17

KRIMINALISTIKA A FORENZNÉ VEDY: VEDA, VZDELÁVANIE, PRAX
CRIMINALISTICS AND FORENSIC EXPERTOLOGY: SCIENCE, STUDIES, PRACTICE
КРИМИНАЛИСТИКА И СУДЕБНАЯ ЭКСПЕРТОЛОГИЯ: НАУКА, ОБУЧЕНИЕ, ПРАКТИКА

September 2021

CRIME SCENE DO NOT CROSS

Bratislava, Slovak Republic

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LIETUVOS KRIMINALISTŲ DRAUGIJA

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Katedra kriminalistiky a forenzných vied

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Science, Studies, Practice

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CONTENT

PROGRAMM

CEST = UTC + 2 h

16.9

12,40			opening speeches. **Vice Rector prof. Mojmir Mamojka** **Lithuanian Criminalistic Association prof. Matuliene, PhD., / Head of Slovak Criminalistic Association Ing. Laciak, PhD.,**
lecturer	**time**	**country / language**	**lectur**
Shepitko Valery Shepitko Mykhaylo	13,00	UA / en	**The formation of digital criminalistics as a strategic direction for the development of science**
Baltrūnienė Jurgita	13,20	Litva / en	**Security strategies in Europe and their impact on the ship with the cigarette cigarette in Litva - Стратегии безопасности в Евросоюзе и их влияние на борьбу с контрабандой сигарет в Литве**
Jakštienė Ramunė	13,35	Litva / en	**Investigating Psychological Domestic Violence in Lithuania**
Šivickaitė-Moldarienė Laura	13,50	Litva / en	**Possible outcomes of improper actions of forensic experts**
Burda Ryšardas	14,05	Litva / ru/en	**Досудебное расследование Литвы: вперёд в прошлое (Lithuania pre-trial investigation: forward to the past)**
Pertsev Roman, Nuger Alexander	14,20	Izrael / ru/en	**ИСПОЛЬЗОВАНИЕ МЕТОДА КРИМИНАЛИСТИЧЕСКОЙ РАЗВЕДКИ ПРИ РАСКРЫТИИ ПРИСТУПЛЕНИЙ, THE USE OF THE METHOD OF FORENSIC INTELLIGENCE IN SOLVING CRIMES**
Break	14,35	3/5 **posters**	**visual presentation**
Szabolc Mátyás, Maďarsko		only visual by organizers	**The possibilities of the spatial display of crimes in the GIS systems of the Hungarian Police**
Metzger, Gardonyi, Ujvári, Maďarsko		visual + verbal by authors	**A consistent methodology for forensic photogrammetry scanning of dead bodies using a single handheld DSLR camera**
Goc Mieczysław, Poľsko		only visual by organizers	**Comparator – a universal program for forensic examinations.** Mieczysław Goc, Marek Miron, Dorota Semków, Karol Bajda, Izabela Kułak,

Miron Marek, Poľsko		only visual by organizers	**Intelligent system for identifying falsification of biometric features of handwriting** Miron Marek, Mieczysław Goc,
Break			
Tomaszewska Alicja + co	15,15	Poľsko/ en	**Participation of NGO's in the process of searching for missing persons in Poland** Gruza Ewa, Ireneusz Sołtyszewski, Tomaszewska Alicja,
Wiergowski Marek + co	**15,30**	Poľsko / en	**Determination of fatty acid ethyl esters (FAEEs), ethyl glucuronide (EtG) and ethyl sulfate (EtS) in meconium as potential biomarkers of alcohol consumption during pregnancy -** Co-authors: Mateusz Kacper Woźniak, Laura Banaszkiewicz, Justyna Aszyk, Iwona Jańczewska, Jolanta Wierzba, Agata Kot-Wasik, Marek Biziuk
Hrehorowicz Malgorzata	15,45	Poľsko/ en	**Premises for appointing court experts and dismissing an expert from the function of the Polish legal system**
Discussion after first day	**16,00**		

	17 september		
Malewski Henryk + co	9,00	Litva / ru/en	**Обзор конгрессов Литовского криминалистического общества - Академическая дидактика** Henryk Malewski, Vidmantas Egidijus Kurapka, Ilona Tamelė,
Włodarczyk Renata	9,20	Poľsko / ru/en	**Пригодность и критерии использования беспилотных летательных аппаратов в области безопасности**
Zhamiyeva Roza	9,35	Kazachstan/ ru/en	**Some issues of introducing dactyloscopic and genomic registration in the Republic of Kazakhstan -** Co-authors: Elena Perehodyuk, Bakytzhan Zhakupov
Szabolcs Mátyás	9,50	Maďarsko / en	**The possibilities of spatial display of crime**
Break	10,05	3 **posters**	**visual + verbal presentation**
Wiergowski, Poľsko		only visual by organizers	**Age determination of bloodstains in criminal cases: the current state of research** Ireneusz Sołtyszewski, Marek Wiergowski, Magdalena Konarzewska
Kaiser Nina, Rakúsko		visual + verbal by author	**Hans Gross centre of interdisciplinary criminal sciences (ZiK)**
Petrétei David, Maďarsko		visual + verbal by author	**Identification of Skeletal Remains by Secondary Identifiers – A Case Study**
Break			

Brodbeck Silke	10,30	Nemecko / en	**Liquid Latex Lifting for the securing of bloodstains, dactyloscopy and DNA after arson**
Olber Paweł	10,55	Poľsko / en	**The impact of computer forensics on Polisch criminal procedure development**
Chaževskas Andrius	11,15	Litva / en	**Forensic password examination in leaked user databases**
Kipouras Pavlos	11,30	Grécko / en	**Construction of evidence and defensive role of Forensic Handwriting Examination**
Herasimenkienė Gintarė	11,50	Litva / en	**Hate Speech Evaluation Guidelines**
Malý Ján	12,05	ČR / en	**Coronavirus and the tactics of criminalistics -** Co-autor: JUDr. Eva Brucknerová, Ph.D.
Finall Discussion,	12,20		**questions, discussion, visual + verbal presentation selected posters,**
Finall speeches. Closing ceremony of the congress.	12,30		**organizers, Lithuanian organizers for next Congress**

INTRODUCTION

The long-presented statement about content and concepts of current criminalistic science as practical science is rational. On the other hand, this does not mean that Criminalistic has no theoreticall problems for actual solving. Research and its aplications and at the same time constantly re-evaluating knowledge is for Criminalistics not contemporary task. In our concept, only this is a scientific what is verified and, on the other hand, in the materialistic world of Criminalistic, only this can be scientifically proven. We express the assumption that the development of the last decades, which we are also trying to anticipate with this congress event, is certainly not smooth and unambiguous. However, differences of opinion and trends make it possible to make progress in criminalistic itself. However, it turned out that the development of the subject of Criminalistic will not be ensured by itself, but only in relation to other sciences. Criminalistic is a separate and established science in the scientific family, but cooperating with more scientific areas. It is a science established and confirmed in its foundations. It is a science cooperating in its own and other subjects of research. Criminalistic in relation to Forensic sciences on the European continent for a long time fight for its place in the scientific excellence of the EU, and it must be said that the current not very successful. On the other hand, it manages to reflect long-term development trends, for example, the development of informatics but also other technical and natural sciences bring new knowledge on which Criminalistic must take a clear position. It is a convincing definition of a criminalistic trace when changing the transmission of information from analog to digital form. Knowledge is expanding, which deepens the possibilities of criminalistic identification. New technologies are penetrating into criminalistic and forensic methods and the results of research are becoming more and more difficult to interpret. New methods are emerging, which also affects the system and definition of the subject and object of Criminalistic. If we add to this the constant interest of the professional public in re-evaluating the possibility of criminalistic identification, it opens up an almost endless space for scientific research. Opposite these trends, we have presented in the development of work at the crime scene that show that it is still the cornerstone on which criminalistic and forensic cognition and investigation stand. That is why the project of international congresses and conferences, further developing the subject and content of criminalistic, follows on from historically verified conferences related to the development of Criminalistic in Slovak conditions in the past, is so necessary and useful. From our point of view, all topics processed by recognized domestic as well as foreign experts in the field of criminalistic, forensic sciences and practical criminalistic activities and non- criminalistic applications, deal with the most topical issues. As a result of the development of opinions on Criminalistic and Forensic sciences and their content and scope, there are also significant shifts in the area of opinions on their subject and system. Little attention is still paid to questions of methods. It is also necessary to work out in the international field an effective model of both theory and practical activity, but also for use as an educational discipline, which is happening very slowly and under very difficult circumstances. In fact, the criminalistic content of education is currently being reduced. To improve this situation, it is therefore necessary to capture every useful thought and idea that appeared during the congress in the presentations and posters of its participants.

The system of conferences and congresses must therefore be maintained. The congress is also a presentation of the results of the research team's work in research tasks carried out at the Department of Criminalistics and Forensic Sciences.

For the opening of the congress prof. Meteňko

COMPARISON OF DEVELOPMENT OF TRENDS AT THE CRIME SCENE FROM THE PERSPECTIVE OF THEORY AND PRACTICE IN THE SLOVAK REPUBLIC AND EUROPE

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Abstract

The authors focus on the comparison and identification of the spectrum of activities and problems that are related to the development of trends in work at the crime scene from a practical and theoretical point of view. By comparing the opinions with the ENFSI concept on crime scene research, including the opinions of practitioners - especially forensic technicians, it is possible to get closer to the real knowledge in the researched area. Theoretical findings were made on the historical analysis of published sources in this area, especially on the basis of the long-term research task "9/2008 - Methods and procedures of work at the crime scene". The field survey was carried out in the form of a questionnaire focusing on selected important areas such as tactics of crime scene inspection, search and securing of tracks, material and technical support and documentation within the presented long-term research plan and project. The information obtained by this comparison can be valuable stimuli for further progress in the development of the basic method of criminal activities not only in the Slovak Republic. Criminalistics is evolving in the same way as all areas of human activity. It is very important to know all the needs and opportunities that are available in the area, as well as to achieve their coherence. The possibilities of criminalistic research with regard to the knowledge that is currently known in the given area are relatively concretely determined. Of course, the current application of methods and criminalistics means in practice will not always consistently copy the development and research in a given area, but it is necessary to get as close as possible to it within the practical possibilities. It is sometimes difficult to identify the real causes of negative developments and disproportions in this area, and especially even more difficult to influence the mechanisms that move developments in a positive direction. This is also our long-term experience, influenced by the effort to positively influence the development of the theory and practice of the crime scene in the Slovak Republic. The key to understanding the true quality of criminalistic activities is the ability to search for and secure latent traces. In order to be able to realistically estimate it, it is necessary to determine the probability of the occurrence of traces in a certain area and the possible number of traces to be secured. A concrete step to improve

the situation is to solve the departmental research task 9/2008 "Methods and procedures of work at the crime scene". As part of the solution of crime scene priorities, a survey within the ENFSI SOC WG (crime scene working group) was initiated, focusing on the area of crime scene research needs, which resulted in starting points in the given issue. The survey focused primarily on areas that, according to its authors, primarily characterize crime scene work, in our opinion, in addition to criminalitcs technicians, crime scene management, subsequent and related investigation processes, as well as other elements that most affect the quality of crime scene work. It can be said that a common feature in most countries is the fact that specialized institutions are not set up to deal with research and development in the field of crime scene investigation.

Key words
crime scene, Criminalistic, criminalistics traces, crime scene inspection, research and development, staff, education and training, technical means.

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COMPARISON OF DEVELOPMENT OF TRENDS AT THE CRIME SCENE FROM THE PERSPECTIVE OF THEORY AND PRACTICE IN THE SLOVAK REPUBLIC AND EUROPE

This presentation is the partial result of research project "PVM - Výsk 151".

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Keywords

- crime scene,
- Criminalistic,
- criminalistics traces,
- crime scene inspection,
- research and development,
- staff,
- education and training,
- technical means.

Abstract

The authors focus on the comparison and identification of the spectrum of activities and problems that are related to the development of trends in work at the crime scene from a practical and theoretical point of view. By comparing the opinions with the ENFSI concept on crime scene research, including the opinions of practitioners - especially forensic technicians, it is possible to get closer to the real knowledge in the researched area.

Theoretical findings were made on the historical analysis of published sources in this area, especially on the basis of the long-term research task "9/2008 - Methods and procedures of work at the crime scene". The field survey was carried out in the form of a questionnaire focusing on selected important areas such as tactics of crime scene inspection, search and securing of tracks, material and technical support and documentation within the presented long-term research plan and project. The information obtained by this comparison can be valuable stimuli for further progress in the development of the basic method of criminal activities not only in the Slovak Republic.

Abstract

Criminalistics is evolving in the same way as all areas of human activity. It is very important to know all the needs and opportunities that are available in the area, as well as to achieve their coherence. The possibilities of criminalistic research with regard to the knowledge that is currently known in the given area are relatively concretely determined. Of course, the current application of methods and criminalistics means in practice will not always consistently copy the development and research in a given area, but it is necessary to get as close as possible to it within the practical possibilities. It is sometimes difficult to identify the real causes of negative developments and disproportions in this area, and especially even more difficult to influence the mechanisms that move developments in a positive direction. This is also our long-term experience, influenced by the effort to positively influence the development of the theory and practice of the crime scene in the Slovak Republic.

Abstract

The key to understanding the true quality of criminalistic activities is the ability to search for and secure latent traces. In order to be able to realistically estimate it, it is necessary to determine the probability of the occurrence of traces in a certain area and the possible number of traces to be secured. A concrete step to improve the situation is to solve the departmental research task 9/2008 "Methods and procedures of work at the crime scene".

As part of the solution of crime scene priorities, a survey within the ENFSI SOC WG (crime scene working group) was initiated, focusing on the area of crime scene research needs, which resulted in starting points in the given issue. The survey focused primarily on areas that, according to its authors, primarily characterize crime scene work, in our opinion, in addition to criminalitcs technicians, crime scene management, subsequent and related investigation processes, as well as other elements that most affect the quality of crime scene work. It can be said that a common feature in most countries is the fact that specialized institutions are not set up to deal with research and development in the field of crime scene investigation.

INTRODUCTION

The development of the last decades, which we also try to anticipate with this contribution, is certainly not smooth and unambiguous. However, differences of opinion and trends allow for progress in criminology itself.

However, it turned out that the development of the subject of criminology will not be ensured by itself, but only in relation to other sciences, and that criminology is still a separate and established family in the scientific family.

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INTRODUCTION

It is a science established and confirmed in its foundations, It is a science cooperating in its own and other subjects of research. Those are presented as partial output for research „Výsk. 151“.

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SOME NEW CONCEPTS AND TRENDS

The key to knowing the true quality of forensic activities is the ability to search for and secure latent tracks. In order to be able to realistically estimate it, it is necessary to determine the probability of the occurrence of footprints in a certain area and the possible number of footprints to be secured. A concrete step to improve the situation is to solve the departmental research task 9/2008 "Methods and procedures of work at the crime scene".

SOME NEW CONCEPTS AND TRENDS

As part of the solution of crime scene priorities, a survey within the ENFSI SOC WG (crime scene working group) was initiated in 2009, focusing on the area of crime scene research needs, which resulted in starting points in the given issue. The survey focused primarily on areas that, according to its authors, primarily characterize crime scene work, in our opinion, in addition to forensic technicians, crime scene management, subsequent and related investigation processes, as well as other elements that most affect the quality of crime scene work.

SOME NEW CONCEPTS AND TRENDS

It can be said that a common feature in most countries is the fact that specialized institutions are not set up to deal with research and development in the field of crime scene investigation. Usually, the situation in a given area is solved in such a way that these partial tasks related to the crime scene are transferred to several institutions. A common feature is that research is carried out by national forensic and forensic institutes in cooperation with police academies and universities. Some countries do not carry out research at all, but at least apply the research results or try to apply them, especially those provided on an international platform (for example from the ENFSI), into their practice.

