theoretical and applied approaches to the use of electronic (digital) evidence in criminal proceedings were studied by I.V. Pyrih (2019), I. Riadi *et al.* (2023). They suggest using various forensic methods, tools, and software products to process and analyse the data obtained. A. Leonov (2020), S. Satpathy & S. Mohanty (2020) highlight issues of so-called digital forensics. In this context, the researchers suggest using data analysis methods, algorithms, and synthesis techniques to effectively investigate crimes committed using information technologies. A. Fukami *et al.* (2021) introduce a new forensic model for mobile device research. In their opinion, this is due to the convenience of using digital evidence, considering the elements of vulnerabilities and features of this type of evidence.

A. Sengupta *et al.* (2023), H. Tara & A. Mishra (2021) explore the problems of extracting internet data from mobile phones and other electronic devices, as well as digital forensic tools for this. To solve these problems, reasonable methods of data extraction are proposed, which work independently of the hardware and software specifications of the mobile terminal. B.M. Manjre *et al.* (2023) examine the integrity of digital evidence obtained during the extraction and decoding of mobile data from mobile phones, etc. The authors suggest using various information technologies to ensure security against possible changes and distortions of information during its extraction from mobile terminals and features of storing digital evidence during forensic examinations.

The purpose of the study was to help employees of the pre-trial investigation bodies to obtain the necessary information from mobile terminals (cellular phones) found at the scene during the pre-trial investigation of criminal offences, using modern scientific and technical means, and procedural registration of the seized information, which can be further evidence in criminal proceedings.

Materials and Methods

In the course of the study of the problem of extracting (copying) information by investigators from the mobile communication device, methodological tools were used. The combination of both general scientific and special methods of scientific cognition was used to achieve the outlined goal of research. The fundamental basis of the methodology in this paper is the dialectical approach, which allows substantiating objectivity in assessing reality. In this context, the method of dialectics is applied in order to expand the terminology by analysing the problems of extracting (copying) and documenting evidence (forensically significant information) at the scene, using modern scientific and technical technologies for obtaining data and areas for solving relevant issues.

During the research, a system of methods of scientific cognition was used. The formal logical method (abstraction, logic, induction, deduction, synthesis) was used to clarify the content of the issues under study. That is, to build a procedure for identifying information from mobile terminals, starting from the moment of receiving information about the commission of a criminal offence and ending with the procedural registration of the seized information at the scene of the incident. Using the hermeneutical method, the concepts of "inspection of objects", "data", and "computer data" used in legislative acts and of legal and practical significance in criminal proceedings were studied. Therefore, these concepts were generalised to reconcile further contradictions and compare the relationship between the concepts of "computer information" and "digital information".

[1]Constitution of Ukraine. (1996, June). Retrieved from https://zakon.rada.gov.ua/laws/show/254к/96-вр#Text.
[2]Criminal Procedure Code of Ukraine. (2012, April). Retrieved from https://zakon.rada.gov.ua/laws/show/4651-17#Text.

The analytical method was used in the process of research of academic literature, the analysis of which provided an opportunity to compare opinions and ways to solve relevant problematic issues, and as a result, to provide a solution to the extraction of information from mobile terminals. The system and structural method was used for a comprehensive scientific analysis of ways to document digital information at the accident scene. Using the modelling, the sequence of actions of employees of the pre-trial investigation body during the investigation of criminal offences was developed. The generalisation was used to formulate conclusions.

In preparing the paper, the author has considered foreign and Ukrainian literature on the problematic issues of such scholars as A. Leonov (2020), H. Tara & A. Mishra (2021), J. Williams *et al.* (2021). The study used the provisions of legislative acts – the CPC – as a material basis[1], which provides for the procedure for actions of pre-trial and judicial investigation bodies in the investigation of a criminal offence within the framework of criminal proceedings and the laws of Ukraine "On Electronic Communications"[2], "On Electronic Trust Services"[3].

Results

Investigative (search) actions at the accident scene are carried out in order to identify, evaluate, and examine evidentiary information that may be relevant for criminal proceedings (Nassif, 2019; Riadi *et al.,* 2023). The investigator applies the existing arsenal of scientific and technical developments, since they are responsible for the course of the pre-trial investigation (Wang *et al.,* 2018; Karthikeyan *et al.,* 2023). In case of detection and seizure of mobile communication equipment at the place of commission of a criminal offence, the investigator initiates the use of a hardware and software complex that is used within the framework of:

- conducting such an investigative (search) action as inspection of the area, premises, things, documents and computer data (Article 237 "Inspection" of the Criminal Procedure Code (CPC) of Ukraine[4]) – for inspection of a mobile phone and/or SIM card;

- criminal proceedings during such an investigative (search) action as a search of a person's home or other possession, a search of a person (Article 236 "Execution of a Decision on a Permit to Search a Person's Home or Other Possession" of the CPC of Ukraine[5]) – for access to computer systems or parts thereof, mobile phones and/or SIM cards.

If a mobile phone was found at the place of commission of a criminal offence or a person suspected of committing a criminal offence was or was detained at the scene and a mobile communication device was found in their possession, the investigator as part of the investigation team initiates such an investigative (search) action as an inspection of the area, premises, things, documents, and computer data in accordance with Article 237 of the CPC of Ukraine "Inspection"[6] in order to identify and record information about the circumstances of the commission of a criminal offence. At the same time, they carry out not only its external inspection as an object, but also internal – the content of information contained in this device, as an inspection of computer data, since information about illegal activities of a person can be stored in a mobile phone (Perumal *et al.,* 2017). Given the technical specificity of this device due to its operation, and in order to obtain assistance on issues requiring special knowledge for such actions, the investigator (prosecutor) may invite a specialist to participate in this review (Pyrih, 2019).

Usually, the investigator engages an employee of the operational and technical unit as a specialist in these actions in accordance with Part 3 of Article 237 and Article 71 of the CPC of Ukraine[7]. The specialist in accordance with paragraph 1 of Part 5 of Article 71 of the CPC of Ukraine[8] must "arrive on call to the investigator, inquirer, prosecutor, court and have the necessary technical equipment and devices"[9]. Therefore, the investigator informs their supervisor from the scene of the incident about the need to involve a specialist with a hardware and software complex (Wang *et al.,* 2018; Kayabaş & Tuna, 2023). The investigator records the participation of a specialist in the protocol of examination of the subject.

For an in-depth understanding of the relevant investigative (search) action related to the technical feature of the operation of a mobile communication device found at the scene, the concept of "inspection of objects and computer data" should be considered, which may be relevant in criminal proceedings. In general, the inspection of things provides for actions related to the external inspection of the object

[1]Criminal Procedure Code of Ukraine. (2012, April). Retrieved from https://zakon.rada.gov.ua/laws/show/4651-17#Text.
[2]Law of Ukraine No. 1089-IX "On Electronic Communications". (2020, December). Retrieved from https://zakon.rada.gov.ua/laws/show/1089-20#Text.
[3]Law of Ukraine No. 2155-VIII "On Electronic Trust Services". (2017, October). Retrieved from https://zakon.rada.gov.ua/laws/show/2155-19/ed20220101#top.
[4]Criminal Procedure Code of Ukraine. (2012, April). Retrieved from https://zakon.rada.gov.ua/laws/show/4651-17#Text.
[5]Ibidem, 2012.
[6]Ibidem, 2012.
[7]Ibidem, 2012.
[8]Ibidem, 2012.
[9]Ibidem, 2012.

(substances, etc.) with an indication of the features of the signs of this object, which allows distinguishing it from identical ones. As a rule, such actions at the scene of an accident as part of the investigation team are carried out by a forensic inspector[1]. The legislative acts of Ukraine regulating the activities of law enforcement agencies do not use such concepts as "computer information", "digital information", etc., i.e., information that is extracted from electronic (information) communication devices.

However, the CPC of Ukraine provides for the use of the concept of "computer data" (Articles 99, 237)[2]. In this context, the Convention on cybercrime, Article 1, interprets this concept as information that is suitable for processing (performing certain functions) in a computer system[3]. That is, computer data contains both information and a programme for performing certain actions of the computer system. The interpretation of this concept is difficult to compare with electronic communication devices and systems, since they do not belong to the concept of a computer. At the same time, data is information in a form suitable for automated processing by computer technology, technical and software tools (paragraph 20 of Part 1 of Article 2)[4]. An electronic data – any information in electronic form (paragraph 13 of Part 1 of Article 1)[5]. Therefore, data is information presented in electronic form. In the field of forensics, scientists correlate the concepts of "electronic data" and "computer data" with the concepts of "computer information" and "digital information" (Teplytskyi, 2020; Hutsaliuk & Antoniuk, 2021). In general, computer data is information that is processed in devices, systems, etc.

A specialist at the accident scene in the presence of witnesses uses a hardware and software complex such as Cellebrite UFED or its analogue to inspect the computer data of a mobile phone detected and seized by an investigator, that is, information, and creates an "image"/electronic report of available information (Tara & Mishra, 2021). The person performing these procedural actions certifies the recorded information on the digital disk with an electronic signature. In accordance with the legislation of Ukraine in the fields of electronic trust services and electronic identification, in particular, the decision of the Supreme Court of Ukraine of the panel of judges of the Commercial Court of Cassation in case No. 922/51/20 of January 29, 2021, an electronic signature is equated to a handwritten signature[6], in accordance with paragraph 12 of Article 1 of the Law of Ukraine "On Electronic Trust Services"[7].

A specialist writes the created "image"/electronic report to a digital medium, such as a digital disc such as CD-R, DVD-R in the form of a file, and attaches an electronic tag in the form of a checksum using the mathematical (cryptographic) algorithm SHA-1 (or SHA-2, SHA-3, MD5, CRC32) (Kobets, 2023). According to the CPC, the inspection of computer data is carried out by an investigator (prosecutor), reflecting it in the inspection protocol, in accordance with Part 2 of Article 237 of the CPC of Ukraine[8]. The investigator draws up a report in accordance with Article 104 of the CPC of Ukraine[9]. A mobile phone, a tangible medium of information marked by a specialist with a mathematical hashing algorithm SHA-1 (or SHA-2, SHA-3, MD5, CRC32) with information obtained during the inspection of information from mobile communication devices and/or SIM cards (Article 105 of the CPC of Ukraine)[10]. The protocol is signed by all participants who participated in the procedural action in accordance with Part 5 of Article 104 of the CPC of Ukraine[11].

Considering the protocol registration of the evidence base, it is worth noting that Article 84 of the CPC of Ukraine states that the sources of evidence are testimony, material evidence, documents, and expert conclusions. According to paragraph 1 of Part 2 of Article 99 of the CPC of Ukraine, documents may include materials of photography, sound recordings,

[1]Order of the Ministry of Internal Affairs of Ukraine No. 575 "On Instructions on the Organisation of the Interaction of Pretrial Investigation Bodies with Other Bodies and Units of the National Police of Ukraine in the Prevention of Criminal Offences, Their Detection and Investigation". (2017, July). Retrieved from https://zakon.rada.gov.ua/laws/show/z0937-17#Text.
[2]Criminal Procedure Code of Ukraine. (2012, April). Retrieved from https://zakon.rada.gov.ua/laws/show/4651-17#Text.
[3]Law of Ukraine No. 2824-IV "On Convention on Cybercrime". (2005, September). Retrieved from https://zakon.rada.gov.ua/laws/show/994_575#Text.
[4]Law of Ukraine No. 1089-IX "On Electronic Communications". (2020, December). Retrieved from https://zakon.rada.gov.ua/laws/show/1089-20#Text.
[5]Law of Ukraine No. 2155-VIII "On Electronic Trust Services". (2017, October). Retrieved from https://zakon.rada.gov.ua/laws/show/2155-19/ed20220101#top.
[6]Resolution of the Commercial Court of Cassation of the Supreme Court of Ukraine case No. 922/51/20. (2021, January). Retrieved from https://verdictum.ligazakon.net/document/94517830.
[7]Law of Ukraine No. 2155-VIII "On Electronic Trust Services". (2017, October). Retrieved from https://zakon.rada.gov.ua/laws/show/2155-19/ed20220101#top.
[8]Criminal Procedure Code of Ukraine. (2012, April). Retrieved from https://zakon.rada.gov.ua/laws/show/4651-17#Text.
[9]Ibidem, 2012.
[10]Ibidem, 2012.
[11]Ibidem, 2012.

video recordings, and other information carriers (including computer data)[1]. In practice, sometimes there are legal situations when the defender challenges the actions of the investigator regarding the inadmissibility of evidence, that is, the illegality of the inspection of a mobile phone without the approval of the investigating judge, considering that during investigative (search) actions illegal (without the decision of the investigating judge) access to information from electronic Information systems was carried out, which is issued as a protocol for the inspection of the object – phone (Leonov, 2020). However, this situation is explained by the decision of the Supreme Court of Ukraine of the panel of judges of the Criminal Court of Cassation in case No. 727/6578/17 of April 15, 2020. According to its decision, a mobile phone does not belong to the concept of "electronic information systems or parts thereof", so it is legitimate to carry out an internal inspection (its informational content) of this phone by investigators without a court decision[2].

Commenting on the decision of the Supreme Court, it is worth considering the concept of a mobile phone, namely, as a means of mobile communication. In accordance with the legislation of Ukraine in the field of electronic communications[3], a cellular phone as a mobile terminal is the final element of an electronic communication network, in particular, mobile communication. Therefore, a mobile phone does not apply to electronic information systems. If a person detained on suspicion of committing a criminal offence voluntarily provided investigators with access to information (computer data) of their mobile phone, then in this case, the use of a hardware and software complex is not mandatory, since one of the main functions of this complex is to overcome the system of logical protection of mobile terminals. However, in this situation, it should be noted in the report on the inspection of the object that they were given this opportunity voluntarily.

