ETHICAL AND SECURITY ASPECTS
OF DATA ANALYTICS IN JOURNALISM:
THE CONTEXT OF THE RUSSIAN-UKRAINIAN WAR

Yana Shekeriak-Kushka
*Ivan Franko National University of Lviv,
Generala Chuprynky Str., 49, 79044, Lviv, Ukraine
e-mail: Yana.Shekeriak@lnu.edu.ua
https://orcid.org/0000-0002-8187-4062*

The purpose of this article is to examine the ethical and security aspects of data usage in data journalism, particularly in the context of wartime. It explores key risks associated with working with data, such as privacy violations, manipulation, and the reinforcement of stereotypes. The article analyzes the legislative framework for personal data protection in Ukraine and the EU, as well as specific challenges faced by journalists during the war, including the protection of information sources, anonymization of sensitive data, and ensuring civilian safety. Recommendations are proposed for ethical data usage and enhancing security within the modern media landscape.

Keywords: data journalism, personal data, ethics, security, war, Ukraine, new media.

Relevance and Problem Statement. Data has become an integral part of daily life in modern society, increasingly dependent on digital technologies. Virtually every action people take, from sharing posts on social media to making purchases in online stores, is recorded and stored as data. At the same time, this data serves as a source for numerous stories that can be uncovered, analyzed, and presented to the public. This, coupled with the ongoing competition for attention and the informational oversaturation of the media space, has created a context where the role of journalists extends far beyond the rapid dissemination of information to the public.

In this context, the role of data journalism is increasing—a relatively new media practice that involves using, processing, and presenting data for journalistic purposes. Its distinctive feature lies in its focus on objectivity through data analysis and the effort to minimize the risk of accusations of subjectivity. Moreover, through the use of data visualizations often included in journalistic materials, such content becomes more accessible to audiences as people increasingly perceive information through graphical or interactive elements.

With the advancement of datafication, characterized by the increasing influence of data across all spheres of life, the ability to work with data has become a critical competency for every contemporary media professional. Data about society, the economy, politics, or

personal preferences hold enormous potential for informing the public and addressing significant societal issues.

Despite the described rapid growth in data accessibility, data interpretation and use do not spread quickly. Often, the information requires comprehensive analysis and responsible approaches to interpreting results. This raises a range of challenges, including the need for specialized skills and meticulous analysis, as well as ethical and security considerations, which will be the focal point of this article.

Each data-driven story has the potential to lead to the identification of individuals involved in specific events, protests, investigations, or those who simply did not intend to disclose personal information, which can result in consequences ranging from ridicule to persecution. Additionally, it can leave a digital footprint that is dangerous, for instance, for investigative journalists. Moreover, by using data from personal social media accounts or publicly accessible websites without considering the legality of their collection, we expose ourselves and the editorial team to legal risks.

In the context of war, media professionals in Ukraine must be even more cautious of these risks.

The purpose of this article is to examine the ethical and security aspects of data (big data) usage in contemporary journalism, particularly in data journalism. To achieve this, the following tasks must be accomplished:

- outline the key ethical challenges journalists face when working with data.
- examine potential threats for journalists working with large datasets, including risks of data breaches, issues of anonymity, and the confidentiality of information sources.
- systematize the provisions of European and Ukrainian legislation regulating (personal) data usage by media professionals.
- identify trends in the modern digital media environment that amplify risks to journalists' personal data and dictate new solutions.

Literature review. The concept of "data journalism" entered academic discourse within the past ten to fifteen years. As a relatively new field, data journalism has not been extensively studied in the Ukrainian academic segment. Most research is conducted by foreign specialists.

Researchers primarily focus on the theoretical foundations of data journalism and its classification within the genres of new media on the one hand and practical recommendations for its implementation and development on the other. They emphasize its history, functions, data sources and collection methods, key stages of working with data, and the rationale for its adoption. Often, practitioners become theorists in this field, documenting their experiences with data journalism projects in global media, developing new methods of working with data, substantiating a critical approach to it, and sharing insights on establishing data teams and incorporating data journalism into educational curricula (Liliana Bounegru, Lucy Chambers, Jonathan W. Y. Gray, 2011[1]; Gray J. A., Bounegru L. 2019[2]). They also address the ethical aspects of using open data and emphasize that journalists must maintain

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[1] Chambers, L., Gray, J. & Bounegru, L. (2012), *Data journalism handbook*, O'Reilly Media, Incorporated. URL: https://datajournalism.com/read/handbook/one (date of access: 31.10.2024).

[2] Gray J., Bounegru L. (2019), *Data journalism handbook: towards a critical data practice*, European Journalism Centre, 270 p. URL: https://datajournalism.com/read/handbook/two (date of access: 05.11.2024).

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the confidentiality of personal data and exercise caution with information that could harm certain population groups.

In Ukraine, similar manuals for working with data are primarily published for representatives of non-governmental organizations and local government bodies (Gazin, A., Horbal, A., Kubay, D., Shulga, Y., Shapovalenko, H.[3], Shadska, U.[4])

The issue of ethics in data usage is also examined in the context of new European legislation; the collection of large amounts of data by tech giants and the lack of a well-thought-out algorithm for protecting both journalists' personal data and their sources in newsrooms (David Craig, Stan Ketterer and Mohammad Yousuf[5]; Heikki Kuutti[6])

Some studies analyze how the use of data helps in covering the war between Russia and Ukraine (Merabet D.[7], Alexa van Sickle, Eunice Au[8])*,* yet their number in the context of security and ethics remains insufficient.