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SOME NEW CONCEPTS AND TRENDS

Identification of priority research areas related to crime scene investigation according to the relatively subjective opinions of SOC WG members determined the order of individual areas of research related to the crime scene, which need to be addressed as a matter of priority: 1. Competence of staff 2. Crime scene investigation methods, procedures and techniques 3. Training 4. Education 5. Resources for crime scene work 6. Procedures 7. Requirements of forensic technicians 8. Crime scene inspection system 9. Evaluation process 10. Manuals

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Methodology
and analysis of the project

•The quality of a crime scene inspection is a variable that creates a positive or negative image of police work, which is quite logical and natural. When working at the crime scene, information is obtained that will serve as evidence for use in forensic-technical, forensic and investigative processes. Based on the respondents' opinions, the selection of suitable staff is crucial for this purpose in order to improve the quality of the crime scene inspection.

Methodology
and analysis of the project

•The staff must be provided with adequate education and training, as well as sufficient time for quality work at the crime scene. These are the basic assumptions. It is therefore very important to apply harmonization, standardization and accreditation in crime scene investigation from a European perspective. Activities in this area have been summarized in the guide for the implementation of ISO 17020, for the crime scene area. Unfortunately, it must be said that the Slovak realities were practically unaffected by this scenario.

SOME OUTPUTS FROM TESTING TRENDS

•Post-arrival activities affect the further progress of the inspection and thus its quality. From the point of view of a forensic technician, the most important is the securing of tracks where there is a risk of 79% delay. Forensic technicians consider, in their own experience, the length of stay at the scene, influenced mainly by objective reasons, which seems to be a realistic view. Staying at the scene depends mainly on its complexity of 95% and severity of 57%, in 29% of cases they identified the number of current events that need to be processed as the cause, and in 28% it depends on the decision of the forensic technician. Here, too, the predominance of where to focus activities is clearly shown.

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SOME OUTPUTS FROM TESTING TRENDS

•While the legal and police community focuses on a "serious" forensic approach, it should focus on the complex case and solutions. The biggest obstacles that have a negative impact on a full-fledged focus on work at the crime scene are considered to be the movement of people around the crime scene, the number of waiting cases 40% and the incidence of non-stakeholders 37%. Forensic technicians consider the most important material equipment that contributes the most to the quantity and quality of traces sought and seized. In this case, it is mainly a fully equipped exit vehicle, crime scene lighting, means for searching and securing tracks and photo equipment.

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SOME OUTPUTS FROM TESTING TRENDS

•An important factor in inspecting the crime scene from the point of view of searching for criminologically relevant tracks is forensic lighting, which currently forms an irreplaceable tool, without which it is not possible to search for tracks effectively. In terms of usable forensic light sources and respective wavelengths, the participants preferred LED and xenon light sources with lengths of 350, 450 and 505 nm, including accessories. This means mainly the use of bands of purple and blue light, which is natural, because the given light spectra means versatility in tracing and the least complications.

SOME OUTPUTS FROM TESTING TRENDS

•With these wavelengths, different types of tracks can be searched without the use of reagents. For this reason, it is advantageous to use the BMT (blue merge technology) system, which allows the search for most types of footprints such as dactyloscopic traces, trasological traces, body fluids and bones. However, there is also room for the application of other wavelengths and technologies that are not yet commonly used for crime scene work (eg laser), while their efficiency compared to other light sources is multiplied.

SOME OUTPUTS FROM TESTING TRENDS

•In terms of documentation, forensic technicians use semi-detailed and detailed shots, tripods, macro lenses and external flashes. The success of searching for latent tracks depends on the control of variable methods. However, the actual assessment of this activity by forensic technicians is not consistent with some statements, which suggests that it appears to be overestimated. It is practically impossible to determine the possible number of latent tracks at a particular crime scene. Only a certain proportion of these tracks will always be provided. The greater the skills and abilities of forensic technicians, the greater.

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SOME OUTPUTS FROM TESTING TRENDS

•According to the results of the survey, it is important to maintain the correct sequence when searching for clues. Tracks with multiple - combined identification value have a much greater meaning and informative value than unambiguous tracks. 84% of forensic technicians presented their professional experience with these tracks. Forensic technicians reported having the most specific experience with the following combinations of tracks: dactyloscopy-DNA / documents, trasology-blood, mechanoscopy-dactyloscopy / biology, and ballistics-DNA. We criticize that this figure could be slightly exaggerated.

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CONCLUSION

- In the article, the authors paid attention to some partial and systemic views of the development of criminology in the field of criminological examination and, from a forensic point of view, also to the issue of the European situation in crime scene management and criminologists . It is clear that these views are similar in certain areas, but differences should not reduce the scope for cooperation on a common European approach to crime scene work.

CONCLUSION

- At the same time, the authors rely on their own research and findings in the project "Methods and procedures of work at the crime scene", which they also interpret in the evaluation opinions of practitioners. Forensic technicians without primary theoretical training, with only a pragmatic overview of their practice, cannot, with a few exceptions, estimate the real situation, nor trends and needs.

CONCLUSION

- The areas that both groups consider to be the most important are crime scene investigation methods and techniques, education and training, and technical means for the crime scene. These areas need to be given priority and concrete steps taken as a matter of priority.

CONCLUSION

- The role of the Academy of the Police Force and the Criminalistics and Expertise Institute of the Police Force is irreplaceable in this respect, whether within research and development activities or joint educational activities. The study is the result of the permanent research task "9/2008 - Methods and procedures of work at the crime scene".

Ladies and gentlemen, it was a pleasure ....

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CSI IN THE PROCEDURES OF MURDER SURVEY DETECTION AND CLARIFICATION - CRIMINALISTIC-TACTICAL METHOD

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Abstract

Detection and clarification of criminal offenses is carried out by police officers in accordance with the needs of society. In these processes, by defining a task that corresponds to the security strategy and to the specific local and substantive jurisdiction, members identify facts and information, exploit information networks, and evaluate this in a knowledgeable, clearing manner. In this way, they process the knowledge needed to answer the questions (7 forensic). Their activity is determined by various factors. Experience confirms that if these factors are currently identified, their determination can be positively used by members of the police (implementers of detection and clarification) in the performance of these purposefully implemented cognitive activities.

The company's interest is to ensure effective protection against criminal offenses - crime. It is indisputable that the higher the ratio of undetected crimes and unidentified perpetrators to the number of detected (detected, clarified), the more the situation deepens, which is in the deepest conflict with the interests of society. Failure to identify the committed and committed crime and their perpetrators is a phenomenon that significantly weakens the preventive and repressive function that members of the police are obliged to perform in ensuring the inevitability of criminal punishment. This fully applies to murders offenses, the detection and clarification of which (identification of the facts) is determined in police practice by the choice of tactics in the application of methods in the system of criminalistic knowledge, especially in the inspection of the crime scene. The choice of tactics for inspecting the crime scene differs significantly from the tactics that members of the police respect when revealing other facts of crime. Members of PZ are obliged to accept this fact. In the presented paper (based on the findings of the survey) we state that the tactics of inspection for the needs of detection and clarification of murder crimes must be carried out with regard to their expected output - result and effect. This activity represents specific activities carried out by members of the Police through interdisciplinary cognition, especially the application of forensic-tactical and forensic-technical methods. In the given context, we present our opinions on their characteristics and significance to the professional public. In relation to the tactics of their application, we state that it is one of the determinants that significantly influences the detection and clarification of murder crimes. Given this reality, the professional public is expected to examine, evaluate and explain this issue, especially for the purposes of designing tactics for this specific police activity.

Key words
forensic knowledge, detection, clarification, forensic-technical methods, forensic-tactical methods, strategy, tactics, methodology, inspection of the crime scene.

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THE EUROPEAN UNION SECURITY STRATEGY AND ITS EFFECT IN COMBATING CIGARETTE SMUGGLING IN LITHUANIA

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Abstract

The article analyses the European Commission's Communication on the European Union Strategy against cigarette smuggling and sets out measures and actions to tackle the problems and factors identified by stepping up the fight against illicit trade in the EU by supporting the implementation of the measures and policies currently in place. One of the most effective ways of combating cigarette smuggling is to make it economically unprofitable and useless. In order to implement the strategy of the Communication of the European Union, cooperation of national authorities and international legal cooperation between the states seeking to administer justice is essential. The crime of cigarette smuggling is increasingly becoming a global threat to the state causing enormous damage to the economy, therefore control over cigarette smuggling should not be fragmented and control measures should be constantly updated and effective.

In our view, the current provisions of the strategies (of separate institutions) are possibly rather declaratory, abstract and inaccurate. The individual strategies do not provide for a link with other legislation or other issues. It must be assumed that the strategies of the individual institutions must be a kind of a vision that sets out the main objectives. Plans must be prepared for the implementation of strategies and they should present the specific measures, deadlines, resources, those in charge of implementation, etc. The author takes the position that in order to facilitate and speed up the implementation of the strategy, an inter-institutional coordination group (of public law enforcement authorities) for the implementation of the strategy against cigarette smuggling should be set up. It should coordinate and monitor the implementation of the action programme. Based on the conclusions of the coordination group, the strategy should be regularly reviewed and adapted to the changing environmental, economic and social factors. The action programme of the strategy of individual institutions must therefore be reviewed annually on the basis of: changes in laws; information from external factors; requirements of the Treaties of the European Union, other international institutions; from the point of view of the society.

In summary, the following conclusions are to be drawn: the current strategies of individual authorities address the issue of legal regulation of cigarette smuggling in an uneven manner and

in some cases raise serious doubts as to their lawfulness and validity. It needs to be assumed that there is a need for the development of the uniform strategy for individual law enforcement authorities in the fight against cigarette smuggling. It can be stated that our law enforcement authorities were not ready to respond quickly and adequately to the criminogenic changes in cigarette smuggling situations when assessing their perception of the strategies. Therefore, the State and its authorities are not yet in a position to ensure the effective investigation of cigarette smuggling crimes. It should be noted that the jumps in cigarette smuggling crimes due to the development of the market economy, Eurointegration processes were not properly assessed, and the reform of the institutional strategy was delay. The reforms of institutional strategies in the fight against cigarette smuggling were not scientifically justified. There was no common approach to investigating the crime of cigarette smuggling, and the strategies of individual law enforcement authorities as well as the single investigations of cigarette smuggling crimes presented only a fragmented reflection (which was not always adequate) of the existing situation. Cigarette smuggling not only requires development of the strategic aspects of detection of the criminal offence, but also requires a strategy for the implementation of the activities of the State and its institutions as a whole.

Keywords
smuggling, cigarette smuggling, European Union internal security strategy, strategy, criminalistics, international cooperation, criminal proceedings, law enforcement authorities.

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WAYS OF COUNTERFEITING AND ALTERING DOCUMENTS

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Abstract
In the presented article, the author discusses the ways of counterfeiting and altering documents without the use of more complex tools such as mechanical text removal, as well as with the help of digital technologies. It deals with the most common type of intervention in the background material of documents, as well as the division of counterfeiters into different groups. The second part of the article describes the technical trends of falsification and alteration, which are divided into: image acquisition technology, image processing and, last but not least, printing technology.

One of the most common ways to modify a document is to try to delete parts of it, e.g. using sandpaper, a razor blade or a knife to remove text or a photo. All such attempts at alteration disrupt the paper fibers resp. document background material. These changes are evident when the altered area is examined under a microscope using different types of illumination. In addition to sanding the paper, the perpetrator can destroy the contents of the document with chemicals. In this case, strong oxidizing agents are used, which are placed above the ink to obtain a colorless reaction. Such an experiment may not be visible to the naked eye, but examination under a microscope reveals a change in color on the treated area of the paper. The perpetrators of the crime falsify and modify the given documents so that they suit their intention as much as possible.

Digital technologies have evolved in many ways over the last 20 years. For some of them, the assumption of origin was very high, especially those that have low costs compared to the high quality of photo reproduction. The digital revolution has had a major impact on counterfeiting technology. Each of the three main steps involved in digital imaging technology is used to falsify: 1. image acquisition, 2. image processing, 3. image printing. Each of these three steps can be performed in binary or analog mode, sometimes hybrid processes may exist and may be performed in various combinations. Both binary and analog images have advantages and

disadvantages. Creating images in binary systems requires patterning the image in such a way that, after a thorough examination, it appears to be dense spatial patterns. Each pixel must be printed either with or without ink. Analog printing creates images with a variety of elements that have different optical densities.

Keywords
counterfeiting, document, groups of counterfeiters, technical trends of counterfeiting, digital image processing

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PRIVATE EXPERTS IN ADMINISTRATIVE PROCEDURE

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Abstract

A fair assessment of the evidence is very important in any type of process. For this purpose, it is very often useful to follow the findings of specialists and experts. The results of expert research are used to implement the tasks of administering justice. Timely and high-quality expert investigations should help courts to establish the truth in administrative cases, and pre-trial investigation institutions to detect offenses quickly and in detail. The purpose of this study is to analyze the status of private experts during the administrative process, determining the relevance of their findings in the evidentiary process. The study found that the application of expertise in the administrative process is of particular importance. A private forensic expert has a dual status in administrative proceedings, i. y. he may act as a specialist in his field and draw up the relevant documents in accordance with the legislation governing that field, or he may act as a private forensic expert who draws up the findings of an expert examination in accordance with procedural law and the Forensic Law. The status of a forensic expert is a procedural status and is to be used in accordance with the Law on Administrative Procedure and the Law on Forensic Examination only in actions related to the parties to the proceedings in the investigation and hearing of cases. A private expert who performs forensic examination or privately consults the parties to the proceedings must comply with the provisions of the Code of Professional Ethics of Forensic Experts and the rights and obligations established in the Law on Administrative Procedure and the Law on Forensic Examination. An analysis of the provisions of the above-mentioned legal regulation and case law leads to the conclusion that private experts are subject to the same requirements in the administrative process as for forensic experts, but their rights are limited.

Keywords

private experts, administrative procedure, examination, specialist, consultation.

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DEFINING AN INVESTIGATION QUALITY MANAGEMENT FRAMEWORK

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Abstract

The publication aims to define an Investigation Quality Management Framework which from the perspective of the quality of the expert witness opinion would be of help to the courts considering admissibility of the expert opinion as evidence in the court proceedings. Investigation Quality Management Framework is defined bearing in mind an investigation in the social science (economics, specifically calculation of damages) and could be further customized to the specific type of investigation. Investigation Quality Management Framework is based on the knowledge from the quality management (ISO 9001, EFQM Excellence model, ISQM1 etc.) as well as on the provisions of the International Standards on Auditing. Investigation Quality Management Framework could be applied by the experts with the selfassement purposes of the quality of the investigation, as well as evaluating the quality of the different kinds of the investigation reports performed by the supervision institutions.

An Investigation Quality Management Framework defined provides for the structure of the process of an investigation, starting from the selection and appointment of an expert and terminating with an expert witness opinion. There are outputs of every step of an investigation process provided as well as quality indicators defined. Investigation Quality Management Framework conception presented should be treated as a methodological approach to the investigative process and any of its components can be adjusted, adapted or changed according to the specific circumstances which vary from case to case as well as are impacted by the type of an investigation. Investigation Quality Management Framework is open to further development including methods of evaluation of compliance to quality indicators and should be supplemented with guidance on application of an Investigation Quality Management Framework.

Investigation Quality Management Framework provides insights which could be used and evaluating of the quality of different types of an investigative reports performed by the public institutions in the role of the supervisory bodies. Investigation Quality Management Framework and its tools could be of help to the judges and parties to the dispute in assessing of expert opinion as evidence in the court proceedings.

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Key words
expert evidence, expert opinion admissibility, theoretical framework, measuring quality, risk assessment.

INTRODUCTION TO PHARMACEUTICAL CRIME

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Abstract

The authors deal with the basic features of pharmaceutical crime in the article. The introduction defines the concept of pharmaceutical crime by the World Health Organization (WHO), but also from the perspective of several organizations that operate at the international and national levels. In the next part, the authors provide a brief overview of the activities of criminal groups committing pharmaceutical crime in the world, on the basis of which they analyze the effective fight against this serious social phenomenon at home.