Within the framework of criminal proceedings, when conducting such an investigative (search) action as a search of a person's home or other possession, a search of a person (Article 236 of the CPC of Ukraine "Execution of a Decision on Permission to Search a Person's Home or Other Possession"[4]) to access computer systems or parts thereof, mobile phones (means of mobile communication) and/or SIM cards, also involve a specialist to inspect the mobile terminal (mobile phone) and SIM card directly at the place of the search with its subsequent inspection. To carry out the relevant procedural action, the investigator involves a specialist in accordance with Part 1 of Article 236 and Article 71 of the Criminal Procedure Code of Ukraine[5]. In such a case, the investigator issues an appropriate decision in accordance with Part 3 of Article 110 of the CPC of Ukraine[6]. The CPC provides that during a search, an investigator has the right to overcome logical protection systems, record computer data in accordance with Part 6 of Article 236 of the CPC of Ukraine[7]. In case of detection of a mobile phone and/or SIM card during a search of the premises, the procedure for using a hardware and software complex such as Cellebrite UFED or its analogue (Tara & Mishra, 2021), extracting information from the mobile terminal and further documenting it is similar to the procedural action for inspection. If necessary, the investigator sends a digital carrier with the created "image"/electronic report of the seized mobile phone to a specialist to analyse the information extracted from the created "image".

Thus, the information provided can expand the procedural activities of employees of the pre-trial investigation body regarding the legally correct solution of practical issues, if a mobile phone is found at the place of committing a criminal offence, the information of which may have evidentiary value in criminal proceedings. The described procedure provides for proper protection of the rights of the person under study and compliance with legal requirements in the context of conducting a search, attracting a specialist and preserving the integrity and objectivity of evidence in criminal proceedings.

Discussion

In their publications, the researchers carried out a comparative study of the means of extracting (copying) forensic information (computer data) from mobile terminals, in the field of electronic communication and information systems, which may be of practical importance. H. Bowling *et al.* (2023) conducted a detailed forensic analysis of the Microsoft Teams programme on Windows 10, iOS, and Android operating systems for investigators (detectives) to recover forensic data from the Teams programme. The software used was checkra1n 0.12.2, as well as

[1]Criminal Procedure Code of Ukraine. (2012, April). Retrieved from https://zakon.rada.gov.ua/laws/show/4651-17#Text.
[2]Resolution of the Second Judicial Chamber of the Criminal Court of Cassation, Supreme Court case No. 727/6578/17. (2020, April). Retrieved from https://zakononline.com.ua/court-decisions/show/88749345
[3]Law of Ukraine No. 1089-IX "On Electronic Communications". (2020, December). Retrieved from https://zakon.rada.gov.ua/laws/show/1089-20#Text.
[4]Criminal Procedure Code of Ukraine. (2012, April). Retrieved from https://zakon.rada.gov.ua/laws/show/4651-17#Text.
[5]Ibidem, 2012.
[6]Ibidem, 2012.
[7]Ibidem, 2012.

TWRP, a tool that allows installing firmware from unidentified developers. To extract information from mobile phones with the iOS and Android operating systems, the Cellebrite UFED 4pc hardware and software package version 7.42.0.82 and the magnet AXIOM Examine analytics tool were used. During this analysis, it turned out that when the memory capacity of a mobile phone is larger than the capabilities of a hardware and software complex, simultaneous physical extraction of information is almost impossible. Therefore, the researchers suggest using other methods for extracting and analysing data from mobile communications. However, their proposed method is difficult to use in practice.

By analysing and comparing the most common mobile forensic tools used to extract information from electronic information devices and systems, such as FTK Imager, Encase, Paladin Suite, Cellebrite, Oxygen forensic tool, and Tableau hardware, the researchers concluded that the FTK Imager image processing programme is simpler and faster to use than EnCase. It was found that the Cellebrite UFED hardware and software suite is better than the Oxygen forensic tool in terms of ease of maintenance, although it is almost identical in terms of technical capabilities (Tara & Mishra, 2021). H. Kayabaş & G. Tuna (2023) emphasised the importance and necessity of using Cellebrite hardware and software complexes with UFED 4pc software by investigators or/or specialists during pre-trial investigations. The researchers' proposal is related to the fact that the Cellebrite UFED hardware and software package uses software to extract (copy) important data from a mobile phone, which can later help law enforcement officers establish the facts of a person's involvement in the commission of a criminal offence. For example: phone books, photos, videos, text messages, call logs, ESN and IMEI data, and then collects the data in a report for research and evidence collection. The issue of the effectiveness of using tools by specialists to extract digital information from mobile communication tools was also considered by S. Saleem *et al*. (2016). Their research was based on the use of a mathematical method for evaluating the Cellebrite UFED and MSAB XRY hardware and software complexes. The results of the comparison showed that XRY in most cases met the performance and compliance requirements better than UFED.

P. Wang *et al.* (2018) investigating the effectiveness of using forensic methods for extracting digital information from mobile devices, proposed to use different hardware and software complexes simultaneously. Their opinion is based on the fact that each complex has its own advantages and disadvantages. Combining two complexes with different capabilities can provide maximum results, that is, remove information from devices as much as possible. This conclusion was made as a result of empirical data demonstrating the advantages of integrating the strengths of two different hardware and software complexes, such as Cellebrite UFED 4pc and Oxygen Forensics. Therefore, they tend to take an integrated approach to the capabilities of mobile forensic tools through their combined use.

Studying the practical application of hardware and software complexes for extracting information from devices, the researchers propose to expand the possibilities of using Cellebrite UFED and MSAB XRY hardware and software complexes for obtaining data from fitness bracelets (Kobets, 2023). This is due to the fact that fitness bracelets can store such data as a person's location (GPS), speed, and pulse at a certain time, i.e., their psychological state. If a suspect who was caught at the scene of a criminal offence, or was at a distance from the scene of the accident, a smart watch or fitness bracelet can be found using a hardware and software complex, which may later have evidentiary value in criminal proceedings (Williams *et al.,* 2021). Getting information from mobile phones such as iPhones with the iOS operating system has certain difficulties, especially when it comes to social media applications. To solve this problem, M.S. Al-Faaruuq & D.F. Priambodo (2022) suggest using tools such as Cellebrite UFED 4pc, Oxygen Forensic Detective, FTK Imager, and Autopsy. The result of using such tools has high indicators.

When using software products of social networks, information fingerprints remain in mobile phones, which in certain situations may be of interest to law enforcement officers, according to Y. Keim *et al.* (2022). To obtain the necessary data, the researchers carried out a forensic analysis. At the same time, Magnet AXIOM Process and Cellebrite UFED 4pc tools were used to obtain the necessary information from the mobile phone for data collection, as well as Magnet AXIOM Examine and DB Browser for SQLite for analysis and reading. Investigating the problem of extracting mobile forensic evidence, S. Perumal *et al.* (2017), G. Dorai *et al.* (2018) conducted comparative studies of open-source software to extract deleted data, and extract other important information from a mobile phone with the Android operating system. Considering the issue of facilitating the work of individuals who collect, store and use forensic (digital) evidence, the researchers propose to create such a forensic tool as the Forensic Evidence Acquisition and Analysis System (FEAAS). This system consolidates the evidence into a readable report that identifies user events (e.g., logging in or out of a device) and what triggered the event (or the use of an IOS mobile phone application).

In the process of studying social networks that are used to spread false information, extremist ideologies, etc., there is a problem of extracting and recording such illegal distribution. The result of this

study showed that some apps store unencrypted user information on devices, such as usernames, phone numbers, email addresses, posts and comments, and private chat messages. In addition, the authors discovered some security vulnerabilities that allow users to upload data that was supposed to be private (for example, sent private images) without authentication or authorisation by other users. To solve this problem, H. Johnson *et al.* (2022) suggest using the Alternative Social Networking Applications Analysis Tool (ASNAAT), which automatically responds to criminally relevant data from alternative social media technologies when presented with a forensic image of a mobile device.

Studying the issues of extracting and analysing data from cell phones, I. Idris *et al.* (2016) suggest obtaining the necessary information for investigation from SIM and USIM cards using appropriate software tools. The above analysis of the use of forensic methods and tools for the extraction and analysis of forensic significant information from mobile communication tools provides investigators and specialists with the opportunity to navigate and make a choice, that is, which tools are best used to obtain information from modern devices and systems.

Conclusions

The study has developed a method for obtaining (extracting) digital (electronic) information from mobile phones using forensic software tools. This process is very important for law enforcement agencies, as it allows obtaining evidence from mobile phones during the investigation of criminal proceedings. The methodology includes the use of technical capabilities of special equipment and software for receiving and processing information from mobile phones. The law also sets out the procedure for processing this information at the scene of a criminal offence for further use as evidence in criminal proceedings.

Procedural actions are given during which the investigator can initiate the use of a hardware and software complex such as Cellebrite UFED or its analogues to extract information from a mobile phone and/or SIM cards found at the incident scene during such investigative (search) actions as inspection and search. A procedural sequence of actions of investigators during the pre-trial investigation of criminal offences related to obtaining the necessary information (computer data) from a mobile phone has been developed, which provides for the creation of an "image"/electronic report of available information, which is recorded on a material digital medium in the form of a file, fixed with a mathematical electronic label in the form of a checksum.

Considering legal discussions about the inadmissibility of evidence when receiving information from mobile terminals seized from detained persons suspected of committing a criminal offence, investigators substantiated the legality of using hardware and software complexes such as Cellebrite UFED or its analogues to extract information from mobile phones. The reasoning is based on a comment on the decision of the Supreme Court of Ukraine of the panel of judges of the Criminal Court of Cassation in case No. 727/6578/17 of April 15, 2020. For an in-depth understanding of such an investigative (search) action as the inspection of objects and computer data, in accordance with Article 236 of the CPC of Ukraine, and considering the technical features of the operation of a mobile phone found at the scene, the concept of "inspection of objects", "computer data", "data", which may be relevant in criminal proceedings, is considered.

The scientific originality of the study lies in the fact that it offers a sequence of actions of the investigator in case of detection of a mobile phone at the scene and a procedural procedure for extracting (copying) information (computer data) from this device, using the technical capabilities of the hardware and software complex. The provided scientific and methodological recommendations in the process of presenting the main material can form the methodological basis for the effective detection and investigation of criminal offences of this nature. An important factor is the cooperation of practitioners and the scientific community on new software complexes, the development of innovative methodologies, the conduct of individual forensic studies, and the launch of the latest technologies.

Acknowledgements

None.

Conflict of Interest

None.

References

[1] Al-Faaruuq, M.S., & Priambodo, D.F. (2022). IOS digital evidence comparison of instant messaging apps. In *International conference of science and information technology in smart administration (ICSINTESA)* (pp. 83-88). New York: Institute for Electrical and Electronics Engineers. doi: 10.1109/ICSINTESA56431.2022.10041620.

[2] Bowling, H., Seigfried-Spellar, K., Karabiyik, U., & Rogers, M. (2023). We are meeting on Microsoft Teams: Forensic analysis in Windows, Android, and iOS operating systems. *Journal of Forensic Sciences*, 68(2), 434-460. doi: 10.1111/1556-4029.15208.

[3] Dorai, G., Houshmand, S., & Baggili, I. (2018). I know what you did last summer: Your smart home internet of things and your iPhone forensically ratting you out. In *ARES 2018: Proceedings of the 13th international conference on availability, reliability and security* (pp. 1-10). New York: Association for Computing Machinery. doi: 10.1145/3230833.3232814.

[4] Fukami, A., Stoykova, R., & Geradts, Z. (2021). A new model for forensic data extraction from encrypted mobile devices. *Forensic Science International: Digital Investigation,* 38, article number 301169. doi: 10.1016/j.fsidi.2021.301169.

[5] Hutsaliuk, M.V., & Antoniuk, P.Ye. (2021). The essence of digital information a source of evidence in criminal proceedings. *Forensic Herald*, 33(1), 37-49. doi: 10.37025/1992-4437/2020-33-1-37.

[6] Idris, I., Alhassan, J.K., Waziri, V.O., & Majigi, M.U. (2016). SIM cards forensic capability and evaluation of extraction tools. In *International conference on information and communication technology and its applications (ICTA 2016)* (pp. 75-81). Minna: Federal University of Technology.

[7] Johnson, H., Volk, K., Serafin, R., Grajeda, C., & Baggili, I. (2022). Alt-tech social forensics: Forensic analysis of alternative social networking applications. *Forensic Science International: Digital Investigation*, 42, article number 301406. doi: 10.1016/j.fsidi.2022.301406.

[8] Karthikeyan, P., Pande, H.M., & Sarveshwaran, V. (Eds.). (2023). *Artificial intelligence and blockchain in digital forensics*. New York: River Publishers. doi: 10.1201/9781003374671.

[9] Kayabaş, H., & Tuna, G. (2023). Cyber wars and cyber threats against mobile devices: Analysis of mobile devices. In *Handbook of research on war policies, strategies, and cyber wars* (pp. 85-107). doi: 10.4018/978-1-6684-6741-1.ch005.

[10] Keim, Y., Hutchinson, S., Shrivastava, A., & Karabiyik, U. (2022). Forensic analysis of TikTok alternatives on android and iOS devices: Byte, dubsmash, and triller. *Electronics*, 11(18), article number 2972. doi: 10.3390/electronics11182972.

[11] Kobets, M.V. (2023). "Cellebrite UFED" hardware and software complex as a means of obtaining information from mobile terminals. In *Current issues and prospects for the use of investigative tools in solving crimes under martial law: Material interdepartmental science and practice conferences* (pp. 70-73). Kyiv: National Academy of Internal Affairs.

[12] Leonov, A. (2020). *Intrusion into privacy*. Retrieved from https://zib.com.ua/ua/142223.html.

[13] Manjre, B.M., Goyal, K.K., & Shivani. (2023). A novel and custom blockchain approach for the integrity assurance of the digital evidences extracted during the extraction and decoding of mobile artifacts from the mobile forensic tools. *Advances in Material Science and Manufacturing Engineering*, 2753(1), article number 030006. doi: 10.1063/5.0127910.