Given the outlined research contexts, the proposed study emphasizes the importance of understanding the ethical and security challenges in working with data in journalism. Considering the principles of privacy protection and responsible data usage is essential for minimizing the risks of manipulation and violations of the rights of information subjects, making this study highly relevant to contemporary journalistic practice.

Methodology. The study's methodological foundation combines general scientific and specialized methods. Descriptive and comparative methods were applied to analyze scientific and media sources on the use of data in journalism. These methods facilitated the collection and systematization of information regarding the ethical and security aspects of working with data. The comparative method was also used to study and compare different practices of data processing and analysis in journalistic materials, particularly comparing Ukrainian and international approaches to data protection and ethical standards in this field.

Structural-functional and systems methods were applied to study the legal and ethical requirements for data protection, the integration of various approaches and concepts regarding data work and their visualization in journalistic projects, and the impact of open

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[3] Кубай, Д., Горбаль, А., Газін, А., Шульга, Є. та Шаповаленко, Г. (2016), *Відкритий посібник з відкритих даних для громадських організацій, журналістів, і не тільки*, Київ: Український центр суспільних даних, URL: https://socialdata.org.ua/manual/ (дата перегляду 24.09.2024).

[4] Шадська, У. (2021), *Аналіз ризиків під час обробки персональних даних: що важливо знати? К.Компринт,* URL:https://umdpl.info/wp-content/uploads/2021/09/Posibnyk_otsinka-ryzykiv-ZPD_na-sajt.pdf?fbclid=IwAR1UmLp64kfohf2uh9tr3SKPtAaIgG4Y88VXqMoJqzmTYWWSxAsDH1SPoCg (дата перегляду 16.09.2024).

[5] Craig, D., Ketterer, S.,Yousuf, M. (2017), "Ethical questions in data journalism and the power of online discussion", *DataJournalism.com,* URL: https://datajournalism.com/read/longreads/ethical-questions-in-data-journalism-and-the-power-of-online-discussion (date of access: 25.10.2024).

[6] Kuutti, H. (2016), "Ethics of data journalism : four ethical phases in the working process", *Helsinki, Finland*, URL: https://jyx.jyu.fi/handle/123456789/58616 (date of access: 01.10.2024).

[7] Мерабет, Д. (2024), Як журналістика даних допомагає висвітлювати відновлення, *Центр практичної освіти «Накипіло»,* URL: https://osvita.nakypilo.ua/yak-zhurnalistyka-danyh-dopomagaye-vidnovlennyu/ (дата перегляду 25.06.2024).

[8] Sickle, A. V. та Au, E. (2023), Data journalism top 10: A year of war in Ukraine, russian casualties, trans identities, unexpected NBA performances, *Global Investigative Journalism Network,* URL: https://gijn.org/stories/data-journalism-top-10-a-year-of-war-in-ukraine-russian-casualties-trans-identities-unexpected-nba-performances/ (date of access: 08.11.2024)

data policies on contemporary media practices. These methods enabled the identification of key elements influencing security and ethics in data work, as well as their functional significance in media practices.

The methods of generalization and synthesis were applied to formulate the research conclusions related to the ethical and security aspects of data usage in journalism and to develop recommendations for journalists and journalism students on working with data.

Main Body of the Research. Data is abundant and everywhere, and it has become an important resource for journalism. Social networks use data to better target advertisements and study users' behavioral patterns; politicians use it to enhance the influence of their campaigns and prove the effectiveness of certain decisions; and public activists use it to disseminate and monitor their activities.

They are also, understandably, used by media professionals. On the one hand, it is their duty: despite the availability of a large amount of open data, its use without preparation is not very interesting to the average network user. Moreover, many recipients lack the necessary skills to understand and use data independently. Enormous datasets, tables with thousands of rows and columns – are often difficult for the average user. People do not know how to interpret this data, where to get it from, and how to use it in real-life situations. On the other hand, when journalists present this data in a clear graphic form, accompanied by context, explanations, and a full-fledged story, it becomes more understandable. Additionally, using data in their work also offers journalists new opportunities. Investigations have become much faster, using a more significant number of sources and scaling them up. With the help of data, journalists confirm war crimes committed by Russians on Ukrainian territory (Eliot Higgins[9], Malachy Browne, David Botti and Haley Willis[10]), monitor the number of alarms and shellings, collect and map[11] civilian casualties in Ukraine, and highlight corruption schemes in state procurement. Moreover, data is not necessarily applied only in serious topics such as economics, politics, or social life and in large formats like research. A short story about a new theater season repertoire can be supplemented with data on sales and news about the start of academic development–visualizations of the number of applicants categorized by specialty. Data will show correlations better than long descriptions, confirming objectivity, helping trace dependencies and causal relationships, and making content more interactive.

If the use of data brings so many advantages to journalism, why don't we use it constantly, and what potential problems could arise? There are indeed quite a few: limited and selective access to data, the lack of a unified format for data presentation and laws, the risk of misinterpretation, the challenge of acquiring new skills, and digital literacy. Here, we will focus on the security and ethical aspects of using data in journalism, which are key to ensuring responsible and transparent media practices, especially in the context of the Russian-Ukrainian war. The use of big data comes with numerous risks, particularly when

[9] Higgins, E. (2022), "«Факти» Росії про Бучу та реальні докази", *Bellingcat,* URL: https://uk.bellingcat.com/rozsliduvannya/2022/05/10/fakty-rossii-pro-buchu-ta-realni-dokazy/ (date of access: 2810.2024).