Keywords

pharmaceutical crime, counterfeit pharmaceutical products, counterfeit medicines.

AGE DETERMINATION OF BLOODSTAINS IN CRIMINAL CASES: THE CURRENT STATE OF RESEARCH

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Abstract

Many years of research has shown that estimation the time of the formation of a bloodstain in a criminal case is a very difficult task. The basic research problem is the fact that the aging process of the bloodstain in the vast majority of cases proceeds in a non-linear manner, which makes it difficult to find an objective marker of this process.

The aim of the review is to present the currently used methods of solving this problem with the use of various methods and diagnostic techniques, such as: atomic force microscopy (AFM), electron paramagnetic resonance spectroscopy (EPR), ribonucleic acid (RNA) analysis or mobile colorimetric technology. The presented methods differ in accuracy and sensitivity, as well as the level of their invasiveness, which determines the degree of destruction of the tested material during the analysis. Comparing the above-described methods, it can be concluded that each of the presented methods is reliable only in a certain range of parameters, and the uncertainty of the estimated time increases with the aging of the bloodstain.

Keywords

criminal incident, bloodstains, age estimation, forensic examination

Age determination of blood stains in criminal cases: the current state of research

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Introduction

GDAŃSKI UNIWERSYTET MEDYCZNY

Many years of research has shown that estimation the time of the formation of a bloodstain in a criminal case is a very difficult task. The basic research problem is the fact that the aging process of the bloodstain in the vast majority of cases proceeds in a non-linear manner, which makes it difficult to find an objective marker of this process.

Bloodstains, like other biological traces, are susceptible to unfavorable external factors, both physical and chemical. The influence of humidity and temperature (both high and low), which lead to the degradation of these traces, is particularly destructive. The favorable conditions for the development of bacteria and fungi mean that these organisms treat blood traces as a reservoir of organic substances and use them in their own metabolic process. Another possibility is that these organisms produce biologically active substances that lead to the reconstruction of the existing structures and the creation of new properties previously absent in the trace. External factors, e.g. UV radiation, detergents (powders, soaps), iron oxides (rust), humic acid (present in soil samples), combustion products (soot, tars), may have a negative impact on the quality of biological material in the blood. and rules, clothing fabrics, plaster or glue paint.

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History of research on age determination of bloodstains

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The first mentions of undertaking research on determining the age of blood stains date back to the beginning of the 20th century. In 1907, Tomellini compiled a 12-item chart that illustrated the color changes of the blood trace over the year after their inception. Three years later, the German Otto Leers described the changes in the color of the bloodstain along with its aging. It should be emphasized that both methods were based on a visual assessment of the color changes taking place, and were subject to high subjectivism, which made their implementation in routine practice difficult. Much later, in the 1930s, Schwarzacher tried to find a correlation between age and the solubility of the bloodstains in water, which is high for fresh traces and gradually decreases with the aging of the trace. A few years later, Schwarz conducted a guaiac test to determine the activity of hemoglobin catalase and peroxidase in bloodstains. The experiments performed showed that the intensity of the color of the reaction inversely correlates with age of bloodstains [1,2].

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History of research on age determination of bloodstains

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In 1960, Patterson was the first to use spectrophotometry to assess the age of blood traces. In his research, he pointed out that the problem was also taking into account the fact that the color of bloodstains also depends on environmental conditions. Extraction of blood stains and subjecting the extracts to spectrophotometric analysis suffers from the disadvantage of destroying the stain, and is sometimes complicated by the simultaneous extraction of dye and dirt from the stained object [3]. Developing this technique, Kind, Patterson, and Owen (1972) presented a non-destructive method to assess the age of a blood trace using spectrophotometric analysis of the reflectance spectroscopy. Bloodstains extracts dissolved in liquid paraffin were used in the analysis [4]. In 1973, Kind and Watson proposed a modification of this method, which used extracts from traces of blood dissolved in ammonia. Extinction measurements were carried out at 500, 560, 578 and 650 nm wavelengths. According to the authors, the method makes it possible to determine the age of blood traces up to 10 or 15 years after the trace was created [5]. In 1980, Dobosz and Rogoliński presented a modification of this method, which consisted in determining the extinction value within the limits of the maximum and minimum absorption curve [6].

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History of research on age determination of bloodstains

In 1977 a publication appeared in which the use of the technique of immunoelectrophoresis was proposed for determining the age of blood traces. The electrophoretic separation was carried out using extracts from blood stains aged 15 days to 1 year, collected from 1 cm of clothing fiber. On the basis of the obtained data, it was found that due to the progressive degradation of β and γ globulins, this method allows for the assessment of the age of traces not older than 12 months [7]. In 1995, Matsuoka et al. reported the results of experiments that monitored changes in the amount of oxygenated hemoglobin (HbO_2) in bloodstains dissolved in saline with oxygen electrodes. HbO_2 concentration measurements were carried out for 10 days at 24-hour intervals under controlled temperature conditions.
At 5 °C, the effect of hemoglobin oxidation was not observed. At room temperature, the process is relatively quick to begin with, but is observed to slow down after a few hours. Blood spots stored at higher temperatures showed faster degradation of HbO_2, but no further changes were found after 24 hours. The advantage of this method was the consumption of only 20 µl of the bloodstain extract and the duration of the research for 5 minutes [8].

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The current state of art in assessment of age of bloodstains

- **High Performance Liquid Chromatography (HPLC)**

In 1992, Inoue et al., using the high-performance liquid chromatography method, examined bloodstains and found the presence of an unknown protein "X", which is not present in fresh blood. They found that the area of the protein X peak in the chromatogram increased with the age of the blood spot [9]. Based on this work, Andrasko developed a protocol to assess the age of blood stains on clothing. Clothes on which blood was applied were used in the experiments. This material was then stored for 60 days in a closed room with constant temperature and humidity. The chromatographic image revealed not only the presence of protein X correlated peaks but also additional peaks marked "Y" and "Z", the source of which could not be determined [10].

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The current state of art in assessment of age of bloodstains

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- **Electron Paramagnetic Resonance (EPR)**

In the experiments described by Sakurai, et al. [11], It was found that the denaturation of hemoglobin in dry blood stains is regulated by a change in the state of iron ions in the hemoglobin molecule. This process can be easily measured using EPR spectroscopy. In 2005, a study by Fujit et al. [12] using this technique allowed the age of traces to be determined up to one year, provided the storage environment of the samples is known.

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The current state of art in assessment of age of bloodstains

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- **Fourier Transform Infrared (FTIR)**

In 2017, Lin et al. [13] published the results of studies using Fourier transform infrared spectroscopy. The authors examined specially prepared samples of biological material in the so-called "biofingerprint region" between 1800 and 900 cm-1. Thanks to this approach, it was possible to obtain detailed information on the composition of biological samples [14]. The combination of infrared spectroscopy with the method of chemometry and statistical analysis makes it possible to determine the age of blood spots up to 107 days [15].

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The current state of art in assessment of age of bloodstains

GDAŃSKI UNIWERSYTET MEDYCZNY

- **Atomic Force Microscopy (AFM)**

The technique of atomic force microscopy enables the observation of the surface of solids in magnification and in three dimensions and the visualization of the tested sample with nanometer resolution. This method uses a high-resolution probe which, by scanning the examined surface, allows for the assessment of e.g. extracorporeal flexibility of erythrocytes. The conducted experiments showed that 1.5 hours after bleeding, the elasticity of red blood cells decreased almost 8 times. With the simultaneous lack of changes in the shape of red blood cells during the 31-day study [16].

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The current state of art in assessment of age of bloodstains

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- **RNA analysis**

The measurement of ribonucleic acid (RNA) degradation seems to be an interesting proposition to assess the age of blood spots, the more so because they are degraded faster than deoxyribonucleic acid (DNA). For the needs of the experiments, two types of RNA were selected, which allowed for the assessment of the relationship between the age of the blood spot and RNA degradation over time (the ratio of 18S rRNA to β-actin mRNA). In the research conducted by Bauer et al. using the semi-quantitative Real Time - PCR technique, it was found that the analysis of degraded RNA in blood traces is possible in traces stored for up to 15 years [17]. On the other hand, research conducted by Anderson et al. with the use of multiplex Real-Time allowed for obtaining reliable data up to six months after the criminal event [18-19].

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The current state of art in assessment of age of bloodstains

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- **Colorimetric mobile technologies**

In 2013, Thanakiatkrai et al. published a work that relates to the processes that accompany extravasated blood. The degradation processes of bloostains are also accompanied by changes in its color from red to dark brown, and the speed of these changes depends on a number of internal and external factors. In the presented method, variables these were used to estimate the time of the bloodstains formation [20].

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Techniques applied for age determination of bloodstains vs inaccuracy time estimation

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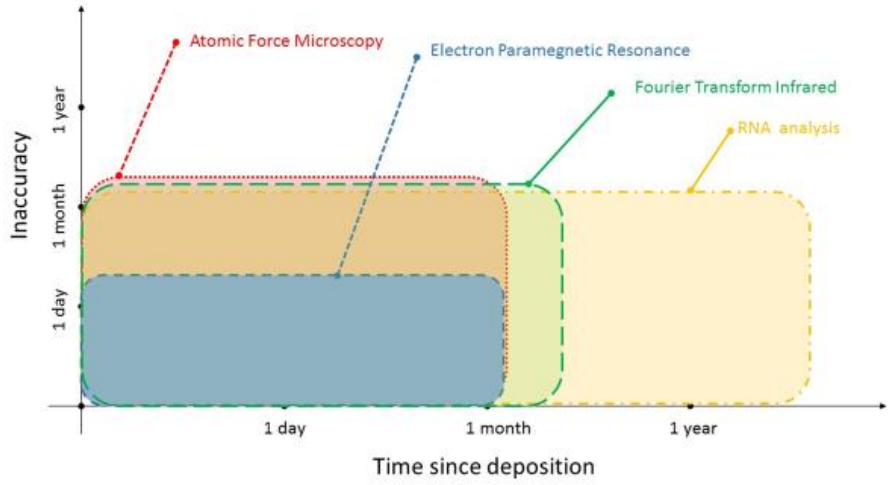

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Conclusion

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Despite the increasing number of publications describing studies to determine the time of formation of blood traces, none of the presented methods have been implemented in the routine practice in forensic laboratories. The presented methods differ in accuracy and sensitivity, as well as the level of their invasiveness, which determines the degree of utilization of the tested material during the analysis. Comparing the above-described methods, it can be concluded that each of the presented methods is reliable only in a certain range of parameters, and the deviations increase with the aging of the blood stains. It is worth noting that the authors of studies obtained a linear correlation between the studied variables under controlled laboratory conditions. The problem was to confirm these results in real conditions in which blood stains are revealed and secured. The above observation leads to the conclusion that research should be focused on the search for from a few to a dozen markers that will take into account a wide range of variables affecting the blood stains. Such an approach will allow, in a certain perspective, to obtain a useful diagnostic method for determining a reliable age of a blood stains with repeatable and relaible information value.

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Thank you for your attention.

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WHAT CRIMINALISTICS-TACTICAL PROCEDURES WE SHOULD APPLY DURING THE CONFRONTATION?

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Abstract

In a scientific study, the author points out the possibilities of using tactical procedures from the point of view of criminalistics tactics during the performance of confrontation. The correct application of tactical procedures affects the overall outcome of the confrontation. The scientific study is one of the outputs of the research task „Confrontation in Forensic Theory and Practice“, the project of which is conducted at the Academy of the Police Force in Bratislava under the number of 247.

Keywords

Confrontation, investigation, tactic of confrontation,

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SOME ASPECTS OF DIGITAL FORENSICS IN THE REPUBLIC OF ESTONIA

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Abstract

This is a relatively new and rapidly developing field, and therefore definitions have not been harmonized between countries. The article discusses theoretical aspects of digital forensics based on the scientific literature and the law. It examines the concept of evidence in criminal proceedings and attempts to define the concept of digital evidence and find its place in today's criminal proceedings. By defining the nature of digital forensics and its place in the forensic science system, the authors seek to generate a conversation in the field.

Digital evidence can be found everywhere - on computer hard drives, mobile phones, digital cameras, memory cards and more. Digital evidence is often associated with computer crime, but practice has shown that digital evidence can and often does help in solving non-cyber crimes. For example, recordings, information in the form of text messages as well as photographs, stored on storage media used by the perpetrators of a crime, are a valuable source of evidence. Digital evidence is therefore information stored or transmitted in binary form, which can be relied on as evidence in court.Based on the literature, it can be argued that "Digital evidence is any data stored or transmitted in digital form which confirms or disproves the existence of an evidentiary fact". Thus, the definition of digital evidence presupposes three characteristics that must coincide in order for the evidence to fall within the definition of digital evidence: firstly, it is data; secondly, it is data in digital form; and thirdly, it confirms or refutes the fact of the crime.

In parallel with the term digital evidence, the term electronic evidence is also widely used. There is no universal definition of digital evidence in the literature and the classification of digital evidence among the types of evidence listed in the Criminal Procedure Code is problematic. The handling of

digital evidence has to take into account the specificities of the evidence, which makes it necessary to know and apply the principles of digital forensics to ensure the preservation of digital evidence. The authors consider that digital forensics is a field of forensic science. This is indicated by the convergence of the examination matter, objectives and operational principles, which aim at discovering, analysing and presenting digital data in a way that can be used as evidence in legal proceedings. The principles of authenticity, traceability of the chain of custody, repeatability, forensic plausibility, objectivity, the use of a forensic copy in the investigation and competency must be observed when handling digital evidence.

Digital evidence is different from traditional evidence. Collecting, storing and presenting digital evidence in court is very different from the same procedure for other types of evidence. As legal practice has shown, the reliability of digital evidence is more difficult to prove in court because of its nature. The material is often technical and the investigator, the prosecutor and the court sometimes need the help of an expert, a specialist or a person with specialised knowledge to understand it.

Problems with the reliability of digital evidence generally become apparent at the stage of the judicial investigation of a criminal case. The problems start earlier - the instruments of international cooperation that allow digital evidence to be obtained in a lawful way are the same as those for physical evidence, and that is the problem. One of the ways of obtaining data located in another country is through international cooperation, in particular in the form of letters rogatory. Another is to access the information stored in the territory of another country. The third option is to go directly to service providers, but this is difficult because service providers are obliged to be discreet and to protect what they have in their possession.

The authors hope that the treatment of this article will encourage discussion with a focus on the following issues:

a) whether digital evidence is an independent type of evidence alongside physical and in-person evidence;

b) whether digital forensics is a separate sub-system of a specialised branch of forensic science or whether it is a field of forensic science.

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METHODS AND PROCEDURE FOR EXPERTISE AGE ESTIMATION OF YOUNG MIGRANTS IN DISPUTES

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Abstract

In the article, we dealt with the methodology of forensic age investigation in cases of unaccompanied migrant minors, which are increasingly required by police authorities and courts in our country. We presented the recommendations and opinions of experts on the standardization of methods for age forensic assessment.

An overview of methods for biological age assessments of adolescents and young adults is presented here. Those methods are the medical history and physical examination, X-ray examination of the hand, dental examination, and examination of the medial clavicular epiphyses development. The minimum-age concept is recommended to prevent the erroneous classification of under-aged as legal adults.

We recommend to draw attention to the outcome and importance of the expert opinion, which must include clear statements on the reliability of the age assessment in order to allow the decision-making body (police, court) to consider any doubts so as to lead to a more favourable legal outcome for the persons concerned.

Keywords

forensic age assessment, biological age, migrants-refuges, the minimum age concept

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THE IMPACT OF COMPUTER FORENSICS ON POLISH CRIMINAL PROCEDURE DEVELOPMENT

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Abstract
The article presents the impact of computer forensics on Polish criminal procedure. The publication contains a proposed article regulating the remote search of a computer system. The study also contains opinions of police officers on the necessity of introducing legal changes.