[14] Nassif, L.N. (2019). Conspiracy communication reconstitution from distributed instant messages timeline. In *Institute for Electrical and Electronics Engineers (IEEE) wireless communications and networking conference workshop* (pp. 1-6). New York: Institute for Electrical and Electronics Engineers. doi: 10.1109/WCNCW.2019.8902574.

[15] Perumal, S., Navarathnam, S., De Vosse, C., Samsuddin, S.B., & Samy, G.N. (2017). Comparative studies on mobile forensic evidence extraction open source software for android phone. *Advanced Science Letters*, 23(5), 4483-4486. doi: 10.1166/asl.2017.8922.

[16] Pyrih, I.V. (2019). Involvement of specialists in investigative activities in the investigation of criminal offenses. In *Realities and prospects for the development of the rule-of-law state in Ukraine and worldwide* (pp. 93-122). Lviv: Liha-Pres. doi: 10.36059/978-966-397-207-7/93-122.

[17] Riadi, I., Yudhana, A., & Inngam Fanani, G.P. (2023). Mobile forensic tools for digital crime investigation: Comparison and evaluation. *International Journal of Safety and Security Engineering,* 13(1), 11-19. doi: 10.18280/ijsse.130102.

[18] Saleem, S., Popov, O., & Baggili, I. (2016). A method and a case study for the selection of the best available tool for mobile device forensics using decision analysis. *Digital Investigation,* 16, S55-S64. doi: 10.1016/j.diin.2016.01.008.

[19] Satpathy, S., & Mohanty, S. (Eds.). (2020). *Big Data Analytics and computing for digital forensic investigations*. Boca Raton: Chemical Rubber Company Press. doi: 10.1201/9781003024743.

[20] Sengupta, A., Singh, A., & Vinjit, B.M. (2023). A platform independent and forensically sound method to extract WhatsApp data from mobile phones. *International Journal of Electronic Security and Digital Forensics*, 15(3), 259-280. doi: 10.1504/IJESDF.2023.130657.

[21] Tara, H., & Mishra, A. (2021). A comparative study of digital forensic tools for data extraction from electronic devices. *Journal of Punjab Academy of Forensic Medicine and Toxicology,* 21(1), 97-104. doi: 10.5958/0974-083X.2021.00016.9.

[22] Teplytskyi, B.B. (2020). Application of criminal tools during a search during investigation of crimes in the field of use of computers, systems and computer networks and telecommunications networks. *Legal Science,* 5(107), 151-157. doi: 10.32844/2222-5374-2020-107-5-2.19.
[23] Wang, P., Rosenberg, M., & D'Cruze, H. (2018). Integration of mobile forensic tool capabilities. In S. Latifi (Ed.), *Information technology – New generations. Advances in intelligent systems and computing* (pp. 81-87). Cham: Springer. doi: 10.1007/978-3-319-77028-4_13.
[24] Williams, J., MacDermott, A., Stamp, K., & Iqbal, F. (2021). Forensic analysis of Fitbit versa: Android vs iOS. In *2021 Institute for Electrical and Electronics Engineers (IEEE) symposium on security and privacy workshops* (pp. 318-326). San Francisco: Institute for Electrical and Electronics Engineers. doi: 10.1109/SPW53761.2021.00052.

Вилучення інформації зі стільникового радіотелефону (засобу мобільного зв'язку) під час слідчих (розшукових) дій

Микола Кобець
Кандидат юридичних наук, доцент
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
https://orcid.org/0000-0002-2233-0946

■ **Анотація.** Актуальність статті обґрунтована необхідністю розроблення порядку процесуального оформлення інформації (відомостей), вилученої зі стільникового радіотелефону за допомогою апаратно-програмних комплексів, зміст якої доводить причетність особи до вчинення кримінального правопорушення, оскільки на практиці такий механізм документування не відпрацьовано. Мета статті полягала у висвітленні теоретико-прикладних підходів до правового забезпечення дій слідчих з вилучення відомостей зі стільникових радіотелефонів, виявлених на місці події. Відповідно до поставленої мети та специфіки предмета дослідження застосовано комплекс таких методів: формально-логічний, системно-структурний, герменевтичний, моделювання, узагальнення. Розглянуто дії слідчого під час досудового розслідування кримінальних правопорушень, коли на місці події виявлено стільниковий радіотелефон (засіб мобільного зв'язку), що зумовлює необхідність використання спеціальних знань. Профіль і кваліфікація фахівця, якого потрібно залучити до огляду стільникового радіотелефону (засобу мобільного зв'язку), визначають залежно від мети й завдань слідчої (розшукової) дії, встановлених первинних даних про характер кримінального правопорушення. Запропоновано процесуальний порядок отримання відомостей (комп'ютерних даних) зі стільникового радіотелефону (засобу мобільного зв'язку), що передбачає створення «образу»/електронного звіту наявної інформації, який записують на цифровий носій у вигляді файлу, закріплюють електронною міткою як контрольну суму. Практична цінність публікації полягає в процесуальному вирішенні питання вилучення відомостей (інформації) зі стільникових радіотелефонів, що важливо під час досудового розслідування та документування цифрової інформації (комп'ютерних даних)

■ **Ключові слова:** комп'ютерні дані; протокол; мобільний термінал; апаратно-програмний комплекс; досудове розслідування; спеціаліст; спеціальні знання

UDC 349
DOI: 10.56215/naia-herald/2.2023.61

Aspects of legal regulation of national-level medical research

Mariia Karpushyna*
Postgraduate Student
Academy of Advocacy of Ukraine
01032, 27 Taras Shevchenko Blvd., Kyiv, Ukraine
https://orcid.org/0000-0003-4125-4202

Roman Veresha
Doctor of Law
Academy of Advocacy of Ukraine
01032, 27 Taras Shevchenko Blvd., Kyiv, Ukraine
https://orcid.org/0000-0003-4996-0283

■ **Abstract.** The relevance of the study is conditioned by the rapid development of the social and state system. Considering the development of political, economic, and social levels of life, and the issues of considering public opinion and raising the level of legal awareness of the public in the medical industry arise. The purpose of the study was to apply a correlation comparison of legal and medical sciences, and their combination with the subsequent use of applied legal dialectics in the sub-branch of medical law knowledge. To achieve this goal, the following methods were used: dialectical, logical and general scientific (observation and generalisation). The analytical processing of statistical information material from the medical sector is reflected in law-making and rule-making processes and acts, and is considered in the case law of the national level based on the decision of the European Court of Human Rights. Legal monitoring of officials authorised at the state level, practical interest of public organisations and certain segments of the population stimulated the innovative development of media-communicative content, which aims to convey the necessary materials of the legal component in the medical sphere in an adapted form. Such an example is the final products of thematic media content. The Academy of the National Health Service of Ukraine has developed useful resources supplemented by an electronic periodical. The specific feature and significance of the state course for the development of the medical industry in the legal sense are reflected in the specially developed material and the procedure for its submission, given the insufficient level of legal education in the potential audience. An innovation of development is the presentation of specific and significant legal and medical materials in a form adapted for perception and understanding and in a simplified form. The results of mastering the information resource of the medical legal field are of practical importance if it is used by consumers of medical services, medical personnel and the state – the body that monitors the relationship between doctors and patients

■ **Keywords:** medical worker; volunteer patient; medical industry; informatisation; society; information

■ **Suggested Citation:**
Karpushyna, M., & Veresha, R. (2023). Aspects of legal regulation of national-level medical research. *Scientific Journal of the National Academy of Internal Affairs,* 28(2), 61-70. doi: 10.56215/naia-herald/2.2023.61.

■ *Corresponding author

■ Received: 27.02.2023; Revised: 24.05.2023; Accepted: 26.06.2023

Introduction

In the context of European integration, foreign experience is borrowed at the state level. Due to rapid changes in legislation, civil society and medical professionals are experiencing a problematic issue of lack of awareness of the legal and regulatory framework in the medical industry. Ignorance of the legal regulation of the medical industry can become a real practical problem due to the lack of understanding by medical personnel of certain aspects of the onset of liability, including criminal and administrative liability for certain types of actions. The lack of understanding on the part of society in the person of potential patients of a certain procedure for applying to medical institutions, the lack of understanding of the importance of medical documentation, and the lack of data on the procedure for defending personal interests serve as obstacles in reflecting the positive dynamics of the development of the medical industry, its digitalisation and bringing it to the level of international standards (Demchenko, 2009).

The relevance of the study lies in the investigation of the issue of liability of medical workers. The issue has been considered by such Ukrainian researchers as R.V. Veresha (2014) and S.R. Dutchak (2018). In their papers, researchers covered problematic issues of increased criteria and requirements for the subjective composition and subjective side of the crime. There were proposals for codification and creation of a set of laws and regulations in the medical industry. National-level researchers investigate the positive aspects of the impact of legal regulation of the medical industry.

The European judicial system considers socially significant disputes at the practical level, the subject of which is the protection of a doctor's business reputation based on the results of spreading negative information (Bogomazova, 2020). However, an essential fundamental and weighty criterion for building a legal and impartial democratic society, with its further development and improvement, is the presence of stable stages, with a sign of a certain hierarchy in terms of applying certain legal norms. Foreign researchers have expressed their thoughts on the historical relationship between medical and legal sciences. Even the primitive aspects of medicine in the Far East required legal regulation (Yang & Zhou, 2023). The achieved levels of development of Far Eastern medical science are protected by law due to their social significance (Fu *et al.,* 2023). The European Health Data Space (EHDS), an ecosystem consisting of rules, common standards and practices, infrastructure and management structure, is subject to medical legal regulation. In modern Europe, the Data Governance Act (DGA) is legally defined in terms of protecting the personal data of clinical trial participants (Lalova-Spinks *et al.,* 2023).

Modern medical science uses the biomedical level with the borrowing of bio-jurisprudence, studies the impact on the development of bioethics principles, and uses the results obtained in judicial practice (Tarasevich, 2023). These results are of great importance in practice, but the methods of communicating with medical personnel and potential patients do not reach a significant level. Access to information materials in sufficient volume is provided to a limited number of subjects of disposal of such information. The legal procedure for using the medical legal mechanism is not fully established.

The need to develop medical legal norms is conditioned by the desire for a social democratic system, which is characterised by rule of law in terms of its application by society on a voluntary and equal basis, without the constant application of imperative coercion by the state. Legal awareness is a significant lever in the social "mechanism" for the implementation of personal interests. The right to health care and proper treatment is guaranteed to individuals at the state level, is an inalienable right, and is consolidated in the Basic Law of Ukraine[1].

The search for an information approach to medical professionals and their patients remains relevant. Communicating reliable content of legal significance in terms of preventing the possibility of undesirable types of disciplinary, administrative, and criminal liability due to non-compliance with the established procedure for performing the duties assigned to a medical worker is of great importance.

The purpose of the study is to compare legal and medical sciences, to combine them with further application, systematisation, and use of the information component of scientific theoretical and practical provisions, including legislative provisions of legal norms. In accordance with the above, an assumption (hypothesis) is made regarding the onset of significant benefits for civil society and the state from the dispositive settlement of potential conflict situations in the medical field by independently mastering the necessary medical information and legal resources by the parties to the doctor-patient relationship. The use of a mandatory punitive method and the search for those responsible by the state in the event of adverse cases loses its effectiveness. Thus, the state can use the released time and human resources for the development of socially significant criteria and industries.

Materials and Methods

In the course of the study, the data analysis method was used to process the materials of the paper. Correlation analysis was applied to the combination of two separate doctrines – medicine and law – into

[1]Constitution of Ukraine. (1996, June). Retrieved from https://zakon.rada.gov.ua/laws/show/254%D0%BA/96-%D0%B2%D1%80#Text.

a specific sub-branch of medical law. In order to identify the correlation between the application of a combination of legal norms and medical science, the national regulatory framework has been developed, in particular: the Law of Ukraine No. 1629-IV of November 04, 2018 "On the National Programme for Adaptation of the Legislation of Ukraine to the Legislation of the European Union[1]; Order of the Ministry of Health of Ukraine No. 95 of February 16, 2009 "On Approval of Documents on Quality Assurance of Medicines", namely: guidelines of ST-N of the Ministry of Health 42-4.0:2008 "Medicines. Good Manufacturing Practice", guidelines of ST-N of the Ministry of Health 42-7.0:2008 "Medicines. Good Clinical Practice", guidelines of ST-N of the Ministry of Health 42-5.0:2008 "Medicines. Good Distribution Practice"[2]; Council Directive 75/318EEC of 20 May 1975. "On the Approximation of the Laws of Member States Relating to Analytical, Pharmaco-Toxicological and Clinical Standards and Protocols in Respect of the Testing of Proprietary Medicinal Products"[3]; EU directive 2004/9/EU of 9 June 1988 "On Inspection and Verification of Good Laboratory Practice"[4].

An important information basis of the research was the results of the analysed studies, namely by: Z.I.Y. Gharaibeh (2022), V. Kononenko & M. Demura (2021). Moreover, a fundamental information base consisted of the results of researchers in the practical field of activity. P.H. Davydov & K.D. Yurchenko (2020), N. Antoniuk (2020).

To achieve this goal, the study used: dialectical and logical methods of scientific cognition. Using dialectical and logical methods in combination with the theoretical method of scientific cognition, the main structured information blocks were considered. Correlation analysis was applied in terms of combining legal and medical doctrines in the subject of research. Using the observation method, practical statistical observations of the current clinical study were carried out. The method of dialectical logic of cognition was applied at the theoretical level of the material processing. The methodological basis for the application of the dialectical method with subsequent assimilation and processing of information resources by identifying significant aspects of the legal field with subsequent application of legal norms through comparison – an empirical general scientific method of research, in the medical field were legal acts, information resources of foreign origin, and research papers.