[10] Browne, M., Botti, D. та Willis, H. (2022), "Satellite images show bodies lay in Bucha for weeks, despite russian claims", *The New York Times,* URL: https://www.nytimes.com/2022/04/04/world/europe/bucha-ukraine-bodies.html (date of access: 29.1.2024).

[11] Bellingcat (2022), "Розбомблені лікарні та зруйновані квартири: картування випадків шкоди цивільним в Україні", URL: https://uk.bellingcat.com/rozsliduvannya/2022/05/10/kartuvannya-vypadkiv-shkody-sivilnym-v-ukrayini/ (дата перегляду: 03.10.2024).

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it involves personal data and the protection of sources. Furthermore, insufficient training of journalists in data handling may lead to misinterpretations or manipulations, putting not only the objectivity of information at risk, but also the safety of individuals involved in journalistic investigations.

Law. The protection and respect for personal data are deeply rooted in core European values. This is partly explained by the experience of the genocide of the Jewish people, carried out by the Nazis, which included the collection of ethnic and personal data during population censuses and the use of technological capabilities (including cooperation with International Business Machines). Therefore, it is not surprising that the right to private and family life is enshrined in, for example, Article 12 of the Universal Declaration of Human Rights (1948) and Article 8 of the European Convention on Human Rights and Fundamental Freedoms.[12] Later, Germany became the first country to adopt a federal law on personal data protection in 1977, which gave impetus to the further development of European legislation in this field. Furthermore, the basis of European data protection legislation was established with the adoption of Directive 95/46/EC in 1995, "On the protection of individuals with regard to the processing of personal data and on the free movement of such data". Subsequently, other countries created local acts based on this directive, including Ukraine (Law of Ukraine "On the Protection of Personal Data").

However, the number of threats has increased with the development of technologies. A particularly alarming factor has been the concentration of vast amounts of data not only in the hands of the state (as was the case at the beginning of the discussion on data collection) but also in the hands of private companies and large corporations. This includes the so-called "big five" GAFAM (Google, Amazon, Facebook, Apple, Microsoft). Their technologies have also been used by governmental bodies. Given the technological advancement, there was a need to update legal norms. Thus, in 2002, the EU adopted the ePrivacy Directive, which regulates, for example, the use of cookies–files familiar to all internet users[13]. In 2014, the right of individuals to request the removal of their personal data from search engines was confirmed[14].

Perhaps the most stringent and influential law in the field of personal data protection in recent times is the General Data Protection Regulation (GDPR). It aims to provide citizens with greater control over their personal data and includes, in particular, the right to correct personal data, the "right to be forgotten," the right to delete personal data and

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[12] Шадська, У. (2021), "Аналіз ризиків під час обробки персональних даних: що важливо знати?", *К.Компринт,* URL:https://umdpl.info/wp-content/uploads/2021/09/Posibnyk_otsinka-ryzykiv-ZPD_na-sajt.pdf?fbclid=IwAR1UmLp64kfohf2uh9tr3SKPtAaIgG4Y88VXqMoJqzmTYWWSxAsDH1SPoCg (дата перегляду 16.09.2024).

[13] Шадська, У. (2021), "Аналіз ризиків під час обробки персональних даних: що важливо знати?", *К.Компринт,* URL:https://umdpl.info/wp-content/uploads/2021/09/Posibnyk_otsinka-ryzykiv-ZPD_na-sajt.pdf?fbclid=IwAR1UmLp64kfohf2uh9tr3SKPtAaIgG4Y88VXqMoJqzmTYWWSxAsDH1SPoCg (дата перегляду 16.09.2024).

[14] CURIA (2014), "An internet search engine operator is responsible for the processing that it carries out of personal data which appear on web pages published by third parties", *press release 70/14. Luxembourg,* URL: https://curia.europa.eu/jcms/upload/docs/application/pdf/2014-05/cp140070en.pdf (date of access: 04.10.2024).

cease processing, and (temporary) transfer to another processing system, among other provisions[15].

The GDPR model has been adopted as the basis for many national laws. Regarding the legislative regulation of the use and protection of private data in Ukraine, this right (the right to respect private life) is also enshrined in our Constitution, specifically in Article 32. In 2011, the Law "On Personal Data Protection" came into effect, which is still relevant, especially considering the rapidly developing open data market in Ukraine. The beginning of this open data market was marked by Law No. 2939-VI (2011), "On Access to Public Information." Later, Law No. 2171, "On Amendments to Certain Laws of Ukraine Regarding Access to Public Information in the Form of Open Data" (2015) and Resolution of the Cabinet of Ministers of Ukraine No. 835 dated October 21, 2015, "On Approval of the Regulations on Data Sets to be Published as Open Data" were adopted. The "National Open Data Portal" Data.gov.ua became operational a year earlier.

In addition to the reasons mentioned above for regulating access to open data, it is also crucial in the context of the European integration process. Specifically, in 2014, Ukraine, in accordance with the Association Agreement with the EU, committed to ensuring an appropriate level of data protection in line with Council of Europe documents[16]. Moreover, the aforementioned Law of Ukraine "On Personal Data Protection," despite amendments (in particular, in 2014, the Law "On Amendments to Certain Legislative Acts of Ukraine Regarding the Improvement of the Personal Data Protection System" was adopted to ensure the independence of the authorized body on personal data protection, in accordance with the Council of Europe Convention on the Protection of Individuals with regard to Automatic Processing of Personal Data), still largely relies on the previously mentioned Directive 95/46, which has become outdated and therefore requires revision and further improvement (Oleksandr Kozhukhar[17]).