The dynamic development of information technology has meant that computer forensics experts have the tools to secure digital evidence in remote locations, on external servers and in cloud computing environments. However, the legal basis for such actions, which may violate the rule of law requiring to act strictly under the applicable provisions of law, remains a matter of debate. Therefore, the Polish criminal procedure needs to change. It's necessary to establish a remote search for an IT system. This will allow for effective protection of digital evidence and thus prosecute cybercrime perpetrators.

There is an ongoing discussion in the Polish computer forensic community about the legal options for securing digital evidence on external servers or in cloud computing. Our superiors also acknowledged the problem. This allows us to assume that further, they will carry activities out in this direction. We should direct the work described above at changing Polish legal regulations regarding the institution of the remote search for an information system. The legislator must adjust the existing legal regulations to the dynamically changing reality, in which digital information is becoming increasingly important. It is also worth considering preparing a comparative analysis of the legal provisions of other countries that address the institute of remote search.

Keywords
digital evidence, computer forensics, digital investigation, jurisdiction, remote search.

THE USE OF THE METHOD OF FORENSIC INTELLIGENCE IN SOLVING SERIAL CRIMES.

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Abstract

The article discusses the current problems of investigating serial using the work of the police in Israel, Latvia and other countries, in particular, in solving property crimes using the method of forensic intelligence. The work includes the collecting, processing and research of forensic data obtained at crime scenes to identify the connection between them and their possible use in solving serial crimes. The article studies the matter of the expediency of using national databases in the process of operation, allowing to analyze and apply the information received by forensic specialists at the places of on-site inspection, to identify the connection between similar crimes on the basis of the available data obtained from the forensic departments of neighboring districts, cities and regions, and nearby countries as well.

Forensic data received during C.S, such as DNA, fingerprints, firearms, shoeprints, special hacking or incident methods, as well as geographic location, can provide the investigator with information to identify and further investigate serial crimes.

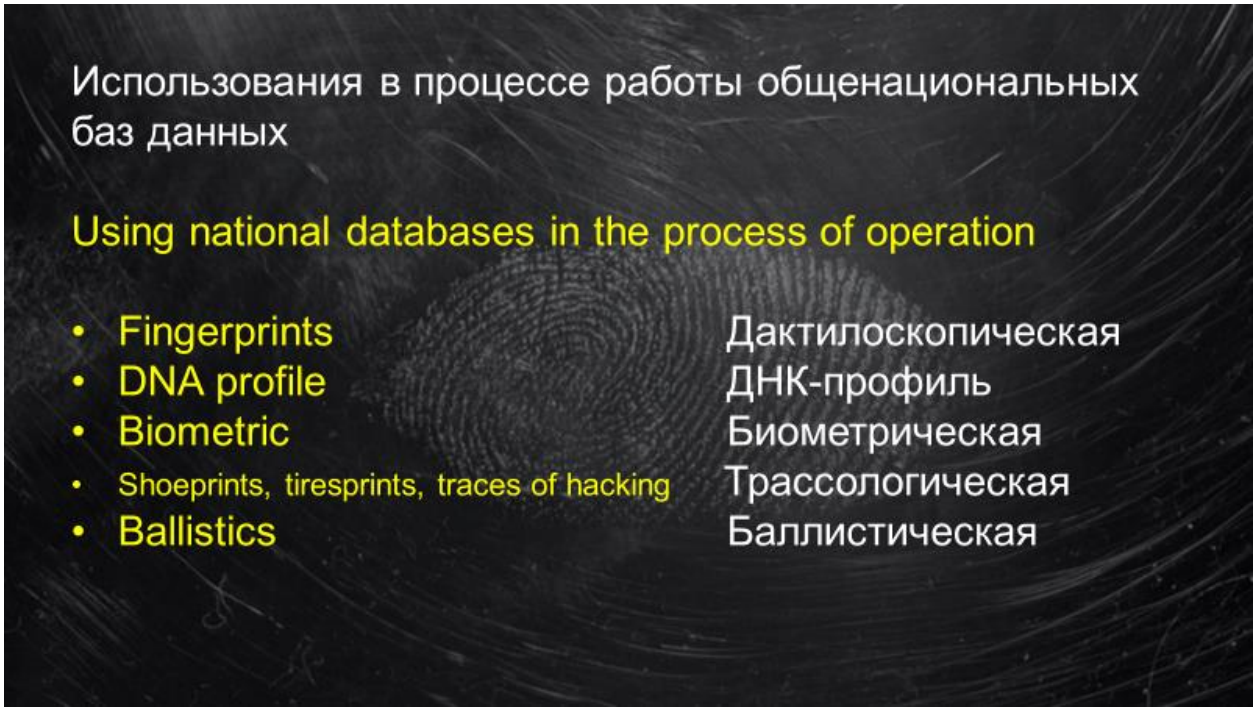
For the effective implementation and application of the forensic intelligence method, this study has identified and suggested:

1. The need to develop direct cooperation and dialogue between related departments and law enforcement authorities.
2. Creation of an analytical unit, which is a part of the forensic department, for the processing and analysis of forensic information, for its more effective use.
3. Using nationwide databases (fingerprints, DNA, shoeprints), as well as data from neighboring countries to detect and fight serial crimes, taking into account the development of transnational crime in general and in the Baltics in particular.

In conclusion, we can say that the use of the forensic intelligence method for analyzing forensic data when solving serial crimes, in particular serial burglaries, can bring forensic science

to a new level of fighting crime, will make it possible to use most of the forensic data available in the pre-trial investigation bodies to understand the state of crime in general and the fight against it.

Key words
serial crimes, information analysis, forensic intelligence, property crimes, shoeprints.



Данные, собираемые и изучаемые экспертами-криминалистами при осмотре места происшествия обычно исследуются, анализируются и представляются в **индивидуальном** порядке как для следственных органов, так и в уголовном судопроизводстве.

The data collected and studied by forensic experts and is usually researched, analyzed and presented on an **individual basis**, both to the investigating authorities and in criminal proceedings.

Использование криминалистических данных в индивидуальном порядке может приводить к потери стратегической разведывательной информации, а также **не выявлению** серийных преступлений.

The use of forensic data on an individual basis can lead to the loss of strategic intelligence information, as well as the **lack of detection** of serial crimes.

Криминалистические подразделения, участвующие в расследовании преступлений, имеют большой объём криминалистических данных:

Forensic units involved in the investigation of crimes have a large amount of forensic data:

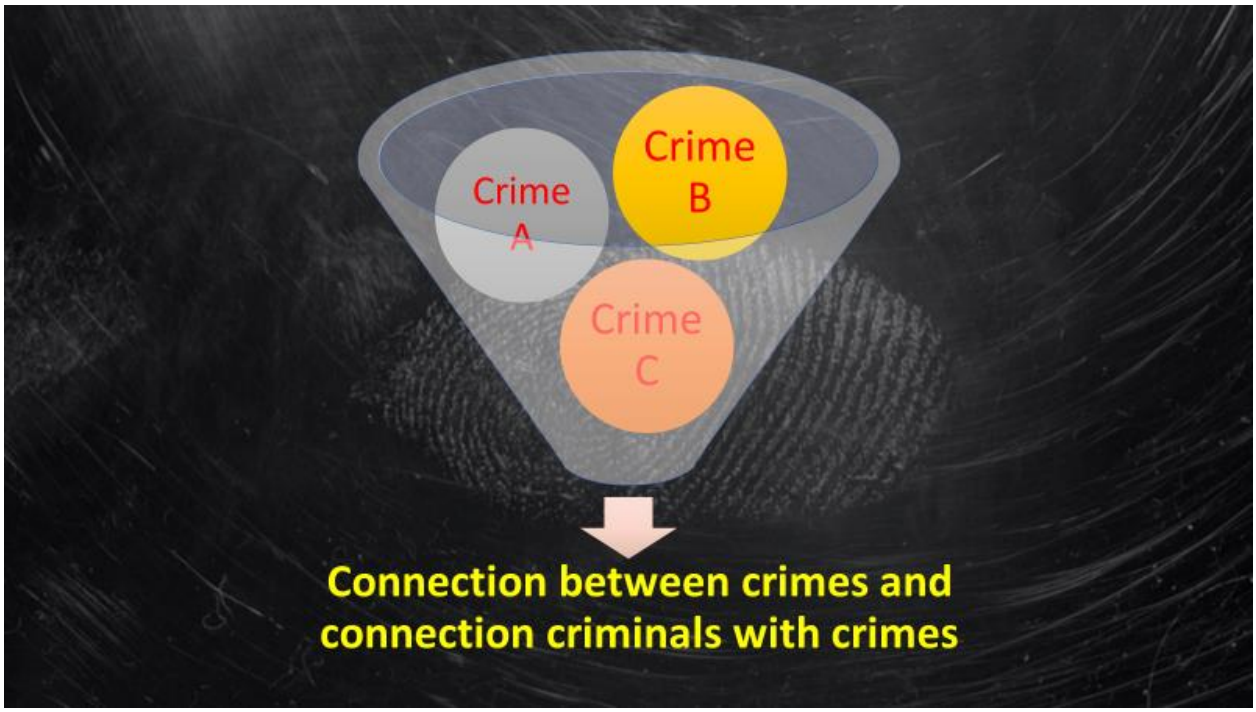
• время и место преступления	time and place of the crime
• методы и следы взлома	methods and traces of hacking
• следы обуви	shoeprints
• ДНК-профиль	DNA Profile
• отпечаток пальца	Fingerprints
• использование одного оружия	the use of the same weapon

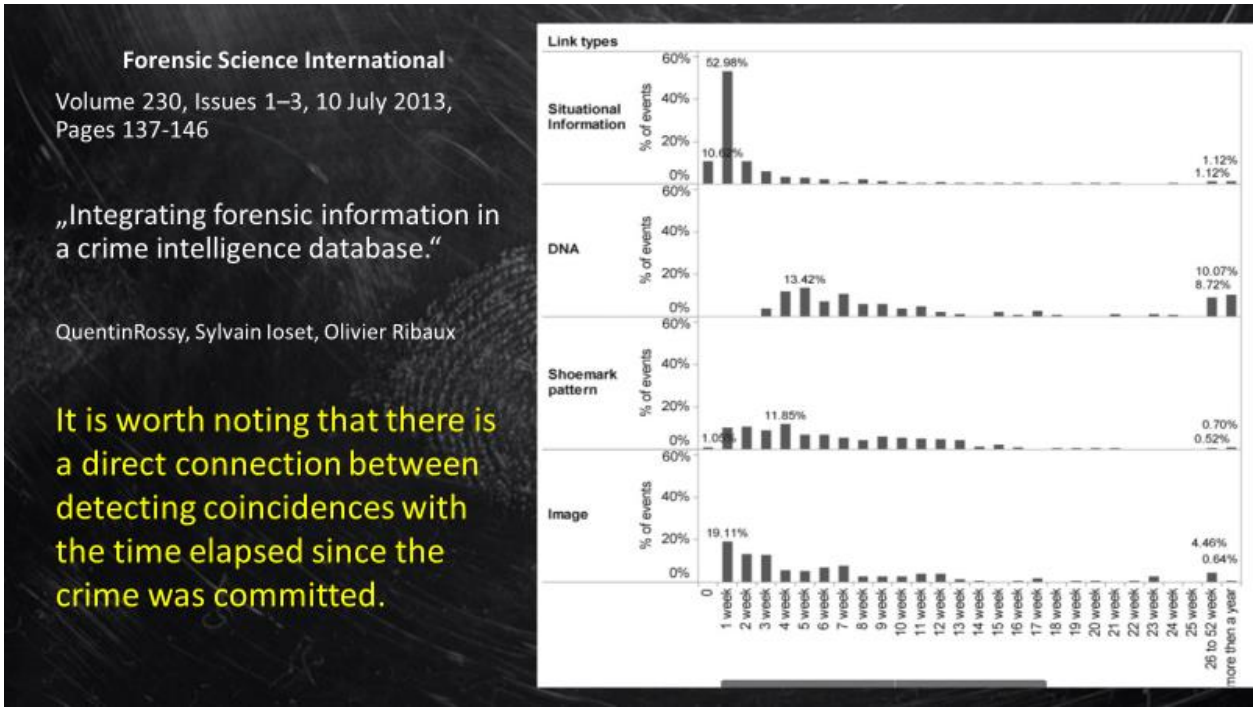
Криминалистическая разведка.

Применение криминалистических данных с целью выявления взаимосвязи между ними.

FORENSIC INTELLIGENCE

Use of forensic data in order to identify the relationship between them


Crime A
Crime B
Crime C
Connection between crimes and connection criminals with crimes


Forensic Science International
Volume 230, Issues 1–3, 10 July 2013, Pages 137-146
„Integrating forensic information in a crime intelligence database."
QuentinRossy, Sylvain Ioset, Olivier Ribaux
It is worth noting that there is a direct connection between detecting coincidences with the time elapsed since the crime was committed.
Link types
Situational Information
DNA
Shoemark pattern
Image
% of events
52.98%
10.62%
1.12%
13.42%
10.07%
8.72%
11.85%
0.70%
0.52%
19.11%
4.46%
0.64%
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25 week
26 to 52 week
more then a year

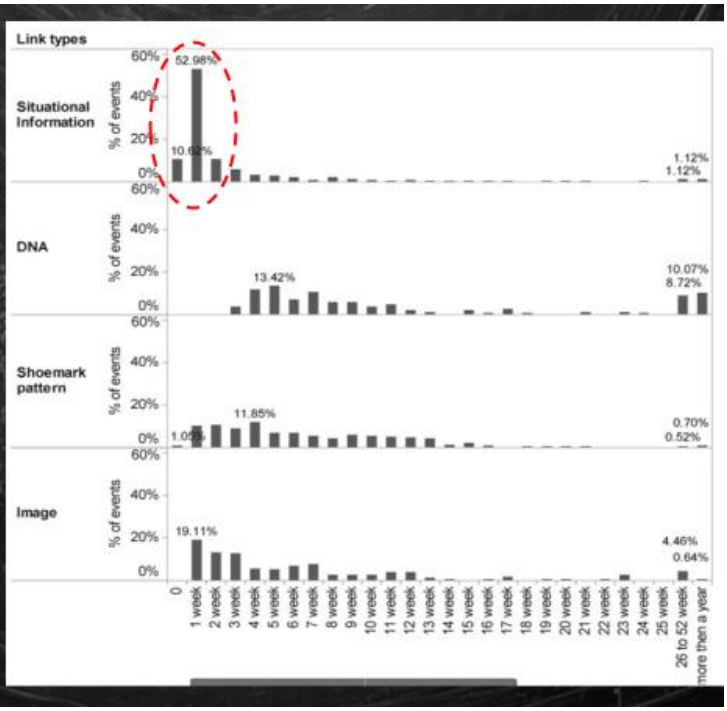
Forensic Science International

Volume 230, Issues 1–3, 10 July 2013, Pages 137-146

„Integrating forensic information in a crime intelligence database.“

QuentinRossy, Sylvain Ioset, Olivier Ribaux

situational information



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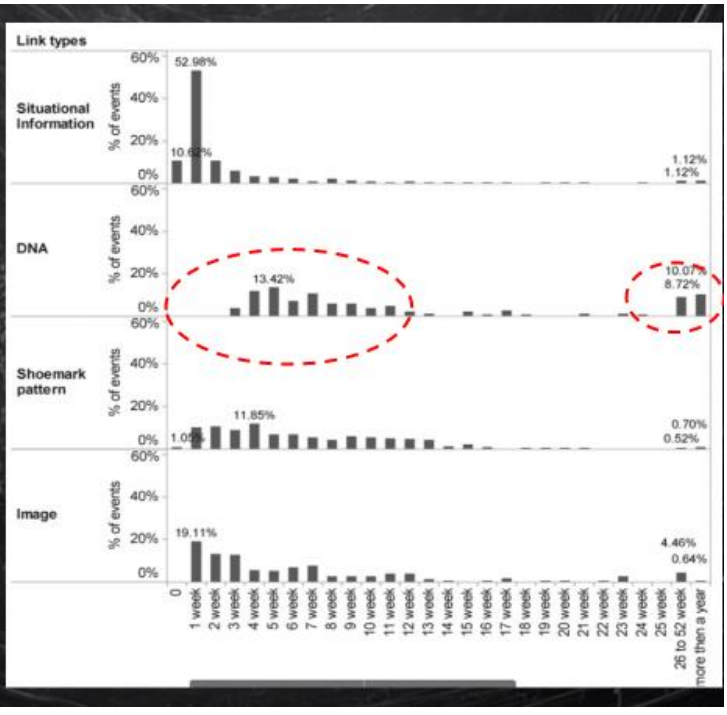
DNA