Results and Discussion

The study considered the state of development of medical law in Ukraine. Positive changes have been established in the context of reducing the manipulation of personal rights on both sides. Due to the lack of legal information in the medical sector, medical personnel and civil society have an insufficient level of legal awareness of the medical industry.

Foreign experience in the context of applying national-level medical law

As a natural consequence of European integration, foreign medical legal experience is being adopted. Based on the study of the case No. 22750/02 "Benderskyi V. Ukraine"[5] and the trials of war crimes before the Nuernberg Military Tribunals under Control Council law (1949), it was established that there are clear regulatory rules and procedures for their implementation. The law defines acts that are criminalised and incompatible with medical ethics, and as a result, make it impossible for a person to perform medical duties in the professional field.

Indicators of empirical observations, in particular in the framework of the EX9924-4473 Soul study by the Danish pharmaceutical company Novo Nordisk as of November 14, 2022, may indicate a relatively high level of consciousness of medical personnel and citizens of foreign countries. As of November 14, 2022, within the framework of the international clinical study of the Danish pharmaceutical company Novo Nordisk, 9 651 participants were registered in the clinical study of semaglutide (a cardiovascular drug that in some cases contributes to the reduction and control of body weight of a patient with type 2 diabetes mellitus) and other components within the framework of the Soul clinical study, which is represented in Ukraine by the LLC "Novo-Nordisk Ukraine" on a global scale. This number is 101.0% of the planned number of 9 555 participants. According to official data: the number of withdrawn participants is "0" persons (0%); the number of persons participating in the study is 7 344 persons (participants), the number of cases that failed is 1 499 participants, the named statistics are given on the date of November 14, 2022 (Articles of association, n.d.; EX9924-4473:

[1]Law of Ukraine No. 1629-IV "On the National Programme for the Adaptation of the Legislation of Ukraine to the Legislation of the European Union". (2018, November). Retrieved from https://zakon.rada.gov.ua/laws/show/1629-15#Text.
[2]Order of the Ministry of Health Protection of Ukraine No. 95 "On the Approval of Documents on Quality Assurance of Medicinal Products". (2009, February). Retrieved from https://zakon.rada.gov.ua/rada/show/v0095282-09#Text.
[3]Council Directive No. 75/318/EEC "On the Approximation of the Laws of Member States Relating to Analytical, Pharmaco-Toxicological and Clinical Standards and Protocols in Respect of the Testing of Proprietary Medicinal Products". (1975, May). Retrieved from https://op.europa.eu/en/publication-detail/-/publication/845d1ac1-0b12-4d7f-8cbc-821ae51a6b2d/language-en.
[4]Directive No. 2004/9/EC "On Inspection and Verification of Good Laboratory Practice (GLP) (Codified version)". (2004, September). Retrieved from https://www.eumonitor.eu/9353000/1/j4nvk6yhcbpeywk_j9vvik7m1c3gyxp/vj3ecgdi4vz1.
[5]Case No. 22750/02 "Benderskyi v. Ukraine". (2007, November). Retrieved from https://zakon.rada.gov.ua/laws/show/974_313#Text.

Semaglutide…, 2020; Soul: Semaglutide cardiovascular…, 2022).

The EX9924-4473 Soul study is conducted on a global scale: in South and North America, South Africa, Europe, and Asia. It is clear that a sponsor, a medical (pharmaceutical) company, interacts with medical laboratories to submit and receive test results within a clinical trial. This approach is quite logical and understandable, because foreign pharmaceutical laboratories are equipped at a high innovative level in accordance with international standards adopted by the international community (EX9924-4473: Semaglutide…, 2020).

At the national level, this clinical trial is conducted in compliance with the norms and conditions of the clinical protocol for the treatment of diabetes mellitus (type II) (Unified clinical protocol for primary and secondary (specialised) medical care. Type 2 diabetes mellitus)[1]. The above indicates that it is advisable for medical personnel to master the legal norms of the medical field of clinical trials in order to prevent the possibility of adverse consequences in terms of disciplinary, administrative, and criminal offences or crimes.

Positivist aspects and media communication channels of legal regulation of the medical industry

The absence of mandatory training of medical personnel participating in clinical (medical) research at the national level in legal norms and standards in clinical activity reduces the level of development of clinical trials in contrast to the mentioned one. Medical personnel involved in clinical trials receive comprehensive training on the medical aspects of the study with elements of legal regulation. Such classes are conducted by the sponsor of the medical study.The community's attitude to medical innovation plays an important role in formulating a conscious public attitude to the legal development of the medical industry. The correct communication to the civil society of the importance of medical research and the need for its existence for the innovative development of the state, without distortion of information material, serves as a significant contribution to the development of the medical legal field at the national level. At the national level of medical legal science, there is a lack of informative material regarding innovative legal regulation of the medical industry.

Considering the reforms at the national level, medicine as a branch of science is keeping up with modern innovations. Section 2 of the Law of Ukraine "On the Basic Principles of Information Society Development in Ukraine for 2007-2015"[2] states that the main task of developing the information society is to help everyone, based on the widespread use of modern information and communication technologies, to be able to create information and knowledge, use and exchange them, produce goods and provide services, fully realising their potential, improving the quality of their life and contributing to the sustainable development of the country based on the goals and principles proclaimed by the United Nations in the Declaration of Principles[3]. In accordance with the plan of action developed at the World Summit on the Information Society (2003), Resolutions of the Verkhovna Rada of Ukraine dated December 1, 2005 "On Recommendations of Parliamentary Hearings on Development of the Information Society in Ukraine"[4], building an information society is a global challenge for the new millennium.

The search for opportunities to convey informative legal material to healthcare professionals and their potential patients remains relevant. Ultimately, criminal law and criminal procedure are special branches of legislation and are not necessarily studied by society. To create digitalisation and informatisation of civil society, adhering to the main directions of the state policy aimed at accelerated development and implementation of information and telecommunications technologies, to increase the availability of medical care, and patient safety means proving efficiency and optimising the work of all components of the industry. To create the conditions for a modern information and communication infrastructure for the introduction of insurance medicine and to implement the digitalisation of the healthcare industry, the government developed and implemented an electronic system for the registration and exchange of medical information between healthcare institutions, facilities, and organisations.

For the first time in Ukraine, in 2009-2013, a system of medical data exchange between medical institutions using information and telemedicine technologies was implemented and put into operation. The following innovations were introduced: electronic patient cards and standard statistical forms on electronic information carriers were put into operation;

[1]Law of Ukraine No. 1118 "On the Approval and Implementation of Medical and Technological Documents on the Standardisation of Medical Care for Type 2 Diabetes". (2012, December). Retrieved from https://zakon.rada.gov.ua/rada/show/v1118282-12#Text.
[2]Law of Ukraine No. 537-V "On the Basic Principles of Information Society Development in Ukraine for 2007-2015". (2007, January). Retrieved from https://zakon.rada.gov.ua/laws/show/537-16#Text.
[3]Declaration "On Principles of International Law Concerning Friendly Relations and Cooperation Among States in Accordance with the Charter of the United Nations". (1971). Retrieved from https://digitallibrary.un.org/record/202170.
[4]Law of Ukraine No. 3175-IV "On Recommendations of Parliamentary Hearings on Development of the Information Society in Ukraine". (2005, December). Retrieved from https://zakon.rada.gov.ua/laws/show/3175-15#Text.

medical and preventive healthcare institutions were provided with internet access; regional training seminars were introduced for system administrators, responsible managers of medical and preventive institutions on the organisation and operation of local electronic systems for registration and exchange of medical information. The system of medical data exchange between medical institutions using information and telemedicine technologies significantly simplified the work with documents and facilitated the processing of medical data, created for the rational collection, storage, and accumulation of data in the medical industry[1].

Innovations in the medical segment of the economic market

In order to fulfil the basic principles of the development of the information society in Ukraine for 2007-2015, for the purpose of the functioning of the electronic system of registration and exchange of medical information between institutions and organisations of the healthcare system, the electronic patient register was launched at the state level on June 6, 2012[2]. In accordance with paragraphs 5 and 7 of the resolution "On Approval of the Regulation on the Electronic Register of Patients", the electronic patient register is an information resource of the Ministry of Health, which is maintained using Information technologies, electronic document management and electronic digital signature. On May 25, 2018, the resolution on the electronic patient register became invalid due to the adoption of a resolution of the Cabinet of Ministers of Ukraine dated April 25, 2018 No. 411 "On Some Issues of the Electronic Health Care System", which approved the procedure for the functioning of the electronic healthcare system[3].

Within the meaning of the law of Ukraine on criminal liability, a person of a patient – a volunteer, patient, or other person who has applied for medical care under the Criminal Code of Ukraine can qualify as a victim, an injured person, and therefore, fall under the existing elements of criminal offences (Veresha, 2006). The patient (clinical trial volunteer) as a direct victim of the crime was identified as the primary subject for criminal legal assessment, and a special subject of criminal violation of patient rights was identified – a medical professional (member of the research team), as well as persons equated to them and admitted to medical practice in accordance with the current legislation of Ukraine. The form of culpability in case of violation of the patient's rights is mixed: the attitude of a medical professional to the violation of the patient's rights itself can be either intentional or negligent.

The Criminal Code of Ukraine includes articles that contain a disposition, hypothesis, and sanction for actions for which criminal liability in the medical industry may occur in the performance and/or improper performance of obligations imposed on employees by a medical industry. Certain articles of the Criminal Code of Ukraine directly establish the responsibility of a medical worker in relation to actions clearly defined by the Criminal Code of Ukraine. A certain action is characterised by the features of several articles of the Criminal Code of Ukraine. Sometimes, it is not immediately possible to trace the components of a crime. An example of this is the criminal law qualification in relation to Articles 140, 142, and 321-2 of the Criminal Code of Ukraine[4]. It is important to remember that the subject matter of proof of all four constituent elements of a criminal act may change during the process of proof. Each circumstance and their totality can be important, which can affect the qualification of the action. Due to the busy work schedule, constant changes and reforms, and the factor of performing complex and responsible work of an intellectual level with the use of practical skills, medical industry workers may have difficulties in finding, mastering, and assimilating legal information. The main theoretical provisions serve as a fundamental basis for hypothesising the expediency of applying correlation analysis to a combination of two sciences – medical and legal. The application of the general scientific empirical method was reflected in the practical processing of the medical database of the ongoing clinical study with the participation of international-level volunteer patients with the involvement of persons who meet the selection criteria at the national level in an official manner.

In the process of providing recommendations for improving the criminal law policy in the field of countering violations of patient rights, in order to develop the medical sphere at the international level, a hypothesis was put forward about the effectiveness of applying to persons who have violated the established procedure for conducting medical activities with the onset of serious consequences, deprivation of the right to hold positions or engage in professional

[1]Law of Ukraine No. 675 "On Approval of the Branch Programme "Electronic System of Registration and Exchange of Medical Information Between Institutions, Institutions and Organisations of the Health Care System". (2008, November). Retrieved from https://zakon.rada.gov.ua/rada/show/v0675282-08#Text.
[2]Resolution of the Cabinet of Ministers of Ukraine No. 546 "On Approval of the Regulation on the Electronic Register of Patients". (2012, June). Retrieved from https://zakon.rada.gov.ua/laws/show/546-2012-п#Text.
[3]Resolution of the Cabinet of Ministers of Ukraine No. 411 "On Some Issues of the Electronic Health Care System". (2018, April). Retrieved from https://zakon.rada.gov.ua/laws/show/411-2018-п#Text.
[4]Criminal Code of Ukraine. (2001, April). Retrieved from https://zakon.rada.gov.ua/laws/show/2341-14#Text.

activities. It is proposed to provide at the level of the provisions of Part 1 of Article 55 of the Criminal Code of Ukraine the possibility of applying a penalty in the form of deprivation of the right to engage in professional activity by a special subject of a crime in the sense of holding a certain position and engaging in professional activity.

Prevention of criminal and administrative offences in the medical industry

Aspects of medical law in the context of levelling the criminal liability of medical workers by applying methods of preventive legal nature of the medical industry have become the subject of discourse of scientists. A. Mykolayenko & O. Lemeshko (2016) considered legal issues of violation of the right to free medical care. V. Galay (2007) analysed the protection of patients' rights in the human rights mechanism in Ukraine. Yu. Shopina (2020) examined the criminal liability of a medical or pharmaceutical worker for committing a crime related to the performance of professional duties. S.V. Vasyliev (2021) investigated the possibility of introducing a legal framework for the implementation of European legislation regulating the creation of innovative medicines at the national level. L.O. Hala (2022) conducted a historical analysis of the development and development of good clinical practice. D. Bogomaz & O. Nikiforova (2022) considered the legal aspects of emergency medical care and pre-medical care.

Among the foreign authors who devoted attention and time to the issue of research in this area is A.M.J. ten Have Henk (2009). The issue medical errors were considered by D.L. Weatherspoon & T.H. Wyatt (2012) and Y. Brazier (2017). Human rights through the prism of the components of comprehensive health care were studied by A. Stefano & M. Thérèse (2023). The legal determinants of the proper development of the health care system have not been fully explored, as noted by M. Thomson (2022).

The authors of this study agree with A. Mykolayenko & O. Lemeshko (2016) in terms of the expediency of covering theoretical legal problems of the medical industry. Of rational importance is the establishment by L.O. Hala (2022) of the legal connection between the historical aspects of the development of medical science and the legal conditions for the existence of medical science as such. The scientific developments of Yu. Shopina (2020) appear to be somewhat incomplete due to insufficient disclosure of special provisions of the criminal liability act. In terms of the focus of S.V. Vasyliev's (2021) research, it is necessary to apply transitional provisions and stages of implementation of the latest procedures. V. Galay (2007) mainly focuses on the interpretation of regulatory aspects of patient protection. In an indirect sense, from this perspective, the person of a medical professional seems to be always responsible in unfavourable conditions and conflict situations. After comparing this approach, the author of this study suggests that rational truth should be sought with impartiality.