Even though Ukraine is not yet a member of the EU, it is important to remember the policy of privacy protection and the handling of personal data, as well as the values of privacy. However, there needs to be a balance between protecting personal data in accordance with the latest EU regulatory standards and limiting access to publicly important information or attempting to update legislation solely by adding new control and penalty measures, as observed in new Ukrainian draft laws on personal data. These

[15] Європейський Парламент і Рада (ЄС) (2011), "Про захист фізичних осіб у зв'язку з опрацюванням персональних даних і про вільний рух таких даних, та про скасування Директиви 95/46/ЄС (Загальний регламент про захист даних)", *Регламент № 2016/679*, URL: https://ips.ligazakon.net/document/MU16144?utm_source=jurliga.ligazakon.net&utm_medium=news&utm_content=jl03&_ga=2.215405655.1530718624.1728473004-853058598.1728305870#_gl=1*124s2rc*_gcl_au*MzIyNzQxNzE4LjE3MjgzMDU4NzA (дата перегляду 21.10.2024).

[16] Шадська, У. (2021), "Аналіз ризиків під час обробки персональних даних: що важливо знати?", К.Компринт, URL:https://umdpl.info/wp-content/uploads/2021/09/Posibnyk_otsinka-ryzykiv-ZPD_na-sajt.pdf?fbclid=IwAR1UmLp64kfohf2uh9tr3SKPtAaIgG4Y88VXqMoJqzmTYWWSxAsDH1SPoCg (дата перегляду 16.09.2024).

[17] Кожухар, О. (2024), "Обробка персональних даних в Україні: правові аспекти", *ЛІГА:ЗАКОН,* URL: https://jurliga.ligazakon.net/analitycs/226318_obrobka-personalnikh-danikh-v-ukran-pravov-aspekti (дата перегляду 06.10.2024).

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measures are often presented as aligning with European legislation and protecting information from Russian attacks[18].

Ethics. According to recommendations from organizations such as the Ethical Journalism Network* and the Global Investigative Journalism Network**, journalists must ensure transparency of their sources, adhere to accuracy principles, and avoid manipulating data.

Ethics is not only discussed in data journalism – it is a foundation for media professionals in general. The goal is to avoid causing harm with one's material, to find a balance between public interest and the benefit and harm to private life. However, when working with data, it is particularly crucial to adhere to ethical standards.

A common mistake when working with data is the assumption that it speaks for itself. In the context of ethical principles, Alison Schrager specifically addresses this issue[19]. No matter how comprehensive the data may be, it cannot exist without context. It is important to choose data that truly reflects the situation, rather than simply fitting the material or hypothesis. A narrow or poorly considered sample is often the cause of distorted results. Another key element is data filtering, where unnecessary elements are removed that may skew the results. For example, when researching the state of national households, it is important to check whether the data only reflects wealthy households, as this would distort the findings. Attention to economic indicators and avoiding premature conclusions are also crucial. For instance, when conducting research on changes in savings over a period of time, it is important not to limit the dataset to just this information but also consider changes in income over the same period.

Since data cannot be used without context, data journalism also requires it. It is important to avoid "zombie data". This term was introduced by Daniel Kaufman, an economist from the Institute for Income Observations, referring to data that is published without any clear purpose or defined use case[20].

Of course, the first thing that provides context is data dictionaries or metadata. They help understand what data a given structure collects and how to interpret and analyze it properly. These files contain information about all the objects in the database, such as how the data file is formatted, the sequence of fields, the name of each field and its type (text, integer, decimal, etc.), and explanations of all the codes applied to certain fields (for example, in the "Gender" field, 0 might mean "Male", 1 – "Female", or vice versa,

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[18] YouControl (2024), "Захист персональних даних ціною в мільярди гривень. Ризики і загрози нових правил", URL: https://youcontrol.com.ua/articles/zakhyst-personalnykh-danykh-tsinoiu-v-miliardy-hryven.-ryzyky-i-zahrozy-novykh-pravyl/ (дата перегляду 06.10.2024).

* *The Ethical Journalism Network (EJN)* is a global coalition of media professionals, including over 70 organizations of journalists, editors, media owners, and support groups worldwide, established to promote education with a focus on ethics and the protection of human rights.

** T*he Global Investigative Journalism Network i*s an international association of nonprofit organizations dedicated to supporting and advancing investigative journalism, with a focus on journalists from repressive regimes and marginalized communities.

[19] Schrager, A., (2014), "The problem with data journalism". *QUARTZ.* URL: https://qz.com/189703/the-problem-with-data-journalism (дата перегляду 20.10.2024).

[20] D'Ignazio, C. та Klein, L., (2019), "Chapter five: the numbers don't speak for themselves", *MIT Press*, URL: https://mitpressonpubpub.mitpress.mit.edu/pub/6ui5n4vo/release/4 (date of access: 02.11.2024).

or genders might be denoted by letters[21]). However, problems arise when there is no data dictionary, as it indicates undocumented changes reflected in the data. Therefore, when journalists encounter unclear or unlisted values during their work, they should contact the data provider to clarify the meaning rather than build the story solely based on their assumptions.

However, even if data dictionaries exist, this does not fully resolve the issue of context. Sometimes, a large amount of data in a certain area (regarding a particular problem) does not necessarily reflect the problem in the way it might initially appear. For example, in 1990, the Jeanne Clery Act was passed in the United States, which required all colleges and universities to disclose crime statistics on their campuses, including incidents of sexual assault. In 2016, students in a data journalism course at Emerson College set out to analyze these data to create a story on rape statistics and found that large institutions, such as Boston University, had disproportionately few reported incidents of assault relative to the number of students and media attention, while the small, affluent Williams College had an exceptionally high number of reported cases[22].