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shoeprints

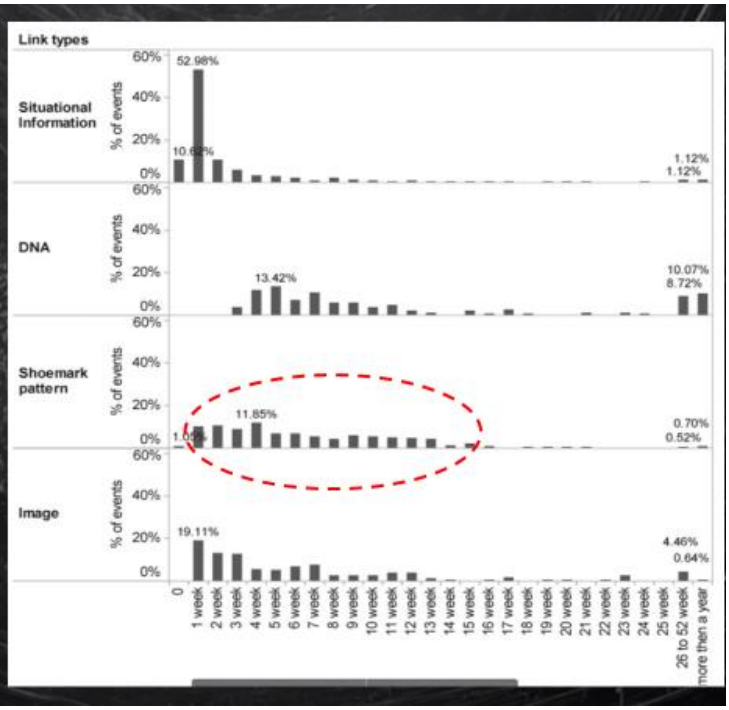

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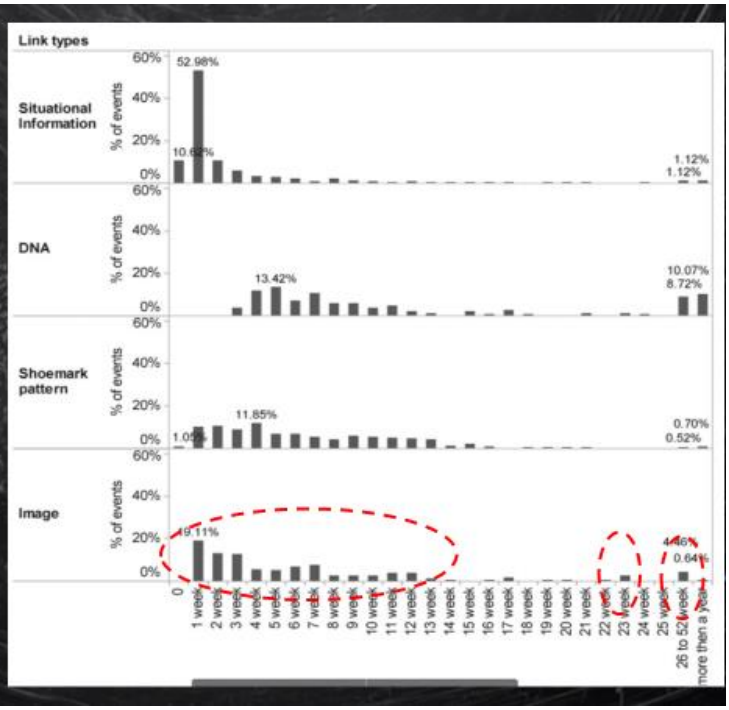
Image



Использования метода криминалистической разведки для анализа криминалистических данных при раскрытия серийных преступлений, в частности серийных краж со взломом, может вывести криминалистику на новый уровень борьбы с преступностью, позволит использовать большую часть криминалистических данных имеющихся в органах досудебного расследования для понимания состояния преступности в целом и борьбы с ней.

Use of the forensic intelligence method for analyzing forensic data when solving serial crimes, in particular serial burglaries, can bring forensic science to a new level of fighting crime, will make it possible to use most of the forensic data available in the pre-trial investigation bodies to understand the state of crime in general and the fight against it.

Для эффективного внедрения и применения метода, рекомендуется:

- Создание аналитического подразделения, входящего в состав экспертно-криминалистического отдела, для обработки и анализа криминалистической информации.
- Использование общенациональных баз данных, а также и данных соседних граничащих стран.

For the effective implementation and application of the method, we recommend:

- Creation of an analytical unit, which is a part of the forensic department, for the processing and analysis of forensic information.
- Using nationwide databases, as well as data from neighboring countries.


Thank you!

IDENTIFICATION OF SKELETAL REMAINS BY SECONDARY IDENTIFIERS

A Case Study

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Abstract

This case study is on an identification process of skeletal remains found in a forest. Forensic pathology and anthropology were used along with data mining and classic police investigation techniques, like inquiry and questioning. Only two days after the recovery of the remains, a scientifically sound personal identification could be established without using the expensive and time-consuming DNA analysis. The human remains could be buried with his own name on the gravestone.

Without expensive and time-consuming DNA analysis, an established identification was possible by anthropologic features only, made the skeletal remains to get back his name and provide him a funeral with a gravestone, and his own name on that gravestone. Only on the third day after the discovery and recovery.

Keywords

anthropology, forensic pathology, identification, investigation, missing person, radiology, CT scan.

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Angyal M.: Interdisciplinary Analysis of Databases of Missing Persons and Unidentified Bodies - Suggestions for Increasing the Personal Identification Rate. *Rendőrségi Tanulmányok* 2020/1. 50-93. (In Hungarian. Az eltűntként körözött személyek és az azonosítatlan holttestek adatbázisainak interdiszciplináris elemzése – Javaslatok a kérdéskört érint személyazonosítási ráta növeléséhez)

All images were taken by author, except the ofiicial ID photo. petretei.david@uni-nke.hu

17th INTERNATIONAL CONGRESS CRIMINALISTICS AND FORENSIC EXPERTOLOGY: SCIENCE, STUDIES, PRACTICE
16-17. 09. 2021. BRATISLAVA

Identification of Skeletal Remains by Secondary Identifiers – A Case Study

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Abstract

This case study is on an identification process of skeletal remains found in a forest in 2013. Forensic pathology and anthropology were used along with data mining and classic police investigation techniques, like inquiry and questioning. Only two days after the recovery of the remains, a scientifically sound personal identification could be established without using the expensive and time-consuming DNA analysis. The human remains could be buried with his own name on the gravestone.
The poster includes original crime scene photos, *ante mortem* images from databases, and *ante mortem* CT-scan images.

Introduction

According to the Interpol DVI Guide, there are three primary methods to identify an unknown body: genetics (DNA analysis), ridgeology (fingerprints, palmprints, sole prints), and odontology (dental records). Everything else is considered secondary identifiers, like anthropologic features, medical findings, scars, and tattoos, belongings. Sometimes it is possible to establish identification based solely on secondary identifiers. In this study, such a case is presented.

In 04. 16. 2013, a forestry worker reported to the police that he and his co-workers had found bones in the forest, which seemed to be human remains. The police had sent a team to the scene: an investigator, a crime scene analyst, and a forensic pathologist. According to the Hungarian Health Act (1997:CLIV. tv.), administrative proceedings must be instituted for every unknown corpse, which requires a police investigation.

The scene was around a 500-meter distance from a single-lane asphalt road, in the forest, with lush undergrowth. Bones and clothes were recovered from an approximately 200 x 200-meter square area with a karst sinkhole in the middle. In total, one skull (cranium), one lower jaw (mandibula), 5 cervical vertebrae, 11 dorsal vertebrae, 5 lumbar vertebrae, 1-1 right and left scapulae, 1-1 right and left clavicle, 9 right ribs, 10 left ribs, sacrum, both ilium, right femur, right tibia, right and left fibula were found. A pair of blue jeans, a blue and white striped short-sleeved shirt, and a boot also were found. The boot was 39 size (EU) and the shirt also was 39 size. The inner label of the shirt had the name „T. F." handwritten with a permanent marker, and a 4x1 cm sticker with the printed name „T. F." and the number 3671.

The Forensic Pathologist

The skull, based on its morphology, was masculine, with coarse muscle attachments, pronounced protuberances, and male-sized mastoid processes. The pelvic bone was also distinctly masculine featured. The found bones may be from the same person, who was male, older than 45 years, 165-168 cm tall, thin in stature. He suffered multiple head injuries in his life, months or years before his death. There was no „fresh" injury on the bones which could indicate the cause of death. So there was nothing on the bones to suggest violent death. There was not any bloodstain on the shirt or the pair of jeans, and both seemed to be intact.

The Investigation

According to the databases there was no missing person with the name of „T. F.", and also there was no other missing person with the estimated age, body height, and body stature of the skeletal remains. It is worth noting the family name „T." is moderately common in Hungary, the „F." is a common first name. The general databases were checked for the name „T. F.", no missing person was found.

A second investigative hypothesis was also tested. The name mark on the inner label of clothes is typical and common in many nursing homes, hospice houses, and sanatoriums. So official inquiries were sent to the nursing homes of Pécs town and the surrounding district. One nursing home sent back the information of a former patient, named „T. F.", who was deceased one and half years before. His belongings, including every clothes, were taken away by his daughter, and were donated to the „Támasz", a homeless support foundation of Pécs. This information led the police to form a new hypothesis: the skeletal remains belonged to a local homeless. From the foundation the police had inquired about a male, aged 40-50, with 165-167 cm body height, slim body, and expressed characteristic deformation of his nose and-or face. The social workers recognized „K. F.", a local homeless, who had epilepsy, and many face trauma.

Knowing the personal data of „K. F.", the forensic pathologist and the crime scene analyst visited the Clinic Centre of the University of Pécs. „K. F" had accurate and detailed medical records there, including X-ray and CT-scan images. Comparing the found cranium and the CT-scan images of „K. F.", the forensic pathologist was able to establish personal identification. The several healed fractures on the facial bones were extremely characteristic and unique.

Closing & Lessons We Learned

No crime implied data were found during the questioning and data gathering at the homeless shelter of the foundation. No suspicious marks or traces of a crime were found on any of the bones, neither the clothes. Therefore the case was closed as an administrative case.

As the person's relatives could not be found during the administrative investigation, his funeral was provided by the municipality of Pécs.

Without expensive and time-consuming DNA analysis, an established identification was possible by anthropologic features only, made the skeletal remains to get back his name and provide him a funeral with a gravestone, and his own name on that gravestone. Only on the third day after the discovery and recovery.

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MODERN PROBLEMS OF FORENSIC EXAMINATION OF MATERIALS AND EVIDENCE

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Abstract
The scientific article discusses the solution to the issues covered in the scientific article, provided thanks to an integrated approach to the study of materials and substances in forensic science, taking into account the modern achievements of criminal procedural science, technology and the needs of practice.

Key words
evidence, forensics, process, conclusions, systematization, methodology, classification, identification, subject, criminal procedural law, object.

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THE FORMATION OF DIGITAL CRIMINALISTICS AS A STRATEGIC DIRECTION FOR THE DEVELOPMENT OF SCIENCE

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Abstract
The article is devoted to the latest trends in Criminalistics in modern conditions and digital Criminalistics as the new forensics direction. An important trend in Criminalistics is its technologization, the development and implementation of information, digital telecommunications and other technologies. The doctrine of Criminalistics defines the role of digital evidence (digital information). Digital evidence requires new approaches its collection, storage, use and research in the course of proof in criminal proceedings. The article draws attention to the strategic tasks solution by Criminalistics, the technological progress impact on its development, changes in legal mechanisms and the introduction of standards of proof.

Key words
criminalistics, digital criminalistics, trends of criminalistics, criminalistic strategy, digital evidences, information technology, standards of proof.

LITHUANIAN SOCIETY OF CRIMINALISTS CONGRESS REVIEW - ACADEMIC DIDACTICS

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Abstract

In this article, we not only present a general overview of the scientific articles published in the publications of the sixteen international conferences (congresses) "Criminalistics and forensic expertology: science, studies, practice" on the issues of forensic didactics, but also, in order to create a common European forensic space, we invite the criminalists of other countries to concentrate their efforts on the harmonization of the development of the criminalistics triad (science-doctrine-practice), including in the area of its didactics. In this article, we present some possible forms of international cooperation in the field of criminalistics didactics, some of which we have already approved: preparation of textbooks and other didactic methodological works (a 3-volume textbook on criminalistics in English was planned to be published with the participation of Ukrainian scientists and representatives of other European countries. The first volume was published in 2016 (the second volume is being edited)); preparation of joint scientific articles on criminalistics didactics; carrying out joint international scientific projects; organising specialised conferences, including student conferences; involving foreign teachers in the study process, etc. In 2017, the Palanga Memorandum on the establishment of the European Federation of National Forensic Organisations was adopted. In authors' opinion, the issue of criminalistics didactics, which is the link between science and practice, should not be overlooked. In the draft Statutes of the future Federation, whose establishment and positive contribution to the creation of a common European area of criminalistics is undoubtedly important, criminalistics didactics is one of the Federation's main objectives, and there should also be room for units related to the training of law enforcement officials in the future structure.

Key words
The Lithuanian Society of Criminalists, criminalistics didactics, international congresses (conferences) "Criminalistics and Forensic expertology: science, studies, practice".

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COMPARATOR – A UNIVERSAL PROGRAM FOR FORENSIC EXAMINATIONS

Mieczysław Goc, Dorota Semków, Karol Bajda, Izabela Kułak

Uniwersytet Rzeszowski

Abstract:

Comparator is the computer program, which is a joint project of the Polish Forensic Association and its Institute of Criminalistics. The Comparator program is used for registration and presentation of images (samples) of handwriting, documents, or their fragments as well as various types of forensic traces in 8 windows. The program allows for numerous useful operations in comparative and identification forensic analyses (including drawing, inversions, measurements, image overlapping and matching). The application combines the advantages of graphic programs and spreadsheets – the user can directly perform statistical analyses. It might also be used as a didactic aid for lecturers and speakers of diverse areas of expertise who want to present several images on the screen simultaneously in their lectures.

Key words:

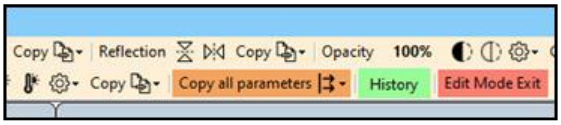
computer program, registration and presentation of samples, comparative forensic analyse, identification forensic analyse, presentation.

Uniwersytet Rzeszowski

17th INTERNATIONAL CONGRESS CRIME AND FORENSIC SCIENCES: SCIENCE, EDUCATION, PRACTICE

"Comparator – a universal program for forensic examinations"

Poster authors: Mieczysław Goc, Dorota Semków, Karol Bajda, Izabela Kułak



COMPARATOR is the computer program, which is a joint project of the Polish Forensic Association and its Institute of Criminalistics. The COMPARATOR program is used for registration and presentation of images (samples) of handwriting, documents, or their fragments as well as various types of forensic traces in 8 windows. The program allows for numerous useful operations in comparative and identification forensic analyses (including drawing, inversions, measurements, image overlapping and matching). The application combines the advantages of graphic programs and spreadsheets – the user can directly perform statistical analyses. It might also be used as a didactic aid for lecturers and speakers of diverse areas of expertise who want to present several images on the screen simultaneously in their lectures.