The author shares the opinion of D. Bogomaz & O. Nikiforova (2022) on the positivist approaches of absolute assumption of freedom of speech in the medical field. It seems logical to refer to the judicial practice of the European Court of Human Rights in terms of considering the issue of spreading negative information about a doctor and making value judgments about their practical activities. The question raised by A.M.J. ten Have Henk (2009) in publicist scientific references to normative achievements of biomedical ethics is relevant. Borrowing ethical rules is appropriate because of their uniformity and recognition in the civilised world.

Applying the theoretical aspects of the study by D.L. Weatherspoon & T.H. Wyatt (2012), it seems important to make a proposal for the development of a simulation of theoretical and practical level with the plots of criminal cases and situational tasks for health care professionals. Such theoretical and legal resources and their practical solution in educational languages in a potential sense form the starting point for modelling the legal consciousness of medical professionals. The fundamental thoughts of Y. Brazier (2017) in dogmatic approaches and the search for specifics through the interpretation of concepts embedded in criminal law are relevant.

The author agrees with A. Stefano & M. Thérèse (2023) and M. Thomson (2022) in terms of the significance of social determinants of health, given that it is necessary to pay attention to the lack of research of the institute of legal determinants at the national level. Borrowing the complex components of fundamental historical and ethical aspects in combination with the fundamental legal values of the modern global level, in contrast to the activities of the mentioned researchers, it is necessary to make proposals regarding the consideration of existing legal mechanisms and medical elements from the standpoint of deepening into the criminal legal component. Even considering the existence of a single desire to improve the quality of medical services and the delivery of information data in relation to medicine from the point of view of legal sciences, as of 2023, there is no unified legal position and established practice regarding the combination of legal sciences and the medical industry. Thus, it can be assumed that such ambiguity in the interpretation of medical and legal positions is conditioned by a significant amount of informative data that is the basis for the development of both sciences – law and medicine.

In the study by O. Baranov (2023), in the field of problematic aspects of public law, the latest ways of

using artificial intelligence are considered. Issues related to the introduction of artificial intelligence relate to the medical industry through the introduction of computerised databases. Improper use of databases by a healthcare professional may result in administrative, disciplinary, criminal, and other types of liability. The informative material provided in the aforementioned paper, if adapted by specifying it in terms of medical activities with the provision of specific criminal law provisions, can be used to inform healthcare professionals.

The authors, providing informative materials, mostly prefer to present the material in a professional medical language with a publicist emphasis on the specifics of the medical industry in combination with legal norms without considering the criminal legal discourse. This approach reflects the legal context of the material in an indirect meaning in relation to the norms of criminal law, without summing up the results by providing recommendations in terms of summing up significant components to a rational conclusion of their application in a procedural criminal format. Legal professionals, such as: I.Y. Senyuta (2018) and O.V. Ustymchuk (2018), outlining aspects of medical legal norms, largely focus on normative information of general importance without providing specifics to a specific area of medical activity by improving the relationship between legal and medical sciences. The above means that informative material presented in scientific journals to a certain extent divides the target audience into separate segments. Some of the scientific and publicistic material will be useful for medical personnel, while the other part will be understandable to legal specialists.

Communicating legal norms that are relevant for medical science, given the specifics of the medical industry, is a fundamental lever for the development of medical activities and updating the sub-branch of medical law. Non-application and/or non-compliance with the norms and regulations of law in medicine lead to the connection of the administrative resource of the medical industry management body. As a last resort, the norms and provisions of the Criminal Code of Ukraine and the Criminal Procedure Code of Ukraine are used with subsequent negative consequences.

Therefore, the popularisation and dissemination of an adapted format of information material of a specific legal category in the medical field will serve as a preventive component for averting offences and misdemeanours in medical activities. By participating in clinical trials, the researcher will be able to get acquainted not only with the clinical criteria for rational conduct of medical research, but also receive practical material adapted for a person without legal education of the legal component of the thematic area. Detailed information will save medical professionals from having to independently identify, systematise, and predict the legal consequences of their professional activities.

Conclusions

The use of digitalisation of the medical industry occurs with its reform in order to increase the legal awareness of medical workers and the public community. In order to develop civil society, strengthen public security, and improve public services, it is advisable to combine the capabilities of the media communication space with the beginning of the functioning of public media. Special attention should be paid to the development of a procedure for conducting preventive measures in terms of informing about the possibility of criminal liability in the medical industry.

A scientific fact is the phenomenon of the actual application of a combination of legal and medical aspects not only at the scientific level, but also in the daily activities of lawyers and medical workers. The combination of purely legal branches of knowledge with other types of sciences occurs through the reform of the social structure at the state level and through the interest of the masses, for example, in the case of commercialisation of certain types of work, and the provision of services in those areas that may require additional development due to social significance and economic interest.

Trends in the application of material norms in practice directly depend on the chosen dynamic method of their application. Due to the importance of the medical segment and the existence of a rational search for the proper application of the implementation procedure and legal mechanism in order to meet the needs of stakeholders and population groups of the modern state, there is a tendency for further development of medical law. In order to develop and promote practical application, the combination of legal and medical norms is of fundamental importance for the element of theoretical awareness of this segment. In other words, it is essential to inform civil society through media communication channels. As a result, there is a statement about the authenticity of the existence of medical legal norms, the lack of their proper consideration and attachment of true importance to them due to the low level of awareness of the group of interested and potentially interested persons concerned with the procedure for exercising the right to provide and receive medical care. The presence of media pluralism at the national level has been established. Due to the multiplicity of communicative possibilities of social significance, the delivery of the necessary information seems possible and appropriate. The theoretical significance of recognising the existence of medical legal norms and consolidating them in specific forms of medical law is a fundamental block of knowledge that can serve for the benefit of the rule of

law state and civil society, and provide development to the medical segment. The scientific value of the paper is reflected in the originality of the fundamental criterion for presenting information materials of the legal nature of the medical segment with their adaptation for civil society and doctors, healthcare workers, and medical personnel. The fundamental task is to formulate an information theoretical resource and its further application by practical skills.

The originality of this study consists in combining separate aspects of the two sciences into a legal sub-branch, with the possibility of applying its provisions at the practical level. A significant need to popularise a socially significant segment of medical legal norms is the lack of awareness of participants with the legal procedure for exercising their rights and obligations at a sufficient level.

The study results are reflected in the establishment of the regularity of the legal relationship between two doctrines – legal and medical, and in tracing the causal relationship between the application of legal science in the medical segment and the procedure for conducting medical research. The findings of the study are an important criterion for the legal regulation of the medical industry, as they specify and clarify the materials that are important in the performance of professional duties by a medical professional. The results can be used in the development of a plan to increase the legal consciousness of the subject of application of the developed applied provisions.

Acknowledgements

The authors would like to express their gratitude to Novo Nordisk Ukraine for the idea and information that made the research possible. Gratitude is extended to Maryna Chukmasova, an endocrinologist at the Endocrine Therapy Department of the I.I. Mechnikov Regional Clinical Hospital of the Dnipropetrovsk Regional Council, for the advice provided in the field of clinical research and practical assistance in finding statistical information.

Conflict of Interest

None.

References

[1] Antoniuk, N. (2020). Differentiation of criminal liability of medical professionals. *Medical Advances*, 73(12 p. II), 2728-2732.

[2] Articles of association. (n.d.). Retrieved from https://novonordiskfonden.dk/en/who-we-are/articles-of-association/.

[3] Baranov, A. (2023). Problems of public law. *Journal of the National Academy of Legal Sciences of Ukraine*, 2, 108-141. doi: 10.31359/1993-0909-2023-30-2-108.

[4] Bogomaz, D., & Nikiforova, O. (2022). Emergency medical care and pre-medical care. In *VII international scientific and practical conference "Modern research in world science"* (pp. 110-113). Lviv: Scientific Publishing Center.

[5] Bogomazova, I.O. (2020). Balancing the doctor's right to respect to business reputation with the public's right to freedom of expression (based on the case law of the European court of human rights). *Medical Law*, 2(26), 24-33. doi: 10.25040/medicallaw2020.02.024.

[6] Brazier, Y. (2017). *What is medical malpractice?* Retrieved from https://www.medicalnewstoday.com/articles/248175.

[7] Davydov, P.H., & Yurchenko, K.D. (2020). Features of criminal liability of medical workers. *South Ukrainian Law Journal*, 1, 28-32. doi: 10.32850/sulj.2020.1.6.

[8] Demchenko, S. (2009). Mass communication as a factor in the formation of civil society in independent Ukraine (global and national). Dnipropetrovsk: Dnipropetrovsk National University Names of Oles Honchara.

[9] Dutchak, S.R. (2018). *Ensuring the protection of patient's rights in Ukraine: Criminal law aspect.* (Dissertation, National Academy of Management, Kyiv, Ukraine).

[10] EX9924-4473: Semaglutide cardiovascular outcomes trial in patients with type 2 diabetes (SOUL). (2020). Retrieved from https://www.centerwatch.com/clinical-trials/listings/240843/ex9924-4473-semaglutide-cardiovascular-outcomes-trial-in-patients-with-type-2-diabetes-soul/.

[11] Fu, C., Zhang, P., Zou, X., & Song, T. (2023). Descriptive analyses of differentially expressed proteins during intrapuparial stage based on the label-free proteomics technique between Chrysomya megacephala and Synthesiomyia nudiseta. *Legal Medicine*, 64, article number 102269. doi: 10.1016/j.legalmed.2023.102269.

[12] Galay, V. (2007). Protection of patients' rights in the human rights mechanism in Ukraine. In *Medical law of Ukraine: Problems of formation and development. Materials of the 1st All-Ukrainian Scientific and Practical Conference* (pp. 67-72). Kyiv: Kyiv Human Rights Alliance.

[13] Gharaibeh, Z.I.Y. (2022). The impacts of applications of criminal law on medical practice. *Medical Archives,* 76(5), 377-382. doi: 10.5455/medarh.2022.76.377-382.

[14] Hala, L.O. (2022). Historical analysis of the development and establishment of good clinical practice. *Pharmaceutical Journal,* 3, 54-63. doi: 10.11603/2312-0967.2022.3.13340.
[15] Henk, A.M.J. ten Have. (2009). UNESCO's activities in ethics. *Science and Engineering Ethics*, 16(1), 7-15. doi: 10.1007/s11948-009-9161-2.
[16] Kononenko, V., & Demura, M. (2021). Problematic issues of bringing disciplinary and criminal liability of medical workers. *Problems of Legality*, 152, 135-151. doi: 10.21564/2414-990x.152.226284.
[17] Lalova-Spinks, T., Meszaros, J., & Huys, I. (2023). The application of data altruism in clinical research through empirical and legal analysis lenses. *Frontiers in Medicine*, 10, article number 1141685. doi: 10.3389/fmed.2023.1141685.
[18] Mykolayenko, A., & Lemeshko, O. (2016). Violation of the right to free medical care. In *Theoretical and legal principles formation of modern medical law in Ukraine. Collection of materials V All-Ukrainian scientific and practical conferences* (pp. 113-114). Poltava: "Firm" Techservice" LLC.
[19] Plan of action. (2003). Retrieved from https://www.itu.int/net/wsis/docs/geneva/official/poa.html.
[20] Senyuta, I.Y. (2018). Arbitration in medical cases in Ukraine. *Medical Law*, 2(22), 41-49. doi: 10.25040/medicallaw2018.02.041.
[21] Shopina, Yu. (2020). Criminal liability of a medical or pharmaceutical worker for committing a crime related to the performance of professional duties.(Dissertation, National Academy of Internal Affairs, Kyiv, Ukraine).
[22] Soul: Semaglutide cardiovascular outcomes trial in patients with type 2 diabetes. (2020). Retrieved from https://www.adventhealthresearchinstitute.com/research/translational-research/clinical-trials/soul-semaglutide-cardiovascular-outcomes-trial.
[23] Stefano, A., & Thérèse, M. (2023). Parsing human rights, promoting health equity: Reflections on Colombia's response to Venezuelan migration. *Medical Law Review,* 31(2), 187-204. doi: 10.1093/medlaw/fwac053.
[24] Tarasevich, T. (2023). Principles of somatic human rights: Formation of a universal model of international and national standards. *Current Issues in Modern Science*, 4(10), 227-239. doi: 10.52058/2786-6300-2023-4(10)-227-239.
[25] Thomson, M. (2022). Legal determinants of health. *Medical Law Review,* 30(4), 610-634. doi: 10.1093/medlaw/fwac025.
[26] Trials of war criminals before the Nuernberg Military Tribunals under Control Council law No. 10 Nuernberg, October 1946-April 1949. (1949). Retrieved from https://www.loc.gov/item/2011525364/.
[27] Ustymchuk, O.V. (2018). Analysis of regulatory and legal framework for regulation of the sphere of provision of medical services in Ukraine. *Public Administration Aspects*, 6(10), 5-13. doi: 10.15421/151859.
[28] Vasyliev, S.V. (2021). Legal principles of public administration for the invention of innovative medicines: European experience. *Law and Innovative Society,* 1(16), 47-53. doi: 10.37772/2309-9275-2021-1(16)-7.
[29] Veresha, R. (2014). Subjects of crime. Kyiv: Alert.
[30] Veresha, R.V. (2006). *Criminal law guilt.* Kyiv: Attica.
[31] Weatherspoon, D.L., & Wyatt, T.H. (2012). Testing computer-based simulation to enhance clinical judgment skills in senior nursing students. *Nursing Clinics of North America*, 47(4), 481-491. doi: 10.1016/j.cnur.2012.07.002.
[32] Yang, G.-J., & Zhou, X.-N. (2023). One Health concept: Viewed by Chinese traditional philosophy from a millennial history. *CABI One Health*, 2(1), 1-3. doi: 10.1079/cabionehealth.2023.0010.