It might seem that more data on violence would indicate a higher number of sexual crimes; conversely, less data would imply fewer incidents. However, the reality was nearly the opposite. Institutions report crimes themselves, and the monitoring is conducted by too few people to detect underreporting (except for high-profile cases). Since numerous reports negatively impact a university's ranking, universities financially incentivize, not encouraging survivors of violence to speak out. Furthermore, without social and psychological support and a safe environment, instead of facing stigmatization, those who have experienced trauma are unlikely to speak out.

While working on their research, the students discovered that many colleges with higher levels of sexual violence (according to the data) actually had a stronger culture of social protection and provided support to survivors, thus creating a safe environment where individuals could share their stories without fear of judgment or retaliation.

This is just one of many examples demonstrating that data does not objectively reflect reality without considering the context in which it was generated. Therefore, it is essential to take this into account during analysis and to examine the data within the context in which it was created. For instance, if there is information that the Lviv region has seen the most significant number of new businesses opened since the start of the full-scale invasion of Ukraine, it does not necessarily mean that this part of the country is not experiencing the consequences of the war, as the context of the number of people who have relocated here from other parts of Ukraine, including those who have moved their businesses, is not considered.

However, these are not the only ethical dilemmas and norms that must be kept in mind when working with data:

Sources are important. Foremost, not everything that media professionals find on the internet, seemingly available for free, can be used in their material. Yes, people may have shared it themselves on some platforms, but perhaps the platform's privacy policy does not

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[21] Kalashnykova, D., Проблеми розвитку журналістики даних, URL: https://www.academia.edu/19519900/ (дата перегляду 03.10.2024).

[22] D'Ignazio, C., Klein, L. (2019), "Chapter five: the numbers don't speak for themselves", *MIT Press,* URL: https://mitpressonpubpub.mitpress.mit.edu/pub/6ui5n4vo/release/4 (date of access: 02.11.2024).

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allow for data collection, which means you are acting outside the scope of that policy. The same applies to data leaks that become publicly available: on the one hand, it is important to report on them to highlight issues regarding the confidentiality of the transmitted data, corporate policies, etc. However, in practice, such materials often turn into discussions about the "interesting details" of these leaks that concern the private lives of those affected. Even if this does not contradict the law, it clearly violates ethical norms, except in cases where the leaks concern individuals whose activities are related to public funds or other areas where public interest outweighs the right to privacy.

It is essential to maintain transparency by clearly indicating when and where data was collected, especially when utilizing pre-aggregated datasets not directly compiled by journalists themselves. The use of data obtained through unauthorized means (for instance, data purchased on the dark web) contradicts journalistic ethics (although such methods may occasionally be considered during investigations of war crimes or other matters of high public interest). However, this also applies to entirely legal data collected by third parties rather than the journalists themselves. Using such data is not inherently problematic—there is simply too much data, too many topics, technical obstacles, and other journalistic activities for everything to be gathered independently. Nevertheless, descriptions of ready-made datasets or data resources can sometimes be misleading. A relevant example is the FiveThirtyEight article titled "Kidnapping of Girls in Nigeria Is Part of a Worsening Problem," written in the aftermath of the widely reported abduction of 276 young women from a school in Chibok, northern Nigeria, in April 2014. Through this story, the FiveThirtyEight blog sought to present a broader perspective and describe the catastrophic situation of kidnappings, with a reported increase in incidents. According to the article, there were over 3,608 abductions of young women in 2013 alone. The piece included maps, charts, and data but contained a significant error. The publication used the "Global Database of Events, Language, and Tone (GDELT)" as its data source. GDELT is a project that compiles news reports on global events for researchers, governments, and civil society. However, the project collects media reports, which can result in single events being recorded multiple times due to the extensive media coverage they receive. The same kidnapping of schoolgirls in Nigeria was a singular event but generated thousands of stories in global media. GDELT correctly linked some of these reports to one event, but erroneously registered others as separate incidents. As a result, the FiveThirtyEight article mistakenly treated each pseudo-event in GDELT as an independent kidnapping incident[23].

This example is quite illustrative. It demonstrates how projects like GDELT often overstate their data's completeness and accuracy and reaffirms the need for journalists to critically evaluate how such resources collect data, the methodology used for counting, and other relevant factors. This should be done regardless of what is stated on the project's main page. For instance, on its website and in publications, the GDELT project leaders claimed that it is "an initiative to create a catalog of human behavior and beliefs on a societal scale across all countries in the world, uniting every person, organization, location, number, theme, news source, and event across the planet into a single massive network that records what is happening in the world, the context, who is involved, and how the world perceives it daily". However, as it turned out, this description does not entirely align with reality.

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[23] D'Ignazio, C., Klein, L. (2019), "Chapter five: the numbers don't speak for themselves", *MIT Press,* URL: https://mitpressonpubpub.mitpress.mit.edu/pub/6ui5n4vo/release/4 (date of access: 02.11.2024).

Consequences of Publication. Another ethical dilemma arises here. On the one hand, all citizens have the right to protect their personal information. On the other hand, if a journalist's goal is to serve the public interest or investigate corruption schemes, such an intrusion into private life may be justified. However, ethical considerations must also prevail in such cases. When personal information about a subject of investigation is disclosed, journalists must exercise caution to avoid exposing details about their relatives, acquaintances, or particularly vulnerable groups (e.g., children). Misrepresentation of data or even unintentional assumptions (such as inferring that a blank cell in a table about a pet's breed indicates it is mixed) distorts the facts.