The COMPARATOR has been designed as a universal tool that can be used in identification examinations in various fields of forensic science (scriptural examinations, authenticity testing of secured documents, traceologic, mechanoscopic tests, examination of traces on the shells and bullets, traceologic, anthroposcopic, otoscopic, odontoscopic, gantiscopic and other testing). The presented application allows for making in a quick way a large number of different measurements and their direct statistical analysis, and additionally making easily comparison juxtapositions that are

particularly useful in forensic identification tests. It is a computer tool that facilitates significantly the work of an expert, and thanks to the use of measurement and quantitative analysis it contributes to raising the level of objectivity in forensic examinations.

THE POSSIBILITIES OF THE SPATIAL DISPLAY OF CRIMES IN THE GIS SYSTEMS OF THE HUNGARIAN POLICE

Mátyás Szabolcs Ph.D.

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University of Public Service, Hungary

Abstract:

The spatial display of crime is now almost exclusively in digital form. The former socialist countries were far behind in this area. Crime maps have been used in large numbers in the United States for decades. The last decade and a half has brought a significant change in Hungary. The backlog could not be closed, but the Hungarian police achieved substantial results. The poster presents the GIS-based systems used in Hungary (used by the police) that are suitable for creating crime maps.

Robotzsaru (RoboCop system) is a nationwide computer system that helps police officers with their day-to-day case processing. Only law enforcement personnel have access to the system. The RobotZsaru system is also suitable for generating maps. It generates an up-to-date map based on recorded case data. Serious crimes can be displayed on the map. Maps can be zoomed in and out without distortion. They are a bit incomplete from a cartographic point of view, as some content elements are missing from the maps (e.g., north-south direction, measure, title, creator). Nevertheless, the maps have a wide range of applications, especially in the field of criminal actions and traffic policing.

In 2018, the PRE-STAT system (Prevention Crime Statistics Database) was completed in cooperation with the Ministry of the Interior and other organizations. The application, which is unique in the international context, can also be used by the public. The application provides analysis at five territorial levels: municipal, district, county, regional, national. Criminal statistical data have been in the system since 2010. In addition, besides crime data, social and economic data can be displayed on the map, as well. Thus other contexts of crime can also be explored. The latest crime data is entered into the system on a monthly basis. The generated statistical data can also be downloaded in Excel, so they can be easily used later. In addition to thematic maps, diagrams can also be edited. Charts and maps can also be downloaded in various file formats.

Since 2012 two types of point maps have been available on the official website of the police (www.police.hu). 1. Crime map (e.g., theft, burglary, car theft, robbery), 2. Accident map. With regard to both maps, it can be said that certain spatially relevant crimes and types of accidents are displayed with a 30-day delay. Both the crime and accident maps can be said to be a unique development for the Hungarian police. Both types of maps are designed for the citizens and have a wide-range of usage (e.g., choosing the route to work and school, choosing the property's

location, avoiding dangerous road sections). Unfortunately, public usage falls short of the possibilities.

When creating the map, you can select the background of the map (color, topographic map, road network map), type (point map, heat map), and period (30, 60, 180, and 365 days). The map can be zoomed in and out so that even hot spots can be studied on it. The map allows street-level analysis. By clicking on the pictograms on the map, information about the type of crime and the time of the crime is displayed.

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Mátyás, Szabolcs (2020): Bűnözésföldrajz (Criminal Geography). Didakt Kiadó, 138 p.
First image: RobotZsaru
Second and third images: https://prestat.lechnerkozpont.hu
Fourth image: www.police.hu

17th INTERNATIONAL CONGRESS CRIMINALISTICS AND FORENSIC EXPERTOLOGY: SCIENCE, STUDIES, PRACTICE

The possibilities of the spatial display of crimes in the GIS systems of the Hungarian Police

MÁTYÁS, SZABOLCS Ph.D. associate professor
(University of Public Service, Department of Investigation Theory)

Abstract

The spatial display of crime is now almost exclusively in digital form. The former socialist countries were far behind in this area. Crime maps have been used in large numbers in the United States for decades. The last decade and a half has brought a significant change in Hungary. The backlog could not be closed, but the Hungarian police achieved substantial results. The poster presents the GIS-based systems used in Hungary (used by the police) that are suitable for creating crime maps.

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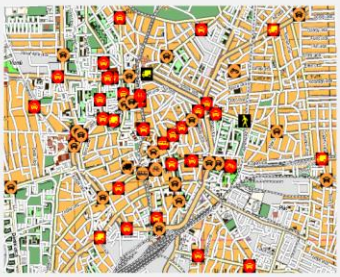

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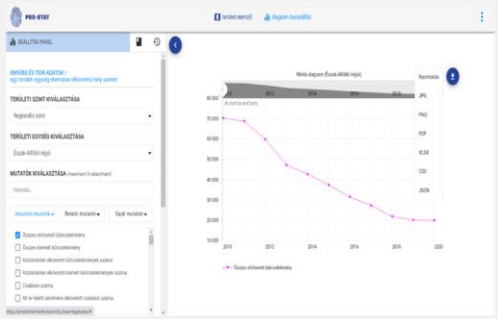

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USE OF COMPUTER SIMULATION IN FORENSIC BIOMECHANICS

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Abstract

The article deals with criminological experiment and the possibility of using computer modeling. The paper describes the current possibilities of using computer simulation and the possibility to use it for clarifying the versions in the case of a specific crime. The Perspective Method is Virtual Crash. This is a certified software that has been developed for forensic engineering and biomechanical applications. With this method, it is possible to simulate situations that can not be practiced by a real experiment with a mannequin or a living person. A computer simulation of human movement can very accurately illustrate the likelihood of individual versions when assessing a person's fall from a height.

Keywords

Criminalistics, Forensic biomechanics, height falls, computer simulation

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INTELLIGENT SYSTEM FOR IDENTIFICATION OF FORGERY OF HANDWRITING BIOMETRIC FEATURES

Mieczysław Goc, Marek Miron

Institute of Criminalistics of the Polish Forensic Society

Abstract

The project consists in developing a research method allowing to conclude that the manuscript was forged using a mechanical device. The devices which support the writing process are commercially available, which means that the entries are made quasi-manually using a writing tool attached to the handle of the device. In this way, a first manuscript is obtained. CNC are precise machine tools, controlled by the computer programme which process data in 3D technology. By using appropriate configuration, the entry of variable pressure can be obtained, which is similar to the imitated handwriting. CNC allows for setting the parameters so that the entry copying the authentic handwriting is characterized by a variable depth, thus giving the possibility of counterfeiting with a high precision. Currently, the effective method of distinguishing the machine-made entry and the entry made by hand has not been developed, which practically means that any handwriting casework opinion can be questioned. The project is carried out by a scientific consortium composed of: CFLP - project leader, IC PFA and JAS Technologie. Research and development project carried out in the field of scientific research and development works for the defense and security of the state - project financed by the NCBR: DOB-SZAFIR/06/A/042/01/2020.

Key words:

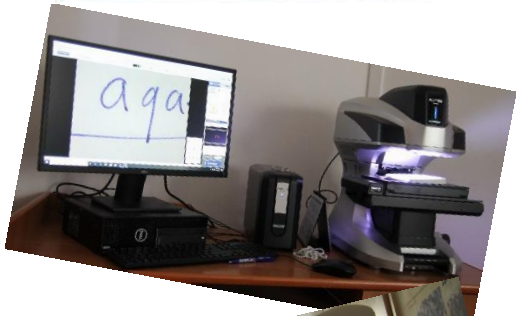
research project, manuscript using a mechanical device, imitated handwriting.

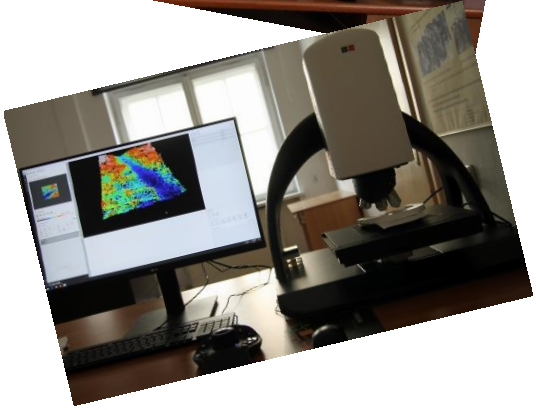
17th INTERNATIONAL CONGRESS
CRIMINALISTICS AND
FORENSIC EXPERTOLOGY: SCIENCE, STUDIES, PRACTICE

"Intelligent system for identification of forgery of handwriting biometric features"

Poster authors: Mieczysław Goc, Marek Miron

The project consists in developing a research method allowing to conclude that the manuscript was forged using a mechanical device. The devices which support the writing process are commercially available, which means that the entries are made quasi-manually using a writing tool attached to the handle of the device. In this way, a first manuscript is obtained. CNC are precise machine tools, controlled by the computer programme which process data in 3D technology. By using appropriate configuration, the entry of variable pressure can be obtained, which is similar to the imitated handwriting. CNC allows for setting the parameters so that the entry copying the authentic handwriting is characterized by a variable depth, thus giving the possibility of counterfeiting with a high precision. Currently, the effective method of distinguishing the machine-made entry and the entry made by hand has not been developed, which practically means that any handwriting casework opinion can be questioned.





The project is carried out by a scientific consortium composed of:
CFLP - project leader, IC PFA and JAS Technologie.
Research and development project carried out in the field of scientific research and development works for the defense and security of the state - project financed by the NCBR DOB-SZAFIR/06/A/042/01/2020

THE POSSIBILITIES OF SPATIAL DISPLAY OF CRIME

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Abstract

The spatial display of crime is now almost exclusively in digital form. The former socialist countries were far behind in this area. Crime maps have been used in large numbers in the United States for decades. The last decade and a half has brought a significant change in Hungary. The backlog could not be closed, but the Hungarian police achieved substantial results. The poster presents the GIS-based systems used in Hungary (used by the police) that are suitable for creating crime maps.

The study showed the connection points of GIS and law enforcement science. During which the author made it obvious for the reader that none of the law enforcement areas can neglect the use of GIS softwares. The Western-European and North-American examples showed that the use of GIS helps the successful detection in every area of law enforcement as well as helping crime prevention. Much to the author's distress he had to realise that the use of GIS in the field of law enforcement is still in its infancy in Hungary despite the fact that the cartographic subdivision of Robotzsaru NEO program makes the use of GIS software possible. The author looks to the future with confidence since in his opinion the number of law enforcement personnel who will show interest in this area and will have at least a user's knowledge of this field will grow in the coming years

Keywords

GIS, criminal geography, spatial display, crime, crime mapping, map

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FORENSIC PASSWORD EXAMINATION IN LEAKED USER DATABASES

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Abstract
Password guessing is an essential part of a forensic encrypted data examination since the data must be decrypted first. The analysis of leaked password databases shows that users tend to use easy-to-remember passwords. It means that the passwords usually exhibit a logical structure; they are not just random character sets. IT forensic experts investigating the encrypted information try to exploit this tendency.

The information technology (IT) forensic examinations in Forensic Science Centre of Lithuania (FSCL) have been carried out since 1995. In most cases, forensic IT experts research digital information stored on various digital information storage devices (hard disk and solid-state drives, memory cards, USB memory sticks, mobile devices, etc.). The main tasks of forensic IT experts are to find information related to user‘s activities (images, videos, documents’ drafts, accounting, e-mails, contacts, etc.), to identify and explain (for the case investigators) the kind of information stored, to determine when it was created or modified. Based on recent years' statistics of the Digital Information Examination Department of FSCL, we can assume that the rapid development of new technologies leads to a constant increase in the number of digital

information examinations. As a result, more IT research was completed during the last three years, and forensic IT examiners solved more questions and analyzed more information.

This paper analyzes Lithuanian social website leaked data and looks into how different users (classified by gender, age, or nationality) construct their passwords. We examine the most common patterns of the passwords typical for users from the Baltic States and compare the results with global trends characteristic to password creation.

Keywords
password guessing, forensic examination, leaked database.

HATE SPEECH EVALUATION GUIDELINES

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Abstract

The paper raises questions about the expansion of definitions of concepts used in the article 170 (Incitement against any national, racial, ethnic, religious or other group) of the Criminal Code of the Republic of Lithuania. Existing definitions of taunting, disparaging, promotion of hate and incitement to violence are very general, they fail to explain the boundary between unethical and criminal speech and between such related speech forms as taunting and mockery. A more detailed explanation of these concepts would help identify cases of hate speech better and prove their qualification under the article 170 of the Criminal Code. The goal of a more unified evaluation of hate speech, which in turn means a more effective response against hate speech, requires not only more detailed definitions of concepts, but also guidelines that explain the steps and aspects of evaluation. The paper proposes hate speech evaluation guidelines that can be improved and applied by non-governmental organizations and police investigators. The guidelines include examples that illustrate that some of the hate speech expressions are typical and easily evaluated, but there are also more complicated cases.

PECULIARITIES OF PERFORMING EXHUMATION OF A CORPSE IN CRIMINAL PROCEDURE IN LATVIA

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Abstract

Tactics of Exhumation is defined as chapter of criminalistic tactics summarizing scientific opinions about regularities of performing investigative exhumation of corpse. Scientific base for performing investigative exhumation is theory of observing. Legal basis for exhumation is getting permition with the consent of a member of the immediate family of the deceased person, or, during pre-trial proceedings, getting decision of the investigating judge, or, during trial, getting a court decision.

It is provided for in the Section 165 of the Criminal Procedure Law that Exhumation of a corpse (Līķa ekshumācija) is exhumation of a corpse from the place of burial in order to perform an inspection thereof, present such corpse for recognition, remove samples for comparison, or to perform an expert-examination.

There are essential differencies between exhumation of a corpse and detection and taking it out from the place of hiding as a type of crime scene investigation or search.

General method of performing exhumation in Latvia is provided for in the Section 166 of the Criminal Procedure Law. Structure of performing exhumation of a corpse is formed by three basic stages; each of the stages has its own peculiarities.

Keywords

criminalistics, criminal procedure, criminalistic tactics, exhumation of a corpse, investigative activity.