Аспекти правового регулювання медичних досліджень національного рівня

Марія Карпушина
Аспірант
Академія адвокатури України
01032, б-р Тараса Шевченка, 27, м. Київ, Україна
https://orcid.org/0000-0003-4125-4202

Роман Вереша
Доктор юридичних наук
Академія адвокатури України
01032, б-р Тараса Шевченка, 27, м. Київ, Україна
https://orcid.org/0000-0003-4996-0283

■ **Анотація.** Актуальність статті зумовлена стрімким розвитком суспільного й державного ладу. З огляду на розвиток політичного, економічного й суспільного рівнів буття, постає питання врахування суспільної думки та підвищення рівня правової обізнаності громадськості в медичній галузі. Мета дослідження полягала в застосуванні кореляційного зіставлення правових і медичних наук, їх поєднання з подальшим використанням прикладної правової діалектики підгалузі знань медичного права. Для досягнення поставленої мети використано: діалектичний, логічний та загальнонаукові (спостереження та узагальнення) методи. Аналітичне опрацювання статистичного інформативного матеріалу медичної галузі відображається в законотворчих і нормотворчих процесах та актах, ураховується в прецедентній судовій практиці національного рівня з огляду на рішення Європейського суду з прав людини. Правовий моніторинг уповноважених на державному рівні службових осіб, практична зацікавленість громадських організацій та певних верств населення стимулювали інноваційний розвиток медіакомунікативного контенту, що має на меті в адаптованій формі доносити необхідні матеріали правової складової в медичній сфері. Таким прикладом можуть слугувати кінцеві продукти медійного контенту тематичного напряму. Академія Національної служби здоров'я України розробила корисні ресурси, доповнені електронним періодичним виданням. Особливість і значущість державного курсу розвитку медичної галузі в правовому значенні відображаються в спеціально відпрацьованому матеріалі та порядку його подання, з огляду на недостатній рівень правової освіти в потенційної аудиторії. Новацією розвитку постає подання специфічного та значущого за змістом правового й медичного матеріалів в адаптованій для сприйняття та розуміння формі та спрощеному вигляді. Результати опанування інформаційного ресурсу медичної правової галузі мають практичне значення в разі його використання споживачами медичних послуг, медичним персоналом і державою – апаратом, що здійснює контроль взаємозв'язків між лікарями й пацієнтами

■ **Ключові слова:** медичний працівник; пацієнт-волонтер; медична галузь; інформатизація; суспільство; інформація

UDC 342.7
DOI: 10.56215/naia-herald/2.2023.71

Features of exercising the right to education for persons granted temporary protection in European Union member states

Volodymyr Vasechko*
Researcher
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
https://orcid.org/0009-0006-4774-800X

■ **Abstract.** The Council of the European Union, by an implementing decision on March 4, 2022, put into effect Directive No. 2001/55/EU of July 20, 2001, on minimum standards for the provision of temporary protection in the event of a mass influx of displaced persons and measures promoting the balancing of efforts between member states to receive such persons and solving the consequences thereof. The problems of exercising the right to education as a natural human right by persons granted temporary protection in the European Union are urgent. In view of the above, the purpose of the study was to address the unique aspects of exercising of the right to education by persons who were granted temporary protection in the member states of the European Union. The methodological basis of the research is the dialectical method and methods of analysis, synthesis, comparison, modelling, system and functional approach, statistical, and formal legal. The paper defines that access to education for persons granted temporary protection in the European Union is provided for by Council Directive No. 2001/55/EU, according to which the member states of the European Union provide full access to the education system for all minors who were granted temporary protection status, on an equal basis with their citizens. It is noted that member states of the European Union may provide for restrictions on such access by the state education system. The specifics of the exercise of the right to education by these persons are also consolidated in the national legislation of EU member states. It was found that these states can provide for restrictions on access to the state education system. They also carry out procedures for recognising foreign diplomas, certificates, and other documents confirming the official qualifications of persons granted temporary protection. The practical value of the results obtained lies in the fact that they can be used to improve the legislation regulating the grounds and procedure for obtaining temporary protection for persons forcibly displaced from Ukraine in EU member states, and the specifics of exercising the rights and obligations by persons with temporary protection

■ **Keywords:** refugees; European asylum system; human rights; migration; training; martial law; legal status

■ **Suggested Citation:**
Vasechko, V. (2023). Features of exercising the right to education for persons granted temporary protection in European Union member states. *Scientific Journal of the National Academy of Internal Affairs,* 28(2), 71-80. doi: 10.56215/naia-herald/2.2023.71.

■ *Corresponding author

■ Received: 24.03.2023; Revised: 09.06.2023; Accepted: 26.06.2023

Introduction

For the first time, the international community faced the problems of forced migration in the early 20th century, which were the consequences of the First World War, the collapse of the Ottoman Empire, and the revolutionary events on the territory of the Russian Empire. This problem became even more acute after the Second World War. As a result, the international legal institution of forced migration was created to address this issue, including the concept, principles, mechanism of international legal regulation, rights and obligations, grounds for recognition, etc. In the 21st century, forced migration has acquired a new scale, which is associated with various international armed conflicts and military operations in Syria, Afghanistan, Iraq, Pakistan, and other states. The full-scale invasion of Russian troops on the territory of Ukraine has led to the emergence of a large number of forcibly displaced persons in European countries (The number of..., 2023). In order to adapt them in a short time in the states of the European Union (EU) a temporary protection mechanism was introduced under which forcibly displaced persons from Ukraine received a number of rights, in particular, the right to reside, work, education, medical care, social protection, etc.

Certain aspects of the legal status of refugees and persons in need of protection were highlighted by V. Bosyi (2021), O. Melnichuk (2016) and Ya.P. Turetska (2019). These studies considered the problems of forced migration and the exercising of rights by refugees and persons who have received international protection, which are relevant until 2022. L.V. Zabolotna & D.V. Barchuk (2022) analysed the legal regulation of the introduction of martial law in Ukraine and the resulting problems it in the field of education. A. Osler (2020), analysing changes in migration patterns in Europe, revealed their impact on education and the growing number of migrants and refugees seeking asylum in Europe as a result of regional conflicts and global inequality. The researcher examined the European standards and policy framework for education and migration, and the specifics of their implementation in policy and practice at the national and subnational levels. He identified contradictions between the establishment of European standards in the field of human rights and democracy and the responsibilities of national governments in the field of migration and education, including education for citizenship.

M. Dei *et al.* (2019) examined universal and regional instruments for the protection of refugees' right to education and analysed obstacles to exercising refugees' right to education, in particular, such as language barriers, lack of documents, lack of qualified teachers, lack of classes, child labour, young marriages, parents' unwillingness to educate their children, etc., and suggested ways to improve its practical implementation. Z. Erdoğan (2023) analysed the problems of refugees' access to higher education during the Syrian crisis, which have not lost their relevance in relation to the Ukrainian crisis. The authors of this study agree with the researcher's opinion on the need to support countries and donors to ensure equal opportunities for refugees to access higher education.

The purpose of the study was to analyse the specifics of exercising the right to education by persons granted temporary protection in EU member states. In the process of preparing the paper, the following tasks were identified:

1. Analysis of the state of affairs in the field of education for persons in the status of temporary protection in EU member states: problems and achievements.

2. Legal aspect: comparison of the legal framework and legal protection of educational rights for persons granted temporary protection in different countries of the European Union.

3. Socio-cultural challenges and adaptation: the impact of cultural and social factors on educational opportunities for persons with temporary protection status.

Materials and Methods

The methodological basis of this study was a system of scientific methods for understanding legal processes, including the dialectical method, which allowed analysing the mechanism for obtaining temporary protection for displaced persons. The hermeneutic method was used to interpret legal acts and decisions of the European Court of Human Rights (ECHR) and statements of representatives of EU bodies and public authorities of individual EU member states regarding the full-scale invasion and support of the people of Ukraine, and the specifics of providing temporary protection to displaced persons from Ukraine. With the help of an axiological approach, legislative initiatives of EU institutions and individual EU member states to improve legislation regulating the criteria and procedure for granting temporary protection to persons displaced from Ukraine to EU countries were analysed.

The principle of scientific objectivity allowed considering the whole set of factors affecting the implementation of Council Directive No. 2001/55/EU[1],

[1]Council Directive No. 2001/55/EU "On Minimum Standards for Giving Temporary Protection in the Event of a Mass Influx of Displaced Persons and on Measures Promoting a Balance of Efforts Between the Member States in Receiving Such Persons and Bearing the Consequences Thereof". (2001, July). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32001L0055.

and is impossible without moving from the abstract to the concrete, from the simple to the complex. The use of induction and deduction helped identify and systematise the rights and obligations of persons granted temporary protection in the EU, in the field of education, and analyse the forms of their implementation. Using the statistical method, the number of displaced persons from Ukraine as a whole to European countries, as well as to each EU country separately, was analysed. The structural and functional method was implemented by determining the legal status of persons granted temporary protection in the EU. This method was used to analyse the system of rights and obligations of displaced persons from Ukraine in the field of education, and the characteristics of their implementation in certain EU countries. This approach was used to establish differences in the organisation of the procedure for obtaining temporary protection and exercising the right to education of persons with temporary protection in individual EU member states.

The comparative legal method revealed common and distinctive features of the legislation regulating the procedure for obtaining temporary protection in the EU. The comparative legal method was used to analyse laws and regulations on cooperation between Ukraine and EU member states regarding the legal status of persons from Ukraine who were granted temporary protection in the EU, for example, in the field of education. The use of this method was necessary when comparing the features of exercising the right to education of persons forcibly displaced from Ukraine to the EU. The use of the formal legal method contributed to the systematisation and periodisation of scientific views on the legal nature of the concept of "temporary protection" and the study of the legal regulation of the right to education by persons granted temporary protection in the EU. A special place was given to the axiological approach, which provided valuable ideas about the criteria and conditions for temporary protection of displaced persons from Ukraine to the EU and the specifics of exercising the right to education.

Thus, the use of general, special and separate scientific methods allowed characterising the specifics of exercising the right to education by persons granted temporary protection in EU member states.

Results

EU Council Implementing Decision 2022/382 of 04 March 2022[1] enacted Council Directive[2] No. 2001/55/EU for the first time, which was the response of EU member states to the military aggression against Ukraine and the solution of the problems of the influx of forcibly displaced persons from Ukraine and the implementation of the temporary protection procedure. Temporary protection is a special form of international protection used as a result of the massive influx of displaced persons and should provide immediate and collective protection, that is, without the need to consider individual applications, for displaced persons who are unable to return to their country of origin. The Council Directive No. 2001/55/EU[3] is of a recommendatory nature for EU member states, except Denmark. In turn, in compliance with the provisions of this Directive, Iceland, Norway, and Switzerland have introduced similar provisions in their national legislation. As a result, each EU member state has established the duration and conditions for granting temporary protection in its national legislation pursuant to Council Directive No. 2001/55/EU[4].

The right to education as one of the natural human rights is consolidated in international regulations, in particular, the Universal Declaration of Human Rights, adopted by the UN General Assembly resolution of December 10, 1948[5]; The International Covenant on Economic, Social and Cultural Rights, adopted by the UN General Assembly on December 16, 1966[6]; The Convention on the Rights of the Child, adopted by the UN General Assembly Resolution of November 20, 1989[7]; The World Declaration on Higher Education for the XXI Century, adopted by UNESCO in 1988[8]; Recommendation on science and

[1]Council Implementing Decision (EU) No. 2022/382 "On Establishing the Existence of a Mass Influx of Displaced Persons from Ukraine Within the Meaning of Article 5 of Directive 2001/55/EU, and Having the Effect of Introducing Temporary Protection". (2022, March). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022D0382&from=EN.
[2]Council Directive No. 2001/55/EU "On Minimum Standards for Giving Temporary Protection in the Event of a Mass Influx of Displaced Persons and on Measures Promoting a Balance of Efforts Between the Member States in Receiving Such Persons and Bearing the Consequences Thereof". (2001, July). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32001L0055.
[3]Ibidem, 2001.
[4]Ibidem, 2001.
[5]Resolution of UN General Assembly No. 217 A(III) "On Universal Declaration of Human Rights". (1948, December). Retrieved from https://zakon.rada.gov.ua/laws/show/995_015#Text.
[6]Resolution of UN General Assembly No. 2200 A(XXI) "On International Covenant on Economic, Social and Cultural Rights". (1966, December). Retrieved from https://www.ohchr.org/sites/default/files/cescr.pdf.
[7]Resolution of UN General Assembly No. 44/25 "On Convention on the Rights of the Child". (1989, November). Retrieved from https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child.
[8]World Declaration No. ED/2005/ME/H/1 "On Higher Education for the XXI Century: Vision and Action". (1998, October). Retrieved from https://www.ohchr.org/en/resources/educators/human-rights-education-training/16-world-declaration-higher-education-twenty-first-century-vision-and-action-1998.

scientific researchers (1974); Convention Against Discrimination in Education, 1960[1]; etc.

The 1948 Universal Declaration of Human Rights provides for the right of everyone to education[2]. Article 13 of the International Covenant on Economic, Social and Cultural Rights of 1966 stipulates that "Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace"[3]. Protocol No. 1 to the European Convention on Human Rights[4] singles out the right to education as the only social right for which legal protection is created and confirms its extremely important place and role in the system of modern democratic values. Considering the above factor, it was determined that no one can be denied the right to education. Since human rights belong to every individual without exception, it should be remembered that the enjoyment of human rights precludes any discrimination. Thus, according to the provisions of the Convention against Discrimination in Education, adopted on 14 December 1960 by the United Nations General Conference on Education, Science and Culture at its 11th session, the concept of "discrimination" encompasses "includes any distinction, exclusion, limitation or preference which, being based on race, colour, sex, language, religion, political or other opinion, national or social origin, economic condition or birth, has the purpose or effect of nullifying or impairing equality of treatment in education"[5].