The discussion above addressed the ethical obligations between journalists and their audience. However, ethical dilemmas regarding data usage also arise within editorial teams. For instance, the issue of authorship. Not all editorial offices have dedicated departments for data visualization or data journalism. As a result, the person who collected the data conducted the analysis, and created the visualization may not be credited as the author of the material. Instead, only the individual who wrote the text is acknowledged[24]. This presents a somewhat ironic ethical dilemma, considering that one of the advantages often highlighted by researchers of data journalism is the difficulty of plagiarism in this field (it is easier to copy a photo or a text excerpt than a data visualization).

Similarly, within a single editorial team or even a group working on a specific project, disagreements may arise regarding which data should be published and which might violate privacy norms and ethical standards. Therefore, it is essential not to make such decisions unilaterally and to establish an editorial policy on the use and preservation of data. This policy should be regularly reviewed in response to technological advancements and changes in legislation and discussed during editorial meetings, for example.

Security. When discussing the safety of media professionals, investigative journalists and the complex process of exchanging information with their sources – often imagined in a stereotypical "dark alleyway" – are typically the first to come to mind. Indeed, this is an important aspect of personal safety for journalists. However, in the digital age, data security has reached a new level of significance due to the sheer volume of data, the numerous operations and digital traces they leave behind, and the relatively recent emphasis on information hygiene and online behavior.

Protecting personal information – both of journalists and the subjects of their stories – has become crucial. This goes beyond simply anonymizing names in an article. Emails, messages, and even phone calls can be hacked. Consequently, the use of end-to-end encryption, VPNs, and secure messaging platforms is as vital in the work of a data journalist as the ability to create a compelling visualization.

Careful attention should also be paid to anonymization. As previously mentioned, many materials simply change the names of their subjects. While this tactic may occasionally work in traditional journalism, it is insufficient in data journalism. Anonymization should go beyond changing names, voices, or obscuring a subject's image; it must also include the use of randomly assigned identification numbers, as well as the removal of medical,

[24] Heravi, B. R., Lorenz, M. (2020), "Data journalism practices globally: skills, education, opportunities, and values", *Journal. Media*, 1(1), 26-40, URL: https://doi.org/10.3390/journalmedia1010003 (date of access: 02.11.2024).

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educational, or other personal information that is not essential to the material but could inadvertently reveal the identity of the individuals involved.

War. Martial law imposes restrictions that affect all spheres of human activity, including the collection, analysis, and dissemination of data. One of the most sensitive aspects is the access to information about the number of casualties and injuries, particularly on the Ukrainian side, which remains restricted. Similarly, some registries are either closed or not updated in real-time, and access to open data portals of local authorities was partially or completely limited for a significant period. This is entirely justified, as many services are subject to constant cyberattacks aimed not only at disrupting operations, but also at spreading fake news about capitulation or stealing personal data[25].

However, despite these restrictions, data has been and will remain an integral part of the informational and analytical coverage of armed conflicts of various scales[26]. Data forms the foundation of materials about events on the battlefield and is used for mapping power outages and shelling incidents, tracking troop movements, documenting war crimes, and more[27]. In the Ukrainian context, data has been actively utilized since the beginning of the Anti-Terrorist Operation (ATO) and Joint Forces Operation (JFO). One of the most notable examples is the work of the international group Bellingcat, which specializes in investigations based on big data. Their efforts included identifying Russian servicemen responsible for the downing of the Malaysian Boeing MH17, shot down on July 17, 2014, in Donetsk Oblast[28] [29].

Russia's full-scale invasion of Ukraine has introduced new challenges in the realm of data security and ethics. On one hand, the high level of media coverage of this war enables the provision of evidence of war crimes, the tracking of enemy troop movements, or the monitoring of missile and other weaponry flights over Ukrainian regions. This is a significant advantage in informing the global community and ensuring personal safety within the country. On the other hand, access to such sensitive data carries substantial risks, including its potential misuse by the enemy to plan new attacks or discredit information.

In particular, journalists must be cautious to avoid publishing details that could be used by the enemy, such as personal data of soldiers, volunteers (which is also problematic

[25] Шекеряк, Я. (2022), "Карти, боти й пошук людей – як журналісти й урядові структури використовують відкриті дані під час воєнного стану", *Медіакритика*, URL: https://www.mediakrytyka.info/novi-tehnologii-media/karty-boty-y-poshuk-lyudey-yak-zhurnalisty-y-uryadovi-struktury-vykorystovuyut-vidkryti-dani-pid-chas-voyennoho-stanu.html (дата звернення 16.10.2024).

[26] Higgins, E. (2022), "«Факти» Росії про Бучу та реальні докази", *Bellingcat,* URL: https://uk.bellingcat.com/rozsliduvannya/2022/05/10/fakty-rossii-pro-buchu-ta-realni-dokazy/ (date of access: 2810.2024).

[27] Browne, M., Botti, D. та Willis, H. (2022), "Satellite images show bodies lay in Bucha for weeks, despite russian claims", *The New York Times,* URL: https://www.nytimes.com/2022/04/04/world/europe/bucha-ukraine-bodies.html (date of access: 29.01.2024).

[28] Romein, D., Allen, T., Anders, K., Higgins, E., Huis, P. V., Kivimäki, V.-P., Ostanin, I. та Toler, A., (2015/2016), "MH17 - potential suspects and witnesses from the 53rd anti-aircraft missile brigade", *the Bellingcat MH17,* URL: https://www.bellingcat.com/wp-content/uploads/2016/02/53rd-report-public.pdf (date of access: 24.10.2024).