DIGITAL IMAGE PROCESSING AND OTHER BENEFITS–MODERN TECHNOLOGY FOR CRIMINALISTICS AND SECURITY

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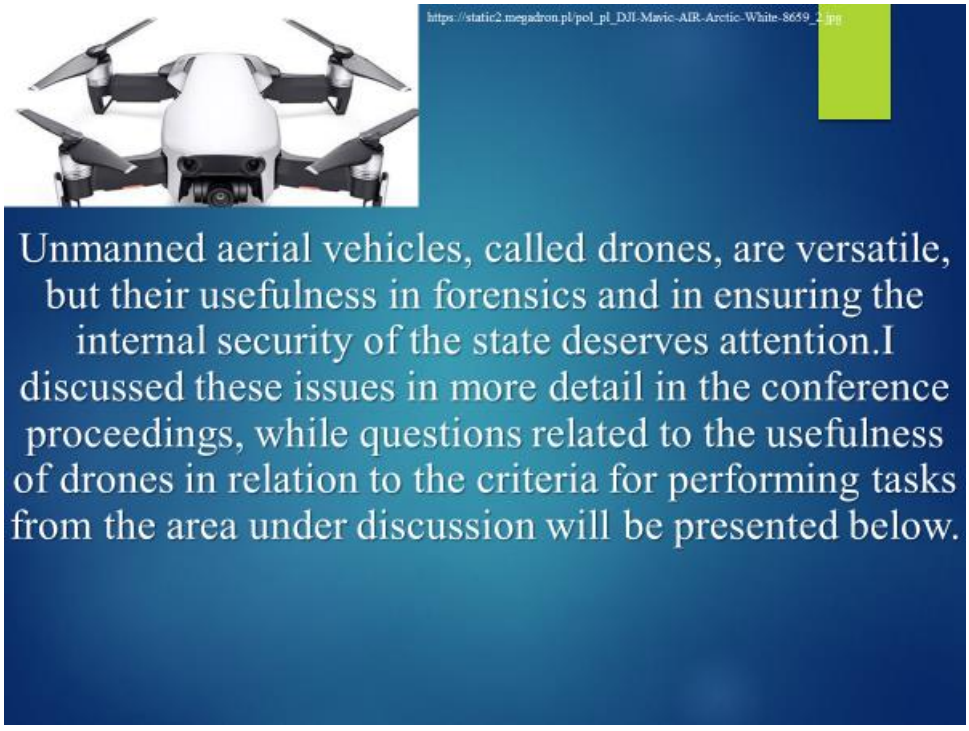
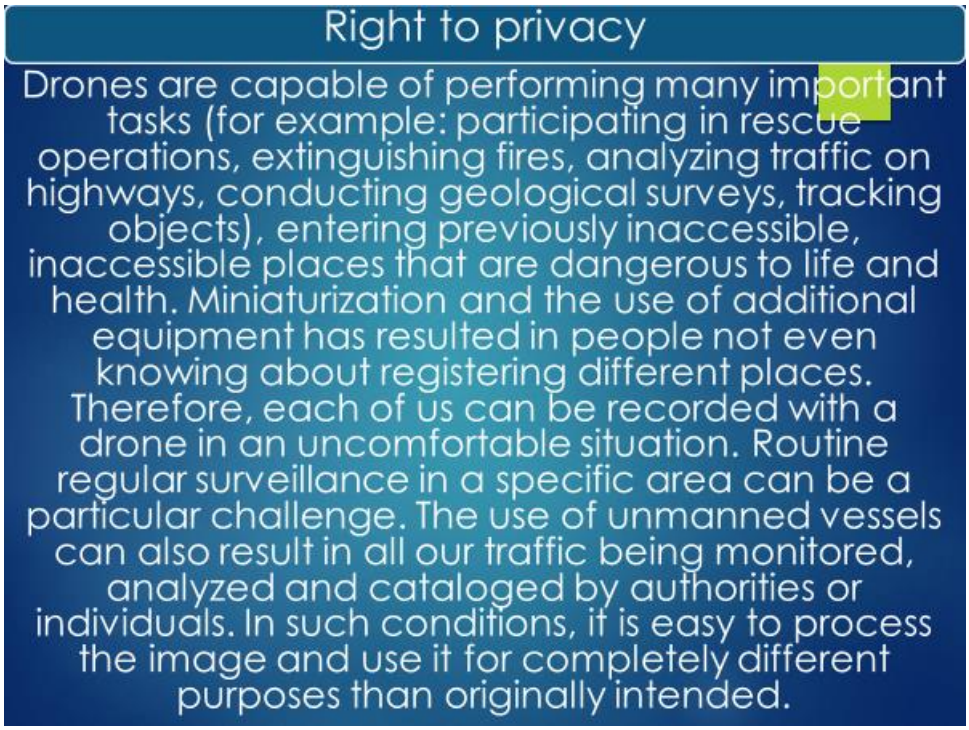
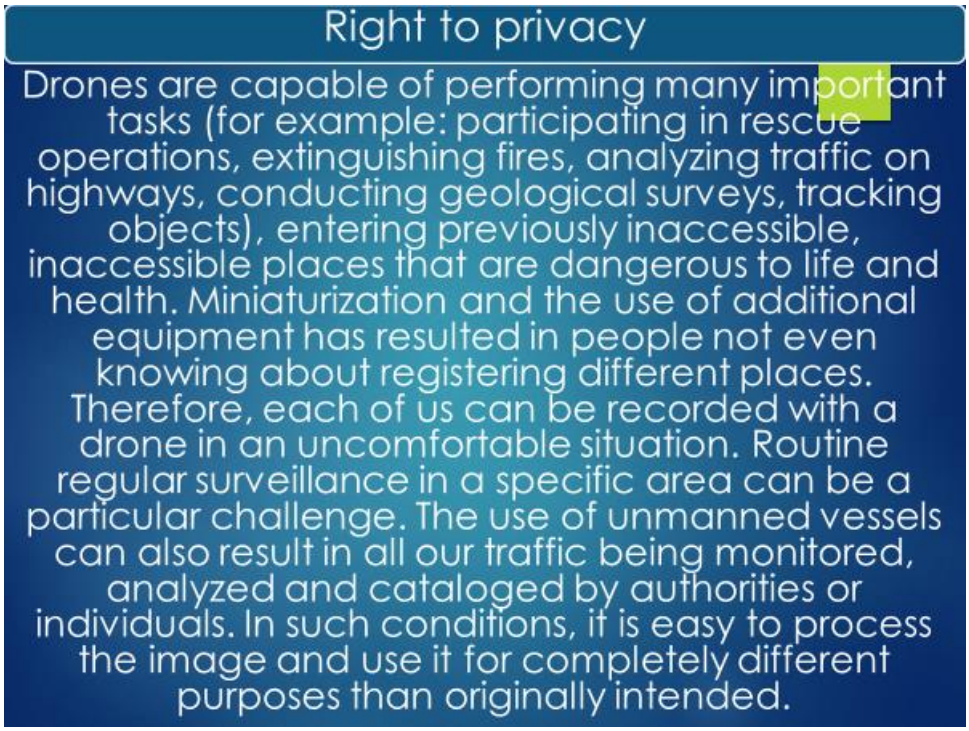
Abstract

As a result of the achievements of modern civilization, there are disturbances related to guaranteeing human security, therefore the leaders of developed countries must act prudently to ensure the rule of law, order and public order for citizens. Hence, the aim of this publication is to present one of the modern technologies, the importance of which for the benefit of criminalistics and security should be taken into account due to its effective replacement of humans in difficult, inaccessible and dangerous environmental conditions. We are talking here about the use of unmanned aerial vehicles (in short: UAVs), commonly known as "drones", "unmanned aerial vehicles", which were originally used to transport aviation weapons, military cargo and registration of space on the battlefield. Over time, the potential of these remotely controlled devices began to be increased and used both for military purposes, as well as to support services that perform precise activities, counteracting threats at long distances. Due to intensive technological progress, more and more original drone models are introduced to use, and their versatility, along with miniaturization and the addition of various artificial intelligence systems, make them penetrate into new spheres of life. Therefore, when using a tool that goes beyond the limits of imagination and abstract thinking, one must bear in mind the limitations in the field of rights and freedoms, because the development of digitization allows cameras to monitor people at every step. Conditions for high-quality observation are favorable in many respects, but also favor uncontrolled surveillance. Currently, we are exposed to an increase in threats both from criminals operating in cyberspace and civil users who use UAVs, who are not aware of the risk they are exposed to or that they can create for others. The author, aware of the concerns related to the mass introduction of UAVs and the resulting threats, intends to focus only on their capabilities in the course of exploitation for the benefit of forensics and the wider human safety. He also wants to visualize the ease of using them, with the possibility of retrofitting with a number of specialized cameras, sensors and tools, thanks to which, with a relatively economical financial outlay, significant work results are achieved. This issue will be described in more detail in the article. The technical development in Poland meant that domestic companies producing UAVs, mainly for foreign recipients, both in terms of maintaining security and in other areas confirming their usefulness, have made their mark on the market. The achievements of our drone constructors are so impressive that they encourage the appreciation of Polish products and "advertise" them to interested entities whose task is to prevent, fight against criminal activities, while ensuring public order and security.

Keywords
unmanned aerial vehicles, law regulations, criminal activities, criminalistics aplications, public order, security activity.




Right to privacy
Drones are capable of performing many important tasks (for example: participating in rescue operations, extinguishing fires, analyzing traffic on highways, conducting geological surveys, tracking objects), entering previously inaccessible, inaccessible places that are dangerous to life and health. Miniaturization and the use of additional equipment has resulted in people not even knowing about registering different places. Therefore, each of us can be recorded with a drone in an uncomfortable situation. Routine regular surveillance in a specific area can be a particular challenge. The use of unmanned vessels can also result in all our traffic being monitored, analyzed and cataloged by authorities or individuals. In such conditions, it is easy to process the image and use it for completely different purposes than originally intended.


Right to privacy
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Due to their mobility and high-end equipment, these devices can significantly interfere with or limit privacy, therefore, when using them, citizens' right to freedom must be taken into account. Surveillance and intelligence may not only concern a unit of interest to law enforcement, but may involve the inclusion of outside observers, which is unconstitutional, applicable law in member states of the European Union and others respecting human rights. When using drones, it is necessary to adapt all provisions guaranteeing civil rights and thus respect democracy. I would like to point out that legal norms were included in the prepared scientific materials, therefore I am skipping the quotation of the introduced international and national norms.

Decision making automation

The proliferation of drones in security is a manifestation of the trend towards replacing humans with automatic processes associated with modern technology. Territory monitoring and detection of life or health hazards can now be carried out without the participation of people. Recording systems can detect and prevent uncontrolled phenomena or behavior that are contrary to the provisions of the law and pose a great threat. However, these technologies raise doubts about the arbitrariness and lack of democratic control. As a result, a person who somehow deviates from accepted behavior may be unfairly labeled as suspicious.

Problem solving question

Drones and properly used monitoring, thanks to them, can create the illusion of simplicity of solution, for example: problems associated with crime. Meanwhile, as statistics show, the use of cameras is not entirely related to the prevention, proof of crimes and does not guarantee a quick response after a criminal act or a threat to life or health.New technologies cannot solve complex social problems, but only support people in constructive actions and the desire to maintain public order.

Confidence and psychology

Long-term observation with the use of control devices can lead to negative psychological consequences and a lack of social confidence, therefore, exacerbate changes in the behavior of citizens. The widespread use of unmanned aerial vehicles (UAVs) may spread the belief that continuous surveillance and control is “normal” surveillance of the population. The ubiquity of drones and cameras in different places makes us believe that there is no trust, which weakens the feeling of freedom in a country that should be guided by democratic principles of citizen participation in public life.

Safe use issues

There are doubts as to whether drones pose a threat to people and property. In recent years, there have been reports of military and private drones shooting down passenger aircraft *. Therefore, their use on a large scale can lead to dangerous situations more often. This leads you to ask about the extent to which drones are allowed to use the airspace.For several years, the civil aviation authorities have been working on changes to improve safety in connection with the use of unmanned devices, which should improve the situation associated with their use.

Limitation of use

In accordance with the requirements of the constitution, any restriction on civil rights and freedoms can only take place if it serves a legitimate purpose (for example: maintaining security, public health) and is necessary and proportional to the achievement of the intended goal. Due to the necessary constraints, it is important to carefully monitor what certain authorities and other organizations use drones for, each time assessing them in terms of the principles set out in the constitution. The legal regulations should regularly adapt to the needs and specify in what situations and under what conditions drones can be used and when their use is prohibited.

Saving and using an image

Legislation should also define current needs, that is, how long images from cameras used by drones can be stored.(and if at all), and to whom it may be shared.

Public awareness

Citizens should be informed if some organizations use drones and, if so, for what purpose. Police and other uniformed services are required to provide this information through websites.Through transparent messages to the public, the risks associated with exceeding constitutionally guaranteed rights will be prevented.

Democratic control

Society should have control over:“Who, for what purposes and on what basis” uses drones. In accordance with democratic principles, citizens should be able to participate in debates about:police and other uniformed subjects may - in the performance of various official activities - use unmanned aerial vehicles,b) to what extent and under what conditions public space can be accessible to drones.

Measuring the effectiveness of drones

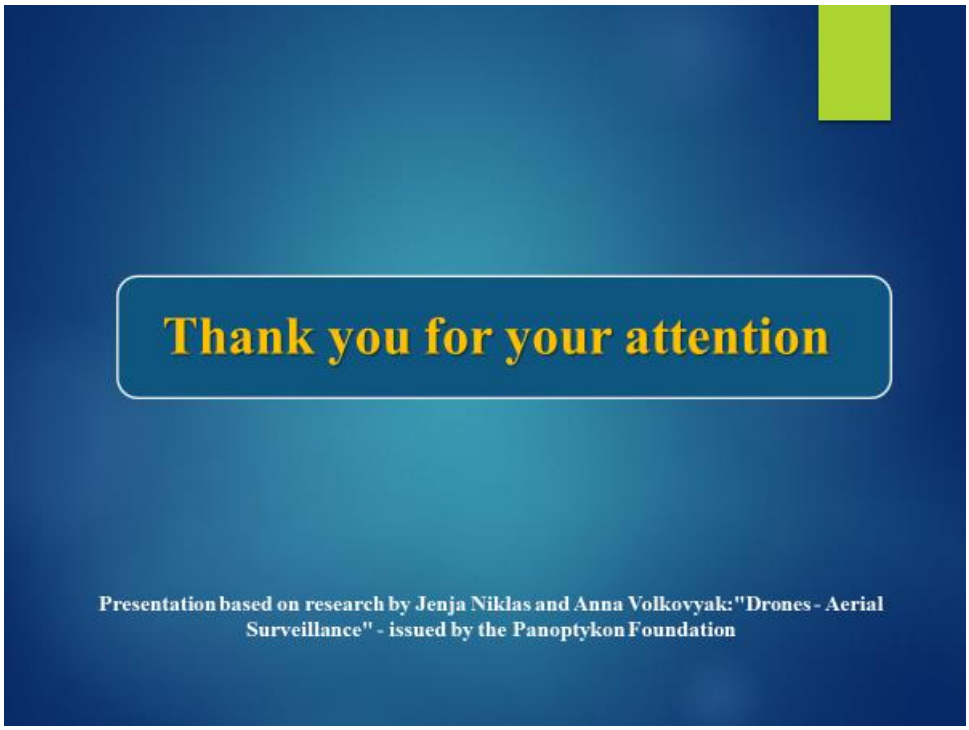
If the unmanned vessel is used by uniformed services and other government agencies, a periodic audit should be carried out showing: “when, under what circumstances is the legitimate purpose, was the use of this device proportional to the expected effect, etc.”In the case of large-scale introduction of modern technologies, this approach is important.on civil, economicand many other reasons.