In pursuance of the provisions of the above-mentioned international instruments on the right to education, the EU member states have adopted similar articles in Council Directive No. 2001/55/EU[6]. Access to education is regulated by Article 14 of this Directive, according to which the member states of the European Union provide full access to the education system for all minors who have acquired temporary protection status, on equal grounds with their citizens. EU member states may provide for restrictions on such access by the state education system. In addition, Part 2 of Article 14 of this Directive provides that EU member states can grant adults who enjoy temporary protection access to the general education system[7]. These states also carry out procedures for recognising foreign diplomats, certificates, and other documents confirming the official qualifications of persons granted temporary protection.

Despite the interstate regulation of these issues, each state that is a member of the European Union independently determines the specifics of obtaining education by persons who were granted temporary protection. For example, in the Republic of Poland (RP), which has hosted the largest number of forcibly displaced persons from Ukraine, children who were granted temporary protection receive the right to free education at the primary school and gymnasium levels. Children between the ages of 7 and the end of high school, but not older than 18, must receive an education. For example, as of February 14, 2023, according to the system of educational information (SIO), there were 43.8 thousand children from Ukraine in preschool education institutions of the RP who arrived after February 24, 2022, 116.8 thousand in secondary education institutions, 27.2 thousand in lyceums, technical and vocational schools, as well as 1 792 teachers from Ukraine, of which 1 120 arrived in the RP after February 24, 2022 (Summary of the..., 2023).

In the RP, there are two learning models to choose from, in particular: a) a model for including students from Ukraine in the Polish education system; b) a model for continuing distance learning in Ukraine if possible. Therefore, parents or guardians decide which form of education to choose (Yablonska-Bonsa, 2022). If the first model of education was chosen for children who received temporary protection in the RP, the position of "teacher's assistant" was created in the Polish school system to facilitate the adaptation of schoolchildren from Ukraine. It is usually occupied by teachers from Ukraine who were granted temporary protection and know the Polish language at a sufficient level for communication and can help students who have little or no knowledge of Polish. In the second case, children who were granted temporary protection in the RP and do not want to study

[1]Convention of United Nations General Conference on Education, Science and Culture No. 995_174 "On Recommendation Against Discrimination in Education". (1960, December). Retrieved from https://zakon.rada.gov.ua/laws/show/995_174#Text.
[2]Resolution of UN General Assembly No. 217 A(III) "On Universal Declaration of Human Rights". (1948, December). Retrieved from https://zakon.rada.gov.ua/laws/show/995_015#Text.
[3]Resolution of UN General Assembly No. 2200 A(XXI) "On International Covenant on Economic, Social and Cultural Rights". (1966, December). Retrieved from https://www.ohchr.org/sites/default/files/cescr.pdf.
[4]Law of Ukraine No. 3436-IV "On the Ratification of the Convention on the Protection of Human Rights and Fundamental Freedoms of 1950, the First Protocol and Protocols No. 2, 4, 7 and 11 to the Convention". (2006, March). Retrieved from https://zakon.rada.gov.ua/laws/show/475/97-%D0%B2%D1%80#Text.
[5]Convention of United Nations General Conference on Education, Science and Culture No. 995_174 "On Recommendation Against Discrimination in Education". (1960, December). Retrieved from https://zakon.rada.gov.ua/laws/show/995_174#Text.
[6]Council Directive No. 2001/55/EU "On Minimum Standards for Giving Temporary Protection in the Event of a Mass Influx of Displaced Persons and on Measures Promoting a Balance of Efforts Between the Member States in Receiving Such Persons and Bearing the Consequences Thereof". (2001, July). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32001L0055.
[7]Ibidem, 2001.

in Polish educational institutions have the right to continue their studies in Ukrainian educational institutions using distance learning technologies. One of the parents or persons who replace them are required to submit a declaration to the municipal property authority of the RP stating that the child continues to study in Ukraine[1].

Both models have their own advantages and disadvantages. In particular, some Ukrainian children joined the educational institutions of the RP in the middle of the school year; significant differences in the curricula between the RP and Ukraine; the language barrier faced by Ukrainian children; it is psychologically difficult for children to accept the new reality, survive the horrors of war and perceive the new environment. Another problem in the field of education of persons granted temporary protection in the RP is related to the continuation of education by students of grades 8, 9, and 11 of Ukrainian educational institutions. On March 21, 2022, the Law of Poland "On the Organisation of Education, Upbringing and Care of Children and Youth Who are Citizens of Ukraine" was adopted[2], which amended the Law of Poland "On Education" of December 14, 2016[3], and the conditions for passing exams in the 8th grade and the final school examination for students from Ukraine have been regulated (Yablonska-Bonsa, 2022). In addition, language courses are held in educational institutions of the RP, as in other EU states, for children and adults with temporary protection. The above-mentioned problems are also typical for persons who were granted temporary protection in other EU member states.

For example, in Belgium, schooling for persons between the ages of 6 and 18 is compulsory and free, regardless of their status, including those who were granted temporary protection. For persons over the age of 18, regional employment centres organise special trainings and language courses, which are held free of charge. Therefore, minor citizens of Ukraine who come to Belgium are required to register with an educational institution within 60 days. If there are no available places in the school, the administration must provide a certificate of registration to the person accompanying the child. Some educational institutions have a special initiative called "DASPA" aimed at accepting, educating, and integrating newly arrived children. This programme provides supervision of the child for one week to 12 months (maximum 18 months) to help them adapt and integrate into the Belgian educational system (Check-list of minimum..., 2021).

The Law of France "On Education Orientation"[4] lacks provisions that regulate education for refugees and persons granted temporary protection. At the same time, the legislation provides for compulsory school education for refugees and persons under temporary protection aged from 6 to 16 years. Primary schools accept applications for education through the municipality, and senior schools accept applications directly at the school that is closest to the child's place of residence. If the child speaks French at a sufficient level for learning, the assessment of their knowledge will be supervised by the Information and Advice Centre. If a child does not have sufficient French language skills, they are supervised by the Academic centres for the education of newly arrived allophone children and children from non-sedentary families (CASNAV) (Enroll your children..., 2022). Special French language courses are organised for such children to promote their integration into the language environment.

The learning process for children between the ages of 16 and 18 is more complex, as they are required to be admitted to schools. They can take French language courses organised by charitable foundations, but the situation depends on the municipality where the child resides. In the Republic of Austria, the right to temporary protection is provided for in Article 62 of the Law "On Granting Asylum" of 2005[5] and the Decree of the Federal Government of Austria "On the Temporary Right to Residence of Immigrants from Ukraine" dated March 11, 2022[6]. According to these regulations, minors who arrived in Austria from Ukraine have the right to free education and all the rights that children of the host state have. In turn, all children living in Austria who turn 6 years old on or before September 1 are required to receive general secondary education. In addition, in Austria, school attendance is mandatory until the age of 16, so displaced minors are allowed to study in educational institutions at their place of residence or in another place defined by law.

[1]Law of Poland No. 59 "On Education". (2016, December). Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=wdu20170000059.
[2]Regulation of the Minister of Education and Science No. 645 "On the Organisation of Education, Upbringing and Care of Children and Youth Who are Citizens of Ukraine. (2022, March). Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20220000645.
[3]Law of Poland No. 59 "On Education". (2016, December). Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=wdu20170000059.
[4]Law of France No. 89-486 "On Education Orientation". (1989, July). Retrieved from https://www.legifrance.gouv.fr/loda/id/JORFTEXT000000509314/.
[5]Law of Austria No. 100/2005 "On Granting Asylum". (2005). Retrieved from https://www.refworld.org/cgi-bin/texis/vtx/rwmain/opendocpdf.pdf?reldoc=y&docid=5c8628c54.
[6]Law of Austria No. 92 "On the Temporary Right to Residence of Immigrants from Ukraine". (2022, March). Retrieved from https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20011842.

In the Federal Republic of Germany, Article 24 of the Law "On the Legal Status of Foreign Citizens"[1] defines the conditions and procedure for obtaining temporary protection for displaced persons from Ukraine in connection with the military aggression of the Russian Federation. General German school education is compulsory and free of charge and provides for the full integration of foreign arrivals. At the initial stage, foreign children who do not speak German can be enrolled in the so-called integration classes, where training is focused on mastering the German language by applicants, which further provides for transfer to regular German-language classes. To apply to the school, a minor must be registered with the coordination office in the area where they reside. In addition, preschool-age children have the right to attend preschool institutions if they are vaccinated against COVID-19 and if there are vacancies.

In summary, in order to promote faster adaptation of Ukrainian children to education in schools of the European Union member states, a practical guide with pictograms was developed. This manual is aimed at overcoming language barriers and the first difficulties in communication (English-Ukrainian pictograms..., 2022). In addition, EU member states are developing various measures to facilitate the adaptation and integration of minors in forced displacement into the European education system. The problems of forced migration have always attracted public attention, and therefore, require their own scientific substantiation and recognition. They became particularly relevant in 2022-2023, when millions of residents of Ukraine were forced to leave the country to escape the hostilities. In these circumstances, EU Council Implementing Decision 2022/382 of 04 March 2022 enacted Council Directive No. 2001/55/EU, which consolidates the rights of persons granted temporary protection in EU countries, including the right to education[2]. The authors of this study share the views of H.M.-E. Khen (2023) on the establishment of a trust fund to compensate states affected by armed conflict and use it to restore the right to education. It is also necessary to develop a joint system of measures with EU member states to return to Ukraine persons who have received education in EU countries after the end of hostilities in order to restore and develop the state. Some aspects of the legal situation of refugees and persons in need of protection are considered in the following studies.

H.M.-E. Khen (2023) draws attention to the problems of protecting the rights of children during armed conflicts, and the specifics of exercising their right to education. Analysing empirical data on violations of the right to education, the researcher offers recommendations for improving the activities of the international community in the field of education and proposes a mechanism for creating a trust fund to compensate states affected by armed conflict, and its use to restore the right to education. The studies by T. Blashchuk & H. Myronova (2022), P. Jurs & I. Neimane (2020) are devoted to the problems of exercising the right to education. Some aspects of access to education by refugees and persons granted protection in EU countries are revealed in studies by foreign researchers that analyse obstacles to education for refugee and migrant children (Yeo & Yoo, 2022; Van Esveld, 2023). The specifics of exercising the right to education as one of the fundamental human rights provided for by international acts are considered by K. Willems & J. Vernimmen (2018), A.N. Esteban (2020).

J. Zajda & S. Ozdowski (2017), analysing the causes of migration, examine the problems of the right to education of school-age children of refugees and asylum seekers from African countries living in Israel and suggest ways to improve it. O. Sosnina *et al.* (2021) examine international aspects of protecting the rights of victims of the armed conflict in eastern Ukraine. M.À. Essomba (2017) reveals certain aspects of the exercising of the right to education for children and youth from refugee families in Europe. The researcher notes that the actual exercising of the right to education for asylum seekers and refugees is the result of a complex combination of factors related to the asylum process: demographic, psychological, economic, legal, and sociological. As of 2023, researchers are just beginning to consider the features and mechanism of implementation of the EU Council Directive No. 2001/55/EU on minimum standards for providing temporary protection in cases of mass influx of displaced persons and on measures to maintain a balance in the efforts of member states in connection with the reception and consequences of such reception of July 20, 2001[3]. A. Pokrason *et al.* (2022) analyse the problems of legal regulation of temporary protection in the European Union countries. Also noteworthy are the studies by M. Hrushko & K. Dymova (2022), Y. Yablonska-Bonsa (2022) and O. Malynovska (2022). EU Council Directive No. 2001/55/EU provides for full access to the education system for all minors who have been granted temporary protection status on an equal basis with EU citizens. The right to

[1]Law of the Federal Republic of Germany No. 24 "On the Legal Status of Foreign Citizens" (2022). Retrieved from https://kiew.diplo.de/ua-de/service/05-VisaEinreise/faq-finanzen---66-68aufenthg/1289754.
[2]Council Directive No. 2001/55/EU "On Minimum Standards for Giving Temporary Protection in the Event of a Mass Influx of Displaced Persons and on Measures Promoting a Balance of Efforts Between the Member States in Receiving Such Persons and Bearing the Consequences Thereof". (2001, July). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32001L0055.
[3]Ibidem, 2001.

education as one of the constitutional human rights and its comparative legal analysis in foreign countries have been studied by O. Melnichuk & M. Melnichuk (2019) and O. Pyzhov (2023).

The above approaches are not universal in nature, but they could significantly help in solving such a complex problem on the scale of the Russian-Ukrainian war. Analysing the conducted research on the features of exercising the right to education by persons granted temporary protection in EU member states, it is important to pay attention to several key elements that are of great importance for understanding and analysing this topic.

1. Context of migration and conflict: In order to analyse the effectiveness of the considered approaches, it is necessary to consider the context of the Russian-Ukrainian war. Armed conflict, internally displaced persons and refugees create a unique situation that may differ from other migration situations.

2. International obligations: Evaluation of the effectiveness of approaches should consider the international obligations to which EU member states are bound, including international law on refugee protection and human rights in general.

3. EU directives: It is important to analyse the implementation of specific EU directives, in particular, Council Directive No. 2001/55/EU, which regulates the temporary protection of persons during mass displacement[1].

4. Legal status and access to education: The study should consider how the legal status of persons who were granted protection affects their educational opportunities in EU member states.

5. Obstacles and challenges: It is important to identify obstacles that people with temporary protection face when trying to access education. This can include language barriers, cultural differences, lack of recognition of documents, etc.

6. Recommendations and improvements: It is important to pay attention to the recommendations proposed in various studies to improve the exercise of the right to education for the target group. These recommendations can be useful for developing policies and programmes.

7. Comparison with practice: It is important to compare the results of the study with the actual practice of implementing education for people with temporary protection in the framework of the Russian-Ukrainian war. This can help determine how well the proposals and recommendations meet real needs.