[29] Huis, P. V., Anders, K., Conflict Intelligence Team, Grozev, C., Romein, D. та Toler, A., (2018/2019). *"A birdie is flying towards you"* identifying the separatists linked to the downing of MH17", *the Bellingcat Investigation Team*, URL: https://www.bellingcat.com/app/uploads/2019/06/a-birdie-is-flying-towards-you.pdf (date of access: 21.10.2024).

given that volunteers often post large datasets on social media to attract more donations), prisoners of war, and the locations of strategic sites or training areas for mobilized citizens.

The issue of protecting one's materials and sources is also becoming more urgent and pronounced. The task for a journalist is not to protect their device and contacts from hacking, as this is practically impossible, but to make it as difficult as possible for a potential attacker to collect data from it or about their sources. Equally important is the verification of one's informational and psychological resilience. One must remember to use digital protection when gathering information, for example, from Russian social networks, while ensuring that the significant amount of time spent on hostile platforms does not distort one's perception of the situation or conclusions. Journalists are always more vulnerable to manipulative influence, considering they will later convey their opinions to the public.

And while the safety issues outlined above are brought to the forefront during wartime, ethical considerations are equally important. To spread information about war crimes, especially in the third year of the full-scale invasion, when international audiences show decreasing "interest," media workers and even ordinary network users often share footage of destruction, civilian casualties, and so on. However, it is crucial not to publish such images without prior warning and consent from the relatives, especially since the relatives of the deceased should not learn of it through the news. This concerns both ethical standards and the risk of retraumatization through similar publications. A notable example in this context was the coverage of an interview with a woman in Vinnytsia, whose daughter died during a Russian missile strike on July 14, 2022. Journalists filmed the mother's reaction, who was in the intensive care unit, to her daughter's death and immediately began recording an interview. Such behavior was criticized by the Journalism Ethics Commission, which stated that, despite the need to constantly draw global attention to Russia's terrorist attacks on Ukraine's civilian population, such materials should not add further pain and suffering to their subjects and should minimize the risks of retraumatization[30]. The same commission developed a set of recommendations related to the coverage of deaths during wartime[31], and the disclosure of private data[32].

The issues of safety and ethics may also intersect. For example, it is unethical to disseminate information about executions or the killing of Ukrainian prisoners of war by revealing their personal details, as journalists cannot be certain that their relatives will not learn about their deaths from such footage, which is often very brutal and widely shared on social media. Although such facts must be documented to establish war crimes, they should be published and distributed with the utmost caution and anonymization. At the same time, the publication of personal data of the missing persons, both on social media

[30] Заява КЖЕ щодо інтерв'ю з потерпілою, яка втратила доньку й зазнала тяжких поранень під час ракетного удару по Вінниці 14 липня, (2022), *Комісія з журналістської етики*, URL : https://cje.org.ua/statements/zaiava-kzhe-shchodo-interv-iu-z-poterpiloiu-iaka-vtratyla-donku-y-zaznala-tiazhkykh-poranen-pid-chas-raketnoho-udaru-po-vinnytsi-14-lypnia/ (дата звернення 21.10.2024).

[31] Рекомендації КЖЕ щодо висвітлення загибелі людей під час війни, (2022), *Комісія з журналістської етики,* URL: https://cje.org.ua/statements/rekomendatsii-kzhe-shchodo-vysvitlennia-zahybeli-liudey-pid-chas-viyny/ (дата звернення 30.09.2024).

[32] Заява КЖЕ щодо меж оприлюднення приватних даних осіб, які постраждали від війни, (2022), *Комісія з журналістської етики,* URL: https://cje.org.ua/statements/zaiava-kzhe-shchodo-mezh-opryliudnennia-pryvatnykh-danykh-osib-iaki-postrazhdaly-vid-viyny/?fbclid=IwAR0AfCZ0xDmUc3yV25SgUux4Akjk6cp0o713MYLh38Dioj4uGXWbogGArek (дата звернення 19.10.2024).

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and in the media, raises ethical and security concerns, as it affects the survival of the person in captivity.

Discussion. The analysis of ethical and security aspects in data journalism demonstrates that their use has become an essential skill for journalists in the modern digital environment. Data journalism provides the opportunity to illustrate trends and socially important issues, prove war crimes, and highlight corruption schemes. However, it also brings to the forefront the issues of personal data leaks, the use of such data by corporations and governments for selfish purposes, and adherence to human rights and privacy protection. This research highlights that, despite the growing accessibility of data, journalists must adhere to ethical standards to avoid manipulation and ensure the trust of their audience.

Moreover, a significant number of journalists do not fully recognize the risks of cyber threats and the potential security breaches that may arise during the process of data collection and processing. The necessity of adhering to national and international information protection standards also requires deeper analysis and implementation at the level of editorial policies. These issues hold further relevance for research and practical application in journalistic work.

Additionally, the development and implementation of ethical principles for the use of data in the context of a full-scale invasion, as well as mechanisms for data protection for both media professionals and their subjects, remains crucial.

Conclusions. The analysis showed that *the main ethical challenges* in data use in journalism are ensuring the confidentiality of personal data, even if collected from open sources, and obtaining consent for their dissemination, as media professionals are better aware of the potential risks associated with publication and must explain these risks to their subjects; avoiding manipulation and distortion of information, including carelessness; and ensuring ethical standards when covering sensitive topics. Ethical norms demand particular attention to the context in which the data is obtained and the impact of the publication on affected individuals and society as a whole. These issues become especially relevant during wartime, and within the Ukrainian context, media professionals continuously face ethical dilemmas, balancing the need to highlight events and war crimes in Ukraine with the risk of retraumatization. Despite the available guidelines from national ethical commissions and international communities, the journalist individually assesses each case through the lens of ethical values and public benefit.