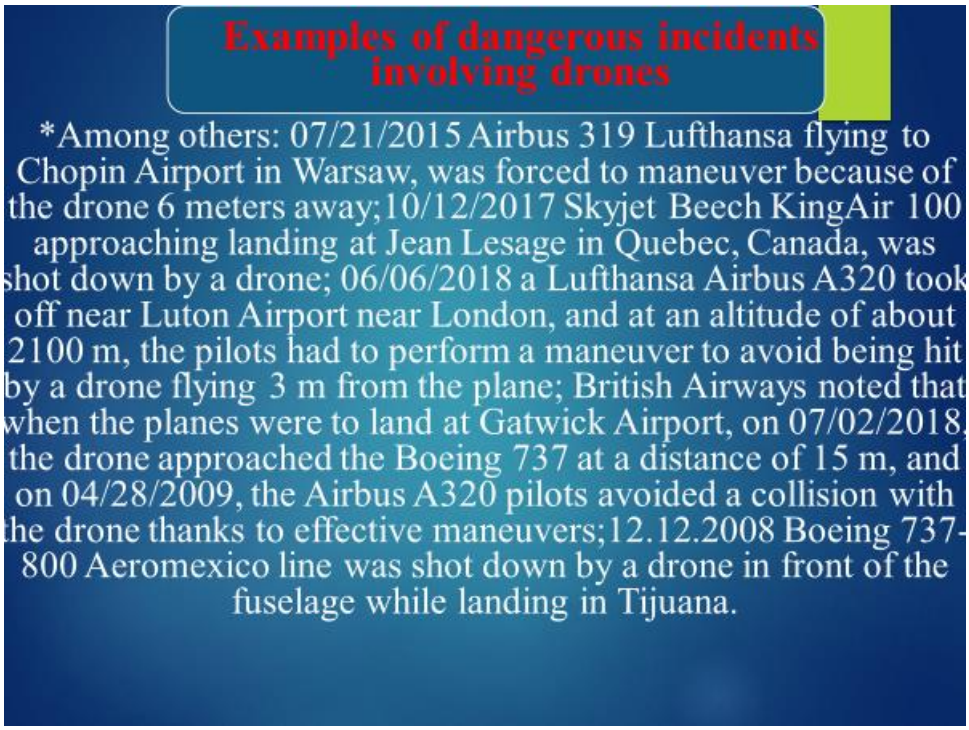
Experiment

The exercises were held in Poland on January 30 and 31, 2020.Koliber 20 at the Katowice-Pyrzowice airport in the area adjacent to the airport-controlled area.Their goal was to verify the compatibility of the elements of the response procedure, cooperation and exchange of information between the air traffic services and the police in the event of a threat to an aircraft landing from an unmanned aerial vehicle flying in an airport controlled area, contrary to the rules of the applicable rules. The scenario of the exercise assumed a situation when the pilot of a civilian passenger aircraft, during an approach at the airport, informs the dispatcher from the flight tower about a very close flight of a drone dangerously approaching the aircraft.

https://www.policja.pl/pol/aktualnosci/184765,Dron-niebezpiecznie-zblizyl-sie-do-samolotu-ladujacego-na-lotnisku-w-Pyrzowicach.html

Foto from experiment


Thank you for your attention
Presentation based on research by Jenja Niklas and Anna Volkovyak:"Drones - Aerial Surveillance" - issued by the Panoptykon Foundation


Examples of dangerous incidents involving drones
*Among others: 07/21/2015 Airbus 319 Lufthansa flying to Chopin Airport in Warsaw, was forced to maneuver because of the drone 6 meters away;10/12/2017 Skyjet Beech KingAir 100 approaching landing at Jean Lesage in Quebec, Canada, was shot down by a drone; 06/06/2018 a Lufthansa Airbus A320 took off near Luton Airport near London, and at an altitude of about 2100 m, the pilots had to perform a maneuver to avoid being hit by a drone flying 3 m from the plane; British Airways noted that when the planes were to land at Gatwick Airport, on 07/02/2018, the drone approached the Boeing 737 at a distance of 15 m, and on 04/28/2009, the Airbus A320 pilots avoided a collision with the drone thanks to effective maneuvers;12.12.2008 Boeing 737-800 Aeromexico line was shot down by a drone in front of the fuselage while landing in Tijuana.

HANS GROSS CENTRE FOR INTERDISCIPLINARY CRIMINAL SCIENCES
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UNIVERSITÄT GRAZ
UNIVERSITY OF GRAZ

Hans Gross Centre for Interdisciplinary Criminal Sciences ZiK

Tradition and Inspiration
The Graz School of Criminology

Hans Gross 1847-1915
©Hans Gross Museum of Criminology University of Graz

"father of the modern scientific criminal investigation"
"pioneer in modern forensic science"
"Graz – mecca of modern knowledge society"
"Graz – centre of burgeoning criminal sciences"

- Encyclopaedic concept of criminology
- Criminology as an interdisciplinary, comprehensive but independent discipline
- Importance of natural sciences
- Focus on material evidence „Realien"
- Education of „practical jurists"

Major works:
"Handbook for Investigating Judges" (first published 1893)
"Criminal Psychology" (first published 1898)

The Institute of Criminalistics, University of Graz (1912-1978)

- museum
- laboratory
- library
- criminalistic station
- publication medium*
- teaching events

* Foundation of the journal "Archives of Criminalistics and Criminal Anthropology" in 1898 (since 1916 "Archives of Criminology")

The ZiK (2021)
- shaping the future of criminal sciences

Interdisciplinary centre affiliated to the Institute of Criminal Law, Criminal Procedure Law and Criminology Faculty of Law, University of Graz

pool of experts → **ZiK** building bridges

researchers and practitioners within and outside the criminal justice system
- external (non-legal) experts in all disciplines relevant for the understanding, prevention and investigation of criminal activities
e.g. forensic medicine, forensic psychiatry, forensic psychology, ballistics, forensic linguistics
- internal experts, (judicial) officials from courts, public prosecution, police, prison, probation service

Unification of
multidisciplinary knowledge and wealth of experience gained from field work and academic reflection
Utilization of
the unified, interdisciplinary expertise for research, education and practice

Research

- Interdisciplinary examination of crime related questions
- Awakening of research interests in (interdisciplinary) criminal sciences
- Initiation and support of forensic research activities across disciplines
- Initiation and support of interdisciplinary forensic research projects and publications
- Organization of and participation in interdisciplinary and international conferences and academic events
- Establishment of a broad scientific network for international cooperation
- **Resulting** in the development of new findings and innovative solutions supporting the understanding, investigation, prosecution and prevention of crime

Education

- Introduction of interdisciplinary and practice-oriented teaching events in criminal sciences, especially in the field of criminalistics/forensic science(s)
- Introduction of specialized programs for law students covering the study of Forensics
- Introduction of practice-oriented education involving forensic and legal practitioners
- Creation of novel academic curricula, educational materials and didactic methods
- Training of legal practitioners to address current needs within the criminal justice system
- **Resulting** in the inspiration and proper education of the next generation of criminal justice practitioners as well as practitioners already in service

Practice

- Building bridges between the (forensic) science(s) and legal practitioner communities
- Serving as a „One-Stop-Shop" for forensic expertise, clearing house and intermediary
- Shared interface for experts enabling an (interdisciplinary) exchange of knowledge and experience
- Dissemination of knowledge in forensic science(s) and research advances to practitioners
- **Resulting** in the improvement of expert reports, the acceleration and facilitation of expert witness appointments, the communication between legal and non-legal practitioners, ultimately supporting the criminal justice system in achieving its goals and ideals

References:
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Investigating Psychological Domestic Violence in Lithuania

Ramunė Jakštienė, PhD

Mykolas Romeris University

Public Security Academy

Presentation

Abstract: Typically, domestic violence is complex and multidimensional. Domestic violence can take not only the form of physical or sexual violence, but also psychological or economic violence that is even more widespread, latent, and dangerous. Systemic psychological domestic violence has negative cumulative effect both on direct and indirect victims, both individually and for society. Therefore, the state has a positive obligation to protect against this form of violence. But in Lithuania only the most dangerous forms of psychological violence are criminalized. As a result, perpetrators avoid liability and victims are not offered an adequate protection. Invoking specific knowledge of psychology and sociology on the issue in criminal proceedings may offer effective solutions. That does not mean that usual practices should be replaced but instead supplemented by specific knowledge.

Keywords: psychological domestic violence, criminal law

SOME ISSUES OF IMPLEMENTATION IN THE REPUBLIC OF KAZAKHSTAN OF DACTYLOSCOPIC AND GENOMIC REGISTRATION

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Карагандинский университет им. Е.А. Букетова, магистрант

Abstract

Kazakhstan is in the process of introducing universal fingerprint and genomic registration. In 2016, a law was passed, the entry into force of which was delayed by 5 years. But circumstances have developed in such a way that the process is delayed for another 2 years. Therefore, the aim was to investigate the main positive and negative consequences of the introduction of universal genomic and fingerprint registration, as well as to identify some of the reasons for this delay. The following methods were applied: the method of systemic and structural analysis, the method of comparative legal analysis, methods of sociological research - interviews, questionnaires, the method of analyzing statistical and other data. It should be noted that the introduction of the Law of the Republic of Kazakhstan "On fingerprint and genomic registration" contributes to the advancement of forensic examination of Kazakhstan to a new level of development, an increase in crime detection, as well as a decrease in recidivism, and there will be fewer investigative and judicial errors. Undoubtedly, the enactment of the law contributes to the improvement of the crime situation, the situation in the field of health protection, in the future it will give a positive, multiplier effect in many areas of life. We believe that it would be possible at the legislative level to expand the scope of use of genomic accounting data in order to use this data in solving crimes, searching for missing and unidentified persons. Moreover, it is necessary, in some cases, to make genomic registration mandatory. The implementation of the law on genomic and fingerprint registration in Kazakhstan is associated with the action of many factors of an economic, organizational, personnel, ethical and legal nature. The introduction of fingerprinting and genomic records should be carried out in conditions of good funding for this area, strict observance of the rule of law, maintaining a balance between the rights and interests of the state and the individual, ensuring measures to protect information and personal data, and conducting extensive explanatory work among the population.

Keywords: universal fingerprinting, genomic registration, personal data, criminal procedure, forensics and forensics, human rights, fingerprinting.

List of literature

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CONSTRUCTION OF EVIDENCE AND DEFENSIVE ROLE OF FORENSIC HANDWRITING EXAMINATION

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Abstract

The documented response to the judge's question regarding the forgery on handwritten documents is very often in the application of justice. The modern tendency that we face in practice is either the attempt of using in an illegitimate way the scientific conclusions of other forensic sciences or focusing mostly on non-significant evidence, in order to mislead the court by cancelling the effects of the conclusion of the Forensic Handwriting (FH) expert's report. A scientifically proved report of the FH expert could become a protective shield for the justice, in order to provide to the court a transparent exposition of the real frequency of the historical facts, so as to help the judge to ideologically conceive the truth. Practical cases of court justice in Greece indicate that in case of lack of strong evidence, there is an appropriate selection of particular exhibits by the parts. The distortion of the meaning of these exhibits is the strategy applied in order to create fake impressions to the court, so as to mislead justice.

The different factors taken into consideration by the court in order to arrive to its sentence are various and they refer to different kinds of exhibits or evidence. Apart from the correct application of the legislation's provision, the sentence should also be based to the logical and scientific analysis that every case's particularities demand. It is well known that law and praxis should converge in the direction of interpreting in the correct way the real facts based on the legislative, civil or penal, point of view. A correct verdict is not the mere result of application of the abstract law provisions, but the effect of a wide approach of two different parameters located in opposite edges of the same mathematical fraction, law and facts. In this frame, a correct and fair verdict demands not only a clear and specific notion in the approach of the meaning of exhibits from the judges, but also a capacity of discerning in order to attribute the appropriate priority to the significance of every particularity. During this operational function of the court, the scientific assistance of experts of different forensic sectors is usually necessary.

KEY WORDS

cross examination, forensic, defensive role, construction, evidence, document examiner, handwriting, court, testament

INNOVATION AND APPLICATION OF SPECIAL KNOWLEDGE OF TECHNICAL SCIENCES IN CRIMINALISTIC

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Abstract

In the article reveals the concept of innovation in criminalistics, stages of the innovation process, provides examples of innovation in the process of investigation, the impact on the innovation capacity of the collective organization of the investigation.

The human factor can slow down or accelerate the introduction of innovations. A characteristic feature of the current stage of introducing innovations in forensic science has become the subordination of this phenomenon to ensuring the rights of the individual. This happens at all levels and in all spheres of organizing the investigation of crimes: from the normative regulation of this activity, a better level of legislation, instructions and methodological developments, to improving the process of managing the investigation and training of specialists, using the innovative potential of the team, as well as focusing on computer information technologies. So, in addition to authority and professionalism, such psychological characteristics of the head of the investigative unit as the willingness to bear moral responsibility for the actions of their employees should be attributed to favorable moments. The successful implementation of the innovation process largely depends on the investigators, among them are: 1) young employees who, although they accept innovations, concentrate on fulfilling their own tasks, and in the case of a brigade investigation method, often to the detriment of common goals; 2) experienced employees who rely to a large extent on their own experience, accumulated established practice and may negatively or wary of the innovations proposed by the management. So, the use of a polygraph was introduced into the practice of the investigating authorities. And despite twenty years of experience in testing in Kazakhstan and abroad, many investigators do not trust such an innovation, considering it unconventional, and the result obtained is questionable and inaccurate.

Key words: criminalistics, the stages of the innovation process, an innovative product, the factors of innovation activity, strategy, organization of investigation.

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THE PARTICIPATION OF NON-GOVERNMENTAL ORGANIZATIONS IN THE SEARCH FOR MISSING PERSONS IN POLAND

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Abstract

About 20 thous. people are gone missing every year in Poland. Approximately 4 thous. of them remain permanently missing. The problem concerns people of different age, social and professional groups, living in rural and urban areas, in the country and abroad. There are different reasons behind human disappearances: personal problems (the desire to run away from home or to broke relationships with parents), life complications (inability to deal with everyday financial pressure and unemployment), illness (depression, psychological problems, issues related to physical trauma, memory loss), as well as criminal actions (kidnapping, accidents or becoming a victim of crime including the murder cases).
The police are the agency responsible for the search for missing persons. There is a specialized search unit within the national Criminal Police – the Department for the Missing People Search and Identification. Among its objectives are the coordination of police search activity regarding missing persons, including practical assistance, the identification of unknown persons and unidentified human remains. Besides, non-governmental organizations may also participate in the search, e.g. search and rescue groups within firefighters' volunteer organizations, mountain and water search and rescue teams, as well as the organizations providing psychological support for the members of the missing persons' families. The most resilient non-governmental organization of this kind is the Itaka Foundation – Centre for Missing People founded on 22 March 1999. Its goal is the support of the people affected by the problem of human disappearances, especially persons who have gone missing, their families and the persons from the so-called risk groups. These goals are carried out by the professionals who have established cooperation with the police, media, government institutions and non-governmental organizations within the country and abroad. The Itaka Foundation also posses effective computerized tools which help collect and analyze relevant data from families and informants.

Keywords: Itaka Foundation - Center for Missing People, non-governmental organization, missing persons, the search for missing persons.

PROBLEMS OF FORMATION AND PROSPECTS FOR DEVELOPMENT OF CRIMINALISTIC INNOVATION

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Abstract:

In the current conditions of aggravation of socio-economic and political problems in society, along with the latest tendencies of world scientific and technological progress, significant changes of quantitative and qualitative indicators of crime occur, new negative processes appear in its dynamics and structure. Informatization, digitization and technologicalisation of all spheres of activity have also significantly affected the state of crime, since criminals are quite actively and successfully using the modern achievements of science and technology in their criminal activities. Such circumstances have posed new challenges for the national forensic science, which are connected with the «social order» of practice in search of adequate means, methods and methods of counteraction to the modern challenges of crime.

In current realities, the tasks of criminalistics are determined by its social function - to to promote their techniques, methods and means in countering criminal phenomena. In this regard, the foremost task of criminalistics is to assist law enforcement agencies in the fight against crime, complete and timely technical and criminalistic support, and maintenance the investigation and prevention of crimes, their judicial review. This task can be realized on the basis of full use of the achievements of modern science and technology. As V.Y. Shepitko rightly points out, in the current conditions of the formation of criminalistic knowledge, this process is dependent on the scientific and technological progress of the human community. The development of criminalistics, its tendencies are caused by the influence of world information flows, the integration of knowledge about the possibilities of combating crime with the help of scientific and technical achievements of modern society. The informatization of the social environment has actually led to the «technologicalization» of criminalistics, the development and implementation of information, digital, telecommunications and other technologies. Given the above, radical changes are currently underway and innovative approaches are being introduced in the criminalistic provision of law enforcement agencies. Therefore, the creation and introduction of innovative criminalistic products and technologies in the present-day context is one of the foremost challenges of criminalistic science at the present stage and an urgent need for practice.

In current realities, criminalistic science, in our view, should activeted its predictive function and scientifically and methodically provide enforcement activities with criminalistic recommendations on the effective application of innovation in practice. Obviously, only the integrated approach, in unity and interconnection, emerging and solvable tasks, can maximally ensure the planning and implementation of the innovation process in criminalistics and law enforcement practice, which involves the development, implementation and application of innovation. Therefore, criminalistics, integrating the latest achievements of science and technology, develops and creates for law enforcement agencies innovative tools, techniques

and methods to counter modern crime and actively implement and use them to improve the quality and effectiveness of such activities.

Key words: innovations in criminalistic, criminalistic innovation, private criminalistic theory, innovations in criminalistic didactics, innovative directions in the development of criminalistic science.

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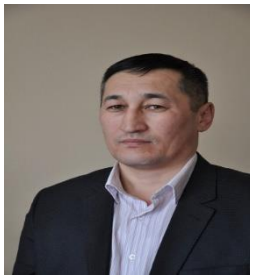

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