In general, the study provides a valuable contribution to understanding the problem and possible ways to improve the implementation of the right to education for persons granted temporary protection in EU member states. However, the successful implementation of these approaches may depend on many factors that should be considered when developing and implementing policies and programmes. As of 2023, there are still many problems in the field of education of persons with temporary protection that need to be addressed and regulated. The includes the improvement of the mechanism for recognising educational documents issued in Ukraine in the EU countries. Another problem is the regulation of the mechanism for obtaining education for children with temporary protection simultaneously in Ukraine and EU countries (especially students in grades 9 and 11). The last unresolved issue is improving the implementation of the right to education for preschool and primary school children staying in an EU country with one of their parents, and deepening language integration courses for students.

Summing up the above information, it can be concluded that the study of the problems of forced migration has always aroused considerable public interest and required scientific substantiation and analysis. In a special context for Ukraine, this topic became important in 2022-2023. Although there are already some studies on the exercise of the right to education, most of them relate to other aspects of forced migration. However, as of 2023, many aspects of education for persons with temporary protection still need to be improved, including the recognition of educational documents, improving mechanisms for obtaining education, and the exercise of the rights of preschool and primary school children. To achieve these goals, cooperation and improvement of legislation between Ukraine and the EU member states is necessary.

Conclusions

The study found that for children granted temporary protection in the Republic of Poland, the opportunity to continue their education is becoming important. This helps them adapt to their new environment and learn the knowledge and skills they need for their future. Support for the inclusion of these children in the Polish education system or the possibility of distance learning in Ukraine becomes the basis for their personal growth and integration into society.

The rights of forcibly displaced persons from Ukraine to temporary protection in the European Union countries, in particular, with regard to education, have become particularly important in the context of the events of 2022-2023. This made it possible not

[1]Council Directive No. 2001/55/EU "On Minimum Standards for Giving Temporary Protection in the Event of a Mass Influx of Displaced Persons and on Measures Promoting a Balance of Efforts Between the Member States in Receiving Such Persons and Bearing the Consequences Thereof". (2001, July). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32001L0055.

only to avoid the threat but also to ensure the continuity of the educational process for these children, which contributes to preserving the educational potential for the future development of Ukraine. Notably, the exercising of the right to education in the context of forced displacement has certain challenges and limitations. Disparity in curricula, language barriers, and adaptation problems can pose some challenges for children and their families. Integration and training of forcibly displaced persons is becoming an important task both for Ukraine and for countries that provide them with temporary protection. Education systems must be continuously improved to ensure the quality and accessibility of education, regardless of status or background.

Obtaining temporary protection for forcibly displaced persons from Ukraine in the EU countries and related rights is important, as it provides an opportunity to escape from danger and continue their education, which is important for the post-war reconstruction of Ukraine. Consequently, the right to education is one of the main social categories in the human rights system and cannot be exercised without the participation of the state and without the creation of the necessary conditions by the public authorities. Promising areas for further research can be topical issues of ensuring the right to education and creating the necessary conditions for it; challenges and restrictions associated with the education of forcibly displaced children; the importance of supporting and integrating children with temporary protection into the educational system.

Acknowledgements

None.

Conflict of Interest

None.

References

[1] Blashchuk, T., & Myronova, H.A. (2022). Current trends in balancing of young people's right to education and public interests in the pandemic period. *Youth Voice Journal*, 2, 7-17.

[2] Bosyi, V. (2021). *Administrative and legal status of refugees and persons in need of additional or temporary protection: Theoretical and praxeological aspect* (Dissertation, Research Institute of Public Law, Dnipro, Ukraine).

[3] Check-list of minimum standards of social protection displaced persons from third countries, who cannot return to their country of origin, that are guaranteed by the member countries of the European Union and the council of Europe within the limits of their European integration obligations. (2021). Retrieved from https://rm.coe.int/check-list-1-social-rights-ua/1680a837b0.

[4] Czarnek, P. (2022). *65,000 children from Ukraine are already studying in Polish schools.* Retrieved from https://www.bankier.pl/wiadomosc/Czarnek-Do-polskich-szkol-zapisane-jest-juz-65-tys-dzieci-z-Ukrainy-8300136.html.

[5] Dei, M., Kortukova, T., Khodanovych, V., Ismailov, K., & Frantsuz, A. (2019). The right to education of refugees. *Asia Life Sciences,* 2, 505-515.

[6] English-Ukrainian pictograms for students and teachers. (2022). Retrieved from https://op.europa.eu/en/publication-detail/-/publication/af0e9d8c-ac59-11ec-83e1-01aa75ed71a1/language-en.

[7] Enroll your children in school. (2022). Retrieved from https://accueil-integration-refugies.fr/wp-content/uploads/2022/03/Inscrire-ses-enfants-a%CC%80-lecole.pdf.

[8] Erdoğan, Z. (2023). Assessing the criteria for equality of the right: Refugees' higher education from the perspective of human rights. *Milli Egitim,* 52(237), 577-602. doi: 10.37669/milliegitim.1066619.

[9] Essomba, M.À. (2017). The right to education of children and youngsters from refugee families in Europe. *Intercultural Education*, 28(2), 206-218. doi: 10.1080/14675986.2017.1308659.

[10] Esteban, A.N. (2020). The right to education of refugee and asylum seekers minors since the approach based in human rights: Difficulties, purpose and educational intervention. *Revista Espanola De Educacion Comparada,* 35, 70-91. doi: 10.5944/reec.35.2020.24342.

[11] Hrushko, M., & Dymova, K. (2023). Peculiarities of the functioning of the legal status of temporary protection in the Republic of Poland. Transformation of legal systems in the conditions of armed conflicts. In *Materials of the round table National University "Odesa Law Academy"* (pp. 31-35). Odesa: Odesa Law Academy.

[12] Jurs, P., & Neimane, I. (2020). The impact of the migration crisis and possible solutions in the context of lifelong learning. In *Proceedings of the international scientific conference, volume V* (pp. 111-120). Latvia: Rezekne Academy of Technologies. doi: 10.17770/sie2020vol5.4916.

[13] Khen, H.M.-E. (2023). Restoring children's right to education during and after war the case of Ukraine. *The International Journal of Children's Rights,* 31(1), 225-267. doi: 10.1163/15718182-31010005.

[14] Malynovska, O. (2022). Temporary protection: Origin, evolution, essence. *Migration & Law,* 2(5-6), 5-30. doi: 10.32752/2786-5185-2022-2-5-6-05-30.

[15] Melnichuk, O. (2016). International legal aspects of the migration crisis. *International Legal Aspects of the Migration Crisis,* 1, 62-67.
[16] Melnichuk, O., & Melnichuk, M. (2019). The right to education in the system of the constitutional rights of Ukraine (comparative analysis). *Mexican Bulletin of Comparative Law,* 1(154), 539-568. doi: 10.22201/iij.24484873e.2019.154.14153.
[17] Osler, A. (2020). Education, migration and citizenship in Europe: Untangling policy initiatives for human rights and racial justice. *Intercultural Education,* 31(5), 562-577. doi: 10.1080/14675986.2020.1794231.
[18] Pokrason, A., Martyniuk, K., & Bulko, L. (2022). To the issue of temporary protection in the countries of the European Union. *Legal Position*, 2(35), 72-76. doi: 10.32836/2521-6473.2022-2.13.
[19] Pyzhov, O. (2023). Constitutional and legal regulation of the sphere of education in foreign countries. *Law and Society,* 1, 24-30. doi: 10.32842/2078-3736/2023.1.4.
[20] Recommendation on science and scientific researchers. (1974). Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000263618.
[21] Sosnina, O., Mykytiv, O., Mykytiv, H., Kolenichenko, T., & Holovach, A. (2021). International aspects of the protection of victims' rights in the conditions of armed conflict in Ukraine. *Cuestiones Políticas*, 39(71), 433-457. doi: 10.46398/cuestpol.3971.24.
[22] Summary of the 2021/2022 school year. (2023). Retrieved from https://www.gov.pl/web/edukacja-i-nauka/podsumowanie-roku-szkolnego-20212022.
[23] The number of Ukrainian refugees with the status of temporary protection in Europe exceeded 5 million for the first time. (2023). Retrieved from http://surl.li/khilz.
[24] Turetska, Ya.P. (2019). Constitutional and procedural status of a refugee as a type of legal status of a foreigner (Dissertation, Uzhgorod National University, Uzhgorod, Ukraine).
[25] Van Esveld, B. (2023). A will and a way: Making displaced Children's right to education enforceable. *Laws,* 12(1), article number 16. doi: 10.3390/laws12010016.
[26] Willems, K., & Vernimmen, J. (2018). The fundamental human right to education for refugees: Some legal remarks. *European Educational Research Journal,* 17(2), 219-232. doi: 10.1177/1474904117709386.
[27] Yablonska-Bonsa, Y. (2022). The Polish Law of March 12, 2022 "On Assistance to Citizens of Ukraine in Connection with the Armed Conflict on the Territory of This State". Primary analysis. *Expert: Paradigms of Legal Sciences and Public Administration,* 2(20), 12-31. doi: 10.32689/2617-9660-2022-2(20)-12-31.
[28] Yeo, S.S., & Yoo, S.-S. (2022). Is refugee education indeed educational? The Freirean perspective to refugee education beyond humanitarian, rights, or development rationale. *Educational Philosophy and Theory,* 54(1), 1-11. doi: 10.1080/00131857.2022.2081545.
[29] Zabolotna, L.V., & Barchuk, D.V. (2022). Martial law as a challenge to modern education. In *The 9th international scientific and practical conference "Innovations and prospects of world science"* (pp. 706-710). Vancouver: Perfect Publishing.
[30] Zajda, J., & Ozdowski, S. (2017). *Globalisation, human rights education and reforms.* Heidelberg: Springer. doi: 10.1007/978-94-024-0871-3.

Особливості реалізації права на освіту особами, які отримали тимчасовий захист у країнах – членах Європейського Союзу

Володимир Васечко
Здобувач
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
https://orcid.org/0009-0006-4774-800X

■ **Анотація.** Рада Європейського Союзу імплементаційним рішенням 4 березня 2022 року ввела в дію Директиву № 2001/55/ЄС від 20 липня 2001 року про мінімальні стандарти для надання тимчасового захисту у випадку масового припливу переміщених осіб і заходи, що сприяють збалансованості зусиль між державами-членами щодо прийому таких осіб та вирішення наслідків цього. Актуальними є проблеми реалізації особами, які отримали тимчасовий захист в Європейському Союзі, права на освіту як природного права людини. З огляду на зазначене, мета статті полягала в розгляді унікальних аспектів здійснення права на освіту особами, які отримали тимчасовий захист у країнах – членах Європейського Союзу. Методологічною основою дослідження є діалектичний метод і методи аналізу, синтезу, порівняння, моделювання, системного та функціонального підходу, статистичний та формально-юридичний. У публікації визначено, що доступ до освіти осіб, які отримали тимчасовий захист у Європейському Союзі, передбачено Директивою Ради Європейського Союзу № 2001/55/ЄС, згідно з якою держави – члени Європейського Союзу надають повний доступ до системи освіти для всіх неповнолітніх осіб, що набули статусу тимчасового захисту, на рівних підставах з їхніми громадянами. Зауважено, що держави – члени Європейського Союзу можуть передбачити обмеження такого доступу державною системою освіти. Особливості реалізації права на освіту зазначеними особами закріплено також у національному законодавстві держав – членів Європейського Союзу. З'ясовано, що ці держави можуть передбачити обмеження доступу до державної системи освіти. Також вони здійснюють процедури визнання іноземних дипломів, сертифікатів та інших документів, що підтверджують офіційну кваліфікацію осіб, які отримали тимчасовий захист. Практична цінність результатів дослідження полягає в тому, що їх може бути використано для вдосконалення законодавства, яке регулює підстави та процедуру отримання вимушено переміщеними особами з України тимчасового захисту в країнах – членах Європейського Союзу, а також особливості реалізації особами з тимчасовим захистом своїх прав й обов'язків

■ **Ключові слова:** біженці; європейська система притулку; права людини; міграція; навчання; воєнний стан; правовий статус

SCIENTIFIC JOURNAL
OF THE NATIONAL ACADEMY OF INTERNAL AFFAIRS

Scientific Journal

Volume 28, No. 2. 2023

Founded in 1996. Published four times per year

The original layout of the publication is made in the Department of Preparation of Educational and Scientific Publications of National Academy of Internal Affairs

Managing Editor:
K. Verner

Editing English-language texts:
S. Vorovsky, K. Kasianov

Desktop publishing:
M. Kryshtal

Signed for print of June 26, 2023. Format 60*84/8
Conventional printed pages 9.6
Circulation 50 copies

Editors office address:
National Academy of Internal Affairs
03035, 1 Solomianska Sq., Kyiv, Ukraine
Tel.: +38 (044) 520-08-47
E-mail: info@lawscience.com.ua
www: http://lawscience.com.ua/en

НАУКОВИЙ ВІСНИК
НАЦІОНАЛЬНОЇ АКАДЕМІЇ ВНУТРІШНІХ СПРАВ

Науковий журнал

Том 28, № 2. 2023

Заснований у 1996 р. Виходить чотири рази на рік

Оригінал-макет видання виготовлено у відділі підготовки навчально-наукових видань
Національної академії внутрішніх справ

Відповідальний редактор:
К. Вернер

Редагування англомовних текстів:
С. Воровський, К. Касьянов

Комп'ютерна верстка:
М. Кришталь

Підписано до друку 26 червня 2023 р. Формат 60*84/8
Умов. друк. арк. 9,6
Наклад 50 прим.

Адреса видавництва:
Національна академія внутрішніх справ
03035, пл. Солом'янська, 1, м. Київ, Україна
Тел.: +38 (044) 520-08-47
E-mail: info@lawscience.com.ua
www: http://lawscience.com.ua/uk