The analyzed threats include data leaks, cyberattacks, the use of data without providing context for manipulation, and the potential use of published data by the enemy for military purposes. To prevent these risks, it is recommended to implement end-to-end encryption, anonymization of sensitive data, use of secure communication platforms, adherence to both editorial data protection policies, and the enhancement of personal cybersecurity skills (regular password updates; creation of separate work accounts, enabling two-factor authentication on all programs and devices; regular cleaning of irrelevant and unnecessary data about oneself and one's subjects from the network). In the context of the Russian-Ukrainian war, physical threats are added to cyber threats – the publication of personal data of the missing may complicate their situation in captivity or lead to death, while publishing personal data of volunteers or the location of training centers may jeopardize security and lives.

The problem of *systematizing the norms* of Ukrainian and European legislation, which is also addressed in the article, is multifaceted. Such systematization allows for the formation of unified data processing standards. It creates a foundation for increasing journalists' awareness regarding personal data protection, defines the limits of information used in the public interest, and facilitates the adaptation of Ukrainian norms to European standards. However, given martial law and the increased risk of data leaks, directly copying European norms without adaptation to the context may have an adverse effect, potentially increasing sanctions and fines rather than ensuring a transparent and effective mechanism for working with personal information. It should also be noted that "under the guise" of protection from Russian attacks, attempts to close registers important for civil society development could occur. Data journalists should also monitor and respond to such threats in this context.

The modern media environment, characterized by datafication and the increasing volume of available data, amplifies the risks of information leaks while simultaneously stimulating the introduction of innovative tools for data protection and information analysis. In particular, the importance of automated data verification systems, visualization, and the use of big data in real-time (or near-real-time) is growing. The application of data in journalism opens new opportunities for covering socially significant issues and providing objective information, but at the same time, it requires responsible handling of ethical and security aspects. In the age of datafication and cyber threats, journalists must clearly understand the risks associated with processing and disseminating information, particularly concerning personal data. Specifically, the following is recommended:

- ensure transparency in the use of sources and methods of obtaining data;
- avoid excessive detail that may compromise the safety of the subjects of the material;
- invest in cybersecurity training;
- use data in accordance with editorial policies that account for both ethical and security aspects. Journalists should refer to international guidelines such as those from the Global Investigative Journalism Network[33] if such policies are not developed within the editorial office,

The outlined issues require further discussion at both the scientific and practical levels, particularly concerning the provision of ethical standards in data use and the strengthening of information security in journalistic projects. When working with data, journalists must not only comply with legislative norms, but also actively contribute to protecting the rights of data subjects and preserving public trust in the media. Furthermore, a key principle in working with data, considering the examined aspects of data journalism, should be the shift from the concept of understanding data as fixed, objective, independent units of information about the world to viewing them as products that emerged within specific social and political contexts and which contain the influence of these conditions within them.

In conclusion, the ethical and security aspects of data usage in contemporary journalism require thorough research and clear regulations. Data journalism holds immense potential but also presents new challenges that demand a responsible approach to information.

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ЕТИЧНІ ТА БЕЗПЕКОВІ АСПЕКТИ АНАЛІТИКИ ДАНИХ У ЖУРНАЛІСТИЦІ: КОНТЕКСТ РОСІЙСЬКО-УКРАЇНСЬКОЇ ВІЙНИ

Яна Шекеряк-Кушка

*Львівський національний університет імені Івана Франка,
вул. Генерала Чупринки, 49, 79044, Львів, Україна
e-mail:* Yana.Shekeriak@lnu.edu.ua
https://orcid.org/0000-0002-8187-4062

Статтю присвячено дослідженню етичних та безпекових аспектів використання даних у журналістиці даних, зокрема в умовах війни. Розглянуто ключові ризики роботи з даними, зокрема порушення приватності, маніпуляції та утвердження стереотипів. Виявлено, що основними викликами є захист персональних даних, навіть коли вони зібрані з відкритих джерел, та необхідність отримання згоди на їх публікацію.

Заслуговують на увагу законодавчі аспекти, зокрема українське та європейське законодавство щодо захисту персональних даних та потреби систематизації їх для встановлення єдиних стандартів роботи з даними. Однак застосовувати європейські норми неможливо без врахування місцевого контексту. Окрім того, важливо звертати увагу на можливі спроби закриття важливих реєстрів (під прикриттям захисту від російських кібератак), що може негативно вплинути на розвиток громадянського суспільства.

Розкрито специфічні етичні та безпекові аспекти журналістики даних в умовах війни, коли журналісти стикаються з дилемою між привертанням уваги до воєнних злочинів і ризиком ретравматизації. Кожен випадок публікації даних потребує індивідуального розгляду через призму етичних цінностей. Загрози, пов'язані з витоками даних, кібератаками та використанням даних ворогом, вимагають застосування заходів захисту, як-от наскрізне шифрування, анонімізація та використання захищених платформ для комунікації.

Проаналізовано механізми, які дають змогу журналістам не наражати на небезпеку тих, про кого вони публікують дані, та захистити себе під час виконання професійних обов'язків. Окреслено рекомендації щодо етичного використання даних у журналістиці та гарантування безпеки в умовах сучасної медійної дійсності.

Ключові слова: журналістика даних, персональні дані, етика, безпека, війна, Україна, нові медіа.